SJB Planning

University of Sydney

Engineering and Technology Precinct – Darlington Campus

Environmental Impact Statement for State Significant Development

(SSD 8636)

April 2018 | Final

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Declaration

Submission of Environment Impact Statement:

Prepared in accordance with Schedule 2 of the Environmental Planning and Assessment (EP&A) Regulation 2000.

Development Application Details	
Applicant:	The University of Sydney
Applicant Address:	22 Codrington Street Darlington, NSW 2008
Land to be developed:	Engineering and Technology Precinct, University of Sydney, Darlington Campus, Darlington
Proposed development	Redevelopment of the Engineering Building and Engineering Link Building for the upgrade of various existing engineering and technology uses to modern and world class standards, in accordance with the approved State Significant Development Campus Improvement Program SSD 13_6123. Redevelopment will result in approximately 6,071m^2 of additional GFA within the precinct.
Environmental Impact Statement	
Prepared by:	Scott Barwick
Address:	SJB Planning Level 2, 490 Crown Street Surry Hills NSW 2010
In respect of:	State Significant Development – Development Application
Declaration:	I certify that the contents of this Environmental Impact Statement to the best of my knowledge, has been prepared as follows: • In accordance with schedule 2 of the Environmental Planning and Assessment (EP&A) Regulation 2000; • It contains all available information that is relevant to the environmental assessment of the proposed development; and • To the best of my knowledge the information contained in this report is neither false nor misleading.
Name	Scott Barwick B. Urban and Regional Planning University of New England (UNE)
Signature	
Date	9 April 2018

Executive Summary

This Environmental Impact Statement (EIS) has been prepared in support of a Development Application (DA) by The University of Sydney (USYD) for State Significant Development (SSD) pursuant to Division 4.7 of the *Environmental Planning and Assessment (EP&A) Act 1979*.

Clause 226(1) of the Environmental Planning and Assessment (EP&A) Regulation 2000 provides that a development carried out by an Australian University (under the meaning of the *Higher Education Act 2001*) is a Crown development. The University is listed as an Australian University under Schedule 1 of the *Higher Education Act 2001*. Consequently, this SSD is a Crown development for the purposes of Division 4.6 of the *EP&A Act 1979.*

The EIS has been prepared in support of the first stage of the redevelopment of the Engineering and Technology Precinct (ETP) of The University of Sydney (USYD).

The EIS has been prepared having regard to and based upon architectural plans prepared by Cox Architects, and technical reports prepared in support of the proposal. The scope of the technical report has been undertaken to address the matters outlined in the Secretary Environmental Assessment Requirements (SEARs) issued for this SSD (SSD 8636) and the relevant conditions of consent under SSD 13_6123 for the University's Stage 1 Campus Improvement Program (CIP) development consent.

The development proposes the construction of a northern wing addition to the Electrical Engineering Building, adaptation of an existing setback to the north of the Engineering Link Building as a loading dock and replacement of the car park to the south of the Electrical Engineering Building with a landscaped courtyard. The new building work will be located within the footprint of the existing buildings. The southern tower of the Electrical Engineering building will be refurbished and configured to allow this space to continue to be utilised during the construction period. The retained floor space will be refurbished. The application will result in an increase in total gross floor area (GFA) from 7,495.86m^2 to 13,567.16m^2, equating to 6,071.30m^2 of additional GFA. The resulting building will provide upgraded engineering research laboratories, academic teaching laboratories, library space, academic office accommodation, storerooms, plant and equipment facilities, and reception areas to modern and world class university standards.

The building and associated facilities will provide core teaching and research accommodation for the University's engineering and related faculties. The upgrade of the facilities and amenities does not increase staff or student populations.

The building is located north of Shepherd Street, on the Darlington Campus. The site fronts Maze Crescent to the west, and Blackwattle Creek Lane to the north. To the west of the site is Cadigal Green.

The application is part of the implementation of the University's CIP, and its commitment to maintain world class teaching and research facilities.

The application design has derived from an invited design competition process that has been overseen by a Design Excellence Review Committee (DERC), which has critiqued the entries submitted, leading to the nomination of the preferred design. The preferred design team has developed the scheme with regular critique and review from the DERC which was further reviewed by the Design Excellence Review Panel (DERP) which included the DERC and representatives of the Department of Planning and Environment (DP&E) and the office of the Government Architect New South Wales (GANSW) to ensure design excellence has been achieved. GANSW has endorsed the competitive design process undertaken by the university.

The development is consistent with the building envelope established in the CIP (SSD 13_6123). The resulting building will be a 10 level building. The development comprises:

- Level 1 – Storage, plant, research laboratory, and loading dock;
- Level 2 – Entrance from Engineering Walk, reception, teaching laboratories, lounge, meeting room, plant, amenities;
- Level 3 – Entrance from Maze Crescent, School Hub, informal learning, plant, library, and workstations;
- Level 4 – Teaching laboratories, research laboratories, existing laboratories and existing workspace, and plant room;
- Levels 5 – Research laboratories, workstations, boardroom, existing laboratories, existing workspaces, and plant room;
- Level 6 - Research laboratories, workstations, existing laboratories and existing workspace, and plant room;
- Level 7 – Teaching and learning accommodation, research office and workstations, existing laboratories, existing workspace, and plant room;
- Level 8 – Research and teaching accommodation, existing laboratories, existing workspace, and plant room;
- Level 9 – Research laboratories and teaching accommodation; and
- Level 10 – Plant and equipment.

Integral to the design and response to the brief is flexibility in being able to readily adapt the accommodation between research and workspace as the teaching and research demands of the University fluctuate. The design would facilitate the ability for the northern areas of Level 7 to be reconfigured as typical laboratory space, and for the southern areas of Levels 4 to 7 to be reconfigured to workstations.

Consistent with the SEARs issued for the project, the key potential environmental impacts that have been considered relate to:

- Statutory and strategic context;
- Policies;
- Built form and urban design;
- Environmental amenity;
- Transport and accessibility;
- Ecologically sustainable development (ESD);
- Noise and vibration;
- Heritage;
- Contamination;
- Sediment, erosion, and dust control;
- Utilities;
- Contribution;
- Drainage;
- Waste; and
- Construction hours.

The potential environmental impacts have been assessed, and are considered to be acceptable, or capable of mitigation with the adoption and implementation of appropriate management controls.

A summary of the environmental impact assessment recommendations and management measures are provided in Section 5 of this EIS.

The design and scope of the development has been informed with engagement with relevant government agencies, comprising The City of Sydney, Transport for NSW (TfNSW), Roads the Maritime Services (RMS), Heritage Council of NSW, and GANSW.

The EIS concludes that the first stage of the renewal of the ETP, consistent with the Stage 1 CIP (SSD 13_6123), should proceed as:

- The EIS has demonstrated consistency with the applicable environmental planning instruments (EPIs) and strategic planning policies. The proposal is consistent with SSD 13_6123, and has addressed the SEARS issued; and
- The proposal results in impacts consistent with those anticipated by SSD 13_6123, and potential adverse impacts can be mitigated with the implementation of the recommendations set out in the EIS.

Consistent with the assessment of the proposal undertaken in this EIS, and subject to the implementation of the recommended mitigation measures, the proposal should be approved.

1.0 Introduction

1.1 Overview

This EIS has been prepared by SJB Planning under Section 4.12 of the *EP&A Act 1979,* on behalf of USYD, in support of the proposed redevelopment of the Engineering Building and Engineering Link Building for various engineering and technology uses, consistent with the approved CIP SSD 13_6123. Redevelopment will result in a total of 13,598m^2 of GFA within the current building footprint, which represents an additional 6,017.30m^2 of GFA on the site.

Clause 226(1) of the EP&A Regulation 2000 provides that a development carried out by an Australian University (under the meaning of the *Higher Education Act 2001*) is a Crown development. The University is listed as an Australian University under Schedule 1 of the *Higher Education Act 2001*. Consequently, this SSD is a Crown development for the purposes of Division 4.6 of the *EP&A Act 1979.*

As the proposed development has a capital investment value (CIV) of $105,136,232 it constitutes SSD in accordance with Schedule 1, Clause 15 of State Environmental Planning Policy – State and Regional Development (SEPP SRD), as it involves and educational establishment with a CIV of more than $20 million.

SSD requires the preparation of an EIS. This EIS addresses the SEARs and the requirements of the *EP&A Act 1979*.

1.2 Project Objectives

In accordance with Schedule 2, Part 3, Subclause 7(1)(B), the objectives of the proposed redevelopment of the ETP are:

- Delivery of the CIP consistent with SSD 13_6123;
- Ensuring that the University's research and teaching facilities remain world class;
- To ensure that the facilities continue to attract the highest calibre of teaching and research staff; and
- To provide a campus with the highest quality built environment that enhances the teaching and learning environment.

The CIP has established the framework for the renewal of the Camperdown-Darlington Campus of USYD.

The SSD for Stage 1 of the ETP will implement the renewal and upgrade of the University's existing engineering and technology teaching and research facilities to modern and world class standards. The works provide improved facilities, but do not increase staff or student capacity.

The completed building will accommodate a GFA of 13,567.16m^2. The refurbished and new construction replaces an existing suite of buildings with an existing GFA of 7,495.86m^2. The proposal utilises 6,071.3m^2 of the allowable additional GFA of 42,500m^2 approved for the ETP under the Stage 2 consent (SSD 13_6123).

1.3 Secretary's Environmental Assessment Requirements (SEARs)

This EIS has been prepared to address the SEARs that were issued 29 September 2017 for application number SSD 8636. Table 1 below provides a summary of the matters listed in the SEARs, and identifies where they have been addressed in the EIS. A full copy of the SEARs is provided at Attachment 28.

Secretary Environmental Assessment Requirements		Location in EIS
General Requirements		
The Environmental Impact Statement (EIS) must meet the minimum form and content requirements in Clauses 6 and 7 of Schedule 2 of the EP&A Regulation 2000, specifically:		
·	Declaration	Page 6
·	Executive Summary	Pages 7-8
·	Statement of Objectives	Section 1.2
·	Detailed description of the development	Section 3
·	Identification and description of likely environment impacts	Section 5
·	Identification of mitigation measures	Section 5.16.3
·	Approvals under Acts	Section 5.16.4
·	Justification for carrying out the development	Section 5.16.5
·	Quantity Surveyor's Report	Attachment 26
Key Issues		
(1)	Statutory and Strategic Context	Section 5.2 and Section 6
(2)	Policies	Sections 5.3 and 6.2
(3)	Built Form and Urban Design	Section 5.4 and Attachment 2
(4)	Environmental Amenity	Section 5.5 and Attachments 2, 12, 16, 17 and 18
(5)	Transport and Accessibility	Section 5.6
(6)	Ecologically Sustainable Development	Section 5.7
(7)	Noise and Vibration	Section 5.8 and Attachment 12
(8)	Heritage	Section 5.9 and Attachment 13
(9)	Contamination	Section 5.10 and Attachment 10
(10)	Sediment, Erosion and Dust Control	Section 5.11 and Attachment 17
(11)	Utilities	Section 5.12 and Attachment 16
(12)	Contributions	Section 5.13
(13)	Drainage	Section 5.14
(14)	Waste	Section 5.15 and Attachment 10
(15)	Construction Hours	Section 5.16 and Attachment 18

Secretary Environmental Assessment Requirements	Location in EIS
Plans and Documents	
· Site Survey	Attachment 1
· Architectural Design Package	Attachment 2
· Landscape Plans	Attachment 3
· Arborist Report	Attachment 4
· Transport and Accessibility Assessment	Attachment 5
· BCA Assessment Report	Attachment 6
· Fire Engineering Statement	Attachment 7
· Access Report	Attachment 8
· Geotechnical Reports	Attachment 9
· Detailed Site Investigation and Remediation Action Plan	Attachment 10
· Preliminary Hazard Analysis (SEPP 33)	Attachment 11
· Noise and Vibration Assessment	Attachment 12
· Heritage Impact Statement	Attachment 13
· Historical Archaeological Assessment	Attachment 14
· Heritage Consultation	Attachment 15
· Lighting Impact Assessment	Attachment 16
· Qualitative Wind Assessment Report	Attachment 17
· Construction Management Plan	Attachment 18
· Infrastructure and Integrated Water Management Plan	Attachment 19
· Civil Design Report Including Sediment Control Plan	Attachment 20
· Demolition and Construction Waste Management Plan	Attachment 21
· Waste Management Plan	Attachment 22
· Structural Engineer's Report	Attachment 23
· Sustainable Design Statement	Attachment 24
· Design Excellence Statement	Attachment 25
· Capital Investment Report	Attachment 26
· Community Consultation Report	Attachment 27
Consultation	Section 4

Table 1: Summary of Secretary Environmental Assessment Requirements and EIS location reference

1.4 Stage 1 Development Application

This SSD application seeks detailed consent for buildings in the ETP generally consistent with the envelopes approved under the University's approved Concept Proposal for the Campus Improvement Program (CIP). On 16 February 2015, the CIP was approved by the Minister for Planning as SSD 13_6123. The Stage 1 consent (SSD 13_6123) provides a masterplan for the renewal and redevelopment of the University's

Camperdown-Darlington Campus. The Stage 1 approval provides for building envelopes, maximum GFAs, access locations, public domain and infrastructure for the campus.

The Stage 1 approval (SSD 13_6123) as a consent pursuant to Section 4.23 of the *EP&A Act 1979* satisfies the requirement for the preparation of a site specific masterplan under Clause 7.20 of the Sydney Local Environmental Plan (SLEP) 2012.

This application is located within Precinct C – Engineering Precinct, as identified in Figure 1 below. The detailed building design includes minor projections beyond the approved building envelopes, but otherwise is consistent with the terms of the Stage 1 consent that has been granted for the CIP. The minor projections to the building comprise the external louvered shading system and the exhausts from the laboratories, which are excluded from any definition of 'building height' as prescribed by both the CIP and SLEP 2012.

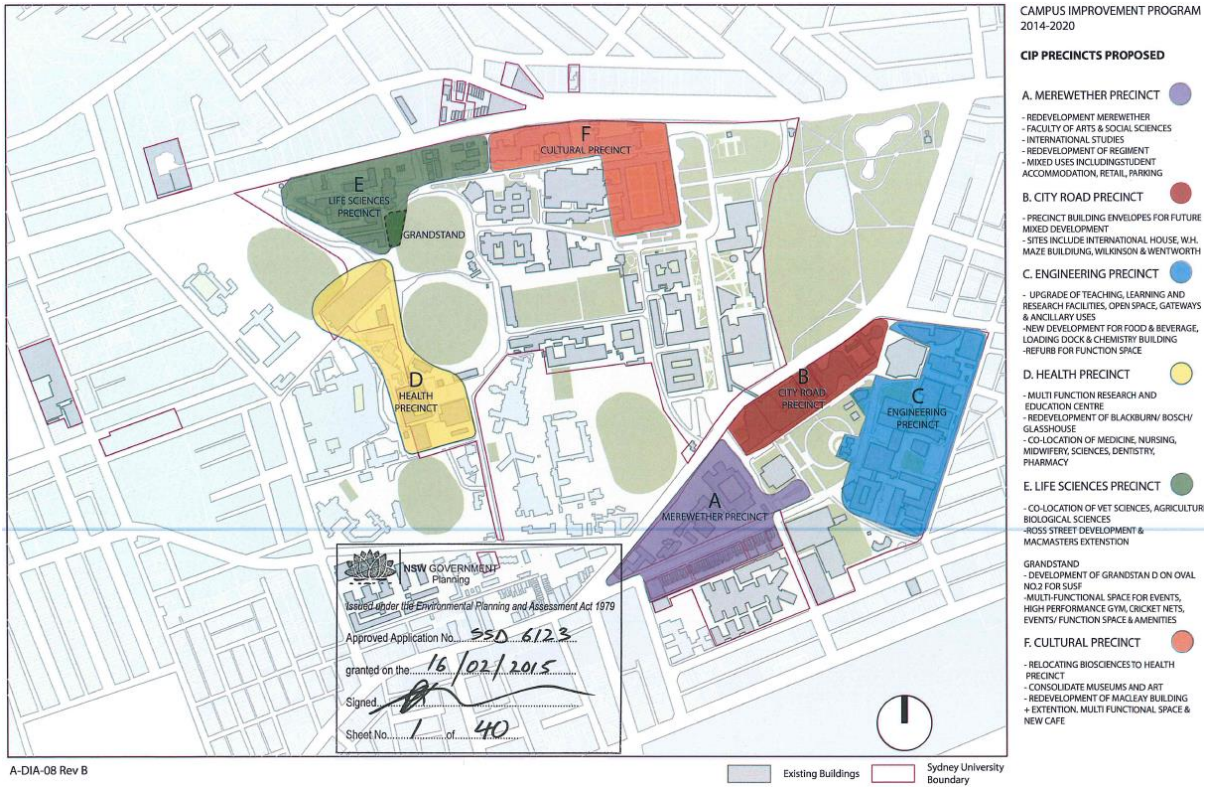

Figure 1: Approved CIP Precinct Diagram from SSD 13_6123

1.5 Structure of the EIS

The EIS addresses the SEARs and the requirements of Schedule 2 of the EP&A Regulation 2000. The EIS is set out as follows:

- Section 1 provides an introduction;
- Section 2 describes the site and local context;
- Section 3 provides a detailed description of the proposed development, including the stated objectives of the proposal and overview of the background to the proposal;
- Section 4 provides an overview of the community consultation that has undertaken for the proposal;
- Section 5 addresses the key environmental issues as set out in the SEARs and includes an assessment of the statutory and policy controls applicable to the site;

- Section 6 provides an assessment of the impacts of the proposal and identifies mitigation measures where appropriate; and
- Section 7 presents the conclusions of the assessment.

1.6 Stage 1 Relevant Conditions of Consent

The site of the proposed Stage 1 of the ETP redevelopment is subject to the terms and conditions of SSD 13_6123. SSD 13_6123 has approved building envelopes, design controls, building volumes, open space and linkages, vehicular access, and indicative land uses.

The relevant conditions below reflect the terms of the consent for SSD 13_6123 as modified 9 June 2015.

Conditions of Stage 1 Consent SSD 13_6123	Compliance/Reference
Development in Accordance with Plans and Documents	
A5. The applicant shall carry out the development generally in accordance with the: a) Environmental Impact Statement titled *The University of Sydney Campus Improvement Program State Significant Development (SSD 13_6123) Environmental Impact Statement,* prepared by Urbis Pty Ltd, dated January 2014. b) Response to Submissions report titled, *Campus Improvement Program 2014- 2020 State Significant Development Application (SSD 13_6123),* prepared by The University of Sydney, dated June 2014. c) *Campus Improvement Program 2014-2020 State Significant Development Application (SSD 13_6123), Supplementary Response to Submissions,* prepared by The University of Sydney, dated September 2014. d) following drawings, except for: i) any modifications which are Exempt or Complying Development; ii) as otherwise provided by the conditions of this consent.	Complies. The minor structure protrusions to the CIP building envelopes are consistent, and comply, with the definition of 'building height' as prescribed by both the CIP and SLEP 2012. Refer to Section 5.4.1.

Building Envelope Drawings prepared by The University of Sydney			
Drawing No.	Issue	Name of Plan	Date
Engineering Precinct			
SSD-D-11	C	ENGINEERING- PROPOSED ENVELOPE PLAN	08/09/2014
SSD-D-12	A	ENGINEERING- SHEPHERD STREET ELEVATION- PROPOSED	01/07/2014
SSD-D-13	A	ENGINEERING- MAZE CRESCENT ELEVATION- PROPOSED	27/06/2014
SSD-D-14	A	ENGINEERING SECTION 1 - PROPOSED	27/06/2014
SSD-D-15	A	ENGINEERING SECTION 2- PROPOSED	01/07/2014

Conditions of Stage 1 Consent SSD 13_6123			Compliance/Reference
SSD-D-16	A	ENGINEERING SECTION 3-PROPOSED	01/07/2014
Concept Landscape Plan prepared by Clouston Associates			
S14-0047	D	THE UNIVERSITY OF SYDNEY CONCEPT LANDSCAPE PLAN	01/07/2014

e) the conditions of this consent.

Gross Floor Area

A6. The maximum additional gross floor area allowed by this approval for new built form within building envelope development sites of the Campus Improvement Program within each precinct is detailed in the following table:

Complies.

An additional 6,071.3m^2 GFA is provided, leaving a balance of 36,428.7m^2 to be utilised.

Precinct	Total Additional GFA
Merewether Precinct	63,400 sqm
City Road Precinct	62,800 sqm
Engineering Precinct	42,500 sqm
Health Precinct	56,700 sqm
Life Sciences Precinct	37,250 sqm
Cultural Precinct	2,000 sqm

Car Parking

A9. Total on-campus (Camperdown and Darlington Campuses) car parking provisions shall not exceed 2,800 spaces at the completion of all future development approved under the Campus Improvement Program.

Complies.

No additional parking provided.

Design Excellence

B1. a) Consent must not be granted to a new building or to external alterations to an existing building unless the consent authority has considered whether the proposed development exhibits design excellence.

Complies.

Refer to Section 5.4.2.

b) In considering whether proposed development exhibits design excellence, the consent authority must have regard to the following matters:

i) whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,

ii) whether the form and external appearance of the building will improve the quality and amenity of the public domain,

iii) whether the building meets sustainable design principles in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security and resource, energy and water efficiency,

iv) if a design competition is held in accordance with the

Conditions of Stage 1 Consent SSD 13_6123	Compliance/Reference
requirements of clause 6.21 Design excellence of Sydney Local Environmental Plan 2012, the results of the competition. NOTE: Where future development does not trigger the City of Sydney design competition process requirements under clause 6.21 of SLEP 2012, the applicant shall have regard to The University of Sydney's Architect Panel Establishment and Competitive Design Process.	
Built Form and Urban Design	
B2. To ensure that a high quality urban design and architectural response is achieved, future development applications shall demonstrate the following: Engineering Precinct g) Future built form within the Shepherd Street car park building envelope (No.1) fronting Shepherd Street shall be designed to ensure that the front row of existing mature eucalypt trees is retained and protected in the future development of the site. Prior to any detailed design an AQF Level 5 Arborist is engaged to determine suitable setbacks to trees (including street trees) to be retained, and an Arboricultural Impact Assessment report is submitted with any development application within this envelope.	This condition does not apply to the subject application.
B3. Future building demolition, site layout and architectural design of future development shall be generally consistent and have regard to the following: a) Camperdown Darlington Campus Strategy Plans at Appendix C of the EIS (as amended by the RtS); b) Design Principles at Appendix F of the EIS; and c) Campus Improvement Program 2014-2020 State Significant Development Application (SSD 13_6123), Urban Design Justification, prepared by Cox Richardson and The University of Sydney, dated June 2014.	The application is consistent with this condition.
B4. To ensure that the visual impact of rooftop plant and architectural roof features is minimised, the design of future built form shall be generally consistent with the following: a) Rooftop plant and equipment shall be setback a minimum three metres from the building parapet; b) Rooftop plant and equipment, including plant and lift overruns, communications devices, satellite dishes and the like are to be designed to minimise their visibility and size; and c) The design of architectural roof features are to integrate with the overall building design.	Complies. Roof plant is recessed and the design has been determined by the DERC and DERP to have achieved design excellence.
B5. Built form shall be sited to achieve a balance between cut and fill, minimise earthworks, provide adequate solar access and minimise impacts on privacy, amenity and overshadowing of land uses surrounding the site.	The proposal achieves this condition with the existing footprint of the Electrical Engineering building being reused.

Conditions of Stage 1 Consent SSD 13_6123	Compliance/Reference
B6. Future development applications for new built form shall include a *Crime Prevention Through Environmental Design* assessment, including mitigation measures, where necessary.	Complies Refer to the Architectural Design package and report at Attachment 2.
B7. Development sited adjacent to the public domain shall be appropriately treated to maximise pedestrian and public safety through the implementation of the *Crime Prevention through Environmental Design* principles.	Complies Refer to the Architectural Design package and report at Attachment 2.
Landscaping	
B8. All future development applications for new built form must include detailed landscape plans identifying the vegetation to be removed or relocated and the location of replacement and additional landscaping, and must be generally in accordance with the approved landscape concept in Condition A4 of Part A of Schedule 2 and The University of Sydney Grounds Conservation Management Plan, dated July 2014. Detailed landscape plans should include relevant details of the species to be used in the various landscapes areas (preferably species indigenous to the area), including details of the informal native and cultural avenue plantings, and other soft and hard landscape treatments, including any pavement areas and modular and sculptural seating.	Complies. Refer to the Landscape Design Report at Attachment 3 and the Arborist report at Attachment 4.
B9. All future development applications for new built form shall satisfactorily demonstrate that proposed built form does not encroach on significant trees and open spaces identified in Figure 4.3 entitled 'Grading of significance: character areas and landscapes' and graded as being exceptional and high in The University of Sydney Grounds Conservation Management Plan, dated July 2014.	Complies. No significant trees are encroached upon. Refer to the arborists report at Attachment 4 and the Heritage Impact Statement at Attachment 13.
Heritage	
B10. All future development applications shall be accompanied by a Heritage Impact Statement addressing their impacts and outlining how the recommendations of respective precinct based heritage impact statements and policies outlined within The University of Sydney Grounds Conservation Management Plan, dated July 2014 have been satisfactorily addressed.	Complies. Refer to the Heritage Impact Statement at Attachment 13 and Historical Archaeological Assessment at Attachment 15.
811. An experienced heritage consultant is to be commissioned to work with the consultant team throughout the design development of built form within each Campus Improvement Program Precinct. The nominated heritage consultant is to be involved in the resolution of all matters where existing significant fabric and spaces are to be subject to preservation, restoration, reconstruction, adaptive reuse, recording and demolition.	Complies

Conditions of Stage 1 Consent SSD 13_6123	Compliance/Reference
B14. All future development applications for new built form that involve the demolition or alteration of existing items of heritage significance shall include a heritage interpretation plan in accordance with NSW Heritage Branch guidelines titled 'Interpreting Heritage Places and Items: guidelines' and policy titled 'Heritage Information Series: Heritage Interpretation Policy' for assessment and approval. The interpretation plan must: a) Detail how information on the history and significance of the building within The University of Sydney will be provided for the public and include pictures, texts, and detailed designs for its implementation. b) Include significance themes, including the building's contribution to the development of the University and residential colleges.	The Heritage Impact Statement has not identified the need for a heritage interpretation plan.
Traffic, Access and Car Parking	
B16. All future development applications for new built form must include a detailed assessment of the traffic and transport impacts associated with the future development and shall address, but not limited to: a) details of the total daily and peak hour trips generated by the proposed development, including accurate details of the current and future daily vehicle movements and assess the impacts of the traffic generated on the local road network; b) detailed intersection analysis in consultation with Council and the Roads and Maritime Services, where University roads connect with local or State roads, including intersection capacity (including University vehicle access points) and requirements for future road and intersection upgrading works; c) the cumulative traffic and parking impacts; d) proposed mode share targets and appropriate measures to ensure they are satisfactorily achieved; and e) the status of the closure of existing at-grade car parking areas (where relevant).	Complies. Refer to the Transport and Accessibility Assessment at Attachment 5.
B17. To ensure that active transport modes are satisfactorily supported and promoted on campus, all future development applications for new built form shall satisfactorily detail that pedestrian and cyclist facilities have been incorporated into the respective proposed development and how integration into broader campus strategies will be made.	Complies. Refer to the Transport and Accessibility Assessment at Attachment 5.
B18. All bicycle and motor cycling parking and associated end-of-trip facilities shall be provided in accordance with Council's relevant policies and controls.	Complies. Refer to the Architectural Design package at Attachment 2 and the Transport and Accessibility Assessment at Attachment 5.

Conditions of Stage 1 Consent SSD 13_6123	Compliance/Reference
B19. Future development applications for new built form shall include a sustainable travel plan, or where relevant, include a faculty/precinct based sustainable travel plan and accompany the first application within the respective CIP Precinct.	Complies. Refer to the Transport and Accessibility Assessment at Attachment 5.
Noise and Vibration	
B20. All future development applications for new built form shall be accompanied by a noise and vibration assessment that identifies and provides a quantitative assessment of the main noise generating sources and activities at all stages of construction, and any noise sources during operation. Details are to be provided outlining any mitigations measures to ensure the amenity of adjoining sensitive land uses is protected throughout the construction and operational periods.	Complies. Refer to the Noise and Vibration Assessment at Attachment 12.
B21. All future development applications for new built form shall detail any noise mitigation measures associated with operational and mechanical plant noise impacts, and demonstrate that any noise generated plant will comply with the noise criteria detailed within noise and vibration assessments.	Complies. Refer to the Noise and Vibration Assessment at Attachment 12 and the Construction Management Plan at Attachment 18.
B22. All future development applications for new built form shall consider potential noise impacts on adjoining residences, including noise generated from student and staff activities and broader associated ancillary community uses of buildings and other University facilities.	Complies. Refer to the Noise and Vibration Assessment at Attachment 12.
Aboriginal Heritage	
B23. Where relevant, future development applications shall address Aboriginal Heritage in accordance with the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005 and Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.	Detailed archaeological assessment not required for this site. The design and landscape treatments have been designed having regard to the University's Wingara Mura Strategy.
Amenity	
B24. Future development applications for new built form shall address amenity impacts having regard to the location of intended future land uses, in particular the student accommodation and ancillary retail/commercial land uses, through the preparation of an analysis addressing solar access, overshadowing, visual privacy, views and vistas, servicing requirements (including waste management, loading zones and mechanical plant), acoustic impacts and wind impacts.	Complies. The built form assessment at Section 5.4 and the architectural design package at Attachment 2 confirm that residential amenity is not adversely impacted upon.

Conditions of Stage 1 Consent SSD 13_6123	Compliance/Reference
Contamination	
B25. Future development applications for new built form shall be accompanied by a detailed site investigation report, including an assessment of potential site contamination following the demolition of existing building and infrastructure, having regard to the recommendations provided within the Preliminary Site Investigation report, prepared by Douglas Partners, dated November 2013.	Complies. Refer to The Contamination Assessment at Attachment 10.
Ecologically Sustainable Development	
B26. Future development applications for new built form shall demonstrate how the principles of ESD have been incorporated into the design, construction and on-going operation of future developments.	Complies Refer to the Architectural Design package at Attachment 2 and the Sustainable Design Statement at Attachment 24.
Building Code of Australia	
B27. All future development applications shall demonstrate compliance with the Building Code of Australia, as relevant.	Complies. Refer to the BCA assessment at Attachment 6 and Fire Engineering Statement at Attachment 7.
Utilities	
B28. All future development applications for new built form shall address the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure through the preparation of an Infrastructure Management Plan in consultation with relevant agencies and service providers.	Complies. Refer to the Infrastructure Management Plan at Attachment 19.
Disability Access	
B30. Where relevant, future development applications shall include a Disability Access Review to demonstrate an appropriate degree of accessibility in accordance with the *Disability (Access to Premises-buildings) Standards 2010* (the Premises Standards).	Complies Refer to the Access Report at Attachment 8.
Waste	
B31. Where relevant, future development applications shall include a Waste Management Plan to address storage, collection, and management of waste and recycling within the development.	Complies refer to the Waste Management Plan and Demolition and Construction Management Plans at Attachments 21 and 22.

Table 2: Compliance with conditions of Stage 1 consent SSD 13_6123

2.0 The Site and Its Context

2.1 Site Context

The development site accommodates the Electrical Engineering Building and is bound by the Mechanical Engineering Building and Seymour Centre to the north, the Engineer Link Building and Shepherd Street to the east, Maze Crescent to the west, and the PNR Lecture Theatre to the south. The location of the works is shown outlined in red in Figure 2 below.

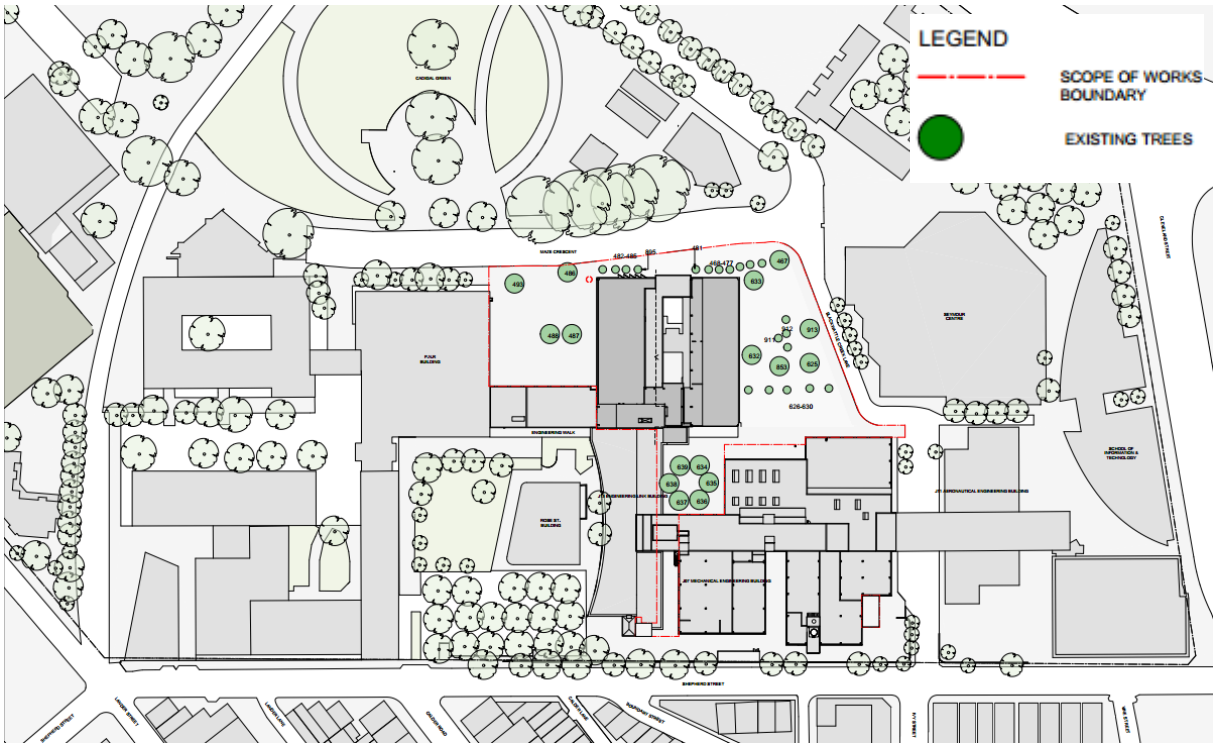

Figure 2: Location plan

The University is a long standing tertiary education site, which under the Eastern City District Plan is adjacent to the Harbour CBD and within the Innovation Corridor (Refer to Figure 3 overleaf).

The education and research capacity of the University are recognised as key economic drivers for the Eastern City and the Sydney region. Shepherd Street to the east, forms the eastern extent of the Darlington campus. To the east of Shepherd Street is the residential suburb of Darlington.

Figure 16: Harbour CBD

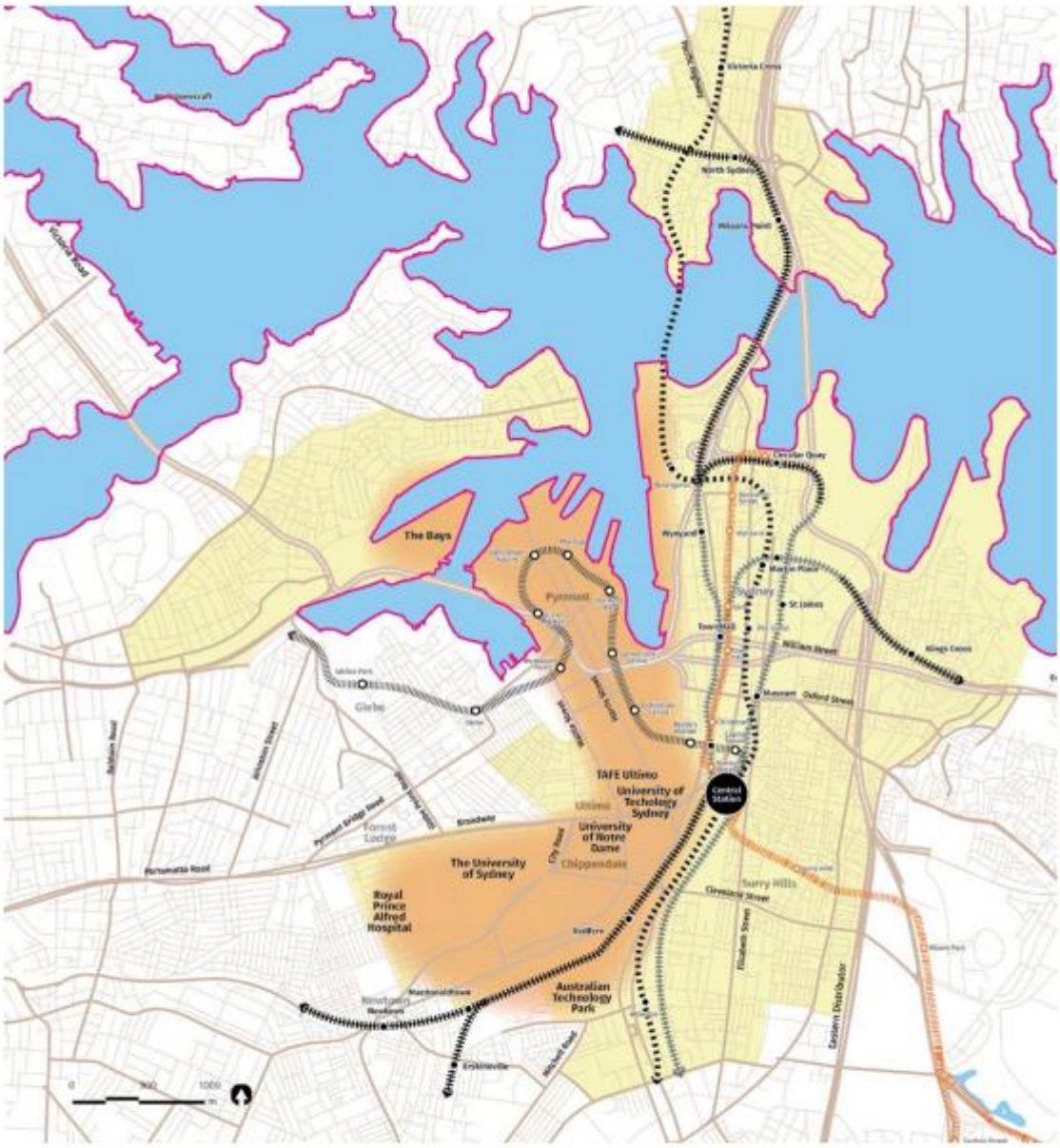

Figure 3: Eastern City District Plan as part of the Harbour CBD and the Innovation Corridor Map

2.2 Site Description

The site is located in the eastern perimeter of the Darlington Campus, and is legally identified as Lot 1 in DP 790620 (refer to Figure 4 below).

The site and surrounding locality is highly urbanised, reflecting its longstanding use for education and research purposes. The development site has a primary frontage to Maze Crescent to the west, and Blackwattle Creek Lane to the north. A service corridor between buildings J13 (Engineering Services) and J07 (Mechanical Engineering Building) link the site to Shepherd Street to the east.

To the east of Shepherd Street are residential areas of predominately terrace form housing. Shepherd Street is oriented on a generally north-south direction, and forms an intersection with Cleveland Street approximately 180m to the north.

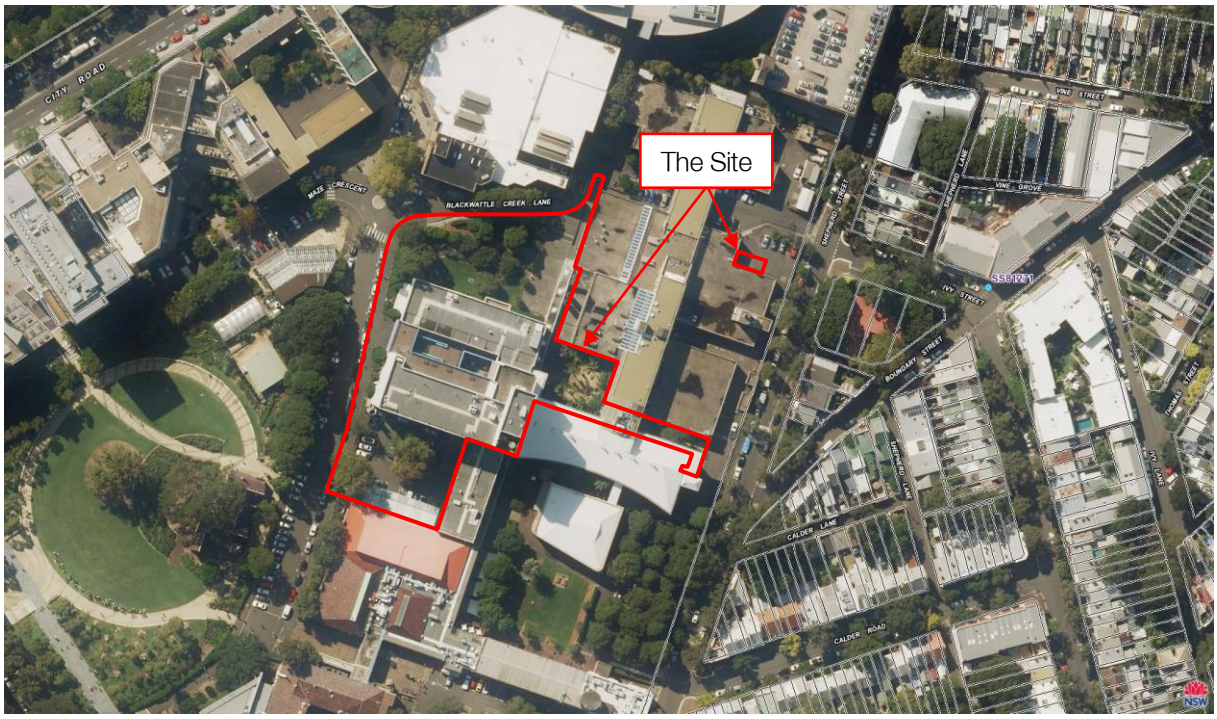

Figure 4: Aerial view of site and locality (Source: SIX Maps)

The site context and location of the development are shown in the following figures.

Figure 5: View of Shepherd Street looking south with the ETP to the right

Figure 6: View of Shepherd Street looking north with the ETP to the left

Figure 7: View of northern elevation of the Mechanical Engineering building showing location of proposed new building

Figure 8: View of the southern elevation of the Mechanical Engineering building which is to be retained

3.0 Proposed Development

3.1 Background to the Proposal

The University's Camperdown and Darlington Campuses lies within the University's approved Concept Proposal for the CIP) (SSD 13_6123). The CIP represents the long term masterplan to guide the redevelopment of the campus, known as the CIP, and was approved by the Minister for Planning on 16 February 2015. The Stage 1 consent has, among other matters, established building envelopes, GFAs, campus wide inclusion of a broad range of University land uses, and built form guidelines for the campus.

This SSD application is located within the Engineering Precinct.

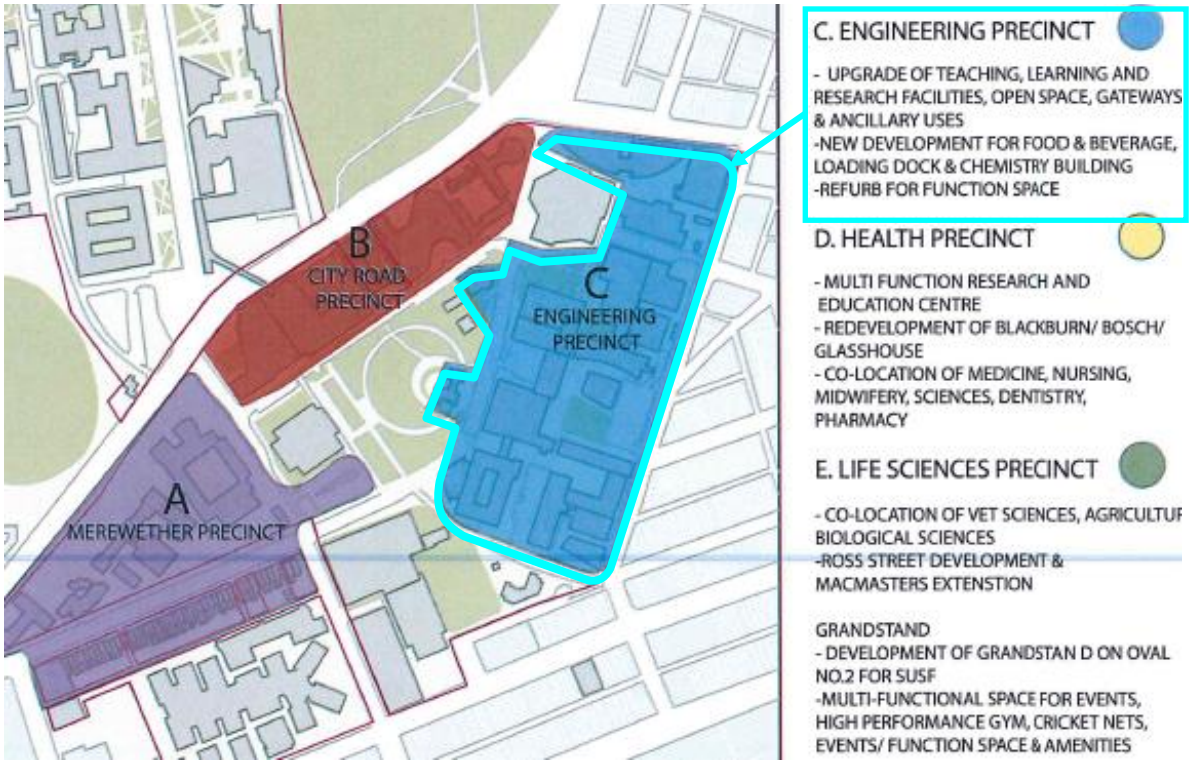

Figure 9: Extract from SSD 13_6123 Stamped Approved Plans – ETP outlined in blue

Consistent with the requirements of SSD 13_6123, and the provisions of SEPP SRD 2011, a concept plan was submitted to the DP&E requesting SEARs.

The SEARs were issued 8 August 2017, with revised SEARs issued 29 September 2017. The revised SEARs included the requirement for the EIS to address the provisions of the State Environmental Planning Policy (Educational Establishments and Child Care Facilities) (Education SEPP) which came into force after the initial issue of SEARs.

The design for which consent is sought is substantially consistent with the concept submitted with the request for SEARs.

The evolution of the design has been subject to an extensive process of design review and critique by the DERC which has been established for the project.

The initial involvement of the DERC was to determine the preferred design for the concept submitted by the three (3) invited design teams.

The DERC reviewed the submitted concepts with the benefit of presentations by the competing design teams. Arising from these deliberations the DERC identified the preferred initial concept as the design prepared by Cox Architecture. The preferred design has been the subject of ongoing review, including the establishment of and review by the DERP, which included DERC members and representatives of the DP&E and the office of GANSW, leading to a final design presentation to the DERC on 28 November 2017. The design the subject of this application has been endorsed by the DERC (refer to Attachment 25).

The DERC have confirmed their satisfaction of design excellence being achieved. The DERC will continue to be involved with ongoing review leading to and throughout the construction phase should consent be granted. The involvement will be at critical stages to ensure that the design integrity of the development proposal is maintained throughout the construction design development phase and the construction phase.

The scheme and supporting documents represent a design that has responded to and satisfied the SEARs, delivers this part of the CIP, and will assist in the University's objectives to remain at the forefront of education and research.

3.2 Overview

The development seeks consent for:

- The upgrade of the retained southern tower of the Electrical Engineering Building (J03);
- Integration of a new eight (8) level building with the Engineering Link Building (J13) and Mechanical Engineering Building (J07 including a new loading dock);
- Embellishment of an open plaza fronting Maze Crescent adjoining the PNR Building (J02), and embellishment of an open plaza fronting Blackwattle Creek Lane; and
- Use of the new facility for education, research, administration, and storage purposes associated with the upgrade of the ETP to modern and world class standards.

The proposal is detailed in the Architectural Drawing Package prepared by Cox Architects included at Attachment 2, and is described in the following sections of this EIS.

Figure 10: Photomontage of the proposed development as viewed from the north west

3.3 Development Statistics

A summary of the development particulars is provided in Table 3 below:

Development Particulars	Proposal
Gross Floor Area (GFA) (Maximum additional GFA for ETP = 42,500m^2)	Total – 13,567.16m^2 New – 6,071.3m^2
Building Height (Permitted RL 57m – CIP approved envelope)	Roof RL – 55.93m (complies) External ducts at RL 59.77m (note chimneys, flues and the like are excluded from calculation of building height)
Vehicle Parking Provision	Nil to be provided
Bicycle Parking Provision	70 spaces provided in 35 racks
Loading facilities	One (1) loading bay

Table 3: Development statistics

3.4 Land Uses

Education establishment uses are permitted with consent in the SP2 Infrastructure zone applying to the land.

3.5 External Materials and Finishes

The proposal incorporates high quality materials and finishes, as detailed in the Material and Finishes schedule prepared by Cox Architects included in the architectural drawings package at Attachment 2.

The finishes and materials are summarised below:

- Vision glass;
- Panted steel exoskeleton;
- Aluminium external louvres;
- Brick walls (existing);
- Perforated feature screen;
- Polycarbonate panel to roof plant facades; and
- Metal deck roofing.

3.6 Open Space and Landscaping

The proposed landscaping is detailed in the Landscape Plan prepared by TCC included at Attachment 3.

The landscape concept responds to and embraces the University's Wingarra Mura Strategy, with the landscape spaces complementing the Cadigal Green Project and the conceptual representation of the constellation of stars above Sydney. The proposal demonstrates the integration with Cadigal Green to the west, and the establishment of plaza areas to the north and south of the building. The southern plaza replaces an existing car park area, while to the north the current open area fronting Blackwattle Creek Lane will be embellished and upgraded.

3.7 Parking, Vehicular Access and Servicing

No additional parking is proposed by this application. Service vehicle access provision is retained from Shepherd Street to the Level 1 store area. The loading dock access path minimises the use of Shepherd Street, providing an access route from City Road through the campus and Maze Crescent to the loading dock.

Traffic and Parking Impacts have been assessed by GTA with the report provided at Attachment 5.

3.7.1 Bicycle Parking

A total of 70 bicycles parking spaces will be provided in 35 bicycle loops, as well as end of trip facilities comprising lockers and shower facilities.

3.7.2 Vehicular Access

Service vehicle access to the loading area will be from City Road or Abercrombie Street, connecting to Maze Crescent with the objective of minimising traffic along Shepherd Street.

3.7.3 Loading / Servicing

The existing loading bay provided off Shepherd Street is retained to service the ETP buildings.

3.8 Building Code of Australia

As detailed in the BCA Assessment Report prepared by SWP, included at Attachment 6, the proposal is capable of complying with the provision of the Building Code of Australia (BCA) through strict compliance or satisfaction of the relevant performance criteria as detailed in the Fire Engineering Statement at Attachment 7.

3.9 Accessibility

The Accessibility Report prepared by Code Performance, as included at Attachment 8, provides an assessment of the accessibility of the proposal in accordance with the relevant provisions of:

- The Building Code of Australia (BCA);
- The Disability (Access to Premises- Buildings) Standards 2010;
- Australian Standard AS1428.1 2009; and
- Sydney Development Control Plan (SDCP) 2012.

The assessment has confirmed that the development is capable of providing accessibility in accordance with these requirements.

3.10 Stormwater Management

Bonacci has prepared a Stormwater Management Plan package for the site which is included at Attachment 20.

3.11 Waste Management

A Waste Management Plan has been prepared by Waste Audit and Consultancy Services for both the demolition and construction phase, and the ongoing operational phase of the development (included at Attachments 21 and 22). The plans detail the waste and recycling facilities to be provided for the operational stages of the development and for the demolition and construction phases of the development.

3.12 Demolition and Construction

The proposal requires the partial demolition of the existing Electrical Engineering Building currently on the site.

The demolition works are to be undertaken in accordance with the provisions of Australian Standard AS 2601-1991.

A Construction Management Plan (CMP) has been prepared by the Laing O'Rourke, and is included at Attachment 18.

A Report on Geotechnical Investigations has been prepared by Douglas Partners, and is included at Attachment 9.

3.13 Capital Investment Value and Cost of Works

As detailed in the Capital Investment Value Estimate prepared by Wilde and Woollard, included at Attachment 26, the proposal has a CIV of $105,136,232.

4.0 Consultation

As required by the SEARs, community engagement was undertaken with relevant public authorities, Council, and the community.

This involved consultation with key stakeholders and referral agencies relevant to the project to clearly communicate the development proposal, establish if there are any issues and actions required to be addressed prior to the application lodgement.

The consultation included a community invitation to attend an information session and overview of the CIP and proposed works to the ETP. The invitation and presentation material are provided at Attachment 27.

Engagement with authorities has consisted of meetings and correspondence.

It is also noted following lodgement with DP&E, the application will be placed on public exhibition for 30 days in accordance with Clause 83 of the EP&A Regulation 2000. During the public exhibition period, Council, State agencies, and the public will have an opportunity to make submissions to the application.

4.1 Stakeholders Engagement

In accordance with the SEARs, consultation was undertaken with the following stakeholders:

- Office of the Government Architect of New South Wales (GANSW);
- City of Sydney Council (Council);
- Heritage Council of NSW (Heritage Council);
- Transport for NSW (TfNSW) in the Sydney co-ordination office; and
- Roads and Maritime Service (RMS).

Meetings were held with the community, GANSW, and Council. Email and telephone conversations were held with RMS, TfNSW, and Heritage Council. Details of the meeting dates with the community are provided in the Community Engagement Report (Attachment 27). Table 4 below provides a brief summary of the key items discussed with each of the stakeholders and identifies in how these items have been responded to in the EIS.

Stakeholder Issues	Response
City of Sydney	
• SSD documentation to be in accordance with SEARs requirements	The EIS is in accordance with the SEARs issued for the project
• Written endorsement of the design excellence process from the Government Architect is to be included in the EIS	Endorsement from the DERP and the Government Architect is provided at attachment 25
• Confirmation that building height has been assessed in accordance with the approved CIP envelopes and Sydney LEP 2012	The works are consistent with the CIP envelopes and definition of 'building height' under the SLEP 2012 (refer to Section 5.4.1 of this EIS).

Stakeholder Issues	Response
• Confirmation sought that the EIS will include a HIS	A Heritage Impact statement (HIS) is included at Attachment 13.
• Confirmation of the proposed treatment of the retained elevations of the Mechanical Engineering building	As detailed in Attachment 2 the elevations of the retained building are unaltered except for Section J of the BCA upgrades.
• Clarification on the external louvre treatment material	The external louvres will be aluminium and are designed to provide sun shading and in most instances, negate the need for internal blinds.
• Clarification of VIA gas enclosure	The gas enclosure will be a security fence only.
TfNSW	
• No issues Raised	
RMS	
• The EIS is to be supported by a Construction Management Plan (CMP).	A CMP is included at Attachment 18.
Heritage Council	
• The EIS to consider the endorsed Conservation Management Plan (2016) for the University's Camperdown and Darlington campuses and the proposed CMP (2017 under review) for both campuses.	The HIS at Attachment 13 addresses the current and proposed CMPs for the Camperdown and Darlington campuses.
• The HIS to consider the impact of the demolition of the landscaped area	The HIS has considered the CMP implications.
• The Archaeological assessment is to be a stand alone document	An archaeological assessment is provided at Attachment 14.
GANSW	
• No issues Raised	

Table 4: Summary of stakeholder issues and response reference

4.2 Community Consultation

To inform nearby residents and the local community of the proposal, and to seek their feedback to inform the final design, a community information session was held on 14 November 2017 at the University Services Building. 200 invitations were delivered via letter box drop to surrounding residents and businesses, as well as email invitations and reminders to local community groups including RAIDD and REDWatch. Four (4) members of the community attended the session. No major issues of concern were raised at the information session.

Despite only four (4) people attending the information session, it is important to note that other members of the community will have the opportunity to review and comment on the proposal during the formal public exhibition period of the application.

5.0 Key Assessment Issues

5.1 Overview

The EIS has been prepared in accordance with the requirements of Schedule 2 of the EP&A Regulation 2000. Schedule 2, Clause 3, Subclause 8 of the EP&A Regulation 2000 requires an EIS to comply with the SEARs. On 29 September 2017, the Secretary reissued the SEARs, which contains 15 'Key Issues' that are required to be addressed. This section addresses the key issues, including:

- The statutory and strategic context of the proposal, including the provisions of all relevant EPIs, permissibility of the development, compliance with the relevant development standards, and consistency with the approved development consent for The University of Sydney CIP (SSD 13_6123);
- The planning provisions, goals, and objectives of relevant planning policies;
- The built form and urban design of the proposal;
- The environmental amenity impacts of the proposed development;
- The transport and accessibility impacts of the proposal;
- Compliance with the principles of ecologically sustainable development (ESD);
- Any noise and vibration impacts of the proposal;
- Any heritage impacts resulting from the development;
- Any contamination issues and compliance with the provisions of SEPP 55;
- Sediment, erosion, and dust control;
- Utility and infrastructure management;
- Sections 94 Contributions;
- Any drainage associated with the proposal;
- Waste management; and
- Construction hours.

5.2 Statutory and Strategic Context

5.2.1 Summary

The EPIs and other statutory planning documents and policies which are relevant to the assessment of the proposed development pursuant to S79C(1)(a) are identified below:

- State Environmental Planning Policy (State and Regional Development) (SEPP SRD) 2011;
- State Environmental Planning Policy (Educational Establishments and Childcare Facilities) (Education SEPP) 2017;
- State Environmental Planning Policy (Infrastructure) (ISEPP) 2007;
- State Environmental Planning Policy No. 33 - Hazardous and Offensive Development (SEPP 33);
- State Environmental Planning Policy No. 55 - Remediation of Land (SEPP 55); and
- Sydney Local Environmental Plan (SLEP) 2012.

The following section provides an assessment against the statutory provisions applying to the proposed development under the relevant environmental planning provisions as required by the SEARs.

5.2.2 State Environmental Planning Policy (State & Regional Development) (SEPP SRD) 2011

SEPP SRD identified types and scales of development that are of State or regional significance.

The Secretary, in issuing the SEARs, has confirmed that the proposed development is considered State Significant Development (SSD). The application is SSD due to the application being for an educational establishment. Schedule 1, Item 15 of SEPP SRD identifies that development with a CIV in excess of $30 million is SSD. The proposal has a CIV of $105,136,232, well above the threshold.

5.2.3 State Environmental Planning Policy (Educational Establishments and Child Care Facilities) (Education SEPP) 2017

The Education SEPP seeks to facilitate the delivery of educational establishments and child care facilities.

The proposed development is permitted with consent under the SP2 Infrastructure zone applying to the site under SLEP 2012. The provisions of the Education SEPP are not relied upon for permissibility in order to undertake any development as exempt or complying development.

5.2.4 State Environmental Planning Policy (Infrastructure) (ISEPP) 2007

ISEPP aims to facilitate the delivery of infrastructure across the State, and identifies matters to be considered for traffic generating development, and development in the vicinity of transport and infrastructure.

The application involves the addition of 6,071.3m^2 of GFA of education and associated research and administration floor space, and does not involve any additional car parking. The site access for service vehicles is not within 90m of a classified road.

The proposed does not constitute traffic generating development under Clause 104 of ISEPP.

The development is for an educational establishment. Clause 102 of ISEPP requires consideration of the impact of road noise if the site is in the vicinity of a road corridor of over 40,000 vehicles per day, or is in the vicinity of a rail corridor.

The new building is not in the vicinity of a busy road or rail corridor.

Further consideration of ISEPP is not required.

5.2.5 State Environmental Planning Policy No. 33 - Hazardous and Offensive Development (SEPP 33)

SEPP 33 relates to development that involves the manufacture, use, or storage of potentially hazardous materials.

The proposal includes the storage of potentially hazardous materials. Accordingly, a Preliminary Hazardous Analysis (PHA) has been undertaken. The PHA (prepared by CETEC, and included at Attachment 11) has confirmed that the volume of chemicals and materials stored confirms the applicability of SEPP 33 to the proposal.

The PHA has recommended a series of safety management systems to reduce the risk hazard. The PHA identifies that the detailed laboratory design and hardware selection will be undertaken to address the relevant Australian Standards are adhered to in the construction stage to ensure risks are minimised.

5.2.6 State Environmental Planning Policy No. 55 - Remediation of Land (SEPP 55)

SEPP 55 provides a framework for the development of potentially contaminated land, and if necessary, its remediation. A Report on Detailed Site Investigation (DSI) has been prepared by Douglas partners (Attachment 10). The report concludes:

> *"This DSI has been prepared in general compliance with the requirements of State Environmental Planning Policy No. 55 (SEPP 55) – Remediation of Land and to assist in development consent approval.*
>
> *Although no exceedances of SAC have been registered during soil sampling at the site, DP notes that data gaps exist beneath building footprints and hardstand at the site and in the vicinity of hazardous goods storage. Groundwater testing was beyond the scope of the DSI. Soils have nevertheless been assessed with respect to their potential contamination risks to groundwater.*
>
> *A Remediation Action Plan (with an Unexpected Finds Protocol) has been prepared such that any contamination subsequently discovered beneath structures, following demolition, can be assessed by further investigation and dealt with during site formation via any necessary remediation and validation which can be undertaken in tandem with the construction of the proposed single level basement which will be formed under part of the building envelope. DP therefore recommends the following be incorporated into the RAP for the site:*
>
> - *Pre-demolition hazardous building materials survey prior to demolition of the existing structures and hardstands;*
> - *Post demolition inspection and sampling from previously inspected areas, it is possible that asbestos may also be present and may be uncovered during earthworks;*
> - *Additional sampling under building footprint and hardstand areas to fill data gaps, further characterise the site, and assess the risk and nature of potential contamination in previously untested areas and areas of concern;*
> - *Waste classification of material to be excavated for the proposed basement on part of the building envelope;*
> - *Validation of any filling which is to remain on site (if any) to confirm suitability for the intended land use;*
> - *Asbestos Management Plan for asbestos removal works, if required; and*
> - *Incorporation of an unexpected finds protocol in the site construction environmental management plan.*
>
> *Based on the results of the DSI with limited sampling and the anticipated development, including bulk excavation for the basement, DP considers the site can be made suitable for a high rise University facility redevelopment subject to implementation of the aforementioned recommendations."*

Consistent with the recommendations of the DSI, a Remediation Action Plan (RAP) has been prepared and is included in Attachment 10.

With the identification that the site can be made suitable for the continued research and education land uses, the application satisfies the requirements of Clause 7 of SEPP 55.

5.2.7 Sydney Local Environmental Plan (SLEP) 2012

SLEP 2012 applies to the site. The relevant SLEP 2012 provisions applicable to the SSD application are addressed below. The consideration identifies that the proposal is consistent with the relevant objectives and provisions of SLEP 2012.

Zoning and Land Use (Clause 2.3)

The site is zoned SP2 Infrastructure, and is identified on the SLEP 2012 Land Zoning Map as "Educational Establishment".

SLEP 2012 identifies an Educational Establishment as:

> *"a building or place used for education (including teaching), being:*
>
> *(a) a school, or*
>
> *(b) a tertiary institution, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act".*

The application is for education and research and ancillary administration functions, and conforms to the permitted land use for the zone.

The Objectives for the SP2 Infrastructure zone within SLEP 2012 are:

- To provide for infrastructure and related uses; and
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

The addition of Educational Establishments as an explicit land use for the land provides guidance in considering the consistency of the proposed development with the zone objectives.

The land has been specifically nominated for use and development of "education establishments". The objective to provide for infrastructure and related uses is satisfied by the development providing for education, research and support accommodation for a tertiary education provider. The application accords with the objective to provide for infrastructure, in this instance teaching, research and administration space for the engineering and technology faculty of the University.

In considering the second objective, the development for education purposes accords with the underlying intent to accommodate tertiary education facilities on the land. The development will not detract from providing infrastructure, rather it delivers education infrastructure as anticipated by the land use zone applying to the site.

Demolition Requiring Development Consent (Clause 2.7)

Consent for demolition will be obtained.

Building Height (Clause 4.3)

No maximum building height applies to the site under SLEP 2012.

Floor Space Ratio (Clause 4.4)

No maximum floor space ratio applies to the site under SLEP 2012.

Heritage Conservation (Clause 5.10)

Clause 5.10 aims to conserve environmental heritage, heritage items, conservation areas, archaeological sites and places of significance.

The development site is not State or local heritage listed, and is not contained within a Conservation Area. The Darlington Campus contains a local listed item of heritage significance adjoining the SSD site, being the former Darlington Primary School to the west within Cadigal Green. The site is also opposite the University's Camperdown campus, which is listed as Conservation Area C5: University of Sydney, under SLEP 2012.

A detailed heritage assessment of the proposal in relation to its context has been undertaken in a Heritage Impact Statement provided at Attachment 13.

Design Excellence (Clause 6.21)

Clause. 6.21 states that development consent is not to be granted unless the consent authority considers the development exhibits design excellence.

Clause 6.21identifies that a design competition process is not required if a proposed building will not:

- Exceed 25m in height above natural ground level;
- Have a CIV of more than $100,000,000; and/or
- Require a DCP to be prepared under Clause 7.20.

The building has a CIV of greater than $100,000,000, therefore the design excellence provisions apply.

Design excellence has been ensured through the invited design competition, and the assessment and review of the entries by the DERC to identify the preferred design team. The preferred design team entry has been subject to further consideration by the DERC as detailed at Section 5.4.2.

Other Land Uses (Car Parking) (Clause 7.9)

The provisions of Part 7, Division 1, seek to implement maximum parking provisions, aimed at limiting the number of car spaces as a means of reducing vehicular traffic. SLEP 2012 permits a maximum of one (1) space for every 200m^2 of GFA for education purposes. The proposal does not include the addition of any additional car parking spaces, complying with the intent of the provision.

The University has a Sustainable Transport and Mobility Plan (STAMP) to facilitate a reduced reliance upon private vehicle transport. The STAMP is aligned with the CIP redevelopment. The traffic and transport assessment identifies the need to provide 61 bicycle parking spaces to support the development in accordance with the STAMP. This compromises nine (9) spaces generated by staff numbers, and 52 by student capacity. The provision of 70 bicycle spaces exceeds the requirements of the STAMP. In addition to bicycle parking, the building is provided with end of trip facilities including showers and change rooms. The proposal is compliant with Clause 7.9 of the SLEP 2012.

Acid Sulfate Soils (Clause 7.14)

The site is identified on the SLEP 2012 Acid Sulfate Soils (ASS) map as containing Class 5 soils. As the site is not located within 500m of Class 2 or 3 soils, a detailed ASS management plan is not required.

Flood Planning (Clause 7.15)

Clause 7.15 aims to minimise the flood risk to life and property, allow development compatible with a flood hazard, and avoid significant impacts on flood behaviour and the environment.

A Civil Design Report, prepared by Bonnacci, has been provided at Attachment 20 to assess the impacts of the proposed development on the stormwater and flooding. Relying upon flood risk management reports undertaken for the campus, the Civil Design Report includes flood storage basin design and drainage works ensuring that the risk of flood has been minimised.

The subject site currently includes and overland flow path which has been accommodated in the design. In addition to contribute to the campus wide flood mitigation strategy a new flood storage basin is proposed in the location of the current electrical engineering car park. This storage basin has been integrated into the landscape concept for the development and provides a contribution to on-site storage for the campus as a whole.

The development site and proposed development provides a contribution to the overall flood mitigation strategy that has been developed for the campus as a whole.

Airspace Operations (Clause 7.16)

The site is located on land identified on the Sydney Airport Prescribed Obstacle Limitation Surfaces Drawing No FSS6934 Revision 1, Declared by the Commonwealth Department of Infrastructure and Regional Development on 20 March 2015 as being located between horizontal surface limits of 90m to 100m (AHD). The proposal will have a maximum height of building RL 55.93m (AHD) and will therefore not penetrate the OLS, noting that the existing lift overrun to the Electrical Engineering Building (J03) is RL 60.20m.

5.2.8 Sydney Development Control Plan (SDCP) 2012

Clause 11 of SEPP SRD 2011 excludes the application of DCPs to SSD projects. To demonstrate consistency with the Council planning framework, relevant provisions in SDCP 2012. have been considered.

Locality Statement

The Sydney University, Darlington Campus is identified as being within Area 2.3 “Chippendale, Camperdown, Darlington”.

The University is located in the ‘University of Sydney/Royal Prince Alfred Hospital’ locality.

The eastern boundary of the ETP abuts the ‘Darlington/West Redfern’ locality.

The locality Statement (2.3.5) identifies the continuing role of the University as a specialised centre for education and research. The development conforms to the locality statement and the principles as:

- Education and research are maintained and enhanced;
- The proposal has been assessed as not detracting from the heritage values of the locality;
- The University’s landscape and pedestrian network are enhanced;
- The neighbourhood interface is substantially unchanged; and
- Landmark vistas are not disturbed.

General Provisions

3.2 Defining the Public Domain

3.2.8. External Lighting

The impact of external/outdoor lighting components has been considered in the Lighting Impact Assessment Report (Attachment 16). The assessment has identified the ability of the lighting to achieve compliance with the relevant Australian Standards.

3.3 Design Excellence

Design excellence for the proposal has been addressed at Section 5.4.2.

3.5 Urban Ecology

The retention of the significant trees, and additional tree planting is proposed as part of the development. Landscaping works proposed will enhance the urban landscape and local tree canopy. The arborist assessment at Attachment 4 identifies that a total of six (6) trees are proposed for removal (trees 534 – 639). The trees to be removed, are all assessed as having a moderate landscape significance to be considered for retention. The two trees being retained have been assessed as having a high landscape significance Tree 493) and moderate significance (tree 625)

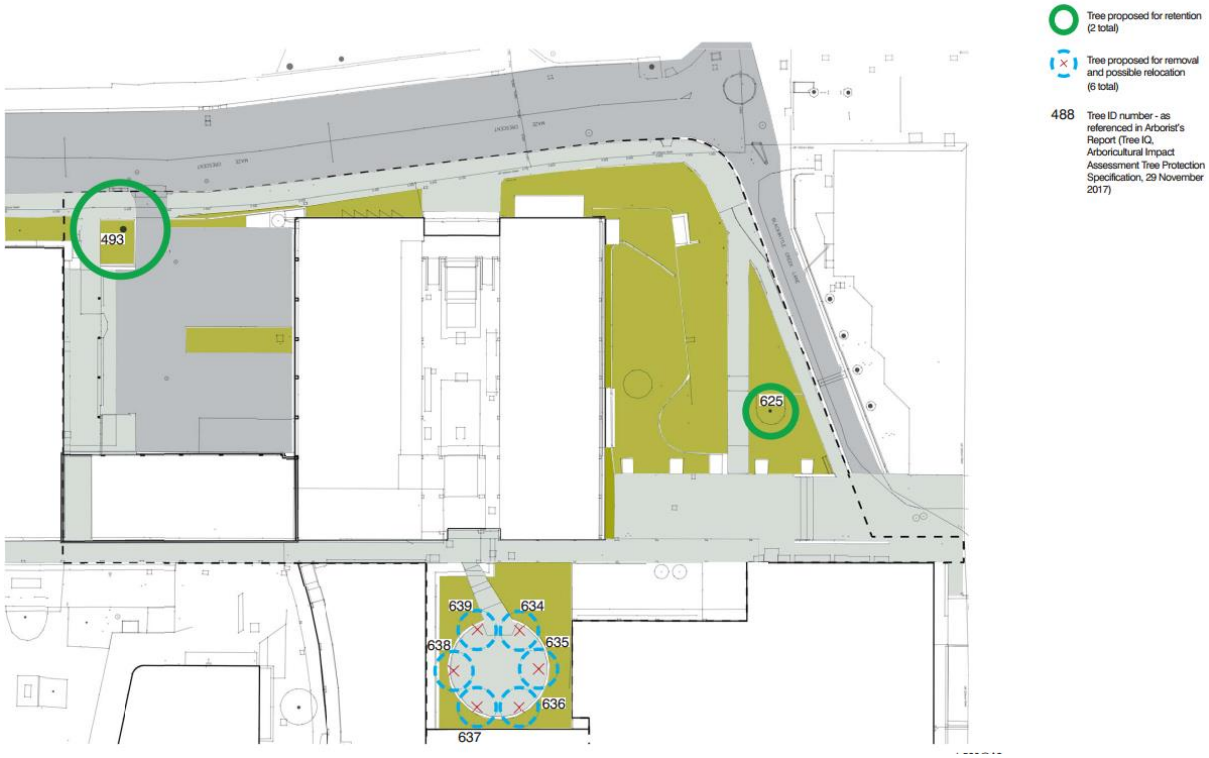

Figure 11: Site plan showing trees to be retained (green circle and trees to be removed (dashed blue circle

The arborist assessment (Attachment 4) acknowledges the replacement planting proposed to mitigate the loss of the trees to be removed. The six 96) removed tress will be compensated for with the provision of 40 new trees. The landscape plan at Attachment 3 identifies new planting in the location of the former car park to the south of the mechanical engineering building, along Maze Crescent, to the north of the new building, south of Blackwattle Creek Lane and within the courtyard to the east of the new building.

The retention of the six (6) trees is impractical in the circumstances. The removal of the trees facilitates the connection into the existing basement areas to be served by the new loading dock to be provided. The overall benefits of the servicing strategy and linkage of the buildings supports the design approach. The removal of the six trees is more than compensated for with the replacement planting proposed.

The replacement planting comprises 40 trees to complement the retained trees (Trees 493 and 625). The replacement trees are to be drawn from a preliminary species list comprising Smooth-barked Apple, Lemon Myrtle, Old Man Banksia, Black Wattle, Coachwood, Blueberry Ash and Broad-leaved Paperbark,

3.6 Ecological Sustainable development

The DCP seeks to implement the principles of ecologically sustainable development (ESD) within future development through various design and construction measures.

The application is supported by a Sustainable Design Statement, prepared by Umow Lai (Attachment 24) identifying the measures for sustainability to be implemented and how ESD principles have been satisfied.

3.7 Water and Flood Management

The proposal is supported by Civil Designs for flood storage, consistent with the campus wide flood management strategy. Refer to Attachment 20 for the Civil Design Report.

3.9 Heritage

The site is not a State or local heritage item, and is not located in a Conservation Area. In recognition of the University's S170 Register listing, a detailed HIS has been prepared, and is provided at Attachment 13.

3.11 Transport and Parking

A Transport Assessment has been prepared and is provided at Attachment 5. The assessment concludes that:

- The loss of car parking spaces is consistent with the CIP;
- Bicycle parking is provided in excess of the STAMP and the University's broader strategies to reduce passenger vehicle use;
- The loading dock is suitable for 12.5m heavy rigid vehicles; and
- Traffic volumes associated with the development are not expected to impact upon the surrounding network.

3.12 Accessible Design

The proposed development is capable of complying with the provisions of the Access to Premises Standards of the *Disability Discrimination Act 1992* and the BCA as detailed in Attachment 8 and Attachment 6.

3.13 Social and Environmental Responsibilities

The design and layout of the building is considered to generally align with the broad principles of Crime Prevention Through Environmental Design (CPTED) as addressed in the Architectural Design Report at Attachment 2.

The site, as part of a broader University campus, is actively used throughout day and early evening. The University grounds are also managed in terms of grounds keeping and security that maintain the appearance of the site.

3.14 Waste

A Construction Management Plan has been prepared and is provided at Attachment 18, and a Waste Management Plan (WMP) has been prepared and is provided at Attachment 22.

3.16 Signage

Signage will be directional and wayfinding signage and would be of a size and nature that would be exempt under the provisions of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Should signs that are not exempt development be proposed, separate Development Consent would be required.

3.17 Contamination

Consideration of the SEPP 55 is provided in Section 5.2.6 and 5.10 of the EIS, and supported by Attachment 10.

The assessment concludes that the site can be made suitable for the continued educational use. The Detailed Site Investigation report is supported by a Remediation Action Plan to manage the site to ensure potential contamination issues are appropriately managed.

With the identification that the site can be made suitable for the continued research and education land uses, the application satisfies the requirements of Clause 7 of SEPP 55.

5.3 Policies

5.3.1 Summary

The following section provides an assessment against the relevant planning provisions, goals, and strategic planning objectives as required by the SEARs, and outlined below:

- NSW State Priorities;
- A Plan for Growing Sydney;
- NSW Long Term Transport Master Plan 2012;
- Sydney's Bus Future 2013;
- Sydney's Cycling Future 2013;
- Sydney Walking Future 2013;
- Sustainable Sydney 2030 (the City of Sydney);
- Healthy Urban Development Checklist, NSW Health; and
- Greater Sydney Commission 's Draft Central District Plan.

5.3.2 NSW State Priorities

The State Government in September 2015 identified 30 priorities for the State. These priorities comprise 12 Premier Priorities, and 18 State Priorities to set the agenda for the NSW Government.

Relevant Premier Priorities include:

- Creating jobs;
- Building infrastructure; and
- Improving education results.

Relevant State priorities include:

- Accelerating major project assessment.

The proposal supports approximately 450 existing teaching and support staff positions, and up to180 construction jobs.

The proposal supports the priorities of augmenting the education and research infrastructure in the strategic health and education precinct of Camperdown/Darlington.

The development is consistent with the relevant State priorities.

5.3.3 A Plan for Growing Sydney

A Plan for Growing Sydney is a State Government strategic document that outlines a vision for Sydney to 2031. It identifies key challenges facing Sydney including a population increase of 1.6 million by 2031, 689,000 new jobs by 2031 and a requirement for 664,000 new homes.

In responding to these and other challenges, the Plan for Sydney sets out four (4) goals:

- *"Goal 1: A competitive economy with world-class services and transport;*
- *Goal 2: A city of housing choice with homes that meet our needs and lifestyles;*
- *Goal 3: A great place to live with communities that are strong, healthy and well connected; and*
- *Goal 4: A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources."*

To achieve these goals, the plan proposes 22 directions and associated actions. The following directions are relevant to the proposal:

Direction 1.1 - Grow a more internationally competitive Sydney CBD.

The continued enhancement and expansion of the University's teaching and research capacity adjacent to the CBD enhances the global competitiveness of Sydney. In addition, the university and the speculated precinct are an important direct provider of jobs and an aggregate of support and allied employment opportunities.

Direction 1.6 – Expand the Global Economic Corridor

The education and research capacity supports and contributes to high-skilled, knowledge based jobs. The project supports the specialised health and education services in the Camperdown/Darlington area and will support the continued importance of the Global Economic Corridor, and Sydney as the Global City.

Direction 1.7 – Grow strategic centres providing more jobs closer to home

The university is part of the Global City in the identified Education and Health precinct. The proposal maintains and enhances education and research facilities and capacity consistent with the direction.

Direction 1.9 – Support priority economic sectors

Professional services and international education and research are identified as priority industries. The education and research facilities of the redevelopment of the ETP are consistent with these industry categories. The engineering facility supports education and training for professional services as well as international education and research. The proposal aligns with this direction.

Direction 4.3 – Manage the impacts of development on the environment

The proposal has been assessed as having no unacceptable impacts upon the environment. The proposal includes ESD initiatives to reduces its impact, water management to ensure overland flows are managed, and supplementary landscape to contribute to the urban tree canopy.

5.3.4 NSW Long Term Transport Master Plan 2012

The NSW Long term Transport Master Plan 2012 provides a framework for an integrated transport system. They fundamentally seek to improve public transport and integration, and reduce reliance upon private vehicle modes of transport.

The application seeks to improve the standard of accommodation and research opportunities on the site. The application does not increase the staff or student population. The application does not increase demand on travel services.

Despite the proposal not increasing demand, the University, through the CIP, has a STAMP to encourage alternative modes of transport usage. The STAMP and the proposed development do not conflict with the NSW Long Term Transport Master Plan 2012.

5.3.5 Sydney's Bus Future 2013

Sydney's Bus Future 2013 seeks to deliver a bus service that is simpler, faster, and better.

The University is serviced by bus routes along City Road and Parramatta Road, providing excellent connectivity for the campus. As noted the application does not result in an increase in the staff or student population of the campus.

The STAMP for the University includes a range of initiatives encourages the use of public transport, including buses.

5.3.6 Sydney's Cycling Future 2013

Sydney's Cycling Future 2013 was released in December 2013 to facilitate bicycle infrastructure in the planning of transport and infrastructure projects.

The strategy seeks to support cycling as a feasible transport option through:

- Investment in cycleways;
- Promoting cycle use; and
- Engaging across the community.

The CIP across the campus improves network connectivity through the campus for cycling.

The subject development supports cycling through the provision of end of trip facilities, and bicycle parking provision for 70 bicycles, exceeding the requirement established in the STAMP for the campus.

The campus currently accommodates approximately 1,300 bicycle parking spaces. The 70 spaces are in addition to the existing bicycle parking provisions provision. The development does not generate additional demand as staff and student numbers do not increase. With the addition of end of trip facilities and parking the bicycle facilities on the campus will be further improved.

The provision of these facilities supports the strategy through assisting in making cycling a feasible transport option.

5.3.7 Sydney's Walking Future 2013

Sydney's Walking Future 2013 was released in December 2013. The strategy seeks to foster a culture of walking, and walking as a transport option.

The strategy seeks to give priority to pedestrian needs in the planning, design and construction of transport and development projects.

The University campus provides excellent permeability and pedestrian connectivity to transport, education and recreation facilities. The development does not alter existing pedestrian circulation patterns but does augment the public domain and pedestrian experience and facilities within the ETP and the Darlington campus via the provision of upgraded and enhanced landscaping. The proposal does not conflict with the objectives of this strategy.

5.3.8 Sustainable Sydney 2030

Sustainable Sydney 2030 is a vision for the sustainable development of the City to 2030 and beyond. It includes 10 strategic directions to guide the future of the City, as well as 10 targets against which to measure progress. The proposed development is aligned with the following SS2030 strategic directions and objectives:

1. A globally competitive and innovative city.
2. A leading environmental performer.
7. A cultural and creative city.
9. Sustainable development, renewal, and design.

The proposal is consistent with the directions from the Community Strategic Plan as:

- The research and education facilities provide high quality, leading edge teaching facilities to ensure the University remains as a leading tertiary institution nationally and globally;
- The design includes sustainable design initiatives and transport management strategies to minimise the environmental impacts from the ongoing use of the building;
- The teaching and research capacity of the University contributes positively to the creativity of the city; and
- The proposal is supported by an ESD statement addressing the environmental initiatives of the development.

5.3.9 Healthy Urban Development Checklist, NSW Health

The Healthy Urban Development Checklist was issued by NSW Health in October 2009. The purpose and objectives of the checklist are to respond to the questions:

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

The application is for the renewal and infill of a teaching and research building.

The primary contribution of the development towards healthier urban development outcomes is the University's STAMP, which promotes active modes of transport, being walking, cycling, and public transport use.

The development augments the public domain walking and cycling environment as well as including end of trip facilities and bicycle parking racks.

5.3.10 Eastern City District Plan

The Eastern City District Plan was released in March 2018 and supersedes the Draft Central District Plan.

The University's campus is located on the fringe off the Metropolitan City Centre, and within the Innovation Corridor of the Eastern Harbour City. A key element of the Innovation is the Camperdown -Ultimo Collaboration area which is one of the largest health and education precincts in Greater Sydney. The University is a key element of the Innovation Corridor

Relevant Planning Priorities for the University campus include:

- E8: Growing and investing in health and education precincts and the innovation corridor; and
- E11: Growing investment, business opportunities and jobs in strategic centres.

Planning Priority E8 seeks to implement Objective 21 of the Greater Sydney Region Plan to deliver an internationally competitive health, education, research and innovation precincts. The upgraded ETP buildings renew the teaching and research facilities for the University, aligning with the intent of the Innovation Corridor to support the continued economic contribution of the University to the economic vitality of the adjoining Metropolitan Centre and the Greater Sydney Region.

The proposal aligns with Priority E11, supporting training and education in knowledge and professional services industries, as well as world class research capacity. The outcomes support jobs and businesses in the Metropolitan Centre and in the Innovation Corridor.

5.4 Environmental Assessment

5.4.1 Built Form and Urban Design

The CIP has been the subject of a concept Approval which, among other matters, has established building envelopes and maximum GFA provisions (SSD 13_6123).

The design has sought to respond to seven (7) core objectives, being:

- Engineering on display;
- A connected community;
- Driven by innovation;
- Flexible and functional;
- 24/7 precinct;
- Sustainability; and
- Wingara Mura.

The Architectural Design Package at Attachment 2 outlines the architectural response to these objectives while also substantially maintaining the footprint of the demolished building so as not to diminish the amount of available open space.

The design has embraced its proximity to Cadigal Green to provide active ground floor uses that will also open to the northern and southern plazas that are to be landscaped to provide circulation and gathering spaces.

Condition A3 of SSD 13_6123 requires that future development is to be generally consistent with the terms of the consent, including the building envelope plans.

The approved CIP envelope has been noted on the elevations of the proposed building.

The additional GFA of the proposed building (6,071m^2) is significantly less than the approved CIP additional GFA for the ETP (42,500m^2).

The element of the new building that projects beyond the envelope comprises the external feature screening, which also acts as sun shading to the building façade and the stainless steel external ducting providing exhausting to the laboratories and teaching spaces.

These elements are practical requirements that in the case of the ducts, exhaust and ventilate the building.

The external screening assists in the management of internal amenity of the building through provision of sun shading while also providing visual interest to the external elevations. These elements do not represent GFA, do not add to the height of the building. and serve to enhance the environmental performance of the building. The inclusion of these screens which are not wholly within the envelope does not result in any inconsistency with the terms of the CIP approval.

The external exhaust ducts are a functional requirement of the laboratory uses within the building. These exhaust flues do project beyond the maximum RL of the approved building envelope having a maximum height to RL 59.77m compared to the maximum envelope height of RL 57.00m.
Height of buildings is defined in SLEP 2012 and the Standard Template instrument as:

> *"(a) in relation to the height of a building in metres—the vertical distance from ground level (existing) to the highest point of the building, or*
>
> *(b) in relation to the RL of a building—the vertical distance from the Australian Height Datum to the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like."*
>
> (emphasis added)

This report concludes this SSD project to be consistent with the approved CIP Concept Plan and SLEP 2012 definitions on building height and the CIP approved building envelopes. On this basis, the exhausts comprise chimneys or flues and are excluded from the calculation of building height.

Furthermore, the exhausts are acceptable as they will remain below the level of the existing Mechanical Engineering building, and have no unacceptable environmental impacts in regards to views, overshadowing, or streetscape impacts. Consequently, the built form of this SSD project is concluded to comply with the intent of the CIP consent.

The Engineering Precinct is allowed a maximum of 42,500m^2 of additional GFA under the terms of the Stage 1 consent (SSD 13_6123).

The existing buildings to be demolished and refurbished have an existing GFA of 7,495.86m^2. The proposal results in a total GFA of 13,567.16m^2, or an additional 6,071.3m^2 of GFA.

This leaves a balance of 36,428.7m^2 for future stages within the ETP and demonstrates that compliance with condition A6 of the Stage 1 Concept approval is achieved.

The approved building envelope for the ETP is provided on sheets 18, 19, 20, 21, 22, and 23 of the approved plans for SSD 13_6123.

The design approach demolishes the northern portion of the existing engineering building to accommodate the new structure which will be integrated into the building to be retained.

The predominant height of the portion of the building being retained and refurbished is 8 storeys with an eastern plant room rising through to level 13.

The new northern wing of the building rises to 10 storeys, rising 2 storeys above the retained southern wing of the building.

The building sits within the envelope approved for the location and represents a building bulk and scale consistent with that anticipated for the locality. The relationship of the addition to the retained building does not dominate the existing building and represents a modest step up to the new building. The step in the final built form up from the southern elevation allows the form of the retained building to be understood and appreciated as a distinct element from the additional accommodation.

The location of the taller element to the north is demonstrated to have minimal solar access impact upon the expanse of open space to the west of Maze Crescent known as Cadigal Green. The mid-winter solar analysis indicates a small encroachment of shadow to the eastern edge of Cadigal Green at 9.00am in mid-winter, which would be gone by 10.00am leaving this important central open space area substantially free of shadow. Shadowing from the building later in the day falls within and onto other educational buildings within the precinct avoiding any impacts to the residential areas to the east fronting Shepherd Street.

The broad expanse of open space and the constructed carriageway of Maze Circuit provide visual relief for the building. This open expanse in conjunction with the large mature planting framing the carriageway of Maze Crescent assist in providing visual relief and providing a counter to the height of the proposed building. This relationship is shown in Figure 11 below.

The building does not dominate this open space area. Similarly, the reconfigured courtyard to the south of the building will have a largely unaffected relationship with the retained building providing the height relationship perceived by users of the courtyard space.

Figure 12: Photomontage view to the proposed building across Cadigal Green looking north east

The location of the building approximately 85m from the western boundary of Shepherd Street ensures that the new building does not dominate or perceptively alter the scale of development as viewed from the adjacent residential areas.

These factors in conjunction with the building having no material impacts upon significant or iconic views assist in the conclusion that the building proposed within the approved building envelopes is an appropriate and anticipated outcome for the site.

The design has been reached through a detailed and rigorous design excellence process that is detailed in Section 5.4.2. The architectural design report at Attachment 2 has also addressed the benefits of CPTED.

5.4.2 Design Excellence

Consistent with the University's commitment to design excellence in its CIP, in 2014 an 18 month long design brief development process was undertaken with Woods Bagot.

This process produced, among other matters, a reference design for the design competition for the ETP buildings. The reference design is consistent with the previously approved SSD (CIP 2015), building envelope. As the buildings within the ETP are highly complex, with interdisciplinary, engineering focussed research facilities, the design brief development process was lengthy to ensure that the significant user requirements have been encapsulated.
In 2016 the University initiated an Invited Competitive Design Alternative Process, consistent with the City of Sydney Competition Design Policy, to three (3) teams of architects and contractors with demonstrated extensive experience in the design and construction of research laboratory buildings. The invited participants were:

- Cox Richardson;
- HDR Rice Daubney; and
- Woods Bagot.

During the course of the competition the Woods Bagot team, in agreement with the University, withdrew their participation from the process.

For the design competition process, the University has established a DERC. The DERC and the process followed has been formulated to align with the DP&E Director General's Design Excellence Guidelines for the establishment of an independent design competition jury to critique and assess the design responses prepared.

The DERC panel established to review the submitted designs comprised two (2) independent architects and two (2) representatives from the University. The voting members of the DERC are:

- Kim Crestani – Independent Architect;
- Tony Caro – Independent Architect;
- Michael Tawa – University of Sydney, Professor of Architecture; and
- Juliette Churchill - University of Sydney, Campus Planning Manager (Chair).

The DERC Meetings were monitored by Probity Advisors.

The remaining two (2) consortia were invited to participate in a 14 week design competition to develop their responses to the reference design and briefing documentation.

The consortia invited include as their design architects:

- Cox Architecture; and
- HDR Rice Daubney.

The participating consortia have each been paid a competition fee of $850,000.

The design review process followed to date is summarised below:

Date	Stage in Design Review Process
9 August 2016	The competing parties were introduced to the scope of the design competition, tender documentation, and provided with an opportunity for clarification.
15 August 2016	Competition commencement with issue of request for tender documentation.
6 October 2016	Introduction of DERC and outline of scope of the Design Competition.
12 October 2016	Competitor initial presentations to DERC of concepts and provision of DERC feedback.
8 November 2016	Competitor presentation No.2, including response to DERC initial feedback. Further DERC feedback prepared and provided to competitors.
21 November 2016	Submission of competitor's proposal in accordance with Request for Tender requirements.
8 December 2016	Presentation of submitted designs to DERC.
9 December 2016	DERC deliberation of the two (2) submissions against the established evaluation criteria.
16 December 2016	The DERC was unable to be satisfied that design excellence had been achieved. As a result, further feedback from DERC was provided and the two (2) competing consortia provided with the opportunity to further respond to the feedback and commentary by 28 February 2017.
13 January 2017	Meeting with the competing consortia to discuss DERC comments and the feedback issued arising from the 16 December 2016 deliberations by DERC.
28 February 2017	Revised final tender clarification responses submitted by competitors.
10 April 2017	Competitors presented revised design proposals to DERC.

Table 5: Summary of the design review process to date

Arising from the DERC assessment, a recommendation on the preferred scheme demonstrating design excellence was made identifying the Cox Architecture design as the preferred scheme to proceed to lodgement.

The evaluation criteria against which DERC considered design excellence include:

- Facilities that will inspire students, academics, researchers, and associated industry leaders;
- Design excellence in the architecture of the function and form of the buildings and the precinct;
- Architecture that holistically, intellectually, and artistically embraces excellence in the total design. This includes the architecture of the urban context. The building's layout and sculptural form of internal and external spaces;
- Integrated, environmentally sustainable design solutions that are both developed with and integrated into the design from the concept stage;
- An exciting, inspirational and innovative design of the building's enclosure, with carefully selected, high quality materials, fabric, structure, and services;

- Quality by the design of detail;
- Architecture that celebrates and showcases the technology of the faculties that it accommodates;
- An appropriate scale and grain that complements the wealth of projects both in the campus and in neighbouring context;
- A positive engagement with the cultural, and social heritage of Wingara Mura;
- Architecture that skilfully integrates services and structure;
- Value engineering and value management without detriment to the quality of the facility.;
- A stimulating environment that is inspirational and rewarding to all that engage with it, and will contribute to the attraction of world class researchers and industry leaders, and thereby the success of the University;
- A space to collaborate and explore, encourage and capitalise on the synergy that exists between industry/research/academics/learning;
- A detailed analysis demonstrating how the proposed design responds to the critical components of the preferred project report (PPR) demonstrating the appropriate design response;
- Establish the rationale for the choice of preferred design, and clearly demonstrate how this exhibits design excellence. Including, but not limited to:
  - A high standard or architectural design and materiality;
  - The bulk, massing and modulation of buildings;
  - Ensure the form and external appearance of the proposed development improves the quality and amenity of the public domain;
  - How the proposed development addresses heritage and streetscape constraints;
  - How environmental impacts are mitigated, such as achievement of sustainable design, and ensuring overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity in accordance with SDCP 2012 requirements;
  - The achievement of the principles of ecologically sustainable development;
  - Pedestrian, cycle, vehicular and service access and circulation requirements, including the permeability of any pedestrian network; and
  - The impact on, and any proposed to, the public domain.
- An overview of the design response in relation to quality and innovation;
- Details of any non-conformances to the University's design standards are to be captured in Schedule 5 – Non-Compliance and Qualifications; and
- Application of safety in design principles.

After the identification of the Cox Architecture scheme as the preferred scheme to proceed to SSD application, there have been two (2) interim review and critique stages where DERC feedback was provided to the design team. This process was finalised on the 28 November 2017, where the DERC confirmed that agreement had been reached that design excellence had been achieved (refer Attachment 25).

The confirmation of design excellence also confirms that the DERC will remain involved with ongoing review during the design development phase, with a particular focus upon:

- Consultation with the Metropolitan Land Council to ensure the provision of an endorsed indigenous narrative;
- Further development and integration of the ground plane concept, vertically through the building;

- Further design development of the landscape concept to improve edge conditions and integration with the surrounds;
- Refinement of the design approach for the internal mesh screening; and
- Refinement of the resolution of the curtain wall façade and external screening.

The process that has been pursued by the University in preparing a scheme to lodge for development consent demonstrates the rigour of the design review and development for the proposal. Indeed, the level of review and critique exceeds the level that could be expected under the City of Sydney Competitive Design Policy particularly with the complexity of the briefing process to encapsulate the varied user needs. The process has also been endorsed by GANSW.

The rigour of the review process and the ongoing involvement of the DERC ensures that design excellence has been achieved as required by the SEARs and Clause 6.21(5) of SLEP 2012.

In the circumstances, the pursuit of a further design competition process in accordance with the City of Sydney Competitive Design Policy would be unreasonable and unnecessary given the rigorous process that has been pursued to date in developing the design for which consent is sought. Accordingly, as allowed by Clause 6.21(6) the consent authority can be satisfied that a further design competition process is unreasonable and unnecessary.

5.4.3 Servicing and Waste Management

The design has retained the existing service access to the east of the building from Shepherd Street. This access provides direct access to storage and waste areas.

These service areas do not conflict with the primary circulation areas along Maze Crescent and will continue to service the new building as well as existing buildings J13 and J01.

The proposal is also supported by an ongoing Waste Management Plan prepared by Waste Audit and Consultancy Services (Attachment 22) detailing the ongoing management of waste services.

5.5 Environmental Amenity

5.5.1 Solar Access and Overshadowing

Solar Access diagrams have been provided in the architectural design package prepared by Cox Architects.

The primary considerations for solar access and overshadowing a consideration of the proposed built form impact upon any sensitive residential areas adjoin the campus and the impacts of the shadow cast by the proposed building on the public domain areas, particularly Cadigal Green to the west of the site.

The north-eastern corner of the new building is approximately 83.0m from the western edge of Shepherd Street and approximately 90.0m to the closets residential property. The new building is approximately 36.0m high at the north-western corner of the new building.

The solar access diagrams demonstrate that the building will have minimal impact upon the residential properties to the east of Shepherd Street. The 9.00am mid-winter shadows are falling towards Cadigal Green, while the midday mid-winter shadows are falling within the Engineering precinct over the new courtyard area towards the PNR Building. The 3.00pm shadows are cast over the Engineering Link Building.

The location and orientation of the site also ensures minimal shadow is cast to the open space of Cadigal Green to the west. Minor early morning shadow is cast at 9:00am in midwinter, with no impacts from the building by 12:00 noon.

The public domain areas within the campus also retain excellent solar access to a variety of active and passive recreation spaces.

5.5.2 Acoustic Impacts

The proposed development has been subject to a Noise and Vibration Assessment prepared by Resonate Acoustics (Attachment 12). The assessment has established the existing acoustic environment through noise monitoring to establish the baseline background acoustic environment against which to assess potential impacts.

The assessment has considered construction noise, construction vibration, and operational noise impacts.

The assessment has identified a range of recommendations to manage construction noise and vibration including the preparation of a Construction Noise and Vibration Management Plan (CNMP) in consultation with relevant stakeholders, The CNMP would address work programming, truck movement and access, site management, and equipment management.

For the ongoing operation of the building, attenuation measures have been recommended to ensure the Industrial Noise Policy criteria is achieved.

5.5.3 Visual Privacy

The building is approximately 90m from the nearest residential property to the east of Shepherd Street. In addition to the physical separation, the eastern elevation is heavily screened. The potential for adverse visual privacy impacts is considered to have been mitigated with the combination of physical separation and screening.

5.5.4 View Loss

The building does not extend to the limits of the approved building envelope, with the minor intrusions comprising ventilation ducts and external screens. The building and its location is such that significant and iconic views are unlikely to be effected. The proposed building does not adversely impact upon any iconic or significant views from within the campus or towards the campus.

Given the low-rise nature of the residential areas to the east of the Darlington Campus, residential properties would not enjoy significant or iconic views across the campus. The new building will be in locations be perceived and visible as part of the campus skyline. The physical separation of the proposed new building and the public domain and residential areas east of Shepherd Street is such that the new building would not be a dominant or overwhelming feature.

The proposed new building is considered to have a negligible impact upon views across the campus and within the campus.

5.5.5 Lighting Impacts

The proposed interior lighting and external landscape lighting has been assessed for potential obtrusive impacts, particularly to residential properties to the east of the campus. The assessment by Stowe has determined that the proposed lighting would not be obtrusive lighting as defined by AS4282 due to the significant distance between the proposed building and residential properties east of Shepherd Street.

The assessment has determined that potential internal light spill will be screened by the external louvre system wrapping the new building. The lighting will also be managed by occupancy detection to ensure that internal illumination is only occurring in those parts of the building being occupied and in use at any time. This avoids unnecessary internal illumination and reduces the contribution to potential light spill.

External lighting will be provided in the open spaces around the building and to provide safe pedestrian movement. The external lighting will be directed downwards to maximise its efficiency in lighting the desired areas as well as minimising light spill.

Lighting of the road carriageways of Maze Crescent and Blackwattle Creek Lane are not proposed to be altered in this proposal and will remain as pole mounted lights.

The assessment has also identified that the selection of luminaries will be in accordance with Category P7/P8 of AN/NZS 1158.3.1 lighting for roads and public spaces.

With the lighting to be provided consistent with the relevant Australian Standards, the proposal is not expected to result in unacceptable light spill resulting or lead to unacceptable impacts to nearby properties.

5.5.6 Wind Impacts

A Qualitative Wind Assessment has been undertaken by Cermak Peterka Petersen (Attachment 17).

The assessment of potential wind impacts has been pursued to consider the impact of the proposed new building upon wind wash in the vicinity of the building and the consequential impacts upon pedestrian comfort levels. The assessment of pedestrian comfort has been considered against the criteria established by Lawson (1990).

From all wind directions assessed (north-east, south and west) the assessment has determined that the proposed norther addition to the electrical engineering building will not significantly impact on the ground plane wind conditions surrounding the site. This outcome is aided by the new building being “nested” within existing buildings that provide shielding and disruption to winds impacting upon the site. The assessment concludes that the existing wind conditions will remain similar to those currently experience.

If long term stationary outdoor activities such as outdoor dining were proposed, wind tunnel testing to identify ameliorative measures would be recommended. The proposal does not include any proposals to incorporate uses such as outdoor dining. The external spaces are to facilitate pedestrian circulation in a pleasant landscaped environment and for informal gathering spaces.

No revisions or mitigation measures have been identified as necessary in the circumstance.

5.6 Transport and Accessibility

A detailed Transport and Accessibility Assessment has been prepared by GTA Consultants (Attachment 5). The assessment has addressed the SEARS issued for the project. The assessment has addressed the surrounding road network, public transport access, car parking provision, loading, and waste collection.

The assessment of the development has also had regard for the campus wide STAMP to promote the campus wide use of sustainable transport options.

In preparing the assessment input from RMS and TfNSW was sought.

The assessment has identified that:

- A total of 33 car parking spaces will be removed from the site;
- Up to 200 spaces will be provided across the campus as part of the ongoing CIP process in subsequent applications;
- Traffic movements in the vicinity of the site will reduce as a consequence of the reduced car parking on the site;

- Servicing by 12.5m heavy rigid vehicles (HRV) can be accommodated;
- Loading movements will increase by 10 vehicles per day;
- On balance, traffic movements will reduce;
- Pedestrian movement will not be impeded by the works;
- With projected cycle usage, a minimum of 61 bicycle parking spaces should be provided;
- Emergency vehicle access remains unaltered; and
- Traffic volumes generated by the development are not expected to adversely impact upon the surrounding road network.

Based upon the traffic and transport assessment no further mitigation measures are necessary.

5.7 Ecologically Sustainable Development (ESD)

A Sustainable Design Statement has been prepared in support of the proposal by Umow Lai (Attachment 24).

The statement has identified that the design of the building achieves a 'Gold' sustainability level under the University's Sustainable Framework. The statement identifies that the sustainability objectives for the ETP development are:

- *"To create buildings that actively facilitates staff and student wellbeing through sustainable design and management;*
- *To provide an internal environment quality that encourages an effective and collaborative staff and student learning environment;*
- *To provide substantial reductions in energy consumption and greenhouse gas emissions with a focus on passive building design, energy efficient services, operational energy management and the use of renewable energy;*
- *To minimise potable water use and environmental impacts through water conservation, rainwater recycling and water sensitive urban design; and*
- *To minimise resource use through the sustainable selection of materials, waste reduction and recycling."*

The ESD statement has addressed:

- Massing and building fabric;
- Construction operation and waste management initiative;
- Healthy environment;
- Resource efficiency of energy and water use;
- Transport;
- Materials;
- Land use and ecology; and
- Emissions.

The implementation of the initiatives detailed in the statement will ensure that the development achieves a level of environmental sustainability consistent with the SEARS requirements.

The measures ensure that the development:

- Achieves energy efficiency above the minimum requirements of Section J of the National Construction Code (NCC);
- Minimises greenhouse gas emissions;
- Reduces potable water use;
- Minimises waster going to landfill through the construction and operational stages; and
- Increases the rate of material re-use and recycling.

5.8 Noise and Vibration

As addressed at Section 5.5.2, the application is supported by a Noise and Vibration Assessment. The assessment has confirmed that with appropriate mitigation measures and strategies the construction and ongoing use of the building will not result in unacceptable impacts to surrounding sensitive receivers.

5.9 Heritage

The site is not a State or local heritage item, and is not located in a Conservation Area. In recognition of the University's S170 Register listing, a Heritage Impact Statement (HIS) and a Historical Archaeological Assessment have been prepared by Urbis (Attachment 13). The preparation of the assessments has included liaison with the NSW Heritage Office.

The archaeological assessment has identified that the site is not identified on any registers as having potential archaeological value. It is unlikely that remains of earlier use and occupation exist due to the extent of site works and excavation to accommodate the engineering buildings currently on site.

The archaeological assessment provides recommendations for a chance finds procedure in the unlikely event that in-situ remains are discovered during the construction phase.

The HIS identifies that the Electrical Engineering Building is of the late twentieth century Brutalist style. Building J03 to be partly demolished has been assessed as being of moderate heritage significance in the heritage assessment prepared for the CIP and forming part of SSD13_6123 for the Stage 1 CIP Concept Approval.

Buildings of moderate significance were identified as being able to be considered for demolition if there is significant overall benefit to the ETP. The ETP is as reflected in the CIP in need of additional research and teaching space to continue providing education services and facilities at the highest standard.

The heritage assessment notes that the taller southern wing of the Electrical Engineering Building is being retained and refurbished. This action will allow for the retained portion of the building to remain as a prominent built form element. The new northern wing is substantially within the existing footprint thus maintaining the existing ground plane open areas.

This represents a balance between the heritage value of the existing buildings and the increased demand and need for teaching and research accommodation space.

The assessment has also considered the impact of the development on the heritage listed former Darlington Primary School building and the Darlington/Newtown - Golden Grove Conservation Area. The assessment has not identified unacceptable impacts upon the heritage significance of these areas nor that the proposal conflicts with The University of Sydney Grounds Conservation Management Plan.

The assessment identified that historic views across the campus will be retained, the early street patterns will be retained and the removal of hard stand car parking and the introduction of landscaping improves the setting of the engineering precinct.

5.10 Contamination

The CIP and SSD13_6123 were supported by a Phase 1 Environmental Assessment prepared by Douglas Partners (November 2013). The preliminary assessment identified the potential for the use of fibre cement material and grease traps associated with the café in the engineering precinct as potential contamination sources. Further potential concerns related to fill material and the use of lead paints in older buildings.

In support of this development, Douglas Partners have prepared a Detailed Site Investigation Report and a Remediation Action Plan to address the bulk excavation and removal of material including potential fill material and the potential for the previous use of asbestos material and lead paint

The assessment has identified that the site can be made suitable for the continued education and research uses. This would be achieved through the implementation of the Remediation Action Plan that has been prepared and included at Attachment 10.

5.11 Utilities

The application is supported by an Infrastructure Management Plan prepared by Laing O'Rourke, Stowe, and Central Plumbing. The plan confirms that the site has access to:

- Electrical infrastructure;
- Communications infrastructure;
- Potable water;
- Waste water services;
- Gas supply; and
- Firefighting water supply.

The ESD report has also identified that potable water usage will be reduced through the inclusion of on-site water collection for reuse. The design plans also accommodate appropriate space for the provision of plant and electrical switchboards to service the development.

5.12 Contributions

Nominally, the Darlington campus is located within the South Precinct of the City of Sydney Development Contribution Plan 2015 (s94 Plan). However, the Darlington campus is also located within the Redfern-Waterloo Precinct. Clause 7 of the Redfern-Waterloo Authority Contribution Plan 2006 (Contributions Plan) applies to the Redfern-Waterloo Precinct. Clause 7 of the Contributions Plan specifically identifies that any contribution plan approved by the City of Sydney does not apply.

In addition to the Contributions Plan, the Redfern-Waterloo Precinct is subject to the Redfern-Waterloo Authority Housing Contribution Plan 2006 (Affordable Housing Contribution Plan).

The contributions plan enforces a levy of 2% of the cost of carrying out development, while the Affordable Housing Contribution Plan enforces a levy of $73.12 per square metre of GFA of a development.

Clause 6 of both contributions plans provides for circumstances where the Minister can consider exemption from contributions.

Fundamentally the Local Infrastructure Regime established by Section 7.11 of the *EP&A Act 1979* is to address an increase in demand or the need to provide public amenities as a result of a development. The subject application is for the rebuilding and renewal of research and education facilities within the ETP of the University. The development will not lead to an increase in staff or student numbers. On this basis, it cannot be said that the development will lead to an increased burden or need for public amenities and services in the area. As there is not an identified increase in demand on facilities or services there is no demonstrable nexus to require the payment of a contribution towards public facilities and services.

Exemptions to contributions under both plans is sought as set out below.

5.12.1 Contributions Plan

The Contributions Plan seeks to collect funds to implement public domain works, road, public transport and access infrastructure works, community facilities and drainage works in the Redfern-Waterloo Precinct.

Exemption is sought as:

- The University is a Crown applicant for the purpose of development applications under Division 4.6 of Part 4 of the *EP&A Act 1979;*
- The University is a registered, not for profit organisation;
- There is no nexus of demand between a demand generated by the development and the facilities to be provided under the Contributions Plan;
- The RWA Development Contributions Plan Works Schedule (Schedule 1) lists those works identified to benefit from Development Contributions received by Urban Growth. The works schedule is targeted for completion within a maximum medium (10 year) term concluding in 2016. Consequently, it could be concluded that the RWA Development Contributions Plan is out of date, and therefore should not be imposed in this instance;
- None of the identified works in the RWA Works Schedule include any works to be provided on or near the University's Darlington campus; and
- The University provides significant budget and works to the provision of open space, infrastructure facilities, and community facilities/benefits on its campus. Unlike a private development (commercial, residential), the campus is accessible and used by the local community and visitors, providing a community benefit.

The nexus between the need for these works and upgrades, and the demand placed upon these by the University and this SSD project is marginal given there will not be an increase in staff or student population as a result of the works.

The University, through its CIP process, will be upgrading its own significant drainage infrastructure to the benefit of the surrounding drainage networks, flood management works, and public domain improvements, providing sporting facilities, undertaking heritage conservation works and continuing to improve pedestrian and cycle facilities. Many of these facilities are used by, and provide benefits to, the surrounding community.

In addition to the consequential community benefits of the extensive works to be undertaken by the University is the status of the University as a public authority providing education and research opportunities. These opportunities are provided by the University operating as a not for profit charity that relies upon grants, donations and external funding to provide new facilities. Additional levies and contributions result in increased costs to the University when upgrading its facilities with limited nexus or benefit derived from the suite of works proposed in the Contribution Plan.

Exemption to the Contributions Plan 2% levy is sought on the basis of:

- Lack of nexus generating the demand for the upgrade works to be undertaken through funding derived from the Contributions Plan;
- The positive social, cultural, educational and employment opportunities provided by the University;
- The public benefit of the access to open space, community facilities and sporting facilities provided by the University; and
- The University is self-sufficient in the provision of community and social facilities, which are also available to the broader community, further demonstrating a lack of demand on external facilities and services.

Exemption to the Contributions Plan is considered appropriate given the status of the University as an education faculty operating as a not for profit organisation with a minimal demand upon the facilities to be funded by 2% levy.

5.12.2 Affordable Housing

The Affordable Housing Contribution Plan seeks to collect funds for the provision of affordable housing in the Redfern-Waterloo Precinct. The University supports the need for the availability of affordable housing opportunities.

The proposed development is for the provision of enhanced education and research facilities as part of the University's CIP, which seeks to ensure world class facilities and teaching opportunities are provided. The University as part of the Innovation Corridor is an important economic driver to the Sydney and NSW economy.

The University, through the CIP, is separately providing affordable housing opportunities for students on campus, with ready access to the education and support facilities, as well as access to transport and a range of employment opportunities. The University's rental pricing for the provision of affordable housing is below the level of what is considered "affordable" for low income students. The provision of affordable housing for students throughout the campus wide approach also assists in alleviating pressure on the private rental market.

The University has already committed to the provision of Affordable Student housing on its Darlington campus via the:

- Regiment Development, Abercrombie Street and City Road on the Darlington Campus – 618 bedrooms approved by the Minister for Planning on 22 November 2017 (SSD 7417); and
- Darlington Terraces Development, Darlington Street and Darlington Lane, Darlington campus – 350 bedrooms – SSD under assessment (SSD 7539).

The additional cost imposition on the project to upgrade the facilities provided by the University is an additional impost upon a not for profit organisation, that through its own means is already actively pursuing the provision of affordable housing options. An exemption from the affordable housing contribution plan in this instance is reasonable. Further, the University is actively pursuing affordable housing options in its own right, and the development is not increasing the staff or student population an therefore not increasing the potential demand for affordable housing.

5.13 Drainage and Sediment, Erosion and Dust Control

The proposal is supported by a Civil Design Report prepared by Bonacci (Attachment 20).

The report provides for a concept stormwater design including on-site detention and flood storage consistent with campus wide strategy.

The report provides for on-site erosion and sediment controls for the construction phase consistent with the "Blue Book".

The implementation of the measures in the report will ensure that stormwater is appropriately managed and disposed of and that construction can be implemented with appropriate sedimentation control measures. The Construction Management Plan prepared by Laing O'Rourke includes appropriate dust mitigation measures to be implemented during the demolition and construction phase of the development.

5.14 Waste

Waste Management Plans have been prepared for the construction and operational phases of the development. The plans prepared by Waste Audit and Consultancy Services are provided at Attachment 22. The Operational Management Plan has been prepared to address three (3) key objectives:

- To minimise the environmental impacts of the operations of the development;
- To minimise the impact of the management of waste within the development on local residents; and
- To ensure waste is managed so as to reduce the amount landfilled and to minimise the overall quantity generated.

The plan provides a comprehensive plan to achieve these objectives for the ongoing operation and use of the new engineering building.

The Demolition and Construction Waste Management Plan will operate in conjunction with the CMP (Attachment 21). The plan provides for action for:

- Demolition material and opportunities for recycling and reuse;
- Hazardous waste materials;
- Construction material and the separation of waste stream for recycling or reuse; and
- Site inductions and training.

The implementation of the plans will be an appropriate mitigation measure to be included as a condition of consent.

5.15 Construction Hours

The CMP provides a detailed methodology for site establishment, construction, materials handling, construction purpose, and contact details should concerns arise.

The general hours or work proposed are:

- 7:00am to 6:00pm, Monday to Friday;
- 7:00am to 3:00pm, Saturday; and
- No work Sundays and public holidays.

Out of hours permits may be sought from the City of Sydney Council if required for work phases such as:

- Termination and connection of services;
- Floating of heavy plant;
- Cranage of demolition plant; and
- Erection and reassembly of the tower crane.

5.16 EP&A Regulation 2000 – Schedule 2 Considerations

The following addressed the additional items specified in Schedule 2 of the EP&A Regulation 2000.

5.16.1 Do Nothing

A 'do nothing' approach would maintain the current levels and standard of teaching and research facilities. The do nothing approach is contrary to the University's goal to continue to provide world class teaching and research opportunities, which would be undermined by a do nothing approach. This would be a consequence of the aging facilities, the difficulty of continuing to accommodate contemporary infrastructure, and a lack of appropriate accommodation space.

Doing nothing will risk a diminishing standard of teaching and research facilities, and would be contrary to the strategic planning objectives for the Innovation Corridor to be a centre of teaching and research excellence.

5.16.2 Alternative Design

A detailed design brief development process was undertaken by the University to capture the needs of the diverse end users. This design brief facilitated a design competition process in which three (3) design teams participated. The design competition process identified a preferred design to proceed to application stage which has been subject to extensive critique and review by the DERC established for the development.

The process leading to the design of the subject of this application has been a result of extensive exploration of options and alternatives for the provision of teaching and research facilities. As a result of the exhaustive review and competition process, the consideration of alternatives has been embedded throughout the process, leading to the proposal for which consent is sought.

5.16.3 Mitigation Measures

The measures required to mitigate the impacts associated with the proposed works are detailed in Table 6 below. These measures are informed by the consideration of key issues outlined in Section 5 and the attached consultant reports.

Mitigation Measures Response
Construction Management and Construction Traffic Management
The Preliminary CMP (Attachment 18) and the Acoustic and Vibration Report (Attachment 12) outline mitigation measures to manage potential impacts arising during the demolition, excavation and construction phases of the development. It is noted that a comprehensive CMP and acoustic and vibration assessment will be required to be prepared in accordance with standard conditions of consent.
Acoustic
The Acoustic and Vibration Report (Attachment 12) outlined various mitigation measures in relation to the following: • Minimising impacts from external noise sources, namely traffic, on the proposed development;

Mitigation Measures Response
• Minimising noise operational impacts from the proposed development on surrounding development; and • Minimising noise and vibration impacts associated with the demolition, excavation and construction phases of the development on adjoining properties and the public domain.
Waste Management
The provision of waste and recycling facilities and management and disposal of waste generated from the operation of the proposal will be undertaken in accordance with the WMP (Attachments 21 and 22).
Traffic and Access
The provision of end of trip facilities as recommended in the Traffic and Transport Assessment (Attachment 5) and the inclusion of convex mirrors to the loading dock as detailed in the traffic and transport assessment.
Contamination
Undertake invasive testing post demolition of the building in accordance with the recommendation of the Preliminary Hazard Assessment (Attachment 10).
Arborist
Undertake all tree protection in accordance with the recommendations of the Arborist Report (Attachment 4).

Table 6: Mitigation measures

5.16.4 Approvals under Acts

As required by the Clause 7 of Schedule 2, the following identifies that the proposal will not require approval under the Acts identified in Table 7 below

Act	Approval Required
Legislation that does not apply to State Significant Development	
Coast Protection Act 1979	N/A
Fisheries Management Act 1994	N/A
Heritage Act 1977	N/A
National parks and Wildlife Act 1979	N/A
Native Vegetation Management Act 2003	N/A
Rural Fires Act 1997	N/A
Water Management Act 2000	N/A

Table 7: Approvals required under other legislation

5.16.5 Justification of the proposal

Social and Economic Considerations

The proposed development will have social and economic benefits for the area including:

- Improving education and research facilities to support the Innovation Corridor;
- Flow on economic benefits for the local, regional, and State economy through attracting investment, supporting research and providing an educated workforce;

- Generating additional employment opportunities though construction jobs and enhancing teaching and research opportunities; and
- Improved safety and security for the area with the introduction of improved pedestrian amenity and landscape treatments.

Biophysical Considerations

The environmental impact assessment of the proposed development has demonstrated that:

- Noise from the operation of the proposed development will not give rise to any unreasonable adverse impacts on nearby sensitive receivers;
- The proposal does not give rise to any adverse impacts on the local road or transport network;
- There is not expected to be any impacts on Aboriginal or European heritage values or heritage significance associated with the site, or the adjacent areas;
- Any potential contamination of the site can be addressed and the site made suitable for the proposed use;
- Wind impacts associated with the development of the proposed building can be managed with the incorporation of the recommended mitigation measures into the design of the building;
- Waste will be managed in an efficient and coordinated manner to avoid potential odour, overflow, dumping or pollution;
- The site will be managed during construction to mitigate potential impacts on the amenity of the surrounding development and pedestrians in terms of noise, vibration, access and traffic, as well as physical environmental impacts; and
- The proposed development can be adequately serviced by existing utilities and stormwater management infrastructure, subject to the provision of on-site stormwater management measures.

Ecologically Sustainable Development (Schedule 2 Clause 7(4) of the EP&A Regulation 2000)

The EP&A Regulation 2000 requires the following four (4) principles of ecologically sustainable development be considered in assessing a project:

- The precautionary principle;
- Intergenerational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

An analysis of these principles has been embedded in the Sustainability Statement at Attachment 24.

Precautionary Principle

The precautionary principle is applied where there is uncertainty as to potential environmental impacts. It provides that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. It requires:

- Careful evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment; and
- An assessment of risk-weighted consequences of variation options.

This EIS has not identified any serious threat of irreversible damage to the environment that would arise from the proposal. On this basis the precautionary principle does not require further consideration for the subject proposal.

Intergenerational Equity

Intergenerational equity requires that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The proposal has been designed to benefit both the existing and future generations by:

- Maintaining and enhancing the education and research facilities in a specialised education precinct to serve current and future generations;
- Providing education and employment within walking distance to public transport, employment and a range of services and facilities to minimise private vehicle usage and the associated environmental impacts;
- Improving the public domain and amenity within the campus; and
- Implementing management measures to protect the environment during the construction and ongoing operation of the development.

Conservation of biological diversity and ecological integrity

This principle requires that conservation of biological diversity and ecological integrity should be a fundamental consideration for development.
The proposal will not have any significant effect on the biological diversity and ecological integrity of the locality or wider area.

Improved valuation, pricing and incentive mechanisms

This principle identifies the need to consider environmental factors, in valuation of assets and services, including the cost of pollution, the costs of environmental resources that are used or impacted in the production of goods and services, and the cost of waste disposal.

The proposal provides for the implementation of mitigation measures for avoiding, reusing, recycling and managing waste during construction and operational phases of the development. Additional measures will be implemented to ensure no environmental resources in the locality are adversely impacted during the construction or operational phases.

6.0 Section 4.15 Assessment

6.1 Overview

The proposed development is defined as development under the *EP&A Act 1979*, and accordingly an assessment under the matters listed under Section 4.15 of the Act is required. This assessment is provided below.

6.2 The Provision of any Environmental Planning Instrument or Development Control Plan

The relevant EPIs applying to the development have been addressed in detail at Section 5.2 as required by the SEARs issued for the proposal.

6.3 Planning Agreements under the *EP&A Act 1979*

No planning agreements apply to the site or the proposed development.

6.4 Any Matters Prescribed by the Regulations

Any demolition works will be undertaken in accordance with Australian Standard AS 2601-1991: The Demolition of Structures. Further management, safety, and waste plans in accordance with this standard will be provided prior to the commencement of works.

The buildings will comply with the BCA as detailed in Attachment 6.

6.5 Likely Impacts of the Development

In responding to the key assessment issues of the SEARs, the proposal has been demonstrated to be appropriate for the site. The resulting development provides housing and employment opportunities in a well-designed building that will be a positive contribution to the locality.

6.6 Any Submissions Made

Any submissions made will be assessed by the DP&E. It is, however, noted that as required by the SEARs, a community engagement programme was undertaken (refer Attachment 27).

This program involved consultation with key stakeholders and referral agencies relevant to the project to clearly communicate the development proposal, establish if there are any issues and actions required prior to application lodgement.

6.7 Suitability of the Site for the Development

The preceding sections of this statement demonstrate that the site is suitable for the proposal. The redevelopment of the site for continued education use is consistent with the objectives of the current zone, the aims and objectives of SEPP SRD, and is compatible with the existing and permissible land uses within the locality.

There are no significant natural or environmental constraints that would hinder the proposal, and accordingly, the site is considered suitable for the proposal.

6.8 The Public Interest

The continued use of the site for education purposes is considered to be consistent with the zone objectives, and the aims and objectives of SEPP SRD. The zoning reflects the important role of the University in the education, research, and flow on economic contribution to the vitality of the locality, and broader Sydney region.

The public interest is served by the consistent application of policy which all supports the proposal. Importantly these broader public interests are able to be served without unacceptable adverse impacts upon the surrounding community.

The proposal is in the public interest.

7.0 Conclusion

The application seeks consent for the construction of a new northern wing to the Electrical Engineering Building and its integration with the Engineering Link Building including the provision of a loading dock facility. The southern tower is to be retained and upgraded with the new building to be linked via a central atrium and ground level lobby space. The new building will provide a total of 6,017.3m^2 of additional GFA for teaching, research, and support administration space for the engineering programs of the University.

This EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act 1979, Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation), and the SEARs. The development is supported by a broad range of supporting studies that confirm that the proposal is consistent with the assessment framework that has been established by the SEARs.

The proposed development and land use are permitted with Development Consent and can be approved. The proposed works are consistent with the CIP approved for the Camperdown and Darlington campuses of the University. The CIP was granted Concept Approval.

The proposal has been derived from extensive design review and critique through an extensive process to ensure that design excellence will be achieved and demonstrated. The design review will be ongoing through the design implementation phase to ensure that the design integrity is retained.

The proposal will contribute to the ongoing improvement of the teaching and research facilities provided by the University, consistent with its aim to continue to provide world class teaching and research opportunities.

The works provide improved public domain amenities through the removal of at grade car parking and the introduction of improved landscaped spaces and connections between Maze Crescent and Blackwattle Creek Lane.

Based on the assessment presented in this EIS and the supporting studies, the proposal is appropriate for the locality and can be undertaken without unacceptable adverse impacts, and the approval of the application is sought.

Attachments

Attachment 1: Site Survey Prepared by Laing O'Rourke

Attachment 2: Architectural Design Package/Design Reports prepared by Cox Architecture

Attachment 3: Landscape Design Report prepared by TCL

Attachment 4: Arborist Report prepared by Tree IQ

Attachment 5: Transport and Accessibility Assessment prepared by GTA Consultants

Attachment 6: BCA Assessment Report prepared by Steve Watson & Partners

Attachment 7: Fire Engineering Statement prepared by Umow Lai

Attachment 8: Access Report prepared by Code Performance

Attachment 9: Report on Geotechnical Investigation prepared by Douglas Partners

Attachment 10: Detailed Site Investigation and remediation action Plan prepared by Douglas Partners

Attachment 11: Preliminary Hazard Analysis (SEPP 33) prepared by CETEC

Attachment 12: Noise and Vibration Assessment prepared by Resonate Acoustics

Attachment 13: Heritage Impact Statement prepared by Urbis

Attachment 14: Historical Archaeological Assessment prepared by Urbis

Attachment 15: Heritage Consultation with the NSW Office of Environment and Heritage

Attachment 16: Lighting Impact Assessment prepared by Stowe

Attachment 17: Qualitative Wind Assessment Report prepared by Cermak Peterka Peterson

Attachment 18: Construction Management Plan prepared by Laing O'Rourke

Attachment 19: Infrastructure Management Plan prepared by Central Plumbing, Stowe, and Laing O'Rourke, and Integrated Water Management Plan prepared by Central Plumbing

Attachment 20: Civil Design Report prepared by Bonacci

Attachment 21: Demolition and Construction Waste Management Plan prepared by Waste Audit

Attachment 22: Waste Management Plan prepared by Waste Audit

Attachment 23: Structural Design Report prepared by Bonacci

Attachment 24: Sustainable Design Statement prepared by Umow Lai

Attachment 25: Design Excellence Statement signed by members of the Design Excellence Review Committee & Alternative Design Excellence Process Recommendation from GANSW

Attachment 26: Capital Investment Report prepared by Wilde and Woollard

Attachment 27: Community Consultation Documents

Attachment 28: Secretary's Environmental Assessment Requirements issued 29 September 2017