Environmental Impact Statement

Faculty of Arts and Social Sciences (FASS), University of Sydney (SSD 7081)

June 2016

urbis

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Glossary

Council	City of Sydney Council
CLM Act	*Contaminated Land Management Act 1997*
CLEP	City of Sydney Local Environmental Plan 2012
SEARs	Secretary's Environmental Assessment Requirements
P&E	NSW Planning and Environment
EEC	Ecologically Endangered Community
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	*Commonwealth Environment Protection Biodiversity Conservation Act 1999*
ESD	Ecologically Sustainable Development
LGA	Local Government Area
NSW Government	State government for NSW
Public Land	Open space, public reserve and road dedication lots
ISEPP	*State Environmental Planning Policy (Infrastructure) 2007*
SEPP (BASIX)	*State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004*
SEPP 55	*State Environmental Planning Policy 55 (Remediation of Land)*
SEPP 64	*State Environmental Planning Policy 64 (Advertising and Signage)*
SRD SEPP	*State Environmental Planning Policy (State and Regional Development) 2011*
SSD	State Significant Development
SSS	State Significant Site
Stage 1 DA	Concept proposal for the University of Sydney Campus Improvement Program 2014 - 2020
TOD	Transit Oriented Development
TSC Act	*NSW Threatened Species Conservation Act 1997*
WSUD	Water Sensitive Urban Design
WIK	Work In Kind
VMP	Vegetation Management Plan
VPA	Voluntary Planning Agreement

Signed Declaration

SUBMISSION OF ENVIRONMENTAL IMPACT STATEMENT

This Environmental Impact Statement has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000.*

Environmental Assessment prepared by:

Names:	**Peter Strudwick (Director)** Bachelor of Town Planning, UNSW **Jacqueline Parker (Associate Director)** Bachelor of Planning UNSW Master of Urban Development and Design UNSW **Vijay Prabhu (Consultant)** Bachelor of Science (Sustainability Science) ANU Master of Urban and Regional Planning USYD
Address:	Urbis Pty Ltd Level 23, Darling Park Tower 2, 201 Sussex Street Sydney NSW 2000
In respect of:	**Faculty of Arts and Social Sciences (FASS)**

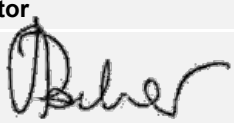
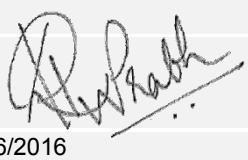
Applicant and Land Details:

Applicant:	University of Sydney
Applicant Address:	Services Building G12, 22 Codrington Street, Darlington NSW 2008
Land to be Redeveloped:	Land within the University of Sydney's Camperdown Campus, bound to the north by Parramatta Road, to the south by RD Watt Building, to the west by the Demountable Buildings, and to the east by the Heydon Laurence Building
Lot and DP:	Lot 1 in DP 1171804
Project:	**Faculty of Arts and Social Sciences (FASS)**

Declaration:

I certify that the contents of the Environmental Impact Assessment, to the best of my knowledge, have been prepared as follows:

- In accordance with the requirements of the Schedule 2 of Environmental Planning and Assessment Regulation 2000; and State Environmental Planning Policy (State and Regional Development) 2011.
- The information contained in this report is true in all material particulars and is not misleading.

Name	**Peter Strudwick, Director**	**Jacqueline Parker, Associate Director**	**Vijay Prabhu, Consultant**
Signature:			
Date:	30/06/2016	30/06/2016	30/06/2016

Executive Summary

This Environmental Impact Statement (EIS) has been prepared in support of a State Significant Development Application (SSDA) (application number SSD 7081) pursuant to Division 4. 1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The proposal is State Significant development because it is development for the purposes of an educational establishment (including associated research facilities) for a University and will have a capital investment value in excess of $30 million pursuant to clause 15 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development)* 2011.

This SSDA seeks approval for the construction of a new Faculty of Arts and Social Sciences (FASS) – comprising a new building and works to the existing RD Watt Building. The proposed new building will be 6 storeys comprising computer laboratories, general teaching spaces, lecture theatre, offices, meeting rooms, and tutorial and consultation rooms. The proposal includes alterations and additional to the RD Watt Building to facilitate uses that are complementary to the FASS development. The proposed works will also include various landscaping works, civil works, and utilities and infrastructure connections to support the development.

The site is located in the north west portion of the Camperdown Campus of The University of Sydney, which is bounded by Parramatta Road to the north, Victoria Park to the east, City Road to the south and the University Colleges and RPA to the west.

The site is zoned SP2 Infrastructure – Education Establishment under *Sydney Local Environmental Plan* 2012 (SLEP 2012). The proposed development is permissible with development consent.

The EIS has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for SSD 7081 that were issued on 18 June 2015, and the conditions of consent for the Stage 1 DA (SSD 6123) that were issued on 16 February 2015.

The proposed FASS development will relocate and consolidate existing teaching facilities, and research and faculty offices used for the School of Economics (SoE) and the School of Social and Political Sciences (SSPS), which are currently fragmented across a number of different buildings on the Camperdown campus, into a multi-functional and flexible building.

The development will provide modernised teaching and research facilities to support the delivery and achievement of a world class educational establishment, while creating an iconic building along the University's prominent Parramatta Road frontage close to the Ross Street entrance to the University's Camperdown Campus.

The proposed design is a result of extensive site planning and design review, and successfully responds to the existing site constraints including surrounding heritage items, landscape elements, the restricted urban context of the site, and existing views and vistas. The design will also be compatible with the future built form and urban context envisaged for the Camperdown Campus in accordance with the University's approved and adopted Campus Improvement Program (SSD 6123).

The EIS and the accompanying technical information have addressed the matters required to be considered in the SEARs. It is concluded that the proposal demonstrates that all on-site and off-site impacts have been carefully considered and addressed, in particular:

- **Built Form and Urban Design:** In accordance with Clause 6.21 of the *Sydney Local Environmental Plan 2012*, a design competition process is not required for the proposed building as the building will not exceed 25 metres in height above natural ground level or have a CIV of more than $100,000,000

  Notwithstanding, the University has conducted and completed a Concept Design Competition for the proposed development in accordance with the University's Design Excellence principles (which are aligned with those of the *Sydney Local Environmental Plan 2012* – Clause 6.21), taking into account the campus context, in order to deliver the highest standard of architectural, urban and landscape design. The ultimately successful architect, Architectus, has been engaged by The University of Sydney to design the proposed new building.

This design competition process and independent architecture and heritage peer review have resulted in a final design for the project that acknowledges and satisfactorily resolves those design issues raised during authority consultation.

The proposal responds positively to the advice provided by the Government agencies during SEAR and pre-SSD lodgement phases, and in meeting the design excellence criteria established by both the University and the Sydney LEP 2012.

The proposal will create an iconic building that complements the adjoining heritage RD Watt building and provides a high quality architectural presentation to Parramatta Road. It will also adaptively reuse internal areas of the R. D Watt Building for additional teaching and research facilities, meeting rooms, and workshop spaces while maintaining the heritage significance of this building.

The proposed development has been designed and laid out to reinforce the principles of Crime Prevention through Environmental Design (CPTED

- **Consistency with the CIP Envelope Approval**: The proposed FASS building has been designed to ensure that the footprint of the development and the large majority of the building form will be fully contained within the approved SSD 13_6123 envelope. The two minor built form exceedances to the CIP envelope comprise a 600 mm exceedance by the atrium roof and cooling tower which will not be perceptible from the public domain immediately surrounding the site because they are both set back at least 3 m from the building's façade parapets. The minor exceedance caused by the atrium roof form will improve the appearance of the building roof form when viewed from afar and from the trafficable roof terrace, presenting a resolved design feature enclosing the lift over run.

  The CIP envelope approval under SSD 6123 identifies Substation no. 54 for retention. However, this substation has been approved for removal under 'REF 3-2016 FASS Early Works Stage 2, Camperdown Campus'.

  As discussed in **Section 3.4.1** and **Section 8. 1** of the EIS, it is noted that SSD 6123 addressed precinct-based building envelopes and built form design controls, as well as open space, pedestrian and vehicular access arrangements, public domain works, transport linkages and indicative land uses for each precinct. Given the broad context and scale of the SSD 6123 approval, the proposed FASS development demonstrates a high level of compliance, and the removal of Substation no. 54 is not considered a significant departure from this approval. It is also noted that the proposed FASS built form is fully contained within the approved horizontal extent of the CIP envelope under SSD 6123.

  Notwithstanding the approved removal of this substation, an Interpretation Strategy has been prepared to ensure that the proposed FASS development scheme will be generally consistent with the CIP envelope approval (SSD 6123) with respect to Substation no. 54, as it proposes the partial demarcation of the former building footprint in the landscape at the location of the present substation building, and the provision of an associated plaque/signage.

- **Built form amenity impacts**: The final proposed design has successfully managed built form impacts such as solar access and overshadowing, acoustic impacts, visual and view impacts, reflectivity impacts, and wind impacts by incorporating recommendations of the various detailed technical studies accompanying this EIS.

- **Heritage:** The built form will respect the heritage context of the site by ensuring that it is set back from the RD Watt Building and Heydon Laurence Building. In addition, the creation of a central courtyard between the FASS building and the RD Watt building will allow breathing space around the RD Watt Building, enabling the external heritage fabric of this building to be appreciated from the courtyard and from within the FASS building, while also providing direct pedestrian access between the FASS building and RD Watt, connecting these two built forms visually and functionally.

  The proposal retains the principal southern façade of the RD Watt building fronting Science Road along with the eastern and western facades, with proposed façade modifications being limited to the rear northern façade.

The most significant internal intervention to the RD Watt Building is the proposed lift, which will require the partial demolition of original structure. However, these works will not compromise the significant character or fabric of the building.

The proposed design of the FASS building and courtyard will provide enhanced exposure to the northern heritage façade of the RD Watt building. The overall scheme respects the constraints presented by the existing structural features of the RD Watt building, such as its internal split floor levels, and provides a visual and functional transition between these two buildings.

The proposed scheme includes an Interpretation Strategy for the RD Watt Building, as well as Substation no. 54, which has been approved for removal under a separate REF (REF 3-2016 - FASS Early Works Stage 2, Camperdown Campus). Implementation of the Interpretation Strategy with respect to RD Watt and Substation no. 54 will ensure that users of or visitors to the site will be afforded an opportunity to understand the historic significance of those heritage elements approved as part of REF 3-2016 or proposed for removal as part of this SSDA. This will enhance the ongoing cultural value of the FASS and RD Watt Buildings.

A Heritage Impact Statement has been prepared to ensure that the impacts of the proposed development are appropriately managed, and includes recommendations for detailed design relating to works to the RD Watt Building to be provided to and approved by the Heritage Consultant or the University of Sydney Campus Infrastructure Services Heritage Architect prior to issue of the Construction Certificate.

The fabric survey that has been undertaken will facilitate the conservation of the building during the construction work, including some internal works as required. It is noted that notwithstanding the internal refurbishment to the RD Watt building proposed as part of this SSDA, the interiors of the building are generally in good condition given that the building is in current and continuous use.

- **Heritage views**: The proposed building will be sympathetic in its form, siting, scale and materiality and enables the heritage items in the vicinity (namely the RD Watt and Heydon Laurence buildings) to retain their prominence in views from Science Road.

  The new building will be visible behind the heritage item, however the siting to the rear and fronting Parramatta Road ensures that the new development will not dominate in internal views from Science Road.

  With regard to views from Parramatta Road, the current site is somewhat utilitarian in character and the FASS development presents an opportunity to improve the presentation to Parramatta road.

  The proposed FASS building will present a modulated and visually interesting frontage when viewed from the significant Ross Street entry to the University campus. This frontage will be visually broken up into three distinct building masses (comprising the stone plinth, the cantilevered three storey frontage, and a taller set back element), ensuring that it does not present as a single linear building wall.

  In addition, the building design bends away from the Parramatta Road frontage to respect the existing building setback of the neighbouring Heydon Laurence building to the east, and the future life sciences building to the west, further reducing the apparent bulk and scale of the building when viewed from Parramatta Road.

- **Trees and Landscaping:** The proposed development will necessitate the removal of selected trees on the site including Tree 230 which is of landscape heritage significance, along with Tree 235 and Tree 236 which are identified as potentially original or early 20th century plantings. The proposed tree removal is required in conjunction with the provision of access to the proposed FASS building.

  The nature of the site's use will change as a result of the proposed FASS development, and will include provision of two new access paths placed symmetrically on either side of the RD Watt Building.

  Whilst the removal of Tree 230 is required to enable the eastern access point off Science Road, when viewed from this roadway, RD Watt's relationship with significant tree planting will still be appreciated

as a coherent landscape element given the symmetrical nature of the proposed access paths, and the retention of the significant landscape elements in front of the RD Watt Building.

In addition, the existing tree planting will be supplemented with significant tree planting on either side of the new access paths to the FASS building as described in the Landscape Report and Landscape Plans at **Appendix K**. The proposed site landscaping and replacement tree planting will ensure that the overall boulevard character of Science Road is maintained.

- **Accessibility:** The proposed development has been informed by an access review and its recommendations. The RD Watt Building will be adapted to meet the relevant accessibility standards and requirements during the detailed design phase of the project and incorporated into the design.

- **Traffic and Transport:** The proposal will not result in any increase in staff numbers or students and will consequently not result in any additional parking requirements. The relocation of existing University populations (staff and students) to a central location will not result in any additional traffic demands or traffic generation. In addition, the site is well serviced by public transport options along Parramatta Road.

- **Environmental Impacts including Construction Impacts:** Potential environmental impacts are able to be managed through various construction and noise management measures described in this EIS.

No additional staffing numbers will be accommodated within FASS or RD Watt during operation other than those already accommodated by the School of Economic (SoE) and the School of Social and Political Sciences (SSPS) elsewhere on campus. However, it is estimated that an additional 729 FTE jobs will be generated in all industries as a result of the project, comprising 277 FTE jobs through direct employment for construction, and 452 FTE jobs through indirect (consumption induced) employment during the construction phase.

This project represents a significant opportunity to promote and enhance the University of Sydney as an important place of education and research. This proposal accords with the State, Regional and Local strategic initiatives to contribute to the growth of the NSW economy via enhanced education offerings in NSW. Based upon the conclusions arising from the assessment of this SSDA, and imposition of the mitigation measures recommended, the project is considered to warrant approval.

Introduction

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment (DPE) in support of an application for State Significant Development Application (SSDA) (application number SSD 7081) for an education and research facility at The University of Sydney Camperdown Campus. The application is pursuant to Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The new building will be known as the "Faculty of Arts and Social Sciences Building (FASS)".

The proposal is a State Significant Development because it is development for the purposes of an educational establishment (including associated research facilities for a University) and will have a capital investment value of $63,127,219 pursuant to clause 15 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development)* 2011 (refer to the QS costing provided at **Appendix S**).

Clause 226(1) of the *Environmental Planning & Assessment Act Regulation 2000* (the Regulations) 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 DA is a Crown development for the purposes of Division 4 of the *Environmental Planning & Assessment Act* 1979 (the Act).

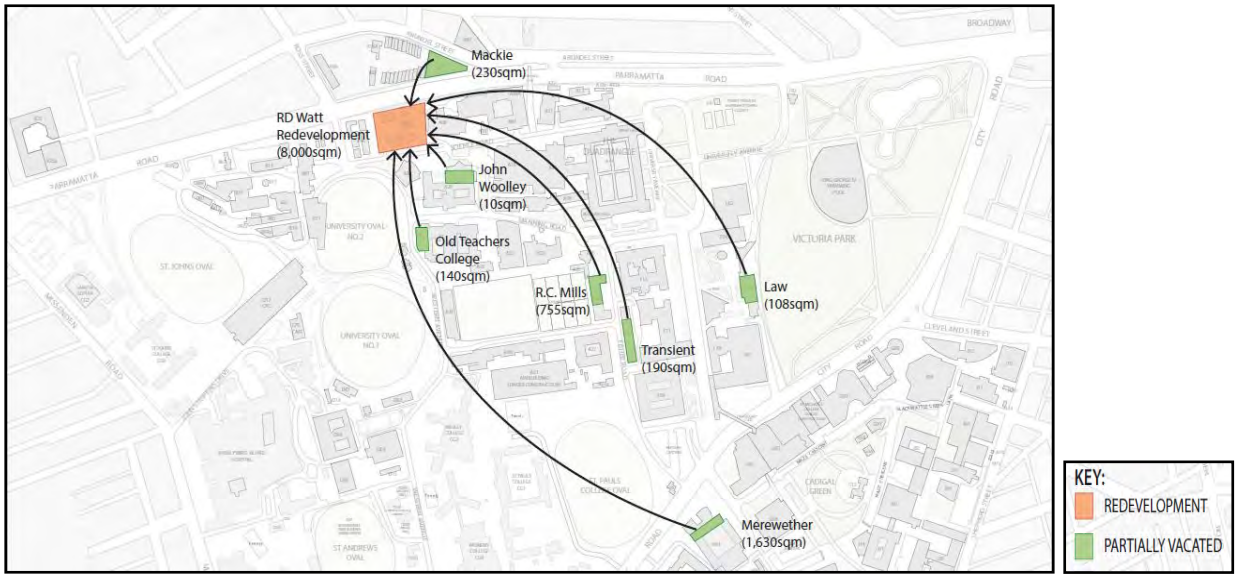
The EIS has been prepared by Urbis. It is based on architectural and landscape plans detailing the proposed work, and other technical information in specialist consultant reports.

The technical studies were undertaken to address the specific potential environmental impacts outlined in the SEARs and the relevant conditions of consent of the Stage 1 DA (SSD 6123). This SSD submission consists of this EIS and supporting documentation at **Appendix A** to **Appendix NN**

1.1 PROJECT OVERVIEW AND BACKGROUND

The proposal is designed to meet Faculty of Arts & Social Sciences (FASS) accommodation needs, specifically the consolidation of the School of Economics (SoE) and the School of Social and Political Sciences (SSPS). These Schools are currently fragmented in a number of other buildings across the Camperdown campus including Merewether, Mackie, John Woolley, Old Teachers College, RC Mills, Law and Transient buildings as shown in Figure 1. The project therefore seeks a sustainable and efficient solution to accommodating the Faculty schools from a variety of older and poorly functioning buildings for teaching and learning purposes, into one multi-function and efficient building designed to World class standards.

FIGURE 1 – FASS BUILDING – DECANTING & RELOCATION PLAN



The FASS Building (SSD 7081) application seeks approval for the construction of a new 6 level facility comprising:

- Computer laboratories and general teaching spaces;
- Lecture theatre at the western end of the building;
- Offices and meeting rooms;
- Tutorial rooms and consultation rooms;
- Various breakout spaces, informal lounges/seating, and facilities on each level;
- Trafficable roof top terrace space; and
- Plant rooms.

The following works are also proposed as part of the SSD application:

- Tree retention and removal within and surrounding the building footprint;
- Hard and soft landscaping works including tree planting;
- Civil works including excavation works to accommodate the building foundation and structures;
- Utilities and infrastructure connections to the building; and
- Alterations and additions to the R.D Watt Building to facilitate uses that are complementary to the FASS development.

The FASS building will be connected to the R.D Watt Building by an awning across a linear courtyard that will function as an entry space to the new building.

The proposed development has been informed by an extensive site planning and urban design process. Extensive consultation with government agencies and the community has also been undertaken to guide the design development of the proposed works.

As described below, the site forms part of a previous Stage 1 DA (SSD 6123) Campus Improvement Program approval. This SSD forms a detailed Stage 2 DA for the redevelopment of the site as envisaged by the Stage 1 DA approval.

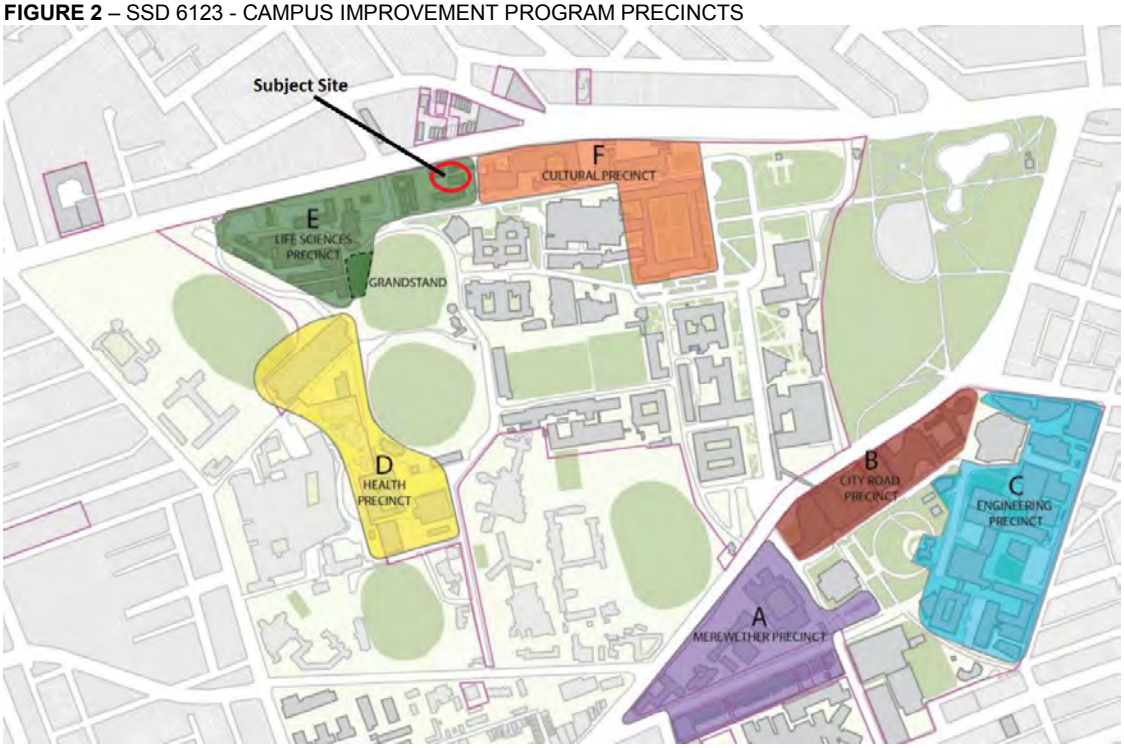
1.1.1 STAGE 1 DA (SSD 6123) - CAMPUS IMPROVEMENT PROGRAM

The Campus Improvement Program (CIP) was lodged with the Department in 2013 as a State Significant Development (SSD 6123), seeking approval for the delivery of new development and infrastructure across the University's Camperdown and Darlington Campuses.

The CIP sought approval for precinct-based building envelopes and built form design controls, open space, pedestrian and vehicular access arraignments, public domain works, transport linkages and indicative land uses for each precinct.

The subject site falls within the 'Life Sciences Precinct' (Precinct E) as shown in **Figure 2** below.

FIGURE 2 – SSD 6123 - CAMPUS IMPROVEMENT PROGRAM PRECINCTS



The SSD 6123 approval (16 February 2015) provided consent for Precinct E to be redeveloped to achieve the following:

- Creation of a multi faculty learning and teaching precinct for the Life Sciences (Veterinary Sciences, Agriculture and Biological Sciences);
- Retaining and enhancing the heritage aspects of the precinct adjoining the significant cultural precinct;
- Improving the address and gateway to Ross Street and Parramatta Road;
- Replacing degraded and inefficient building stock;
- Enhancing the boundaries to St Johns College and the Charles Perkins Centre;
- Creating iconic building addressing the campus Ross Street entrance from Parramatta Road;
- Co-location of the faculties of Veterinary Sciences, Agricultural and Environment and Biological Science, service delivery and basement parking and new Oval No.2 grandstand;
- Redevelopment of the Gunn, McMasters, Evelyn Williams Building groups, part redevelopment of the JD Stewart Building and relocation of demountable building structures;
- New building envelopes ranging in height from approximately 14 m to 28 m; and
- Demolition of 9,700 m^2 of GFA and development of 46,950 m^2 of GFA (+37,250 m^2 of GFA).

This SSDA (SSD 7081) forms the detailed Stage 2 DA for the development of the FASS building within Precinct E. The consistency of the proposed development with the Stage 1 approval is addressed within **Section 1.5** of this report.

1.2 PROJECT OBJECTIVES

The proposal seeks to provide a new multi-functional and efficient Faculty of Arts and Social Sciences (FASS) building to consolidate the School of Economics (SoE) and the School of Social and Political Sciences (SSPS) which are currently fragmented across a number of other older and poorly functioning buildings across the Camperdown campus. The new FASS building id designed to achieve the following specific objectives:

- Relocate and consolidate existing teaching facilities, and research and faculty offices used by the School of Social Science and Political Science; and the School of Economics;
- Create an iconic building that complements the adjoining heritage RD Watt building and provides a high quality architectural presentation to Parramatta Road;
- Design a new building that is compliant with the building envelope controls for this site contained within the SSD approved Campus Improvement Program 13_6123;
- Upgrade and modernise teaching and research facilities to support the delivery and achievement of a world class educational establishment;
- Ensure that the development has minimal environmental and amenity impacts on surrounding areas;
- Adaptively reuse internal areas of the R. D Watt Building for additional teaching and research facilities, meeting rooms, and workshop spaces;
- Protect and enhance the heritage significance of the surrounding heritage items including the R. D Watt Building;
- Improve pedestrian accessibility and enhance the landscape character of the Camperdown Campus.
- Protect significant landscape elements including those to the south of RD Watt fronting Science Road.

1.3 STRUCTURE OF THIS REPORT

The EIS provides the following sections:

- **The Site and Contextual Analysis:** Provides a description of the FASS Site, the University of Sydney Camperdown Campus and the local and wider regional context. This section also outlines the constraints and opportunities identified for development of the site.
- **The Proposal:** Provides a description of the proposed works.
- **Justification and Assessment of Alternatives:** Details the justification for the proposed works and consideration of alternatives.
- **Consultation:** Details the consultation process undertaken to date and the specific consultation undertaken as a part of this application.
- **Planning Framework Assessment:** Provides a detailed review of the proposal against the commonwealth, state and local planning framework including an assessment of statutory and strategic planning considerations.
- **Environmental Assessment:** Details an in-depth assessment of the existing environment and the potential impacts for each of the key criteria in the SEARs.
- **Construction Environmental Management:** Details the specific considerations for the development of a Construction Environmental Management Plan.
- **Recommendations and Mitigation Measures:** Provides a consolidated list of recommendations and mitigation measures based on the technical studies undertaken as part of this application.

- **Conclusion:** Provides a summary of the impact assessment with concluding comments.

1.4 SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

The SEARs for SSD 7081 - FASS Building were issued on 18 June 2015. A copy of the SEARs is included at **Appendix A**. **Table 1** below summarises the requirements and identifies where responses to each of the SEARs are addressed in this report.

TABLE 1 SSD_7081 - SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT	REFERENCE
General Requirements	
The Environmental Impact Statement (EIS) must meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the *Environmental Planning and Assessment Regulation 2000.*	Throughout EIS and appendices.
Environmental Risk Assessment EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development. Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include: ▪ adequate baseline data; ▪ consideration of potential cumulative impacts due to other development in the vicinity; and ▪ measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.	Throughout EIS and appendices.
Capital Investment Value The EIS must be accompanied by a report from a qualified quantity surveyor providing: ▪ a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Environmental Planning and Assessment Regulation 2000) of the proposal, including details of all assumptions and components from which the CIV calculation is derived; ▪ an estimate of the jobs that will be created by the future development during the construction and operational phases of the development; and ▪ certification that the information provided is accurate at the date of preparation	CIV Report at **Appendix S**
Key issues: The EIS must address the key issues set out in points (1) to (16) below:	
Statutory and Strategic Context Address the statutory provisions applying to the concept proposal contained in all relevant environmental planning instruments, including: ▪ State Environmental Planning Policy (State & Regional Development) 2011'; ▪ State Environmental Planning Policy (Infrastructure) 2007'; ▪ State Environmental Planning Policy No 33-Hazardous and Offensive Development; ▪ State Environmental Planning Policy No.55 - Remediation of Land; and	**Section 7**

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT	REFERENCE
▪ Sydney Local Environmental Plan 2012. ***Permissibility*** Detail the nature and extent of any prohibitions that apply to the development. ***Development Standards*** Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards. ***Campus Improvement Program 2014 - 2020*** In accordance with section 83D(3) of the Environmental Planning and Assessment Act 1979, demonstrate that the proposal is not inconsistent with the development consent granted for The University of Sydney Campus Improvement Program concept proposal (SSD 6123).	
Policies Address the relevant planning provisions, goals and strategic planning objectives in the following: ▪ NSW2021; ▪ Rebuilding NSW - State Infrastructure Strategy 2014 ▪ A Plan for Growing Sydney; ▪ NSW Long Term Transport Master Plan2012; ▪ Sydney's Cycling Future 2013; ▪ Sydney's Walking Future 2013; and ▪ Healthy Urban Development Checklist, NSW Health.	**Section 7**
3. Built Form and Urban Design ▪ Address the height, density, bulk and scale, and setbacks of the proposal in relation to the locality and the surrounding development (including SSD 6123 Campus Improvement Program building envelopes), topography and streetscape, having particular regard to the relationship with the RD Watt Building, the Heydon-Laurance Building and Substation No.54; ▪ Address design quality, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials, colours, landscaping and Crime Prevention Through Environmental Design Principles. ▪ Demonstrate design excellence in accordance with the design excellence provisions of Sydney Local Environmental Plan 2012. ▪ Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	**Section 8. 1** Architect's Design Report at **Appendix E**
4. Environmental Amenity Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing, lighting impacts and wind impacts. A high level of environmental amenity for any immediately adjacent residential land uses must be demonstrated.	**Section 8** Reflectivity Report at **Appendix GG** Wind Report at **Appendix FF** Acoustic Report at

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT	REFERENCE
	Appendix HH Architect's Design Report at **Appendix E**
5. Transport and Accessibility Include a transport and accessibility impact assessment that provides, but is not limited to the following: ▪ the existing traffic, public transport, pedestrian and cycle movements within the vicinity of the site; ▪ an estimate of the total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and cycle trips; ▪ future traffic, pedestrian and cycle movements with the proposed development within the vicinity of the site; ▪ the adequacy of public transport, pedestrian and bicycle infrastructure to meet the likely future demand of the proposed development; ▪ measures to promote travel choices for students, staff and visitors that support the achievement of State targets, such as a location-specific sustainable travel plan, development of wayfinding strategies and end of trip facilities for pedestrians and bicycle riders; ▪ the daily and peak vehicle movements impact on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works (if required); ▪ the proposed access arrangements and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and cycle networks; ▪ proposed car and bicycle parking provision, including consideration of the availability of public transport and the requirements of the relevant parking codes and Australian Standards; ▪ proposed location of pedestrian and bicycle facilities in secure, convenient, accessible areas close to main entrances that incorporate lighting and passive surveillance; ▪ service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times); and ▪ an assessment of traffic and transport impacts during construction and how these impacts will be mitigated for any associated traffic, pedestrian, cyclist, parking and public transport, including the preparation of a draft Construction Traffic Management Plan to demonstrate the proposed management of the impact. This plan shall include details of vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures for all demolition/construction activities. ***Relevant Policies and Guidelines*** ▪ *Guide to Traffic Generating Developments (Roads and Maritime Services)* ▪ *EIS Guidelines - Road and Related Facilities (DoPI)* ▪ *NSW Planning Guidelines for Walking and Cycling* ▪ *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development*	**Section 8** Transport Impact Assessment at **Appendix U**

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT	REFERENCE
Ecologically Sustainable Development (ESD) ▪ Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design and ongoing operation phases of the development. ▪ Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice. ▪ Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.	**Section 8** ESD Report at **Appendix W**
7. Noise and Vibration Identify and provide a quantitative assessment of the main noise and vibration generating Sources during construction and operation. Outline measures to minimise and mitigate the potential noise impacts on surrounding sensitive receivers. Relevant Policies and Guidelines: ▪ NSW Industrial Noise Policy (EPA) ▪ Interim Construction Noise Guidelines (DECC) ▪ Assessing Vibration: A Technical Guideline 2006	**Section 8** Acoustic Report at **Appendix HH**
8. Biodiversity Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment (FBA) (OEH 2014), unless otherwise agreed by OEH, by a person accredited in accordance with s.1428(1)(c) of the Threatened Species Conservation Act 1995. **Note**: In accordance with s.5.1.1.3 of the FBA, areas that are not native vegetation do not require further assessment in the FBA except where it is assessed as habitat for threatened species according to Section 6.4.	**Section 8** Biodiversity Assessment Report at **Appendix I**
Heritage ▪ Include a statement of heritage impact prepared in accordance with the guidelines in the NSW Heritage Manual and include a statement of significance of The University of Sydney, the Ross Street entry, the R.D Watt Building (A04), Heydon-Laurance Building (408), J.D Stewart Building (801), fencing to Parramatta Road and Substation No.54 and consider the accumulative material effect of the proposed development on significance. ▪ Provide a view assessment identifying significant views and potential impacts. ▪ Provide a landscape heritage assessment, including consideration of the cultural landscape of The University of Sydney, University Ovals No.1 and No.2 (P9), University Ovals (G7) and Science Road-West (G6). ▪ The assessment shall address any archaeological potential and significance on the site and the impacts the development may have on this significance.	**Section 8** Heritage Impact Statement at **Appendix L** Historical Archaeological Assessment Report at **Appendix P**
10. Aboriginal Heritage ▪ All Aboriginal cultural heritage values that exist within the development site shall be identified, described and documented. This may include the need for surface survey	**Section 8** Aboriginal Archaeological

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT	REFERENCE
and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting Aboriginal Cultural Heritage in NSW (DECCW, 201 I) and in consultation with OEH officers. ▪ Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented. ▪ Where relevant, impacts on Aboriginal cultural heritage values are to be assessed and documented. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	Assessments at **Appendix Q**
11. Sediment, Erosion and Dust controls (Construction and Excavation) Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. ***Relevant Policies and Guidelines***: ▪ Managing Urban Stormwater So/s and Construction 4th Edition (Landcom) ▪ Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)	**Section 8** Construction and Traffic Management Plan at **Appendix JJ**
12. Contamination Demonstrate that the site is suitable for the proposed use in accordance with SEPP 55 *Relevant Policies and Guidelines:* ▪ Managing Land Contamination: Planning Guidelines Remediation of Land (DUAP)	**Section 8** SEPP 55 Contamination Letter at **Appendix DD**
Utilities ▪ Preparation of an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure. ▪ Preparation of an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	**Section 8** Infrastructure Management Plan at **Appendix R** Integrated Water Management Plan at **Appendix Z**
14. Contributions Address Council's Section 94 Contribution Plan and/or details of any Voluntary Planning Agreement.	**Section 5**
15. Drainage and Flooding ▪ Detail drainage associated with the proposal, including stormwater and drainage infrastructure. ▪ Assess any potential flooding impacts associated with the development and	**Section 8** Civil Design Report at **Appendix AA**

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT	REFERENCE
consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and increase in rainfall intensity.	
16. Waste Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	**Section 8** Construction and Traffic Management Plan at **Appendix JJ** Waste Management Plan at **Appendix KK**
Plans and Documents	
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following: ▪ *Architectural drawings (dimensioned and including RLs);* ▪ *A physical 3D model and 3D CAD model;* ▪ *Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries;* ▪ *Site Analysis Plan;* ▪ *Stormwater Concept Plan;* ▪ *Sediment and Erosion Control Plan;* ▪ *Shadow Diagrams;* ▪ *View Analysis / Photomontages;* ▪ *Landscape Plan (identifying any trees to be removed and trees to be retained or transplanted);* ▪ *Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan;* ▪ *Geotechnical and Structural Report;* ▪ *Arborist Report;* ▪ *Acid Sulphate Soils Management Plan (if required); and* ▪ *Schedule of materials and finishes.*	Provided at various Appendices

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENT	REFERENCE
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: ▪ City of Sydney Council; ▪ Heritage Council of NSW; ▪ Transport for NSW; and ▪ Roads and Maritime Services. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided	**Section 6**

1.5 STAGE 1 DA – CONDITIONS OF CONSENT

The SSD site is subject to a previous Stage 1 DA approval for the Campus Improvement Program (SSD 6123). The Stage 1 DA approval provided consent for precinct-based building envelopes and built form design controls, open space, pedestrian and vehicular access arraignments, public domain works, transport linkages and indicative land uses for each precinct.

The Stage 1 DA approval contains certain conditions of consent that are relevant to the proposed development because they address the specific built form and potential impacts of the proposal. In addition to the SEARs for SSDA 7081, the relevant conditions of SSD 6123 have been listed below in **Table 2** and addressed throughout this EIS and the appendices.

Note: The Stage 1 DA approval was modified through SSD 6123 MOD 1 (approved 09 June 2015). This modification was limited to minor amendments to the development description, Condition A4 and Condition B13. Where relevant, the conditions as modified have been addressed in **Table 2** below.

TABLE 2 RELEVANT STAGE 1 DA CONDITIONS OF CONSENT

STAGE 1 DA CONDITION OF CONSENT	REFERENCE
Gross Floor Area	
A6. The Maximum addition al GFA allowed by this approval for new built form within the building envelope development sites for the Campus Improvement Program within each precinct is as follows: Life Sciences Precinct – Total Additional GFA 37,250m2	**Section 3.11.1** The proposal complies with this condition.
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. (b) In considering whether proposed development exhibits design excellence, the consent authority must have regard to the following matters:	**Section 1.1.2** Design Excellence Process Report at **Appendix F** Design Competition not

STAGE 1 DA CONDITION OF CONSENT	REFERENCE
(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 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.	required
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 (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.	**Section 3** Project adheres to 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 their size (c) The design of architectural roof features are to integrate with the overall building design	**Section 3** Project adheres to this condition
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.	**Section 8** Project adheres to this condition
B6 Future Development Applications for new built form shall include a Crime Prevention Through Environmental Design assessment, including mitigation measures, where necessary.	**Section 8. 2** Project adheres to this condition

STAGE 1 DA CONDITION OF CONSENT	REFERENCE
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.	**Section 8. 2** Landscape Plan and Report at **Appendix K**
Heritage Conditions	
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.	**Section 8** Heritage Impact Statement at **Appendix L** supports the project and recommends specific conditions.
B11 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 re-use, recording and demolition.	**Section 8** Heritage Impact Statement at **Appendix L** prepared by a qualified heritage consultant.
B12 Future development applications (where relevant) for new built form shall include a building fabric survey for a comprehensive understanding of condition, and the requirement for conservation and repair of the following buildings: (a) Macleay Building and Botany Wing (A12) **(b) RD Watt Building (A04)** (c) Peter Nicoll Russell Building (J02) (d) Old School Building Darlington (G15) (e) J.D. Stewart Building (B01) (part)	**Section 8** Conservation Schedule at **Appendix O** Project adheres to this condition
B13 *(as modified)* Future development applications (where relevant) for new built form shall include digital photographic archival recording and documentation of the following buildings and their curtilage in accordance with the NSW Heritage Office guidelines *How to Prepare Archival Records of Heritage Items* (1998) and *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006): a) International House (G06); b) Macleay Building and Botany Wing (A12); c) R. D Watt Building (A04); d) Peter Nicoll Russell Building (J02); e) Old School Building Darlington (G15); f) J. D Steward Building (B01); and g) Blackburn Building (D06)	**Section 8** Archival Recording at **Appendix M** Project adheres to this condition

STAGE 1 DA CONDITION OF CONSENT	REFERENCE
B14 All future development applications for new built form that involves 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: guideline*' and policy titles '*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 significant themes, including the building's contribution to the development of the University and residential colleges.	**Section 8** Heritage Interpretation Plan at **Appendix N** Project adheres to this condition
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 be 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 RMS, where University roads connect with local or State roads, including intersection capacity (including University 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).	**Section 8** Transport Impact Assessment at **Appendix U**
B17 To ensure that active transport modes are satisfactorily supported and promoted on campus, all future development applications for 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.	**Section 8** Transport Impact Assessment at **Appendix U**
B18 All bicycle and motor cycle parking and associated end-of-trip facilities shall be provided in accordance with Council's relevant policies and controls	**Section 8** Transport Impact Assessment at **Appendix U**
B19 Future development applications for new built form shall include a sustainable travel plan,	**Section 8**

STAGE 1 DA CONDITION OF CONSENT	REFERENCE
or where relevant, include a faculty/precinct based sustainable travel plan and accompany the first application within the respective CIP Precinct.	STAMP at **Appendix V**
B20 All future development applications for new built form shall be accompanies by a noise and vibration assessment that identifies and provides a qualitative 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 mitigation measures to ensure the amenity of adjoining sensitive land uses is protected throughout the construction and operational periods.	**Section 8** Acoustic Report at **Appendix HH**
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.	**Section 8** Acoustic Report at **Appendix HH**
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.	**Section 8** Acoustic Report at **Appendix HH**
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.	**Section 8** Aboriginal Archaeological Impact Assessments at **Appendix Q**
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.	**Section 8**
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.	**Section 8** Waste Management Plan at **Appendix KK** SEPP 55 Contamination Letter at **Appendix DD** Construction and Traffic Management Plan at

STAGE 1 DA CONDITION OF CONSENT	REFERENCE
	Appendix JJ
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).	**Section 8** Access Reports at **Appendix X** and **Appendix Y**

1.6 PREVIOUSLY APPROVED WORKS AT THE FASS DEVELOPMENT SITE

The FASS development site has been subject to two previous determinations under Part 5 of the EP&A Act 1979. These approvals relate to various site preparatory works to enable the timely staging of the proposed redevelopment. The works approved as part of the two previous determinations are described below.

Both REFs were referred to City of Sydney and NSW Heritage Office, and their submissions were considered in the process of determination.

1.6.1 FASS EARLY WORKS – MINOR DEMOLITION, PRUNING OF HEDGE TREES, AND INSTALLATION OF TEMPORARY HOARDING

A Review of Environmental Factors (REF) (REF 11-2015 - FASS Early Works Stage 1, Camperdown Campus) was undertaken for early works on the FASS development site, including the demolition and removal of the following elements from the subject site:

- Native Animal House (single storey temporary structure);
- Four (4) single storey storage containers relating to Sydney University Sports & Fitness (SUSF) and School of Biological Sciences;
- Demountable Museum Storage (single storey);
- Cricket nets and associated turf and structure;
- 2. 4 metre 'Class A' perimeter hoarding to the west, south and east perimeters of the site;
- Pruning of hedging trees (*Syzygium australe* – Lilypilly) along the north western portion of the subject site, to allow for demolition works and to accommodate the hoarding installation.

This REF was determined by the University of Sydney Vice Chancellor on 04 November 2015.

1.6.2 FASS ENABLING WORKS

An REF (REF 3-2016 - FASS Early Works Stage 2, Camperdown Campus) was undertaken for enabling works on the FASS development site including:

- Services relocation, diversions and protection of existing services;
- Removal of the existing Substation No. 54 & Switchroom;
- Installation of a kiosk substation to the east of the site and a new LV switch room adjacent to the Heydon Laurence Building (A08);

- Demolition and foundations removal of the existing built form components on the site, including the Ross Street Storage Facility (A05a) and adjacent waste store;

- Removal of asphalt and concrete hardstand areas, including stairs connecting Substation no. 54 to the Parramatta Road frontage;

- Removal of trees;

- Limited excavation relating to HV cabling along the Parramatta Road frontage; and

- Erosion and Sedimentation Control works.

This REF was determined by the University of Sydney's Director of Campus Infrastructure Services on 10 March 2016.

As noted above, the REF approved the demolition of Substation no. 54, which has been noted for retention in the SSD 13_6123 CIP approval. However, as discussed in **Section 3.4.1**, **Section 8.1**, and **Section 8.10.3** of the EIS, it is considered that this approved removal of the substation will not result in a development that is inconsistent with the SSD 13_6123 CIP approval.

Furthermore, the Heritage Impact Statement that was undertaken as part of the REF supports the proposed works from a heritage perspective because:

- The subject site is significantly set back from the buildings and vegetation along the significant Science Road streetscape and is obscured from view. As such, the demolition of these buildings will not change the presentation of Science Road;

- Although the removal of these buildings will have some impact on the setting of the remaining buildings generally, the principal significant buildings within the heritage conservation area will be conserved as part of the proposed activity;

- The northern façade of the substation building has been previously modified and the Parramatta Road Streetscape context in which it is located is highly developed. As such, the proposed demolition will constitute the next stage of development in this area;

- The Substation and Switchroom buildings to be demolished are not considered to be rare as there are a number of Arts and Crafts buildings and substation extant in Sydney generally;

- The demolition of these buildings will allow the site to be used as a learning facility in the future (i.e. the future FASS development), which is in line with the cultural significance of the University and conservation area;

- The significance of the Heritage Conservation Area is partly vested in its indication of changing building technologies, materials and architectural styles. The removal of Substation no. 54 & Switchroom will allow for the future development of the FASS building, which would represent the early 21st century phase of development;

- The HIS notes that the Switchroom adjacent to Substation no. 54 has little significance and does not contribute to the heritage conservation area. Therefore, its removal will not have a detrimental heritage impact;

- The HIS recommends that an archival recording of the substation be undertaken as part of any new works to record the current state of the site. This archival recording is to be undertaken in accordance with Policy 38 of the 2010 Substation Conservation Management Plan.

This archival recording will be undertaken separate to this SSD application before the Substation is demolished.

An Interpretation Strategy has been prepared for Substation no. 54 and the RD Watt Building and is provided at **Appendix Y**. The Interpretation Strategy is discussed further in **Section 8.10.3**. In summary it is proposed to interpret the former substation through

- The partial demarcation of the former building footprint in the landscape at the location of the present substation building;

- Location of a plaque/signage adjacent to the ground inlays as a freestanding element, interpreting the former use of the site and complementing the built form interpretation.

2 The Site

2.1 REGIONAL CONTEXT

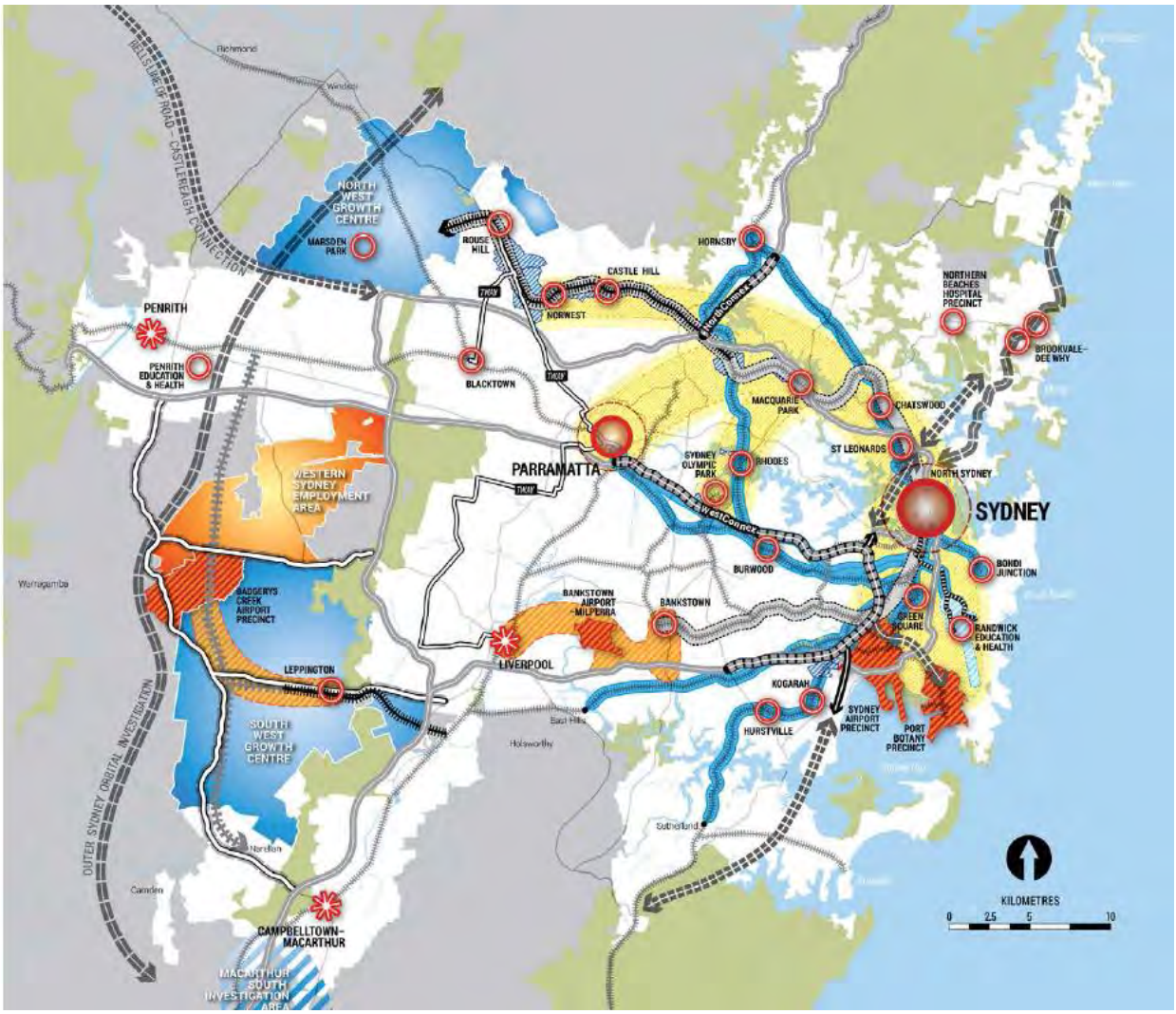
The subject site is located within the University of Sydney's Camperdown Campus.

The University of Sydney (the University) was founded in 1850, and is one of Australia's oldest. It is recognised as one of the leading Group of Eight (Go8) universities as well as the nation's principal university specialising in tertiary educational and research pedagogy.

The University of Sydney's Camperdown and Darlington Campuses are located in the City of Sydney Local Government Area (LGA), and forms part of the city's 'Central Business District' (CBD) as shown in **Figure 3** and **Figure 4**. These inner-city campuses are surrounded by arterial roads, rail infrastructure, and growing residential and business communities.

A Plan for Growing Sydney identifies the University of Sydney as one of the key 'Knowledge Assets' of NSW. It is identified as a major activity precinct for education, research and technology based jobs within Sydney's Central Subregion.

FIGURE 3 – A PLAN FOR GROWING SYDNEY (Source: www.planning.nsw.gov.au)

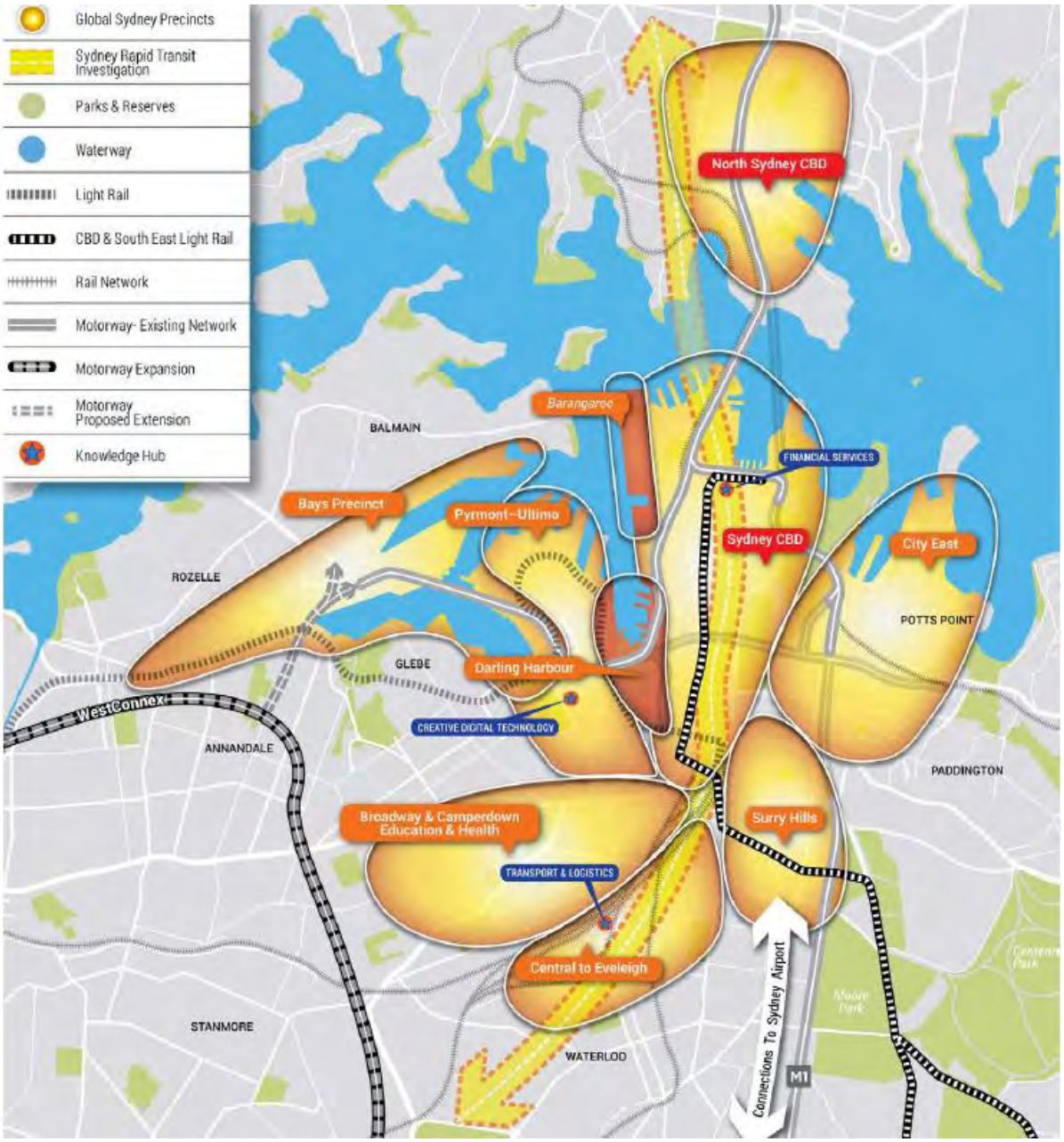


Sydney's CBD is the epicentre of the metropolitan region and is recognised as a "global city" that generates 28 per cent of the City's GDP. The University's Camperdown Campus is located at the south-western edge of the CBD and forms part of the "Broadway and Camperdown Education & Health Precinct" (refer to **Figure 3).**

The location of Camperdown Campus at the edge of the CBD and adjacent to Parramatta Road also places the University within Sydney's "global economic corridor", an area of global economic activity stretching from Port Botany and Sydney Airport, through the Sydney Central Business District (CBD), North Sydney and St Leonards to Macquarie Park and Parramatta (refer to **Figure 2**). This region accounts for the majority of Sydney's globally oriented commercial businesses and over 10% of the National Gross Domestic Product.

The precinct is recognised as a significant area for world-class education, research, medical, and technology-based jobs and includes other significant infrastructure assets such as the University of Technology Sydney, the Sydney Institute of Technology as well as the Royal Prince Alfred Hospital (RPA) and the headquarters of the ABC.

FIGURE 4 – PRECINCTS OF GLOBAL SYDNEY (Source: www.planning.nsw.gov.au)



The University is a significant contributor to Sydney's cultural experiences and includes various cultural attractions such as the Seymour Centre theatre, various campus museums and art galleries and heritage educational offerings.

The campus is well placed in close proximity to regional transport networks that support the role of the University as a leading educational, employment and cultural precinct, including

- Central Station and Redfern Station - within 2 km walking distance, providing access to all the suburban and intercity services;

- Various bus services along Parramatta Road - within a 50 metre walking distance, providing access to the CBD, and services to Leichhardt, Strathfield, Burwood, Campsie, Abbotsford, Rozelle, Five Dock, Mortlake, and Earlwood;

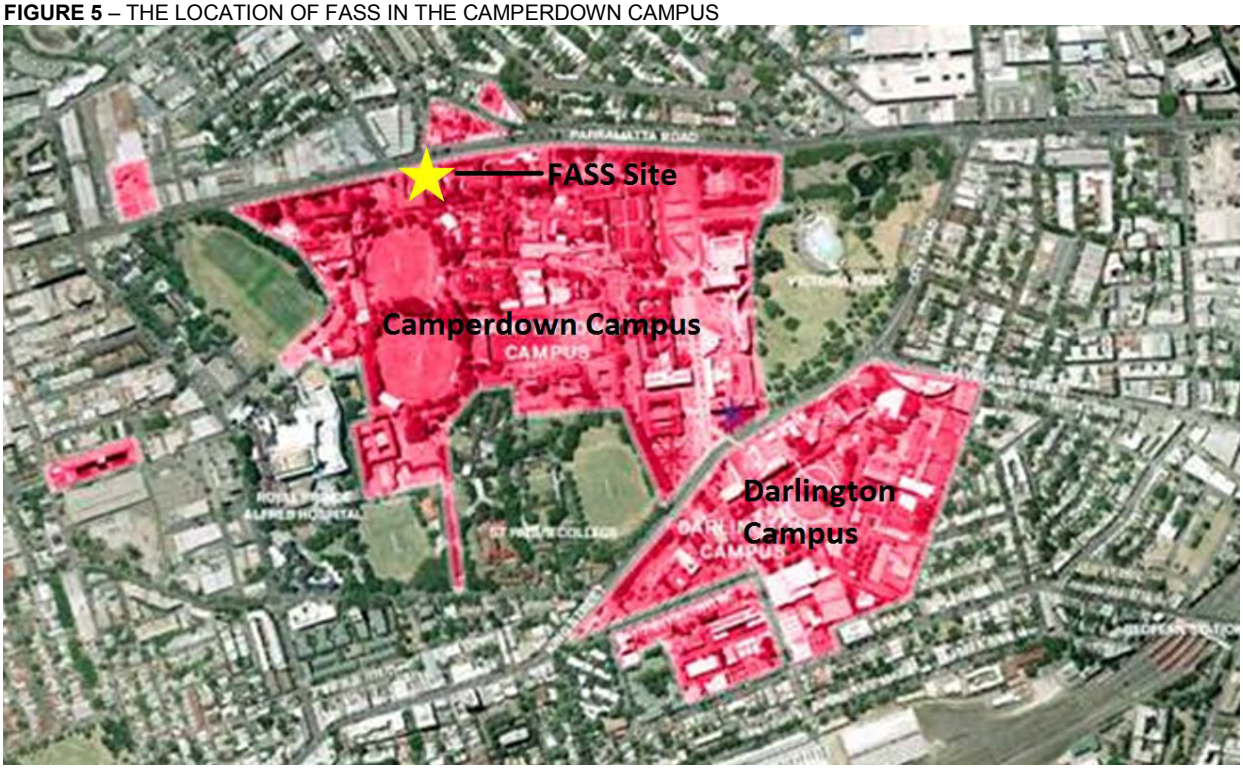
- Various bus services along City Road – within 1 km walking distance, providing access to the CBD, and services to Newtown, Canterbury, Kingsgrove, Kogarah, Dulwich Hill, Coogee, Tempe, Marrickville, and Sydenham.

2.2 LOCAL CONTEXT

The Camperdown-Darlington Campus shown in **Figure 4** is situated on the western edge of the Sydney CBD, and comprises two distinct 'sub-campuses', Camperdown and Darlington, divided by City Road. The Campus is approximately 49 hectares (ha) in area (Camperdown 33ha and Darlington 16ha).

The site is located in the north west portion of the Camperdown Campus, which is bounded by Parramatta Road to the north, Victoria Park to the east, City Road to the south and the University Colleges and RPA to the west.

FIGURE 5 – THE LOCATION OF FASS IN THE CAMPERDOWN CAMPUS

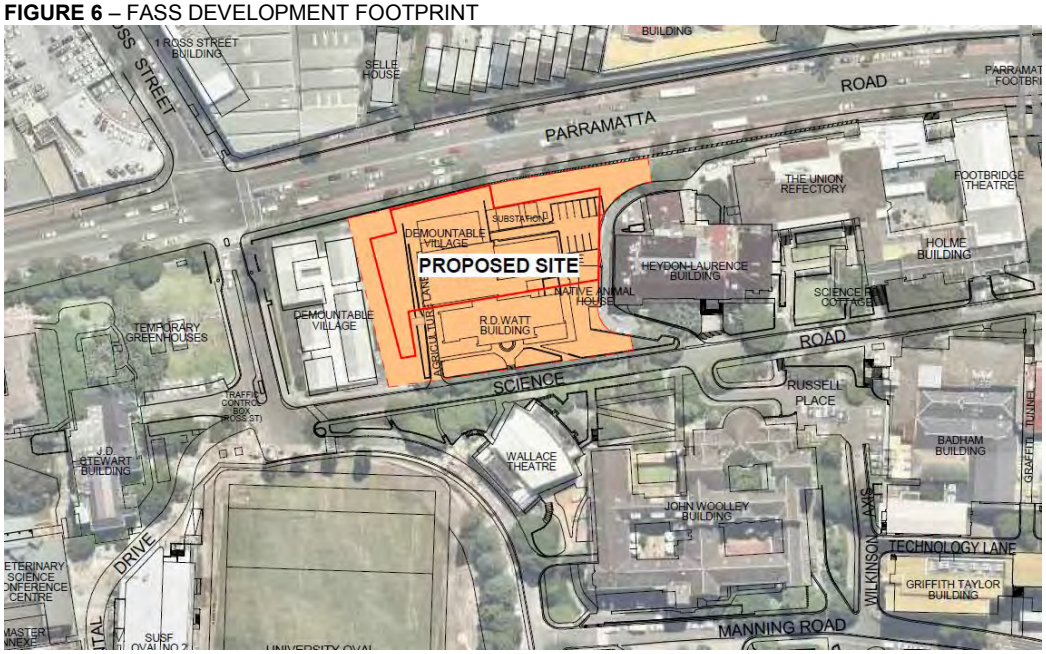


2.3 THE SITE

The land subject to the SSD 7081 application is within the University of Sydney Camperdown Campus and is legally described as Lot 1 in DP 1171804. The site is located on NSW Crown Land.

The site is bounded by Parramatta Road to the north, the R.D Watt Building and Science Road to the south, the Demountable Buildings and Ross Street to the west, and the Heydon-Laurence Building to the east.

FIGURE 6 – FASS DEVELOPMENT FOOTPRINT



The FASS site lies on land that was previously occupied by the McMillan Building - constructed c.1961, and demolished in 2012. The McMillan building, shown from Parramatta Road in **Figure 7** below was used by the Faculty of Agriculture and provided teaching and learning facilities. Furthermore, this building obscured any visual presentation of the existing heritage listed RD Watt building when viewed from Parramatta Road.

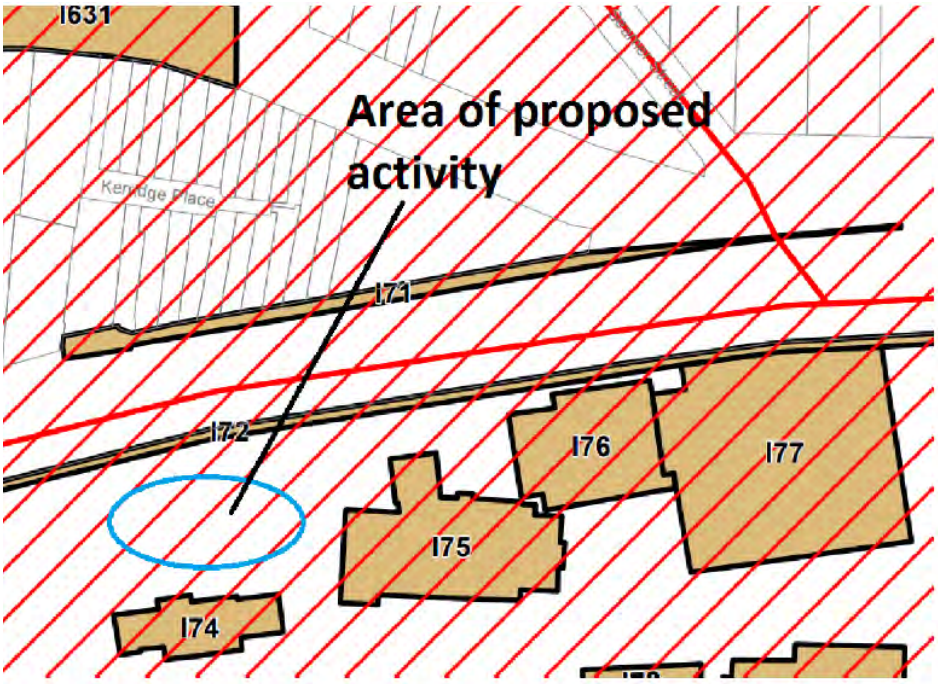
FIGURE 7 –FORMER MCMILLAN BUILDING AS VIEWED FROM PARRAMATTA ROAD

The site is currently occupied by various built form elements as shown in **Figure 8** below. These built form elements have been approved for removal/demolition through Reviews of Environmental Factors (REF) that have previously been undertaken (discussed at **Section 1.6**).

FIGURE 8 – EXISTING DEVELOPMENT ON THE SITE
(Source: Nearmap, 05/05/2016)

The subject site is located in the vicinity of three local heritage listed items – 'RD Watt Building' (Item 74), 'Heydon-Laurence Building' (Item 75), and the 'Site landscaping and the University of Sydney perimeter fencing and gates' (Item 72) at Parramatta Road, Camperdown as shown in **Figure 9** below.

FIGURE 9 – SURROUNDING HERITAGE ITEMS



Substation no. 54 & Switchroom as shown in **Figure 11** and **Figure 12** below are listed as an item of environmental heritage under the University of Sydney's Section 170 Heritage Register (ID 4726030). However Substation no. 54 & Switchroom are not listed as a local item under the Sydney Local Environmental Plan or as a State Heritage Item. As noted in **Section 1.6**, this substation and switchroom have been approved for removal under a separate pathway under Part 5 of the Act.

There are a number of existing trees within or adjacent to the site as identified in the Aboricultural Impact Assessment Report prepared by Tree IQ at **Appendix J**.

Vehicular access is currently available to the site off Science Road. Similarly pedestrian access is also provided from Science Road, with no direct public access available from Parramatta Road to the site.

FIGURE 10 – VIEW OF THE SITE LOOKING SOUTH EAST ACROSS PARRAMATTA ROAD

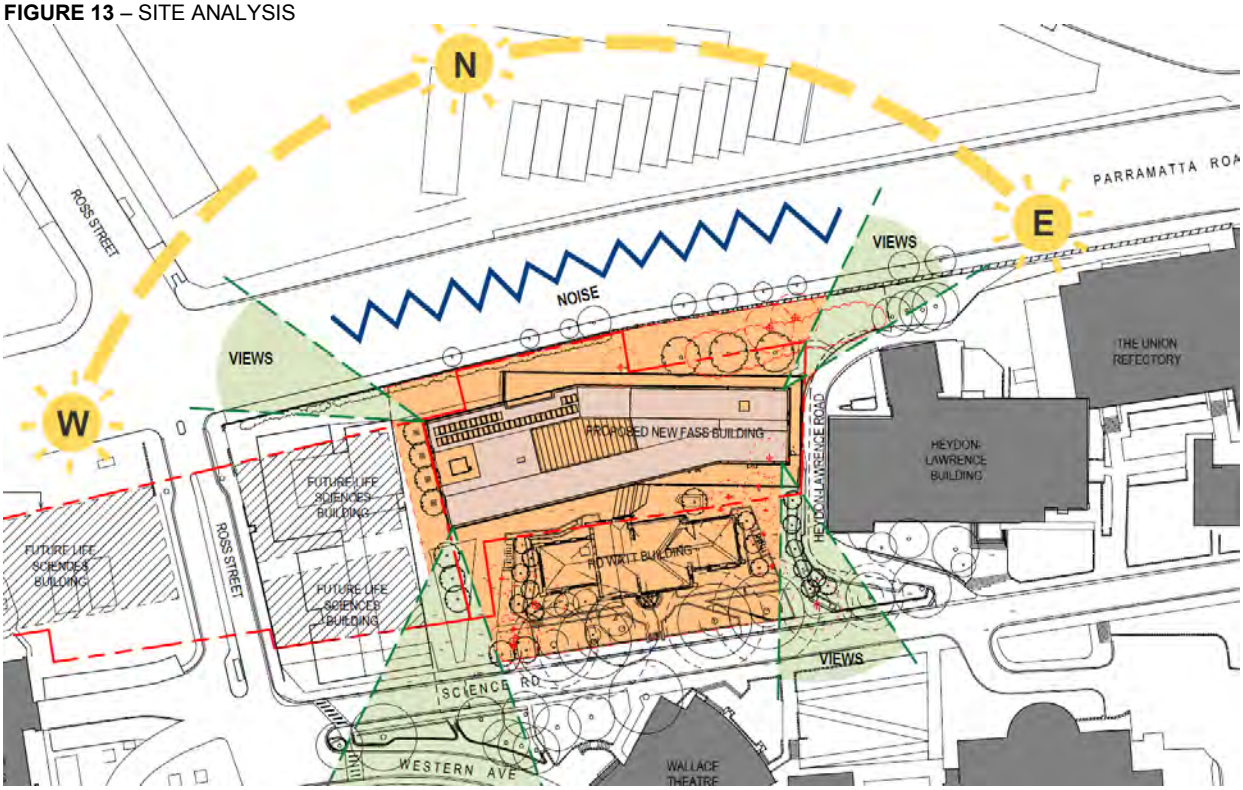
FIGURE 11 – SUBSTATION 54 & SWITCHROOM

FIGURE 12 – SUBSTATION 54 & SWITCHROOM VIEWED ACROSS PARRAMATTA ROAD

2.4 CONSTRAINTS AND OPPORTUNITIES

Extensive site analysis has been undertaken as part of the detailed site planning and architectural development of the proposal. A broad overview of the primary spatial relationships and key site features is show below in **Figure 13**.

FIGURE 13 – SITE ANALYSIS



CONSTRAINTS	OPPORTUNITIES
Surrounding heritage buildings – Heydon Laurence, R. D Watt Building, and J. D. Stewart	Prominent Parramatta Road Frontage – opportunity to activate the streetscape and provide visual connections with the Campus from this location
Existing Landscaping elements	Opportunity to establish links to the RD Watt building, and also visually connect to the future Life Sciences Building
Heritage Fence along Parramatta Road	Promote the orderly and economic use of land that is otherwise underutilised
Limited vehicle access to the site	Contribute to the consolidation of existing faculty facilities currently dispersed across the campus
Approved CIP envelope limits the potential built form	The proposed FASS development will complement the neighbouring cultural precinct (Precinct F) approved as part of SSD 6123

The proposed development has been designed to respond to these opportunities and constraints based on the detailed specialist advice as described in the following sections of the EIS.

3 Proposed Development

3.1 OVERVIEW OF THE PROPOSED DEVELOPMENT

This SSD 7081 application seeks approval for a new Faculty of Arts and Social Sciences Building referred to as 'FASS'. The new building will consolidate of the Faculty's School of Economics (SoE) and the School of Social and Political Sciences (SSPS), which are currently fragmented across the Camperdown campus, into a multi-functional and flexible building designed to World class standards.

The land subject to the SSD 7081 application is within the University of Sydney Camperdown Campus and is legally described as Lot 1 in DP 1171804. The site is located on NSW Crown Land.

The FASS building is to be located in the north western portion of the site adjacent to the Parramatta Road frontage of the Camperdown Campus.

The site is bounded by Parramatta Road to the north, the R.D Watt Building and Science Road to the south, the Demountable Buildings and Ross Street to the west, and the Heydon-Laurence Building to the east.

The FASS development will involve the construction of a new 6 level facility comprising:

- Computer laboratories and general teaching spaces;
- Lecture theatre at the western end of the building;
- Offices and meeting rooms;
- Tutorial rooms and consultation rooms;
- Various breakout spaces, informal lounges/seating, and facilities on each level;
- Trafficable roof top terrace space; and
- Plant rooms.

The following works are also proposed as part of the SSD application:

- Tree retention and removal within and surrounding the building footprint;
- Hard and soft landscaping works including tree planting;
- Civil works including excavation works to accommodate the building foundation and structures;
- Utilities and infrastructure connections to the building; and
- Alterations and additions to the R.D Watt Building to facilitate uses that are complementary to the FASS development.

The FASS building will be connected to the R.D Watt Building by an awning across a linear courtyard that will function as an entry space to the new building.

3.2 DEMOLITION

The proposed development will necessitate demolition works to the existing structures, hardstand and planting within the FASS building development site. These demolition works have been addressed and approved within previous REFs as discussed at **Section 1.6** of the EIS.

Additionally, minor external works will also be required to the RD Watt Building to incorporate the awning connection with the FASS building and provide a pedestrian entry within the northern façade of the RD Watt Building at ground level.

3.3 CIVIL WORKS

Excavation is proposed at the western end of the site by approximately 3.5 m and the eastern end of the site by approximately 8.5 metres to achieve the proposed Level 1 ground surface elevation of 25.65 m AHD.

Excavation/land forming of about 8.5 metres is proposed in the northern area of the FASS building site to bring the upper round level (Level 2) of the proposed development to the approximate level of Parramatta Road.

Excavation of approximately 4.5 metres in the southern area is proposed to bring the Level 1 lower ground surface of the proposed development to an elevation of 25. 65 m AHD and level with the proposed ground level northern entrance of the R. D Watt Building to the south.

3.4 BUILT FORM

3.4.1 APPROVED CIP ENVELOPE

This SSD 7081 application forms the detailed Stage 2 DA for the redevelopment of part of Precinct E as envisaged in the SSD 13_6123 approval.

The indicative building footprints and elevations that were approved as part of SSD 13_6123 are shown in **Figure 14** and **Figure 15** below.

FIGURE 14 – SSD 13_6123 CIP APPROVAL - INDICATIVE FOOTPRINTS FOR PRECINCT E

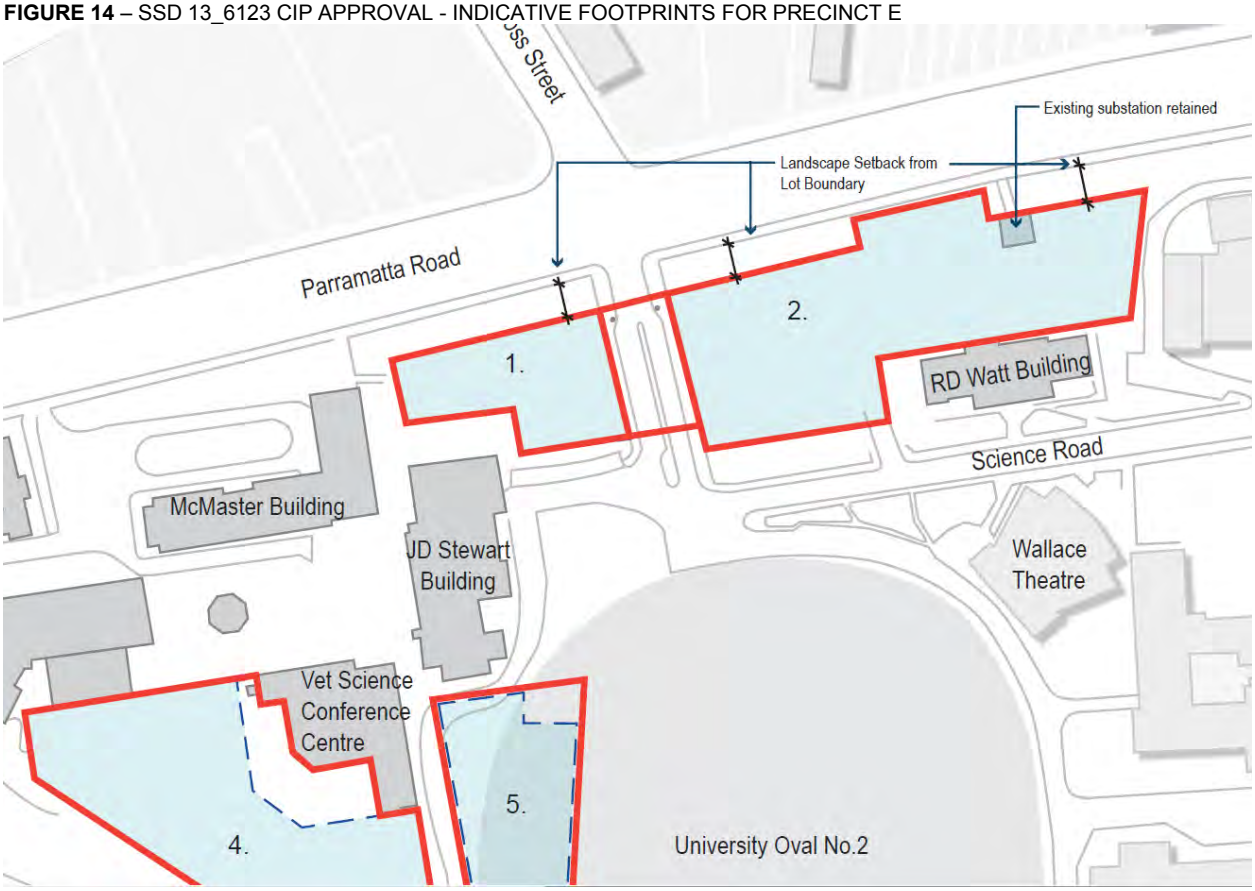
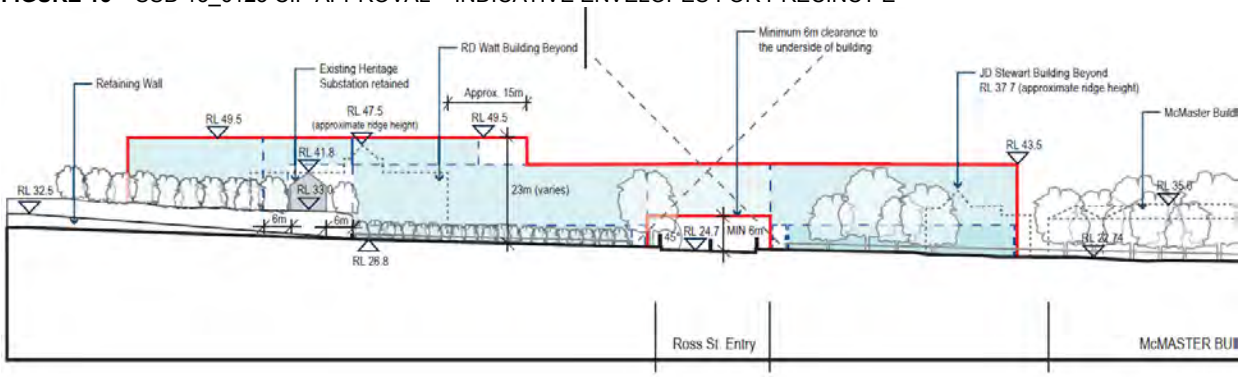
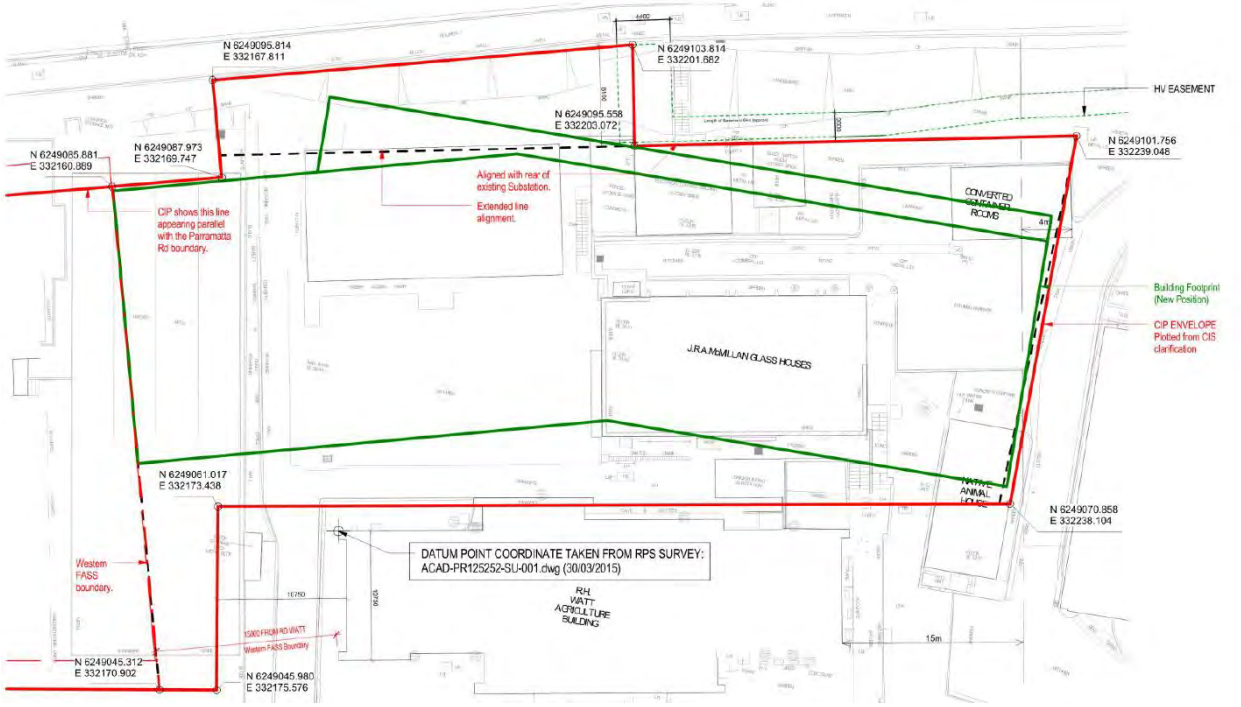


FIGURE 15 – SSD 13_6123 CIP APPROVAL – INDICATIVE ENVELOPES FOR PRECINCT E



The proposed FASS building has been designed to ensure that the footprint of the development will be contained within the approved SSD 13_6123 footprint as shown in Error! Not a valid bookmark self-reference. below.

FIGURE 16 – PROPOSED FASS BUILDING FOOTPRINT COMPARED TO THE CIP ENVELOPE APPROVAL



It is noted that the CIP envelope approval under SSD 6123 identifies Substation no. 54 for retention as shown in **Figure 16** above. However, this substation has been approved for removal under 'REF 3-2016 FASS Early Works Stage 2, Camperdown Campus' as discussed in **Section 1.6.2**.

Substation no. 54 & Switchroom are listed as an item of environmental heritage under the University of Sydney's Section 170 Heritage Register (ID 4726030), and is located within the University of Sydney Heritage Conservation Area (C5). However Substation no. 54 & Switchroom are not listed as a local item under the Sydney Local Environmental Plan or as a State Heritage Item.

The Heritage Impact Statement that was prepared as part of the 'REF 3-2016 - FASS Early Works Stage 2', Camperdown Campus' concluded that the removal of the buildings would not have a significant detrimental impact on the character of Science Road and the Sydney University Heritage Conservation Area for the reasons summarised below:

- *The subject site is significantly set back from the buildings and vegetation along the significant Science Road streetscape and is obscured from view. As such, the demolition of these buildings will not change the presentation of Science Road;*

- *Although the removal of these buildings will have some impact on the setting of the remaining buildings generally, the principle significant buildings within the heritage conservation area will be conserved as part of the proposed activity;*

- *The northern façade of the substation building has been previously modified and the Parramatta Road Streetscape context it is located in is highly developed. As such, the proposed demolition will constitute the next stage of development in this area;*

- *The Substation and Switchroom buildings to be demolished are not considered to be rare as there are a number of Arts and Crafts buildings and substation extant in Sydney generally;*

- *The demolition of these buildings will allow the site to be used as a learning facility in the future (i.e. the future FASS development to be addressed through a separate planning process), which is in line with the cultural significance of the university and conservation area*

- *The significance of the Heritage Conservation Area is partly vested in its indication of changing building technologies, materials and architectural styles. The removal of Substation no. 54 & Switchroom will allow for the future development of the FASS building, which would represent the early 21st century phase of development.*

Substation no. 54 was originally marked for retention within the CIP (SSD 6123) approval because there was no identified requirement to remove this building during the early design development for the FASS project under the reference scheme (refer to **Section 4.1.2** of the EIS). The Reference Scheme allowed the Substation to be retained because of its proposed footprint further south closer to the RD Watt Building than the final design. However, the reference scheme was not progressed due to its potential for negative impacts on the heritage fabric of the RD Watt Building.

The final design, which features a building footprint further north compared to the reference scheme, set back from the RD Watt Building but encroaching on the location of Substation no.54, was developed in part to protect the heritage significance of the RD Watt Building, which is a local heritage item under SLEP 2012. Furthermore, the size, orientation and location of the Substation make it unfeasible to retain and adaptively reuse as part of the FASS development. Retaining the Substation in this location would sterilise the development potential of this portion of land with no real use for, or relation to, the FASS development.

It is noted that SSD 6123 addressed precinct-based building envelopes and built form design controls, as well as open space, pedestrian and vehicular access arrangements, public domain works, transport linkages and indicative land uses for each precinct. Given the broad context and scale of the SSD 6123 approval, the proposed FASS development demonstrates a high level of compliance, and the removal of Substation no. 54 is not considered a significant departure from this approval.

It is also noted that the proposed FASS built form is fully contained within the approved horizontal extent of the CIP envelope under SSD 6123.

Notwithstanding the previous REF determination to remove the Substation, and the accompanying HIS (extract above) which concludes that removal of the buildings would not have a significant detrimental impact on the character of Science Road and the Sydney University Heritage Conservation Area, an Interpretation Strategy (**Appendix K**) has been prepared to interpret the substation through the following measures:

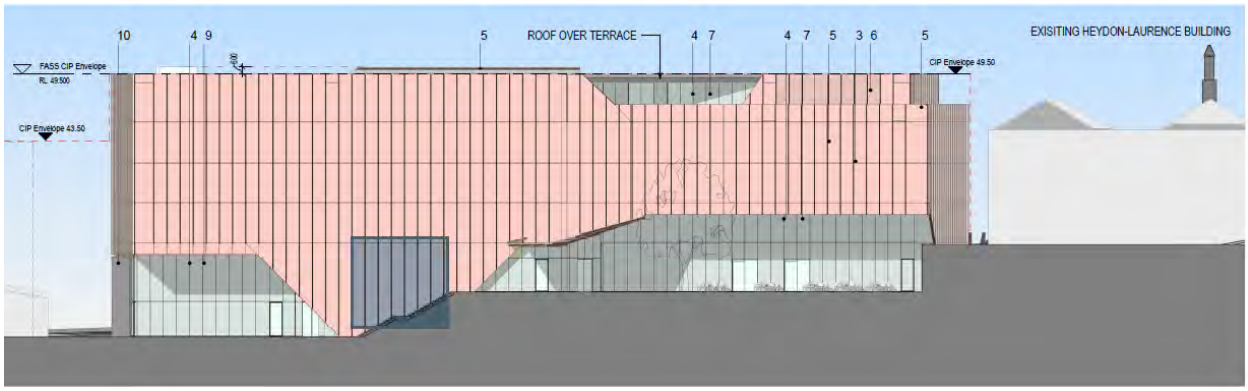
- Interpret the former substation through the partial demarcation of the former building footprint in the landscape at the location of the present substation building; and

- Location of a plaque/signage adjacent to the ground inlays as a freestanding element, interpreting the former use of the site and complementing the building form interpretation.

The Interpretation Strategy has been prepared to ensure that the proposed FASS development scheme will be generally consistent with the CIP envelope approval (SSD 6123) with respect to Substation no. 54. Refer to the **Section 8.10** of the EIS for further discussion.

It is also noted that a minor variation is sought to the building height approved by way of the SSDA 13_6123 CIP building envelope at RL 49.5 as shown in **Figure 17** and discussed in **Section 3.4.2** below.

FIGURE 17 – PROPOSED FASS BUILDING ELEVATIONS COMPARED TO THE CIP ENVELOPE APPROVAL
(South Elevation)



3.4.2 HEIGHT

As noted above, the majority of the building form sits entirely within the CIP Envelope approval (SSD 6123).

The proposed height of the development is 21.8m at the lower slope of the Parramatta Road frontage and 19.7m at southern frontage at the lower courtyard level. The overall maximum building height is 24.45m which is within the CIP Envelope approval of RL 49.50.

Two elements, however, project 600mm above the approved CIP envelope. These are the cooling tower towards the building's western façade and atrium roof which encloses the lift overrun as shown in **Figure 15** above. Refer to the **Section 8.1** of the EIS for further discussion.

3.4.3 SETBACKS

Also, as noted above, the proposed design sits entirely within the CIP Envelope approval (SSD 6123).

The proposed development has the following setback to the approved CIP envelope:

- **North** : 250mm to 8470mm setback with a further 2500mm roof/Level 6 setback (4660mm to 10970mm)
- **South**: 1230mm to 6810mm setback. The roof/level 6 terrace has a further 4500mm setback.
- **East:** 150mm to 480mm setback
- **West**: 100mm setback

The building is set back from the R. D Watt Building to enable a circulation space between these two buildings, and enable access from the south east of the site to the future Life Sciences building to the west.

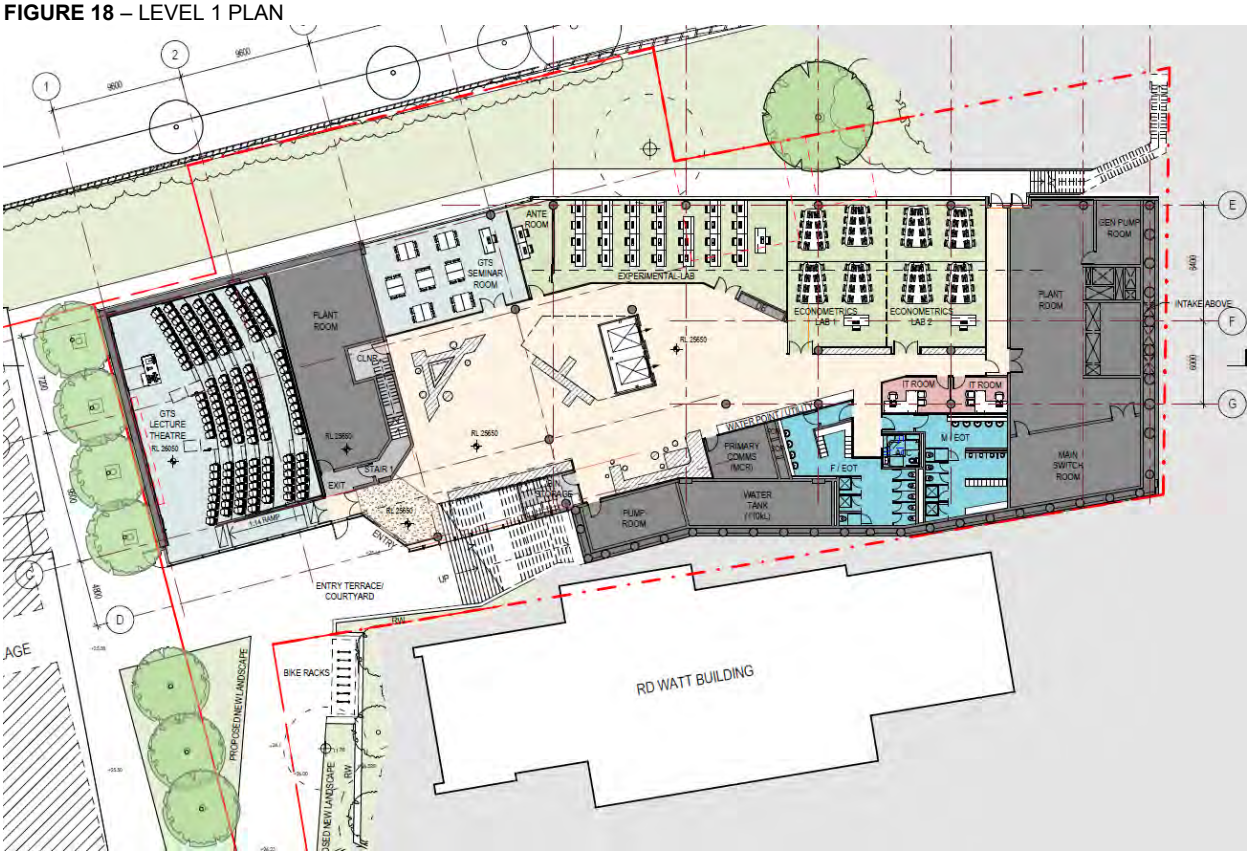
Along the Parramatta Road frontage, the base is recessed to allow the main mass of the building to appear to float above the established hedge and also to accommodate existing service easements. Level 6 is set back from level 5 to reduce the visual mass along Parramatta Road.

3.5 LEVEL 1

Access to the development is provided from the south west of the building at this level, providing direct access to the Lecture Theatre within the western portion of the building. Split internal/external stairs connect Level 1 and Level 2, with the external portion leading up from level 1 to the main entry at Level 2 above. Internal access between the different levels of the building is provided via two (2) passenger lifts.

The main uses on Level 1 include a Lecture Theatre (over Level 1 and Level 2), general teaching spaces, experimental and econometrics laboratories, male and female end of trip facilities, bin store, plant rooms and common circulation and informal seating spaces surrounding the central atrium.

FIGURE 18 – LEVEL 1 PLAN



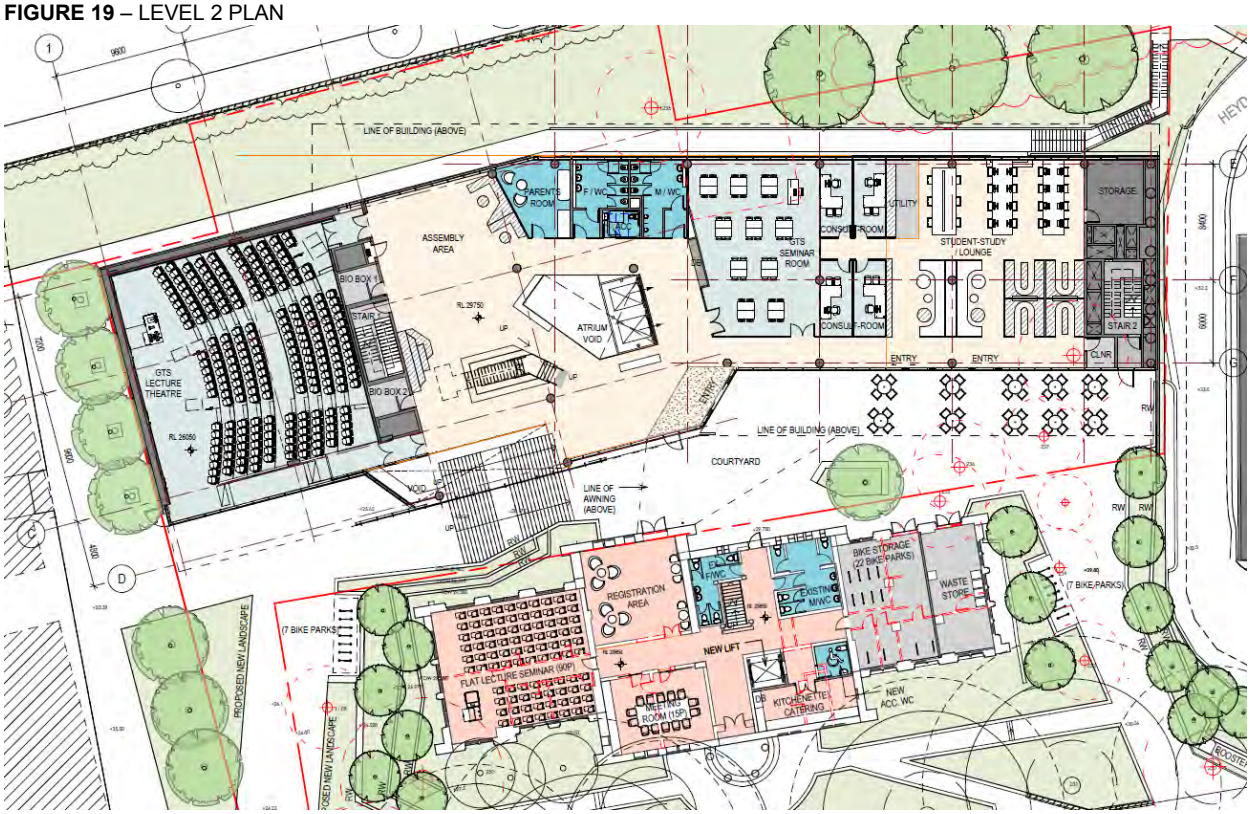
3.6 LEVEL 2

Level 2 of the FASS building comprises the upper level of the Lecture Theatre, general teaching spaces, consultation rooms, and a student lounge. Other uses include restroom facilities and storage room, along with common circulation and informal seating spaces surrounding the central atrium.

Alterations are also proposed to the internal ground level spaces within the R.D Watt Building to accommodate bike storage facilities within the 'basement' utility area incorporating new door openings to the northern ground floor facade. Internal modifications are also proposed to incorporate a lecture theatre, meeting rooms, provide a new accessible WC (retaining the existing male and female facilities). It is proposed to convert a former lecture room to a new reception and registration area.

The proposed connection between the FASS building and the R.D Watt Building will require minor external works to a small section of the northern façade (converting an extant window) of the R.D Watt Building at this level as shown in **Figure 19** below.

FIGURE 19 – LEVEL 2 PLAN



This level is also Level 1 of the RD Watt Building, accessed from the upper (FASS Level 2) courtyard. Internal modifications are proposed to the RD Watt building at this level including:

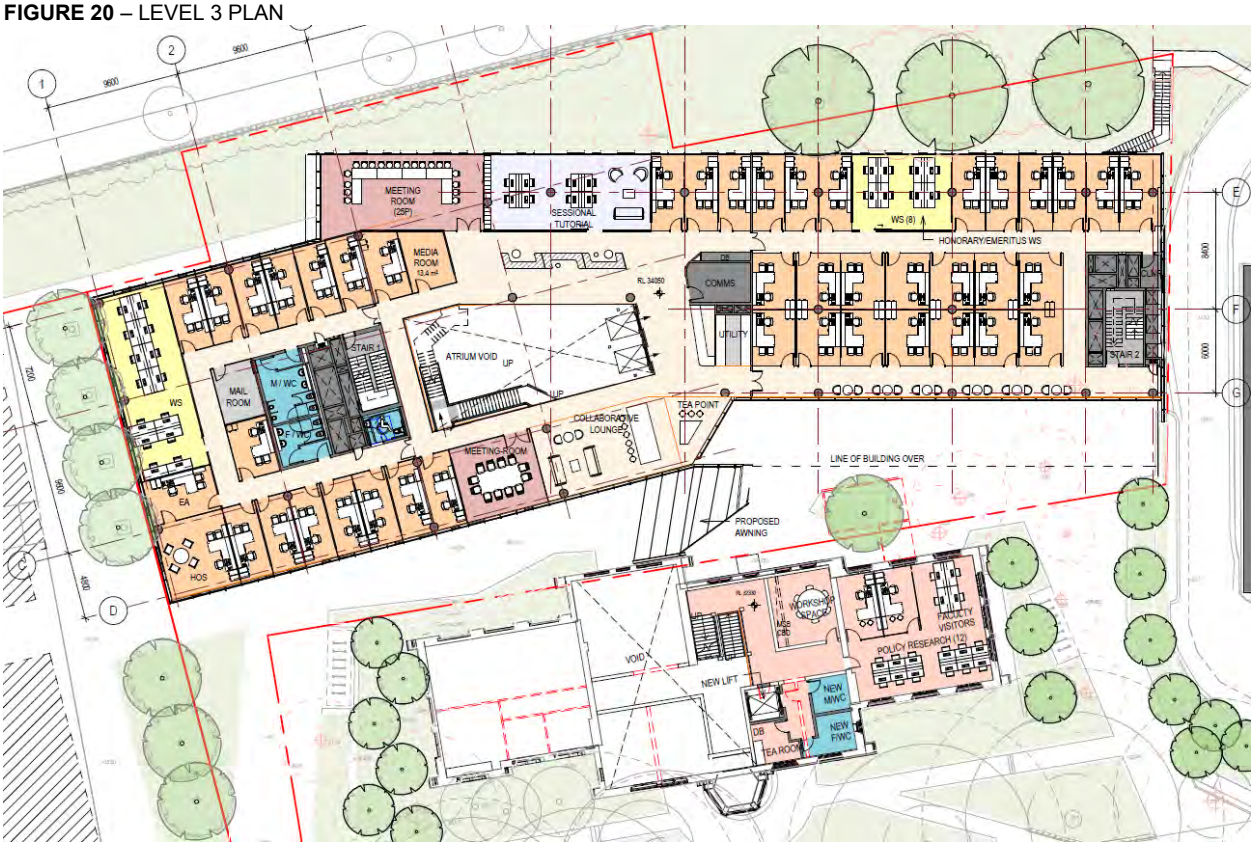
- New bike and waste store;
- New seminar lecture room;
- New lift installed to the building;
- New accessible WC;
- New fixtures and finishes to existing WCs; and
- Work for new Reception /Registration room that considers the existing heritage elements.

3.7 LEVEL 3

Level 3 of the FASS Building will feature 43 faculty office rooms for the School of Social & Political Sciences, with two (2) open plan office spaces with workstations, two (2) meeting rooms, one (1) media room, and male and female facilities (including an accessible restroom) along with informal breakout spaces surrounding the central atrium.

Internal modifications are proposed to Level 2 of the RD Watt Building. This level will be used as office spaces for policy research and faculty visitors, along with a workshop space. This level within the RD Watt Building will also incorporate a tea room and male and female facilities.

FIGURE 20 – LEVEL 3 PLAN

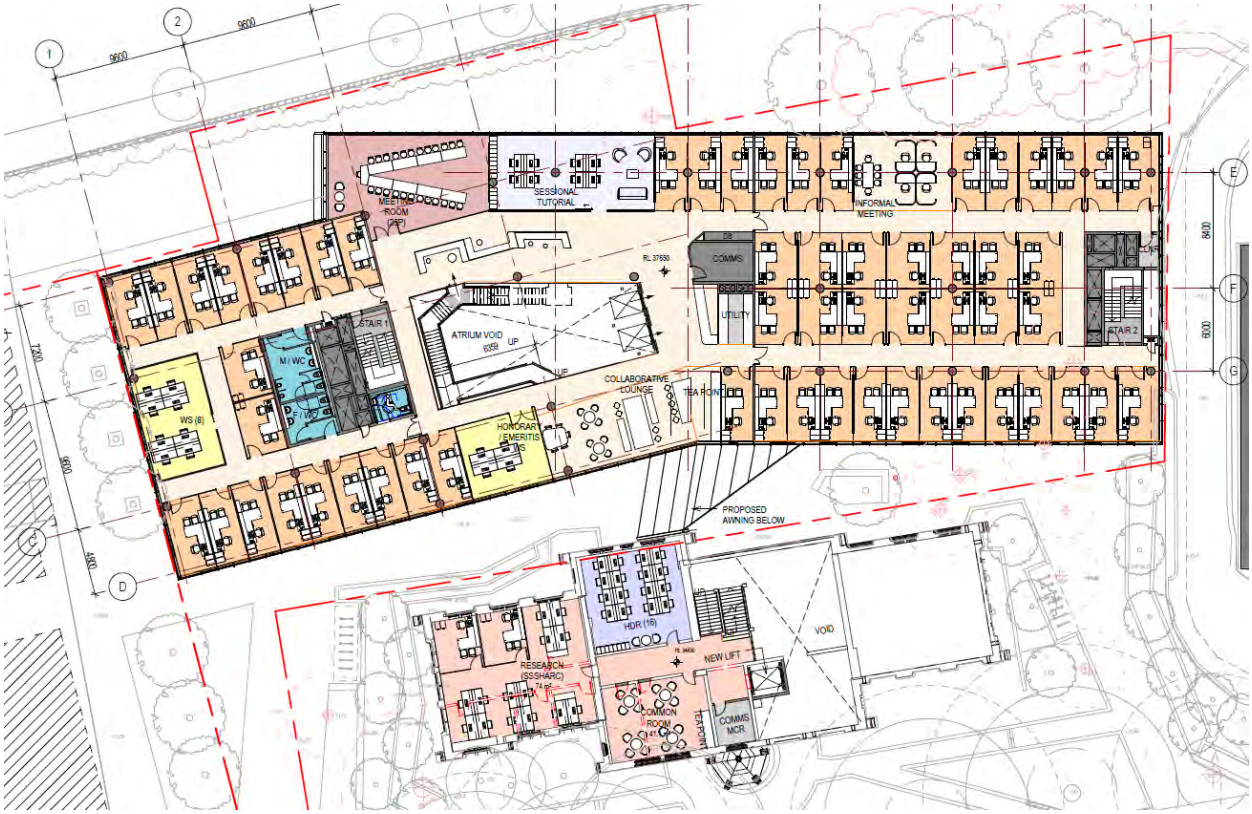


3.8 LEVEL 4

Similar to the level below, Level 4 will feature 58 faculty office rooms for the School of Social & Political Sciences, with two (2) open plan office spaces with workstations, one (1) meeting room, and male and female facilities (including an accessible restroom) along with informal breakout spaces surrounding the central atrium.

Internal modifications are proposed to Level 3 of the RD Watt Building. This level will feature a mix of office rooms and open plan research rooms with workstations, a common room, and a tea point.

FIGURE 21 – LEVEL 4 PLAN



3.9 LEVEL 5

Level 5 will feature 59 faculty office rooms for the School of Economics, with two (2) open plan office spaces with workstations, one (1) meeting room, one (1) sessional tutorial room, one (1) mail room, and male and female facilities (including an accessible restroom) along with informal breakout spaces surrounding the central atrium.

Level 3 of the RD Watt Building will feature open plan offices with workstations for higher degree by research students, with male and female facilities (including an accessible restroom, and a tea room.

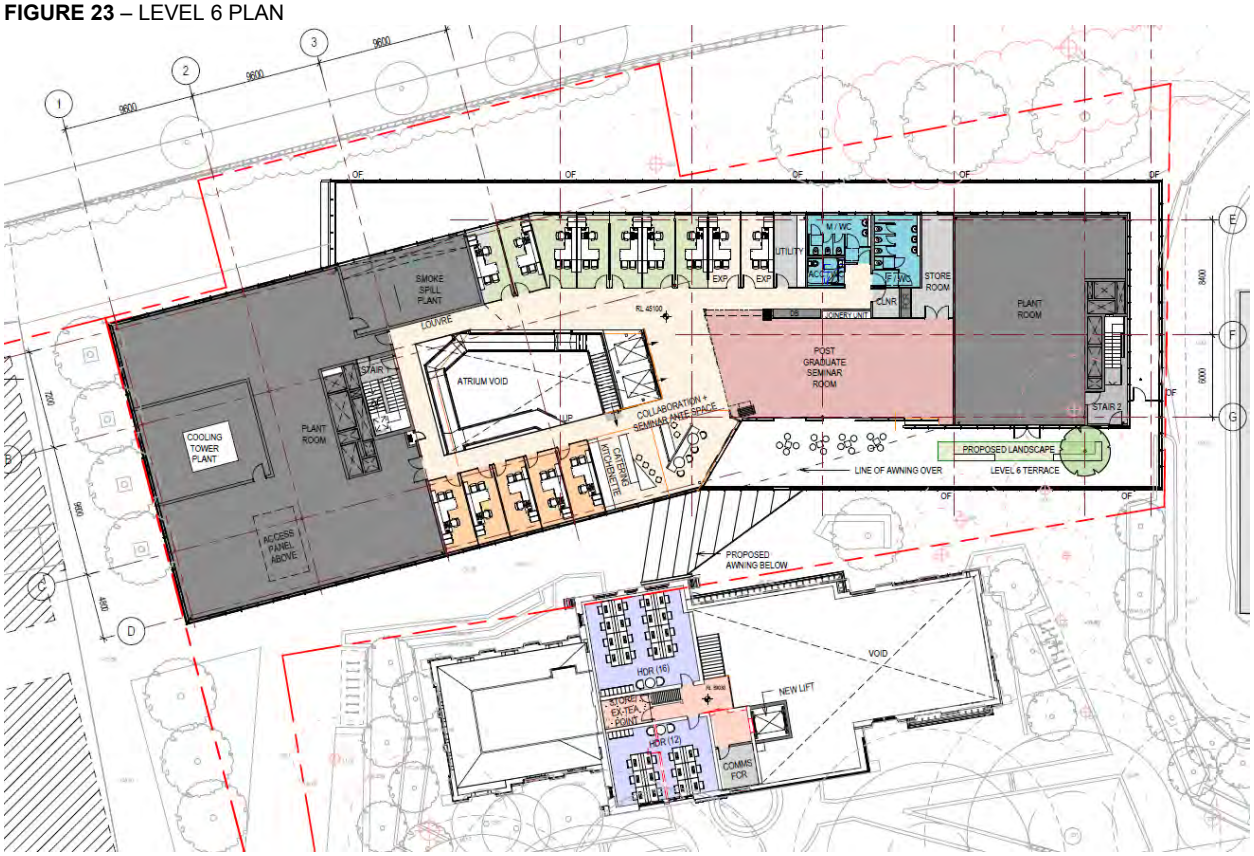
FIGURE 22 – LEVEL 5 PLAN

3.10 LEVEL 6

Level 6 of the FASS building features a partial level, with a substantial portion occupied by plant rooms. This level comprises 14 office rooms, male and female facilities (including an accessible restroom), a catering kitchenette, and informal breakout spaces surrounding the central atrium. This level also features a large seminar room that opens into a roof top landscaped area with outdoor seating.

Level 4 of the RD Watt Building will feature open plan office spaces for higher degree by research students, a small common room, and an existing tea point.

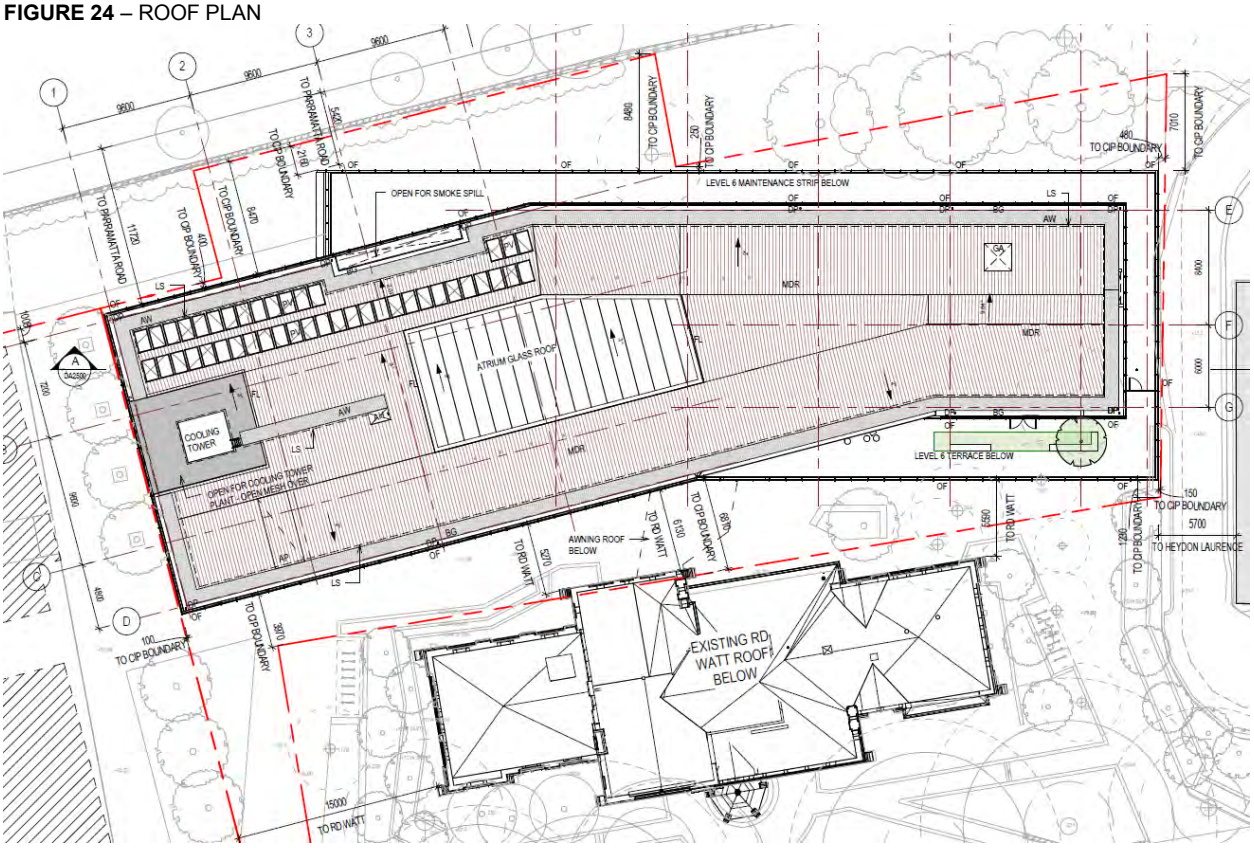
FIGURE 23 – LEVEL 6 PLAN



3.11 ROOF

The Roof Level of the FASS development will feature a glass roof over the central atrium, and roof sheeting over the remaining portions. The proposed cooling tower will be located in the western portion of the roof, and will be accessible for maintenance purposes.

FIGURE 24 – ROOF PLAN



3.11.1 NUMERICAL OVERVIEW

BUILDING STATISTICS	PRECINCT E – LIFE SCIENCES	FASS
Gross Floor Area	+ 37,250 m^2 of additional GFA	+ 7,118 m^2 of GFA
Height (metres)	RL 50.35 – 14 m to 28 m	RL 49.50 – 23.85m to top of roof RL 50.10 – 24.45m to top of atrium roof and cooling tower
Front setback	Building footprint to sit within CIP envelope	The proposed development sits within the CIP envelope with the following setbacks provided to that envelope: ▪ **North :** 250mm to 8470mm setback with a further 2500mm roof/Level 6 setback (4660mm to 10970mm) ▪ **South:** 1230mm to 6810mm setback. The roof/level 6 terrace has a further 4500mm setback. ▪ **East:** 150mm t0 480mm setback ▪ **West:** 100mm setback

3.12 RD WATT BUILDING

Other than the works described within **Sections 3.7** to **3.11**, the following works are also proposed to be undertaken in relation to the RD Watt Building:

- Amendments for BCA compliance including:
  - Relocating the Electrical Distribution Boards (EDB) in the main stair hall;
  - Amendments to the stair balustrade for BCA compliance;
  - Provision of a new dropped ceiling in the central east-west corridor to provide for services above;
  - Potential upgrade of existing sprinkler system (to be determined by the PCA);
- Amendments for DDA including:
  - Construction of a lift for equitable access (including removal of some sections of timber flooring and provision of a concrete floor and lift structure);
  - Inclusion of accessible bathrooms; and
- Removal of redundant services (e.g. drenchers) to the rear northern façade and rationalisation of downpipes.

As noted in the Heritage Impact Statement at **Appendix L**, the proposal retains the principal southern façade of the RD Watt building fronting Science Road along with the eastern and western facades, with proposed façade modifications being limited to the rear northern façade

As described earlier, an extant window along the rear northern façade is proposed to be converted to a new door, providing a rear main entry to the building and proposed reception area. The proposed conversion retains the extant width of the opening, stone quoins and reveals and the upper section of stone mullions, cross bar and glazed casement windows, although requires the removal of the stone sill and lower windows (refer to Figure 5 picture 19 in the HIS report).

Provision of a covered walkway between the RD Watt and FASS buildings, will require works to the northern rear façade of the RD Watt Building to attach the proposed awning.

The most significant internal intervention to the RD Watt Building is the proposed lift, which will require the partial demolition of original structure. The HIS notes that these works will not compromise the significant character or fabric of the building. Refer to a detailed discussion of the heritage impacts of the proposed development in **Section 8.10** of the EIS.

3.13 TREES AND LANDSCAPING

3.13.1 TREE REMOVAL AND TREE PROTECTION MEASURES

To enable the proposed development, several trees of various sizes within or adjacent to the FASS development site are required to be removed.

The following trees have been approved for removal through an earlier REF (FASS Enabling Works) as described in **Section 1.6**:

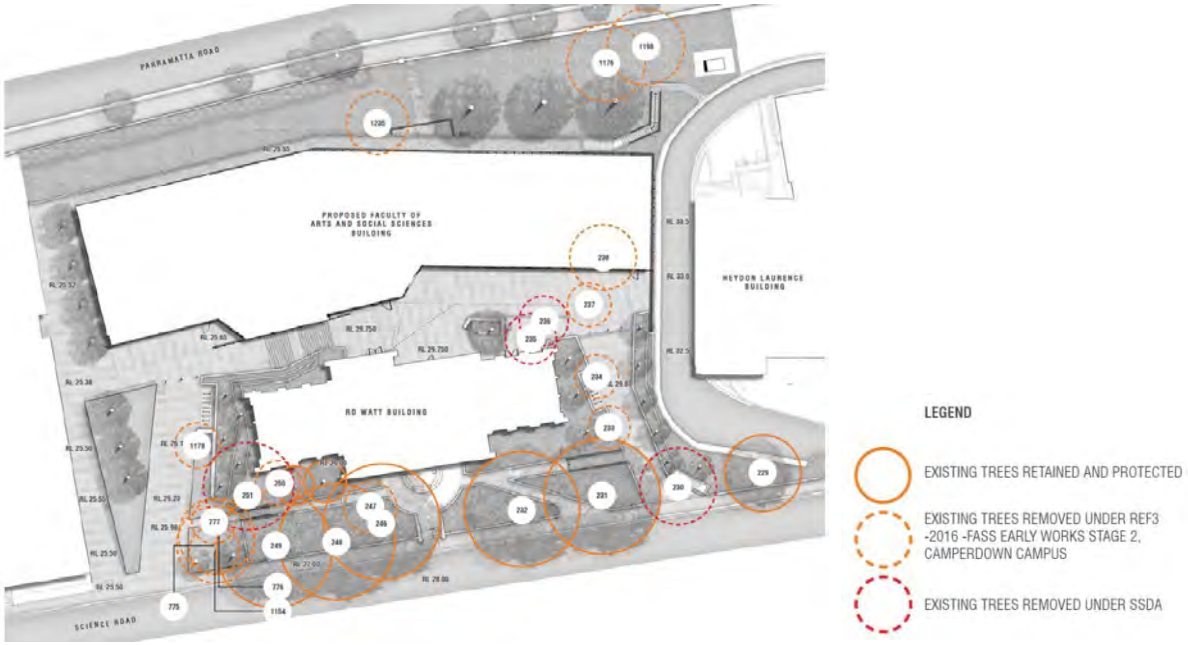
- Three (3) *Morus nigra* (Trees 233, 234, and 238);
- One (1) *Lophostemon confertus* (Tree 237);
- One (1) *Acmena smithii* (Tree 247);
- One (1) *Acer palmatum* (Tree 250);

- One (1) *Corymbia eximia* (Tree 775);
- One (1) *Banksia integrifolia* (Tree 776);
- One (1) *Grevillea sp*. (Tree 777);
- One (1) *Corymbia eximia* (Tree 1154);
- Two (2) *Ficus rubiginosa* (Trees 1176 and 1177);
- One (1) *Jacaranda mimosifolia* (Tree 1178); and
- The eastern end of the row of 37 *Syzygium paniculatum* (Group 240).

The following additional trees will need to be removed to enable the proposed works:

- Brush Box (*Lophostemon confertus*) to Science Road (Tree 230);
- Frangipani (*Plumeria acutifolia)* (Tree 235) and Jacaranda plantings (*Jacaranda mimosifolia)* (Tree 236) to the rear (northeast corner) of the RD Watt Building;
- Bush Cherry (*Syzygium paniculatum*) - Group 240 (western end only) growing as a closely planted double row providing screening between the University and Parramatta Road; and Tree 1235 also along Parramatta Road.
- Oriental Liquidambar (*Liquidambar formosa*) to the west of the RD Watt Building (Tree 251).

FIGURE 25 – TREES IDENTIFIED TO BE REMOVED



Tree 230 has been classified as '*Priority for Retention'* in the Arborist Report and has landscape heritage significance according to the Grounds Conservation Management Plan (refer to the HIS at **Appendix L**). As noted in the HIS, the removal of this tree can be mitigated through the provision of new site landscaping to retain the overall character of Science Road.

Trees 235, 236, 1235, 251 and Group 240 (western end) have been classified as '*Consider for Retention*' according to the Arborist Report. The HIS states that whilst the RD Watt Conservation Management Plan (CMP) identifies Tree 235 and Tree 236 as potentially original or early 20th century plantings, the grading of significance is not clear but is likely to be moderate. The HIS concludes that, whilst their removal will have some impact, it will also assist to the mitigate issues of damp to the northern façade of the RD Watt Building, where the land is built up against the building.

Notwithstanding the above classifications, the proposed tree removal is required in conjunction with the provision of access to the proposed FASS building. The proposed removal of these trees is acknowledged by the arborist report and replacement planting recommended.

3.13.2 LANDSCAPING WORKS

The proposed development will feature substantial landscaping surrounding the new development and within the courtyard spaces between the FASS Building and the existing RD Watt Building. A Public Domain and Landscape Concept Plan has been developed by Oculus and is provided at **Appendix K**.

The key design principles of the public domain and landscape design for the FASS building are:

- improve pedestrian connectivity to the Ross St entry, Science Road and the rest of the campus;
- create a series of flexible public spaces adjacent to the building, notably the upper courtyard between the FASS and RD Watts Building, and the lower forecourt to the west;
- respond to the overall landscape setting and master plan for the campus;
- respect the existing heritage RD Watt building; and
- integrate Aboriginal & Torres Strait Islander Culture and Story into the design as part of The University of Sydney's Wingara Mura strategy.

The proposed landscaping will feature a mix of lawns, mass planting, tree planting, hard paving and seating areas within the courtyards. Consistent with the recommendations of the Arborist Report, new tree planting is proposed along the building's Parramatta Road frontage, along the western alignment of the building's façade and within the central courtyard between FASS and RD Watt.

The roof terrace will provide space for formal and informal functions, and will feature loose furniture, low planting with seating incorporated into the landscape design, and a feature tree.

Refer to the Public Domain and Landscape Concept Plan at **Appendix K** for further details.

3.14 MATERIALS AND FINISHES

The proposed building skin is predominantly glass in the form of a curtain wall with bronze anodised framing, and a strong vertical emphasis. The curtain wall sits on top of a stone plinth that lowers and rises across the site to accommodate changes in site level.

The proposed glazed transparent facades will enable people to visually connect with internal activities within the building from the external public domain and university campus spaces. The Level 1 teaching rooms overlooking Parramatta Road are provided with slot windows to enable focussed and private work, whereas the main lecture theatre has a glass wall on the south and overlooks the new landscaped courtyard, and beyond to the oval to the south east. The glass wall can be blacked out with automated blinds or opened up to provide a stunning venue for public lectures.

A detailed description of the design concept, materials and colours are included in the Architectural Design Report at **Appendix E**.

3.15 SIGNAGE

Signage is not proposed as part of this SSD application.

Future signage is not envisaged to the north, west and east façade however signage may be integrated into the south façade. If so, it will be the subject of a future signage application.

3.16 STORMWATER MANAGEMENT AND DRAINGAGE

Concept stormwater drainage plans have been prepared by SCP and are provided at **Appendix AA**. The concept stormwater design has been provided in accordance with the requirements of the City of Sydney, Sydney Water and AS 3500.3 Pluming and Drainage. The site stormwater drainage will connect to a pit in Science Road.

Subsoil drainage will be provided behind the retaining walls constructed on site in accordance with the structural engineer's requirements. This sub soil water will discharge into the stormwater drainage system.

On site detention is not required for this site as the Flood Mitigation Work Program incorporates OSD off site at other locations within the University campus. This approach has been confirmed as acceptable by Sydney Water.

No water quality measures are proposed for the FASS development. The Warren Smith and Partners 'Camperdown Campus Stormwater Concept Design Report' proposes GPTs as part of the CIP works downstream of the FASS building site. This will achieve compliance with the City of Sydney WSUD treatment for stormwater runoff from the campus including runoff from the FASS building site.

3.17 TRAFFIC, ACCESS AND PARKING

The proposal does not alter the existing vehicle access arrangements to the campus. As no car parking or loading areas are proposed, the proposal does not provide for a vehicle access to or from the FASS site.

The FASS building will accommodate 36 bicycle parking spaces yet will result in the loss of13 car parking spaces currently located in the location of the proposed building works.

All required loading and waste collection will occur along Science Road to the south. This arrangement is consistent with numerous other buildings within the campus.

3.17.1 PEDESTRIAN ACCESS

Pedestrian access into FASS will primarily be from the south east pathway off Science Road, across the new courtyard into the Level 2 main entry. Secondary access is from the south west lower forecourt.

3.18 ACTIVE TRANSPORT

The University has adopted a Sustainable Transport and Mobility Plan (STAMP) (refer to **Appendix V**). This seeks to increase the uptake of active and public transport options by the University's students and staff of the Camperdown and Darlington campuses. The STAMP complements the CIP which aims to improve Campus liveability, accessibility and connectivity by providing students and staff with economic choices and incentives to adopt more sustainable travel modes. It is also consistent with the University's 2015 Environmental Sustainability Policy's objective to promote sustainable transport.

The proposed development will provide end of trip facilities as well as 36 bike racks (22 internal/14 external) to encourage active transport to and from the FASS building.

3.19 LIGHTING

Public domain lighting will be designed to comply with the relevant Australian Standards and the University of Sydney Lighting Master Plan. Overall lighting will be provided to external areas for public safety along with select feature lighting to elements such as feature trees.

3.20 UTILITIES AND INFRASTRUCTURE

A review of existing and required services has been undertaken by NDY and detailed in the Infrastructure Management Plan contained at **Appendix R**.

Existing Services

All existing services located adjacent to, or within the proposed location of FASS Building, that may be affected by the development are to be:

- Capped, sealed and removed, if redundant; or
- Isolated and re-routed if being retained.

All works associated with capping, diverting or connecting to Sydney University infrastructure shall be co-ordinated with Campus Infrastructure Services (CIS) prior to any works being carried out.

Electrical Infrastructure

The maximum demand for the new building is anticipated to be approximately 720kVA with an allowance of 20% spare capacity. The supply to the building will be derived from the new 1,000kVA kiosk (KL type) substation which will be located on the North East corner of FASS building subject to further Ausgrid approval.

Hydraulic Infrastructure

Sewer, Gas and Water branches have been provided within infrastructure upgrade works carried out under a separate scope of works (as advised by Sydney University) to serve the proposed FASS development.

Water

The calculated probably Simultaneous Flow (PSF) of the Domestic water to serve the proposed FASS development is to be determined, however based on preliminary calculations will not exceed ***3.5 L/second***.

The Domestic water shall be supplied via a separate branch from the existing Sydney University infrastructure located within Science road.

The calculated Fire Service demand for the proposed FASS development is ***26 L/second***. A maximum calculated Fire Service Flow of ***40 L/second*** is available from the Sydney University infrastructure.

The Fire Service demand (*26 L/second*) will be supplied by a dedicated 150mm connection to the existing Sydney University infrastructure within Science road, with no Fire water storage tanks provided.

Sewer Drainage

The calculated Fixture Loading Units of the Sewer Drainage serving the proposed FASS development is to be determined, however based on preliminary calculations will not exceed ***400 Loading Units***.

The proposed FASS development will be served via 150mm Sewer Drainage connection to the existing Sydney University Sewer infrastructure located within Science Road.

Roof Water

The calculated 1:100 ARI discharge from the roof is 133 L/Second. The Roof water system is designed to convey two separate discharges, as follows:

- Water from non-trafficable areas to the Rainwater Harvesting plant; and
- Water from trafficable areas to the site stormwater infrastructure.

The water captured from non-trafficable areas, will be treated and reticulated as Non Potable Cold Water for Sanitary Flushing and Landscape Irrigation.

The Overflow provision from the Rainwater Harvesting tank is being discharged to the site civil stormwater system.

Gas

The proposed FASS development will be served via 100kpa, 100mm Sydney University Gas infrastructure located within Science Road.

Communications

The Camperdown Campus underground communications ducting network is to be extended and adapted to provide ducting connections to the existing RD Watt building and the new FASS building.

The following is a summary of the proposed communications infrastructure:

- A new pit and underground pipe system shall be installed for two lead-in points to FASS, and two-lead-points to RD Watt. The new pit and underground pipe system shall be installed to connect to the existing pit and pipe system on Science Road. These are for optical fibre connections and for the copper lead-ins.

- Each diverse lead-in paths to the FASS building shall contain four (4) x P100 conduits for cabling reticulation. One lead-in pathway shall come from South-West of the FASS building; and the other lead-in pathway shall come from South-East of the FASS building.

- Each diverse lead-in paths to the RD Watt building shall contain two (2) x P100 conduits for cabling reticulation. One lead-in pathway shall come from West of the RD Watt building; and the other lead-in pathway shall come from East of the RD Watt building.

- The manholes are to be Telstra-compliant and thus are not trafficable. They must be positioned where maintenance vehicles will not be able to drive on them. Bollards to protect the manholes where necessary.

- All new manholes shall be CL 426 4 lid type. All manhole lids are to be standard cast iron type, marked "Comms" and Telstra styles. Note that all manhole features, such as ladders, side bells, etc. must be allowed for.

3.21 OPERATION

The main teaching and learning spaces are located on Level 1, and comprise seminar rooms and a lecture theatre. Offices and workstations are located on levels 3-6 configured east and west of a central atrium to provide more private and quiet zones on the floor for academics and staff.

The primary collaboration spaces are located around the atrium facilitating informal and structured interactions across the faculty.

Level 6 features a large meeting room adjoining the landscaped roof terrace. This space is located away from the Parramatta Road frontage to protect it from the noise of this busy transport corridor, and to provide views across the campus towards the main Quadrangle.

The below is a breakdown of the floor area within the FASS development for different uses:

- Teaching & Learning – 800m^2
- Tutorial Accommodation – 330m^2
- Faculty Hub – 1,073m^2

- Staff Workspace – 4,500m^2
- Amenities (end of trip facilities, storage, etc.) – 415m^2

Total FASS building GFA: 7118m2

The below is a breakdown of the floor area within the RD Watt building for different uses:

- Teaching & Learning – 130m2
- Meeting rooms/Workshop space – 132m2
- Offices/Workstations – 565m2
- Amenities – 182m2

Total RD Watt GFA – 1009m2

3.22 HOURS OF OPERATION

The FASS and RD Watt building will be operate during the hours of 8am – 9pm with occasional evening events to occur past this time.

Both buildings will be accessible via security access measures to approved faculty and students out of the main opening hours to enable use of faculty services for study over these periods.

3.23 STAFFING

The FASS and RD Watt building will accommodate approximately 258 staff members.

It is noted that no additional staffing numbers will be accommodated within FASS or RD Watt than those already accommodated by the School of Economics (SoE) and the School of Social and Political Sciences (SSPS) elsewhere on campus.

4 Justification and Assessment of Alternatives

The principal purpose of the development is to consolidate existing faculty offices, and research and teaching spaces for the School of School of Social & Political Sciences and the School of Economics into a central faculty building The consolidation will allow for improved operating efficiencies across the University and reduce fragmentation of administration services, while delivering improved engagement and event spaces to support the multi-faceted role of the University of Sydney. The FASS building will also be in close proximity to the neighbouring Cultural Precinct (Precinct F) approved as part of the CIP, which is envisaged to become a principal, visitor destination precinct accommodating cultural, museum and heritage components.

The proposed FASS building and works to RD Watt Building will strengthen the University's role in contributing to the growth of the Sydney Education and Health Precinct within the Central Sydney Subregion, the neighbouring Cultural Precinct within the University's Camperdown campus and more broadly the NSW economy.

4.1 ALTERNATIVES CONSIDERED AND CONSEQUENCES OF NOT CARRYING OUT THE DEVELOPMENT

The University of Sydney has identified three options in respect to the identified need for the development. These options include:

- 'Business as Usual' option,
- Reference Scheme, and
- Development of the FASS building.

The various design options were explored as part of the University's Design Excellence process detailed in **Section 8.2** and at **Appendix F.**

4.1.1 OPTION 1 – 'BUSINESS AND USUAL'

Option 1 involves retaining the current use of the site for storage and ancillary uses, with the teaching, administration and research facilities for the Faculty of Arts and Social Sciences dispersed across the University's campuses.

This approach will not facilitate an improvement of the operating capacity of the University. It will also not help achieve the envisaged redevelopment of the Life Sciences Precinct (Precinct E) as envisaged by the CIP envelope approved under SSD 6123.

4.1.2 OPTION 2 – REFERENCE SCHEME

Significant design development has been undertaken as part of the planning process. This has involved the investigation of an alternative design option which was explored.

The design alternative was not progressed due to the following factors:

- Issues and concerns over the structural resolution and negative impact of the atrium roof connection upon the heritage fabric of the RD Watt building, resulting in the removal of the roof and therefore the atrium.
- As a result of the removal of the atrium, and the redistribution of the informal ground floor space, the original design concept was significantly compromised.
- The redistribution of space also resulted in the building footprint extending beyond the maximum approved CIP envelope.

- The proposed design response did not adequately architecturally address the significant and challenging Parramatta Road frontage;

- Delays in program and design progression as a result of the architect's failure to address and resolve these above issues.

This previous design option has been replaced by a refined and considered design response as depicted in the architectural plans at **Appendix D** that responds to the heritage, landscape and urban form constraints of the site.

4.1.3 OPTION 3 – THE PROPOSED SCHEME

Option 3 involved undertaking the proposed development as outlined in this EIS and as shown in the architectural plans at **Appendix D.**

This option is the result of extensive site planning and design review which was undertaken to ensure site constraints are overcome and an appropriate urban form and design is achieved. The proposed development is the preferred option because it has balanced the constraints of:

- Successfully containing a large majority of the new building within the SSD approved building envelope and footprint for this site;

- The surrounding heritage items,

- Existing landscape elements,

- Restricted urban context including a prominent frontage to Parramatta Road,

- Existing vistas and views, views across the campus and west along Parramatta Road, and

- Suitable compatibility with the future urban context and form as reflected in the adopted CIP.

In summary, the SSDA as proposed under this application offers the following key benefits to the existing and future community:

- Relocate and consolidate existing teaching facilities, and research and faculty offices used for arts and social sciences;

- Upgrade and modernise teaching and research facilities to support the delivery and achievement of a world class educational establishment;

- Create an iconic building addressing the Ross Street entrances from Parramatta Road in line with the Campus Improvement Program - the proposed FASS building will have a prominent frontage to Parramatta Road and will sit immediately to the east of a future Life Science Building that will address the Ross Street entrance to the campus;

- Protect and enhance the heritage significance of the surrounding heritage items including the R. D Watt Building - Adaptively reuse internal areas of the R. D Watt Building for additional teaching and research facilities, meeting rooms, and workshop spaces;

- Improve pedestrian accessibility and enhance the landscape character of the Camperdown Campus.

- Protect significant landscape elements including those to the south of RD Watt fronting Science Road.

5 Contributions

The new FASS building is designed to consolidate existing staff and students from the Faculty's School of Economics (SoE) and the School of Social and Political Sciences (SSPS), which are currently fragmented across a number of different buildings on the Camperdown campus, into a multi-functional and flexible building.

The University is seeking an exemption under Section 2.14 of the Sydney Contributions Plan 2006.

The University's position in relation to the payment of contributions has been made clear in previous submissions, being that no contributions should be paid having regard to the following reasons:

- Clause 226(1) of the *Environmental Planning & Assessment Act Regulation 2000* (the Regulations) 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 of Sydney is listed as an Australian University under Schedule 1 of the *Higher Education Act 2001.* Consequently, this DA is a Crown development for the purposes of Division 4 of the *Environmental Planning & Assessment Act 1979* (the Act).

The Development Contribution Plan 2006

The City of Sydney adopted the *City of Sydney Development Contribution Plan 2006* (Contribution Plan) in 2007 (updated in 2009) as the basis for levying contributions on development under Section 94 of the Act. The Contribution Plan applies to areas surrounding the Sydney CBD, and contains works programs and contribution rates for three Precincts. The University of Sydney Campus falls in the Western Precinct of the Contribution Plan.

The contribution rates for components of the levy in the Western Precinct are given in the following table. These figures are subject to indexation.

Western Precinct Summary Contributions Rates (from 7 June 2009)

Contribution Type	Per Resident	Per Worker	Bedsits and One Bedroom dwellings	Two Bedroom Dwellings	Three or more Bedroom Dwellings	Residents of a Non-Private Dwelling*
Community Facilities	$ 388.18	$ 77.64	$ 504.63	$ 737.54	$ 1,009.26	$ 138.69
Public Domain	$ 748.45	$149.69	$ 972.98	$ 1,422.05	$ 1,945.96	$ 748.45
New Open Space	$ 6,144.52	$ 1,228.90	$7,987.88	$ 11,674.60	$ 15,975.76	$ 6,144.52
Accessibility	$ 61.43	$ 12.29	$ 79.86	$ 116.72	$ 159.72	$ 61.43
Management	$ 66.42	$ 13.28	$ 86.35	$ 126.20	$ 172.69	$ 66.42
Total	$ 7,409.00	$ 1,481.80	$ 9,631.70	$ 14,077.11	$ 19,263.39	$ 7,159.51

*Residents of a Non-Private Dwelling are not charged for Childcare.

Sections 2.8 – 2.14 of the DC Plan deal with issues associated with exemptions from development contributions. Council's intention is to levy, by a condition of development consent, all development in the area covered by the plan "*which creates the potential for a nett increase in the population and, therefore, the potential demand for the use of the amenities, facilities and services, which Council provides".* The contribution rates are based on the number of 'equivalent' residents and workers created by development.

Section 2.13 deals with the policy on development contributions by the Crown. The DC Plan explicitly provides that development contributions can be waived for Crown and private development based on a merit assessment. The types of developments that may be considered for an exemption include:

- Developments which provide a distinct community benefit on a not-for-profit basis;

- Development by or for non-profit organisations which provide a distinct community development;

- Alterations and additions to an existing residential development;

- Residential development on vacant land where the immediate prior use of the land had not been for non-residential purposes; and

- Conversion of a "dwelling" type of building to residential from a commercial use.

Given the proposed development by the University constitutes development by a non-profit organisation which provides a distinct community benefit through *educational establishment* facilities and services, the proposed development therefore qualifies for exemption from the DC Plan.

University consolidation strategy:

The DC Plan applies to the impact of additional residents and workers, but makes no reference to students. No nexus has been sought or established for any demand for community facilities required by students. Furthermore, the proposed building does not contain any residential component. Accordingly, a contribution per resident is not applicable. The proposed development will utilise and relocate existing University administrative staff and students within the Camperdown-Darlington campus to this new consolidated building.

Exemption from contributions is also supported by Planning Circular (Circular D6) relating to Crown Development Applications. The Circular (from 1995) is referenced in the Department's draft Development Contributions Guidelines 2009 as providing the 'current limitations on the imposition of development contributions on public sector developments'. The Circular provides a guide to Councils and Crown agencies as to which categories of Section 94 contributions are applicable to Crown Development stating that:

> *"Crown activities providing a public service or facility lead to significant benefits for the public in terms of essential community services and employment opportunities. Therefore, it is important that these essential community services are not delayed by unnecessary disputes over conditions of consent. These activities are not likely to require the provision of public services and amenities in the same way as developments undertaken with a commercial objective"*

In respect to the subject case:

- The project involves the delivery of public infrastructure by the Crown. Such development is one of the express exemptions under both the Contributions Plans identified (i.e.*'…other public infrastructure approved by the Minister'*);

- The University has a public character and is open to the public as a non-gated, accessible and permeable precinct which presently provides a number of material public benefits such as sports facilities (e.g. pools), open space, libraries, cultural spaces and venues, and retail outlets;

- The University is not a developer and is a not-for-profit public institution which relies on significant grants, donations, and external funding to provide new facilities for both the University community, and the wider community at large;

- The levying of contributions on projects that are funded by external sources including Commonwealth Government grants is simply diverting a portion of funds for an educational purpose to local services without any direct nexus to the development;

- It is unreasonable to require the University to pay development contributions which will have the effect of directly reducing the amount that the University can spend on public infrastructure and facilities; and

- The University provides a wide range of social, cultural, and recreational public benefits and contributions to LGA and its resident and worker population, in addition to the subject development.

Importantly, the project does not increase the capacity of the site or its ongoing use. No additional staffing numbers will be accommodated within FASS or RD Watt during operation other than those already

accommodated by the School of Economic (SoE) and the School of Social and Political Sciences (SSPS) elsewhere on campus. Accordingly, the development seeks to consolidate existing activities spread out across the Camperdown Campus, resulting in no population “nett increase” to warrant the collection of section 94 contributions to offset increased demand of local services or infrastructure.

The University of Sydney, along with other Universities across NSW, has taken up this matter at a broader and strategic level through the NSW Vice Chancellors’ Committee given this issue is common across many University jurisdictions. This has resulted in the drafting of a sector-wide position paper which has recently been issued to the Minister for Planning and DPE’s Infrastructure Taskforce.

6 Consultation

Consultation was undertaken throughout the design development process as discussed below. In particular the University sought to consult with the immediately surrounding landowners, local community groups, relevant agencies and internal user-groups and stakeholders. A consultation strategy was developed to support the proposal and responded to the requirements of the SEARs.

6.1 COMMUNITY CONSULTATION AND ENGAGEMENT

The FASS building site is located within a landholding held in the ownership of the University of Sydney, with no immediately adjacent sensitive receivers. The nearest receivers are located across Parramatta Road to the north of the site.

The University adopted a targeted community engagement program identifying and approaching key local community groups and community authorities and agencies.

6.1.1 INVITATION AND PROMOTION OF EVENT

The University held a community information session on 28 October 2015 at 6 pm to provide local community members and organisations with the opportunity to find out about the University's vision for the FASS Building.

Invitations to attend the meeting were emailed on 16 October 2015, with a follow up email on 26 October 2015 to the following community groups:

- Residents Acting in Defence of Darlington (RAIDD)
- REDWatch
- Chippendale Residents Action Group
- Coalition of Glebe Groups
- East Chippendale Community Group
- Forest Lodge and Glebe Coordination Group
- Glebe Community Action Group
- The Glebe Society Inc.

6.1.2 LETTERBOX DROP

A letterbox drop was conducted by the University to over 300 houses in the local vicinity inviting residents to attend the briefing.

6.1.3 INFORMATION SESSION ATTENDANCE AND AGENDA

One community member, who is a Darlington resident and a member of REDWatch, attended the Community Information Session. The session was also attended by the University's Director of Planning (Mr. Stephane Kerr), FASS Project Director (Mr. Scott Biggs), Precinct Manager (Mr. Alf Del Pizzo) and Community Engagement Manager (Ms. Julie Parsons).

A PowerPoint was prepared and displayed that provided, context and details to date regarding the project and a Question and Answer session formed part of this agenda.

The response to this early consultation from the participant revealed that there were no issues requiring resolution as this stage. The University has received no enquiries/complaints regarding the project.

6.2 AUTHORITY CONSULTATION AND ENGAGEMENT

The SEARs required consultation with various parties during the preparation of the EIS and the development of the scheme, including:

- City of Sydney Council;
- Transport for NSW
- Roads and Maritime Services (RMS); and
- Heritage Council.

The following table provides a summary of the key issues raised through the consultation to date, and how the proposal has responded and evolved to address these issues.

TABLE 3 – SUMMARY OF AUTHORITY CONSULTATION

ISSUE	RESPONSE
City of Sydney A meeting was held with City of Sydney on 03 May 2016 with Chris Corradi (Area Manager), Tony Smith (Heritage and Urban Design) and Russell Hand (Planner). The main points of discussion are summarised below.	
▪ Provision of sunlight into the internal courtyard between the two buildings at midwinter. ▪ If sunlight not possible, confirm how this area is to be treated to ensure a high quality space. This could go to material selection for the surface finishes. This needs to be addressed in the Landscape Report. ▪ Confirm if roof terrace will be accessible to both students and staff to provide access to sunlight during winter.	▪ The FASS building has been designed within the CIP envelope with a 4.5m roof set back to the south to improve solar access to RD Watt and the internal courtyard. ▪ High quality finishes and space design will be provided in the courtyard to maximise the amenity of this space. Materials are detailed on the landscape plans at **Appendix K** and include granite flagstone paving and stairs, mass planting and a feature tree in the upper courtyard, raised turf platforms for seating and gathering. ▪ The southern portion of the roof terrace will be accessible to both students and staff. The east and northern portions of the roof are authorised access only.
▪ Surveillance and safety – to be addressed in terms of CPTED principles.	▪ Refer to **Section 8.3** for an assessment of the design against the CPTED principles.
▪ Landscape plan is to include detail of treatment of roof terrace and around the edge of the building	▪ Refer to the Landscape Plans at **Appendix K** for information on the treatment of the roof terrace and the edges of the building. Materials on the accessible terrace area will include granite flagstone paving, insitu concrete and timber seating, a mass planting bed in a raised corten steel planter.
▪ Signage – Potential signage zones/design to be incorporated into the architectural design of the building	▪ No signage is envisaged to the north, east or west facades. There is potential for signage on the south façade. Any signage would be subject to future DA.
▪ Incorporation of Public Art is required	▪ Public Art is to be provided as part of the University's Wingurra Murra strategy which requires public art at all new buildings.
▪ RD Watt Building – provide details of fabric survey to be undertaken and ongoing conservation for the building.	▪ A detailed fabric survey has been undertaken for the RD Watt Building and is provided at **Appendix Y**. ▪ The survey outlines required conservation works and categorises them as 'Current Works'; 'High Priority works'; 'Medium Priority Works' and 'Low Priority

ISSUE	RESPONSE
	Works'. ▪ As part of this SSDA, the University commits to undertaking those works identified in the Conservation Schedule as 'Current Works'. All other items identified will inform the ongoing conservation and maintenance works for RD Watt. ▪ Refer further discussion at **Section 8.10.1**.
▪ Substation no. 54 - Need to interpret the substation as part of the building or landscape design. Potential to re-use some of the materials from the substation itself.	▪ Substation no. 54 has been approved for removal under a separate REF process as described in **Section 1.6**. A separate Heritage Impact Statement was undertaken to address the removal of the substation under this REF, which found that the removal of the substation was supportable from a heritage perspective. The HIS recommends archival recording of the substation prior to demolition. This archival recording is to be undertaken separately to this SSD prior to the demolition of the substation. ▪ Substation interpretation works are recommended as part of the HIS prepared in support of the subject SSDA. These works include partial demarcation of the former building footprint in the landscape and Location of a plaque/signage adjacent to the ground inlays as a freestanding element, interpreting the former use of the site and complementing the built form interpretation.
▪ Clarify future of the existing stairway from Parramatta Road. Can this be retained/interpreted?	▪ The existing stairway from Parramatta Road has been approved for removal under a separate REF process as described in **Section 1.6**. A separate Heritage Impact Statement was undertaken to address the removal of the substation under this REF, which found that the stairs were a later addition and are not significant from a heritage perspective.
▪ Provide details of the ESD commitments as part of the design.	▪ An ESD report has been prepared which outlines the proposed approach to environmental sustainability across the proposal. The report is included at **Appendix W**. In summary, a number of sustainability initiatives are proposed in order to achieve compliance with the University's Sustainability Framework where the Framework aligns with the Green Star Design framework. Further discussion in this regard is provided at **Section 8.6**.
▪ Council want assurance that the façade material will not be value managed out of the design post-approval.	▪ The University is committed to a high performance curtain wall glazing with warm coloured thermal interlayer
▪ Cooling tower projecting through the CIP envelope by 600 mm	▪ The cooling tower will project 600mm above the CIP envelope. ▪ The cooling tower is setback a minimum of 3m from the building's facades and will create minimal visual impact when viewed from the public domain, in accordance with Condition B4 of SSD 13_6123. ▪ The minimal projection is considered to be generally in accordance with the approved envelope plans and consistent with the intent of Condition B4 noted above.

ISSUE	RESPONSE
▪ Maximum allowance for reflectance is 20%	▪ A reflectivity report has been prepared by SLR, included at **Appendix GG**, which identifies possible glare conditions affecting motorists, pedestrians and occupants of neighbouring buildings. The report recommends a maximum reflectivity of 20% for façade materials. ▪ Further discussion on reflectivity is provided at **Section 8.4.5**.
Heritage Council	
▪ A meeting was held with the Heritage Council on Tuesday, 28 June 2016 to discuss the FASS Development and associated works proposed to the RD Watt Building. The key points of discussion related to the transition between the FASS building and the RD Watt Building, the presentation of the proposed development to the Parramatta Road frontage, the proposed tree removal and landscaping works, and the proposed works to the RD Watt Building.	▪ The University has considered the feedback from the Heritage Council and included responses where relevant as discussed in **Section 8.1**, **Section 8.4**, **Section 8.9**, and **Section 8.10** of the EIS.
Roads and Maritime Services (RMS)	
An email was sent to RMS on 14 April 2016, with the information relating to the proposed development that available at that time, seeking comments for consideration into the proposed design. However, email response was received from RMS stating that they cannot comment on the design until all the information is provided for a detailed assessment. A further updated design package was provided to RMS on 10 May 2016, with no comments received to date. This email correspondence with RMS is provided at **Appendix H** for reference.	It is anticipated that RMS will provide comments on the proposed development during the formal public exhibition period post SSD lodgement.
Transport for NSW (TfNSW)	
An email was sent to TfNSW by the University on 24 March 2016 attaching the proposed design. Response was received on 29 March 2016, refer to **Appendix H**, stating that based on the information provided, and because there is no proposed change to the road network as part of the proposal, there was no requirement for a presentation to TfNSW.	It is anticipated that TfNSW will provide comments on the proposed development during the formal public exhibition period post SSD lodgement.

6.3 INTERNAL STAKEHOLDER CONSULTATION

In addition to the above, the University has also conducted presentations and workshops across the relevant University faculties and schools that are primarily affected by the proposed projects including:

- Faculty of Arts and Social Science and the associated schools

Feedback from these parties has been developed into the project brief, and all relevant parties have formed part of the University's project user group, which has helped refine the design and spatial development with the selected architect.

6.4 PUBLIC EXHIBITION

In accordance with the EP&A Regulation 2000, the EIS will be placed on formal public exhibition and following this exhibition period, the applicant will provide a response to all the matters raised.

7 Planning Framework Assessment – Statutory and Strategic

7.1 STRATEGIC

The following strategic planning policies and guidelines are relevant to the proposed development:

- NSW 2021.
- A Plan for Growing Sydney.
- Rebuilding NSW – State Infrastructure Strategy 2014.
- NSW Long Term Transport Master Plan 2012.
- Sydney's Cycling Future 2013.
- Sydney's Walking Future 2013.
- Healthy Urban Development Checklist (NSW Health)

The following sections assess the proposed development against these strategic planning policies and guidelines as relevant.

7.1.1 NSW 2021

'NSW 2021 A Plan to Make NSW Number One' is a 10 year plan to rebuild the economy, return quality services, renovate infrastructure, restore accountability to government, and strengthen our local environment and communities. In summary, the key objectives of the Plan are to:

- Increase use of walking and cycling.
- Increase the number of jobs closer to home and increase the percentage of the population living within 30 minutes by public transport of a city or major centre in Metropolitan Sydney.
- Grow cities and centres as functional and attractive places to live, work and visit.

The proposed development will contribute to achieving the objectives of NSW 2021. The site is already well serviced by public transport with bus stops (with regular bus services) located along Parramatta Road in close proximity to the project site, along with bus stops along City Road, and train services from Central and Redfern stations within a 2 km radius.

Furthermore, the proposal will enhance the offering of a major University in Sydney, helping make the University and more broadly Sydney an attractive place to visit, work and study.

7.2 A PLAN FOR GROWING SYDNEY

"*A Plan for Growing Sydney*" was published in December 2014 and replaced the previous Metropolitan Plan 2031 as the key growth strategy to guide development across the Sydney Metropolitan Region. It sets out the State Government's plan for Sydney's future over the next two decades.

As with previous strategic growth plans, "*A Plan for Growing Sydney*" is based on centres based planning model, and adopts a series of Key Directions and Actions around four (4) principle goals of growth. These four (4) goals include:

- **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.

The proposed development is entirely consistent with and supports the relevant Key Directions and Actions of "*A Plan for Growing Sydney*" in that:

- **Direction 1.6: Expand the Global Economic Corridor**: Ongoing upgrade of the University's facilities ensures that the University of Sydney retains and reinforces its position as a prominent and respected member of the "Group of Eight" tertiary education institutions in Australia.

  The University is a significant generator of employment both directly and indirectly and has ties with other specialised and priority industries, which together make a significant contribution on the local and regional economy.

- **Direction 1.7: Grow Strategic Centres – providing more jobs closer to home:** The University is located in one of the most densely developed areas of the Metropolitan region and is well connected to areas such as Sydney Inner West by public transport.

  The development will provide for short term employment opportunities through construction and will promote continued operation of the University further supporting its growth in education and research, attracting foreign and domestic investment.

- **Direction 1.9: Support priority economic sectors**: International education and research is identified as a "priority industry" in the plan. This is reflected in the establishment or recognition under the plan in the establishment of the "*Broadway and Camperdown Health and Education Precinct*", the plan encourages the adoption of "*appropriate*" planning controls as a means of creating conditions that foster and encourage growth within specialise and priority industries as key to strengthening the economic role of the City.

It is also noted that:

- The detailed design and site investigation phases of the project established suitable GFA and building heights that respond to the site's heritage, landscaping and urban form constraints.

  While the design generally complies with the approved CIP envelope under SSD 6123 (noting a minor projection of 600mm for the roof atrium and cooling tower), it maximises the use of the land, achieving economic and orderly use of the land and delivering functional world class facilities in-line with the University of Sydney's international reputation and standards.

- The proposed development, along with the other redevelopment works envisaged for the University under the CIP, will contribute to the market growth of the University that attracts substantial national and international research and student funding per year. This has flow-on effects to the broader economy.

- The proposed development will relocate and consolidate existing teaching facilities, and research and faculty offices used for arts and social sciences, and incorporate function and seminar spaces. This will provide synergies with the neighbouring cultural precinct (Precinct F) which envisages a principal visitor destination precinct accommodating cultural, museum and heritage components.

7.2.1 REBUILDING NSW – STATE INFRASTRUCTURE STRATEGY 2014

Rebuilding NSW, A State Infrastructure Policy 2014 was published in November 2014 and is a $20 million strategic infrastructure funding program that seeks to reinvigorate and secure the State's long term economic future.

Budgetary allocations are focused around seven (7) sectors with an allowance for discretionary projects.

- Urban Public Transport
- Urban Roads
- Regional Transport
- Water Security
- Education
- Health
- Culture and Sport
- Other Opportunities

The program has not directly allocated funding to develop the State's Universities. In this regard effects of the policy on the development and the long term future of the University are likely to be indirect and to relate to improved accessibility arising from programs such as the Rapid Transit and improved Urban Roads. In particular the potential delivery of a new rapid transit stop at Central will improve accessibility of the City and the University.

The proposed development is not inconsistent with the goals of the Strategy and would not compromise attainment of those goals.

7.2.2 NSW LONG TERM TRANSPORT MASTER PLAN 2012

The NSW Government *Long Term Transport Master Plan* 2012 (LTTMP 2012) sets out a framework for the delivery of an integrated, modern transport system. The LTTMP 2012 is underpinned by a range of short to long term actions to guide the transformation of the NSW transport system

A long term plan associated with the LTTMP 2012 is to increase the capacity of Sydney's rail network and update existing infrastructure facilities. These plans will enhance public transport accessibility and contribute towards increased visitation to the site by public transport. This is a positive approach towards accessibility to the University.

7.2.3 SYDNEY'S CYCLING FUTURE 2013

Sydney Cycling Future was released by NSW Government in December 2013 to facilitate improved bicycle networks as an integrated component when planning for new transport and infrastructure projects.

The report identified four (4) broad themes in bicycle journeys including:

- Connectivity and Separation;
- Safe behaviour;
- Delivery of supporting facilities; and
- Health well-being and confidence.

The proposal is not inconsistent with the aims of the program and the University is geographically located to take advantage of established bicycle networks through and connecting the inner west and CBD areas.

The development promotes the use of active modes of transport through the provision of 36 bicycle parking spaces associated with the development site, and end of trip facilities, including showers and lockers to support the use of alternative and active modes of transport as a means of encouraging active lifestyles and reduced reliance on private motor vehicles.

7.2.4 SYDNEY'S WALKING FUTURE 2013

The Sydney Walking Future 2013 was released by NSW Government in December 2013. It seeks to create culture of walking for transport by promoting walking as a viable and attractive transport choice. The Strategy aims to focus infrastructure investment on completing connections within two kilometres of centres and public transport interchanges. In addition to this, the Strategy aims to link walking to urban growth and to prioritise the needs of pedestrians in the planning, design and construction of new transport and urban development projects.

The site is generally well connected by suitable public and private domain spaces that encourage pedestrian comfort and safety.

The site is located within close proximity to north and south bound bus stops along Parramatta Road. It is anticipated that the proposed development will not significantly impact on existing walking trips and is unlikely to result in any additional capacity stress on the current pedestrian network.

Further consideration to enhance any existing pedestrian infrastructure surrounding the site is therefore not warranted.

7.2.5 HEALTHY URBAN DEVELOPMENT CHECKLIST (NSW HEALTH)

The purpose of the checklist is to assist health professionals to provide advice on urban development policies, plans and proposals. It is intended to ensure that the advice provided is both comprehensive and consistent. The checklist is principally about helping to answer the questions:

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

The principal users of the checklist are intended to be Area Health Service Workers and are designed to apply over large regions, whole LGAs and large precincts. In particular the policy indicates that its application to plans and proposals relates to developments of the following kind:

- Master plans;
- Town Centre Plans; and
- Development applications for projects involving large housing developments, shopping centres and community and health facilities.

The subject application is for a relatively small, stand alone, urban infill site within a broader land use and single holding. The principles adopted by the plan are fundamental planning principles that are reflected in key planning controls. While the application of this policy is not necessarily related to the scale of the development proposed, the proposal is not considered to be inconsistent with principles for healthy urban development, in that:

- The development has access to green space and natural areas. The University grounds provide a range of open space and recreational facilities, ranging from informal "break out" spaces to formal recreation options such as gyms and swimming pools. Victoria Park is located to the east of the site, and Oval 1 and Oval 2 are located immediately to the south east of the site across Science Road/Western Avenue.
- The Campus layout encourages incidental activity of staff and students due to its expansive layout and defined "faculty based" precincts. Students and staff can readily walk between teaching and learning facilities, libraries, recreation facilities, administration areas and support services such as cafes and retail services.

- The proposal provides end of trip facilities including bicycle parking racks and showers at Level 1of the FASS Building.

- The site is located within the CBD of Sydney with superior public transport access to bus and rail, which reduces car dependency.

7.3 STATUTORY PLANNING FRAMEWORK

The following Acts are of relevance to this application:

- Environmental Planning and Assessment Act 1979

- Threatened Species Conservation Act 1995

- Heritage Act 1977

- Roads Act 1993

As noted in the SEARs, the following local and state-wide statutory planning instruments are to be considered in relation to the proposed development:

- State Environmental Planning Policy (State and Regional Development) 2011;

- State Environmental Planning Policy (Infrastructure) 2007

- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development;

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

- Sydney LEP 2012.

The following sections assess the proposed development these planning instruments as relevant.

7.4 LEGISLATION

7.4.1 EP & A ACT

As outlined in Section 1.3.1of this EIS the University prepared and received approval from the DPE for the CIP in February 2015 that adopted a whole of campus approach to planning for future growth and upgrades of the University.

The SEARs require consideration and demonstration of consistency with the provisions of section 83D (2) of the EP&A Act 1979, in relation to the approved scope of the CIP and the proposed development. Section 83D (2) of the EP&A Act 1979 states the following:

83D Status of staged development applications and consents

> *(2) While any consent granted on the determination of a staged development application for a site remains in force, the determination of any further development application in respect of that site cannot be inconsistent with that consent.*

The proposed FASS Building is within the Life Sciences Precinct (Precinct E) of the CIP Stage 1 SSDA (SSD 6123). As discussed in **Section 1.5**, the proposed development will generally comply with the relevant conditions and the built form envelope that was approved as part of the SSD 6123.

7.4.2 TSC ACT

The objects of the *Threatened Species Conservation 1995* (NSW) (TSC Act) include:

- To conserve biological diversity and promote ecologically sustainable development;
- Prevent the extinction and promote the recovery of threatened species, populations and ecological communities;
- To protect the critical habitat of those threatened species, populations and ecological communities that are endangered; and
- To ensure that the impact of any action affecting threatened species, populations and ecological preventing the extinction and promoting the recovery of threatened species, populations and ecological communities is properly assessed.

The TSC Act provides the procedure for the listing of threatened species, populations and ecological communities and key threatening processes in NSW and the preparation and implementation of recovery plans and threat abatement plans. As well as establishing a mechanism whereby a licence may be granted to impact on any matters listed for protection.

A Biodiversity Assessment of the site has been undertaken in relation to the proposed development. This report is provided at **Appendix I**.

The report concludes that the impact of the development on biodiversity will be minimal. Where vegetation occurs, the site is a modified urban landscape consisting of planted trees, horticultural hedges, cultivated groundcovers and small areas of open dirt being colonised by native and exotic pioneer species.

The use of the Biobanking Credit Calculator would not need to be applied to this project on the basis that the vegetation present consists of non-natural vegetation, the diversity of native species is low and the potential impact on threatened species has been minimised through the amelioration being applied to the site (additional plantings at conclusion, retention of a planted bed along the Parramatta Road boundary). Any foraging habitat currently in place will be retained although in a modified form.

7.4.3 HERITAGE ACT 1977

The Heritage Act 1977 regulates development/activities in relation to non-indigenous heritage, including the Section 170 register a mandatory list of heritage items contained on Government-owned land.

A search of the NSW Heritage confirms that the University's Camperdown Campus is listed on the Section 170 Register.

The University is a highly significant site and the heritage context and the relatively constrained site require a finely nuanced approach to siting, materiality and form. The R.D Watt building is a listed heritage item under schedule 5 of the City of Sydney Local Environmental Plan 2012 (Item No. I74). The FASS site is in proximity to locally listed heritage items as listed under the SLEP 2012 including the 'Heydon Laurence Building' (Item No. I75); and 'Site landscaping, University of Sydney perimeter fencing and gates' (Item No. I72). The subject site is also located within the University of Sydney Heritage Conservation Area (C5) as listed under the LEP. The above noted buildings, and Ovals 1 and 2 to the south east of the site are also listed on the University's Section 170 Register.

Section 8.10of this report details provides discussion and consideration of the development and potential for impact on these items.

7.4.4 ROADS ACT 1993

The proposed development does not involve any alterations to the existing access from Parramatta Road (at Ross Street) and does not propose any new vehicular access off Parramatta Road.

The preliminary design package was sent to RMS for comment. However, RMS has responded stating that they cannot make any comments on the design until all the information is provided for a detailed assessment. A further updated design package was provided to RMS on 10 May 2016, with no comments received to date. This email correspondence with RMS is provided at **Appendix H** for reference. It is anticipated that RMS will provide comments on the proposed development during the formal public exhibition period post SSD lodgement.

A Transport Impact Assessment has also been prepared for the proposed development, and is provided at **Appendix U**. The potential construction and operational traffic impacts are considered in **Section 8**.

7.5 STATE ENVIRONMENTAL PLANNING INSTRUMENTS

7.5.1 STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011

State Environmental Planning Policy (State and Regional Development) 2011 (SEPP SRD) was gazetted on 1 October 2011, identifying various types of development and particular sites upon which certain development is defined as Stage Significant Development (SSD).

The NSW State Government has confirmed the FASS project as SSD under the SEPP SRD. The proposal is SSD because it is development for the purposes of educational establishment (including associated research facilities) for a University and will have a capital investment value in excess of $30 million pursuant to clause 15 of Schedule 1 of the SEPP SRD.

7.5.2 STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) came into force in December 2007 and aims to facilitate the effective delivery of infrastructure across the State. The SEPP identifies matters for consideration in the assessment of development adjacent particular types of infrastructure development, including all new development that generates large amounts of traffic in a local area.

The development site is located immediately adjacent to Parramatta Road, which is a classified road with an annual average daily traffic volume of more than 40,000 vehicles (RMS, Traffic Volume Data 2002). In this regard, the development is required to consider the following matters:

- Provision of vehicular access off a non-classified road if practicable.
- Potential road related noise or vibration requires consideration in respect to future sensitive land uses (including educational establishments) proposed along busy roads.

The development does not propose any new vehicle access off Parramatta Road. All site access will be via Science Road with no vehicular access proposed onto the FASS site itself.

The SSD will be required to be referred to the RMS for comment under the SEPP. As discussed in **Section 6.2**, the preliminary design package was sent to RMS for comment. However, RMS has responded stating that they cannot make any comments on the design until all the information is provided for a detailed assessment. A further updated design package was provided to RMS on 10 May 2016, with no comments received to date. This email correspondence with RMS is provided at **Appendix H** for reference. It is anticipated that RMS will provide comments on the proposed development during the formal public exhibition period post SSD lodgement.

Consideration has been given to the NSW Government "*Development Near Rail Corridors and Busy Roads – Interim Guideline*" during the detailed design and reviewed by an acoustic and vibration consultant to ensure suitable internal noise amenity.

The Acoustic Impact Assessment at **Appendix HH** concludes that traffic noise intrusion into the development will be considered as part of the detailed design phase of the project to ensure that a suitable level of acoustic amenity is maintained which satisfies the intent of Clause 102 of the ISEPP.

7.5.3 STATE ENVIRONMENTAL PLANNING POLICY NO. 33 HAZARDOUS AND OFFENSIVE DEVELOPMENT

Development proposals for potentially hazardous and offensive industry or storage require assessment under *State Environmental Planning Policy No.33 – Hazardous and Offensive Development* (SEPP 33) and include the preparation of a preliminary hazard analysis (PHA) for the potentially hazardous development.

The FASS Building is to be used by the School of Social & Political Sciences and the School of Economics. As there will be no storage or use of chemicals as part of the continued use of this building, the development is **not** defined as a 'potentially hazardous development'. Accordingly, a 'preliminary hazard analysis (PHA)' is not considered necessary for this development.

7.5.4 STATE ENVIRONMENTAL PLANNING POLICY NO. 55 REMEDIATION OF LAND

SEPP No.55 relates to use and development of potentially contaminated land. The policy provides a consistent policy approach to the consideration of potential contamination and remediation to reduce the risk for harm to human health.

The site forms part of the Camperdown Campus of the University of Sydney. Prior to the establishment of the University campus in circa 1857 the site was used as farming land. As such the site has a documented and continuance use for the purpose of an "educational establishment" for 158 years. Accordingly the site is not known to have been used for any purpose listed in Schedule 1 of the Management of Contaminated Land Guidelines.

The development of the FASS building will continue the approved and established use and does not involve a change in the use of the land.

A detailed two-stage contamination assessment has been undertaken by Coffey Environments. The report and a SEPP 55 letter is included at **Appendix DD**. The assessment entailed a site history review followed by an investigation that included invasive sampling and laboratory analysis for a range of contaminants of potential concern. The investigation was undertaken in accordance with the relevant sections of the NSW OEH (now EPA) publication, *Guidelines for Consultants Reporting on Contaminated Sites (2011)*. The report concluded that

> *Given the results of soil and groundwater investigations undertaken as part of this Detailed Site Contamination Investigation, Coffey considers that the site is suitable from a contamination perspective for the proposed redevelopment.*
>
> *The results of the investigation indicate that further investigation and / or remediation of the site is not required to permit the proposed FASS Enabling Works and, therefore, preparation of a Remediation Action Plan is not necessary.*

Based on the above, the site has limited potential for contamination.

7.6 LOCAL ENVIRONMENTAL PLANNING INSTRUMENTS

7.6.1 SYDNEY LOCAL ENVIRONMENTAL PLAN 2012

Sydney Local Environmental Plan 2012 (SLEP 2012) provides the local statutory planning provisions and controls for the site. The relevant SLEP 2012 provisions applicable to the SSD are reviewed in **Table 4** below. The proposal is consistent with the relevant objectives and provision of SLEP 2012.

TABLE 4 – SYDNEY LOCAL ENVIRONMENTAL PLAN 2012

PROVISION	RESPONSE
Zoning and Land Use (Clause 2.3)	The site is zoned SP2 Infrastructure and is identified on the zoning maps as "Educational Establishment". Under SLEP 2012, ***"educational establishment** means a building or place used for education (including teaching), being:* *(a) a school, or* *(b) a tertiary institution, including a university or a TAFE establishment, that provides formal education and is constituted by or under an Act".* The proposed development is consistent with the definition of "*educational establishment*" in SLEP 2012 and is therefore permissible with development consent.
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.
Preservation of Tree or Vegetation (Clause 5.9)	**Clause 5.9** aims to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation. A detailed Arboricultural investigation has been undertaken to assess the impact of the proposed development on the existing trees within and surrounding the FASS development site. Refer to **Section 8.9** for an summary of the conclusions and recommendations of this report.
Heritage Conservation (Clause 5.10)	**Clause 5.10** aims to conserve environment heritage, heritage items, conservation areas, archaeological sites and places of significance. ▪ The Camperdown Campus contains 18 individually listed items of heritage significance and is located within its own Conservation Area C5: University of Sydney. These items include: ▪ Heydon Laurence Building – Item 175 ▪ Site Landscaping, University of Sydney perimeter fencing and gates – Item 172 ▪ R.D Watt Building – Item 174 - The proposed development includes internal and external works to the RD Watt building The University of Sydney, Camperdown Campus forms a standalone Conservation Area listed under the LEP (Conservation Area C5) and is recognised for the following: ▪ As a heritage cultural landscape containing buildings of exceptional individual value set within a designed landscape with large areas enclosed by an historic fence; ▪ Social significance as the site of the first University in Australia established in 1850, operating continuously at Camperdown since 1858.

PROVISION	RESPONSE
	▪ Historic significance for its continuing association with the development of tertiary education in Australia. Incorporating Prince Alfred Hospital and various residential colleges, the Area represents the establishment and continued expansion of institutional uses on Grose Farm. ▪ High aesthetic significance for its collection of fine buildings and public spaces dating from the 1850s, and has association with several prominent architects including Blacket, Vernon and Wilkinson. ▪ The continuing function of the institution as a University is also of exceptional cultural significance. An important Sydney landmark, containing what is probably the most significant group of Gothic Revival buildings in the country. Detailed heritage assessment of the proposal in relation to its context has been undertaken in a Heritage Impact Statement provided at **Appendix L**. Consideration of the findings and recommendations of this report are provided in **Section 8.10** of the EIS.
Clause 6.21 Design Excellence	Clause. 6.21 states that development consent is not to be granted unless the consent authority considers the development exhibits design excellence. In accordance with clause 6.21, a design competition process is not required for the proposed building as the building will not: ▪ Exceed 25 metres in height above natural ground level ▪ Have a CIV of more than $100,000,000 ▪ Require a DCP to be prepared under Clause 7.20 However, the SEARs requires the SDD to demonstrate design excellence in accordance with the design excellence provisions of SLEP 2012. The University of Sydney has its own design excellence process which is summarised at **Section 8.2**. A Design Excellence Report is also provided at **Appendix F**. The University's competition was applied to firstly seek a reference scheme, and then ultimately to arrive at the scheme that forms part of this SSDA.
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. Pursuant to clause 7.9(3) the maximum number of space for a building for the purposes of an education facility is 1 space for every 200sqm. No car parking is proposed as part of the proposed development. It is noted that the City of Sydney's parking requirements are maximum and not minimum provisions and the provision of no parking on the site, which is in close proximity to public transport is consistent with promoting the use of public and alternative modes of transport. In addition, 36 bicycle parking spaces (22 of which are under cover) and end of trip facilities (showers and lockers) have been provided as part of the development to promote active transport.
Acid Sulphate Soils (Clause 7.14)	The site is identified on the Acid Sulfate Soils planning maps as containing class 5 soils. As the site is not located within 500 metres of Class 2 or 3 soils, a detailed ASS management plan is not required. The Geotechnical Report at **Appendix BB** confirms that the site is within an area of no known occurrence of acid sulfate soils.

PROVISION	RESPONSE
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. The proposed site is located within the Johnstons Creek catchment, an area of which forms the subject area of a flood modelling assessment completed by WMA Water on behalf of City of Sydney Council. The associated report, Johnstons Creek Catchment - Floodplain Risk Management Draft Plan, Draft Report, September 2014, identifies no localised flooding effects on and in the vicinity of the FASS development site. A Stormwater Management Report has been provided at **Appendix AA** to assess the impacts of the proposed development on the stormwater and flooding. The conclusions and recommendations of this report are discussed in **Section 8.15** of this report.
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 90 - 100 metres (AHD). The proposal will have a maximum height of building RL 50.10 metres (AHD) and will therefore not penetrate the OLS.

7.7 DEVELOPMENT CONTROL PLANS

Clause 11 of SEPP (State and Regional Development) 2011 excludes the application of development control plans to SSD projects. Notwithstanding, consideration has been given to the relevant key development controls in *Sydney Development Control Plan* 2012 (DCP 2012).

TABLE 5 – SYDNEY DEVELOPMENT CONTROL PLAN 2012

PROVISION	RESPONSE
Locality Statement	The Sydney University, Camperdown Campus is identified in **Figure 2.1** *City Locality Area maps,* as being within area 2.3 "*Chippendale, Camperdown, Darlington".* Subsection 2.3.5 identifies the site as being located within the *University of Sydney/Royal Prince Alfred Hospital* locality. The proposed development within the University lands demonstrates that effective urban infill and orderly and economic use of land that is considered to align with Council's outcomes expressed in the character statement and supporting principles as follows: ▪ The development will not adversely impact on any listed heritage items, and will complement the heritage significance of RD Watt (local heritage item), by enabling its adaptive reuse, and providing a curtilage around the heritage building, enhancing its setting; ▪ Detailed site planning has been undertaken to ensure the preservation and retention of existing and established tree planting ▪ Retains and enhances the significant role of the University in the city as a specialised centre for education and research. ▪ Will not impact on existing or planned bicycle and pedestrian connections with the site surrounds or legibility and ease of access. ▪ The development will have a prominent frontage to Parramatta Road, and will introduce an active street frontage in this location between Ross Street and Glebe Point Road. ▪ The proposed development will effectively activate an otherwise underutilised space improving streetscape amenity and connectivity. ▪ The building siting, scale and mass has been designed to respond to the existing built form and character of the Camperdown Campus and the likely future character and form of the future Life Sciences Building and development within the Cultural Precinct (Precinct F) as dictated by

PROVISION	RESPONSE
	the approved CIP.
GENERAL PROVISIONS The relevant sections of the SDCP 2004 are considered below.	
3.1 Defining the public domain	The FASS has been designed to make a positive contribution to the public domain through detailed planning of the campus interface with the site surroundings. The development will have a prominent frontage to Parramatta Road, activating the streetscape. The development will also help frame the future Life Sciences building to the west of the site, enhancing and defining the Ross Street entry into the Camperdown Campus.
3.2.7 Reflectivity	A solar light reflectivity report has been prepared for the proposed development, and is provided at **Appendix GG**. With the incorporation of the recommendations in this report in relation to the reflectivity of glazing, the proposed development will not cause adverse solar glare to pedestrians and motorists in the surrounding area, or to occupants of neighbouring buildings, and will comply with the planning controls regarding reflectivity for the City of Sydney Development Control Plan 2012.
3.2.8. External Lighting	All external/outdoor lighting components will be designed in a manner that is bound by the relevant standards, specifically: ▪ AS 1158.3.1 Part 3.1: Pedestrian Area (Category P) Lighting – Performance and Design Requirements ▪ AS 4282 – Control of the Obtrusive Effects of Outdoor Lighting Further, all luminaires used within the external/outdoor lighting portion shall be designed such that any light spill is highly controlled, particularly in an upward direction. This will be achieved through features designed into the luminaires, or through additional measures as required. The lighting design will minimise any light spill impacts.
3.3 Design Excellence	A Design Excellence report has been prepared by the University outlining the process by which the building design has evolved and been subject to the University's Design Excellence criteria which are based on those contained within Sydney LEP 2012.
3.5 Urban Ecology	The retention of the significant trees, and the tree planting that is proposed as part of the landscaping works will ensure that there are no adverse impacts on the urban ecology of the site and its surroundings.
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 University aims to ensure a built environment that is energy efficient, cost-effective to operate and provides improved environmental, economic and social benefits to its student, staff and surrounding communities. This will be achieved by embedding sustainability initiatives into the planning, design, procurement, construction and commissioning process of future campus development. Further discussion on the University's Sustainability Framework is discussed in **Section 8.6.**
3.7 Water and Flood Management	The proposal is not affected by flooding or any significant ponding. Refer to **Appendix AA** for details on stormwater and flood management.
3.9 Heritage	A detailed heritage impacts assessment has been prepared and is provided at **Appendix L.**
3.11 Transport and Parking	A Traffic and Parking Impact Statement has been prepared and is provided at **Appendix U.**

PROVISION	RESPONSE
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 Building Code of Australia.
3.13 CPTED	The design and layout of the building is considered to generally align with the broad principles of Crime Prevention through Environmental Design, including: ▪ **Territorial Reinforcement:** The proposal provides for well-designed publicly accessible spaces, including the provision of high quality landscaping. ▪ **Surveillance:** The development features transparent curtain walls across a majority of its facades, enabling passive surveillance of Parramatta Road, and the new courtyard spaces surrounding the development. CCTV will also be installed to monitor entries and internal areas of the building throughout the day and evening. ▪ **Access Control:** The building itself will be regulated by electronic security systems to ensure safety. The main entry into the building is through the courtyard space to the south of the building, which will form part of new defined circulation space, directing pedestrian entry from Science Road into the site. ▪ **Space/Activity Management:** The development site has a direct road frontage Parramatta Road. As described above, the main entry to the site is on the southern façade of the building. 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.
3.16 Signage	No signage is envisaged to the north, east or west facades. There is potential for signage on the south façade. Any signage would be subject to future DA.
3.14 Waste	A Construction Management Plan (CMP) has been prepared and is provided at **Appendix (...).** The CMP deals with construction waste management including waste management procedures; including strategies, reporting and monitoring protocols for the management of waste materials generated through construction processes including demolition, earthworks, construction and through to completion and operational maintenance. A Waste Management Plan (WMP) has been prepared and is provided at **Appendix (…).** The WMP provides calculations of projected operational general waste and recycling, based on office, teaching, and lounge space floor areas and expected future occupancy and usage of both the FASS and RD Watt building. It recommends suitable equipment and storage and handling practices that have been incorporated into the design of the buildings.
3.17 Contamination	Consideration of the SEPP 55 is provided in **Section 7.5** of the EIS and supported by a Detailed Site Investigation and SEPP 55 Letter provided at **Appendix CC** and **Appendix DD** . The Detailed Site Contamination Investigation Report concludes further investigation and / or remediation of the site is not required to permit the proposed FASS Enabling Works and, therefore, preparation of a Remediation Action Plan is not necessary.

7.7.1 SECTION 79C ASSESSMENT

The proposed development has been assessed in accordance with the matters of consideration listed in Section 79C of the *Environmental Planning and Assessment Act 1979* as outlined below:

TABLE 6 – SECTION 79C ASSESSMENT

CONSIDERATION	COMMENT
Environmental Planning Instrument	State and Local Environmental Planning Instruments have been assessed in Section 5.
Draft Environmental Planning Instruments	There are no relevant Draft Environmental Planning Instruments applicable to this application.
Development Control Plans	The proposed development has been assessed against the Sydney Development Control Plan 2012 in Section 5..
Any Matters Prescribed by the Regulations	This EIS has been prepared in accordance with Sections 6 and 7 of Part 3 of the *Environmental Planning and Assessment Regulation 2000*.
Likely Impacts of the Development	An impact and risk assessment has been provided in Section 6 of this report. Mitigation measures to the risks and impacts identified within Section 5 and the relevant Appendices are summarised in Section 10.
Suitability of the Site	The existing University site is entirely suitable for the development of an new faculty building as development that is ordinarily incidental or ancillary to an educational establishment as outlined in Section 5
Any Submission made in accordance with this Act or the Regulations	Submissions will be considered following exhibition of the application.
The Public Interest	The development is compliant with the relevant planning instruments and controls. The proposal will not create any adverse significant social, economic or amenity impacts. This project represents a significant opportunity to promote and enhance the University of Sydney as an important place of education and research within the Global Corridor of Metropolitan Sydney.

8 Environmental Assessment

This section contains an assessment of the key issues identified in the SEARs and the relevant Stage 1 DA conditions.

8.1 BUILT FORM AND URBAN DESIGN

The FASS building development site is part of the SSD approval for the Campus Improvement Program (SSD 13_6123) Life Science Precinct (Precinct E). The CIP approval provides built form envelopes for the future redevelopment of the site.

The proposed FASS building has been designed to ensure that the footprint of the development and the large majority of the building form will be fully contained within the approved SSD 13_6123 envelope.

It is noted that there are two minor breaches to the approved CIP height envelope. These comprise a 600mm exceedance by the atrium roof and cooling tower. Each of these elements are setback at least 3m from the building's facade parapets (in accordance with Condition B4 of SSD 13_6123), and as such the proposed height exceedance will not be perceptible from the public domain immediately surrounding the building. Whilst they may be viewed from afar, neither element will appear bulky or visually obtrusive on the roof of the building.

The atrium roof serves to integrate the lift overrun into roof structure and to provide some visual interest to building users on the roof terrace when viewing the roof from an elevated position. The minor height exceedance above the CIP envelope is considered to be acceptable and generally in accordance with the approved SSD 13_6123 envelope because:

- It will improve the appearance of the building roof form when viewed from afar and from the trafficable roof terrace, presenting a resolved design feature enclosing the lift over run;
- The height exceedance caused by the cooling tower is minor, being only 600mm above the CIP envelope height.
- The remainder of the building will be located within the approved CIP envelope and the proposal itself will be generally in accordance with the approved height envelope under SSD 13_6123.
- The projecting elements both present a minor breach only to the approved building envelope, do not detract, and instead enhance the building's appearance. The resultant building form is considered to be generally in accordance with the approved CIP SSDA 13_6123 building envelope for Precinct E.

It is also noted that the CIP envelope approval under SSD 6123 identifies Substation no. 54 for retention. However, this substation has been approved for removal under 'REF 3-2016 FASS Early Works Stage 2, Camperdown Campus' as discussed in **Section 1.6.2** of the EIS.

It is noted that Substation no. 54 was originally marked for retention within the CIP (SSD 6123) approval because there was no identified requirement to remove this building during the early design development for the FASS project under the reference scheme (refer to **Section 4.1.2** of the EIS). The Reference Scheme allowed the Substation to be retained because of its proposed footprint further south closer to the RD Watt Building than the final design. However, the reference scheme was not progressed due to its potential for negative impacts on the heritage fabric of the RD Watt Building.

The final design, which features a building footprint further north compared to the reference scheme, set back from the RD Watt Building but encroaching on the location of Substation no.54, was developed in part to protect the heritage significance of the RD Watt Building, which is a local heritage item under SLEP 2012. Furthermore, the size, orientation and location of the Substation make it unfeasible to retain and adaptively reuse as part of the FASS development. Retaining the Substation in this location would sterilise the development potential of this portion of land with no real use for, or relation to, the FASS development.

It is noted that SSD 6123 addressed precinct-based building envelopes and built form design controls, as well as open space, pedestrian and vehicular access arrangements, public domain works, transport

linkages and indicative land uses for each precinct. Given the broad context and scale of the SSD 6123 approval, the proposed FASS development demonstrates a high level of compliance, and the removal of Substation no. 54 is not considered a significant departure from this approval.

Notwithstanding the previous REF determination to remove the Substation, and the accompanying HIS (extract above) which concludes that removal of the buildings would not have a significant detrimental impact on the character of Science Road and the Sydney University Heritage Conservation Area, an Interpretation Strategy (**Appendix K**) has been prepared to interpret the substation through the following measures:

- Interpret the former substation through the partial demarcation of the former building footprint in the landscape at the location of the present substation building; and

- Location of a plaque/signage adjacent to the ground inlays as a freestanding element, interpreting the former use of the site and complementing the building form interpretation.

The Interpretation Strategy has been prepared to ensure that the proposed FASS development scheme will be generally consistent with the CIP envelope approval (SSD 6123) with respect to Substation no. 54. Refer to the **Section 8.10** of the EIS for further discussion.

The design of the scheme has been developed through careful consideration of the heritage, landscape and urban form constraints of the site.

The built form will respect the heritage context of the site by ensuring that it is set back from the RD Watt Building and Heydon Laurence Building. In addition, the creation of a central courtyard will allow breathing space around the RD Watt Building, enabling the external heritage fabric of this building to be appreciated from the courtyard and from within the FASS building, while also providing direct pedestrian access between the FASS building and RD Watt, connecting these two built forms visually and functionally.

The proposed courtyard will also function as an entry space to the FASS building, and provide a weather protected link between the two buildings through a glazed awning.

The proposed design of the FASS building and courtyard will provide enhanced exposure to the northern heritage façade of the RD Watt building. The overall scheme respects the constraints presented by the existing structural features of the RD Watt building, such as its internal split floor levels, and provides a visual and functional transition between these two buildings.

The building will align with and respect the existing Parramatta Road frontage of the Heydon Laurence building (a local heritage item) to the east and the future Life Sciences building to the west through a subtle shift in alignment through the middle of the built form, effectively bending around the R. D Watt Building.

The proposed development will enable easy pedestrian access to the site, with entry spaces provided on the south east and south west of the building, creating double height cantilevers that provide shelter and extend the courtyard.

The building will enhance public domain activation with indoor/outdoor edges at the ground level and roof level, with courtyards and green spaces created between the FASS Building, the existing R.D Watt Building, and the future Life Sciences building to the west.

The proposed development will also feature an internal open atrium creating opportunities for social interaction and providing physical and visual connectivity into the floorplates on each level. This atrium space also creates opportunities for indigenous art in this location.

The predominantly glazed transparent facades will enable people to visually connect with internal activities within the building from the external public domain and university campus spaces.

The building has been designed to capitalise on short internal campus views to the south and longer Parramatta Road views to the north.

The material, finishes, and colours have been selected to form a dynamic yet subtle and dignified backdrop to the RD Watt Building.

The FASS building will have a prominent frontage to Parramatta Road. Detailed design development of this façade has been undertaken to ensure the building presents a dynamic expression to the public domain to create a high quality and internationally recognisable flagship identity.

Refer to the Architect's Design Report at **Appendix E** for further details.

8.2 DESIGN EXCELLENCE

The proposed development does not trigger the requirement for a Design Competition in accordance with clause 6.21 of Sydney LEP 2012 as the building falls below a maximum height of 25m above natural ground level and has a Capital Investment Value below $100 million.

Notwithstanding this, the University has conducted and completed a Concept Design Competition for the proposed development as described in the CIS Design Excellence Process Report prepared by the University at **Appendix F.**

The ultimately successful architect, Architectus, listed on the University's pre-qualified panel of architects, has been engaged by The University of Sydney to design the proposed new building. The proposed architectural plans are provided at **Appendix D**.

CIS applies competitive design processes for all major projects in ensuring that design excellence outcomes are achieved. Project teams are responsible for ensuring that the University's Design Excellence principles (aligned with those of the *Sydney Local Environmental Plan 2012* – Clause 6.21), take into account the campus context, and deliver the highest standard of architectural, urban and landscape design

The following competitive design excellence and peer review processes were undertaken during the design process for the FASS development being a State Significant Development project;

- **Stage 1:** A concept design competition was held to generate the initial concept reference design, resulting in a SEARs application to the Department of Planning & Environment (DPE);
- **Stage 2:** A second stage design competition was held to challenge the Stage 1 concept reference design;

Stage 1 Concept Design Competition

The design competition process for FASS was in the form of an invited architectural design competition for the development of a concept reference scheme. The invitation was extended to four (4) architectural companies, all listed on the University's pre-qualified Architecture Panel for 'Buildings over $10M'.

The architectural firms selected for Stage 1 were as follows;

- Allen Jack + Cottier Architects,
- Bates Smart,
- Hassell,
- Noel Bell, Ridley Smith + Partners.

The design submissions were reviewed by a Campus Infrastructure Services (CIS) Evaluation Committee, chaired by independent architect David Holm. The committee assessed the schemes against the design excellence criteria and the recommendation was for the selection of Bates Smart to develop their concept design further, and to test and refine the brief.

The Bates Smart concept design was further developed over an 18 month period, responding to the refinement and development of the brief, input from University Stakeholders and as a result of ongoing design reviews held the CIS design review panel, heritage architects and Design Manager.

In spite of numerous repeated attempts over this design development period, Bates Smart were unable to satisfactorily resolve concept design, and address a range of issues identified with their design, while meeting the Functional Brief and budgetary requirements.

Stage 2 Secondary Design Competition

As a result of the issues with the Bates Smart scheme, the University elected to embark upon a secondary design competition in October 2015, responding to the change in the brief with the removal of the atrium, and to look at alterative panning and facade options. Bates Smart (the original competition winners), and Architectus (selected from the University Pre qualified architectural panel), were invited to submit alternative design proposals.

A design review panel was established made up of both CIS and Faculty Stakeholders.

On the 1st December 2015, both designs were also presented to the Building and Estates Committee (BEC – a Senate sub-committee, members being subject matter experts in the field of development and construction). Both the Design review panel and the BEC unanimously agreed to proceed with the Architectus proposal, being a superior architectural design and demonstrated design excellence. The design proposal was adopted as the University preferred reference design scheme.

External Consultation Process

As a requirement under the SEARs, during the design development stage of the project, consultation was held with the City of Sydney where Architectus presented their developed scheme, presenting their design approach and response, and how they had achieved design excellence.

The design was received favourably by the City of Sydney, however some minor design comments were received, which were considered by the University and the architects, and were responded to and integrated into the final design proposal.

Over the past month, heritage consultant Ian Kelly, representing the University, has been in regular contact with the NSW Heritage Council seeking a date for the University to present the design. Unfortunately due to the current availability of their resources a date is yet to be determined. The University is committed to consulting with the Heritage Council and will meet with them at their earliest convenience to seek their feedback and integrate any comments into the final design.

Summary

This design competition process and independent architecture and heritage peer review have resulted in a final design for the project that acknowledges and satisfactorily resolves those design issues raised during authority consultation.

The University believes the design excellence and design competition processes has achieved noteworthy and meritorious design outcomes for both buildings.

The proposal responds positively to the advice provided by the Government agencies during SEAR and pre-SSD lodgement phases, and in meeting the design excellence criteria established by both the University and the *Sydney LEP 2012*.

8.3 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

The NSW Guidelines for *Crime Prevention and the assessment of development applications: Guidelines Under section 79C of the Environmental Planning and Assessment Act 1979* has been used to inform the assessment of the application in relation to the primary principles of CPTED.

CPTED: KEY PRINCIPLES

The proposed development has been designed and laid out to reinforce the principles of Crime Prevention through Environmental Design (CPTED), as outlined in **Table 7** below.

TABLE 7 – CPTED ASSESSMENT

PRINCIPLE	DESIGN RESPONSE/CONSIDERATION OF ISSUE
(1) Surveillance	
(a) Casual Surveillance	Casual surveillance is promoted through the predominantly open layout of the building design with its central atrium which allows for clear sightlines extending in all directions around the entire building. This is further enhanced by the extensive glazed curtain wall facades overlooking the central entry courtyard, lower forecourt, western fringe, northern setback along Parramatta Road, and eastern Heydon Laurence edge, allowing passive surveillance of all these areas. The design and layout of the building incorporate ground level active uses to reinforce positive street level design and encourage use of common areas to promote a sense of safety through activity. Common areas will be appropriately lit at night to allow for surveillance.
(b) Sightlines	The use of a predominantly glass façade reduces the potential for concealment by avoiding the creation of hiding spaces or blind corners and providing full perimeter site lines. Pedestrian entries and paths extending to and from the building are linear in nature and free of blind corners. Sightlines within and through public domain and spaces are preserved by low level planting to preserve visibility and avoid concealment. Low level lighting used at night will enhance visibility and not produce glare.
(2) Access Control	Access to the building is through the main entry point at the level 1 southern façade of the building, demarcated by the double height awning connecting to the RD Watt Building. A second lower level entry provides access to level 1, with both entries visually connected by a double height stair. These centralised access points limit the number of building entries, thereby increasing security of access. Out of hours, access will be provided by security tag only to relevant staff and students.
(3) Territorial reinforcement	The building is sited within the University of Sydney perimeter boundary fence, a clearly demarcated space. The design of the FASS building itself and its landscaped surrounds delineates the building boundaries from the remainder of the campus, Clear delineation of space is achieved through a mix of landscaping treatments and finishes within the new Courtyard space.
(4) Space Management	Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out pedestrian and bike rack lighting and the removal or refurbishment of decayed physical elements. The University has a dedicated grounds management team that manage all publicly accessible domain areas of the Campus. Where damage to the premises occurs the grounds staff are on call to manage and undertake repairs. Combined with on demand response to vandalism or disrepair, the grounds staff are also responsible for ongoing management of the grounds. Following completion of the FASS building the University will include management of the building surrounds as part of their maintenance schedule.

8.4 ENVIRONMENTAL AMENITY

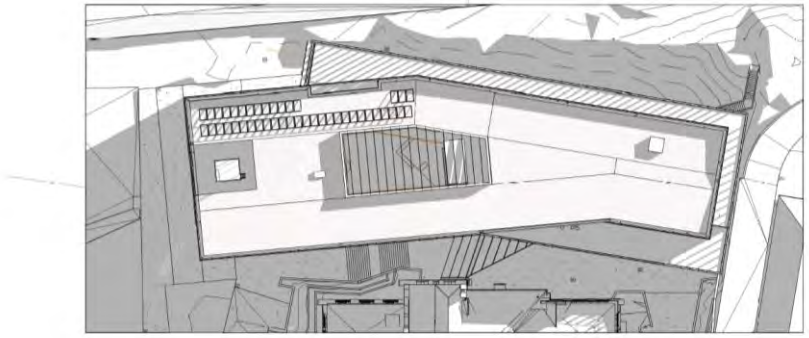
8.4.1 SOLAR ACCESS AND OVERSHADOWING

Shadow diagrams have been prepared by Architectus and are included in the architectural plans at **Appendix D**, with extracts shown below. In summary:

- Shadows will be cast over the internal courtyard at midwinter, with solar access at the ground plane at the west of the site available from mid-afternoon. Sun will also be available to a portion of the roof terrace at mid-winter during the morning hours.
- Sun access will be achieved to the roof terrace between 9am and 3pm at 21 September/March.
- Sun access will be achieved to the internal courtyard and roof terrace at 21 December.

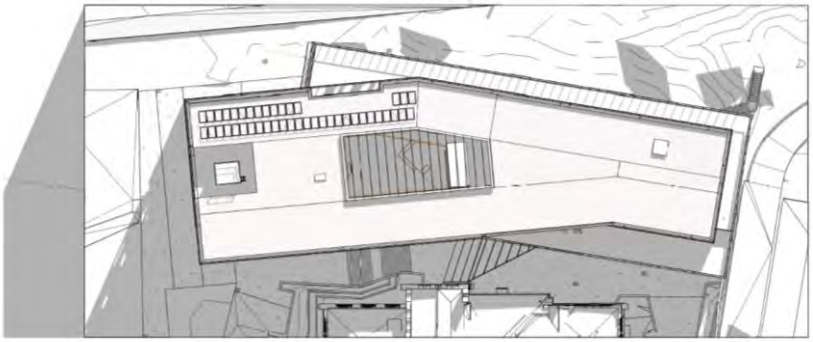
The materials and finishes chosen for the courtyard, along with the trees and landscaping described in the Landscape Plans at **Appendix K** will ensue that this courtyard space is a relatively passive and comfortable environment.

FIGURE 26 – SHADOW DIAGRAM – JUNE 21_9 AM



4 Solar Study_Jun_21_ 9 am

FIGURE 27 – SHADOW DIAGRAM – JUNE 21_12 NOON



5 Solar Study_Jun_21_12 pm

FIGURE 28 – SHADOW DIAGRAM – JUNE 21_3 PM

8.4.2 ACOUSTIC IMPACTS

Acoustic Impacts resulting from the proposed development have been assessed in the Acoustic Impact Assessment at **Appendix HH**. A summary of the conclusions and recommendations of this report are discussed at **Section 8. 6** further below under 'Noise and Vibration'.

8.4.3 VISUAL AND VIEW IMPACT

View Impact from Surrounding Public Domain

The proposed development will sit within the approved CIP envelope, including in terms of horizontal extent and, for the majority of the building, height. A minor height exceedance of 600mm is proposed to accommodate the atrium roof and cooling tower – each relatively minor elements and minor height exceedances of 600 mm. Accordingly, the proposed development is not anticipated to cause any adverse visual impacts when viewed from the public domain and residential uses along Parramatta Road.

The proposed FASS building features a prominent Parramatta Road frontage. As shown in **Figure 29** below, the proposed development will present a modulated and visually interesting frontage when viewed from the significant Ross Street entry to the university campus. This frontage will be visually broken up into three distinct building masses (comprising the stone plinth, the cantilevered three storey frontage, and a taller set back element), ensuring that it does not present as a single linear building wall.

FIGURE 29 – VIEW OF PARRAMATTA ROAD FRONTAGE VIEWED FROM ACROSS THE ROSS STREET ENTRY

In addition, the building design bends away from the Parramatta Road frontage to respect the existing building setback of the neighbouring Heydon Laurence building to the east, and the future life sciences building to the west, further reducing the apparent bulk and scale of the building when viewed from Parramatta Road.

The proposed development features a modern high quality design with a transparent glazed curtain wall frontage to Parramatta Road. The proposed design will activate this streetscape and improve the visual presentation of the campus when viewed from the public domain and residential uses along Parramatta Road.

Heritage View Impact

The Heritage Impact Statement at **Appendix L** has undertaken a view assessment identifying significant views and potential impacts.

As noted in the HIS, the Grounds CMP identifies the following significant planning and visual axes relevant to the subject proposal:

- Views east/ west along Science Road between the Main Quadrangle and the JD Stewart Building. This axis refers to the planned axis formed in the early 1900s under Vernon's master plan and strong, landscaped, visual axis 'bookended' by the J.D Stewart Building (B01) to the west and the War Memorial Gallery (A14) to the east.

- Views north/ south across the western side of the Camperdown campus along Western Avenue across the Ovals and between the Ross Street entry and Carillon Avenue.

Of the views identified in the Grounds CMP Policy, only the axial vista east and west along Science Road is relevant to the subject proposal. The character of this is largely unchanged by the subject works; the historic character remains, as does the avenue of plantings, albeit with some modifications.

The RD Watt CMP Policy and the Heydon Laurence CMP Policy also identify significant views and vistas. The HIS concludes that the views identified within these CMP policies are not impacted by the subject proposal.

The HIS concludes the following regarding the proposed development and its impact on views and vistas:

- Whilst the new development will obscure views to the rear of the RD Watt, the site has been previously developed and this is not a primary vista.

- The proposed awning which connects the northern façade of the RD Watt building to the new FASS building is modestly scaled and will not interrupt views of the façade.

- The proposed building is considered sympathetic in its form, siting, scale and materiality and enables the heritage items in the vicinity (namely the RD Watt and Heydon Laurence buildings) to retain their prominence in views from Science Road.

- The new building will be visible behind the heritage item, however the siting to the rear and fronting Parramatta Road ensures that the new development will not dominate in internal views from Science Road.

The HIS provides the following recommendations relating to views and vistas:

- There is an opportunity to thin out soft landscaping (later non-significant plantings) to enhance views from Science Road to the RD Watt Building. This should not impact on significant tree plantings.

- With regard to views from Parramatta Road, the current site is somewhat utilitarian in character and presents an opportunity to improve the presentation to Parramatta road.

8.4.4 LIGHTING IMPACTS

All external / outdoor lighting components shall be designed in a manner that is bound by the relevant Australian Standards, specifically:

- AS 1158.3.1 Part 3.1 Pedestrian Area (Category P) Lighting – Performance and Design Requirements
- AS 4282 – Control of the Obtrusive Effects of Outdoor Lighting.

All luminaries used within the external/outdoor lighting portion of the site shall be designed such that any light spill is highly controlled, particularly in an upward direction. This will be achieved through features designed into the luminaries, or through additional measures as required.

8.4.5 REFLECTIVITY IMPACTS

A Solar Light Reflectivity Analysis has been undertaken for the proposed development and is provided at **Appendix GG**.

The analysis identifies any possible adverse reflected solar glare conditions affecting motorists, pedestrians and occupants of neighbouring buildings.

The report concludes that the reflected solar glare form concrete, brickwork, timber, etc. is negligible and will not cause any adverse solar glare effects. Similarly, any painted or powder coated metallic surfaces on the exterior façade of the development will have a maximum normal specular reflectance of visible light in the range of 1% to 5% which is well within the acceptable limit.

The Solar Light Reflectivity Analysis recommends a maximum specular reflectivity of visible light of 20% for the glazed aspects of the development in order to avoid any potential adverse glare impacts. The proposed façade has a specular reflectance under 16%.

8.4.6 WIND IMPACTS

A Pedestrian Wind Impact Assessment has been prepared and is provided at **Appendix EE**. The report notes that the key areas outdoor trafficable areas associated with the proposed development in relating to wind effects are:

- The outdoor trafficable areas along the southern boundary of the site including the pedestrian footpath, open courtyard and outdoor seating areas;
- The pedestrian footpath along the eastern boundary of the site; and
- The communal rooftop terrace.

The Pedestrian Wind Impact Assessment provides the following recommendations to mitigate wind impacts:

- Inclusion of the proposed awning connecting the subject development to the adjacent RD Watt Building.
- Inclusion of recommended densely foliating trees within and around the subject development site.
- Inclusion of the proposed awning above the outdoor seating area on the rooftop communal terrace.
- Inclusion of recommended 1.5m high impermeable balustrades along the perimeter of the rooftop communal terrace.

The report concludes that with the inclusion of the above mentioned recommendations within the final design of the development, suitable wind conditions can be achieved for all trafficable outdoor areas within and around the site.

A Wind Noise Assessment has also been undertaken and is provided at **Appendix FF.**

As noted in the Wind Noise Assessment, sources for wind noise generation that are to be avoided in the proposed development include:

- Small gaps or slots between 3 to 10mm in width that are open to a void behind. This can be between façade panels, a gap in a mullion extrusion or DGUs, a door and its associated wall or other openings.
- Extruded hollow members – it is preferable for connections to be bolted rather than welded as this will increase damping in the system and they are sealed.
- Large, light and hollow panel sizes of louvres with sharp cornered blades/edges.
- Perforated sheets with uniform hole size and spacing.
- Interference effects between spires or fins resulting in vibrational induced noise.

The Wind Noise Assessment has considered the various façade options, and concludes that they are not a cause for concern regarding wind noise generation. The report recommends that any regular pattern of circular shapes within porous mesh elements be replaced with irregular shapes and that multiple holes of similar size and shape are not placed in groups.

Other recommendations to mitigate the potential for vibrational response from external fin shading options include:

- Ensure that the natural frequencies of the fins are not within the audible range.
- Round the corners of the fin sections to a radius of greater than 5mm.
- Ensure that there is not a small gap between the glass façade and the fin and that the ends of the fins are sealed.
- Alternatively, external vertical fins and sections protruding from the building façade can be arranged in varying patterns and section lengths.

8.5 TRANSPORT AND ACCESSIBILITY

8.5.1 TRAFFIC IMPACTS

The proposed development will not alter the existing provision of on-site parking nor the traffic generated by the University overall.

Furthermore the proposal will facilitate a relocation of existing University populations to a central location close to public and active transport networks, namely the FASS Building, and as such not change existing travel demands of the University.

Therefore the existing operation of the surrounding road network, public transport services and pedestrian / cycle linkages will remain unchanged by the proposed project.

8.5.2 PUBLIC TRANSPORT

The University's Camperdown Campus and the FASS building site are well-connected with existing public transport options, including

- Central Station and Redfern Station - within 2 km walking distance, providing access to all the suburban and intercity services;

- Various bus services along Parramatta Road - within a 50 metre walking distance, providing access to the CBD, and services to Leichhardt, Strathfield, Burwood, Campsie, Abbotsford, Rozelle, Five Dock, Mortlake, and Earlwood;

- Various bus services along City Road – within 1 km walking distance, providing access to the CBD, and services to Newtown, Canterbury, Kingsgrove, Kogarah, Dulwich Hill, Coogee, Tempe, Marrickville, and Sydenham.

The proposed development does not include any car parking spaces given its close proximity to these public transport options.

8.5.3 ACTIVE TRANSPORT

The proposed development will encourage active transport as it provides 36 bicycle parking spaces, as well as male and female end of trip facilities including lockers and showers.

It is also noted that in 2014 the University adopted a Sustainable Transport and Mobility Plan (STAMP) which is contained in **Appendix V**. This seeks to increase the uptake of active and public transport options by the University's students and staff of the Camperdown and Darlington campuses. The STAMP complements the CIP which aims to improve Campus liveability, accessibility and connectivity by providing students and staff with economic choices and incentives to adopt more sustainable travel modes. It is also consistent with the University's 2015 Environmental Sustainability Policy's objective to promote sustainable transport.

8.5.4 VEHICLE ACCESS AND PARKING

No parking or vehicle access is proposed as part of the proposed development. The proposal will result in the loss of an existing 13 car parking spaces currently located at the site of the proposed FASS building. This loss of car parking is considered acceptable because the loss represents a reduction of 0.3% of the existing campus parking, which is observed to have generous spare capacity on numerous occasions during the undertaking of the Traffic Assessment.

The location of the proposed development is well connected to active and public transport options.

It should also be noted that City of Sydney's parking requirements are a maximum not a minimum provision and that the provision of no parking on site, particularly as the site is within close proximity to public transport connections. This is consistent with promoting the use of public and alternative modes of transport.

8.5.5 SERVICING

Servicing requirements of the building will be minimal. This will generally involve a medium rigid vehicle (8.8m) briefly stopping along Science Road outside of peak hours. This servicing arrangement is consistent with that of other buildings on campus and is considered satisfactory.

8.5.6 CONSTRUCTION TRAFFIC

A Preliminary Construction Management Plan has been prepared by Lend Lease and is provided at **Appendix JJ**.

The CMP includes a Construction Traffic Management Plan (CTMP), which has been drafted in coordination with the findings from the Traffic Impact Assessment at **Appendix U**.

The CTMP includes a summary of the proposed vehicle and pedestrian access routes, provides management measures to ensure there are no adverse impacts from construction traffic on the surrounding pedestrian and vehicular traffic networks.

The CTMP provides management measures to coordinate movements of construction and delivery vehicles and to prevent backing of vehicles onto Parramatta Road

Pedestrian paths of travel will not be impacted along Parramatta Road, Ross St or the Southern side of Science Road. Pedestrian access ways will be maintained around the site on existing pathways. Pedestrians will be controlled at the time of vehicles exiting the site entry gate by Traffic Controllers utilising accordion gates, signage and flashing lights. Vehicles leaving Ross Street to Parramatta Road will be in line with the signalised operations of the existing intersection.

Single unit trucks and flatbed trucks will be utilised for the majority of deliveries during the excavation, structure and fitout phases. However during the structure phase there may be some requirements for semi-trailer deliveries for tower crane, steel reinforcement and structural steel.

It is expected that the peak movements during the structure phase of construction will be bogies removing spoil from the excavation and supply of concrete trucks. The peak movements are calculated as follows:

- Approximately 15 truck and dog loads of spoil removal per day for 30 days during excavation = 10,000m3
- Approximately 40 concrete loads per major concrete pour - 12 off
- On average we anticipate approximately 10 – 15 truck and 5-6 courier/van deliveries per day

All general deliveries will be organised to mostly take place outside peak traffic periods.

There will be no facility for parking on site. Public Transport will be encouraged to all site staff and operatives. There is significant public transport infrastructure servicing the campus including Buses to City Road and Parramatta Road and trains to Redfern Station.

It is also proposed to not issue parking permits to construction related vehicle, as it is anticipated that significant numbers of the workforce will travel by train and bus outside the morning and afternoon commuter peaks.

A detailed pedestrian control plan will be prepared by the contractor prior to commencement to identify how pedestrian access will be managed around the construction site.

Traffic controllers will be required to control traffic to ensure the construction will have no effect on Parramatta Road, with further details to be developed in the traffic control plan.

8.6 ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

The project acknowledges the requirements set out in the SEARs document and reference to the Environmental Planning Regulation 2000. The project proposes to meet the ESD Principles as defined in Clause 7(4) of the Environmental Planning Assessment Regulation 2000 Schedule 2 by:

- Assessing the project design against the University of Sydney Sustainability framework which sets operational energy and water efficiency targets, lifecycle costing requirements for major plant and equipment and materials conservation goals;
- Undertaking building science studies for the FASS building to demonstrate compliance with the targeted operational goals of the building; and
- Identifying appropriate sustainable design initiatives for the project given the nature of the building.

The University has stated that the approach to sustainable design for the FASS building is through the incorporation of the University of Sydney's Sustainability Framework. This is to ensure that the proposed FASS building aligns with the core sustainability aspirations of the University.

The project will not be certified against or complete any formal rating to a recognised environmental scheme, rather has been assessed against the University's Sustainability Framework. The University of Sydney Sustainability Framework is an holistic rating scheme that draws from the best national (Green Star) and international building (BREEAM & LEED) rating systems and best design practice.

The University's Sustainability Framework provides an equivalent rating scheme to demonstrate industry best practice for sustainable design. The Sustainability Framework considers the following themes:

1. Leadership and Communication

2. Resource Efficiency

3. Healthy Environment

4. Materials

5. Climate Change, Landscape & Infrastructure

6. Sustainable Transport

The Sustainability Framework benchmarks sustainability across the different building types by using common sustainability ambition levels. The FASS building is targeting a Bronze rating under the Sustainability Framework. This equates to a minimum environmental rating score of 91 points out of a possible 140 points and is considered to be an appropriate target for a project of this nature.

Similar to other rating systems, the University of Sydney's Sustainability Framework requires a formal submission of design and as-built documentation to the University for review and to demonstrate the project has achieved the requirements of the framework.

The ESD assessment demonstrates that the University of Sydney Sustainability Framework aligns with greater than **75%** of the Green Star initiatives of the Design & As-built v1.1 tool and as such the Framework can be considered an appropriate environmental tool to apply for the FASS project. Further it is noted that the University of Sydney Framework exceeds the initiatives set-out in Green Star through thirteen (13) other environmental initiatives and targets that are specific to the needs of the University.

To achieve bronze rating under the University's Sustainability Framework, a number of environmental initiatives and measures will be implemented for the FASS development that will minimise consumption of resources, water (including water sensitive urban design) and energy in operation. These are detailed in the ESD Report at **Appendix W** and are summarised below:

- Materials and Resource Use – a number of initiatives are proposed to be met through design standards, material specifications and construction practices to be employed on the site. These have been identified to reduce resource consumption and improve the indoor quality of the building in operation.

- End of Trip Facilities – The development will include end of trip facilities to the FASS building on Level 1, including showers, change and lockers. Centralised bicycle parking is t be provided in the RD Watt building on Level 2 with access from the public domain.

- Water Efficiency – the project is targeting water efficiency performance with includes reduced overall potable water consumption by around 10% against comparable benchmark projects. This is to be achieved through rainwater harvesting and re-use, appropriate selection of water fixtures, recovery of fire test water for reuse in the building, and appropriate storage and management of on site stormwater and flood management.

- Energy Efficiency – the building is targeting up to 10% energy improvement to the National Construction Code Part J provisions. This requirement is to be met through mechanical systems design and zoning, interior lighting efficiency, building fabric treatments and reduced hot water demands.

- Indoor Quality – a high indoor amenity will be achieved through high quality internal or external views provided to 40% of the floor area. Glare will be managed through the use of façade glazing treatments to mitigate direct solar glare into the interior spaces. Over-lighting of internal spaces will be avoided through maintenance of internal illuminance levels in accordance with the University's Lighting Design Standard.

The proposed development will support social sustainability through a socially connected internal space that enjoys good daylight and views, while wellness is supported through provision of end of trip facilities.

The consolidation of the FASS schools from various buildings into one multi-use and flexible building represents sustainability through efficient building use and human resources.

Financial Sustainability will be achieved through an efficient and cost effective building delivering value for money, with low maintenance costs

8.7 NOISE AND VIBRATION

A Noise Impact Assessment has been prepared by Acoustic Logic and is provided at **Appendix HH**. In accordance with the SEARs and the Stage 1 DA conditions of consent, noise and vibration generated by the development is addressed in this report according to the following guidelines:

- Industrial Noise Policy.
- Interim Construction Noise Guideline.
- Assessing Vibration: A Technical Guideline 2006.

With further guidance on the assessment of noise impacts associated with the site adopted from the following:

- State Environmental Planning Policy (Infrastructure) 2007
- EPA Road Noise Policy

The existing noise environment for the site has been established based on long term and short term monitoring data. Given the site's location close to Parramatta Road which carries heavy and continuous traffic, the site has been classified as an urban noise environment. Based on this, the Noise Impact Assessment report provides amenity criteria noise emission goals for the development.

The two main sensitive receivers relevant to the development are the residential terraces and multi-level apartment building along Arundel Street across Parramatta Road and the Royal Prince Alfred hospital approximately 350 m to the south west of the site.

In addition, SEPP (Infrastructure) 2007 provides guidance for traffic noise impact on developments located near major roads.

A summary of the outcomes and recommendations of the Acoustic Impact Assessment are provided below.

8.7.1 CONSTRUCTION NOISE AND VIBRATION IMPACTS

The Acoustic Impact Assessment sets out the relevant noise objectives with which the construction activities should comply.

The main sources of construction noise are expected to be from excavation of soil and soft sandstone, and the construction of the proposed FASS building.

The Acoustic Impact Assessment provides recommendations for mitigation measures to ensure the noise objectives are achieved. These recommendations include:

- Use of augured rather than driven or vibratory piling will be considered if feasible.
- Location of the concrete pump away from Parramatta Road if practical. If this is not possible, in the event of complaint, temporary screening of the pump should be considered (plywood hoarding, or plywood sheet fixed to temporary fencing).

- For activities where acoustic controls and management techniques still cannot guarantee compliance with “Noise Management”/”Background+10dB(A)” noise levels, implement a notification process whereby nearby development is made aware of the time and duration of noise intensive construction processes. This may include days of heavy hammering and excavation works.

- Implementation of a noise monitoring program (attended noise measurements during key stages of construction) during construction to provide feedback back to the Builder to ascertain whether construction noise goals are being exceeded and determine additional management strategies. This would be expected at commencement of excavation works.

The Acoustic Impact Assessment concludes that there will be no significant vibration impact associated with the construction works.

8.7.2 OPERATIONAL NOISE AND VIBRATION IMPACTS

The Level 6 terrace may be used for formal functions, awards events and alumni events. The function room has an associated outdoor terrace which faces south. It is anticipated that amplified speech and music may be utilised internally (not externally). The Acoustic Impact Assessment recommends noise control measures including glazing to the facades to manage the noise impacts from the uses at Level 6.

The Acoustic Impact Assessment has also undertaken an indicative assessment of primary plant items including cooling towers, air handling plant and water cooled chillers. Noise controls will be incorporated within the design of the mechanical plan as outlined in the Acoustic Impact Assessment to ensure that cumulative noise output from the plant and other noise sources are managed.

With regard to operational vibration impacts, the Acoustic Impact Assessment concludes that sources of vibration associated with the development will be generally attributed to sporadic vehicle movements in and out of the loading area along Science Road and the operation of mechanical plant servicing the development

Vibration associated with vehicle movements on site will have negligible impact on surrounding receivers and will be no greater than that associated with movements along Fisher Road. Mechanical plant will be located within the site and will have no vibration impact on surrounding receivers.

8.7.3 TRAFFIC NOISE INTRUSION

Given the location of the FASS building near Parramatta Road, traffic noise intrusion into the development will be considered as part of the detailed design phase to ensure that a suitable level of acoustic amenity is maintained to satisfy the intent of Clause 102 of the SEPP (Infrastructure) 2007.

The University Sustainability Guidelines and *AS2107:2000 Acoustics – Recommended Design sound levels and reverberation times for building interiors* set out internal noise levels deemed acceptable for teaching and learning spaces.

Building glazing specifications will be nominated in the construction stage that will enable the proposal to meet the relevant internal noise criteria nominated by this AS.

8.8 BIODIVERSITY

A Biodiversity Assessment Report has been prepared by Ecological and is provided at **Appendix I**.

This report assesses matters relating to the impacts of biodiversity and ecological values of the site in accordance with the Framework for Biodiversity Assessment (FBA) (OEH 2014).

The report confirms that no remnant native vegetation will be removed as part of the proposed development, and any structures within the development footprint lack habitat for threatened species that could be present on the site.

The loss of a few individual Brush Box trees (*Lophostemon confertus*) within the development footprint is deemed to have a negligible effect on foraging by identified threatened species.

The loss of the two figs (*Ficus rubiginosa*) located on the northern side of the development footprint is deemed to have a minimal impact on the foraging value for bats such as Grey-headed Flying Fox because this tree species and other members of the genus are common and widespread in the immediate region.

Similarly, the loss the row of shrubs along the drive beside the Heydon Laurence Building (*Syzygium* or *Acmena*) would constitute a negligible effect on foraging animals and raptor birds that prey on them, given the widespread presence of similar amenity plantings of these species in the local area.

None of the species identified during the site visit were of a species of conservation concern.

The Biodiversity Assessment Report concludes that the impact of the development on biodiversity will be minimal. Where vegetation occurs, the site is a modified urban landscape consisting of planted trees, horticultural hedges, cultivated groundcovers and small areas of open dirt being colonised by native and exotic pioneer species.

The use of the Biobanking Credit Calculator would not need to be applied to this project on the basis that the vegetation present consists of non-natural vegetation, the diversity of native species is low and the potential impact on threatened species has been minimised through the amelioration being applied to the site (additional plantings at conclusion, retention of a planted bed along the Parramatta Road boundary). Any foraging habitat currently in place will be retained although in a modified form.

8.9 TREES AND LANDSCAPING

To enable the proposed development, several trees of various sizes within or adjacent to the FASS development site are required to be removed, as identified by the Arboricultural Report at **Appendix J**.

The following trees have been approved for removal through an earlier REF (FASS Enabling Works) as described in **Section 1.6**:

- Three (3) *Morus nigra* (Trees 233, 234, and 238);
- One (1) *Lophostemon confertus* (Tree 237);
- One (1) *Acmena smithii* (Tree 247);
- One (1) *Acer palmatum* (Tree 250);
- One (1) *Corymbia eximia* (Tree 775);
- One (1) *Banksia integrifolia* (Tree 776);
- One (1) *Grevillea sp*. (Tree 777);
- One (1) *Corymbia eximia* (Tree 1154); and
- Two (2) *Ficus rubiginosa* (Trees 1176 and 1177);
- One (1) *Jacaranda mimosifolia* (Tree 1178); and
- The eastern end of the row of 37 *Syzygium paniculatum* (Group 240).

The following additional trees will need to be removed to enable the proposed works:

- Brush Box (*Lophostemon confertus*) to Science Road (Tree 230);
- Frangipani (*Plumeria acutifolia)* (Tree 235) and Jacaranda plantings (*Jacaranda mimosifolia)* (Tree 236) to the rear (northeast corner) of the RD Watt Building;

- Bush Cherry (*Syzygium paniculatum*) - Group 240 (western end only) growing as a closely planted double row providing screening between the University and Parramatta Road; and Tree 1235 also along Parramatta Road.

- Oriental Liquidamnar (*Liquidambar formosa*) to the west of the RD Watt Building (Tree 251).

As noted in the Heritage Impact Statement at **Appendix L**, the Grounds Conservation Management Plan (2014) identifies significant Cultural soft landscape; being significant trees and types of open spaces and landscapes. Tree 230 has been classified as '*Priority for Retention'* in the Arborist Report and has landscape heritage significance according to the Grounds Conservation Management Plan (refer to the HIS at **Appendix L**).

Trees 235, 236, 1235, 251 and Group 240 (western end) have been classified as '*Consider for Retention*' according to the Arborist Report. The HIS states that whilst the RD Watt Conservation Management Plan (CMP) identifies Tree 235 and Tree 236 as potentially original or early 20th century plantings, the grading of significance is not clear but is likely to be moderate. The HIS concludes that, whilst their removal will have some impact, it will also assist to the mitigate issues of damp to the northern façade of the RD Watt Building, where the land is built up against the building.

The nature of the site's use will change as a result of the proposed FASS development, and will include provision of two new access paths placed symmetrically on either side of the RD Watt Building. The removal of Tree 230 is required in conjunction with the provision of access to the proposed FASS building.

Whilst the removal of Tree 230 is required to enable the eastern access point off Science Road, when viewed from this roadway, RD Watt's relationship with significant tree planting will still be appreciated as a coherent landscape element given the symmetrical nature of the proposed access paths, and the retention of the significant landscape elements in front of the RD Watt Building.

In addition, with the exception of the trees noted above, the proposed development will protect significant landscape elements including those to the south of RD Watt fronting Science Road. The existing tree planting will be supplemented with significant tree planting on either side of the new access paths to the FASS building as described in the Landscape Report and Landscape Plans at **Appendix K**.

The landscaping works that are proposed as part of the development will help mitigate the impact of the tree removal, and will incorporate feature trees including *Jacaranda mimosifolia*, *Elaeocarpus reticulatus*, *Flindersia australis*, *Lophostemon confertus*, and *Cupaniopsis anacardioides* and substantial planting landscape planting including lawns and mass planting. The proposed landscaping will result in a net increase in the number of trees on the site that are located to enhance the appearance and amenity of the site.

The Arboricultural Report also recommends tree protection measures to ensure trees that are to be retained are not adversely impacted or damaged throughout the construction and future occupation of the proposed development.

8.10 HERITAGE

The proposed FASS building will be set back from the RD Watt building to its south, and bend around this local heritage item, providing a landscaped courtyard with seating and circulation spaces as a buffer between these two buildings. The courtyard will allow breathing space around the RD Watt Building, enabling the external heritage fabric of this building to be appreciated from the courtyard and from within the FASS building, while also providing direct pedestrian access between the FASS building and RD Watt, connecting these two built forms visually and functionally.

The proposed design of the FASS building and courtyard will provide enhanced exposure to the northern heritage façade of the RD Watt building. The overall scheme respects the constraints presented by the existing structural features of the RD Watt building, such as its internal split floor levels, and provides a visual and functional transition between these two buildings.

The proposed FASS building features a prominent Parramatta Road frontage. This frontage will present a modulated and visually interesting facade when viewed from the significant Ross Street entry to the

University campus. This frontage will be visually broken up into three distinct building masses (comprising the stone plinth, the cantilevered three storey frontage, and a taller set back element), ensuring that it does not present as a single linear building wall.

In addition, the building design bends away from the Parramatta Road frontage to respect the existing building setback of the neighbouring Heydon Laurence building to the east, and the future life sciences building to the west, further reducing the apparent bulk and scale of the building when viewed from Parramatta Road.

As required by the SEARs, A Heritage Impact Statement has been prepared and is provided at **Appendix L**. The HIS assesses the heritage impact of the proposal and provides statements of significance for the University of Sydney, the University of Sydney Grounds, the University of Sydney Heritage Conservation Area, J.D Stewart Building, Heydon Laurence Building, Ovals 1 and 2, Site Landscaping, University of Sydney Perimeter Fencing and Gates.

The HIS provides an assessment of impact on the significant landscaping and views and vistas relevant to the site and the proposed development. The impact of the proposed development on the views and vistas of the Camperdown Campus is addressed in **Section 8.4.3**, and the impact on the significant landscaping is addressed in **Section 3.13.1**.

Conclusions:

- The proposal retains the heritage listed RD Watt Building, with the proposed works generally involving the refurbishment and minor partial demolition of interiors to facilitate access and enhance amenity, whilst retaining the identified significance of the building. There are no significant additions and no change to the principal form of the building or the principal southern façade. The proposal also retains the significant central open stair and split level internal configuration.

- The proposal forms part of a high quality contemporary design overlay and will not impact on the interpretation of the cultural landscape of the University and it's identified significance as the first and oldest university in Australia or its significant historic and distinctive aesthetic character which is defined by its signature gothic 19th century buildings and complemented by the significant early 20th century building overlay.

- The proposed building is considered sympathetic in its form, siting, scale and materiality and enables the heritage items in the vicinity (namely the RD Watt and Heydon Laurence buildings) to retain their prominence in views from Science Road.

- The proposed works will not impact on the identified significance of the items in the vicinity, or their collective value to the Science Road precinct and the broader cultural landscape of the University.

As required by the Stage 1 DA (SSD 13_6123) conditions, the Heritage Impact Statement also includes an assessment of the proposed development against the precinct based policies of the University of Sydney Grounds Conservation Management Plan, including the University Grounds CMP, RD Watt CMP and the Heydon Laurence CMP.

The key recommendations of the Heritage Impact Statement are as follows:

- The method of attachment and drainage for the proposed awning connecting the FASS and RD Watt buildings should be subject to further detailed development and heritage advice and should be designed to be largely reversible. It should fix into mortar joints or brickwork, and should not fix to stone.

- The proposed entry to the northern façade affects a significant façade and it is critical that the design of the proposed door is well resolved to mitigate potential impacts. Details of the northern façade entry should be provided and approved prior to the Construction Certificate.

  At minimum, the proposed opening must retain the width of the present opening and must retain the extant quoins and upper window sections including the stone cross bar. It is acknowledged that this will require the loss of the stone sill and lower section of the window and will impact on the symmetry of the façade bay and therefore detailed design illustrating details and finishes of the reveals should

be provided and approved. Details of the proposed door should also be provided. The upper fixed window should also be restored to match the steel pivot window.

- The proposal discontinues the significant lecture room function of ground floor room 109 which is inconsistent with the CMP. Whilst this is considered reasonable and is supported, interpretation of the former lecture theatre should be required to mitigate impacts. Detailed design should be subject to heritage advice and should be undertaken in accordance with the submitted interpretation strategy.

- Where partitioning of former laboratory spaces is proposed, this should be able to be reversible and should be detailed in such a way that the original configuration remains able to be interpreted.

- Any significant timber doors to be removed should be salvaged and reused where possible.

- The proposal should incorporate any priority conservation works as determined in the separate submitted conservation schedule.

- Proposed landscaping works should maximise retention of identified significant tree plantings and where removal is required, should be mitigated by replacement landscaping, of like or otherwise appropriate species. Detailed landscape plans should be provided. Landscaping works should include works to improve identified significant vistas to the main RD Watt façade from Science Road (this should not include removal of significant plantings).

A separate fabric survey, digital photographic archival recording, and a heritage interpretation strategy have also been prepared for the RD Watt Building given its proximity to the proposed development, and are provided at **Appendix N**.

The recommendations of the Heritage Impact Statement include the requirement for the detailed design for works to the RD Watt Building to be provided to and approved by the Heritage Consultant or the University of Sydney Campus Infrastructure Services Heritage Architect prior to issue of the Construction Certificate, especially in relation to the attachment and drainage of the proposed awning, the proposed entry to the northern façade and the detailed design of room 109. This recommendation will ensure that any potential heritage impacts of the proposed development are appropriately managed and mitigated.

A Historical Archaeological Assessment has also been undertaken and the report is provided at **Appendix P**.

The Historical Archaeological Assessment found that:

- The study area, the FASS Building Project site, has low potential to contain historical archaeological remains;

- Those potential remains on the site have been assessed as not meeting the criteria for local heritage significance. As a result they are not archaeological 'relics' as defined by the NSW Heritage Act. A similar definition would also apply to the requirements to projects assessed as a State Significant Development under the Environmental Planning & Assessment Act 1979.

- No further action is required regarding historical archaeology on the FASS Building Project site.

- As no archaeological relics have been identified within the study area, there is no further requirement for archaeological investigation of this site.

8.10.1 FABRIC SURVEY

Condition B12 of the Stage 1 DA Consent requires future development applications (where relevant) for new built form to include a building fabric survey for a comprehensive understanding of condition, and the requirement for conservation and repair of the following buildings:

- Macleay Building and Botany Wing (A12)

- RD Watt Building (A04)

- Peter Nicoll Russell Building (J02)
- Old School Building Darlington (G15)
- J.D. Stewart Building (B01) (part)

Of relevance to the subject SSD is the R.D Watt Building, as the other buildings listed above are not in the immediate vicinity of the proposed development, and it is not anticipated that they will be impacted by the proposed works.

A Fabric Survey of the R.D Watt Building to inform a Conservation Schedule has been prepared and is provided at **Appendix O**.

The Fabric Survey investigation undertaken to inform the Conservation Schedule was based on visual inspection only, no intrusive investigations were completed. This schedule was prepared in conjunction with the architectural design and only covers remnant historic fabric that is proposed to be retained. It does not cover any fabric (historic or contemporary) that is proposed for removal or demolition within the architectural drawings.

The Conservation Schedule outlines a range of required conservation works and categorises them into:

- Current works: being conservation works that are required to be undertaken as part of the current program of works;
- High priority works: being works that should ideally be undertaken within the next two to four years;
- Medium priority works: being works that should be undertaken within the next four to six years; and
- Low priority works: being works that should be undertake within the next six years.

Generally, the works comprise the repair and reconstruction of external fabric such as brick and stone surfaces and ironmongery, the repair and reconstruction of the roof and rainwater goods so as to ensure the building is waterproof and confirms to regulations.

The fabric survey that has been undertaken will facilitate the conservation of the building during the construction work, including some internal works as required. It is noted that notwithstanding the internal refurbishment to the RD Watt building proposed as part of this SSDA, the interiors of the building are generally in good condition given that the building is in current and continuous use.

As part of this application, the University commits to undertaking those works identified in the Conservation Schedule as 'Current Works'. All other items identified will inform the ongoing conservation and maintenance works for RD Watt.

8.10.2 ARCHIVAL RECORDING

Condition B13 (as modified) of the Stage 1 DA Consent requires future development applications (where relevant) for new built form to include digital archival recording and documentation of the following buildings and their curtilage:

- International House (G06);
- Macleay Building and Botany Wing (A12);
- R. D Watt Building (A04);
- Peter Nicoll Russell Building (J02);
- Old School Building Darlington (G15);
- J. D Steward Building (B01); and

- Blackburn Building (D06)

Of relevance to the subject SSD is the R.D Watt Building, as there are no works proposed in relation to the other buildings listed above or their curtilages.

An Archival Recording of RD Watt has been undertaken in accordance with the NSW Heritage Office guidelines *How to Prepare Archival Records of Heritage Items* (1988) and *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

A digital copy of the Archival Recording is included at **Appendix M**. Hard copies of the Archival Recording are also provided as required.

8.10.3 INTERPRETATION STRATEGY

An Interpretation Strategy has been prepared in response to Condition B14 of SSD 13_6123 and is included at **Appendix N**. The Interpretation Strategy addresses those elements of heritage significance proposed to be demolished or altered by the development proposal. Specifically, the Interpretation Strategy references:

- RD Watt building; and
- Substation no.54 and Switch room.

As discussed in **Section 1.6.2** above, REF 3-2016 FASS Early Works Stage 2, Camperdown Campus was approved by the University of Sydney Director of Campus Infrastructure & Services on 10 March 2016. This REF, supported by a Heritage Impact Statement, approved the demolition of Substation no.54 notwithstanding it being shown to be retained on plan reference SSD-F-11 Rev C (08/09/2014) approved by Condition A5 of SSD 13_6123.

As approval has already been granted for removal of the Substation no.54, the Interpretation Strategy identifies ways in which its location and use (along with those significant elements of RD Watt proposed for removal or alteration) can be properly documented, interpreted and displayed such that it can be appreciated by future users and the wider public.

Notwithstanding the approved removal of this substation, the Interpretation Strategy will ensure that the proposed FASS development scheme will be generally consistent with the CIP envelope approval (SSD 6123) with respect to Substation no. 54 as it proposes the partial demarcation of the former building footprint in the landscape at the location of the present substation building, and the provision of an associated plaque/signage as discussed in **Table 8** below, enabling users and visitors to understand the historic significance of the substation.

Given the history and significance of the subject buildings, as well as their location within the wider University of Sydney campus, interpretation is mainly intended for occupants and users of the site and wider university users and visitors. The following audience groups have been identified in order of visitation.

- Occupants and users of the site (current students and staff);
- Local wider university users and visitors (including past students and staff);
- Overseas university users and visitors; and
- General public.

With consideration for the intended wider audience, interpretation is proposed to be provided through built form and media, including embedded in a landscaped zone/section within a publicly accessible area/thoroughfare and in principal internal circulation areas.

The following themes have been identified for interpretation

- Beginnings of Agricultural Education

- Science and Technology

Interpretation is proposed in the following ways, as detailed in **Table 8.**

TABLE 8 – HERITAGE INTERPRETATION

ELEMENT FOR INTERPRETATION	METHOD OF INTERPRETATION
Interpretation of Built Form	
Alterations are proposed to the fabric and use of the existing ground floor lecture theatre into a reception and registration area. The lecture theatre is identified in the CMP as being of high heritage significance and retains the original tiered configuration.	▪ It is proposed to provide interpretation of the former lecture use of the room through demarcation in the flooring to illustrate the tiered arrangement of the seating. ▪ Where the original timber floor is intact (subject to investigation) this should be retained and reused. It is also recommended that the skirting is retained stepping up the wall in order to further demonstrate the tiered arrangement of the seating. The works also include conservation and restoration of significant facades and features which enhances the passive interpretation of the building and its former function.
The Substation	
Substation 54 has been approved for removal per REF 3-2016 FASS Early Works Stage 2, Camperdown Campus.	▪ Interpret the former substation through the partial demarcation of the former building footprint in the landscape at the location of the present substation building; ▪ Location of a plaque/signage adjacent to the ground inlays as a freestanding element, interpreting the former use of the site and complementing the built form interpretation. The plaque should acknowledge and interpret the significance of the building. ▪ Potential content and images for interpretation panels are shown within the Interpretation Strategy.
Interpretation through Panels/Signage	
RD Watt	▪ It is proposed to include interpretation signage within the RD Watt Building which interprets the historical use of the building as the former Faculty of Agriculture. ▪ The interpretation should represent themes identified above and should at a minimum present a chronology of the site's development and use, as well as its significant technological and research contribution, overlaid with a variety of graphic images. Examples of appropriate imagery are detailed in the Interpretation

ELEMENT FOR INTERPRETATION	METHOD OF INTERPRETATION
	Strategy. ▪ Interpretation should be located on the ground floor within the primary circulation area. This zone is consistent with the aims and objectives of the strategy, by providing interpretation that is readily accessible to all users and occupants of the building.

It is intended that the heritage consultant work with the project team to further develop a detailed Interpretation Brief to finalise recommended interpretation media.

Implementation of the Interpretation Strategy with respect to RD Watt and Substation no. 54 will ensure that users of or visitors to the site will be afforded an opportunity to understand the historic significance of those heritage elements approved for removal as part of REF 3-2016 or proposed for removal as part of this SSDA. This will enhance the ongoing cultural value of the FASS and RD Watt Buildings.

8.11 ABORIGINAL HERITAGE

Three (3) Aboriginal Heritage Assessment reports are provided at **Appendix Q**, including:

- University of Sydney Campus Improvement Program Aboriginal Due Diligence Report, prepared by Godden Mackay Logan (October 2013);
- University of Sydney Buildings Aboriginal Heritage Due Diligence Report, prepared by GML Heritage (September 2015); and
- University of Sydney Aboriginal Heritage Impact Assessment, prepared by AHMS (February 2016).

These Aboriginal heritage assessments, prepared over the past decade for the University campus in general and for specific work sites, have concluded that no archaeological sites or artefacts relating to Aboriginal occupation have been found within the University grounds.

The report by GML Heritage (September 2015), prepared in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005* concludes that the proposed FASS study area is assessed to have no to low Aboriginal archaeological potential as a result of:

- Early European farming, grazing and cultivation which has resulted in erosion and stripping of already shallow top soils;
- Construction of Parramatta Road and its subsequent widening in 1910;
- Ground disturbance for excavation of World War II air raid shelter trenches;
- Terracing which has significantly modified the natural sloping landform[32];
- Construction and demolition of various buildings on the site over time including the RD Watt Building (1916), the Ross Street Building (1946 - 2010) and the demountable village (built 2012 - 2013), the McMillan Building (1960 - 2012) and adjacent outbuildings (demolished 2012); and
- Electrical substation building and a network of subsurface service lines.

In addition, the Aboriginal Heritage Impact Assessment (AHIA) report by AHMS has been prepared in accordance with the G*uide to investigation, assessing and reporting Aboriginal Cultural Heritage in NSW (DECCW, 2011)***,** and the *Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010)*. The AHIA concludes that:

- With the exception of the western portion of the Life Sciences and Health Precincts, it is considered that the remaining precincts would have low potential for cultural materials to be present. (**Note**: the subject site is located in the eastern portion of the Life Sciences precinct); and

- No areas identified as having cultural values would be directly or indirectly affected by the proposed development.

8.12 SEDIMENT, EROSION AND DUST CONTROLS (CONSTRUCTION AND EXCAVATION)

An Erosion and Sedimentation Control Plan has been prepared by Lend Lease and is provided within the Construction & Traffic Management Plan at **Appendix JJ.**

The erosion and sediment control plan has been prepared in accordance with Landcom's Soil and Construction manual (commonly known as the Blue Book), Volume 1, March 2004.

8.13 CONTAMINATION

An assessment of likely site contamination has been undertaken by Coffey Environmental. A Detailed Site Contamination Investigation at **Appendix CC** and SEPP 55 Letter summarising the findings of this Investigation at **Appendix DD** addresses the level of site contamination.

The assessment entailed a site history review followed by an investigation that included invasive sampling and laboratory analysis for a range of contaminants of potential concern. The investigation was undertaken in accordance with the relevant sections of the NSW OEH (now EPA) publication, *Guidelines for Consultants Reporting on Contaminated Sites (2011)*. The report concluded that

> *Given the results of soil and groundwater investigations undertaken as part of this Detailed Site Contamination Investigation, Coffey considers that the site is suitable from a contamination perspective for the proposed redevelopment.*
>
> *The results of the investigation indicate that further investigation and / or remediation of the site is not required to permit the proposed FASS Enabling Works and, therefore, preparation of a Remediation Action Plan is not necessary.*

Based on the above, the site has limited potential for contamination and no further mitigation measures are required.

8.14 UTILITIES

The Infrastructure Management Report at **Appendix R** identifies that there is sufficient capacity within the network to provide the required infrastructure services to support the future operation of the FASS and RD Watt buildings as proposed.

Whilst new servicing infrastructure will be required to connect to the subject buildings, this can be undertaken appropriately, subject to the obtaining of relevant authority requirements prior to construction.

8.15 FLOODING AND DRAINAGE

The proposed site is located within the Johnstons Creek catchment, an area of which forms the subject area of a flood modelling assessment completed by WMA Water on behalf of City of Sydney Council. The associated report, Johnstons Creek Catchment - Floodplain Risk Management Draft Plan, Draft Report, September 2014, identifies no localised flooding effects on and in the vicinity of the FASS development site.

A Civil Design Report has been provided at **Appendix AA** which assesses the impacts of the proposed development on the stormwater and flooding. The conclusions and recommendations of this report are summarised below:

Flooding

The flood assessment relies upon the design of Warren Smith and Partners and the campus stormwater augmentation works proposed as part of the CIP, which will reduce the extent of flooding across the campus. The FASS building site is located close to the detention storage which is proposed on University Oval no.2. The flood levels for both the existing and proposed development scenarios have been studies and reported by WMA water and Warren Smith & Partners in their reports undertaken for the University of Sydney.

The reported increase in flood levels at university Oval No.2 at the Grandstand is 0.18m in a 1% AEP event, to RL21.68 and 0.24m in a PMF event, to RL21.74.

The estimated flood level at the FASS site entry off Science Road in a 1% AEP event is RL 26.0m AHD. The PMF event shows a flood level in Science Road to be about the same as the existing 1% AEP event at the FASS building site entry.

Once the stormwater upgrade works are completed as reported in the Warren Smith & Partners Stormwater Concept Design Report, the flooding will be ameliorated resulting in a reduction in flood levels near the FASS site.

Should the FASS building be completed prior to the campus stormwater works being constructed, the site surface grading has been designed within the PMF flood levels considered such that the FASS building achieves the required flood immunity required.

The proposed stormwater drainage system for the FASS building has sufficient capacity to drain the 100 year storm without ponding. The design provides at least 300mm freeboard from flooding in the 100 year storm.

The PMF for the site area is also capable of being collected by the trench drain and surcharged at the corner of Ross Street and Science Road via an existing grated gully pit and new kerb lintel pit.

Concept Stormwater Design

The concept stormwater drainage design has been provided in accordance with the requirements of the City of Sydney, Sydney Water and AS 3500.3 Plumbing and Drainage.

On site detention is not required for this site as the Flood Mitigation Work Program incorporates OSD off-site at other locations within the University Campus. A letter from Sydney Water confirming this requirement is appended to the Civil Design Report.

The Warren Smith & Partners 'Camperdown Campus Stormwater Concept Design Report' proposes GPTs as part of the CIP downstream of the FASS building site to comply with City of Sydney WSUD treatment for stormwater runoff from campus including runoff from the FASS building site. Therefore, no water quality measures are required for the FASS building.

Subsoil drainage will be provided behind the retaining walls in accordance with the structural engineer's requirements. The sub soil water will discharge into the stormwater drainage system.

This analysis demonstrates that no further mitigation works are required to ameliorate the effects of site flooding or stormwater management.

8.16 EXCAVATION AND GEOTECHNICAL IMPACTS

A Geotechnical Report has been prepared by Coffey and is provided at **Appendix BB**.

As noted in the report, the existing ground surface slopes up from 29 m AHD in the south west corner of the site to 33.9 m AHD at the north east corner of the site.

The proposed development involves:

- excavation of the western end of the site by about 3.5 m and eastern end of the site by about 8.5 m to achieve the proposed Level 1 ground surface elevation of 25.65 m AHD for the FASS building;

- excavation/land forming of about 8.5 m the northern area of the FASS building and approximately 4.5 m in the southern area, outside of the building to R.D.Watt Building, to Level 1 ground surface elevation of 25.65 m AHD; and

- construction of FASS building consisting of 6 levels (0.16 hectare in area).

The Geotechnical Report found that the site is:

- underlain by Ashfield Shale (Winamatta group), which is typically dark grey to black claystone, siltstone and fine grained sandstone and laminate;

- underlain by "Blacktown Landscape" generally comprising undulating rises of shallow moderately to highly reactive soil overlying shale; and

- within an area of no known occurrence of acid sulfate soils.

Coffey has carried out a recent geotechnical investigation on site in May 2016 to investigate the weathering and strength profile of the shale bedrock on the eastern end of the site. Two boreholes (BH14 and BH15) were drilled up to 15.5 m depth from the surface in the north-eastern corner of the site adjacent to the access road.

The potential issues associated with site demolition include the impact of excavation induced vibrations and ground movements existing structure surrounding RD Watt Building, and existing retaining walls.

The report concludes that the geotechnical issues that may be relevant to the proposed development include excavation, excavation support, and ground water. .

The report provides recommendations on excavation/construction methodology and footings to support the proposed structures. This information has informed the design and construction proposed on the site as part of this proposal.

8.17 ACCESSIBILITY

An Access Review report has been prepared for the proposed FASS building and is provided at **Appendix X**. A separate Access Audit Report has been prepared in respect to RD Watt and is included at **Appendix Y**.

FASS Building

The Access Report assesses the proposed development to ensure ingress, egress, paths of travel, circulation spaces, and toilets comply with relevant statutory guidelines including:

- AS 1428.1:2009 (General Requirements for Access-New Building Work)

- AS 1735.12:1999 (Lifts, Escalators, & Moving Walks)

- BCA – Building Code of Australia 2015

- DDA Access to Premises Standards 2010

- University of Sydney Access Guidelines

The report also provides recommendations to maximise reasonable provisions of access for people with disabilities to be addressed prior to construction certificate.

The key recommendations of the Access Review are:

- Ensure there is an unobstructed accessible path of travel from pedestrian footpath to the main entry doors.
- All fire doors on upper floors are to have 850mm clear widths.
- Ensure common area floor surfaces are suitably slip resistant and traversable by a wheelchair or walking frame, compliant with AS1428.1:2009 and HB197/AS4856 (wet pendulum method).
- Lift car components (grabrail, control buttons, lighting) to comply with AS1735.12.
- Stair to have handrails on both sides, nosings in accordance with AS1428.1 and TGSI in accordance with AS1428.4.1.
- The level 2 entry vestibule requires 1450mm clearance between door swings in accordance with AS142.1.
- Investigation is required as to the best means of access to the front of theatre that complies with DDA Premises Standards
- The accessible toilets will require a balance of left and right handed pans throughout the floors in accordance with DDA Premises Standards.
- The level 2 accessible toilet should have an automatic door to be in line with the University of Sydney Access Guidelines
- Accessible toilets to have fixtures and fitting that comply with AS1428.1.
- Ensure ambulant cubicle fixtures and fittings are designed in accordance with AS1428.1
- Provide an ambulant cubicle in the male and female toilets on level 6.
- The lecture theatre and other rooms that have in built amplification system will also require hearing augmentation system.
- Wayfinding and identification signage is required in accordance with BCA and DDA Premises Standards.

<u>RD Watt Building</u>

Having regard to the relevant requirements of the Disability (Access to Premises – Buildings) Standards 2010, the Disability Discrimination Act 1992, a review has been undertaken of the proposed works to RD Watt and recommendations made to ensure relevant standards are met for equitable access.

Specific recommendations are made as follows which will enable the building to be adapted to meet the relevant accessibility standards and requirements. These recommendations will be adopted in the detailed design phase of the project and incorporated to the design:

Ingress and Egress

- Install handrails on both sides of entry stair in accordance with AS1428.1.
- Ensure the stair has a continuous indicative colour contrasting strip installed on each step tread.
- An alternative Solution report needs to be under taken on using the rear access to the building as the main accessible entry point.
- Ensure hinged door to have 850mm clear width (920mm door leaf) with appropriate (in/out) latch side clearances ie 510mm latch side clearance (door opens away from user) and 530mm latch side clearance (door opens toward the user) over a surface depth of 1450mm.

Paths of Travel

- A passenger lift is required to access all floors (DA drawings currently show a passenger lift to be provided).
- Ensure the slip resistance of flooring systems used within areas required to be accessible.
- Where possible, all common use hinged door to have 850mm clear width (920mm door leaf) whilst maintaining an appropriate (in/out) latch side clearances ie 510mm latch side clearance (door opens away from the user) and 530mm latch side clearance (door opens towards the user) over a surface depth of 1450mm.
- Management plan to be used to designate accessible rooms to students/staff in wheelchairs, where room doors cannot achieve compliance with above

Stair

- Provide handrails on both sides of the central stair.
- Ensure the handrails at the top of the stair extends 300mm (horizontal) past the step tread then turns 180 degrees downwards or returns fully to post/wall.
- Ensure the handrail at the base of the stair extends one tread width (at same angle) plus 300mm (horizontal) from last riser, then turns 180 degrees downwards or returns fully to post/wall.
- Provide TGSI at the top/bottom. TGSI to start 300mm from the top & bottom of the stair over a depth of 600mm. TGSI to have an appropriate luminance contrast to the background surface as follows:
  - Integrated TGSI's (i.e. tiles) require 30% min. luminance contrast
  - Discrete TGSI's (i.e. buttons) require 45% min. luminance contrast
  - Composite TGSI's with 2 materials/colours requires 60% min. luminance contrast

Common Use Facilities

- The tea room shall be modified so there is a 1550 diameter in front of the kitchen sink. The 1550mm diameter will also allow a person in a wheelchair to entry and exit the tea room in an equitable and dignified manner.
- All lecture theatres and other teaching spaces with audiovisual facilities are to be provided with hearing augmentation. The University utilises an infra – red system. Persons using the system need to be notified and if required to either Student Services or their Staff Accessibility Manager to obtain a receiver.
- Provide locations for wheelchair users and their carer in each lecture space

Accessible Sanitary Amenities

- Ensure one unisex accessible toilet in each building (ie GF) is to be provided with an auto sliding or swing door (850mm open clear width). Any other accessible WC to have 850mm clear width (920mm door leaf) with appropriate (in/out) latch side clearances.
- Consideration is needed for both accessible WC have a minimum internal measurements of 2400mm x 2400mm or 1900mm x 2800mm (ADVISORY).
- Ensure fixtures with are designed and installed as per the requirements of AS1428.1-2009
- Ensure all accessible toilets are to be provided with a Duress alarm button to CIS Security Control Room and strobe light: refer to University Security design Standard. It is too be noted that the Sydney University Access Standard does not state the location of the duress button within the accessible WC.

However, a duress button located 600mm FFL and 50mm from toilet roll holder is within arm's reach of a person on or near the toilet pan.

- Ensure all accessible toilets are to be provided with a shelf for a bag or A4 size notebook.
- Ensure all accessible WC washbasins to have a sensor or flick mixer tap.
- Ensure all accessible WC to have Automatic electric hand dryer installed within arm's reach when directly in front of the wash basin.
- Provide ambulant cubicles within each bank of male and female toilets in accordance with AS1428.1.

8.18 WASTE

8.18.1 CONSTRUCTION WASTE MANAGEMENT

A construction waste management plan has been prepared by Lend Lease and is provided within the Construction & Traffic Management Plan at **Appendix JJ**.

This construction waste management plan identifies the different streams of waste likely to be generated during the construction phase of the project and provides a breakdown of methodology, responsibility, monitoring and reporting requirements, and performance measures for the management of these waste streams.

The plan also identifies the appropriate storage requirements as well as what waste streams can be reused, recycled or disposed of.

8.18.2 OPERATIONAL WASTE MANAGEMENT

An Operational Waste Management Plan has been prepared by Waste Audit and is provided at **Appendix KK**.

The key waste streams associated with the ongoing operation of the FASS development will include:

- Paper/cardboard recycling;
- Comingled recycling;
- Organics recycling; and
- General waste.

A bin storage room is provided on Level 1 of the FASS building with dedicated bins for each waste stream. The bin storage room is located approximately 10 metres from the atrium lift. A dedicated waste room is provided within the Level 1 of the RD Watt Building, where there will be dedicated bins for each stream, including space for all waste and recycling from the FASS building.

Cleaning staff will collect waste and recycling from each floor nightly and bring the materials to the Level 1 Bin Storage Room. Once these bins are full, cleaners will take them to Level 2 (ground level) using the atrium lift, then wheel the bins through the lobby and across the courtyard to the main Waste Store on Level 1 of the RD Watt Building.

From here, cleaners will wheel the bins down the eastern of the two access pathways to the collection point on Science Road, and present them for collection at kerbside

Removal of waste and recycling will be aligned with the University's existing collection timetable so that bins are put out as close to the collection time as possible.

Waste will be managed on site in an environmentally responsible manner and in accordance with legislative requirements and minimising environmental impact, and in accordance University Waste

Management Design Standard. These measures will promote and simplify resource recovery and recycling in the proposed development.

8.19 CONSTRUCTION IMPACTS

A Construction Management Plan (CMP) has been prepared by Lend Lease and is provided at **Appendix JJ**.

Demolition, excavation and construction works will be undertaken in a manner to minimise adverse amenity impacts, including noise, vibration, dust, and erosion and sedimentation. Management measures have been provided to mitigate these impacts, and to ensure pedestrian and vehicular networks in the vicinity are not impacted.

The various components of the Construction Management Plan, including Construction Traffic Management, Construction Waste Management, and Construction Noise and Vibration Management have been addressed in the preceding sections of the EIS.

An Erosion and Sediment Control Plan is provided as part of the Civil Design Report at **Appendix AA**. This has been prepared in accordance with Landcom's Soil and Construction Manual (The Blue Book). The Contractor will be responsible for confirming the design and phasing of the measures to suit the construction staging. A stormwater sump and pump will be required during the basement excavation and construction to capture and discharge trapped stormwater.

8.20 ECONOMIC IMPACTS

A Multiplier Analysis has been undertaken for the construction of the proposed FASS building, and is provided at **Appendix T**.

The report describes the economic effects of the construction of the proposed development on the state of NSW, and estimates the anticipated employment effects during the construction cycle.

The results of this analysis are summarised below in **Figure 30** which is an extract from the report.

FIGURE 30 – FASS – ANTICIPATED EMPLOYMENT GENERATION

Industry	Economic Employment Contribution		
	Direct (Type 1A)	Indirect	Total (Type 2A)
Non-Residential Building Construction	237 FTE	399 FTE	636 FTE
Professional, Scientific and Technical Services	40 FTE	53 FTE	94 FTE
Total	**277 FTE**	**452 FTE**	**729 FTE**

Source: AECOM, 2016

Direct employment from the construction of the FASS development is estimated to be 277 FTE (full time equivalent) jobs in all industries, whereas the indirect (consumption induced) employment is an additional 452 FTE jobs generated in all industries, resulting in an additional 729 FTE jobs generated in all industries as a result of the project during the construction phase.

Note: The above figures refer to construction jobs, and no additional staffing numbers will be accommodated within FASS or RD Watt during operation other than those already accommodated by the School of Economics (SoE) and the School of Social and Political Sciences (SSPS) elsewhere on campus.

9 Proposed Mitigation Measures

Following the delivery of appropriate mitigation measures identified in the previous section, it is determined that the proposal will not result in any significant adverse impacts on the surrounding environment.

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
Built Form and Urban Design	Building form and scale may adversely impact the heritage significance of the surrounding heritage items	Construct in accordance with submitted plans at **Appendix D** and the recommendations of the Heritage Impact Statement at **Appendix L**.	Construction and management
	Potential for poor amenity in the proposed courtyard space	Construct and maintain in accordance with submitted architectural plans at **Appendix D** and landscape plans at **Appendix K** including tree planting and nominated materials/finishes	Construction and management
	Potential disruptions to important views and vistas	Construct in accordance with the submitted plans at **Appendix D**.	Construction
Environmental Amenity	Solar access and overshadowing	Construct in accordance with the submitted plans at **Appendix D**.	Construction
	Adverse reflectivity impacts on public domain and neighbouring uses	Implement the recommendations from the Reflectivity Report at **Appendix GG**, including a maximum specular reflectivity of visible light of 20% for glazed surfaces.	Detailed design and construction
	Adverse wind impact on use of courtyard spaces and the roof terrace space	Implement the recommendations of the Pedestrian Wind Impact Assessment at **Appendix EE** including : ▪ Inclusion of the proposed awning connecting the subject development to the adjacent RD Watt Building. ▪ Inclusion of recommended densely foliating trees within and around the subject development site. ▪ Inclusion of the proposed awning above the outdoor seating area on the rooftop communal terrace. ▪ Inclusion of recommended 1.5m high impermeable balustrades along the perimeter of the rooftop communal terrace.	Design Development prior to Construction Certificate

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		Implement the recommendations of the Wind Noise Assessment at **Appendix FF** including: ▪ any regular pattern of circular shapes within porous mesh elements be replaced with irregular shapes and that multiple holes of similar size and shape are not placed in groups. ▪ Ensure that the natural frequencies of the fins are not within the audible range. ▪ Round the corners of the fin sections to a radius of greater than 5mm. ▪ Ensure that there is not a small gap between the glass façade and the fin and that the ends of the fins are sealed. ▪ Alternatively, external vertical fins and sections protruding from the building façade can be arranged in varying patterns and section lengths.	
	Lighting Impacts	Ensure that all external lighting meet the requirements of: ▪ AS 1158.3.1 Part 3.1 Pedestrian Area (Category P) Lighting – Performance and Design Requirements; and ▪ AS 4282 – Control of the Obtrusive Effects of Outdoor Lighting.	Design Development prior to Construction Certificate
Transport and Accessibility	Congestion and adverse impact on key intersections as a result of increased traffic generation on the site and altered traffic arrangements.	Implement the Construction Traffic Management Plan within the Preliminary Construction & Traffic Management Plan at **Appendix JJ**.	During Construction
	Adverse impact on pedestrian access across the site.	Implement a Pedestrian Control Plan as recommended by the Construction & Traffic Management Plan at **Appendix JJ**.	During Construction
Ecologically Sustainable Development (ESD)	That the development does not align with the principles of ESD.	Adopt the commitments contained within the ESD report at **Appendix W** as a condition of consent.	Construction through to operation

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
Noise and Vibration	Adverse noise and vibration impacts on neighbouring sensitive receivers	Implement the recommendations from the Acoustic Report at **Appendix HH** including: ▪ Use of augured rather than driven or vibratory piling will be considered if feasible. ▪ Location of the concrete pump away from Parramatta Road if practical. If this is not possible, in the event of complaint, temporary screening of the pump should be considered (plywood hoarding, or plywood sheet fixed to temporary fencing). ▪ For activities where acoustic controls and management techniques still cannot guarantee compliance with “Noise Management”/”Background+10dB(A)” noise levels, implement a notification process whereby nearby development is made aware of the time and duration of noise intensive construction processes. This may include days of heavy hammering and excavation works. ▪ Implementation of a noise monitoring program (attended noise measurements during key stages of construction) during construction to provide feedback back to the Builder to ascertain whether construction noise goals are being exceeded and determine additional management strategies. This would be expected at commencement of excavation works. ▪ noise control measures including glazing to the facades to manage the noise impacts from the uses at Level 6	Detailed design, construction, and management
	Adverse noise intrusion impacts into the building from traffic noise	Implement the recommendations from the Acoustic Report at **Appendix HH** ▪ compliance with the University including Sustainability Guidelines and *AS2107:2000 Acoustics – Recommended Design sound levels and reverberation times for building interiors*	Detailed design, construction, and management
Biodiversity	Adverse impact on health, vitality and retention of trees not proposed to be removed	Implement tree protection measures as prescribed by the Arboricultural Report at **Appendix J**.	Construction and Operational Stages
Heritage	Impact on the heritage fabric of the RD Watt Building	Implement the recommendations of the Heritage Impact Statement at **Appendix L** including: ▪ The method of attachment and drainage for the proposed awning connecting the FASS and RD Watt buildings should be subject to further detailed development and heritage advice and should be designed to be largely reversible. It should fix into mortar joints or brickwork, and should not fix to stone.	Detailed design and construction

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		▪ The proposed entry to the northern façade affects a significant façade and it is critical that the design of the proposed door is well resolved to mitigate potential impacts. Details of the northern façade entry should be provided and approved prior to the Construction Certificate. At minimum, the proposed opening must retain the width of the present opening and must retain the extant quoins and upper window sections including the stone cross bar. It is acknowledged that this will require the loss of the stone sill and lower section of the window and will impact on the symmetry of the façade bay and therefore detailed design illustrating details and finishes of the reveals should be provided and approved. Details of the proposed door should also be provided. The upper fixed window should also be restored to match the steel pivot window. ▪ The proposal discontinues the significant lecture room function of ground floor room 109 which is inconsistent with the CMP. Whilst this is considered reasonable and is supported, interpretation of the former lecture theatre should be required to mitigate impacts. Detailed design should be subject to heritage advice and should be undertaken in accordance with the submitted interpretation strategy. ▪ Where partitioning of former laboratory spaces is proposed, this should be able to be reversible and should be detailed in such a way that the original configuration remains able to be interpreted. ▪ Any significant timber doors to be removed should be salvaged and reused where possible. ▪ The proposal should incorporate any priority conservation works as determined in the separate submitted conservation schedule. ▪ Proposed landscaping works should maximise retention of identified significant tree plantings and where removal is required, should be mitigated by replacement landscaping, of like or otherwise appropriate species. Detailed landscape plans should be provided. Landscaping works should include works to improve identified significant vistas to the main RD Watt façade from Science Road (this should not include removal of significant plantings). Undertake the ‘Current Works’ identified in the Conservation Schedule for RD Watt included at **Appendix O**.	

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
	Loss of heritage significance associated with the adaptive re-use of RD Watt and loss of Substation no.54	Implement the recommendations of the Heritage Interpretation Strategy at **Appendix N.**	Detailed design and construction
	Impact on key heritage significant views and vistas	Implement the recommendations of the Heritage Impact Statement at **Appendix L** including ▪ There is an opportunity to thin out soft landscaping (later non-significant plantings) to enhance views from Science Road to the RD Watt Building. This should not impact on significant tree plantings.	Detailed design and construction
Aboriginal Heritage	Discovery and impact of elements of Aboriginal Heritage Significance	Implement the recommendations of the AHMS Report and GML Report at **Appendix Q** including: ▪ A Heritage Management Plan (HMP) should be developed for the project. The HMP should be developed in consultation with DPE, OEH and the RPAs to provide protocols, procedures and tasks to manage the cultural resources identified in the AHIA during, before and after the development. The HMP should make specific reference to: Management of the Life Sciences (West of Ross Street) and Health Precinct, which have the potential for deeply buried cultural materials to be present. Ideally, such works should be undertaken prior to any approval under Section 89J of the EP&A Act 1979 and integrated into he AHIA, and recommendations modified accordingly. Should this prove unfeasible, further sub-surface investigation and salvage (if required) of these deposits should be developed and outlined in the HMP. The remaining precincts are considered to have low potential for Aboriginal objects to be present. These areas should be managed through unexpected finds procedures to be developed and outlined in the HMP. ▪ Opportunities exist to reflect contemporary Aboriginal values through a range of possible initiatives that have been identified through consultation with the AHIA. It is recommended that an interpretation strategy is developed as a condition of consent to explore and implement expressions of Aboriginal cultural value across the University grounds. ▪ A Aboriginal Cultural Heritage induction should be developed in collaboration with the MLALC. This should include an Aboriginal sites discovery protocol.	Prior to issue of CC; During Construction

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
Arboricultural Heritage	Impact on trees of high retention value fronting Science Road.	Retain Trees 229, 231, 232, 248 and 249 fronting Science Road. Implement appropriate Tree Protection Measures during construction as recommended in the Arborist Report at **Appendix J** and as follows: ▪ Demolition Works: Tree sensitive methods should be used for the removal of existing structures and pavements within TPZ areas. Where possible, existing footings and sub-base materials should be left in situ and reused. The existing sandstone wall fronting Science Road should be left in situ (where possible) to ensure the stability of the trees' rootplates is maintained. ▪ Access / Walls / Stairs: Hand excavation and root pruning should be undertaken along the line of the proposed access/walls/stairs prior to the commencement of mechanical excavation to precent shattering of roots by excavation equipment. Root pruning should be undertaken by the Project Arborist only. New walls within TPZ areas should be designed and constructed as to avid the requirement for over-excavation. Where standard drainage (ie slotted ag pipe and aggregate drainage) is proposed to the rear of walls, these materials should be substituted for a slimline drain cell type product to reduce the requirement for additional excavation. New wall footings for insitu concrete walls/reconstructed sandstone walls should be modified to bridge significant roods (as determined by Project Arborist). ▪ Grading/Pavement Installation: Grading between the existing steps on the footpath fronting RD Watt Building and the new access way to the east of the RD Watt building supervised by the Project Arborist, and be undertaken in small increments using a compact excavator fitted with a flat bladed bucket. Pavement sub-base layers should be either thinned or finished pavement levels amended to enable the retention of significant roots (as determined by Project Arborist). ▪ Plant Installation: The installation of plants within TPZ areas should be undertaken using hand tools and roots (<25mm) should be protected. No mechanical cultivation/ripping of soils should be undertaken within TPZ areas. Other than the installation of soil conditioners to a maximum depth of 50mm above the existing soil profile, excavation and installation of new, important soil mixes should be excluded from TPZ areas.	Prior to issue of CC and during construction

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
Landscape	Removal of Trees from site	Provide replacement planting as follows: ▪ Replacement trees should be supplied as advanced size stock to help offset the loss of amenity resultant from the tree removals. ▪ Replacement planting should be supplied in accordance with *AS 2302 (2015) Tree Stock for Landscape Use* and the University of Sydney's Tree Management Plan (2016) ▪ Sufficient soil volumes should be provided for the new tree plantings to support healthy tree growth over a long time frame. Wherever possible, isolated planting areas should be increased in size or linked below pavement surfaces to adjacent planting areas to maximise the available growing environment. Various products are available which can be used beneath pavement surfaces to provide adequate support for the pavement whilst providing a suitable growing environment for tree roots. In addition, research shows that the use of tree friendly paving products can significantly reduce pavement damage and maintenance costs over the long term.	Prior to issue of CC and during construction
Sediment, Erosion and Dust controls (Construction and Excavation)	Adverse construction impacts resulting in sedimentation, erosion and dust impacts	Implement the Erosion Sediment Control Plan at **Appendix AA**.	Demolition, excavation and construction
Construction Management	Impacts associated with noise, waste management and traffic management during site enabling and construction works.	Implement the methodology and recommendations of the Preliminary Construction and Traffic Management Plan at **Appendix JJ**.	Prior to CC, During construction
Geotech	Site Stability and Construction methodology to suite geotechnical conditions – Potential Impact on the structural stability of RD WATT and the proposed FASS Building	Implement the recommendations contained within the Geotechnical Report at **Appendix BB**, including: <u>Existing Structures surrounding RD Watt Building</u> ▪ Prior to demolition works undertaken on the existing developments surrounding the R.D.Watt Building, assessment of footings/ building foundation of R.D.Watt building should be carried out and used to support the development of demolition methodology prior to starting demolition works.	Prior to CC, During Construction

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		▪ Continuous monitoring of the building is recommended during demolition. Prior to the commencement of building demolition works, dilapidation surveys of the R.D.Watt building are also recommended to be carried out. <u>Existing Retaining Walls</u> ▪ Existing retaining walls have been located to the east of the existing cricket nets and north of R.D.Watt Building. It is expected that these retaining walls will be removed during demolition works. It is recommended that during demolition of these retaining walls, site visits by a geotechnical engineer to review performance of existing slope and foundations be carried out. Additionally, stockpiles or demolishing debris should not be stored above retaining walls to minimise surcharging of such retaining walls. <u>Excavation-Induced Vibrations</u> ▪ The use of excavation plant such as impact hammers will generate vibrations that may affect any surrounding sensitive structures (in particular the R.D Watt Building) and buried services. Measures to mitigate the risks associated with vibration such as the use of rock saws or rock grinders should be considered. For excavation, the vibration limits in Table 3 below are commonly recommended to reduce the risk of vibration damage to sensitive receptors. **Table 3: Ground Vibration Limits for Various Types of Structures** | Type of Structure	Peak Particle velocity (mm/s)
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Historic buildings or monuments	2
Residential or low rise buildings in good condition	10
Reinforced concrete commercial and industrial buildings in good condition	25	 ▪ Dilapidation surveys should be carried out on neighbouring structures or sensitive services prior to commencing excavation as a baseline record of their condition. ▪ Excavation trials with vibration monitoring should also be carried out to assess appropriate distances for various excavation plant to be used to limit generated vibrations, and need for ongoing vibration monitoring during site works to check that the limits are not exceeded. ▪ Depending on the complexity of the geotechnical problem, further assessments such as an empirical assessment or 3-dimensional finite element analyses may be required together with consultation with the project structural engineers to assess possible load influences, resulting ground movements/stresses, and additional support requirements.	

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		Excavation-Induced Ground Movements ▪ It is recommended that dilapidation surveys and footing investigations be carried out before the excavation to assess the condition of the buildings with the zone of influence of the FASS development excavation. Such investigation would investigate the elevation of footings (footings within the influence zone of the excavation, if any) and the foundation and assess the risk of damage to the footings due to excavation. ▪ Potential risk of damage to building footings from ground movements during excavation should be considered when developing the excavation methodology. Ground movements of the building should be monitored during excavation to reduce the risk of damage from excessive ground movements/ vibrations.	
Utilities	Authorisation to connect to utilities infrastructure	Obtain required services connection authorisations from relevant utilities providers.	Prior to CC, During Construction
Drainage and Flooding	Site inundation during flood events and stormwater system capacity	Construct stormwater and drainage works in accordance with the Civil Design Package at **Appendix AA**.	Prior to CC and During Construction
Waste	Excess building and construction waste are diverted to landfill	Implement the Construction Waste Management Plan within the Preliminary Construction and Traffic Management Plan at **Appendix JJ**.	Construction
	Inadequate space is provided on the development site for storage of waste materials during demolition, excavation and construction	Implement the Site Establishment Plan (to be detailed by the main contractor on award) within the Preliminary Construction and Traffic Management Plan at **Appendix JJ**.	Construction
	Operational waste is stored or disposed of improperly	Implement waste storage and disposal measures in line with the University Waste Management Design Standard.	Operation
Disability Access	Provision of inequitable access to and through the site and buildings	Implement the recommendations of the FASS building and RD Watt Access Audit reports at **Appendix X** and **Appendix Y**, including: FASS Building ▪ Ensure there is an unobstructed accessible path of travel from pedestrian footpath to the main entry doors.	Prior to CC, During Construction

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		▪ All fire doors on upper floors are to have 850mm clear widths. ▪ Ensure common area floor surfaces are suitably slip resistant and traversable by a wheelchair or walking frame, compliant with AS1428.1:2009 and HB197/AS4856 (wet pendulum method). ▪ Lift car components (grabrail, control buttons, lighting) to comply with AS1735.12. ▪ Stair to have handrails on both sides, nosings in accordance with AS1428.1 and TGSI in accordance with AS1428.4.1. ▪ The level 2 entry vestibule requires 1450mm clearance between door swings in accordance with AS142.1. ▪ Investigation is required as to the best means of access to the front of theatre that complies with DDA Premises Standards ▪ The accessible toilets will require a balance of left and right handed pans throughout the floors in accordance with DDA Premises Standards. ▪ The level 2 accessible toilet should have an automatic door to be in line with the University of Sydney Access Guidelines ▪ Accessible toilets to have fixtures and fitting that comply with AS1428.1. ▪ Ensure ambulant cubicle fixtures and fittings are designed in accordance with AS1428.1 ▪ Provide an ambulant cubicle in the male and female toilets on level 6. ▪ The lecture theatre and other rooms that have in built amplification system will also require hearing augmentation system. ▪ Wayfinding and identification signage is required in accordance with BCA and DDA Premises Standards.	

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		<u>RD Watt Building</u> *Ingress and Egress* ▪ Install handrails on both sides of entry stair in accordance with AS1428.1. ▪ Ensure the stair has a continuous indicative colour contrasting strip installed on each step tread. ▪ An alternative Solution report needs to be under taken on using the rear access to the building as the main accessible entry point. ▪ Ensure hinged door to have 850mm clear width (920mm door leaf) with appropriate (in/out) latch side clearances ie 510mm latch side clearance (door opens away from user) and 530mm latch side clearance (door opens toward the user) over a surface depth of 1450mm. *Paths of Travel* ▪ A passenger lift is required to access all floors (DA drawings currently show a passenger lift to be provided). ▪ Ensure the slip resistance of flooring systems used within areas required to be accessible. ▪ Where possible, all common use hinged door to have 850mm clear width (920mm door leaf) whilst maintaining an appropriate (in/out) latch side clearances ie 510mm latch side clearance (door opens away from the user) and 530mm latch side clearance (door opens towards the user) over a surface depth of 1450mm. ▪ Management plan to be used to designate accessible rooms to students/staff in wheelchairs, where room doors cannot achieve compliance with above *Stair* ▪ Provide handrails on both sides of the central stair. ▪ Ensure the handrails at the top of the stair extends 300mm (horizontal) past the step tread then turns 180 degrees downwards or returns fully to post/wall.	

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		▪ Ensure the handrail at the base of the stair extends one tread width (at same angle) plus 300mm (horizontal) from last riser, then turns 180 degrees downwards or returns fully to post/wall. ▪ Provide TGSI at the top/bottom. TGSI to start 300mm from the top & bottom of the stair over a depth of 600mm. TGSI to have an appropriate luminance contrast to the background surface as follows: – Integrated TGSI's (i.e. tiles) require 30% min. luminance contrast – Discrete TGSI's (i.e. buttons) require 45% min. luminance contrast – Composite TGSI's with 2 materials/colours requires 60% min. luminance contrast *Common Use Facilities* ▪ The tea room shall be modified so there is a 1550 diameter in front of the kitchen sink. The 1550mm diameter will also allow a person in a wheelchair to entry and exit the tea room in an equitable and dignified manner. ▪ All lecture theatres and other teaching spaces with audiovisual facilities are to be provided with hearing augmentation. The University utilises an infra – red system. Persons using the system need to be notified and if required to either Student Services or their Staff Accessibility Manager to obtain a receiver. ▪ Provide locations for wheelchair users and their carer in each lecture space *Accessible Sanitary Amenities* ▪ Ensure one unisex accessible toilet in each building (ie GF) is to be provided with an auto sliding or swing door (850mm open clear width). Any other accessible WC to have 850mm clear width (920mm door leaf) with appropriate (in/out) latch side clearances. ▪ Consideration is needed for both accessible WC have a minimum internal measurements of 2400mm x 2400mm or 1900mm x 2800mm (ADVISORY). ▪ Ensure fixtures with are designed and installed as per the requirements of AS1428.1-2009	

SEAR/CONDITION	POTENTIAL IMPACT	MITIGATION/MANGEMENT RECOMMENDATION	STAGE OF DEVELOPMENT
		▪ Ensure all accessible toilets are to be provided with a Duress alarm button to CIS Security Control Room and strobe light: refer to University Security design Standard. It is too be noted that the Sydney University Access Standard does not state the location of the duress button within the accessible WC. However, a duress button located 600mm FFL and 50mm from toilet roll holder is within arm's reach of a person on or near the toilet pan. ▪ Ensure all accessible toilets are to be provided with a shelf for a bag or A4 size notebook. ▪ Ensure all accessible WC washbasins to have a sensor or flick mixer tap. ▪ Ensure all accessible WC to have Automatic electric hand dryer installed within arm's reach when directly in front of the wash basin. ▪ Provide ambulant cubicles within each bank of male and female toilets in accordance with AS1428.1.	

10 Justification and Conclusion

The proposal seeks to provide a new multi-functional and efficient Faculty of Arts and Social Sciences (FASS) building to consolidate the School of Economics (SoE) and the School of Social and Political Sciences (SSPS) which are currently fragmented across a number of other older and poorly functioning buildings across The University of Sydney's Camperdown campus.

The key objectives of the project are to:

- Relocate and consolidate existing teaching facilities, and research and faculty offices used by the School of Social Science and Political Science; and the School of Economics;
- Create an iconic building that complements the adjoining heritage RD Watt building and provides a high quality architectural presentation to Parramatta Road;
- Design a new building that is generally compliant with the building envelope controls for this site contained within the SSD approved Campus Improvement Program 13_6123;
- Upgrade and modernise teaching and research facilities to support the delivery and achievement of a world class educational establishment;
- Ensure that the development has minimal environmental and amenity impacts on surrounding areas;
- Adaptively reuse internal areas of the R. D Watt Building for additional teaching and research facilities, meeting rooms, and workshop spaces;
- Protect and enhance the heritage significance of the surrounding heritage items including the R. D Watt Building, and interpret the heritage significance of Substation no. 54 which has been approved for removal;
- Improve pedestrian accessibility and enhance the landscape character of the Camperdown Campus; and
- Protect significant landscape elements including those to the south of RD Watt fronting Science Road, and mitigate the impact of tree removal (including Tree 230, Tree 235, and Tree 236) through replacement tree planting and site landscaping.

The University of Sydney has a world class reputation in education and research. The FASS development will provide modernised teaching and research facilities to support the delivery and achievement of a world class educational establishment, while creating an iconic building along the University's prominent Parramatta Road frontage close to the Ross Street entrance of the University's Camperdown Campus.

The proposed design is a result of extensive site planning and design review, and successfully responds to the existing site constraints including surrounding heritage items, landscape elements, the restricted urban context of the site, and existing views and vistas. The design will also be compatible with the future built form and urban context envisaged for the Camperdown Campus in accordance with the University's approved and adopted Campus Improvement Program (SSD 6123).

The proposed design will generally comply with the approved CIP envelope under SSD 6123, and will maximise the use of the land, achieving economic and orderly use of the land and delivering functional world class facilities in-line with the University of Sydney's international reputation and standards.

This EIS has assessed the proposed development under the relevant statutory planning and policy provisions and the issues identified within the SEARs for this SSDA. The key environmental considerations that have been assessed as part of this EIS include:

- Built form and urban design;
- Consistency with the CIP Envelope Approval (SSD 6123);

- Built form amenity impacts;
- Heritage impacts and heritage view impacts;
- Trees and landscaping;
- Accessibility;
- Traffic and transport; and
- Other environmental impacts including construction impacts

As discussed in **Section 3** and **Section 8** of the EIS, it is concluded that the proposal demonstrates that all on-site and off-site impacts have been carefully considered and addressed.

The University has also undertaken extensive consultation with relevant community groups, neighbours in the local vicinity, and various state and local government authorities. Comments received as part of this consultation process have been addressed in this report, and incorporated into the design of the final proposal where relevant as discussed in **Section 6** of the EIS.

No additional staffing numbers will be accommodated within FASS or RD Watt during operation other than those already accommodated by the School of Economic (SoE) and the School of Social and Political Sciences (SSPS) elsewhere on campus. However, it is estimated that an additional 729 FTE jobs will be generated in all industries as a result of the project, comprising 277 FTE jobs through direct employment for construction, and 452 FTE jobs through indirect (consumption induced) employment during the construction phase.

This project represents a significant opportunity to promote and enhance the University of Sydney as an important place of education and research. This proposal accords with the State, Regional and Local strategic initiatives to contribute to the growth of the NSW economy via enhanced education offerings in NSW. Based upon the conclusions arising from the assessment of this SSDA, and the implementation of recommended mitigation measures, the project is considered to warrant approval.

Having considered all the relevant matters, it is concluded that that the proposal will facilitate a sound development outcome that upholds the NSW Government's vision for the site, and it is requested that the Minister approve this SSDA under Section 89E of the EP&A Act.

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