

# **The University of Sydney Camperdown Campus**

## **The Engineering and Technology Precinct New teaching and research facilities**

**Request for the Secretary's Environmental Assessment Requirements  
(SEARs) – State Significant Development**



**July 2017**

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## 1.0 EXECUTIVE SUMMARY

The University of Sydney (the University) is proposing to develop the Engineering and Technology Precinct on its Darlington campus. The proposed State Significant Development is consistent with the approved Concept approval for the Campus Improvement Program.

In accordance with Clause 3 and Schedule 2 of the Environmental Planning & Assessment (EP&A) Regulation 2000, and Clause 15 and Schedule 1 of the State Environmental Planning Policy (State and Regional Development) (SRD SEPP) 2011, the University is seeking the Department of Planning and Environment (DP&E) Secretary's confirmation of, and response to, the following matters regarding the proposed redevelopment of the Engineering and Technology Precinct on the University's Camperdown and Darlington campus:

- Confirmation that the project qualifies as State Significant Development (SSD);
- Secretary Environmental Assessment Requirements (SEAR) for the SSD application; and
- Acceptance and endorsement of the Invited Competitive Design Alternative Process undertaken for this SSD project.

It is also noted that the University is deemed to be Crown pursuant to section 88 of the Environmental Planning & Assessment Act 1979 (the EPA&A Act), and pursuant to clause 226 of the Regulations.

The Engineering and Technology Precinct site falls within the recently approved Concept Campus Improvement Program (CIP) – SSD 13\_6123. The CIP is the University's development implementation program for future campus precincts with accompanying building envelopes, and was approved by the Minister for Planning on 16 February 2015.

The Darlington campus is located within the City of Sydney's Local Government Area (LGA). The engineering precinct is not in a Heritage Conservation Area. It is, however in the vicinity of the Old School Building on Maze Crescent, which is identified as a heritage item under Sydney Local Environmental Plan (SLEP) 2012 (Item 1524).

The site proposed for redevelopment comprises an area of approximately 9,300m<sup>2</sup> and is located to the eastern end of the University's Darlington Campus between Shepherd Street and Maze Crescent. The site is adjacent to the Mechanical Engineering Building and Seymour Centre to the south, and the Electrical Engineering and Engineer Link Building to the north.

The Engineering Precinct currently houses 16 separate buildings, being the Gordon Yu-Hoi Chiu Building, Chemical Engineering Building, Old School Building, P.N.R Building, Electrical Engineering Building, Agricultural Glasshouse, School of Information Technology, Shepherd Street Parking Station, Engineering Workshop, University Store, Aeronautical Engineering Building, Mechanical Engineering Building, Engineering Link Building, Rose Street Building, Civil Engineering Building and Civil Engineering Workshop.

Under this SEARs request, only the Electrical Engineering Building and Engineering Link Building are proposed to be redeveloped by extension, replacement and refurbishment. The additions will enable the provision of improved infrastructure enabling shared resources and increased support for research and researchers to ensure the University is able to provide world class research and teaching facilities.





### **The Engineering and Technology Precinct extent of works.**

The Engineering and Technology Precinct will be designed to meet the additional infrastructure requirements of the Engineering and Technology Faculty for 2019 with capacity for 2024. The proposal will include the addition of a new building containing teaching labs, research space, school hub and academic work space.

Subject to detailed planning, the proposed redevelopment site is anticipated to provide approximately 20,000 m<sup>2</sup> of Gross Floor Area (GFA) to accommodate the various uses proposed. Of the 20,000m<sup>2</sup> approximately 14,000m<sup>2</sup> is additional GFA to that currently provided on the site. The final GFA will be revealed through the detailed design development phase.

This Project comprises educational purposes as defined by State Environmental Planning Policy – State and Regional Development (SRD SEPP), Schedule 1, Clause 15 - Education Establishment, and has a Capital Investment Value (CIV) of more than \$30,000,000. The CIV for the project is \$105,136,232 and is detailed in Section 12 of this report.

The University's Campus Infrastructure and Services department (CIS) is responsible for the delivery of the proposal.

The development of the Engineering and Technology Precinct is designed to comply with the Minister for Planning's approved concept CIP building envelopes (SSD 13\_6123). The building envelope depicted by the CIP for this development precinct permits an additional 42,500m<sup>2</sup> GFA to supplement the 57,131m<sup>2</sup> GFA of the current Engineering Precinct.

The total GFA of the Engineering Precinct will be 99,631m<sup>2</sup> under the approved CIP.



Condition A6 of the CIP Concept Approval allows for a total additional GFA of 42,500m<sup>2</sup> for the Engineering Precinct, after taking into account the demolition of the northern portion of the J03 Electrical Engineering building [with an existing GFA of 5,666m<sup>2</sup> GFA this proposal will introduce an additional GFA of 14,000m<sup>2</sup> to the Engineering Precinct [subject to final design resolution]. A detailed breakdown of each space will be provided in the Environmental Impact Statement which will demonstrate and confirm compliance with the conditions of the approved Concept Plan for the University.

The project will continue to foster the educational establishment uses and strengths of the campus, ensuring it serves as a leading research establishment and fosters innovation as a leading educational establishment.

This role is consistent with the Greater Sydney Commission Draft Central District Plan, which identifies the area as the Camperdown-Ultimo Education Precinct, a part of the Major Global Sydney Precinct.

## 2.0 THE UNIVERSITY OF SYDNEY - STATE SIGNIFICANT DEVELOPMENT AND CURRENT PROJECTS

The University is recognised as Sydney's oldest University and at the forefront of providing specialist tertiary education and research pedagogy. In 2016 the University attracted some 54,000 enrolments, employed over 7,600 permanent staff, and generated over 5,100 jobs in the areas of construction, facilities, maintenance and services. The University is a significant employment node and destination as well as a future employment provider through its qualified students.

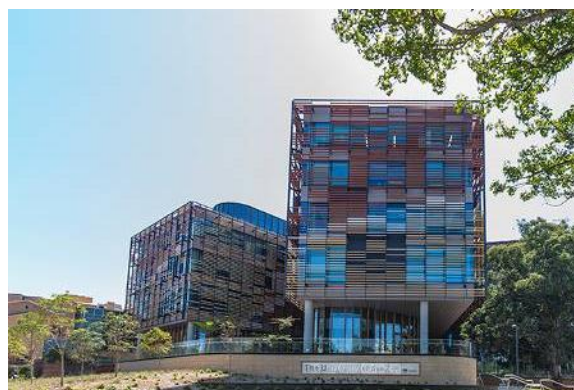
The University's Camperdown-Darlington campus is located within the Global Sydney 'cityshaper', within the Sydney Education and Health precinct of the DPE's A Plan for Growing Sydney. It is also located within the 'Camperdown-Ultimo Education and Health Super Precinct' under the draft Central District Plan (Greater Sydney Commission, November 2016).

As part of its current capital works program, the University has delivered a significant capital projects program over the last five (5) years with a value exceeding \$800 million. Recent examples include:

- \$385M Charles Perkins Centre for Obesity, Diabetes and Cardiovascular Disease (2014);
- \$250M Abercrombie Precinct Redevelopment: Sydney Business School (2015);
- \$110M Australian Institute for Nanoscience (2015); and
- \$58M Queen Mary Building: Student Accommodation (2015)



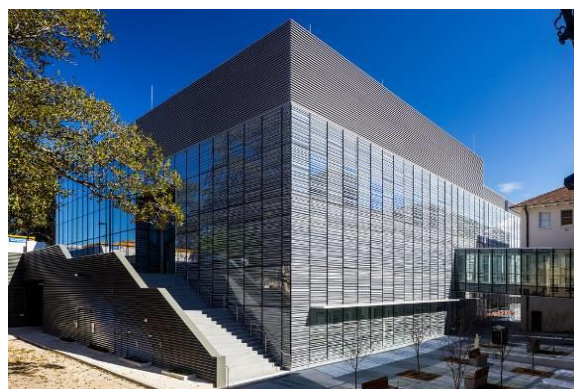
Charles Perkins Centre



Abercrombie Business School



Queen Mary Building



Australian Institute for Nanoscience

These four (4) major transformational projects were completed on the Camperdown-Darlington campuses during 2014-2015, and resulted in increased construction employment as well as consolidating full time academic, research, teaching and administrative employment growth in the sectors of Medicine, Nanoscience and Business. The University's investment in these projects



attracts research grants resulting in specialised jobs and encourages and supports collaboration with relevant industry sectors.

These combined projects represent an injection into the NSW economy of more than \$1 billion in construction and related activities.

Details of these projects can be found on the following website  
<http://sydney.edu.au/about/profile/building-projects/index.shtml>

The University is also currently managing the development of another five (5) transformational projects at the Camperdown-Darlington campus including the Life, Environment and Earth Sciences (LEES), F23 (Administration Building), Regiment mixed use redevelopment, Faculty of Arts and Social Science (FASS) and the Health Precinct Stage 1.



LEES1 Building



F23 Administration Building



Engineering Technology Precinct



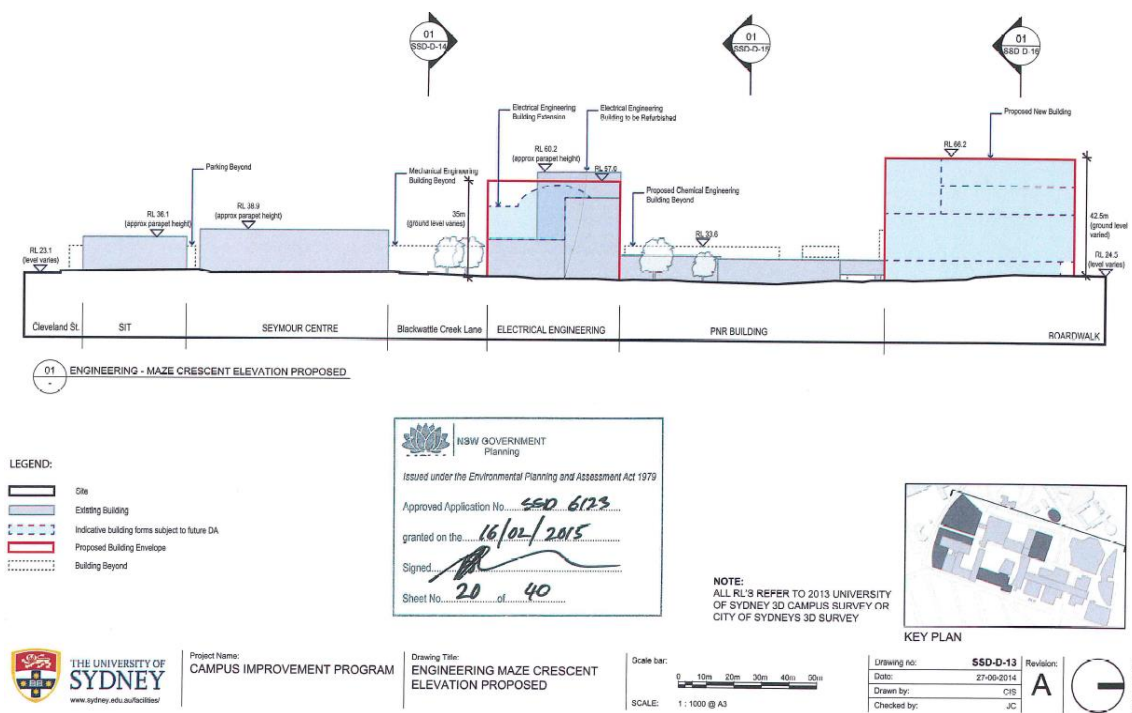
Faculty of Arts and Social Sciences

### 3.0 RELATIONSHIP TO THE CONCEPT CAMPUS IMPROVEMENT PROGRAM SSD 13\_6123

The University has adopted the CIP for the Stage 1 implementation strategy of development and infrastructure to the Camperdown-Darlington campus. The CIP is a State Significant Development that was approved by the Minister for Planning (SSD 13\_6123) on 16 February 2015.

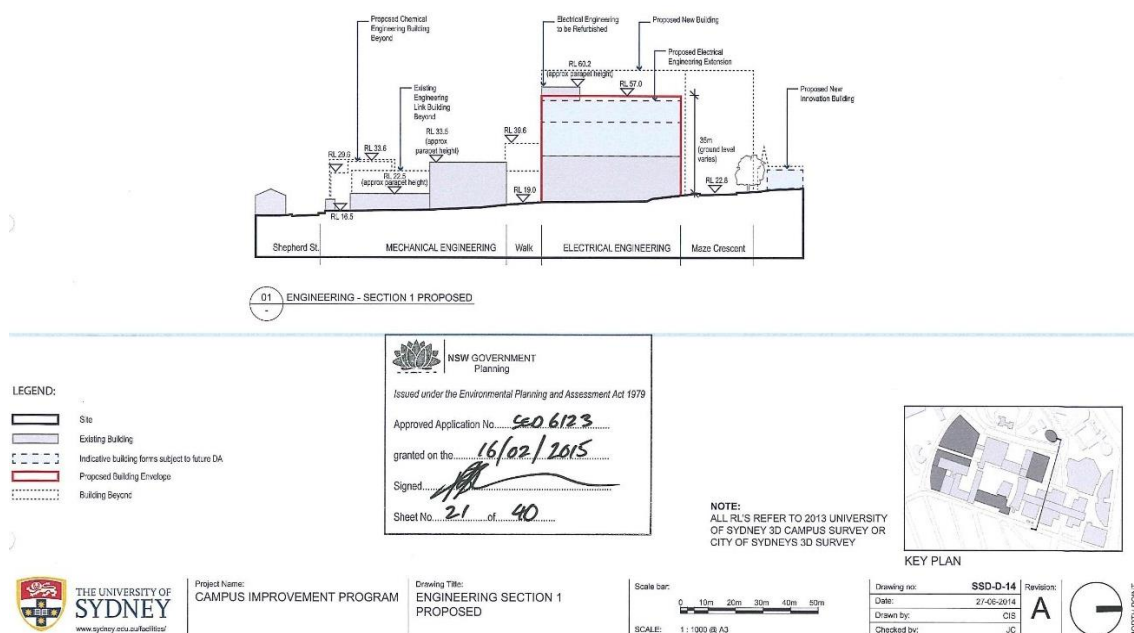
The CIP provides a total of six (6) campus precincts with appropriate building envelopes, generic University land uses, transport and access arrangements, landscape concepts, heritage and design principles for the University's campus. Budgetary forecasts for the CIP project an additional estimated \$1.4 billion in construction spend over a ten-year period.

The proposed Engineering and Technology redevelopment site is located within the approved CIP Engineering Precinct and will conform with the approved CIP building envelope areas.



### Section: CIP Approved *Engineering and Technology Precinct – Electrical Engineering Building*





## Section: CIP Approved Engineering and Technology Precinct – Electrical Engineering Building

The Minister's approval of the CIP SSD13\_6123, includes (but is not limited to) the following relevant and specific conditions to the Engineering and Technology Precinct that will be relevant to be addressed in the SSD application to be lodged:

### Gross Floor Area

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

Precinct	Total Additional Gross Floor Area
Merewether Precinct	63,400 sqm
City Road Precinct	62,800 sqm
<b>Engineering Precinct</b>	<b>42,500 sqm</b>
Health Precinct	56,700 sqm
Life Sciences Precinct	37,250 sqm
Cultural Precinct	2,000 sqm

### Car Parking

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

### Design Excellence

- 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 in accordance with the City of Sydney's Competitive Design Policy (December 2013).

## **eBuilt Form and Urban Design**

- B3. Future building demolition, site layout and architectural design of future development shall be generally consistent and have regard to the following:
- a) Camperdown Darlington Campus Strategy Plans at Appendix C of the EIS (as amended by the RtS);
  - b) Design Principles at Appendix F of the EIS; and
  - c) Campus Improvement Program 2014-2020 State Significant Development Application (SSD 13\_6123), Urban Design Justification, prepared by Cox Richardson and The University of Sydney, dated June 2014.

## **Landscaping**

- B8. All future development applications for new built form must include detailed landscape plans identifying the vegetation to be removed or relocated and the location of replacement and additional landscaping, and must be generally in accordance with the approved landscape concept in Condition A4 of Part A of Schedule 2 and The University of Sydney Grounds Conservation Management Plan, dated July 2014.

## **Heritage**

- B13. 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):
- e) Old School Building Darlington (G15).

## **Traffic, Access and Car Parking**

- B16. All future development applications for new built form must include a detailed assessment of the traffic and transport impacts associated with the future development and shall address, but not limited to:
- a) Details of the total daily and peak hour trips generated by the proposed development, including accurate details of the current and future daily vehicle movements and assess the impact of the traffic generated on the local road network;
  - b) Detailed intersection analysis in consultation with Council and the Roads and Maritime Services, where University roads connect with local or State roads, including intersection capacity (including University vehicle access points) and requirements for future road and intersection upgrading works;
  - c) The cumulative traffic and parking impacts;
  - d) Proposed mode share targets and appropriate measure to ensure they are satisfactorily achieved; and
  - e) The status of the closure of existing at-grade car parking areas (where relevant).

The Environmental Impact Statement (EIS) report that will accompany the SSD application for the Engineering and Technology Precinct will address all relevant conditions that apply to the precinct, site and the broader campus that are contained in the Minister's SSD 13\_6123 consent.



## 4.0 THE UNIVERSITY OF SYDNEY PROFILE



Located in the heart of Sydney, and on various satellite campuses throughout NSW, the University is unique among Australia's leading universities in the breadth of disciplines it offers the following:

**Student mix:** The University targets a mix of between 60 and 70 per cent undergraduate student load, up to 15 per cent postgraduate research student load, and between 20 and 30 per cent postgraduate coursework student load. Their international students, from more than 130 countries, make up almost a quarter of the student body.

The University currently has 54,314 enrolments and 39,124 EFTSL. Domestic student load is targeted between 65 and 70 per cent, and international student load is targeted between 25 and 30 per cent. The University does not envisage a significant increase in student enrolments. The campus is close to capacity, and the University is consequently targeting an increase in the quality of teaching, learning, research facilities and infrastructure.

**Employment profile:** In 2015, the University employed approximately 7,600 full time staff, comprising 2,266 administrative staff and 5,350 faculty staff. At August 2015, the University's student: staff ratio was 17.6:1.

**Construction and capital works activity:** The University is committed to a variety of construction and capital work programs, in particular those earmarked by the Minister's approval for the CIP, existing building upgrade works, and regular building facilities and maintenance works. The University typically generates more than 2,000 construction jobs on major transformational projects at any one time, as well as over 200 capital works building projects. The University also employs more than 3,000 inducted contractors for facilities maintenance and related services. In the past five (5) years, the University has successfully delivered more than \$800M in capital works.

**World-Class Research:** The University consistently ranks among the top 100 universities in the world. The federal government's 2012 Excellence in Research Australia initiative rated 100 per cent of our fields of research at world standard or above in all 22 broad discipline areas in which we were rated. In 2013, the University was the second highest recipient of funding from granting bodies listed on the federal government's Australian Competitive Grants.

The University's current strategic plan is also investing initiatives to support the current and future research talent towards the NSW workforce through technical disciplinary training, more general training in research leadership and management, skills in commercialisation and communication, and in developing cross-disciplinary research capabilities. For example, the recently completed Charles Perkins Centre delivers sustainable solutions for obesity, diabetes and cardiovascular disease, while our China Studies Centre aims to improve Australia's cooperation and relations with China and better understand its impact on the world.

Work such as this makes a real difference by informing decisions in government, industry and the wider community. We collaborate closely with external partners and regularly take part in government, parliamentary inquiries and policy reviews.



**Degrees of Inspiration:** The University's student experience has been repeatedly recognised as the best in the country by the National Union of Students.

We encourage our students to get involved in life outside the classroom, participate in our 200+ social clubs and share their views in University decision-making.

We also contribute to Sydney more broadly through our championship-winning sports teams, ground breaking art and music and fascinating museums - one of which houses the largest collection of antiquities in the southern hemisphere. The University's museums and art gallery attracted more than 95,000 visitors in 2012, while our Sydney Ideas public lecture series welcomed almost 13,000 people to hear globally prominent speakers discuss the key issues facing the world, from human rights to climate change.

**Social Inclusion Strategies:** The University has adopted and implements, the following social inclusion strategies:

- The *Wingara-Mura Buna Barrabugu* strategy informs how the University works as a community to empower Aboriginal and Torres Strait Islander cultures and perspectives as part of its identity; expands Aboriginal education, research and engagement to become a core activity of the University.
- The University's *Student Well-being* strategy. The student accommodation program incorporates a providing informed resources, services and support to students from both within the University and from the wider community. This requirement will result in increased community capacity, linked up services (government, non-government and university) and assist in the University fostering social inclusion for all students.

## 5.0 THE CAMPERDOWN-DARLINGTON CAMPUS

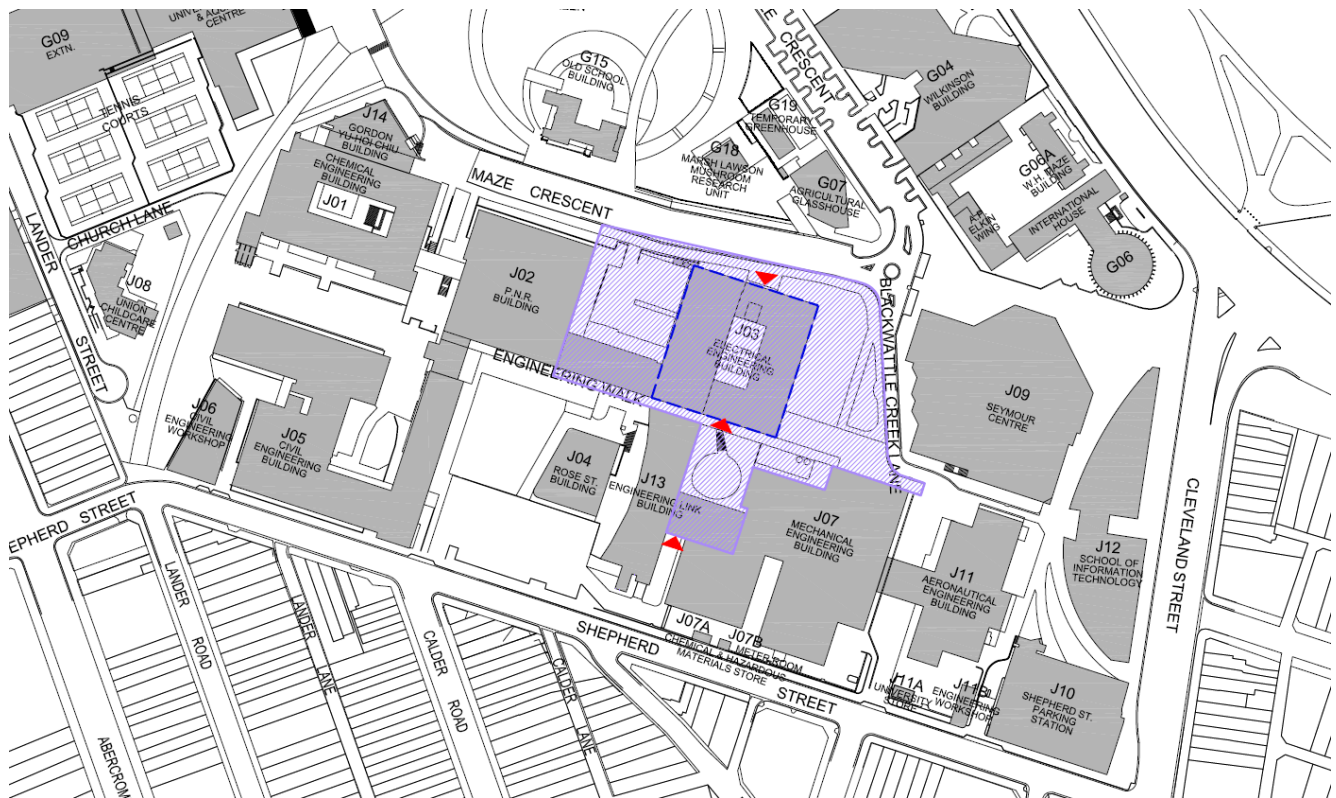
### 5.1 Campus Overview

The University's Camperdown-Darlington Campus is located in the heart of Sydney, is well connected to principal railway stations and bus services close to the CBD and enjoys the following metrics:

- **Campus Size:** 49 hectares (Camperdown 33; Darlington 16);
- **Student enrolments:** 54,314 enrolments; 70% domestic; 30% international
- **Construction Jobs:** 5,100 construction; contractor's facilities maintenance
- **Built environment:** 237 buildings (186 habitable);
- **Employment:** 7,616 full-time staff: 2,266 administrative; 5,350 faculty.

### 5.2 Site Description

The development site is bounded by the Mechanical Engineering Building and Seymour Centre to the north, the PNR Building to the south, and the Engineering Link Building to the east. Shepherd Street and Maze Crescent to the east and west. The location of the works is shown hatched in the Figure below.



Indicative plan of extent of external works (shaded)



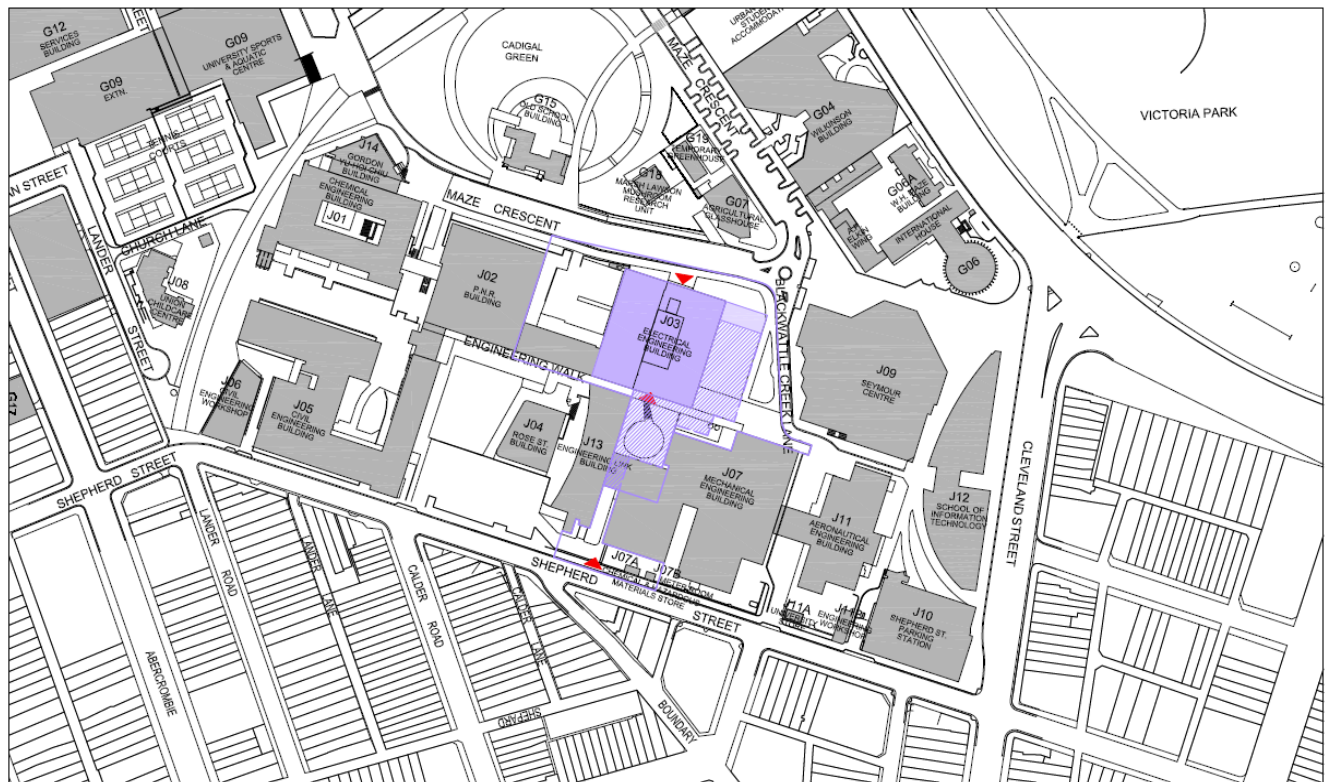
## 6.0 THE PROPOSED SSD PROJECT

This request for SEARs for the development of the Engineering and Technology Precinct seeks the following:

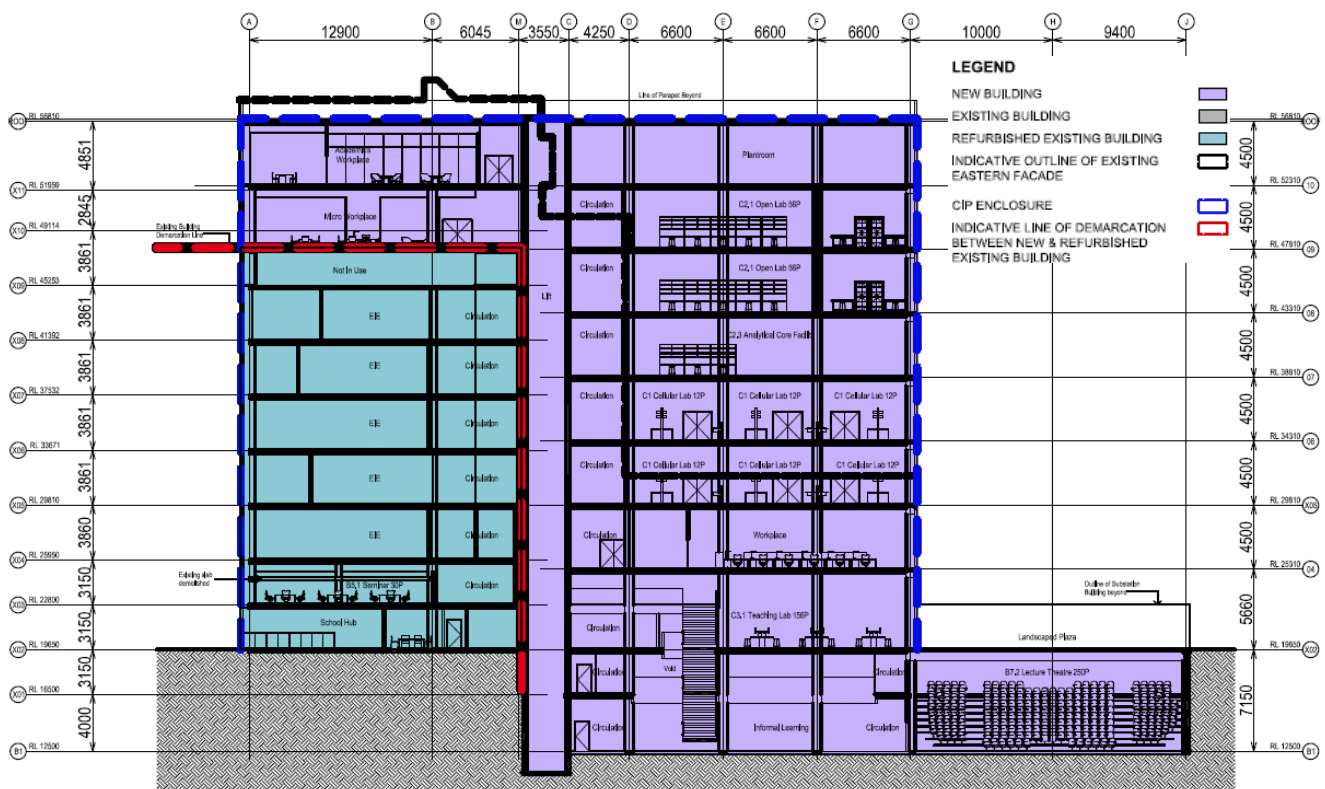
1. Confirmation that the project qualifies as a State Significant Development Application; and
2. Confirmation of the Secretary Environmental Assessment Requirements (SEARs) for matters to be incorporated into the SSD EIS and associated documentation.

Broadly, the scope of works for the proposed development in the Engineering Precinct comprises:

- Existing Engineering Precinct Buildings: 57,131m<sup>2</sup> GFA
- Additional Engineering Precinct Buildings of: 14,000m<sup>2</sup> GFA
- Demolition of the north tower of the J03 Electrical Engineering Building;
- Retention of the south tower levels 2-8;
- Retention of the adjoining laboratory building (Tyree Lab); and
- Provision of a new building extension to the north of, and integration with, the 'South Tower' to accommodate.
  - Research labs;
  - Teaching labs;
  - Workplaces associated with research labs;
  - School Hub administration;
  - Academic offices;
  - Lecture theatre teaching space; tutorial spaces, and informal learning spaces;
  - Outdoor teaching space;
  - Meetings rooms;
  - Loading dock and storage, including hazardous waste storage, gas, and chemical storage.
  - Landscaping within the development site; and
  - Improved pedestrian connections and servicing access.



### Site Plan of proposed works (shaded)



### Cross section from reference design scheme

The use of the proposed building will be consistent with the definition of educational establishment and the SP2 Infrastructure land use zone applying to the campus under SLEP 2012. The site is located centrally to the University's Darlington campus and does not front or address any RMS or Council owned roads.

The J03 Electrical Engineering building north tower, which is proposed for demolition, is not a heritage listed building or contained within any Conservation area. The University's Grounds Conservation Management Plan 2015 identifies the J03 Electrical Engineering Building as having a 'Moderate' significance to the university grounds.

The Proposal will examine an extension containing teaching labs, research space, school hub and Academic work space designed to meet the additional infrastructure requirements of the Engineering and Technology Faculty

The architecture of the extension will be complementary to the surrounding built and natural environments, whilst still expressing its individual identity in response to the functional use and site context. The urban and landscape design of all interfaces adjoining the development site, will be fully considered as part of the design development process.

The new building will enable increased research opportunities and joint use of facilities between departments and act as the Faculty hub.

The Engineering and Technology Precinct development provides an excellent opportunity to significantly improve the character of the local area and the amenity for students, staff and the wider community alike.

At the heart of the project is the University's vision to:

- Upgrade the quality of campus facilities;
- Create shared learning and teaching pedagogy between Faculties and the broader University cohort;
- Develop a healthy and sustainable campus environment;
- Ensure equitable access to University building and through the greater campus; and
- Create a building that addresses the local environment and Faculty functional requirements.

Specifically, the objective for this new building is to allow for the Faculties to continue to position themselves as the leading teaching, learning and research institutions in their field and maintain dominance in recruiting outstanding students and staff.



## **7.0 PROJECT FUNCTIONAL REQUIREMENTS**

The project incorporates the development of a new contemporary, flexible and collaborative facility that aligns with the University's strategic vision. The proposed building will enable the Engineering and Technology faculty to expand its research and teaching facilities continuing to expand on its world class reputation.

The new building will accommodate 20,000m<sup>2</sup> of Gross Floor Area (GFA) and accommodate teaching laboratories, research laboratories, research workspace, academic workspace, school hub administration and a loading bay and storage space.

### **VISION**

The vision for the Engineering and Technology Precinct is to create a world class research establishment which shares resources and facilities between departments to:

- Increase support for research and researchers;
- Build partnerships with government, business and institutions that foster innovation;
- Recruit the best staff and ensure their development;
- Recruit the best students; and
- Ensure the physical and virtual environment of the faculty is fit for purpose.

### **ENTRY**

It is anticipated that the development will provide access from Maze Crescent, Blackwattle Creek Lane, Engineering Walk and Shepherd Street. The final pedestrian flow will be determined through the detailed design development phase.

## **8. EPI, DESIGN, & POLICY REQUIREMENTS**

### **8.1 State Policy**

The EIS report accompanying the SSD project will address the relevant provisions of:

- State Environmental Planning Policy (State & Regional Development) 2011 (SRD SEPP) - Clause 15 & Schedule 1;
- State Environmental Planning Policy No 33 (Hazardous and Offensive Development) (SEPP 33) 2011;
- State Environmental Planning Policy No 55 (Remediation of Land) (SEPP 55);
- State Environmental Planning Policy (Infrastructure) (ISEPP) 2007; and
- Draft State Environmental Planning Policy (Educational Establishments and Child Care Facilities) (SEPP-EECC) 2017

### **8.2 City of Sydney**

The EIS report accompanying the SSD project will address the relevant controls and guidelines of the:

- Sydney Local Environmental Plan (SLEP) 2012; and
- Sydney Development Control Plan (SDCP) 2012.

### **8.3 SSD 13\_6123**

The EIS report accompanying the SSD project will address the:

- Relevant conditions of the Minister's consent for the Concept Campus Improvement program SSD 13\_6123;
- S83D(2) Status of staged development applications and consents of the Environmental Planning Assessment Act 1979; and
- Demonstrate consistency with the approved CIP SSD 13\_6123.

### **8.4 Draft Central District Plan**

The EIS report accompanying the SSD project will address the *draft Central District Plan* produced by the Greater Sydney Commission, including any amendments that are made in the adoption of the District Plan, if made prior to the lodgement of this SSD project.

### **8.5 University of Sydney Design Standards**

The purpose of the University's Design Standards is to inform architects and other consultants when preparing planning and project documents for the University.

The University's Architectural Standard provides:

- Details of the University's minimum requirements for planning and architectural design
- A reference document to enable consistency with the design and engineering objectives
- Support of the University's vision for the built environment and world's best practice.

The University's design standard addresses key objectives:

- Quality architectural design which responds, enhances and complements the environment
- Appreciation of the heritage context and cultural history of the campuses
- Value for money in all aspects of the project
- The design of low maintenance buildings and environments
- Longevity in life of construction and a whole of life approach to design
- Standardisation of space, to minimise individual specialisation of spaces
- Flexible space design, to future proof building usage for expansion or adaption to new uses
- Safety in design.

Other design considerations subject to concept design development may include but are not limited to:

- General vehicles, service vehicles, cycle and pedestrian access arrangements
- Bicycle storage or parking including end of journey facilities
- Heritage and conservation considerations
- Landscape design and arborist considerations
- Waste management – handling requirements, collection points
- Passive and active security systems
- Lighting – internal and external
- Building and public domain signage including statutory and way finding
- DDA and accessibility to all areas
- Adequate, accessible and serviceable plant space and services reticulation
- Safety in Design consideration for construction, operation and maintenance
- Environmental design in relation to security and crime prevention

## **8.6 Materials**

External facades and building design at the University will address or seek to include the following:

- Robust low maintenance finishes;
- Locally sourced products;
- Sustainable product use and design;
- Passive solar control;
- Use of proprietary systems;
- Consideration of the whole life cycle costs of the building; and
- Demonstrated green initiatives that may be relevant to this project.

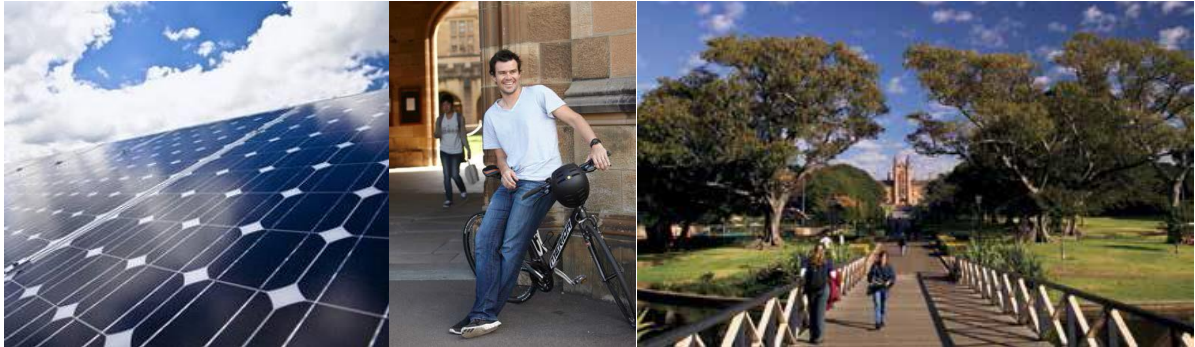


## 8.7 ESD Initiatives

The University encourages design that makes commercial and sustainable sense. In particular:

- Apply ESD initiatives to all design, equipment selection and operating efficiency;
- Low VOC specification materials; and
- Recycling and recovery principles.

The development will be required to conform to the University of Sydney Sustainability Framework.



## **9.0 CONSULTATION**

### **9.1 External Consultation**

The building envelope for the Engineering and Technology Precinct was developed through extensive consultation with Government agencies and adjoining landowners. The new building will be designed to fit within the CIP approved Engineering Precinct building envelope.

The renewal is substantially located within the campus. The properties to the south of the site on Shepherd Street are the primary external properties that may have a direct interest in the proposal.

Local residents and resident committees surrounding the university campus will be consulted by the university prior to the submission of a development application.

This is a University owned asset and the operators and wider university community are informed about the future development.

The University understands the SEARs will be forwarded to the City of Sydney and other relevant Government agencies. The University will undertake a program of further consultation as directed by the SEARs.

### **9.2 Internal Consultation**

The University has conducted a number of presentations and workshops across the relevant University faculties and schools that are primarily affected by the proposed projects including:

- The University Executive; and
- The Faculty of Engineering and Technology.

Feedback from these parties has been translated into the project brief, and all relevant parties will be represented at the University's Project Control Group. Furthermore, they will assist to refine the design and spatial development for the building.

## 10.0 SUPPORTING INFORMATION AND INPUTS

The University recognises the level of documentation required to inform the project applications. It has therefore facilitated the engagement of a number of specialist consultants to assist in preparing design documentation. This will include specific matters such as architecture, town planning, access, traffic, structural engineering, quantity surveyor cost estimates, Building Code of Australia compliance, landscaping and urban design. The University or will engage a multidisciplinary design team including:

- An Architectural consultancy to develop concept and detailed design solutions;
- A Town Planning/Urban Design company to assist in establishing the strategic, statutory planning matters for consideration in preparing an EIS report;
- A Transport and Traffic company to prepare an 'Access Strategy' to respond to the existing and proposed traffic, servicing, parking and pedestrian arrangements for the site, and in consideration of surrounding access arrangements;
- Servicing details providing information on, waste management, loading zones, mechanical plant and how they will be integrated into the development;
- A utilities review and survey to project the capacity of utilities supply to service both sites and to identify where upgrade of utility services is required;
- Noise and vibration assessments of the main noise and vibration generating sources.
- A stormwater management strategy;
- A draft 'Communications and Community Consultation Strategy' that will be developed into the SSD application;
- Various other relevant consultant documents including arborist, archaeology, ESD and BCA and hazardous material storage; and
- The EIS is expected to include the following relevant plans and documents:
  - Architectural drawings demonstrating dimensions and RLs;
  - Physical 3D model and 3D CAD model;
  - Site survey plan showing the existing levels, location and height of existing adjacent structures, buildings and boundaries;
  - Site analysis plan;
  - Stormwater concept plan;
  - Sediment and erosion control plan;
  - Shadow diagrams
  - View Analysis and Photomontages;
  - Landscape plan;
  - Preliminary construction management plan, including a preliminary construction traffic management plan;
  - Geotechnical and structural report;
  - Arborists report; and
  - Schedule of materials and finishes.



In addition to these specific study updates the following policies and procedures will be addressed in the project brief and design process:

- The University's Disability Action Plan 2013-18, designed to promote accessibility to and through the campuses as well as to and through campus buildings.
- The University of Sydney Sustainability Framework, which aims to ensure all new buildings, are designed to be resource and cost efficient. Key themes within the Sustainability Framework include:
  - Place making, amenity and sustainable transport;
  - Communication, engagement and community benefit;
  - Healthy environment;
  - Efficient resource use;
  - Climate change and impact; and
  - Land use, landscape and biodiversity.
- The University's green travel plan promotes sustainable, healthier and more cost-effective and active travel modes: walking and cycling. It supports linkages and access to public transport, to make mobility and transport more affordable and reduce dependence on motor vehicle use.

## 11.0 DESIGN PROCESS AND DESIGN EXCELLENCE

### 11.1 Design Process

Clause 6.21 of the Sydney LEP 2012 requires development to demonstrate design excellence. Clause 6.21 (5) requires that development outside of Central Sydney that is greater than 25m in height or has a CIV greater than \$100 million, must not be granted development consent unless a competitive design process has been held.

The Sydney LEP 2012 defines competitive design process as:

*“competitive design process means an architectural design competition, or the preparation of design alternatives on a competitive basis, carried out in accordance with the City of Sydney Competitive Design Policy.*

The City of Sydney Competitive Design Policy identifies three alternatives:

- An open architectural design competition
- An invited architectural design competition; or
- An invited competitive design alternatives process.

The new Engineering and Technology Precinct building will have a building with heights of 35m to 39m above ground level. The SSD approved CIP building envelope for the Engineering and Technology Precinct permits a building up to a maximum height of 39 metres above the lowest point of ground level (the approved CIP envelope). The CIV of the proposal also exceeds the \$100 million threshold. Strictly in accordance with the provisions of Sydney LEP 2012 a Design Competition is required to be undertaken before the consent authority, in this case the Minister for Planning (pending SEARs confirmation from DPE) could determine the application.

The University has adopted a design competition process that aligns with the City of Sydney's Invited Competitive Design Alternatives Process. The only variation to this process is a consequence of one of the invited tenders pulling out during the course of the competition. Despite the withdrawal of one participant, the process and the level of review and critique undertaken exceeds the level that could be expected under the City of Sydney Competitive Design Policy, and is described in further detail in section 11.2 of this SEARs report.

The University is committed to and supportive of design excellence. To ensure design excellence is achieved the University has implemented in the design development of the proposed new Engineering and Technology Precinct building a rigorous design review process which will continue through the design development of the application post issue of any SEARs. In recognition of the rigour and design review that has been implemented it is sought through the SEARs process that the consent authority form the opinion that a competitive design process would, in the circumstances be unnecessary and unreasonable as allowed by clause 6.21 (6) of Sydney LEP 2012. The justification for a design competition process being unnecessary and unreasonable in the circumstance is set out below demonstrating how design excellence has been achieved and will be maintained and addressing:

- Design excellence process to date

- Required stakeholder consultations
- On going Design Excellence Review Committee involvement

## 11.2 Design Excellence

Consistent with the University's commitment to design excellence in its Campus Improvement Program (CIP), in 2014 an eighteen month long brief development process was undertaken with Woods Bagot finalising briefing documents. This process produced among other matters, a reference design for the design competition for the Engineering and Technology Precinct buildings. The reference design is consistent with the previously approved SSDA (Campus Improvement Programme 2015), building envelope. As the building is a highly complex and interdisciplinary engineering focussed research building, the brief development process was lengthy to ensure the significant user requirements have been encapsulated. In 2016 a design competition invitation was issued to three teams of architects and contractors who have demonstrated extensive experience in the design and construction of research laboratory buildings. The invited participants were:

- Cox Richardson
- HDR Rice Daubney
- Woods Bagot

During the course of the competition the Woods Bagot team, in agreement with the University, dropped out.

For the design competition process, the University has established a Design Excellence Review Committee (DERC). The DERC and the process followed has been formulated to align with the Department of Planning and Environment Director General's Design Excellence Guidelines for the establishment of an independent design competition jury to critique and assess the design responses prepared.

The DERC that has been reviewing the designs developed comprises two (2) independent architects and two (2) representatives from the University. The voting members of the DERC are:

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

The DERC Meetings were monitored by Probity Advisors.

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

The consortia invited include as their design architects:

- Cox Architecture; and
- HDR Rice Daubney.

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

The design review process followed to date is summarised below:

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

Arising from the DERC assessment a recommendation on the preferred scheme demonstrating design excellence has been made.

The evaluation criteria against which DERC considered design excellence include:

- Facilities that will inspire students, academics, researchers, associated industry leaders.
- Design excellence in the Architecture of the function and form of the buildings and the precinct.



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

The process that has been pursued to date by the University in preparing a scheme to lodge for development consent demonstrates the rigour of the design review and development for the proposal. Indeed, the level of review and critique exceeds the level that could be expected under the City of Sydney Competitive Design Policy. Post issue of the SEARs, and accompanying the SSD application will be a full report on the DERC process, including their deliberation and recommendations.

### **11.3 Stakeholder Consultation**

Further demonstration of the difficulty of pursuing design excellence in accordance with the City of Sydney Competitive Design Policy is the level of stakeholder consultation required to inform the design. It would be logistically difficult to capture the specialist needs and inputs of all stakeholders in this intensive research building containing complex and significant user requirements in the typical six (6) week design competition process which is focussed towards a typical residential or commercial development not a highly specialised research and teaching building. As an example, the process that the University is pursuing to achieve design excellence has included 125 presentations and workshops with stakeholders broadly covering: Architecture, Research, Teaching and Learning, Professional Services Support, Innovation, ESD Sustainability, Civil, Building Services, ICT and AV, Security, WHS, Cost, Staging and Construction Management. These consultations all inform the design being pursued. To capture this level of input alone in a Design Competition consistent with the City of Sydney's policy would be unworkable.

#### **11.4 On-going DERC participation**

Post issue of the SEARs it is proposed that the membership of the DERC be expanded to include the NSW Government Architect or their nominee. The additional member of the DERC would be involved with the on-going design quality of the project as it is refined responding to any SEARs issued and post any development approval in ensuring that the design integrity is maintained through detailed design development for construction.

The process followed and the DERC report to be provided with the final EIS will clearly articulate how design excellence has been achieved and will be maintained without the need to pursue a further Design Competition process as outlined in the City of Sydney Competitive Design Policy.

Any EIS prepared in support of the SSD application will based on the process outlines above be able to clearly articulate how the Design Excellence requirement of Clause 6.21(5) of SLEP 2012 has been achieved.

In the circumstances a further design competition process would be unreasonable and unnecessary and the EIS will be able to demonstrate that the DERC process undertaken by the University will deliver design excellence. With the on-going participation of the DERC and the expansion of its membership the consent authority will be able to be satisfied that design excellence is achieved without a further design competition being pursued

## 12.0 CAPITAL INVESTMENT VALUE

The University has engaged an independent Quantity Surveyor (Wilde & Woollard ) to prepare Capital Investment Value estimates to confirm the project's qualification as a State Significant Development.

The Environmental Planning & Assessment (EP&A) Regulation 2000 (Clause 3) provides the following definition for CIV:

*“Capital Investment Value of a development or project includes all costs necessary to establish and operate the project, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment, other than the following costs:*

- (a) amounts payable, or the cost of land dedicated or any other benefit provided, under a condition imposed under Division 6 or 6A of Part 4 of the Environmental Planning and Assessment Act or a planning agreement under that Division*
- (b) costs relating to any part of the development or project that is the subject of a separate development consent or project approval*
- (c) land costs (including any costs of marketing and selling land)*
- (d) GST (as defined by A New Tax System (Goods and Services Tax) Act 1999 of the Commonwealth).”*

The QS report prepared by Wilde & Woollard is included at Attachment D and concludes the CIV for this project at \$105,136,232.

## 13.0 WAIVING OF SECTION 94 CONTRIBUTIONS

The University will be seeking an exemption in its SSD application to the payment of Section 94 contributions for the redevelopment of the Engineering and Technology Precinct, Darlington campus.

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

- Clause 226(1) of the Regulation 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 Part 4 of the EP&A Act 1979; and
- The University is a major employer within the community providing numerous employment opportunities directly and indirectly.

In relation to the redevelopment of the Engineering and Technology Precinct on the Darlington campus, the University will be seeking exemption from paying Section 94 contributions under the City of Sydney's Development Contributions Plan 2015, having regard to the above reasons as well as on the following grounds:

1. **Benefits provided by the University:** The University already provides an extensive array of material public benefits over and above its core focus on education and research. These include public access to, and use of the University's libraries, spaces for cultural events, community facilities such as child care centres, sporting facilities (including an aquatic centre), playing fields and stadiums, entertainment spaces, retail facilities and professional services, as well as large areas of open space. The University also provides significant infrastructure services upgrades throughout the campus including stormwater. These are analogous to the public amenities and services which the Council provides for its local government area.
2. The project intention is to produce current and World Class education and research facilities that replace and upgrade existing Engineering Faculty requirements, and is not intended as an additional Engineering facilities to attract additional student population.

Given the proposed development by the University constitutes development by a non-profit organisation, provides a distinct community benefit and provides a significant quantum of budgeted/financed infrastructure works already dedicated by the university on campus, the proposed development therefore qualifies for exemption from the City of Sydney's Development Contributions Plan.



## 14.0 PROJECT PROGRAM

The University has developed the following indicative project timeframe in order to facilitate commencement of construction in July 2018 with a target for practical completion of the project in July 2020.

Milestone	Program
Milestone 1 – Lodge SEARs Application	July 2017
Milestone 2 – Lodge EIS & SSD Application	December 2017
Milestone 3 – Target SSD approval	June 2018
Milestone 4 – Construction commencement	July 2018
Milestone 5 – Practical completion	July 2020

## 15.0 CONCLUSION

This submission supports a request for the DPE's Secretary's Environmental Assessment Requirements (SEARs) to accept the Engineering and Technology Precinct building as State Significant Development and to provide the University with a list of requirements to be addressed in the State Significant Development application and Environmental Impact Assessment report.

This University's submission and request for SEARs are considered justified for the following reasons:

- The application is made by a Crown authority, being The University of Sydney;
- This major project qualifies as State Significant Development under SEPP (State and Regional Development) 2011 and will attract a capital investment value well in excess of \$30 million;
- This major project is designed to complement and comply with the Concept Campus Improvement program SD 13\_6123 approved by the Minister for Planning on 16 February 2015;
- In 2016, the University employed over 7,600 permanent staff, and generated over 5,100 jobs in the areas of construction, facilities, maintenance and services. The proposed SSD will continue to create new construction and administrative employment opportunities through the proposed development and associated infrastructure; The project will further promote the University as a principal health, education, research and visitor destination;
- This SSD will further promote the University as a principal education, research, as well a significant destination to national and international markets;
- The project will have a flow on effect to the adjoining local business centres and residential communities including Newtown, Glebe, Redfern, and Broadway;

The University is a key employment contributor to the NSW economy, not only as a major employment centre, but also as an employment provider through its annual 18,000 graduates. A great proportion of these graduates will directly contribute to the Sydney and NSW economies; and

- The current University capital works program, combined with the Minister for Planning's approved Concept Campus Improvement Program (SSD 13\_6123), represents an existing injection of more than \$1.4 billion in construction and related activities into the NSW economy.

## **APPENDICES**

**APPENDIX A** – SITE PHOTOGRAPHS

**APPENDIX B** - SITE SURVEY AND SERVICES PLAN

**APPENDIX C** – CONCEPT BUILDING ENVELOPES

**APPENDIX D** – QUANTITY SURVEYOR: CAPITAL INVESTMENT VALUE CALCULATION

## APPENDIX A – SITE PHOTOGRAPHS



**Image 1: View of Electrical Engineering building from engineering lawn**



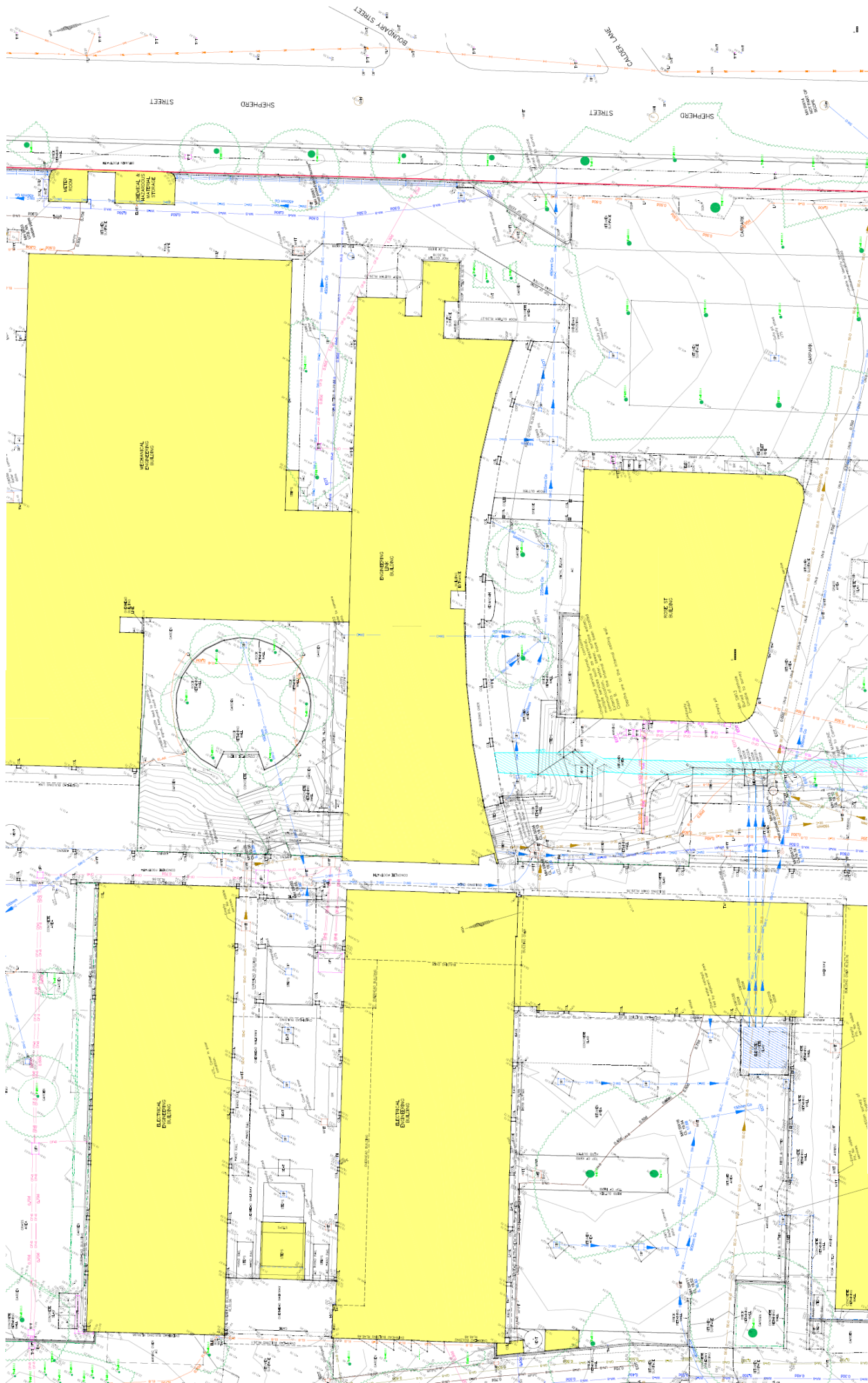
**Image 2: Engineering and Technology Precinct viewed from Maze Crescent**





**Image 3: Electrical Engineering building viewed from P.N.R building**

## **APPENDIX B – SITE SURVEY INCLUDING IN-GROUND SERVICES**



## **APPENDIX C – CONCEPT BUILDING ENVELOPES**





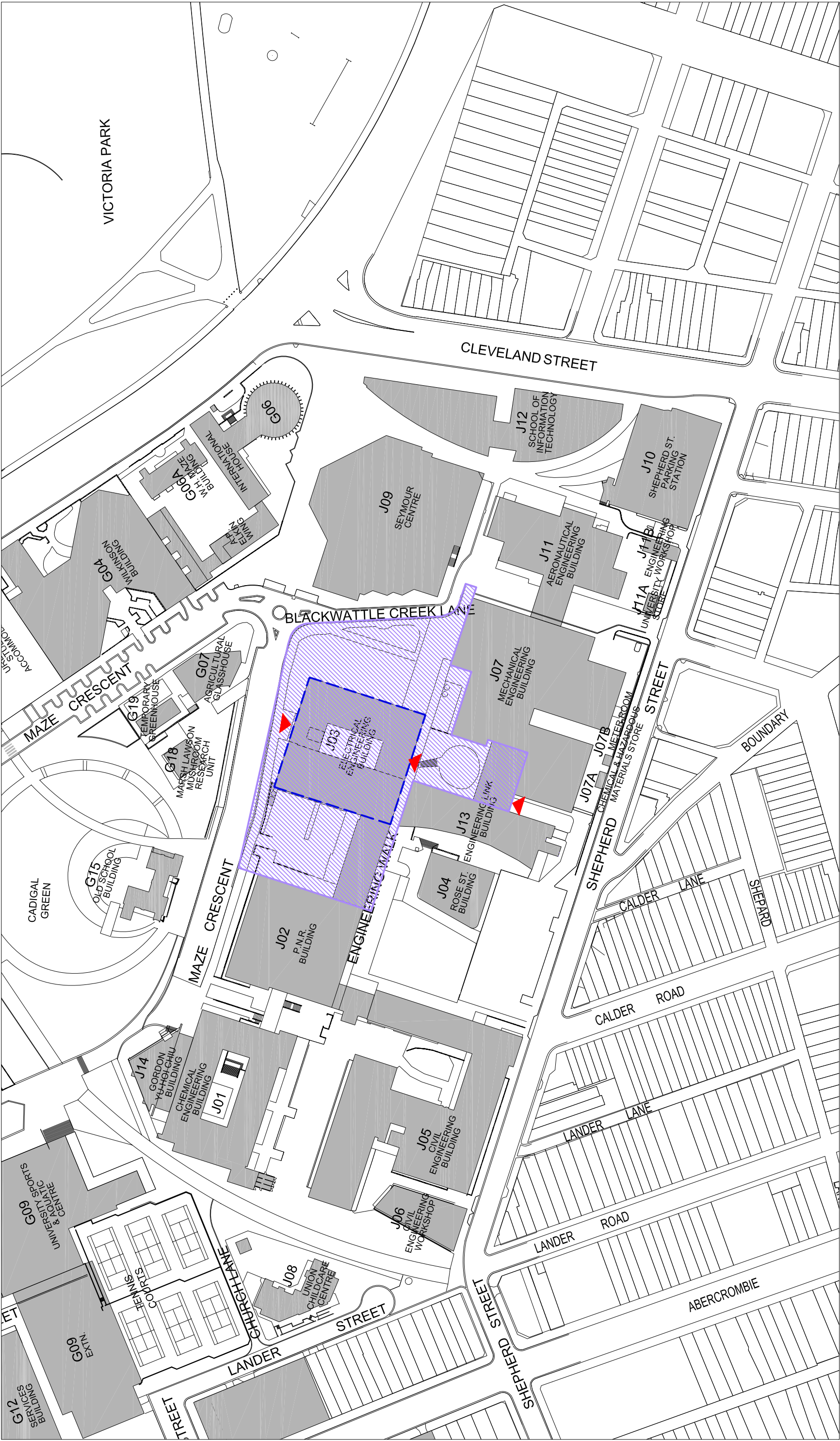


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01 ENGINEERING AND TECHNOLOGY PRECINCT

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- NOTE:**
- ALL WORK IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS
  - ALL WORKS IN ACCORDANCE WITH RELEVANT UNIVERSITY OF SYDNEY DESIGN STANDARDS
  - ALL DIMENSIONS TO BE CHECKED ON SITE

**LEGEND**

INDICATIVE DEVELOPMENT SITE (9224sqm)

CAMPUS IMPROVEMENT PROGRAM ENVELOPE



project: **CAMPUS MAPS  
ENGINEERING AND  
TECHNOLOGY PRECINCT**

title: **ATTACHMENT B  
INDICATIVE EXTENT OF  
EXTERNAL WORKS**

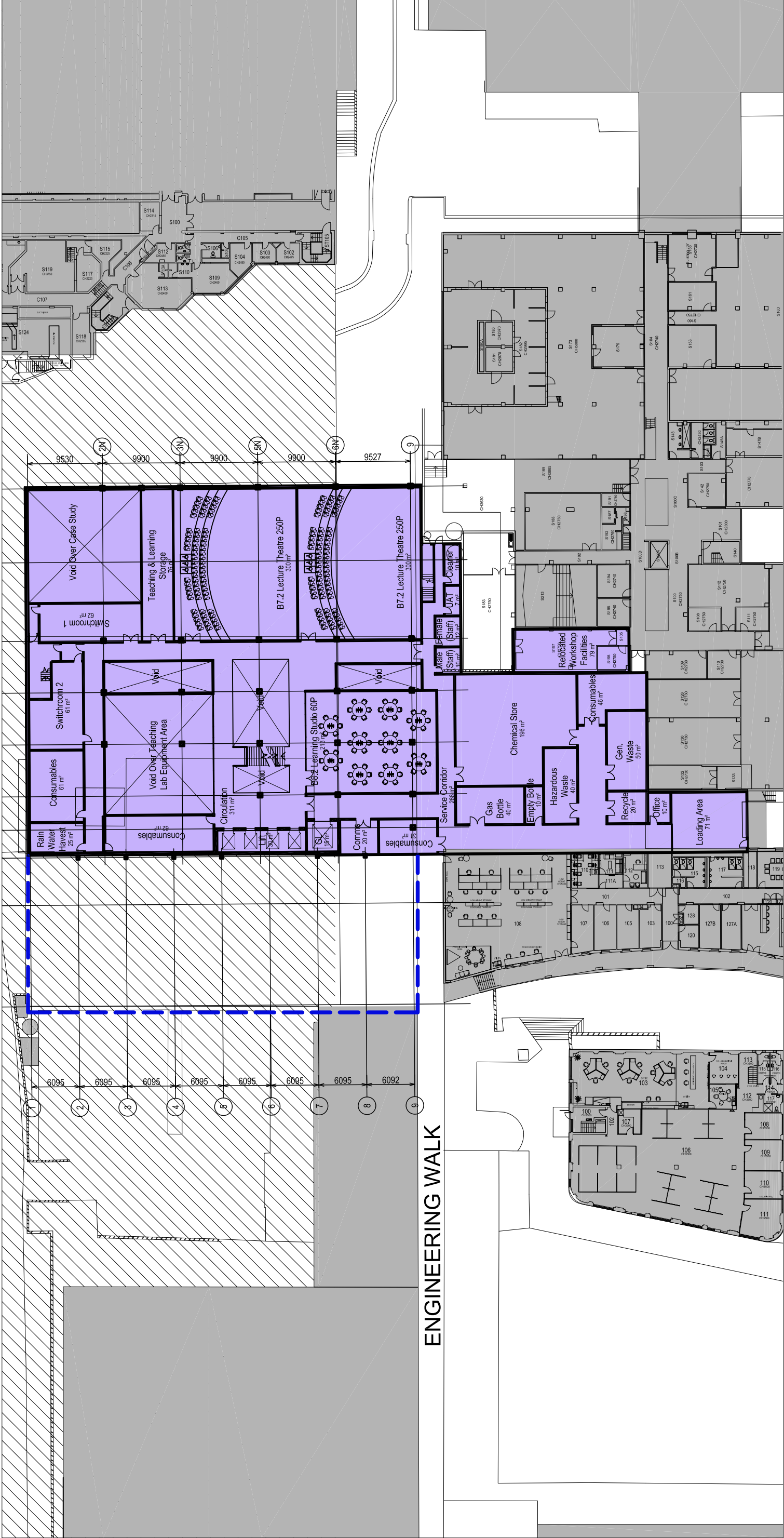
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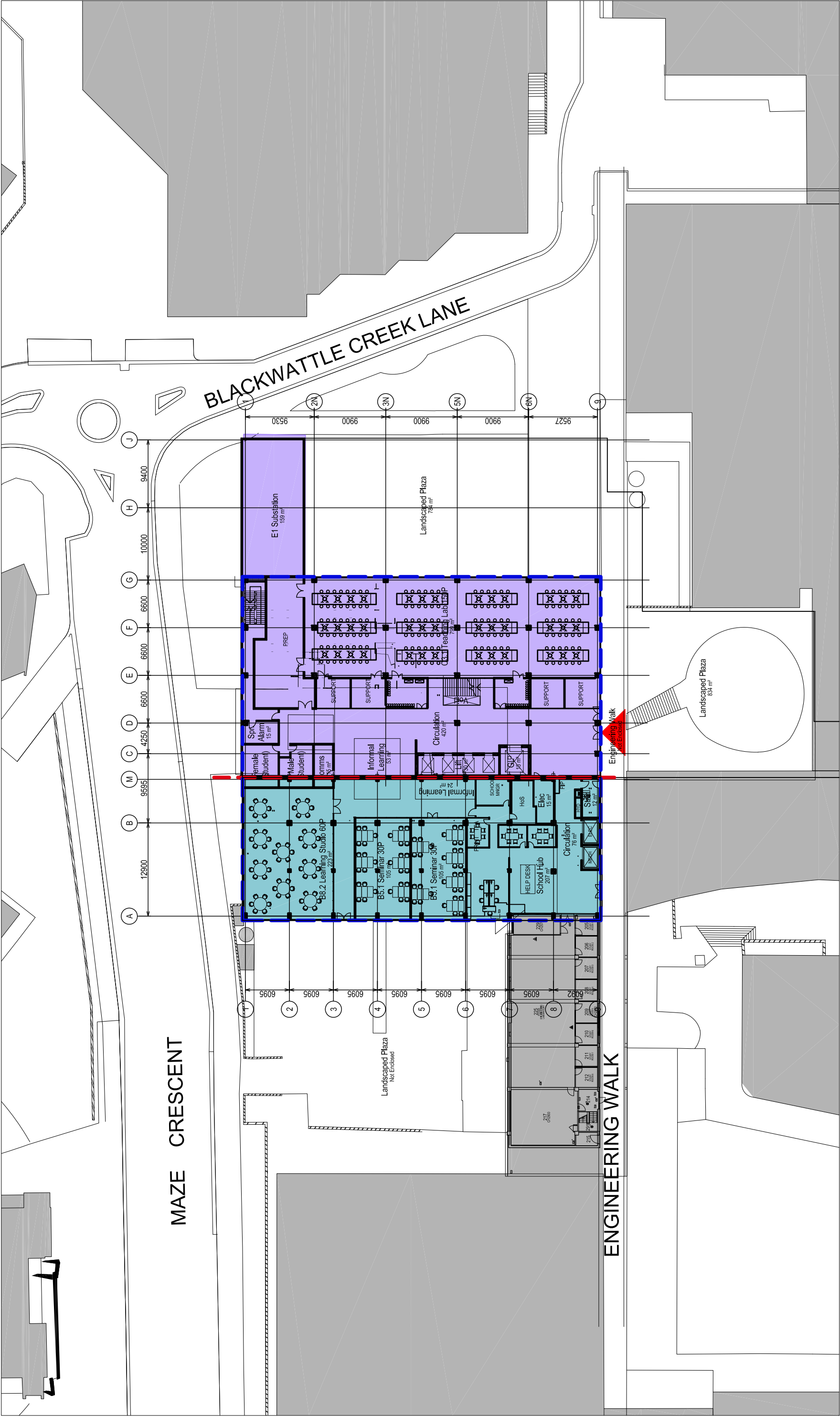


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LEGEND

- NEW BUILDING
- EXISTING BUILDING
- REFURBISHED EXISTING BUILDING
- CIP ENCLOSURE
- INDICATIVE LINE OF DEMARCATION BETWEEN NEW & REFURBISHED EXISTING BUILDING



project: J03  
ENGINEERING & TECHNOLOGY  
PRECINCT

title: J03 REFERENCE DESIGN  
LEVEL 02

BASE DRAWINGS PRODUCED BY  
WOODS BAGOT

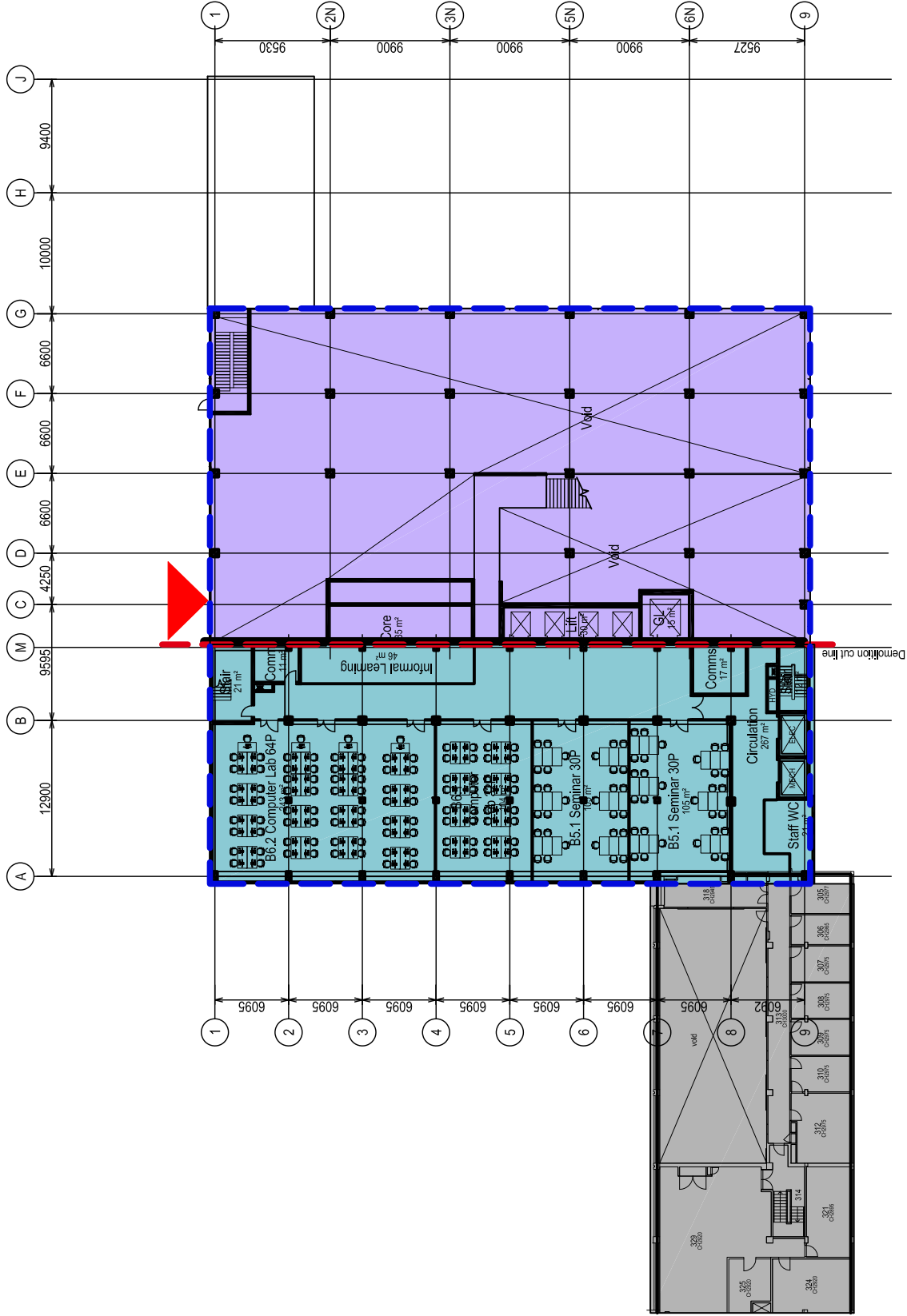
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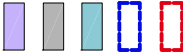
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LEGEND

- NEW BUILDING
- EXISTING BUILDING
- REFURBISHED EXISTING BUILDING
- CIP ENCLOSURE
- INDICATIVE LINE OF DEMARCATION BETWEEN NEW & REFURBISHED EXISTING BUILDING



project:

J03  
ENGINEERING & TECHNOLOGY  
PRECINCT

title:

J03 REFERENCE DESIGN  
LEVEL 03

BASE DRAWINGS PRODUCED BY  
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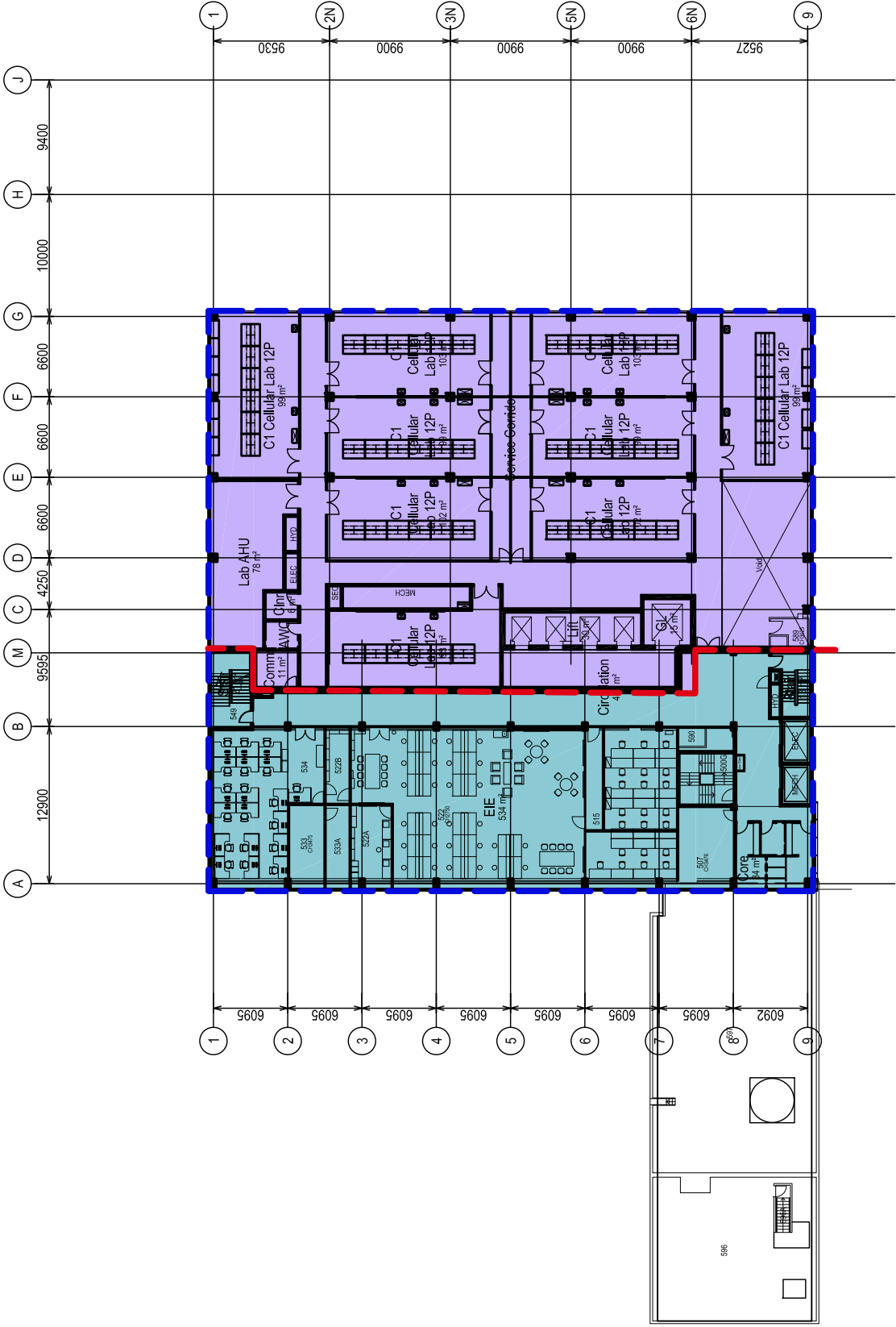


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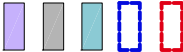
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#### LEGEND

- NEW BUILDING
- EXISTING BUILDING
- REFURBISHED EXISTING BUILDING
- CIP ENCLOSURE
- INDICATIVE LINE OF DEMARCATION BETWEEN NEW & REFURBISHED EXISTING BUILDING



project: J03  
ENGINEERING & TECHNOLOGY  
PRECINCT

title: J03 REFERENCE DESIGN  
LEVEL 05

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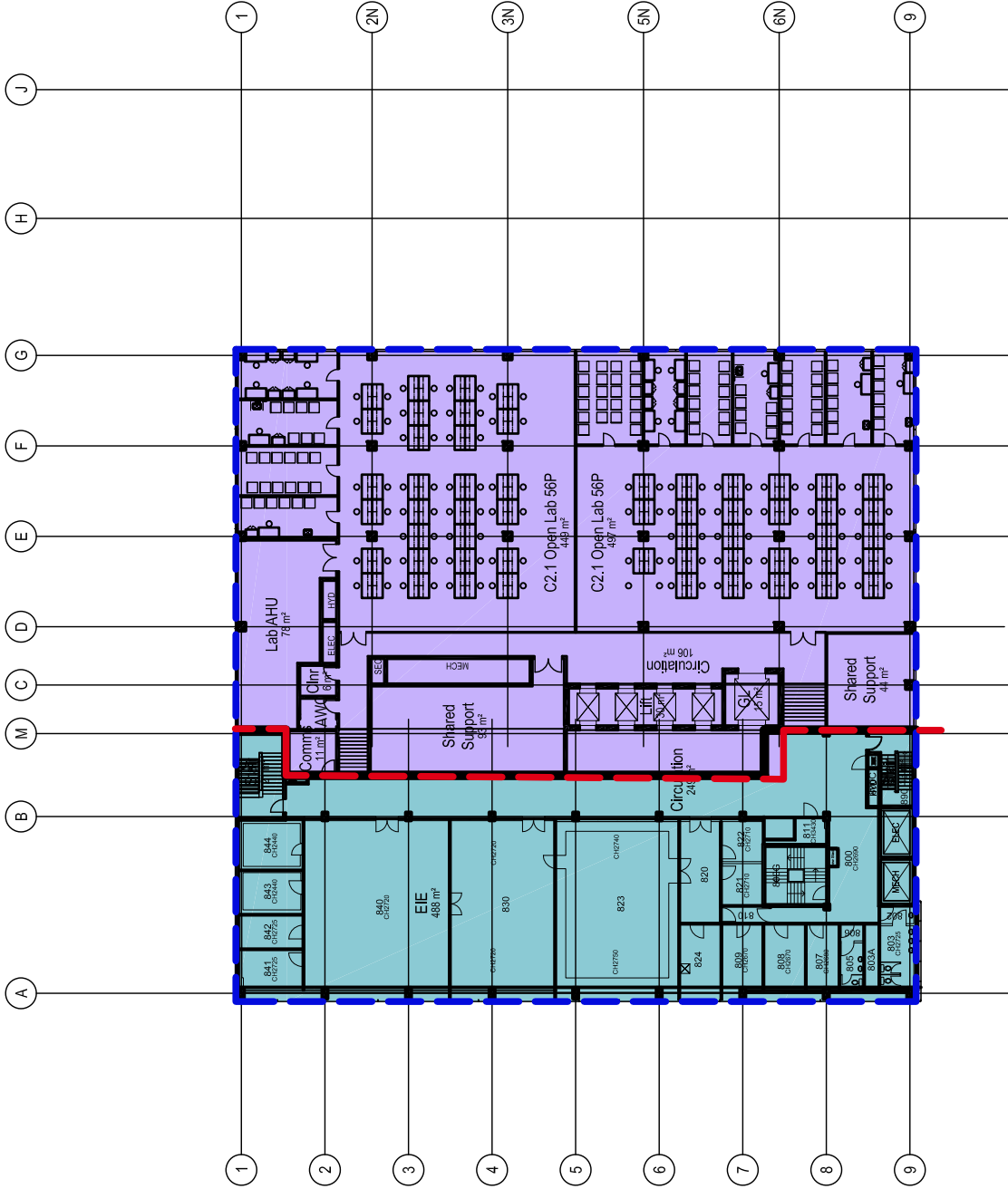


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LEGEND

- NEW BUILDING
- EXISTING BUILDING
- REFURBISHED EXISTING BUILDING
- CIP ENCLOSURE
- INDICATIVE LINE OF DEMARCATION BETWEEN NEW & REFURBISHED EXISTING BUILDING



project: J03  
ENGINEERING & TECHNOLOGY  
PRECINCT

title: J03 REFERENCE DESIGN  
LEVEL 08

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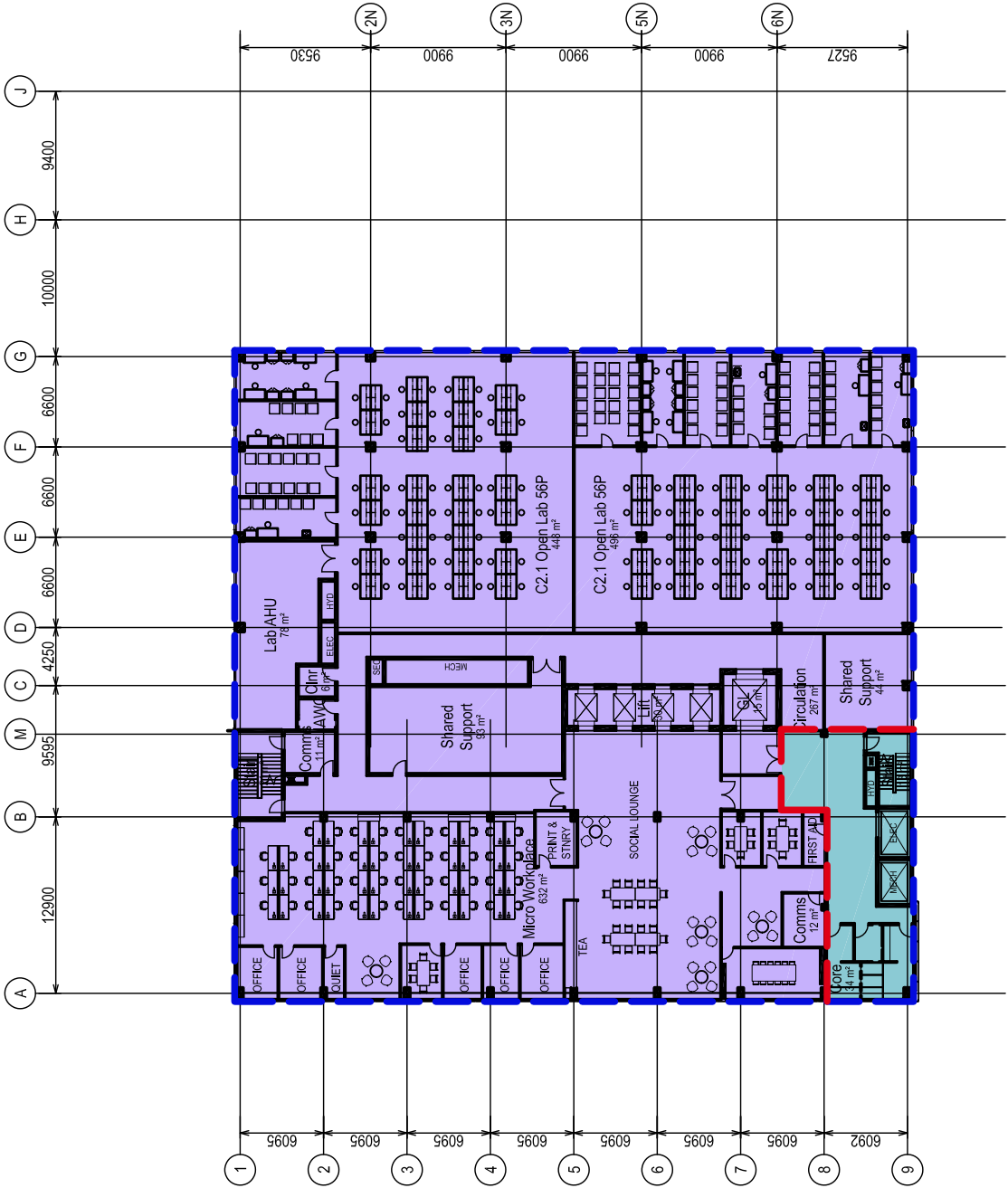


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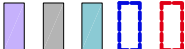


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# LEGEND

- NEW BUILDING
- EXISTING BUILDING
- REFURBISHED EXISTING BUILDING
- CIP ENCLOSURE
- INDICATIVE LINE OF DEMARCATION BETWEEN NEW & REFURBISHED EXISTING BUILDING



project: J03  
ENGINEERING & TECHNOLOGY  
PRECINCT

title: J03 REFERENCE DESIGN  
LEVEL 09

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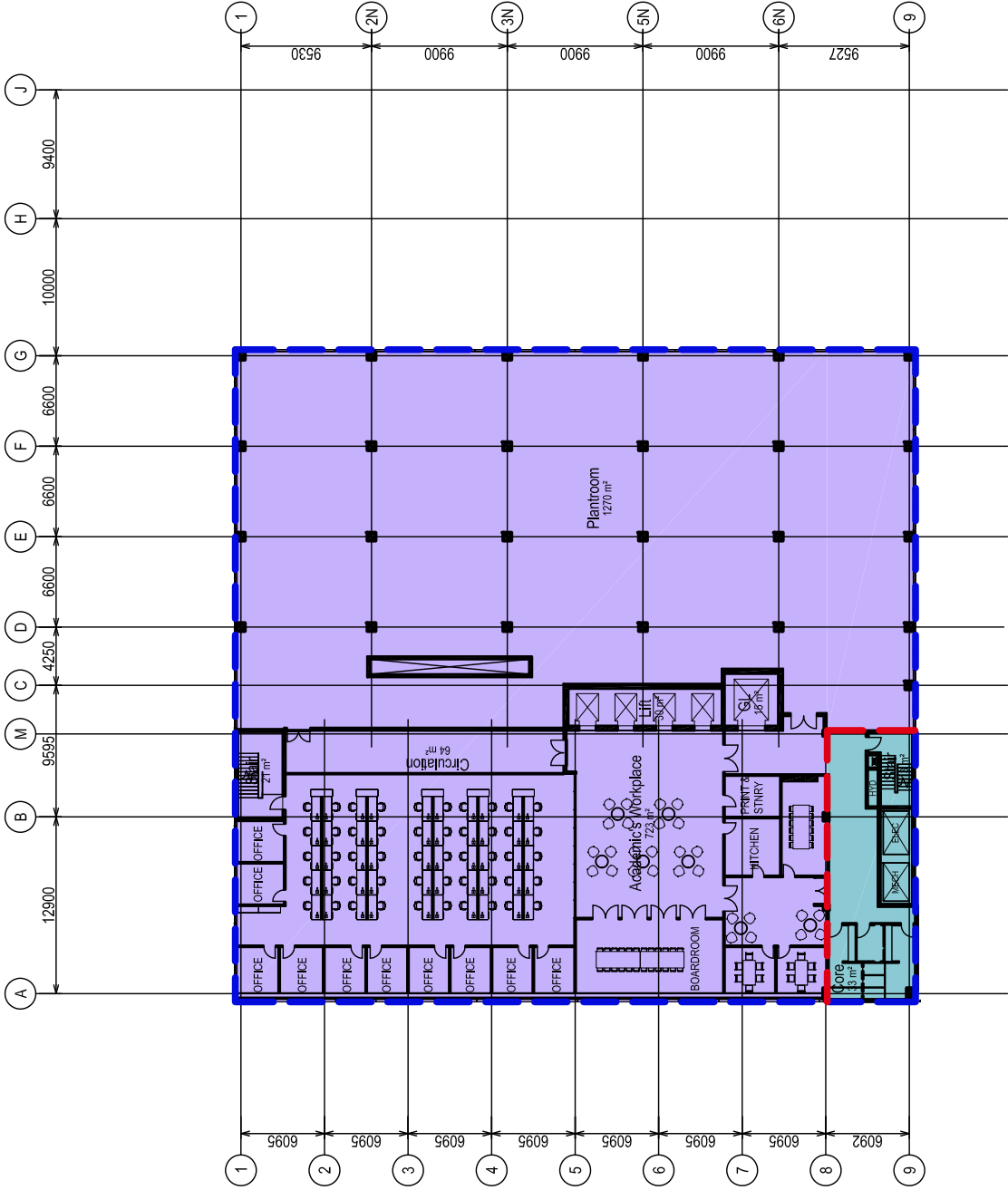


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LEGEND

- NEW BUILDING
- EXISTING BUILDING
- REFURBISHED EXISTING BUILDING
- CIP ENCLOSURE
- INDICATIVE LINE OF DEMARCATION BETWEEN NEW & REFURBISHED EXISTING BUILDING



project: J03  
ENGINEERING & TECHNOLOGY  
PRECINCT

title: J03 REFERENCE DESIGN  
LEVEL 10

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## **APPENDIX D** – QUANTITY SURVEYOR: CAPITAL INVESTMENT VALUE CALCULATION

8<sup>th</sup> May, 2017  
Seamus O'Connell  
Sydney University  
Campus Infrastructure Services  
**DARLINGTON NSW 2007**

Dear Seamus,

## **CAPITAL INVESTMENT REPORT (CIV) ENGINEERING TECHNOLOGY PROJECT – STAGE 1**

Wilde and Woollard has been engaged by Sydney University to provide initial Cost Planning Services for the proposed Stage 1 Project of the Engineering and Technology Precinct.. The development comprises the partial demolition of existing Building J03, the refurbishment of the remaining part of the building and a linked new construction tower. The project will house general teaching spaces, staff areas and multi purpose engineering laboratories. In addition there are in ground services infrastructure improvements and various landscaped zones created within the precinct.

As part of our services commission, we have been requested to assess the Capital Investment Value for the development.

### **Definition**

Capital Investment Value (CIV) is defined by the Environmental Planning Authority as:-

*The CIV of a development or project includes all costs necessary to establish and operate the project including the design and construction of buildings, structures, associated infrastructure and fixed or mobile equipment but excluding the following:-*

- a) Amounts payable, or the cost of land dedicated or any other benefit provided, under a condition imposed under Division 6 or 6A of Part 4 of the Act or a planning agreement under that Division.*
- b) Costs relating to any part of the development or project that is the subject of a separate development consent or project approval.*
- c) Land costs (including any costs or marketing and selling land).*
- d) GST (within the meaning of A New Tax System (Goods and Services Tax) Act 1999 of the Commonwealth).*

### **Calculation**

To determine the CIV, Wilde and Woollard have prepared a Cost Plan for the new building construction works.

The total Capital Investment Value for Stage 1 is **\$105,136,232** summarised as follows:-

#### **STAGE 1**

<b>Project Element</b>	<b>Cost (\$)</b>
Demolition	1,371,100
Alterations and Improvements	9,879,295
Main Building Works'	69,619,337
Infrastructure/External Works	4,938,500
Landscaping	1,000,000
Preliminaries and Margin	18,328,000
<b>TOTAL ESTIMATED CIV</b>	<b>105,136,232</b>
<i>* Based on Concept Design Estimate 8<sup>th</sup> June 2016</i>	

#### **Programme**

The Cost Plan is based on preliminary works being undertaken from late 2017 with main demolition and construction works commencing mid 2018. The approximate date for completion of the works is December 2019.

#### **Statutory Fees**

Statutory fees are excluded from the calculation in accordance with the definition attached.

#### **Professional Fees**

The Concept Cost Plan makes allowances for Professional Fees related to all Consultants during the design and construction phases of the project in accordance with standard Industry practice.

Should you require any further information, please do not hesitate to contact me.

Yours faithfully,  
**Wilde and Woollard**

**Paul A Dowling**  
**Director**