ENIRONMENTAL IMPACT STATEMENT

WESTERN SYDNEY UNIVERSITY

BANKSTOWN CITY CAMPUS

24 OCTOBER 2019

PREPARED FOR WESTERN SYDNEY UNIVERSITY

URBIS

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Project Code	SA7500
Report Number	1

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DECLARATION

Applicant Name:	Western Sydney University
Applicant Address:	Locked Bag 1797 Penrith NSW 2751
Land to be developed:	74 Rickard Road, Bankstown (Lot 5 DP777510) and part 375 Chapel Street, Bankstown (Lot 6 on DP777510)
SSD Application Number:	SSD 18_9831
Proposed Development:	New vertical university campus as detailed within **Section 3** of this Environmental Impact Statement.
Environmental Impact Statement:	This report is an Environmental Impact Statement which addresses all relevant matters required by Section 4.12(8) of the *Environmental Planning and Assessment Act 1979* and Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*.
Declaration:	The undersigned certify that we have prepared the contents of this Environmental Impact Statement and to the best of our knowledge it: • addresses all relevant matters listed under Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*; • contains all available information that is relevant to the environmental assessment of the development to which the Environmental Impact Statement relates; and • is not, by its presentation or omission of information, false nor misleading.
Prepared By: **Name:** **Qualifications:** **Address:** **Signature:** **Date:**	Murray Donaldson Bachelor of Town Planning (Hons) UNSW, Master of Environmental Management Level 8/ 123 Pitt Street, Sydney  24.10.2019
Prepared By: **Name:** **Qualifications:** **Address:** **Signature:** **Date:**	Genevieve Beard BSc (USYD); Grad Dip Urban Planning (Curtin) Level 8/ 123 Pitt Street, Sydney  24.10.2019

GLOSSARY AND ABBREVIATIONS

Reference	Description
ABW	Activity Based Working
ACH	Aboriginal Cultural Heritage
ACHA	Aboriginal Cultural Heritage Assessment
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACM	Asbestos Containing Material
ADS-B	Automatic Dependent Surveillance Broadcast
ANZECC & ARMCANZ	Australian and New Zealand Environment and Conservation Council
AQF	Australian Qualifications Framework
AQIA	Air Quality Impact Assessment
ARI	Average Recurrence Interval
ARP	Aerodrome Reference Point
ASS	Acid Sulphate Soils
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016*
BC Reg	*Biodiversity Conservation Regulation 2017*
BCC	Bankstown City Campus
BCR	Benefit Cost Ratio
BCSP	Bankstown Complete Streets Project
BDAR	Biodiversity Development Assessment Report
BLEP 2015	Bankstown Local Environmental Plan 2015
BRA	Building Restricted Area
CAT	Aircraft Category
CBC	Canterbury Bankstown Council
CBD	Central Business District
CC	Construction Certificate
CDA	Concept Development Application
CEMP	Construction Environmental Management Plan

Reference	Description
CFIT	Controlled Flight Into Terrain
CGS	Commonwealth Grant Scheme
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
CMP	Construction Management Plan
CNVMP	a Construction Noise & Vibration Management Plan
COPC	Contaminant of Potential Concern
CPTED	Crime Prevention Through Environmental Design
CTMP	Construction Traffic Environmental Plan
DCP	Development Control Plan
DECC	Department of Environment, Climate Change
DECCW	Department of Environment, Climate Change and Water
DDA	Discrimination Disability Act
DoPI	Department of Planning and Infrastructure
DPE	Department of Planning and Environment
DPIE	NSW Department of Planning, Industry and Environment
DQO	Data Quality Objectives
DUAP	Department of Urban Affairs
DSI	Detailed Site Investigation
DZN	Destination Zone
Education SEPP	State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017
EFTSL	Effective Full Time Student Load
ELA	Eco-Logical Australia
ELVIS	Elevation Information System
EOT	End of Trip
EPA Act	*Environmental Planning and Assessment Act 1979*
EPA Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*

Reference	Description
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
ESD	Ecologically Sustainable Development
FSR	Floor Space Ratio
FTE	Full Time Equivalent
GANSW	Government Architect NSW
GEM	Gust Equivalent Mean
GFA	Gross Floor Area
GLALC	Gandangara Local Aboriginal Land Council
GRC	Glass Reinforced Concrete
GSC	Greater Sydney Commission
GSRP	Greater Sydney Region Plan, A Metropolis of Three Cities
GVA	Gross Value Added
HBM	Hazardous Building Materials
HCA	Heritage Conservation Area
HOB	Height of Building
IACA	Institute of Australian Consulting Arborculturists (IACA)
ICAO	International Civil Aviation Organisation
IFD	Intensity Frequency Duration
IFR	Instrument Flight Rules
IHS	Inner Horizontal Surface
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
L	Litres
LDMP	Loading Dock Management Plan
LEP	Local Environmental Plan
LGA	Local Government Area
LOR	Limit of Reporting
LSPS	Local Strategic Planning Statement

Reference	Description
m	Metres
MARCS	The MARCS Institute for Brain, Behaviour and Development
MDA	Minimum Descent Altitude
MGB	Mobile Garbage Bin
MOC	Minimum Obstacle Clearance
MRV	Medium Rigid Vehicle
NARCliM	NSW and ACT Regional Climate Modelling
NDB	Non-Directional Beacon
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NPW Act	National Parks and Wildlife Act 1974
NPW Reg	National Parks and Wildlife Regulations 2009
NSW NPfI	*NSW Noise Policy for Industry*
OEH	Office of Environment and Heritage
OHS	Outer Horizontal Surface
OLS	Obstacle Limitation Surfaces
OSD	On Site Detention
PANS POS	Procedures for Air Navigation Services – Aircraft Operations
PASS	Potential Acid Sulphate Soil
PBSA	Purpose-Built Student Accommodation
PID	Photo-ionisation Detector
PKP	Paul Keating Park
PMF	Probably Maximum Flood
POM	Plan of Management
PSD	Permissible Site Discharge
PSI	Preliminary Site Investigation
RAP	Registered Aboriginal Parties
RBL	Rating Background Level

Reference	Description
RMS	Roads and Maritime Services
RTCC	Radar Terrain Clearance Chart
SAC	Site Assessment Criteria
SDRP	State Design Review Panel
SD Plan	South District Plan
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
SEPP	State Environmental Planning Policy
SEPP 55	State Environmental Planning Policy No. 55 – Remediation of Land
SEPP 64	State Environmental Planning Policy 64 - Signage
SIA	Social Impact Assessment
Site	The site includes 74 Rickard Road (being Lot 5 DP 777510) and a portion of 375 Chapel Street (being part Lot 6 DP 777510). In addition, public domain works are proposed to Rickard Road, 70 Rickard Road (being part Lot 7 DP 777510) and access is proposed via 80 Rickard Road (being Lot 12 DP 566924)
SME	Small to Medium Enterprises
SPZ	Structural Protection Zone
SRD SEPP	*State Environmental Planning Policy (State and Regional Development) 2009*
STARS©	*Significance of a Tree, Assessment Rating Systems*
SSD	State Significant Development
SSDA	State Significant Development Application
TAR	Terminal Area Radar
TfNSW	Transport for NSW
TIA	Traffic Impact Assessment
TPZ	Tree Protection Zone
UFP	Unexpected Finds Protocol
VFR	Visual Flight Rules
VNAV	Vertical Navigation Criteria
VOC	Volatile Organic Compounds

Reference	Description
WMP	Waste Management Plan
WSU	Western Sydney University
WSUD	Water sensitive urban design

EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared by Urbis Pty Ltd on behalf of Western Sydney University (WSU) in support of a Development Application for a State Significant Development (SSDA) of a new vertical university campus within the Bankstown Central Business District (CBD) at 74 Rickard Road and part 375 Chapel Road, Bankstown. Following the development, the site will remain in the ownership of City of Canterbury Bankstown Council (CBC) and occupied on a leasehold basis by WSU.

The proposed development has an estimated capital investment value of $264,022,630 and accordingly, is classified as a State significant development (SSD) under clause 15(3) in Schedule 1 of *State Environment Planning Policy (State and Regional Development) 2011* (the SRD SEPP).

This EIS and associated supporting documents confirm the site suitability and demonstrate that any potential negative environmental impacts can be appropriately mitigated, minimised or managed. This EIS has been prepared in support of the SSDA and responds to the relevant matters listed within the Secretary's Environmental Assessment Requirements (SEARs) SSD_9831 issued on 22 February 2019 and reissued on 24 August 2019.

BACKGROUND

The proposed Bankstown City Campus (BCC) is a key component of the Western Sydney University 'Western Growth Strategy', an initiative to bring the highest quality education opportunities and world-class research expertise to Greater Western Sydney. The implementation of the Western Growth Strategy in Bankstown CBD follows the opening of the Parramatta City Campus and the Liverpool City Campus which set the benchmark for state-of-the-art tertiary learning, teaching and research facilities in Western Sydney CBDs.

The BCC presents an opportunity to contribute to the regeneration and activation of the Bankstown CBD and will facilitate innovation and discovery in a dynamic and technology-enabled campus. The BCC will provide student-centred and research-led facilities and implement a new model for delivering education and research, responding to the growth of digital disruption, shifting labour market and evolving industry.

As the largest educational provider in Western Sydney, WSU is a key driver of the region's social and economic development. As the region changes, WSU will deliver education to meet the needs and expectations of current and future students and teachers.

The advances of digital communication have contributed to a new teaching and learning approach that is collaborative and activity based, delivered in smaller flexible spaces. Learning is increasingly linked with industry, so connections to workplaces are often an important factor in study choices. Study patterns are changing too. Students are seeking accessible, connected learning hubs close to industries that open up opportunities for future employment.

These changes demand new approaches to complex issues for campus planning design, such as:

- Transport, access and parking;
- Retail and support services;
- Research and industry partnerships; and
- Connecting with the local community

The BCC will expand upon the public services and facilities in Bankstown's Civic Precinct and the wider CBD, providing a new educational facility and enhanced public domain to complement the existing cultural and civic facilities of the Knowledge Hub, Bryan Brown Theatre, Council administrative facilities and public open space of Paul Keating Park. The proposed campus will make a significant contribution to economic development, employment and training opportunities in Western Sydney.

WSU submitted a Planning Proposal to Council in December 2018 to amend the maximum Height of Building and Floor Space Ratio development standards applying to the site under the *Bankstown Local Environmental Plan 2015*. The proposed development is consistent with the proposed planning controls in the Planning Proposal. Council are in the process of finalising it's assessment of the Planning Proposal and has advised it will be considered at a Council meeting in October 2019.

The development proposed and assessed within this EIS is considered to present the optimal outcome to deliver the objectives of the WSU Western Growth Strategy, in the Canterbury-Bankstown Local Government Area (LGA), considering the alternative options as identified and discussed below.

- **Option 1 – Do Nothing Scenario:** Under the 'Do Nothing' scenario, a new tertiary educational establishment within the Bankstown CBD is not provided. This option does not provide a desirable outcome as it fails to adequately plan for future growth and opportunities to grow Bankstown as a Health and Education Precinct and Strategic Centre in Greater Western Sydney. It is also inconsistent with the broader strategic planning policies including the Greater Sydney Region Plan and the South District Plan. The 'Do Nothing' approach would represent a missed opportunity to align the future of the site with Council and the State Government's strategic vision for the Bankstown CBD.

- **Option 2 – Alternative Design:** The design process included the review of a series of building typology models and the detailed consideration of two concept design approaches. Four typology models were assessed based on building height, solar access to Paul Keating Park, urban legibility and vistas, campus external space and campus internal space.

  The initial design approach developed Typology Model 3 (Tower with Podium) into a concept design suitable for discussion with the GANSW and Council. This option incorporated curvilinear and scalloped shaping to both the tower and podium elements, with a connection from a mid-level of the podium to the external civic plaza and walkway on the south side of the Knowledge Hub. Retail facilities were proposed facing the Park and The Appian Way, with the primary entry to the building at ground level at the south east corner of the site. As well as a large terrace on the west roof of the podium, smaller inset balconies were proposed at the corners of the tower, looking out from the vertical scalloped forms.

  Review of the initial design option with the GANSW and Council identified a range of key considerations, including:

  - Maintaining a clear alignment of The Appian Way;
  - Defining a clear civic datum and alignment of building elements of adjoining civic buildings;
  - Privatisation of public space ;
  - Solar access to adjoining public spaces; and
  - Overall size and bulk of the building..

Consideration of the issues raised by GANSW and Council informed the Urban Design Principles, and the generation of the proposed building form, outlined in **Section 3.5.2** of this EIS, and the review and reduction of the proposed floor area of the project.

- **Option 3 – Proposed Design:** The proposed built form responds to each of the key issues raised by the GANSW and Council during the extensive consultation carried out as well as to the objectives of WSU and considerations for the proposed a vertical campus.

THE SITE

The site encompasses the entirety of Lot 5 DP 777510 at 74 Rickard Road, Bankstown and a portion of Lot 6 DP 777510 at 375 Chapel Street, Bankstown. In addition, public domain works are proposed to Rickard Road, 70 Rickard Road (being part Lot 7 DP 777510) and access is proposed via 80 Rickard Road (being Lot 12 DP 566924). The site is owned by Canterbury - Bankstown Council, and subject to a Lease agreement between the Council and the WSU.

The site is located within the 'Civic Precinct' of the Bankstown CBD, situated on the southern side of Rickard Road, between the Bankstown Library & Knowledge Centre (to the west), and Bankstown Civic Tower (to the east). The site currently provides open lawn space and at grade public parking, contiguous with Paul Keating Park and road along The Appian Way, to the south and east of the site.

The site has an area of 3378 square meters and is currently accessed from The Appian Way (one-way local road) via Rickard Road.

DEVELOPMENT DESCRIPTION

This SSDA seeks consent for the redevelopment of the site as a tertiary education facility with ancillary ground floor retail uses. Specifically, the proposal involves construction and use of a 19-storey building comprising approximately 29,270 sqm of GFA and consisting of:

- Two basement levels including car and bicycle parking, a loading dock, back-of-house storage and plant equipment;
- Ground floor retail tenancies, shared lobby, multi-purpose tiered space, showcase areas, amenities and plant equipment;
- Above ground levels comprising a mix of tertiary education uses including conference facilities;
- Landscaped podium terraces and balcony's;
- Ground level landscaping and public domain works including the provision of a pedestrian plaza along The Appian Way fronting the retail premises; and
- External signage.

The construction of the development will be staged, with early works to include the erection of site hoardings, demolition of all improvements including tree removal, bulk excavation, shoring, the disconnection and/or diversion of services and the extension of the Appian Way layback along Rickard Road. Following completion of the early works the main works for the base construction and above ground building will be undertaken. The early works is the subject of a separate Local development application lodged to Council. The scope of early works shown on the information submitted with the SSDA is provided for information purposes only, and not the subject of this SSDA.

In developing a design that provides the large volume of floor area necessary for a stand-alone vertical campus, providing capacity for engagement with local industry and community and flexibility to accommodate future University needs, careful consideration has been given to how the building form responds to the existing and proposed urban context.

These considerations have been fundamental to the development of the building form, manipulating the required volume to maximise solar access to public open space and stepping the building's form to align with its neighbours. It is necessary for the design to be viewed 'in the round', engaging with the distinct immediate interfaces of high-volume road, pedestrian mall, public park and civic driveway, and being a visible landmark from both nearby and more distant vantage points.

The Ground Level of the building seeks to provide permeable and active engagement with its immediate surroundings. The project will use the existing Knowledge Hub driveway for access to a two-storey basement that accommodates loading and waste collection, as well as parking and services plant, minimising the operational and maintenance activities necessary at street level. The Paul Keating Park, The Appian Way and Rickard Road frontages are designed to provide an open and inviting active edge to the campus, negotiating the conflicting requirements of flood level freeboard and DDA accessibility, with multiple entries that attend to the key directional approaches.

The ground landscape design has also been developed with consideration for strategic projects being undertaken by the Council, including the Complete Streets project, Playgrounds and Play Spaces Strategic Plan and Master Plan for Paul Keating Park.

The project provides opportunities to improve the public domain and pedestrian environment along Rickard Road and The Appian Way, and to offer an engaging interface with Paul Keating Park.

The lower roof levels serve as high amenity terraces, expanding and enhancing the quality of learning and working environments offered within the campus. They provide integrated greenspace with elevated trees to support the University community and visually link the campus with the park.

Internally the building has been designed to support community engagement activities and student services and specialist research at the lower levels from Ground to Level 2. This includes two retail tenancies, University showcase exhibition space and multi-purpose tiered theatre at Ground Level.

Level 3 comprises the Student Hub and terrace, with the Library located immediately above on Level 4. Levels 5 to 12 accommodate the core learning spaces and staff workplaces, supported by a terrace at Level 7, and inset balconies across levels 7 to 12 co-located with informal student and staff amenities. Level 13 comprises a flexible conference facility with breakout terrace.

Levels 14 to 18 occupy the striking cantilevered form and will accommodate capacity for university and education uses. These levels also incorporate small inset balconies and a south facing terrace at Level 16.

The materiality and treatment of the building facades respond to their different orientations and outlooks with distinctive shading alignments incorporated into curtain wall facades, and a substantial extent of green façade. The ombre colouration of the facades and soffits is composed of graduated shades from a rich red, aligned with both the University's branding and the Bankstown Knowledge Hub, to a light gold. This encompassing colour treatment, together with the articulation of volume edges and inset balconies by a contrasting neutral frame, serve to visually articulate and break down the building's volume.

The design also makes full use of the '5th façade' roof spaces that the stepped building form provides. Plant rooms are fully integrated into the building volume enabling the topmost roof to support a photo-voltaic array.

As well as accommodating the proposed distribution of the academic program and mix of uses, the design of the vertical campus has been developed to provide long-term flexibility to respond to the University's changing needs. This has informed the sizing of floor plates, structural grid, vertical transport systems and building services infrastructure, as well as determining egress capacity and amenities to serve anticipated use and populations. The visual and physical connections and proximities across the levels of the campus will enable it to support a vibrant University community, fostering engagement between disciplines and connections between staff, students and the broader Canterbury - Bankstown community.

PLANNING CONTROLS

This EIS considers the relevant regulatory framework applicable to the site and the proposal and contains an assessment of the proposal against the following statutory controls and regulatory instruments:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Environmental Planning and Assessment Regulation 2000 (EP&A Reg)
- State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)
- State Environmental Planning Policy 64 – Signage (SEPP 64)
- State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)
- Biodiversity Conservation Act 2016 (BC Act)
- Draft State Environmental Planning Policy (Environment)
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)
- Draft Environmental Planning Policy (Remediation of Land)
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
- State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP)
- Bankstown Local Environmental Plan 2015 (BLEP)

The proposal has also been assessed in accordance with its consistency with the key planning objectives, priorities and actions outlined within relevant strategic land use and transport planning policies including:

- NSW State Priorities: Premiers Priorities
- Greater Sydney Region Plan – A Metropolis of Three Cities
- South District Plan
- Future Transport Strategy 2056

- State Infrastructure Strategy 2018 – 2038 Building the Momentum
- Crime Prevention Through Environmental Design (CPTED) Principles
- Better Placed: An integrated design policy for the built environment of New South Wales (GANSW, 2017)
- CBCity 2028 (Canterbury- Bankstown Council)

In addition the following policies and draft policies have been addressed:

- Draft Sydenham to Bankstown Urban Renewal Corridor
- Bankstown CBD Local Area Plan
- Draft Bankstown Complete Streets

STAKEHOLDER CONSULTATION

Community and stakeholder engagement has been undertaken by Urbis in conjunction with WSU in the preparation of the proposed Western Sydney University Bankstown City Campus. This included direct engagement and consultation with:

- Adjoining landowners and occupants;
- City of Canterbury Bankstown Council;
- Government Architect of NSW;
- Bankstown Collaboration Group; and
- Other government, agency and utility stakeholders listed within the SEARs

The outcomes of the community and stakeholder engagement are detailed in the Consultation Report and within this EIS. The report identifies changes to the proposal in response to the issues raised, including:

- The built form massing has been designed to:
    - create a clear alignment along The Appian Way;
    - maximise sunlight to Paul Keating Park and other public open spaces;
    - provide an active retail frontage to The Appian Way;
    - create a civic datum with the podium aligning with the adjoining Library and Knowledge Hub and the mid tower aligning with the adjoining Civic Tower; and
    - incorporate large outdoor spaces for users of the building to ensure the adjoining public spaces are not over utilised.
- Floor levels have been designed to respond appropriately to flood planning levels.
- Heritage assessment has been undertaken with no built form changes recommended.
- Traffic and parking impacts have been assessed and mitigation measures including promotion of a Green Travel Plan and preparation of a detailed Construction Management Plan outlined.
- All other matters have been addressed within this EIS and the detailed documentation submitted with the SSDA.

KEY BENEFITS

The WSU BCC will significant long term public benefits to both the Bankstown CBD, Western Sydney and the broader Metropolitan Area. The high architectural quality will enhance the brand and identity of Bankstown and the creation of an accessible, high profile university campus will increase engagement levels of local residents in tertiary education. The WSU BCC proposes open space, publicly accessible areas and community infrastructure that will meet the needs of students, staff and visitors. The open space and publicly

accessible areas have been well targeted to user needs and are likely to be more attractive to students, staff and visitors than the surrounding open spaces.

The proposal reflects an appropriate built form and scale that is commensurate with the vision for Bankstown CBD as expressed by the emerging scale of development on adjacent and surrounding lands. The concept will also leverage off significant investment in the current and future transport infrastructure accessible to the site, providing increased education and employment opportunities in a well serviced location.

The proposal makes a significant contribution to the public domain through the provision of a renewed The Appian Way pedestrian pathway which will enhance the public domain and significantly contribute to the quality of the pedestrian footpath network within the immediate locality.
The strategy along The Appian Way is to clearly define pedestrian movement, create a progression of useable and public green and social spaces from north to south along the axis of The Appian Way, integrate vehicular drop off into a shared street environment that is paved with high quality materials and slow the flow of stormwater with deep pockets of landscape.

The proposed building form enables direct sun access to a diversity of public activity zones across Paul Keating Park and The Appian Way throughout the year. Large areas of lawn to the north and south create inviting point of entry, capture the lunch time sun and offer a meeting point conveniently located adjacent to retail spaces that spill out into The Appian Way. The extent is bound by several large deciduous shade trees and large areas of dense under planting which aim to capture, and filter site run off and offer more intimate zones for respite as a counter pint to the busy lawns and pedestrian spine. The landscape quality of the development will be further enhanced through the provision of landscaped terraces and balconies totalling 3,233m^2.

The proposal includes onsite detention and strategies which will reduce the peak flows of stormwater discharge from the site reducing the flood affectation of the adjoining areas. The development's water sensitive urban design will also improve the water quality throughout the area.

Economic benefits for existing business and new business to cluster in the City Centre that service the new vertical campus with mutual benefits for students and staff. Direct economic benefits will be experienced through both the construction and the operations phases. Local supply-chain impacts on the Bankstown CBD will be significant. Local industries will benefit through increased demand for their output, particularly professional, scientific and technical services, manufacturing and administrative and support services.

Catalytic impacts relating to the establishment of the WSU BCC encompass the productivity and economic performance benefits which flow from the opening of a university campus in an urban economy.

Key catalytic economic benefits which would be attributable to proposed WSU BCC development, include:

- Human capital:
    - Increase in opportunities for higher educational attainment for local students, and others across Sydney and NSW;
    - Increase in local human capital, from students seeking part-time work close to WSU BCC and retention of graduates in local employment opportunities; and
    - Improvements productivity as a result of increase in skilled local labour supply, with flow-on effects to wages and economic growth.
- Knowledge transfer and development:
    - Increase in knowledge transfer due to proximity to civic institutions such as the Bankstown Library and the Bankstown Town Hall, and potential to share facilities;
    - Opportunities for community-based technology and knowledge development to occur through use of WSU BCC amenities and spaces (e.g. public lectures, conferences, events);
    - Strategic partnerships and outreach between WSU and key regional stakeholders and businesses; and
    - Academic consulting and leadership opportunities.
- Business innovation:

- Contributions to local business innovation due to focus on entrepreneurship and small-to-medium enterprises in academic program, specifically in areas of health, advanced manufacturing and education;
- Deliberate linkages fostered between academics and business/industry by WSU; and
- Efficiencies arising from proximity of campus to manufacturing industry in region, new airport, and highly connected public transport .

- Regional development:
  - Enables Bankstown CBD to become a hub for innovation, research and technological development;
  - Supports local economic and social development indirectly by attracting commercial and retail businesses to area; and
  - Offers cultural amenities by offering access to facilities, spaces and events that can enrich the local community.

IMPACTS AND MITIGATION MEASURES

This EIS assesses the proposed development in relation to relevant planning instruments and policies and considers the likely environmental impacts of the proposal, as follows:

Suitability of the Site

Following an analysis of the site and its surrounding context and the applicable State and local planning policies, it is considered that the proposed development is consistent with the strategic and statutory planning provisions which apply to the site. The potential environmental impacts of the development have been comprehensively assessed and can be mitigated, minimised and/or managed to avoid unacceptable impacts to the site or the locality. Accordingly, the site is considered suitable for the proposed use.

Built form and Urban Design

The design process considered a range of issues associated with the impact and integration of the proposed development with its immediate surroundings. Of particular importance was the alignment of The Appian Way, the design and landscaping of The Appian Way, relationship with adjoining buildings in the existing and future context; use and interaction with Paul Keating Park, necessary NLA and appropriate floor plates for a vertical campus.

The potential reading of The Appian Way alignment has been explored, including comparison of title boundary alignments, examination of the pedestrian environmental experience, and review of the morphology of the ground and elevated built forms. This has shown that The Appian Way is not defined by a singular alignment and varies along its length from the Bankstown Train Station to Rickard Road. Notwithstanding this, the proposed building form has been stepped back an average of 10.5m from The Appian Way maintaining a clear spatial reading of The Appian Way when viewed from both Bankstown Station and Rickard Road. The pedestrian appeal of The Appian Way route will increase in the future, with transformation of The Appian Way into a shared zone, as proposed in the draft Complete Streets strategy Master Plan, prepared by Council, and the alignment of entries to the future Metro Station and bus interchange to the south.

Visual Impact

The visual impact analysis has demonstrated that the proposed built form will be consistent and compatible with the locality, including the adjoining library and knowledge hub and civic tower. The architectural design of the proposal has had regard to a number of design considerations in addition to view impacts, including the need to facilitate appropriate floor plate sizes for the vertical campus, reflect the high accessibility and amenity of the locality, maintaining sufficient solar access to public open space , provide an extension of The Appian Way and make a positive contribution to the future built form context of the Bankstown CBD. The design outcome by Lyons is considered to be the most appropriate balance of these considerations and the proposal will have an overall positive visual impact on the locality.

Solar Access and Overshadowing

As the site is located on the northern side of existing public open space (Paul Keating Park and The Appian Way) the potential shadow cast by the building has been a key consideration during the design process, with the minimisation of the shadow impact being a primary design objective.

In the absence of LEP or DCP controls in relation to solar access to public open space, the project team have referred to other precedent public open spaces in Sydney. The Drying Green Park in the Green Square Town Centre Development was identified as a comparable public open space. The Green Square Town Centre DCP identifies that the Drying Green needs to: 'achieve direct sunlight each hour between 11am and 2pm for at least 50% of the park'. The proposed building form enables direct sun access to a diversity of public activity zones across Paul Keating Park and The Appian Way throughout the year, with the building performance comparable to the benchmark precedent of the Drying Green.

The design proposal achieves at least 50% of public open space at Paul Keating Park having direct sunlight for over 4 hours in the middle of the day and early afternoon. The detailed solar assessment process informed the key massing principles of the podium and shaped tower form and enabled the fine tuning the spatial placement of building volume, refining the exact floor shapes and height shifts associated with the proposed form. In particular a key response was to rotate the top portion of the tower, stepping the form back from the Park, reducing the shadow cast onto the public open space whilst maintaining floor space within the maximised height.

European Heritage

A Heritage Impact Statement prepared by Urbis provides an assessment of the heritage significance of the proposed development site, the adjoining heritage item at 375 Chapel Road and the heritage character of the surrounding civic precinct. The existing car park and landscaping has no historic significance on a local or state level and has no representative value. There is no evidence that the site has importance in the local community. There will be no physical impact anticipated on the heritage item from the proposed development nor will there be any unacceptable impact on the curtilage surrounding the item.

Aboriginal Cultural Heritage

An Aboriginal Cultural Heritage Assessment was undertaken involving research into the history of the site and cultural significance. The ACHAR concluded that there are no registered Aboriginal objects and/or archaeological sites within the site. There are no landscape features with potential for Aboriginal objects or archaeological deposits located within the site, the site has been the subject of high to extreme levels of disturbance since the 1960s at the latest; and the original soil profile has been entirely removed from the site during the last 50 years and replaced with extensive levels of fill material. In additional no Aboriginal cultural heritage values have been identified by the registered Aboriginal Parties (RAPs).

Aeronautical Impacts

An Aeronautical Impact Assessment has been prepared by Landrum & Brown which assessed the proposed development and the accompanying construction cranes against the relevant aeronautical requirements. The proposed maximum building height of 106.78m AHD exceeds the OLS Inner Horizontal Surface (IHS) of Bankstown Airport where the height limit is 51m AHD but is less than the PANS-OPS of 108.1m. The proposed construction crane height of 125m AHD exceeds the PANS-OPS and a short-term controlled activity permit will be required which will allow up to 3 months infringement into the PANS-OPS.

Biodiversity and Arboricultural Impacts

A preliminary ecology assessment was undertaken by ELA who concluded that the site did not contain any biodiversity values and as such a BADAR waiver should be granted. The OEH and DPE have subsequently issued a BDAR waiver for the site. An arboricultural impact assessment was undertaken to identify mitigation measures for the retention of trees adjoining the subject site. 23 trees will be removed on or adjacent to the site with 2 trees within Paul Keating Park to the south of site requiring tree protection fencing during construction. Replacement trees will be planted along the Rickard Road frontage and along The Appian Way.

Flood and Stormwater Impacts

Whilst the proposed development will increase the impervious area on the site it will maintain the existing overland flow path preventing any impacts onto neighbouring properties. The Appian Way ground levels were modelled in TUFLOW which considered the levels and gradients required to result in nil adverse flood impacts. The intention is for The Appian Way to increase water conveyance and flood storage. The proposed

development will result in the flooding being localised around The Appian Way and Rickard Road. As such, the areas around the adjoining properties will receive a reduction or nil-change in flood levels. Some areas downstream of the site are currently flooded but will become dry as a result of the proposed development.

Economic Impacts

The proposal will have significant economic benefits and direct and indirect employment opportunities locally and within the Canterbury Bankstown LGA. It is anticipated that the construction will also contribute to direct and indirect employment through the supply-chain within the LGA. WSU BCC will support and generate direct and indirect jobs to the local economy.

Rental Market

The anticipated impacts of the proposed project on the Bankstown rental market are minimal. The WSU BCC is likely to attract a broader range of students and increase the number of students seeking housing close to the WSU BCC. However, the site is accessed by good public transport networks allowing students to live within the broader suburbs. Students relocating from the Milperra Campus predominantly reside in the local housing market and the WSU BCCs impact on the housing market is anticipated to be low.

Social Impacts

The proposal will deliver long term positive social impacts for the Bankstown CBD. The high architectural quality will likely enhance the brand and identity of Bankstown and the creation of an accessible, high profile university campus will increase engagement levels of local residents in tertiary education. The WSU BCC proposes open space, publicly accessible areas and community infrastructure that will meet the needs of students, staff and visitors. The open space and publicly accessible areas have been well targeted to user needs and are likely to be more attractive to students, staff and visitors than the surrounding open spaces. The size of WSU BCC and number of incoming students do not warrant the provision of social infrastructure beyond the proposed the library.

Geotechnical and Contamination

The potential for site contamination has been identified through an intrusive soil assessment and analysis. The potential for contamination is considered low. However, mitigation measures have been provided , including treatment and disposal of asbestos material. Additional testing is also recommended for specific components to ensure the site is suitable for the proposed use.

Traffic and Transport

the site is well served by public transport, with a train station and two bus interchanges within easy walking distance. The planned redevelopment of the station as part of the Sydney Metro project, will provide new high frequency services at Bankstown from 2024.

Given the high service of public transport nearby the site, it is anticipated that the new campus will predominantly be accessed by public transport. The project is a transformative project for the Bankstown CBD and from a transport and traffic perspective responds to a modal shift in response to changing travel demands that will respond to improvements in public transport access and general CBD improvements as part of the Bankstown Complete Streets project. The potential impacts on the local road network have been assessed, including likely traffic generation for heavy and light vehicles.

The assessment found that the development car park (containing 94 parking spaces) is likely to generate 53 vehicle trips in the AM peak hour and 49 vehicle trips in the PM peak hour. The Appian Way drop-off (two short term drop off spaces) was assumed to generate 51 movements in the AM peak period and 35 in the PM peak period. The impact of this to the surrounding intersections at peak times was found to be manageable, with the SIDRA traffic modelling finding they will continue to operate at a satisfactory level of service.

End of trip facilities and bike parking will be provided within the basement. Approximately 32 bike spaces will be provided within the basement, with up to 100 bike spaces placed within the public domain of the site.

Pedestrian Wind

A pedestrian wind study was undertaken by Windtech Consultants Pty Ltd in which wind speeds throughout the proposed development and surrounding streetscape were assessed. This was undertaken by positioning a 1:300 detailed, scale model of the proposed development and the surrounding area within a boundary layer wind tunnel. The modelled area includes the buildings and topography within a 375m radius of the site.

The report recommendations have been incorporated into the proposal including the inclusion of trees within terraces, The Appian Way and Paul Keating Park, impermeable screens on upper terraces and localised mobile screening. Implementation of these measures which will ensure wind conditions are appropriate for all outdoor trafficable areas within and around the site and suitable for the intended uses.

Reflectivity

An external glare study was undertaken by Inhabit Australasia Pty Ltd in which the impact of the proposed façade's solar reflections assessed from 7 critical view locations. The report recommends that all façade glazing have an external reflectivity below 20% the proposed façade has an external reflectivity of 16% complying with this recommendation. Furthermore, external shading devices and fins have been incorporated onto the building's facades further removing glare.. There is some resultant glare that will impact the neighbouring buildings and this can be reduced by the proposed landscaping and existing architectural details at the surrounding buildings including existing sun-shades, balconies and blinds.

Crime Prevention Through Environmental Design

A Crime Prevention Through Environmental Design (CPTED) was prepared by Urbis and assesses the proposed development against the 4 key CPTED principles: surveillance, access control, territorial reinforcement and site and activity management. As the proposed development is located in an area that has seen a variety of opportunistic crimes, the following elements of the proposed development have been identified as priority areas: car parking / entry and exit points / external layout / maintenance and management. Recommendations within the CPTED report have been incorporated and, the development has been properly designed as to mitigate and deter these identified crimes.

Ecologically Sustainable Development

The proposal incorporates Environmentally Sustainable Design (ESD) initiatives through integrated design. The University has committed to a target 5-star Greenstar as-built rating. Additionally, as a future proofing measure, the building is being designed to be capable of achieving a NABERS rating. The design approach for the project seeks to deliver a very low energy and highly sustainable building without complicating the design and campus operation.

Noise and Vibration

Analysis of the potential impacts arising from the demolition, construction and operational phases of the development has concluded that there will be no exceedances of noise levels during the daytime hours. The potential noise exceedances during the out-of-hours work can be mitigated or minimised through implementation of recommended measures in the CMP.

Hazard and Risk

A dangerous goods assessment has been undertaken in relation to fuel for the generator and the chemicals used for the cooling towers. The storage and handling of these elements was assessed against the requirements and guidelines and it was concluded the design measures incorporated into the proposal are adequate to alleviate any risk.

Infrastructure Requirements

The existing utility services are adequate and/or can be extended to accommodate the needs of the future development. A sewer main traversing the site is required to be relocated and redundant services capped.

Construction Impacts

The preliminary construction management measures are considered appropriate to manage potential impacts on the site and locality during the demolition and construction phases. The preliminary CMP will be updated once a Principal Contractor is engaged and will incorporate any conditions of consent imposed on the SSDA.

Waste

Operational waste management has been assessed in detail by Elephants Foot and a Waste Management Plan prepared which identifies how the waste will be handled and disposed of, details of bin sizes/quantities and waste rooms, descriptions of the proposed waste management equipment used and information on waste collection points and frequencies.

Each of the recommended mitigation measures has been reviewed in detail and it is considered that they can be incorporated as conditions of consent and implemented during the construction and operational phases to avoid unacceptable environmental impacts.

CONCLUSION

The EIS demonstrates that the proposal will not result in any significant departures from applicable controls or unreasonable environmental effects. Having regard for the biophysical, economic and social considerations, including the principles of ecologically sustainable development, the proposed development is justified for the following reasons:

- The proposed development is permissible with consent on the site under the provisions of *Bankstown Local Environment Plan 2015* and satisfactorily responds to the aims and matters for consideration listed within the LEP;
- The proposal is consistent and compatible with the strategic land use and transport policies and will deliver a substantial investment in Western Sydney with significant construction and ongoing employment opportunities close to the growing residential population;
- The proposed building has been sited and designed to satisfactorily address State and local environmental planning instruments and guidelines, including compliance with relevant local strategic plans;
- The environmental impacts associated with the construction and operational phases of the development have been comprehensively assessed and can be appropriately mitigated to avoid unacceptable impacts to the site or locality;
- The development will provide positive local, regional and national economic impacts through the provision of employment and essential education infrastructure;
- The development can be adequately serviced by essential infrastructure without unreasonable demands on existing networks; and
- The issues identified during the stakeholder consultation have been incorporated into the final design and can be implemented in the construction and operation of the proposed development.

Based on the above matters, it is considered the proposed development is in the public interest and is recommended for approval.

1. INTRODUCTION

1.1. PROJECT OVERVIEW

This Environmental Impact Statement (EIS) is submitted to the Department of Planning, Industry and Environment (DPIE) on behalf of the Western Sydney University (WSU) and in support of an application for State Significant Development (SSD) application number SSD 9831.

The proposed development is located on Lot 5 DP 777510 and a portion of Lot 6 DP 777510 at 74 Rickard Road and part 375 Chapel Road, Bankstown and will be known as the Western Sydney University, Bankstown City Campus (BCC). In addition, public domain works are proposed to Rickard Road, 70 Rickard Road (being part Lot 7 DP 777510) and access is proposed via 80 Rickard Road (being Lot 12 DP 566924)

The SSDA has been lodged under Part 4 of the *Environmental Planning and Assessment Act* 1979 (the EPA Act) and seeks development consent for the redevelopment of the site as an educational establishment with ancillary retail use.

Specifically, the proposal involves construction and use of a 19-storey building comprising approximately 29,270 sqm of GFA and consisting of:

- Two basement levels including car and bicycle parking, a loading dock, back-of-house storage and plant;
- Ground level including retail tenancies, shared lobby, multi-purpose tiered space and plant equipment;
- Above ground levels comprising tertiary institution, conference facility and education floor space;
- Landscaped podium terraces and balcony's;
- Ground level landscaping and public domain works including the provision of a pedestrian plaza along The Appian Way fronting the retail premises; and
- External signage.

Site establishment works are subject to an Early Works Development Application submitted to Canterbury-Bankstown Council, lodged on 5 September 2019 (DA-697/2019).

The proposed development has an estimated capital investment value of $264,022,630 (refer to **Appendix A**). Accordingly, the proposal is classified as SSD under Clause 15(3) in Schedule 1 of *State Environment Planning Policy (State and Regional Development) 2011* (SRD SEPP).

This EIS has been prepared to support the SSD application and responds to the relevant matters listed within the Secretary's Environmental Assessment Requirements (SEARs) issued on 22 February 2019 SSD_9831 and revised SEARS issued on 24 August 2019 (refer to **Appendix B** and **Section 1.7**).

1.2. CROWN DEVELOPMENT APPLICATION

Clause 226(1) of the EP&A Regulation provides that a development carried out by an Australian University (under the meaning of Higher Education Act 2001) is a Crown development. Western Sydney University is recognised as an Australian University under Schedule 1 of the Higher Education Act 2001 and therefore the development is a Crown development for the purpose of Part 4 of the EP&A Act.

1.3. PROJECT BACKGROUND

The Bankstown City Campus project is a key component of the Western Sydney University 'Western Growth Program' and presents an opportunity to contribute to the regeneration and activation in the Bankstown Central Business District (CBD). The Western Growth Strategy is to secure success for the students and the Greater Western Sydney region through innovation and discovery in a dynamic and technology-enabled world, serve the region and local communities, provide student-centred and research-led facilities, and implement a new model for delivering education & research responding to growth of digital disruption, shifting labour market and industry.

The implementation of the Western Growth Strategy in Bankstown CBD follows the opening of the Parramatta City campus known as the Peter Shergold building at 1 Parramatta Square and the Liverpool City Campus Liverpool.

As the largest educational provider in Western Sydney, WSU is a key driver of the region's social and economic development. As the region changes, WSU will deliver education to meet the needs and expectations of current and future students and teachers.

The advances of digital communication have contributed to a new teaching and learning style that is collaborative and activity based. Learning is increasingly linked with industry, so connections to workplaces are often an important factor in study choices. Study patterns are changing too. Students are seeking accessible, connected learning hubs close to industries that open up opportunities for future employment.

Western Sydney University has developed the Western Growth Strategy to directly shape existing and future campus design and planning. These changes demand new approaches to complex issues for campus planning design, such as:

- Transport, access and parking;
- Retail and support services;
- Research partnerships; and
- Connecting with the local community

The project, entailing a stand-alone vertical university campus building will facilitate relocation of teaching, research and staff facilities currently located at the WSU Bankstown Campus at Milperra. The academic program offered at the Bankstown City Campus will reflect its status as a flagship campus for WSU, in a region with culturally and linguistically diverse population, strong manufacturing industry and highly connected by public transport. The courses offered will encompass undergraduate and post graduate degrees by coursework and research, as well as Diploma offerings and English Language testing services through The College.

The Academic facilities for staff workspaces, research and teaching will be supplemented by other facilities to create a comprehensive University experience for students and foster connections with local business, industry and community. Facilities that will be incorporated into the Campus include basement parking (for users of the building), ground level Retail spaces, a branch of the University Library, flexible Conference and Event spaces, facilities for student social engagement and administrative services, along with large outdoor terraces.

1.4. PROJECT OBJECTIVES

The proposed redevelopment of the site to accommodate the Western Sydney University, Bankstown City Campus is intended to achieve the following objectives:

- A bold and future facing external presence that signals the University’s intentions in the region;
- Make a positive contribution to Bankstown City Centre, a strategic centre with an emerging health and education precinct;
- Activation of the building design to invite multiple forms of engagement with the University by the surrounding community;
- Maximise the permeability of the building (particularly through the lower levels) to promote in-flow of community members, current and prospective students, external partners and research collaborators.
- Ground floor space that connects to the community and extends the precinct, being open, integrated, flexible and permeable, and meaningful connectivity with adjacent buildings, external spaces and community functions;
- Showcase to the community the technology potential, and education and research opportunities, of a digitally enabled future;
- Promote and advocate the value of the contribution of the University’s teaching and research;

- An engaging internal presence and user experience that promotes quality teaching, research and engagement;
- Publicly useable spaces, amenities and recreation facilities that draw patrons in to create a vibrant internal life for the building's users (staff, students and community); and
- A variety of pop-up spaces that enhance the user experience.

1.5. STRATEGIC NEED FOR THE PROPOSAL

Sydney's universities rank highly in national and international comparisons, creating strong demand from regional, interstate and international students. Further to this, the NSW Government has placed a strategic focus on the growth and development of Greater Western Sydney, through the announcement of Bankstown as a Strategic Centre. This requires collaboration from complementary stakeholders to create opportunities for investment, business and jobs growth and internationally competitive industry sectors.

WSU has embarked on a large-scale transformative program that will bring the highest quality educational opportunities and world-class research expertise to Western Sydney. WSU is reshaping its campus network, to combine existing campuses with CBD vertical campuses and is committed to developing campus precincts that connect with and embed business, industry and community partners.

The proposed development is optimally located to link with WSU's existing CBD network namely the Parramatta and Liverpool campuses.

The proposed development strategically aligns with the NSW Government's vision for Greater Sydney by providing tertiary and vocational education and training facilities that allow people to gain and refine skills for employment. The proposed development will maximise the site's locational and strategic potential to deliver an internationally competitive education and innovation hub to contribute to the growth and development of Western Sydney and the Sydney region at large.

1.6. ANALYSIS OF FEASIBLE ALTERNATIVES

Under the provisions of the *Environmental Planning and Assessment Regulation 2000* (EPA Regulation), Schedule 2, Clause 7 there is a requirement to analyse any feasible alternatives to carrying out the development, including the consequences of not carrying out the development.

1.6.1. Do Nothing Scenario

Under the 'Do Nothing' scenario, a new tertiary educational establishment within the Bankstown CBD is not provided. This option does not provide a desirable outcome as it fails to adequately plan for future growth and opportunities for an integrated business, education and innovation hub in Greater Western Sydney. It is also inconsistent with the broader strategic planning policies including the Greater Sydney Region Plan and the South District Plan.

The 'Do Nothing' approach would represent a missed opportunity to align the future of the site with Council and the State Government's strategic vision for the Bankstown CBD.

Further to this, the 'Do Nothing' approach would require the applicant to acquire another CBD site to deliver their vision. Given the subject site is highly serviced, is approximately 400m from the Bankstown Railway Station and is well connected to the existing Civic facilities, other locations would likely sub-optimal.

If the site is not used for the proposed tertiary and retail uses, the most likely alternate development option involves a mixed-use commercial office and residential development in accordance with the site's B4 Mixed Use zone. The Bankstown CBD commercial core is currently in a state of transformation, which notably will include the redevelopments of Compass and Kitchener Parade sites both of which will provide an influx of high-quality mixed use and residential uses in close proximity to the site.

Whilst there is strong demand for high quality residential floor space within the Bankstown CBD, the Greater Sydney Region Plan and the South District Plan both place a strong emphasis on developing an education, health and innovation precinct within the Bankstown CBD. The proposal is strategically located to contribute to this and build on the existing educational uses in the area including TAFE NSW and the proposed relocation of the Bankstown-Lidcombe Hospital to form an education and health precinct in the heart of the Bankstown CBD.

Developing the site for uses other than the proposed purposes would be a lost opportunity to contribute to and strengthen the Bankstown health and education precinct and foster direct collaboration and innovation with local industry partners. Accordingly, there is a clear strategic need for the proposed mixed-use development, and alternatives are considered to be less desirable.

1.6.2. Alternative Design – Options Analysis

The design process has included the review of a series of building typology models and the detailed consideration of two concept design approaches. The review and analysis of the typologies and the initial design approach informed the Urban Design Principles (detailed in **Section 3.6.1**) and the Proposed Building Form (detailed in **Section 1.1.1**).

For comparison purposes a range of typology models were examined testing how a vertical campus of approximately 25,000m² NLA could be accommodated on the site. It is noted that this is slightly less than the proposed briefed area of 26,200m², and is for general comparison only.

Typology Model 1: Maximised floor plate and minimised height

Figure 1 – Alternative Built Form Typology 1

Source: Lyons

Typology 1 analysis:

- **Height**: Shortest model.
- **Solar Access**: Minimises length of winter shadow across the Paul Keating Park.(north south extent) but increases width and duration of the shadow onto Paul Keating Park.
- **Urban legibility and vistas**: Does not provide open space above The Appian Way. Provides open space in east-west direction, aligning generally with southern side of Knowledge Hub and Council buildings.
- **Campus external space**: Building mass broken with recessed floors to provide sheltered external breakout space at mid-levels. Less desirable external space to terrace style.
- **Campus internal space**: Building floor plate maximised in east-west direction for daylight access. Potential for central core with column free zone along north and south sides of floorplate. Large floor plate supports a mix of spaces and services on each floor.

Typology Model 2: Minimised floor plate and maximised height

Figure 2 - Alternative Built Form Typology 2

Source: Lyons

Typology 2 analysis:

- **Height**: Tallest model. Floor plate as required to keep overall height to approx. 83m (just below PANS-OPS).
- **Solar Access**: Increases depth of shadow across the Paul Keating Park.(north south extent) but decreases the shadow width and duration on the Paul Keating Park.
- **Urban legibility and vistas**: Provides open space above The Appian Way, adjacent to Knowledge Hub Driveway and adjacent to Paul Keating Park. Building form articulated to provide visual relationship to Knowledge Hub and Council Building forms.
- **Campus external space**: Minimal external breakout, no large areas for group gathering or congregation.
- **Campus internal space**: Potential for central core with column free zones to all sides of floorplate. Internal voids and circulation critical for ensuring connectivity between spaces and services on different floors.

Typology Model 3: Tower with Podium

Figure 3 - Alternative Built Form Typology 3

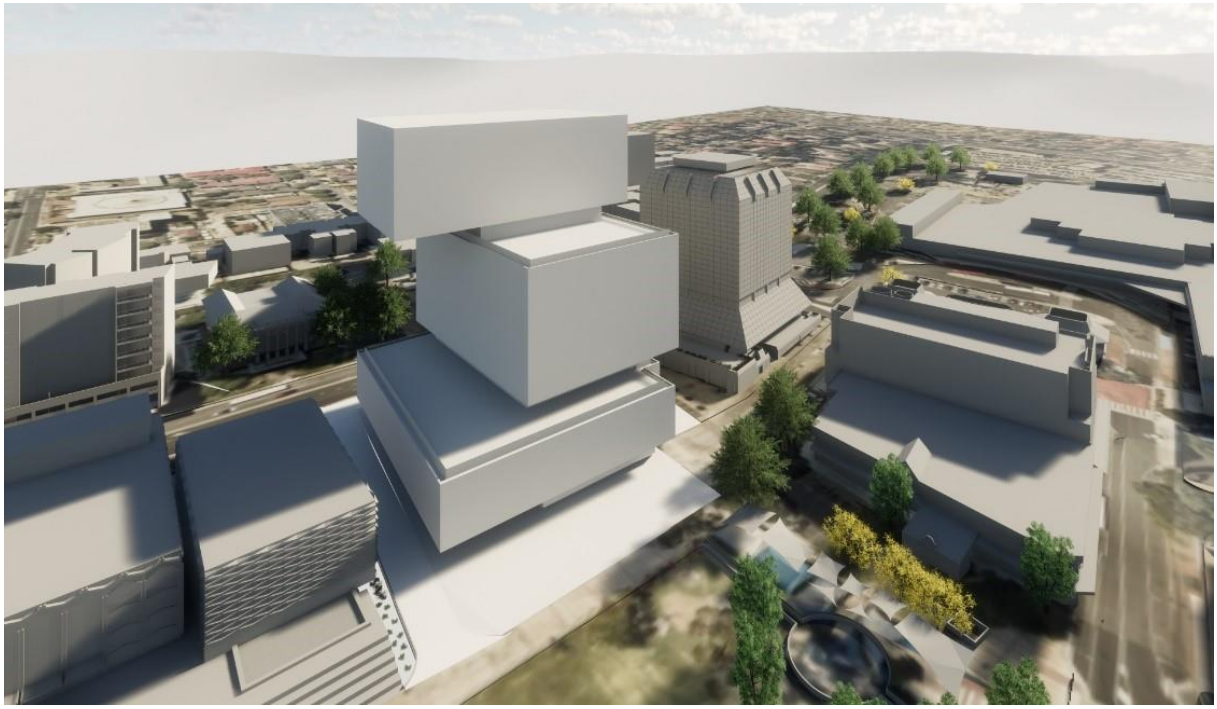
Source: Lyons

Typology 3 analysis:

- **Height**: Slightly lower than Typology 2, due to increased floor plate size at lower levels.
- **Solar Access**: Retains some benefits of Typology 2, with reduced width and duration of the shadow onto the Paul Keating Park from the upper portion of the building.
- **Urban legibility and vistas**: Tower form is setback from the east site boundary but does not provide clear space above The Appian Way at ground level and the podium form. Building form articulated to provide visual relationship to Knowledge Hub and Council Building forms.
- **Campus external space**: Provides large external breakout to roof of podium form, plus smaller breakout where tower is articulated.
- **Campus internal space**: Potential for central core with column free zones to all sides of tower floorplate. Larger podium floor plates suit allocation of high population spaces and more active services at lower floors.

Typology Model 4: Additive Building Form

Figure 4 - Alternative Built Form Typology 4



Source: Lyons

Typology 4 analysis:

- **Height**: Similar to Typology 2, with varied floor plate sizes to podium, mid and upper tower levels.
- **Solar Access**: Retains the benefits of Typology 2, including open space above The Appian Way and reduced width and duration of the shadow onto the park from the mid tower. Reduces the depth of shadow across the park (north south extent) by moving the upper tower volume to the northern side of the site.
- **Urban legibility and vistas**: Whole building form is set back from the east site boundary to provide clear space above The Appian Way. Building form articulated to provide enhanced visual relationship to Knowledge Hub and Council Building forms. Provides unique and iconic form clearly legible from park space.
- **Campus external space**: Provides multiple large external breakout spaces at roof terraces, plus potential for smaller breakout spaces to further articulate the building form.
- **Campus internal space**: Core alignment and structural grid to be coordinated with building form to provide column free zones, daylight access and internal circulation and visual connections. Larger lower floor plates suit allocation to high population spaces and more active services.

Initial Design Concept Analysis

The initial design approach developed Typology Model 3 into a concept design suitable for discussion with the GANSW and Canterbury Bankstown Council (Figure 5). This option incorporated curvilinear and scalloped shaping to both the tower and podium elements, with a connection from a mid-level of the podium to the external civic plaza and walkway on the south side of the Knowledge Hub. Retail facilities were proposed facing Paul Keating Park and The Appian Way, with the primary entry to the building at ground level at the south east corner of the site. As well as a large terrace on the west roof of the podium, smaller inset balconies were proposed at the corners of the tower, looking out from the vertical scalloped forms.

Figure 5 – Massing form of the Initial Design Option

Source: Lyons

Review of this design option by GANSW and Council identified a range of issues and considerations, including:

- Council's desire to establish The Appian Way as a clear pedestrian prioritised street from Rickard Road to The Mall, with open space above and the new building frontage providing active "Eat Street" retail tenancies.
- The top of the podium form should align with the height of the Knowledge Hub parapet. This level is closely aligned with the top of the chamfered glazed base of the Council Building, thereby providing a consistent datum to all the Civic Precinct buildings fronting Rickard Road.
- The need to ensure that the University didn't over utilise the existing public domain. Concerns included connecting the building to the Knowledge Hub plaza and the provision of sufficient outdoor amenity as part of the Vertical Campus.
- The impact of the building on the existing solar access of the public open space. It was noted that although there are no existing requirements in the planning scheme for the provision of solar access to Paul Keating Park, it would be necessary for the design to maintain access to sunlight to a diversity of public spaces, including mid-winter.
- The overall size of building proposed, which exceeds the existing floor space ratio (FSR) for the site under the City of Bankstown Local Environmental Plan 2015. The FSR and Height of development permitted on the site is being addressed through a separate Planning Proposal with the Council.

These issues and considerations have been addressed in the proposed design.

1.6.3. Proposed Design

Consideration of the issues raised by GANSW and Council has informed the Urban Design Principles, outlined in **Section 3.6.1**, the generation of the Proposed Building Form, outlined in **Section 1.1.1**, and the review and reduction of the proposed floor area of the project. The process and outcomes of consultation with the GANSW, through the State Design Review Panel process, is outlined in further detail in **Section 5.1**.

1.7. SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

In accordance with Section 4.39 of the EP&A Act, the Secretary of the Department issued the requirements for the preparation of the EIS. The Secretary's Environmental Assessment Requirements (SEARs) issued on 22 February 2019 are addressed within this EIS and are included in full at **Appendix B**.

Table 1 below provides a summary of the SEARs and identifies the section of this EIS where the relevant requirement is addressed and/or the Appendix reference for the specialist consultant's report associated with that requirement.

Table 1 – Summary of SEARs

Secretary's Requirements	Reference
General • Detailed calculation of CIV and job creation (both construction and operational phases)	**Appendix A**
Statutory and Strategic Context • Address the statutory provisions 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 (Educational Establishments and Child Care Facilities) 2017; • State Environmental Planning Policy No.55 – Remediation of Land; • State Environmental Planning Policy No. 64 – Advertising and Signage; • Draft State Environmental Planning Policy (Remediation of Land); • Draft State Environmental Planning Policy (Environment); and • Bankstown Local Environmental Plan 2015	**Section 7**
Policies Address the relevant planning provisions, goals and strategic planning objectives in the following: • NSW State Priorities; • The Greater Sydney Regional Plan, A Metropolis of three cities; • South District Plan • NSW Future Transport Strategy 2056; • State Infrastructure Strategy 2018 – 2038 Building the Momentum • Crime Prevention Through Environmental Design (CPTED) Principles; • Better Placed – An integrated design policy for the built environment of NSW 2017; and • CBCity 2028 (Canterbury Bankstown Council).	**Section 6**

Secretary's Requirements	Reference
Built Form and Urban Design Ensure the proposal demonstrates design quality through consideration of the following: • Site and context including planning and massing options and preferred strategy for future development. • Contextual fit including height, bulk and scale, setbacks and interface of the proposal with surrounding development, topography, streetscape, and public open spaces, particularly: Paul Keating Park; Bankstown Library and Knowledge Centre; Bankstown Civic Tower; The Appian Way; Rickard Road; and Council Chambers (the Roundhouse). • Demonstration of design excellence, with specific consideration of the overall layout, connectivity, open space and edges, interface with the public domain (particularly The Appian Way; Paul Keating Park and Rickard Road), facades, rooftop and plant design, massing, setbacks, building articulation, materials, finishes, colours, signage (or signage zones), public and occupant movement around and through the building. • Visual impact including views to and from the site and any adjoining heritage items. • Built form including overall site layout, planning and massing, facades, building articulation and scale, materials and colours. • Crime Prevention Through Environmental Design Principles. • Environmental amenity including access to landscape and outdoor spaces and future flexibility. • Landscape design, including consideration of equity and amenity of spaces, and integration with built form, security, shade, topography and existing vegetation. • ESD principles including sustainability targets and integration of these in design approach. • Integration of services including waste management, loading zones and mechanical plant.	**Section 8.2** **Section 8.3** **Section 8.18** **Appendix E** **Appendix G** **Appendix S** **Appendix BB**
Environmental Amenity • Assess amenity impacts on the surrounding locality, including solar access, acoustic impacts, visual privacy, visual amenity, view loss, overshadowing and wind impacts. A high level of environmental amenity for any surrounding residential units or areas of public open space must be demonstrated, particularly Paul Keating Park. • Conduct a view analysis to the site from key vantage points and streetscape locations.	**Section 8.4** **Section 8.14** **Section 8.16** **Section 8.19** **Appendix F** **Appendix V**

Secretary's Requirements	Reference
• Include a lighting strategy and detail measures to reduce spill into the surrounding sensitive receivers. • Assess wind impacts including impacts on Paul Keating Park, The Appian Way, Rickard Road, the accessway between Civic Tower and Hoyts, nearby outdoor dining spaces and playground facilities.	**Appendix CC** **Appendix EE**
Transport and Accessibility Include a transport and accessibility impact assessment, which details, but not limited to the following: • existing pedestrian and cycle movements within the vicinity of the subject site, particularly between the subject site and Bankstown Railway Station, future Metro Station and the two local bus interchanges and identify any public domain upgrade works required to cater for increased movement. • estimated total daily and peak hour trips generated by staff and students to be accommodated within the building, including vehicle movements, public transport, pedestrian and bicycle trips. • the adequacy and capacity of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development. • measures to integrate the development with the existing/future public transport network. • the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (traffic modelling is to be undertaken using SIDRA network modelling for current and future years). • the identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections. • details of the origins of students, staff and visitors and public transport accessibility, including travel times from the origins. • an assessment of the capacity of existing bus services and interchange facilities to accommodate anticipated student demand. • details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location specific sustainable travel plan (Green Travel Plan and specific Workplace Travel Plan) and the provision of facilities to increase the noncar mode share for travel to and from the site. • the proposed walking and cycling access arrangements and connections to public transport services.	**Section 2.1.2** **Section 3.11** **Section 8.14** **Appendix Q**

Secretary's Requirements	Reference
• the proposed access arrangements, including car and bus pick-up/dropoff facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones. • proposed bicycle parking provision, including end-of-trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance. • proposed number of car parking spaces for staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided as part of the proposed development. • car parking arrangements for students accessing the campus outside of core teaching hours, particularly from 10pm to 6am. • an assessment of the cumulative on-street parking impacts of cars, staff parking and any other parking demands associated with the development. • an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED. • emergency vehicle access, service vehicle access, service vehicle parking, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times for the delivery of goods to any retail, commercial and educational facilities within the development). • the preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: • assessment of cumulative impacts associated with other construction activities. • an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity. • measures proposed to mitigate any associated general traffic, public transport, pedestrian and cyclist impacts. • details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process. • details of anticipated peak hour and daily construction vehicle movements to and from the site. • proposed haulage routes and location of work zones (if any). • details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle.	

Secretary's Requirements	Reference

• details of temporary cycling and pedestrian access during construction.
• Relevant Policies and Guidelines:
  ○ Guide to Traffic Generating Developments (Roads and Maritime Services)
  ○ EIS Guidelines – Road and Related Facilities (DoPI)
  ○ Cycling Aspects of Austroads Guides
  ○ NSW Planning Guidelines for Walking and Cycling
  ○ Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development
  ○ Standards Australia AS2890.3 (Bicycle Parking Facilities).	

Staging Provide details regarding staging of the proposed development (if any).	**Section 3.16** **Appendix L**

Ecologically Sustainable Development (ESD)
• Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the design and ongoing operation phases of the development.
• Include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and lowcarbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy.
• Include details of the initiatives that would enable the future development to achieve a minimum of 4-Green Star rating in accordance with the rating system of the Green Building Council Australia, or the equivalent using an alternate accredited rating scheme, including details of how compliance with the rating scheme will be achieved.
• Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change, specifically:
  ○ hotter days and more frequent heatwave events
  ○ extended drought periods
  ○ more extreme rainfall events
  ○ gustier wind conditions
  ○ how these will inform landscape design, material selection and social equity aspects (respite/shelter areas).
	Section 3.14
	Section 8.19
	Appendix S

Secretary's Requirements	Reference
Relevant Policies and Guidelines: • NSW and ACT Government Regional Climate Modelling (NARCliM) climate change projections.	
Heritage • Provide a statement of significance and an assessment of the impact on the heritage significance of any adjacent heritage items or conservation area in accordance with the guidelines in the NSW Heritage Manual.	**Section 8.5** **Appendix T**
Aboriginal Heritage • Address Aboriginal Cultural Heritage (ACH) in an Aboriginal Cultural Heritage Report (ACHAR) to be prepared in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). • The EIS must demonstrate attempts to avoid any 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.	**Section 8.6** **Appendix U**
Noise and Vibration • Identify and provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, construction and operation. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land, particularly the Bankstown Library and Knowledge Centre and residential dwellings. Relevant Policies and Guidelines: • NSW Noise Policy for Industry 2017 (EPA) • Interim Construction Noise Guideline (DECC) • Assessing Vibration: A Technical Guideline 2006 • Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning 2008).	**Section 8.20** **Appendix V**
Social and Economic Impact Include an assessment of the social and economic impacts of the development, including: • the economic feasibility and suitability of the new campus, including potential direct and indirect economic benefits of the development to the Bankstown City Centre and the Canterbury Bankstown, Greater Sydney and NSW economies	**Section 8.9** **Section 8.10** **Appendix R**

Secretary's Requirements	Reference
• the number of students expected to be based at the campus (expressed both as an estimated daily, weekly and annual population in the first year, and the forecast growth over 10 years) and the social impacts on the local community, including how the proposal adds to the social sustainability of the broader community • adequacy of open space, sport and recreation facilities to support the student and academic population • the proposed initial academic program, and planned changes over time which reflect local, regional and international demand. This should include details of the planned catchment of the university, including indicative student population proportions that are from Canterbury- Bankstown, the South District, Greater Sydney, NSW, interstate and international.	
Utilities • Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure. • Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and nonpotable water, and water sensitive urban design.	**Section 3.17** **Appendix K**
Contributions Address Council's relevant developer contributions plan and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.	**Section 4**
Biodiversity Assessment • Biodiversity impacts related to the proposed development are to be assessed in accordance with the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the *Biodiversity Conservation Act 2016* (s6.12), *Biodiversity Conservation Regulation 2017* (s6.8) and Biodiversity Assessment Method (BAM). • The BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM. • The BDAR must include details of the measures proposed to address the offset obligation as follows: o the total number and classes of biodiversity credits required to be retired for the development/project o the number and classes of like-for-like biodiversity credits proposed to be retired	**Section 7.5** **Appendix Z**

Secretary's Requirements	Reference
○ the number and classes of biodiversity credits proposed to be retired in accordance with the variation rules ○ any proposal to fund a biodiversity conservation action ○ any proposal to make a payment to the Biodiversity Conservation Fund. • If seeking approval to use the variation rules, the BDAR must contain details of the reasonable steps that have been taken to obtain requisite like-for-like biodiversity credits. • The BDAR must be submitted with all spatial data associated with the survey and assessment as per Appendix 11 of the BAM. • The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.10 of the *Biodiversity Conservation Act 2016*. • Where a Biodiversity Assessment Report is not required under the Biodiversity Conservation Act 2016, engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal. *Note: Notwithstanding these requirements, the Biodiversity Conservation Act 2016 requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report unless otherwise specified under the Act.*	
Contamination and Hazardous Material • Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. Relevant Policies and Guidelines • Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP).	**Section 8.11** **Appendix M**
Drainage • Detail measures to minimise operational water quality impacts on surface waters and groundwater. • Stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties. Relevant Policies and Guidelines • Guidelines for development adjoining land and water managed by DECCW (OEH, 2013).	**Section 8.8** **Appendix I**
Flooding Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development	**Section 8.8**

Secretary's Requirements	Reference
Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation. Relevant Policies and Guidelines: • Bankstown DCP 2015 – Part B12 Flood Risk Management • Development Engineering Standards 2009 • Salt Pan Creek Catchment Study 2007 • Salt Pan Creek Catchment Floodplain Risk Management Study and Plan 2013.	**Appendix J**
Sediment, Erosion and Dust Controls Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. Relevant Policies and Guidelines • Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom) • Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA) • Guidelines for development adjoining land and water managed by DECCW (OEH, 2013).	**Section 8.12** **Appendix I**
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 for any retail, commercial and educational facilities.	**Section 3.15** **Appendix DD**
Construction Hours Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	**Appendix L**
Plans and Documents	
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following:	**Section 8.2** **Section 8.3**

Secretary's Requirements	Reference

• Architectural drawings to a usable scale at A3 (showing key dimensions, RLs, scale bar and north point), including:
  ○ plans, sections and elevations
  ○ illustrated materials schedule including physical or digital samples board with correct proportional representation of materials, nominated colours and finishes
  ○ details of proposed signage, including size, location and finishes
  ○ site plan
• Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and site boundaries
• Site Analysis Plan, including:
  ○ site and context plans that demonstrate principles for future development and expansion, built form character and open space network
  ○ active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links
  ○ site and context plans that demonstrate principles for future network, active transport linkages with existing, proposed and potential footpaths and bicycle paths and public transport links
• Shadow Diagrams at hourly intervals
• View analysis, photomontages and architectural renders, including from those from public vantage points, particularly the view from:
  ○ the southern end of The Appian Way, adjacent to the railway corridor looking northward
  ○ the southern end of Paul Keating Park looking northward
  ○ The Mall, looking between Civic Tower and the Hoyts building, looking north west
  ○ Council Chambers looking north east
  ○ the corner of Rickard Road and Lady Cutler Avenue, looking west
  ○ the view from the corner of Chapel Road and Rickard Road, looking east
  ○ Apex Reserve looking south toward Bankstown City Centre
  ○ Wattle Street, opposite Mt Lewis village centre, looking west
• Public Domain Plan
• Landscape architectural drawings showing key dimensions, RLs, scale bar and north point, including:
	Appendix D
	Appendix E
	Appendix G
	Appendix I
	Appendix X
	Appendix Z
	Appendix GG

Secretary's Requirements	Reference
○ integrated landscape plans at appropriate scale, with detail of new and retained planting, shade structures, materials and finishes proposed ○ plan identifying significant trees, trees to be removed and trees to be retained or transplanted • Design report to demonstrate how design quality will be achieved in accordance with the above Key Issues including: ○ architectural design statement ○ diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal ○ detailed site and context analysis ○ analysis of options considered including building envelope study to justify the proposed site planning and design approach ○ visual impact assessment identifying potential impacts on the surrounding built environment and adjoining heritage items ○ summary of feedback provided by GANSW and responses to this advice ○ summary report of consultation with the community and response to any feedback provided • Sediment and Erosion Control Plan • Geotechnical and Structural Report • Accessibility Report	
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with: • Canterbury Bankstown Council • Government Architect NSW (through the NSW SDRP process) • Transport for NSW • 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 5** **Appendix P**

1.8. STRUCTURE OF EIS

The EIS provides the following sections:

- **Section 1:** provides an overview of the project, SEARs and EIS structure.
- **Section 2:** provides a description of the site, local and regional context, along with future development context.
- **Section 3:** provides a detailed description of the proposed development.
- **Section 4:** identifies the development contributions framework and outlines WSU's position on the payment of development contributions under Bankstown Council's 'Section 94/94A Contribution Plan'.
- **Section 5:** outlines the consultation process undertaken with respect to the proposal.
- **Section 6:** analyses the State, regional and local strategic planning policies relevant to the site and proposed development.
- **Section 7:** provides a detailed assessment of the environmental planning framework for the site.
- **Section 8:** Environmental Impact Assessment – Details an in-depth assessment of the existing environment and the potential impacts for each of the key criteria in the SEARs.
- **Section 9: Section 4.15 Assessment Summary** – Summarises how the proposed development has been assessed in accordance with the matters for consideration under Section 4.15 of the EP&A Act.
- **Section 10: Environmental Risk Assessment and Mitigation Measures** – Identifies recommendations and mitigation measures based on the technical studies undertaken as part of this application.
- **Section 11**: **Summary of Mitigation Measures** – Summarises the proposed mitigation measures.
- **Section 12: Evaluation and Conclusion** – Provides a concluding statement considering the assessment of the proposal in accordance with the SEARs and a recommended course of action with regard to the determination of the application.

1.9. PROPONENT DETAILS

This EIS has been prepared on behalf of the Western Sydney University (WSU). A range of specialist consultants were engaged by WSU to assist with the preparation of the plans and technical documentation, including:

Table 2 – Project Team

Discipline	Consultant
Applicant	Western Sydney University
Accessibility	Group DLA
Acoustic and Vibration Assessment, Utilities and Infrastructure Assessment	Norman Disney Young
Aeronautical Assessment	Landrum & Brown
Arborist Report and Biodiversity.	Eco Logical Australia
Architecture, Built Form, Urban Design, Visual Impact	Lyons
Urban Planner	Urbis
BCA	Group DLA

Discipline	Consultant
Civil and Hydraulic Engineering. Flood Assessment. Structural Assessment	Bonacci
Dangerous Goods Assessment	Salus Risk
Digital Model	Make Models
Fit-out Architect	HDR
Geotechnical Assessment, Detailed Site Investigation (Contamination) and Hazardous Material Assessment.	Douglas Partners
Hazard and Risk Management	Umow Lai
Landscape Design	Aspect Studios
Pedestrian Wind Assessment	Windtech
Photomontage view analysis	Art + Form
Project Management	Archerfield Partners
Quantity Surveyor	Rider Levette Bucknall
Reflectivity Assessment	Inhabit
Statutory Planning, Aboriginal Heritage, European Heritage, Economic and Social Impact Assessment and Community Engagement	Urbis
Surveyor	RPS
Transport and Traffic	Arup
Waste Management	Elephants Foot

2. SITE AND CONTEXT

2.1. SITE DESCRIPTION

The proposed campus is located across two adjoining lots. The site encompasses the entirety of Lot 5 DP 777510 at 74 Rickard Road, Bankstown and partially covers the northern segment of Lot 6 DP 777510 at 375 Chapel Street, Bankstown. In addition, public domain works are proposed to Rickard Road, 70 Rickard Road (being part Lot 7 DP 777510) and access is proposed via 80 Rickard Road (being Lot 12 DP 566924).

Table 3 – Site Area

Address	Legal Description	Site Area
74 Rickard Road, Bankstown	Lot 5 DP777510	3329m²
375 Chapel Street, Bankstown (part)	Lot 6 DP777510 (part)	349m²
	Combined Site Area	3678m²

Figure 6 – Aerial Photograph of the Site

Source: ***Nearmap***

The site is located within the City of Canterbury Bankstown Local Government Area (LGA). The site boundaries are defined by Rickard Road (to the north), The Appian Way and Bankstown Civic Tower (to the east), Paul Keating Park (to the south) and Library and Knowledge Hub (to the west).

The site is currently utilised in part as a timed free public car park with 59 at grade car parking spaces and in part an open lawn space (refer to

Figure 6). The site is relatively flat, with a fall of approximately one metre across the site from the north-western to the south-eastern corner.

Figure 7 – Site Images

Picture 1 – The site as viewed from the north west

Source: Google Maps

Picture 2 – The site as viewed from the east

Source: Lyons Architects

Figure 8 – Site Boundaries

Source: Lyons Architects

2.1.1. Stormwater and Overland Flow

The site is situated at a low point on a major overland flood path and is subsequently impacted by the 100-year ARI overland flood flow (categorised as being Medium to High Risk).

The site slopes down from north to south, particularly on The Appian Way which forms a major overland flow path from a sag pit located on Rickard Road. The existing topography of the site leads to the site draining south towards Salt Pan Creek, 1km south of the site.

Much of the site sheet-flows across the carpark, landscaping and The Appian Way to the south where stormwater is captured by a pit and pipe network. The pit and pipe network discharge to a culvert running north to south located east of the site. The main discharge point for the site stormwater, which is incorporated into the proposed building design is located at the south east corner of the site. An existing OSD tank is located at the south west corner of the site and is assumed to service the Library and Knowledge Hub. The existing OSD is not believed to be impacted by the proposed development.

For further discussion on flooding and stormwater management see **Section 8.8** and **Appendix I**.

2.1.2. Local Movement Network

Traffic Engineering advice for the project is being provided by Arup, who have prepared a detailed Transport Management and Accessibility Plan (**Appendix Q**).

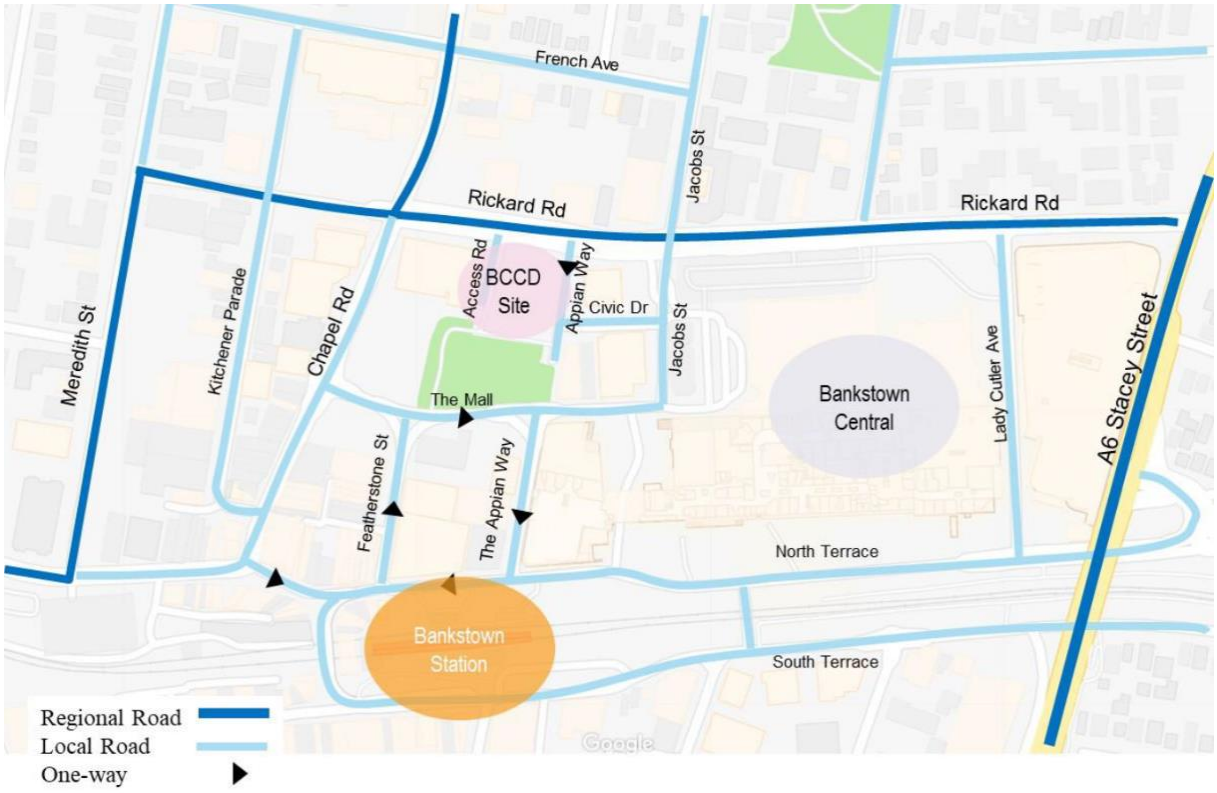
2.1.2.1. Vehicular Access

The Appian Way, a one-way shared roadway provides both vehicular access to the car park within the subject site as well as access to the basement parking of the Bankstown Civic Tower. The Appian Way accommodates on street parking composed of 18 visitor spaces and 18 council staff parking spaces. The Appian Way connects to Civic Drive and Jacobs Street, located east of the site.

The western side of the site is bordered by the Library and Knowledge Hub driveway, providing access from Richard Road to the existing Library carpark plus event and maintenance vehicle access to Paul Keating Park.

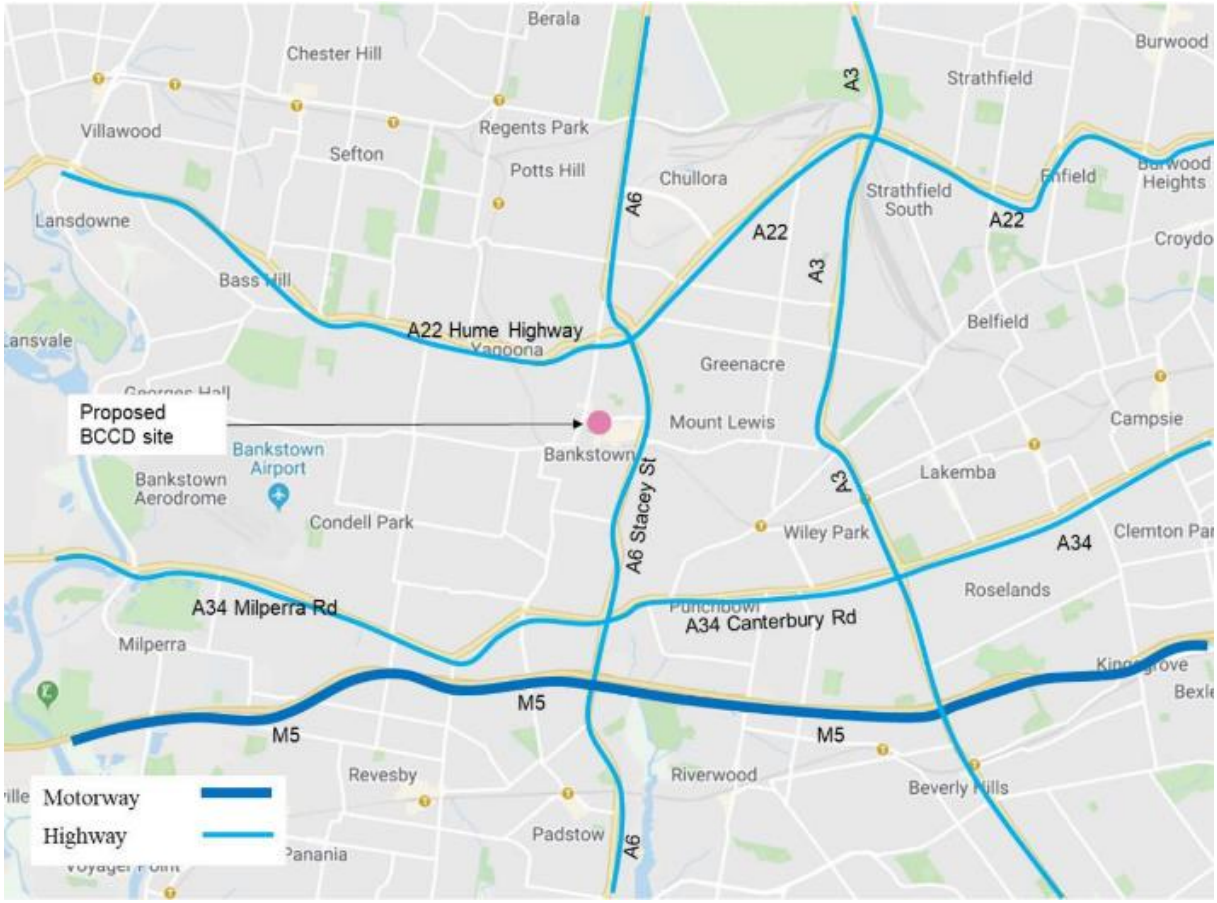
Rickard Road a regional road consisting of three lanes running east to west and two lanes running west to east is located immediately north of the site. Rickard Road provides a direct connection to the A6 Highway located to the east of the site. The A6 provides connections between Bankstown to centres north and south of Bankstown, including Lidcombe. The A6 also connects the site to other major, arterial roads and subsequently, the rest of the Greater Sydney.

Figure 9 – Local Road Network



Source: Arup

Figure 10 – Regional Road Network



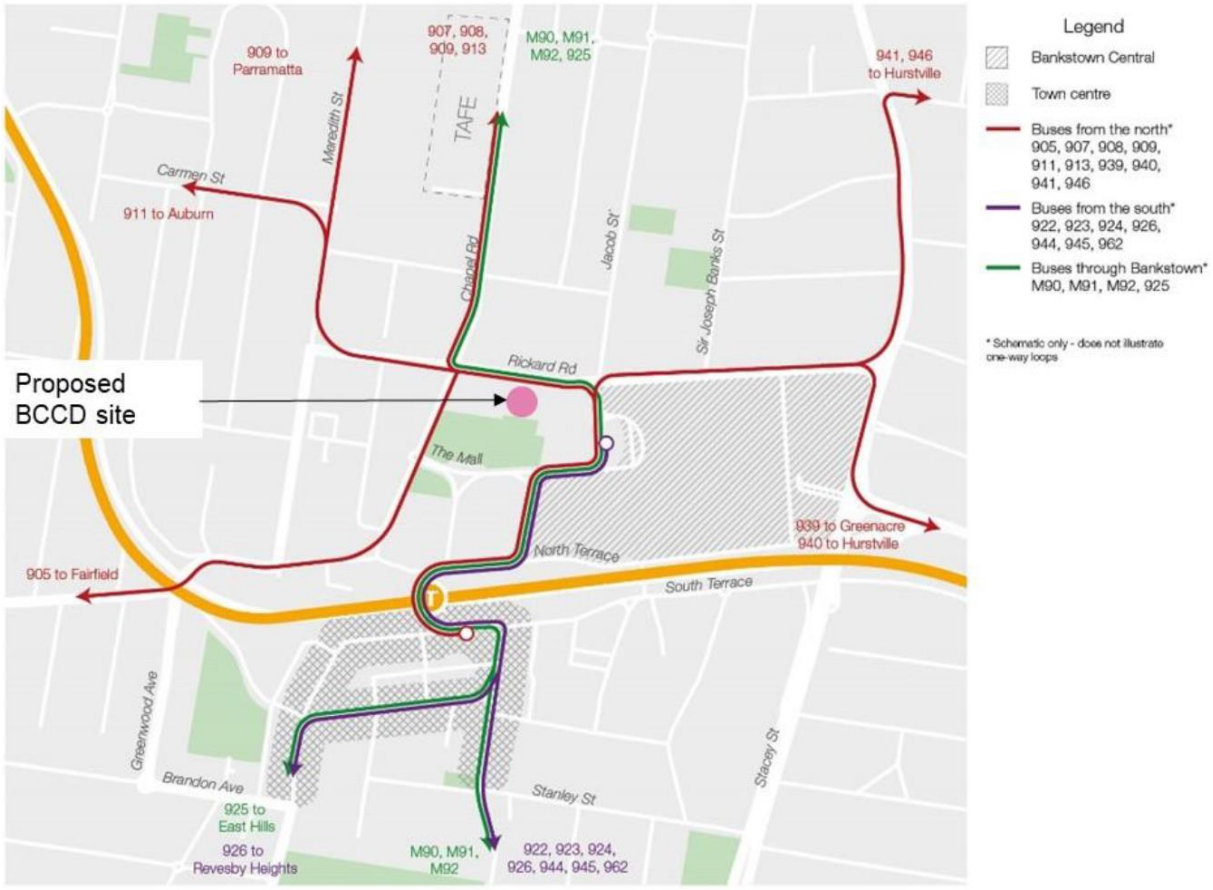
Source: Arup

Existing Public Transport Network

The site is well served by public transport, with a train station and two bus interchanges within easy walking distance. The Bankstown Train Station is approximately 400m (5 minute walk) south of the site, and provides access to T3 line services including Sydenham, City Circle and Lidcombe. The planned redevelopment of the station as part of the Sydney Metro project, will provide new high frequency services in 2024.

There is a bus interchange less than 200m east of the site which is served by 7 regional bus routes connecting the site to Parramatta, Lidcombe, Burwood, Liverpool, Fairfield, Hurstville, & Sutherland. In addition the Bankstown Bus Interchange is located on both the north and south sides of Bankstown Train Station. There is a total of 16 bus routes in the surrounding area connecting the site to other centres.

Figure 11 – Schematic of bus routes



Source: Arup

Existing Pedestrian Network

Footpaths are provided throughout the local area, with signalised crossings provided at major intersections.

- Rickard Road provides a pedestrian connection between the numerous civic and commercial facilities that run throughout the Civic Precinct.
- The Appian Way provides a clear pedestrian link between Rickard Road and the area south of Paul Keating Park, including the Bankstown Central Mall and the Bankstown Rail Station.
- A shared use driveway associated with the Library and Knowledge Hub is located to the west of the site.
- The paved path at the far southern end of the site is lined by fixed road bollards. This allows safe pedestrian travel east and west across the south side of the site.
- The overall open nature of the at grade car park and the surrounding grass fields allows for clear pedestrian thoroughfare between the surrounding developments and roads.

Existing Cycleway Network

The cycle infrastructure to and throughout Bankstown is currently quite limited with no dedicated cycle paths within the site or the surrounding road network. Cyclists travelling to and from the site currently need to travel along existing roadways.

Although the site is not currently in close proximity to any dedicated bicycle paths, the Draft Complete Streets Strategy does identify Councils intention to create bicycle links through Bankstown CBD to legibly connect the WSU site with other educational facilities and the Metro station, including future shared and separate bike paths around the Civic Precinct and project site.

2.2. SITE HISTORY

The Aboriginal Cultural Heritage Assessment (ACHA) report submitted in support of the proposal (and discussed in detail within **Section 8.2**) details the historical occupation of land within the Sydney Basin by Aboriginal people prior to 1788 and who would have had a close association with the land on which the proposal will take place. The site is identified as being near the location where the territories of multiple Aboriginal language groups met and is associated with multiple Aboriginal clans. The site is believed to be within the area associated with the Eora people but also within proximity to the territory associated with the Daruk people.

The subject site formed part of an original land grant to James Marshall in 1831 but was slow to develop. Rickard Road first appears in 1910 and subdivision plans from 1911 indicate the subdivision of the northern portion of the block bound by Chapel Road to the west, Rickard Road to the north, The Appian Way to the east and Bankstown Railway to the south.

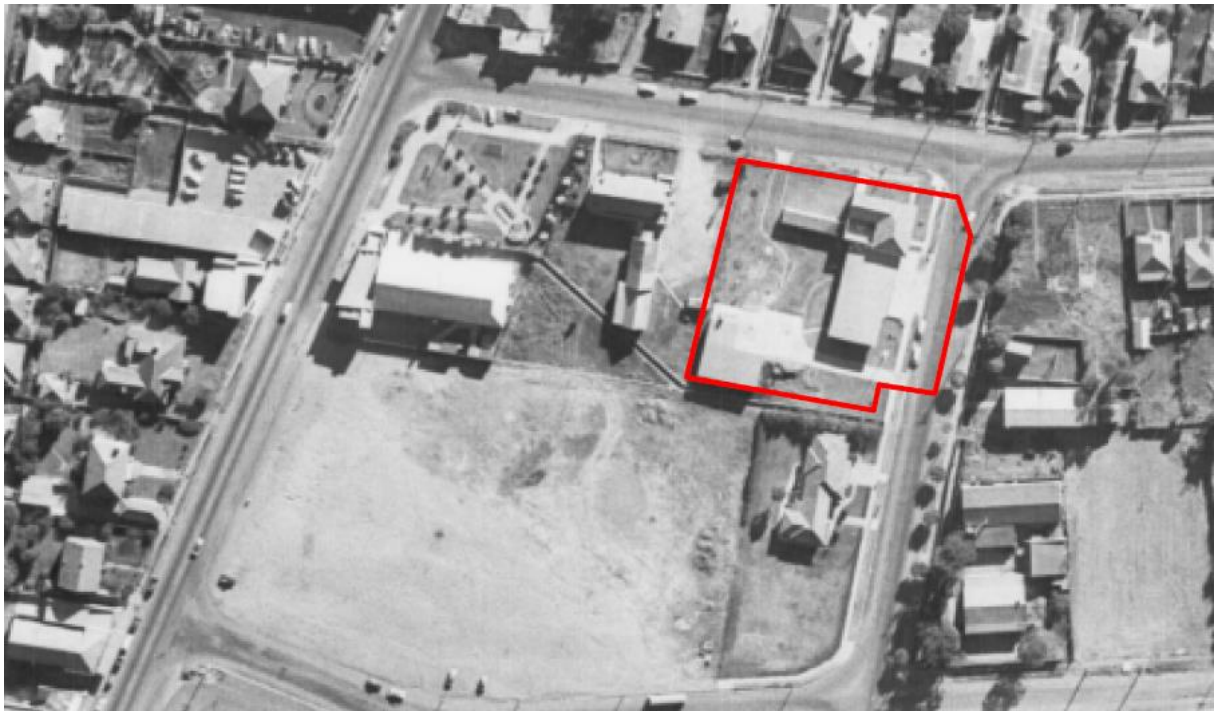
The earliest development in the northern portion of the block in which the site is located was the Capitol Theatre, constructed in 1922 with a frontage onto Chapel Road. The Capitol Theatre served as a pseudo Town Hall and Civic Centre for Bankstown during the mid-twentieth century. The block on which the site is located remained in relatively the same condition throughout the 1930s and 1950s as illustrated in **Figure 12** below an aerial image from 1943.

Figure 12 - 1943 aerial photograph, with the approximate location of the subject site outlined in red.

Source: Sixmaps – Extracted from Urbis HIS

By the early 1960s, the block had been substantially improved as illustrated in **Figure 13** below. The second Canterbury-Bankstown District ambulance station was constructed on the subject site, consisting of a brick structure with gabled roof clad with terracotta tiles. A skillion roof structure was located at the rear of the building where the ambulance's would have been parked. Elsewhere on the block, a single storey library had been constructed at the corner of The Appian Way and The Mall. Two other small structures had been erected to the east of the subject site, in the location of the existing Blacktown Library.

Figure 13 - 1960 aerial photograph, with the approximate location of the subject site outlined in red.

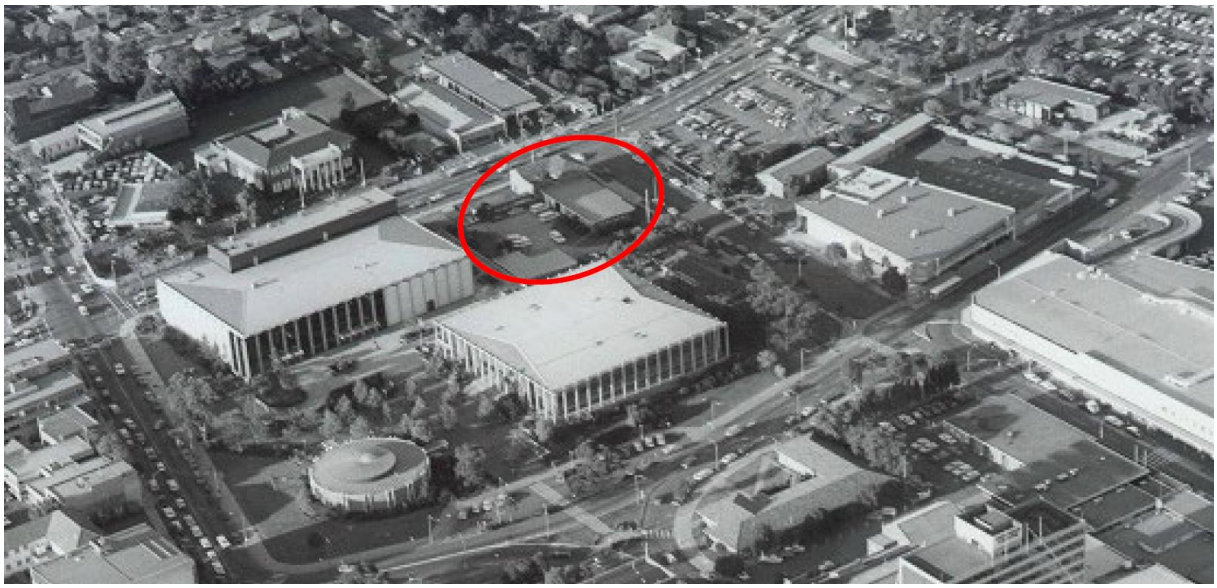


Source: NSW LPI – Extracted from Urbis HIS

In 1963 the Council Chambers 'Roundhouse', designed by Kevin Curtin, was constructed. The Round House formed Stage 1 of the formal arrangement of buildings completed in 1963 in the creation of the Bankstown Civic Centre. By 1964, the block had been substantially more developed. Bankstown Council relocated its premises to the corner of Chapel Road and The Mall.

The block was continually developed over the next decade with the erection of the Administrative Offices and Town Hall which opened in 1973. The subject site continued to be the location of the Ambulance Station throughout the 1970s and 1980s.

Figure 14 – Early 1970s oblique aerial photograph, with approximate location of subject site in red.



Source: Canterbury Bankstown Libraries, Local Studies display – Extracted from Urbis HIS

The civic centre of Bankstown continued to grow at the end of the 1980s with the construction of the Civic Tower at the corner of Rickard Road and The Appian Way, located directly to the east of the subject site. The Ambulance Station building was demolished by 1994 and replaced with a Council carpark. The northern end of The Appian Way was modified to accommodate the new carpark and Civic Tower and remains in the same configuration today.

Figure 15 – 1988 Aerial Image with approximate location of subject site in red.

Source: NSW LPI – extracted from Urbis HIS

In 1997, the Council Administration building, located directly to the south the subject site, burnt in a fire, leading to its eventual demolition in 1999. The small library located at the corner of The Appian Way and The Mall too was demolished, and Paul Keating Park was constructed in its place and declared in 2000.

The subject site remained in the same configuration throughout the 1990s and through the 2000s. In 2012, the Bankstown Town Hall, located the west of the subject site, was partially demolished for the construction of the new Bankstown Library. Works were completed by 2014 along with new landscaping and carparking area on the subject site.

The heritage listed Council Chambers is located in the south western edge of the 375 Chapel Road block and at the corner of The Mall and Chapel Road. This property comprises a heritage item under the Bankstown Local Environmental Plan 'Council Chambers' (item no. I6). It should be noted that the curtilage of this heritage item does not encompass the entire lot or the section of the lot to be occupied by the subject development as illustrated in Figure 16.

Section 8.5 provides an in-depth assessment of any heritage impact of the proposal.

Figure 16 – Extract of Bankstown LEP Heritage Map with approximate location of subject site in blue.

Source: Bankstown Local Environmental Plan 2015, Heritage Map HER_005

2.3. SITE CONTEXT

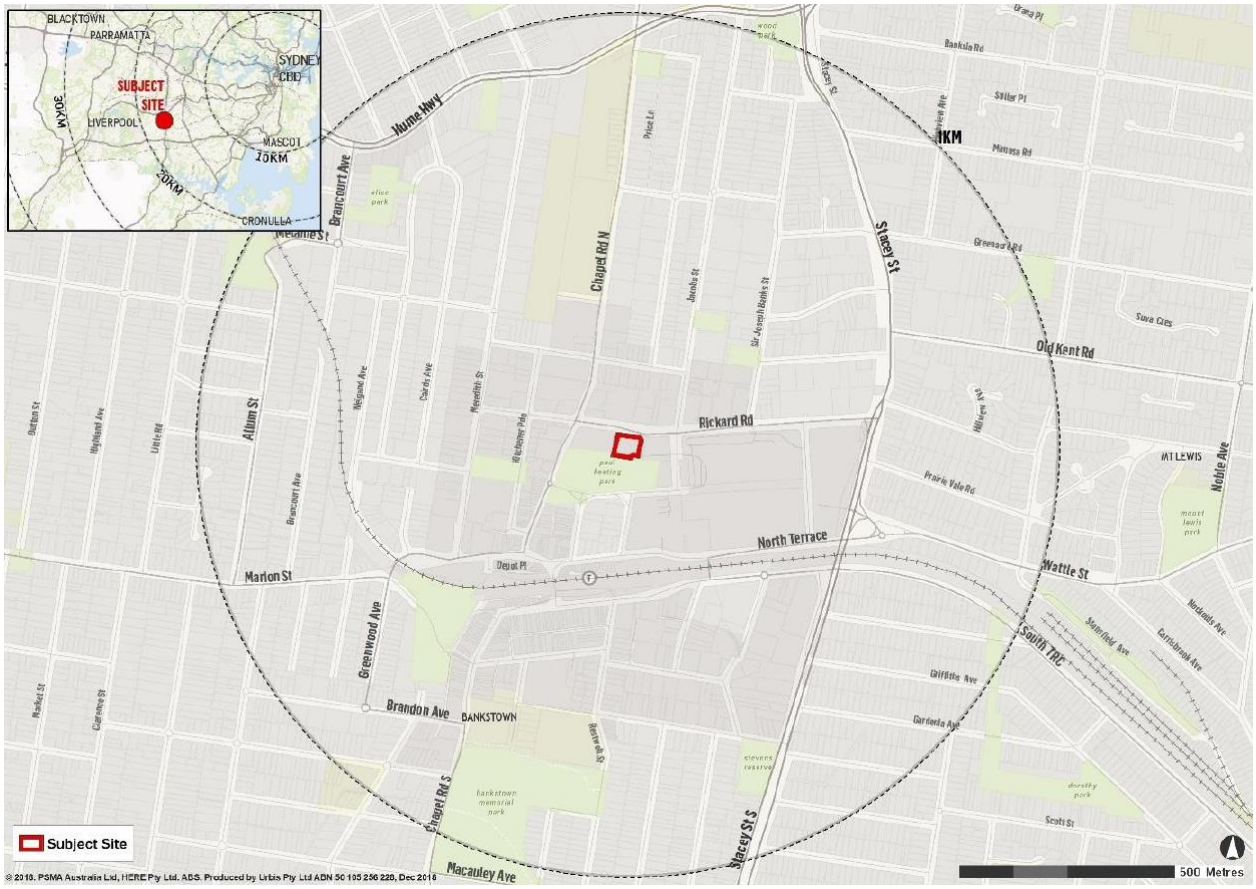
The site is located within the Civic Precinct of the Bankstown CBD, approximately 17km south-west of the Sydney CBD (refer **Figure 17**). Bankstown is a major centre with extensive retail, community and civic services. The CBD precinct is focused on the northern and southern sides of Bankstown Station with the site located in the northern precinct. The area is well connected by public transport via the Bankstown Railway Station and high frequency bus services.

The centre's retail focus has historically been dominated by Bankstown Square, but the Bankstown City Plaza pedestrian mall also provides a cultural focus with associated specialised retail and commercial uses. The primary commercial focus is small business and not-for-profit and community services. Bankstown is also strong in private sector language and associated education services (namely TAFE NSW).

Bankstown is bordered by the suburbs of Yagoona and Greenacre (to the north), Punchbowl (to the east), Padstow (to the south) and Condell Park (to the west). Bankstown is connected to the broader region via Stacey Street which connects to the South Western Motorway (south of precinct) and Hume Highway (north of precinct).

The skyline of Bankstown is set to undergo a transformation, with a number of key factors contributing to the evolution of Bankstown as a strategic centre within the draft Sydenham to Bankstown Urban Renewal Corridor, and South District Plan.

Figure 17 – Location Map



Source: *Google Maps*

The subject site is zoned B4 Mixed Use under the Bankstown LEP 2015. The surrounding area is predominately zoned B4 with the exception of the recreation and passive open space areas including Paul Keating Park to the south which is zoned RE1 Public Recreation.

Immediately surrounding the site are a range of building forms which are predominantly medium and high rise commercial and multi-storey mixed-use residential buildings:

North:

- Rickard Road is a regional road located immediately north of the site.
- A medical centre, 24/7 gymnasium and high density residential development is located immediately on the opposite side of Rickard Road
- High density residential development is located further north of the site.

South:

- Paul Keating Park is located directly south of the site. Paul Keating Park is a focal public open space within the Bankstown Civic Precinct and is used for large scale cultural and community celebrations and events. It is also used as a venue for smaller community group activities, and informal park and playground use by the local community. The Paul Keating Park is currently undergoing master planning by Council.
- Further to the east and south of the Civic Precinct are the regional shopping centre ‘Bankstown Central’, a bus Interchange, street front commercial and shopping facilities.
- The Bankstown rail station and the adjoining bus interchange is located further south of the site.

East:

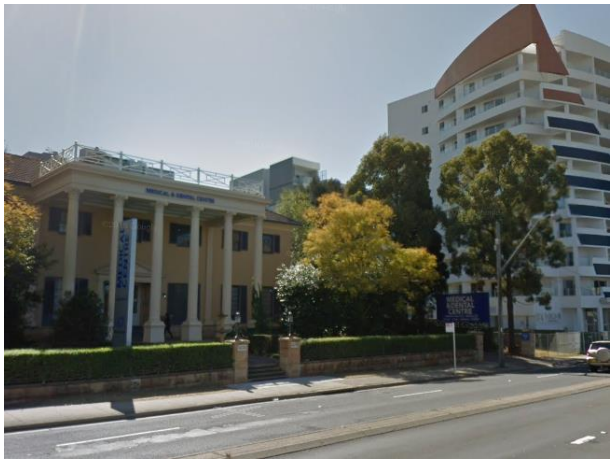
- The Appian Way is located immediately east of the site and currently functions as vehicular access to the site and basement parking of the Bankstown Civic Tower.

- The Bankstown Civic Tower is located to the east of the subject site. This structure contains a mix of uses including commercial offices, Legal Aid NSW and the Bankstown Community Services Centre.

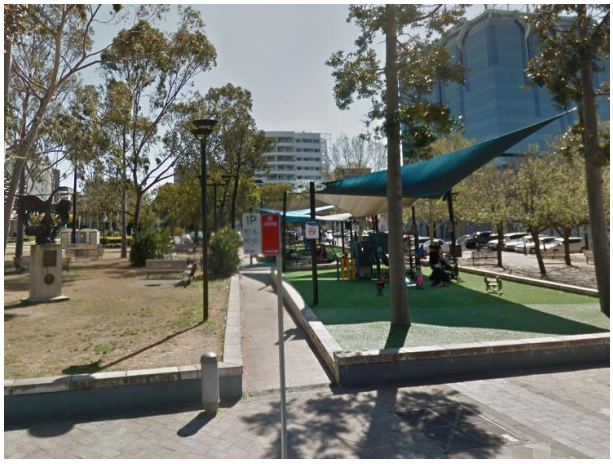
West:

- The Bankstown Library and knowledge Centre is located immediately west of the site and was completed in 2014. The three-level building houses a 5000sqm library, along with the 300 seat Bryan Brown Theatre, public function, conference and exhibition spaces, and a cafe. The building is surrounded by a raised podium to the south which steps down as tiered seating to the Paul Keating Park.
- Small scale retail and commercial premises are located further east,
- A heritage item, the Bankstown Council Chambers is located to the south west of the site.

Figure 18 – Surrounding Development

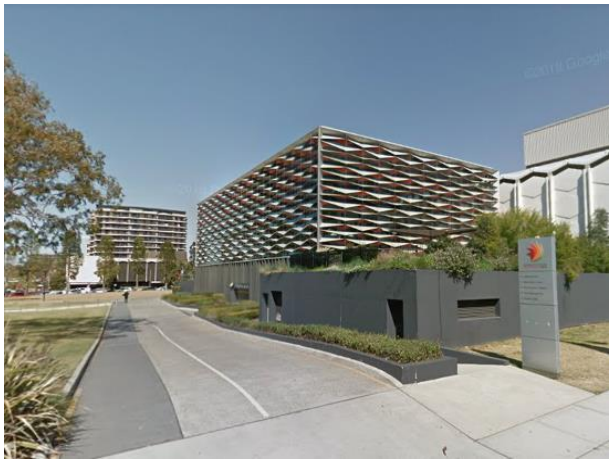


Picture 3 – **North:** Medical Centre (Left) and High Density Residential (Right)



Picture 4 – **South:** Paul Keating Park

Picture 5 – **East:** The Appian Way



Picture 6 – **West:** Bankstown Library and Knowledge Centre

Picture 7 – **East:** Bankstown Civic Tower

Source: Google Streetview

Picture 8 – **South West:** Bankstown Council Chambers

2.4. FUTURE DEVELOPMENT CONTEXT

The Bankstown Development Control Plan (2015) anticipates that development in the Civic Precinct, and broader Northern CBD Core, will generally be in the form of tall buildings to create an identifiable skyline image for the Bankstown CBD, with the tallest buildings generally located around Paul Keating Park.

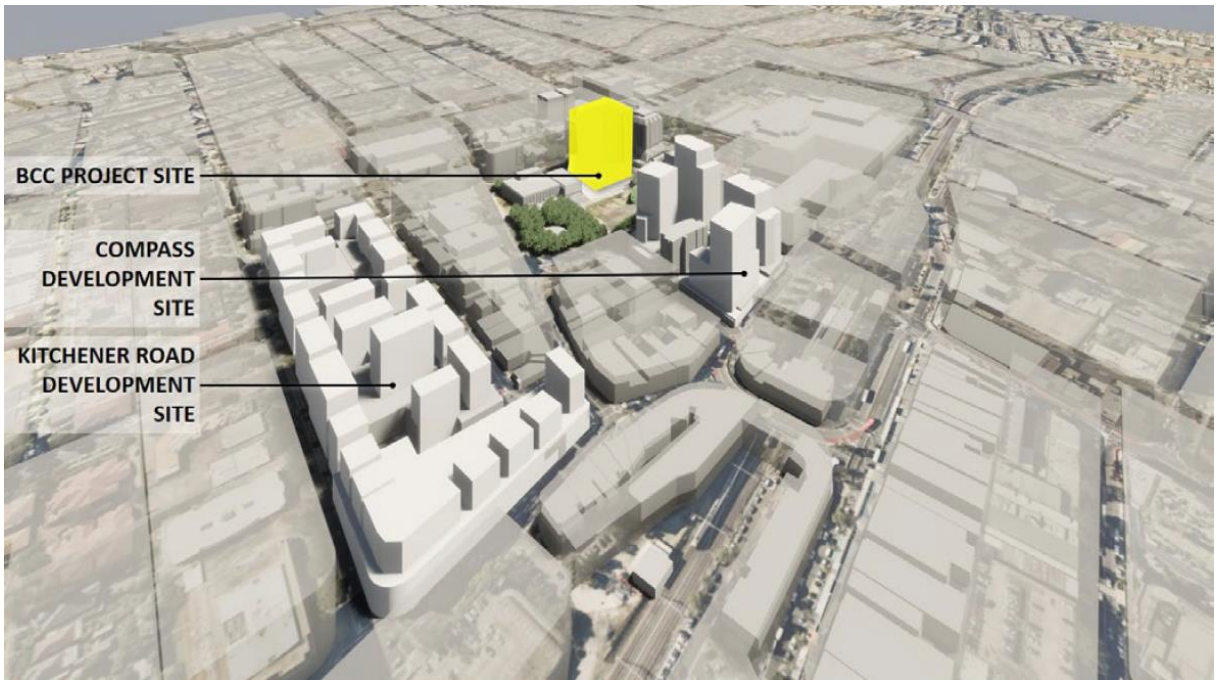
This is reflected in the current height and floor space ratio (FSR) limits nominated in in the City of Bankstown local environmental plan (LEP). A separate Planning Proposal application has been made to the City of Canterbury Bankstown to increase the permitted height on the site from 53m to 83m, and the FSR from 4.5:1 to 8.0:1

The commercial sites within the Northern CBD Core precinct, particularly to the East and South of the site are expected to undergo a period of urban renewal and redevelopment due to the age and capacity of existing building stock and the planned infrastructure enhancements (Sydenham to Bankstown Metro Station).

In 2018 the Council approved two large-scale mixed-use redevelopments near the site. The Compass Site proposal, immediately to the south of Paul Keating Park, entails the construction of 4 new mixed-use towers up to 83m tall, together with low height commercial and retail facilities and undercover parking.

Planning approval has also been provided for the development of 32 Kitchener Parade, covering a site that extends along the west side of Kitchener Parade from Marion Street to Rickard Road, and includes multiple residential and commercial buildings with a maximum height of 45m.

Figure 19 – Known Future Development Context



Source: Lyons

Council is currently undertaking several strategic design projects to address broader Urban Design opportunities, with input from WSU as a key stakeholder. These include the creation of an Urban Design Framework for the Northern CBD Core, strategies around engagement with the future Sydney Metro station, the Complete Streets Strategy, and a Master Plan for Paul Keating Park.

WSU and the design team for the BCC have engaged with Council around these strategies, including meeting with the Council's design consultants for the Urban Design Framework and Paul Keating Park Master Plan, and providing feedback to the Draft Complete Streets Strategy. The project team and WSU anticipate further consultation with the Council as these strategies are refined and developed, in order to ensure the successful integration of the BCC with the future context and public realm.

3. PROJECT DESCRIPTION

3.1. OVERVIEW

This SSDA seeks consent for the redevelopment of the site as an education establishment with ancillary retail uses. Specifically, the proposal involves construction and use of a 19 storey building comprising approximately 29,270 sqm of GFA and consisting of:

- Two basement levels including car and bicycle parking, a loading dock, back-of-house storage and plant;
- Ground floor retail tenancies, shared lobby, multi-purpose tiered space, showcase areas, amenities and plant equipment;
- Above ground levels comprising tertiary institution, conference facility and university/ education floor space;
- Landscaped podium terraces and balcony's;
- Ground level landscaping and public domain works including the provision of a pedestrian plaza along The Appian Way fronting the retail premises; and
- External signage.

Site establishment works are subject to an Early Works Development Application submitted to Canterbury Bankstown Council to expediate commencement of onsite works in response to the tight timeframes which need to be met in order to facilitate commencement of classes in February 2022.

Early works not subject to this SSD include:

- Erection of site hoardings;
- Demolition, including tree removal;
- Bulk excavation;
- Shoring, including temporary anchors;
- Disconnection and/or diversion of services; and
- A new lay-back along Rickard Road leading into The Appian Way, constructed to take heavy construction traffic.

Figure 20 – Graphic overview of Proposal

Source: HDR

The building is designed to readily adapt to the changing demands of an evolving and growing university campus, with floor plates providing flexibility for different uses into the future.

Architectural Plans prepared by Lyons Architects are included at **Appendix D.**

3.2. OBJECTIVES OF THE PROPOSED DEVELOPMENT

3.2.1. Western Sydney University Bankstown Campus Objectives

The overarching objective of the WSU Bankstown City Campus is to provide a flexible and adaptable vertical campus to support the delivery of a variety of university programs within a built form and design that positively contributes to the locality. The proposed building aesthetic and landscaping accommodates many positive and healthy learning environments for students, staff and visitors. The formal academic spaces will support a multi-discipline curriculum and the informal learning spaces will accommodate group study and peer to peer interactions.

It will provide a learning environment that is easily accessed by public transport and by private vehicles. The proposed development will also function as a landmark building, positively building upon the desired future character of the Bankstown City Centre. The built form seeks to provide the required GFA within the site whilst also developing a scalar relationship to the adjoining buildings. The development is also designed to prevent overbearing when viewed from Paul Keating Park.

The proposed ground floor retail, public engagement space and glazed wall design will active the ground level and will positively interface with The Appian Way, Paul Keating Park, Chapel Road and Rickard Road. It will build upon the planned “Eat Street”, a strip of retail and food & drink premises that will line the southern portion of The Appian Way.

Solar access to the adjoining public spaces, notably the Paul Keating Park and the future Eat Street are of high priority for the proposed development. Providing substantial natural sunlight to large proportions of the floor plates is also integral to the buildings design.

The proposed development will provide a significant service to the local community as well as the overall Greater Sydney context. It will accommodate up to 10,000 new students (2,000 per day), providing new employment opportunities, community spaces and facilities for education. This will enrich the social and financial capital within the Bankstown CBD and it will progress Bankstown's role as a strategic centre.

3.2.2. Vertical Campus Objectives

The creation of a stand-alone Vertical Campus necessitates a distinct set of objectives be addressed.

Unlike a multistorey commercial or residential building, the facility needs to be capable of accommodating a diverse and heterogeneous mix of spaces. The activities that need to be accommodated are incredibly varied, from individual focussed academic work through to large dynamic group events, in order to create a supportive workplace that facilitates student centred education.

The internal planning needs to provide room for the highly active and mobile occupants, addressing a complex mix of movement paths between destinations, and offering opportunities for serendipitous meetings, informal learning and social engagement.

To ensure the creation of a successful Vertical Campus, the Architectural consultant team has applied learning from previous projects across Australia and international benchmarking research to the project. Key objectives that reflect best practice and design excellence in Vertical Campus include the following:

- The diversity of a traditional ground based campus needs to be organised in a vertical configuration. This requires a variety of internal, external and concealed service spaces, as well as spatial, material and social diversity.
- Vertical campuses will create an instant critical mass of occupants. The ground level needs to be highly permeable, connecting to broader urban access routes and providing appropriate space for high volumes of movement from entry points to the vertical circulation infrastructure.
- Vertical campuses can act as a catalyst for urban regeneration, particularly when located in a site that was previously underutilised. Key issues to be considered include how the development may provide new ways of accessing, identifying and inhabiting both the site and it's surroundings.
- Vertical campuses, being located in the midst of dissimilar land uses also needs to be civic minded, understanding how it may affect existing forms of access, identity and space use.
- The building will host an academic community with a diversity of occupants. The working and learning cohorts need to be arranged across the levels with consideration to proximities needed between groups, including the need for communal spaces that are shared between groups.
- Student centred design needs to provide a diversity of spaces to meet the desired pedagogical modes and the necessary informal and social learning modes. The relationship between staff and students, and exposure of students to a variety of research and learning fields are key considerations.
- The inclusion of outdoor spaces within the multi-storey building are critical amenities, providing breathing space for campus users. They should provide social spaces with a variety of environments, scales and orientations to provide diversity of choice, that are readily visible and accessible destinations.
- Internal layouts should enhance the opportunities for serendipitous encounters, including consideration of how vertical and horizontal circulation networks link key facilities, provide visual connections and opportunities to pause.
- Vertical circulation needs to be triaged, formulating a strategy that prioritises and promotes the use of open stairs and escalators ahead of lifts. Considerations include presentation and visibility from the point of entry as well as operating systems to moderate lift use.
- Future proof the campus by planning for change and identifying key capacities and infrastructure features that consider needs beyond the immediate accommodation brief. Issues may include maximum occupancy population, fire engineering strategy, structural grids, and services access.
- The briefing should be forward thinking to address the needs of a new generation students, including consideration of appropriate teaching pedagogies, providing sufficient space, amenities, power access and wifi networking to support student learning experiences on campus.

3.2.3. Landscape Objectives

The landscape design objectives relate to both the creation of a vertical campus, and to the placement of a major development within an established CBD Civic Precinct. The design objectives, address both the public realm and the external occupiable spaces that are integrated into the building, including large terraces and smaller balconies and courtyard spaces.

The public realm objectives relate to three core principles:

- **Street**: Aligning the portion of The Appian Way adjoining the site with The Appian Way further to the south to improve pedestrian and visual connection between the BCC and the Bankstown Train Station. By aligning The Appian Way, we create a coherent pedestrian experience and connections to Paul Keating Park. The public amenity of The Appian Way will be vastly improved with the existing access road transformed into a vibrant shared space that adds to the urban fabric of Bankstown.
- **Park:** The southern edge of campus has an important connection to an established community asset, Paul Keating Park. The design of the public realm should build on this connection, connecting the park up The Appian Way to Rickard Road.
- **Water:** The site sits within a flood zone, the ground plane should alleviate flooding conditions. The design is to respond to the flooding overlay in numerous ways. The design of The Appian Way should create a simplified ground plane with minimal interruption to overland flow.

As well as informing the Landscape Design, these core principles have been considered in the development of the building form, the ground plane and façade design. Crime prevention principles, including provision of clear sightlines and passive surveillance have been considered in the landscape design.

Design objectives that are reflected in both the Landscape and Interior Design include the integration of activities between the external occupiable spaces and adjacent internal spaces, as well as embracing opportunities for landscape elements to be brought into the building and woven into interior fitout.

3.2.4. Fitout Objectives

The interior fitout vision is to create a vertical and inclusive learning and research environment that promotes direct engagement between students, staff and the Bankstown local community.

The interior fit out of WSU takes the inspiration of “Bothways Learning” principles with the intent of celebrating the intertwining of cultures with the individual to support the well-being of the staff, student and local communities visiting and occupying the campus. A series of strategic initiatives are undertaken to bring awareness to environmental and social impact, making the resident (occupier / visitor/ student / communities) a “citizen of the building” that are actively engaged with responsible behaviours. As a core initiative, the interior is delivering a responsible environmental approach and implementing biophilic principles to influence positive behaviours and improve well-being.

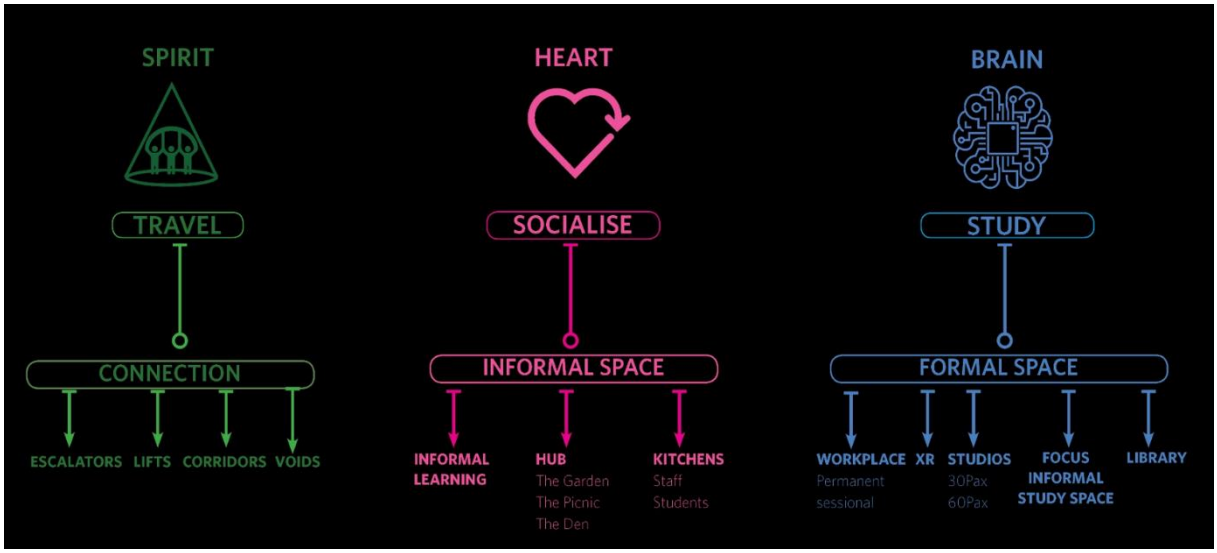
Reinforcing the importance of connecting people from different cultures to learn with and from each other irrespective of whether those individuals are located locally, Australia wide or internationally. The aims include:

- Respect for cultural heritage; and
- Intercultural understanding to encourage the convergence of ideas and solutions to the strengthen the WSU global community.

Bothways is articulated though the interior fit out and further detailed within the Architectural Design Report (**Appendix E**).

The interior language of the physical environment has a substantial impact on the ‘Spirit’, ‘Heart’ and ‘Brain’ of the BCC (Figure 21) as underlying design principles, through space configuration, environmental condition and materiality, to support and stimulate the function and wellbeing of the WSU staff, student, researchers and community.

Figure 21 – Interior fitout design principles



Source: HDR

The design response to these principles has been developed further by HDR in their internal design concept, including the Interior Narrative and concept of Weaving Communities which is further detailed within the Architectural Design Report (**Appendix E**).

3.3. ACADEMIC PROGRAM

The academic programs offered at the BCC will reflect its status as a flagship campus for the university, in a region with a culturally and linguistically diverse population, strong manufacturing industry and highly connected by public transport.

The academic program proposed for the Bankstown City Campus will reflect the programs and disciplines currently offered at Milperra Campus, broadened by the inclusion of specialisations that support and reflect the defining characteristic of Canterbury-Bankstown. The education and research programs to be established at the Bankstown City Campus will be focused around three core themes. These themes are:

- Health, Aging and Healthy Living;
- Advances Manufacturing with a Small – Medium Enterprise (SME) and Industry 4.0 focus; and
- Education.

The courses offered will encompass undergraduate and post graduate degrees by coursework and research, as well as Diploma offerings and English Language testing services through The College. These courses will include an offering in academic programs across disciplines of teacher education, psychology, arts and humanities, business (with a focus on Small and Medium Enterprises), IT (with a focus on Entrepreneurship and Industry 4.0), and Non-clinical Health.

The emphasis on working in partnership will be exemplified by the multi-disciplinary curriculum, integrated with teaching and research practised in collaboration with industry.

In supporting these programs the university is also intending to develop partnerships with local business and industry, as well as research based collaboration.

Further work is to be done collaboratively between the university and local community to develop programs and ensure the Bankstown City Campus is adaptable to the changing needs of the community.

The following additional facilities are proposed to be located at WSU Bankstown City Campus.

The MARCS Institute for Brain, Behaviour and Development

The MARCS Institute for Brain, Behaviour and Development (MARCS) is an interdisciplinary research institute of Western Sydney University that study's the scientific bases of human communication. Research at MARCS Institute for Brain, Behaviour and Development is conducted in five interdisciplinary research programs:

- Biomedical Engineering and Neuromorphic Systems;
- Human-Machine Interaction;
- Multisensory Communication;
- Music Cognition and Action; and
- Speech and Language.

MARCS has a number of funded research projects running at any given point in time. All MARCS research projects aim to have a profound impact in their particular field and often involve collaboration with local and international researchers.

MARCS BabyLab conducts research with infants and children focusing on speech perception, speech production and related skills such as literacy. The MARCS BabyLab is currently located in two locations WSU Bankstown (Milperra) and WSU Kingswood. The Milperra arm will be relocated to the Bankstown City Campus.

Translational Health Research Institute (THRI)

THRI is Western Sydney University's Translational Health Research Institute. WSU produces world class research in public health and health services, psychology, nursing, human geography, paediatrics and reproductive medicine, microbiology, pharmacology, and many other important areas of healthcare. Our researchers cover diseases – both acute and chronic — health service delivery and new models of care. THRI connects Western Sydney University's research to the nation's fastest growing urban population, Western Sydney and partners with health practitioners, hospitals, local health districts, primary health networks and, of course, patients

Western Sydney University Launch Pad

Western Sydney University Launch Pad is a one-stop shop business and innovation support program that provides facilities, assistance and resources for startup and high growth technology based businesses in Western Sydney. Launch Pad supports business by providing modern but low-cost serviced office and co-working space, specialist business advice, mentoring, events, networking, training and education. Clients work within a highly collaborative environment with other technology-focused entrepreneurs, leading to problem solving, sharing of expertise and experience.

Industry 4.0

Industry 4.0 refers to the trend of using technologies such as automation, data exchange and artificial intelligence to support business growth. WSU is establishing an advanced manufacturing community of practice assisting early stage and established businesses to scale-up, collaborate and innovate through exposure to leading edge technologies in Western Sydney.

Under the Program, the WSU is:

- offering advanced manufacturing small to medium enterprises (SMEs) the opportunity to join a vibrant community of practice directly linked to the university and its partner network;
- providing participants access to research and development resources, high-tech equipment and technologies;
- integrating MakerSpace facilities at its Werrington and Parramatta Launch Pad sites. This will introduce manufacturers to new digital technologies and provide collaborative work environments to explore new approaches to advanced smart manufacturing; and
- bringing together SMEs and startups within high-tech innovation spaces that provide a dynamic environment to promote entrepreneurialism and creative thinking.

Companies are being assisted to challenge their current business models and seek new capabilities through:

- leveraging digital technology to reap the benefits of improved quality;
- lower costs; and
- increased efficiency positioning their business for success within today's globalised and highly competitive markets.

The aim of Industry 4.0 is to broaden the horizons of manufacturing businesses in Western Sydney. Improving understanding of digital technologies, will open new avenues for businesses and work to ensure their future competitiveness and sustainability.

Badanami Centre for Indigenous Education

The Badanami Centre for Indigenous Education provides programs, services and facilities to encourage and support the involvement of Aboriginal and Torres Strait Islander people in all aspects of tertiary education. The majority of Aboriginal and Torres Strait Islander students, who are new to university, find the experience very exciting but sometimes overwhelming. Students are encouraged to access the Badanami Centre to feel a sense of familiarity and belonging to such a large and busy institution.

The Centre provides tutorial assistance, access to computers, study space, an orientation program at the beginning of the year and assistance in study and learning skills. The Centre also has kitchen and printing facilities.

Currently Badanami Centres are located at the following WSU campuses:

- Bankstown (Milperra);
- Campbelltown;
- Hawkesbury;
- Parramatta; and
- Penrith.

The Bankstown Milperra Centre will be relocated to the Bankstown City Campus and will occupy a large custom design space within the Level 3 Student Hub. The proposed Badanami Centre on Level 3 will also feature an Indigenous garden which will feature native Indigenous plantings.

3.4. FUNCTIONAL BRIEF

The core academic facilities of the University, including staff workspaces, research and teaching spaces, will be supplemented by other facilities to create a comprehensive University experience for students and foster connection with local business, industry and community.

Facilities incorporated into the BCC include basement parking, ground level retail tenancies, a branch of the university library, flexible conference facility and facilities for student social engagement and administrative services. These internal spaces will be supported by a generous circulation network and external breakout spaces.

Table 4 – Function Brief Areas

Function Spaces	Briefed Area (m²)
Circulation	5,496
Research (MARC and Psychology)	399
Schools workspaces	1,338
Staff shared support spaces	2,307
Post graduate student spaces	178

Function Spaces	Briefed Area (m²)
Shared learning spaces	3,226
Shared study and breakout zones	5,570
AR/VR immersive technology spaces	198
Specialist learning spaces	533
Badanami Centre	213
Retail (ground level)	341
Conference facilities (level 13)	931
Library and support services	992
Research and industry pop up	195
Student engagement	156
Student experience	638
Hub social spaces	650
Student support spaces	359
University/ Education Use	5,390
Total Briefed Area	**29,110**
Space Management target	3,000
Base Building Briefed Area	**26,200**

3.4.1. Building Floor Area

The briefed area for the project has been identified by the University to provide the required learning, research, workspace and supporting facilities for the users of the proposed campus. As illustrated in **Section 3.4** the functional brief for the project entails a Net Lettable Area of 26,200 sqm. The proposal provides 26,505 m² of NLA, including allocations to meet the University functional needs, retail tenancy space and scope to meet future University growth and changing needs.

Table 5 – Building Area Breakdown

Usage	Level	Gross Floor Area (m²)	Net Lettable Area (m²)	External Area (m²)
University/ Education Use	18	785	607	79
University/ Education Use	17	1,122	945	107
University/ Education Use	16	1,232	1,092	327
University/ Education Use	15	1,434	1,288	0
University/ Education Use	14	1,504	1,358	0

Usage	Level	Gross Floor Area (m²)	Net Lettable Area (m²)	External Area (m²)
Conference Facilities	13	1,059	905	342
University Spaces	12	1,395	1,255	67
University Spaces	11	1,423	1,284	39
University Spaces	10	1,339	1,202	88
University Spaces	9	1,412	1,264	62
University Spaces	8	1,399	1,260	21
University Spaces	7	1,191	1,042	673
University Spaces	6	1,909	1,759	0
University Spaces	5	1,862	1,711	40
University Spaces - Library	4	1,897	1,740	50
University Spaces	3	1,462	1,314	1192
University Spaces	2	2,546	2,401	85
University Spaces	1	2,362	2,214	62
University Spaces & Retail	Ground	1,649	1,466	Excluded
End of trip facilities, Plant, Loading and Parking	Basement 1 and 2	160	515	0
Total		**29,133**	**26,622**	**3,233**

3.4.2. Building Population

Load capacity for the University space in the building, based on a timetable of 8am to 10pm Monday to Friday, is estimated at 2000 Effective Full Time Student Load (EFTSL) per day.

Operations and staffing will include 245 staff workspaces in the lower and mid tower along with extensive hot desking opportunities for casual and visiting staff. The upper tower population (levels 14 through to 18) will be set by regulatory requirements relating to the egress capacity of fire stairs and exits and the toilet provisions associated with the building classification.

3.5. BUILT FORM AND DESIGN

3.5.1. Urban Design Principles

The development of the site has evolved from eight key Urban Design principles that have been established with input from officers of the Canterbury Bankstown Council and consultation with the Government Architect of NSW (GANSW) and State Design Review Panel (SDRP). These principles aim to ensure that the development on the site works cohesively with the surrounding urban context. These principles have been developed with reference to the GANSW Better Placed Objectives [*identified in brackets*] to ensure an outstanding urban outcome.

1. **Building size**: The University brief requires 26,200sqm NLA. The FSR proposed for this development is subject to a separate Planning Proposal Application currently under assessment by Council. *[Better Fit, Better for People]*

2. **Preserve Open Space of The Appian Way**: This principle is key to the site layout and building form. It furthers the Council's draft Complete Streets Strategy by creating a new linear pedestrian park, with activated frontage, to connect from Rickard Road to the existing Park and pedestrian mall. This will be a clearly identified walkable destination from Bankstown Station. *[Better for Community, Better for People, Better Working]*

3. **Optimise solar access to public spaces**: The site adjoins the public spaces of Paul Keating Park and The Appian Way. Thorough shadow analysis of progressive iterations of the building mass, delivering the required NLA, and retaining open space along The Appian Way, have generated the proposed building form. This form presents the best outcome for public solar access, given the required floor area, and provides distinctive skyline interest. *[Better for Community, Better Look and Feel]*.

4. **Vertical Campus Typology**: The building form and materiality shall reflect the typology of a Vertical Campus. Key aspects of the vertical campus include sizing floor to floor heights, floor areas, and vertical circulation, to support the diversity of spaces, activities and services that exist in a campus environment. Both visual and physical connectivity between levels are vital, as well as robust analysis of building structure, building services, egress and amenity provisions to support both initial and future needs as the University's research, programs and facility requirements evolve over time. *[Better performance, Better Working].*

5. **Align the building form**: The scale and proportion of the building form are optimised with the existing and future urban context. In particular the adjacent Library and Knowledge Hub, the adjacent Civic Tower and the adjoining PKP. The treatment of the facades takes the concept of alignment further, supporting a cohesive but visually interesting and diverse character to the Bankstown Civic Precinct as a whole. *[Better Fit, Better Value, Better Look and Feel]*

6. **New External Spaces**: Provide new external landscape spaces as an integral component of the Vertical Campus to sustain the University users. This is critical to the success of the development as a Vertical Campus. Provision of social breakout spaces and outdoor amenity within the site development are also critical to ensuring that the public domain is not negatively impacted by the University population. The design includes a variety of outdoor spaces supporting different modalities of use, comfort and amenity, developed to work cohesively with the adjacent internal spaces. *[Better Performance, Better for People, Better Working]*

7. **Active Ground Level**: A variety of active ground level interfaces will address The Appian Way, Paul Keating Park, Library driveway and Rickard Road:

    - Highly connected Ground level pedestrian environment;
    - Retail spaces supporting The Appian Way Eat Street;
    - Showcasing industry and innovations;
    - Consideration of vehicle servicing and entrance points.

    The building will provide active frontages on all faces, with the design and placement of entrance points and visual interfaces promoting new connections between the university and community, and new high amenity interfaces with the public realm. *[Better Fit, Better Performance, Better for Community]*

8. **Flexible and Adaptable Campus**: A Campus that supports delivery of a variety of University programs, tailored to the needs of the student catchment:

    - Academic programs that entail a multi-disciplinary curriculum, aligned with key research themes, and partnership opportunities;
    - Accommodation for relocated and new facilities;

- Encompassing diploma, undergraduate degree, post graduate coursework and post graduate research offerings; and
- Supporting commencing student and staff numbers and future growth.

The design response to these principles has been developed further by HDR in their internal design concept, including the Interior Narrative and concept of Weaving Communities. *[Better Performance, Better Working, Better for Communities].*

3.5.2. Building Massing Strategy

The following sequence of Massing Strategy Diagrams outlines how the form has been generated, with reference to the Urban Design principles above. The form that is proposed was generated through an iterative process, beginning from the overall building volume necessary to deliver the required NLA, and reviewing the solar access impacts of different adjustments to the shape of the volume.

The sequence following demonstrates the logic underpinning the form which provided the best solar access whilst also meeting the other requirements.

1. **Site Area**: The site has an area of 3,678sqm.

2. **WSU required NLA**: The spatial volume of the building, generated by extruding the Site area to the height needed to create the required floor area (26,622sqm NLA).

3. **The Appian Way**: The building form set back on the eastern side to maintain clear and open view along the Appian Way alignment.

4. **Align with Library**: The building form has a horizontal break to align with the top of the adjacent Knowledge Hub and Bryan Brown Theatre buildings.

5. **Setback from Knowledge Hub**: The form above the horizontal break is set back to enable the alignment of the podium form to be read.

6. **Narrow Paul Keating Park frontage**: To reduce the bulk of the tower form when seen from the Paul Keating Park and The Appian Way, the upper portion of the tower is narrowed at this end and shaped as a taller wedge.

7. **Align with Civic Tower**: A horizontal break is introduced into the tower wedge, creating a volumetric relationship with the existing Civic Tower.

8. **Rotate tower**: The top portion of the tower is rotated, stepping the form back from the Paul Keating Park, reducing the shadow cast onto the public open space whilst maintaining floor space within the maximised height.

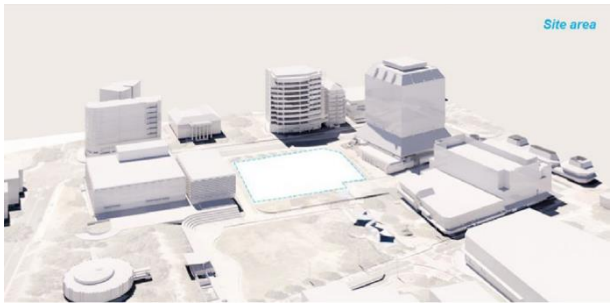
9. **Vertical Campus Circulation**: To provide efficient access between floors escalators are proposed up to Level 7, plus open-air stairs on the Paul Keating Park side. These are supplemented by lifts and egress stairs.

10. **Vertical Campus Landscape**: The steps in the building form create a series of substantial terraces, providing break-out space and access to outdoor amenity, complementing the shared uses and destinations on these levels.

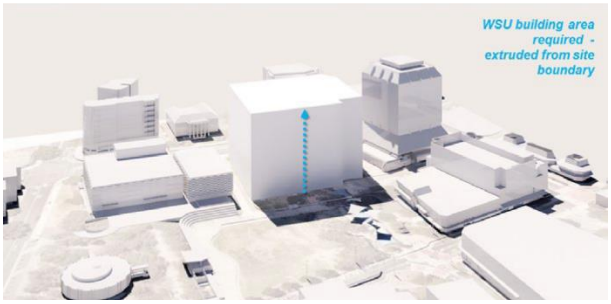
11. **Vertical Campus Connectivity**: To provide further connection across levels, a series of multi-level voids are inserted, providing visual links and increased opportunities for access to daylight and natural ventilation. These include single and two storey balcony spaces cut into the form on west, north and east elevations, in addition to three storey voids through the podium and lower tower levels, and the central void associated with the escalator core.

12. **Vertical Campus Façade Portals**: The balconies, voids and park stair are expressed in the building façade, with these opportunities for sheltered access to fresh air and amenity contained within the overall building form.

Figure 22 – Massing Strategy Diagrams



Picture 9 – Massing Strategy 1: Site Area



Picture 10 – Massing Strategy 2: WSU Space Requirement

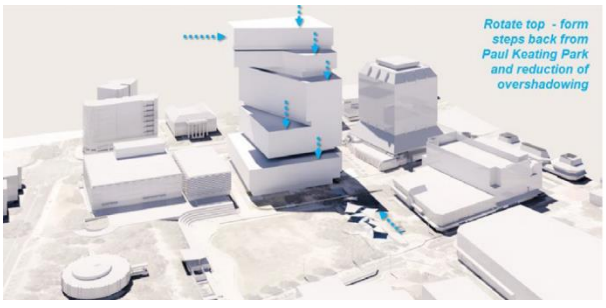
Picture 11 – Massing Strategy 3: Protect alignment of Appian Way

Picture 12 – Massing Strategy 4: Development alignment with Library and Knowledge Hub

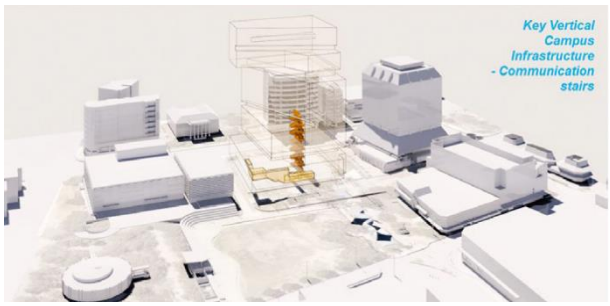
Picture 13 – Massing Strategy 5: Setback from Library and Knowledge Hub

Picture 14 – Massing Strategy 6: Narrow PKP frontage

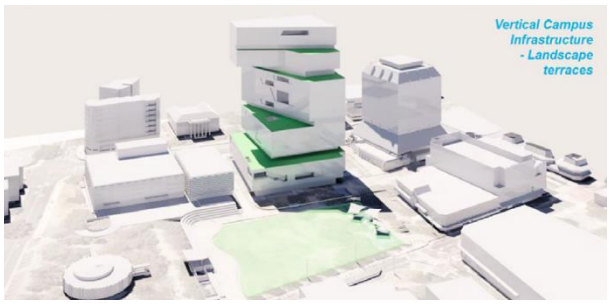
Picture 15 – Massing Strategy 7: Create scalar relationship with Civic Tower



Picture 16 – Massing Strategy 8: Rotate upper tower form to reduce shadow over PKP



Picture 17 – Massing Strategy 9: Communication Stairs



Picture 18 – Massing Strategy 10: External spaces

Picture 19 – Massing Strategy 11: Voids for connectivity

Picture 20 – Massing Strategy 12: Façade portals

Source: Lyons

3.6. BASE BUILDING DESIGN

This section of the EIS provides a detailed description of the proposed campus building broken down into component parts, as follows:

3.6.1. Basement

The two levels of basement have been designed to accommodate the car parking needs of the building, loading and waste collection truck access, End of Trip cyclist facilities, storage and building services plant.

The two levels have vehicle access via an entrance ramp down from the Library and Knowledge Hub driveway. The entry level of the ramp will provide the required 100mm freeboard for protection of the basement from flooding. The basement has been designed to accommodate the largest vehicles expected to access the site being a Medium Rigid Vehicle (MRV).

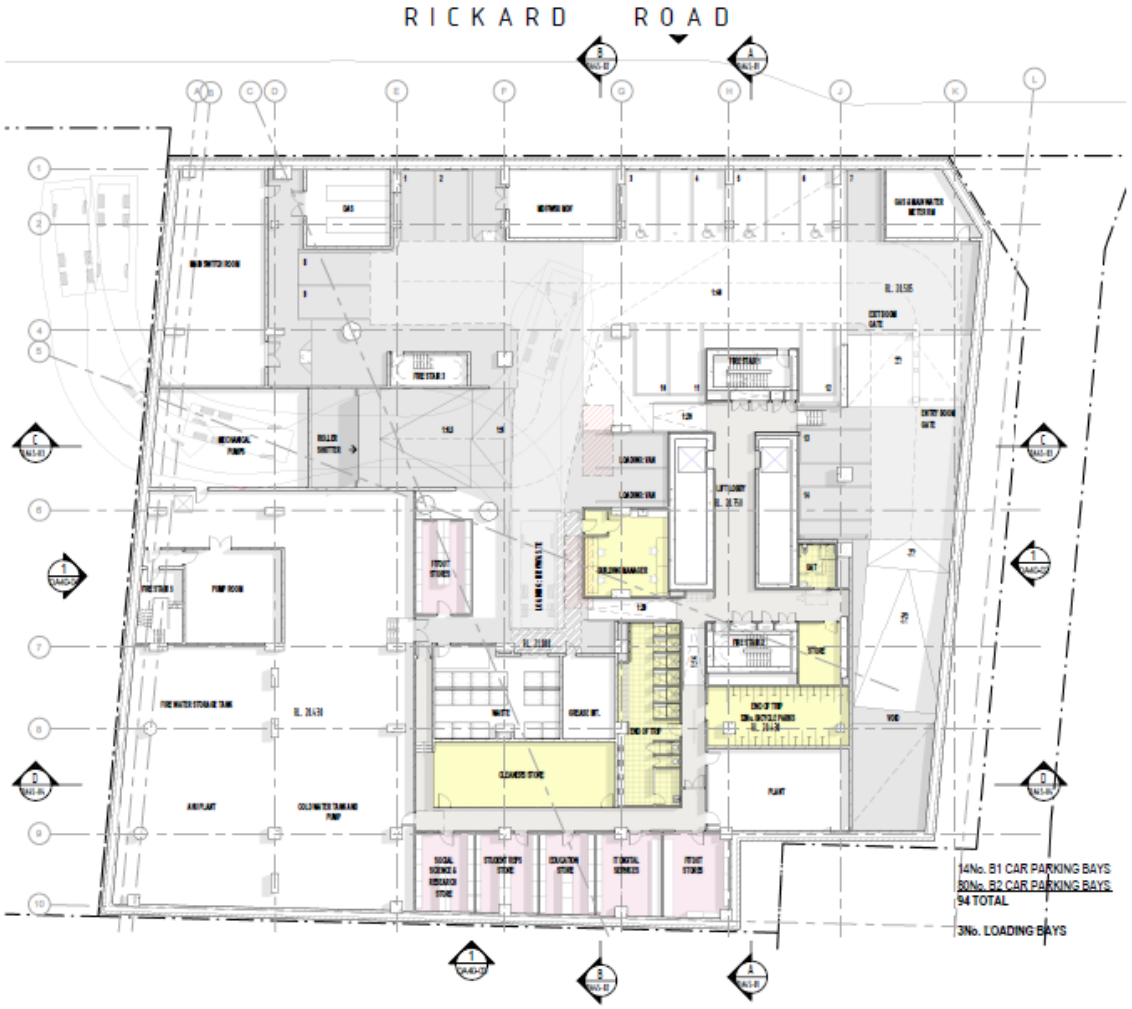
Entrance to the basement will be controlled via a roller shutter for afterhours security and an internal boom gate will control vehicle access to the lower level of parking. A Building Manager's office is positioned to enable oversight of the entrance and assist users within business hours.

Two lifts service the basement levels, providing passenger access for parking and End of Trip Facility users, as well as goods loading, to all levels of the building above.

- **Basement level 1** consists of:
    - Building Managers office;
    - Truck (MRV) loading bay x1;
    - Van loading bay x2;
    - Vehicular parking spaces x 15 (including disabled parking spaces x4);
    - Waste store;
    - End of trip facilities;
    - Bicycle parks x 32;
    - Cleaners store;

- Storage rooms and WSU fit-out (space allocated for operational needs including storage needs associated with different Campus activities); and
- Services and plant rooms (including core building services such as mechanical chillers and cooling water pumps, multipurpose tiered space air handling systems, fire water storage and pumps, main switch-room, communications infrastructure, grease interceptor trap and metering for gas and water).

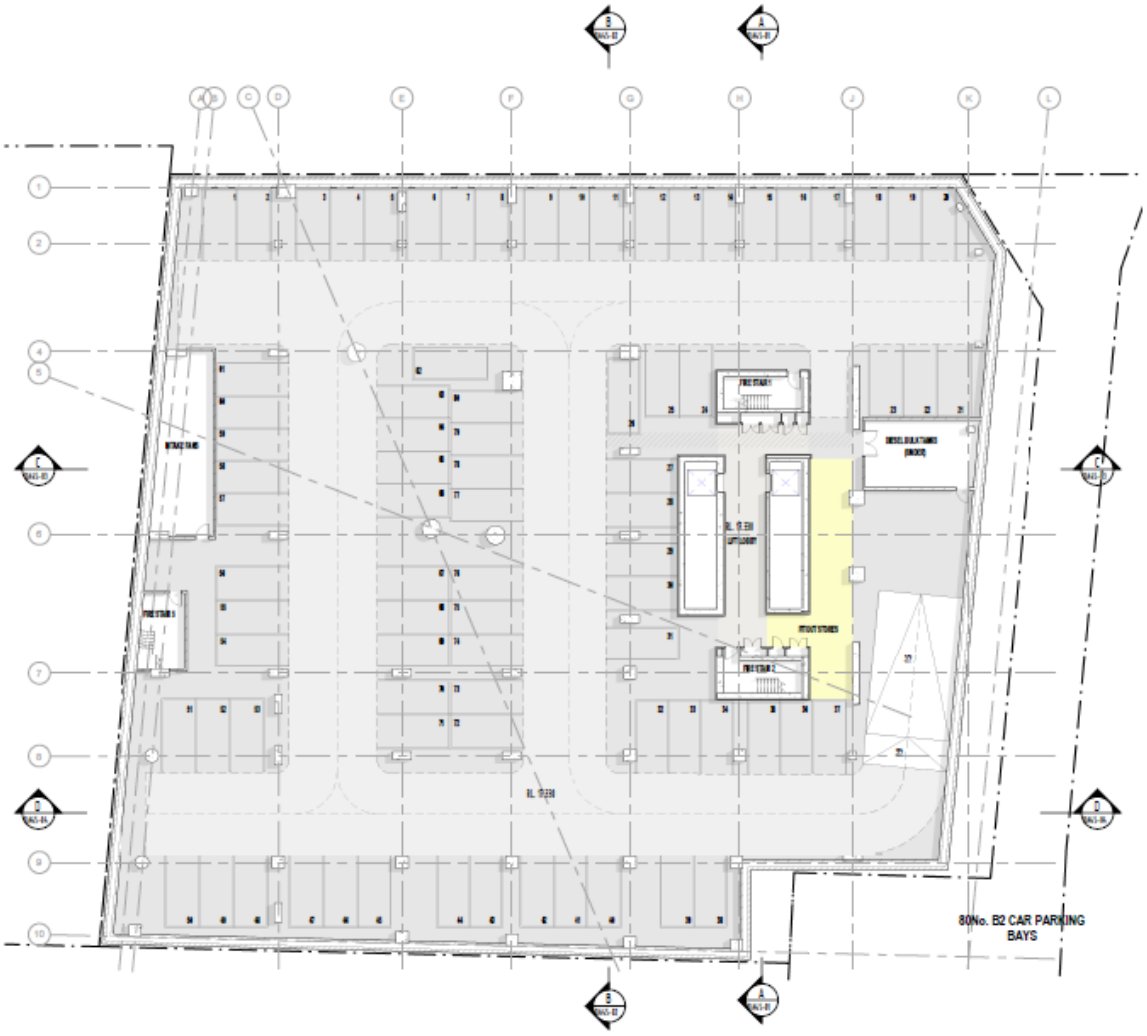
Figure 23 – Basement Level 1 Floor plan



Source: Lyons

- **Basement level 2** consists of:
  - Vehicular parking spaces x 78;
  - Intake fans; and
  - Diesel tanks and pump for the Level 18 backup generator.

Figure 24 – Basement Level 2 Floor plan



Source: Lyons

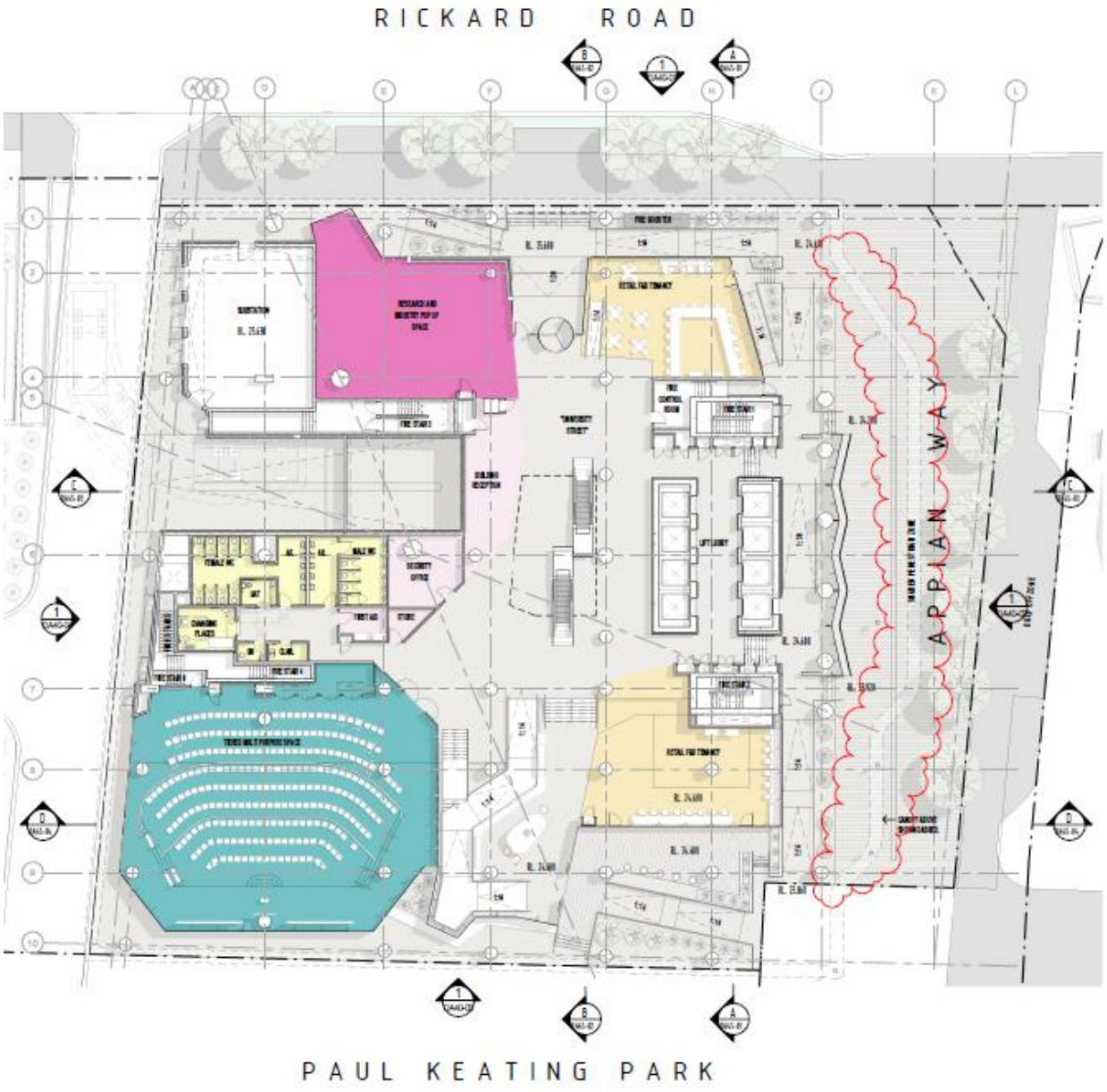
3.6.2. Ground level

Access to the ground level has been carefully considered to address the technical constraints of flood protection and DDA requirements and provide a strong sense of arrival and reception to the new campus.

- **Ground level** of the building consists of:
    - Tiered multi-purpose space - with floor to ceiling glazing to Paul Keating Park providing a window into the life and activity of the University;
    - University street - a multipurpose circulation space and will be available as a function space and to showcase the universities achievements;
    - Research and industry pop-up space – a showcase shopfront is located on Rickard Road on the west side of the entrance, providing primary frontage for the University's own showcase, to display and promote projects;
    - Retail food and beverage tenancies x 2 – accessible from internal university street and also external facades (an indicative location for an additional coffee cart is also proposed);
    - Building reception;
    - Security office;
    - Male, female, gender neutral and accessible toilet facilities (including a disabled change room with shower facilities);

- Storage rooms;
- First aid room; and
- Substation, fire control room, communications rooms and DFP.

Figure 25 – Ground Floor plan



Source: Lyons

Floor Level

The main ground level is elevated above the site to provide the 500mm freeboard required for 1:100 year flood events, during which the site is subject to flooding (see **Section 8.8** for further details). In order to accommodate the flow of floodwater it has also been necessary to minimise the footprint of the building including all elements built up above the existing ground level such as external access stairs and ramps, and landscape features.

Access

The primary pedestrian approach will be from the south via The Appian Way from Bankstown's future Metro Station or adjacent bus terminal. Entering the BCC from the east along Rickard Road is also expected to be an important pedestrian desire line.

From these two key approaches, arriving at the corners of the building (as illustrated in **Figure 26**) users of the building have a choice of entry via ramped walkways or steps, which provide access up to the entry doorways including the primary southern entrance, two entries into The Appian Way Lift foyer, and the Rickard Road entrance.

Figure 26 – Proposed ground level entrances

Picture 21 – Pedestrian Approach from corner of Paul Keating Park and The Appian Way

Picture 22 – Pedestrian approach from corner of Rickard Road and The Appian Way

Source: Lyons

The generous open circulation space of the University Street extends from Rickard Road to Paul Keating Park providing visual connectivity with the park and the spatial capacity needed for large volumes of people movement. This includes movement during day to day operations with clear access to floors above via the escalators (up to Level 7) or via the side core lift lobby to all levels.

An external staircase near the south entrance provides an alternative route up to the level 3 student amenities and external spaces.

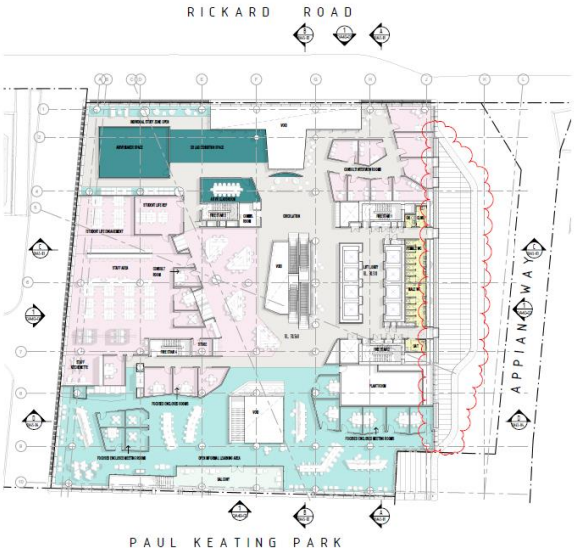
The north west side of the Ground Floor attends to operational aspects of the facility, including a large substation, designed to authority requirements, and ramp down to basement levels from the existing Knowledge Hub driveway. The Ground Floor amenities have capacity to serve the retail tenancies and building users.

A glazed awning is proposed at the east elevation, covering the pedestrian thoroughfare which will be parallel to the relocated The Appian Way. Ground floor landscaping is addressed in **Section 3.9**.

3.6.3. Level 1 and 2

The building has a horizontal break, establishing a podium out of the first 3 floors. The ground, 1st and 2nd floors provide public engagement, research, showcase and learning programmes and student service facilities. The ground floor and floors 1 and 2 have increased floor to ceiling heights and the podium has the largest net lettable area (nominally 2,300m²) within the building and will feature fully glazed walls.

Figure 27 – Level 1 and 2 floor plates



Picture 23 – Level 1 floor plate

Picture 24 – Level 2 floor plate

Source: Lyons

Levels 1 and 2 are readily accessed from the University Street at ground level via the escalators, and additionally have visual connection through the north and south voids, accessed via the southern external Park Stair or Lifts. Level 2 will house the School of Psychology and the MARCS Institute which are required to be highly accessible by the general public.

3.6.4. Level 3

The section of the building immediately above the podium has an increased setback at the western and southern elevations and is comprised of levels 3 to 7. The student hub and student services are located on level 3 which similar to levels 1 and 2, has an increased floor to ceiling height and the tower setback facilitates a large level 3 terrace. The Student Hub will provide breakout and social infrastructure to support the student community on Campus. Facilities are proposed to include the Badanami Centre, supporting indigenous elders and student community, rooms for a number of student social support groups, and a variety of internal and external study, display, social, gaming and self-catering facilities.

The external terrace at Level 3 can also be accessed from the levels below via the external Park Stair, which incorporates sheltered outlook to Paul Keating Park from recessed balconies via Level 1 and 2.

Figure 28 – Level 3 Floor Plan – Student Hub

Source: Lyons

3.6.5. Levels 4, 5, 6 and 7

Levels 4 to 7 (nominally 1750m2NLA) are proposed to house a substantial portion of the learning spaces, including both formal and informal learning spaces, together with the Library at Level 4.

These levels are accessed from Ground via the continuation of the escalators, was well as lifts. The large rectangular flexible floor plate allows for a range of learning accommodation, including larger rooms to the north, where the column spans are at their greatest.

A void penetrates through these levels to the courtyard on Level 4, providing external breakout from the Library and adding to the diversity and amenity to these levels.

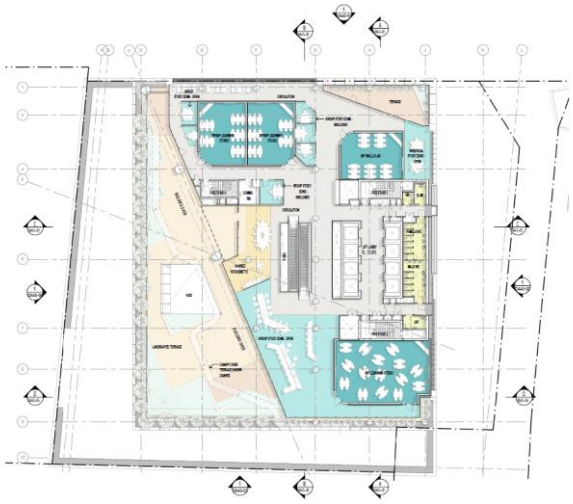
Levels 7 is the topmost level served by the escalators. The Learning Terrace is regarded as a key study destination as well as being capable of hosting outdoor teaching sessions.

Figure 29 – Level 4, 5, 6 and 7 Floor plans

Picture 25 – Level 4

Picture 26 – Level 5

Picture 27 – Level 6



Picture 28 – Level 7

Source: Lyons

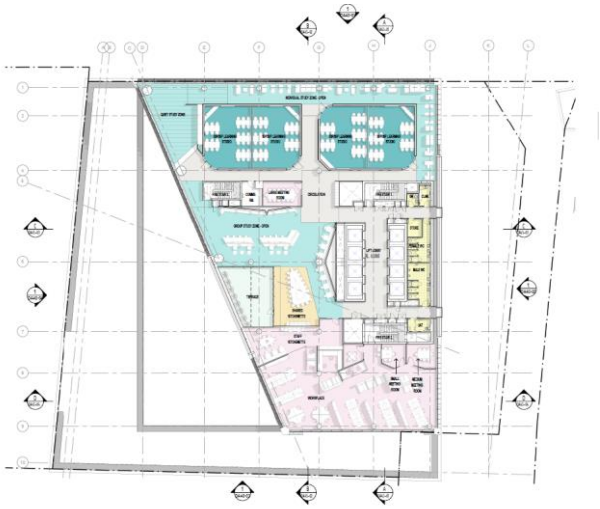
3.6.6. Levels 8, 9, 10, 11 and 12

From level 7 to 13, the scale of the tower is further reduced at the south western corner, leading to this upper portion of the tower to have a narrower wedge shape. Levels 8 to 12 (nominally 1250m² NLA) will accommodate a variety of university work and learning spaces with access via the lifts.

These levels will accommodate a variety of University workspaces along with some learning spaces to the North. A series of balconies are provided at each floor the western façade allowing for external study and social breakout from the centre of the floorplate.

Figure 30 – Level 8, 9, 10, 11 and 12 Floor plans

Picture 29 – Level 8



Picture 30 – Level 9

Picture 31 – Level 10

Picture 32 – Level 11

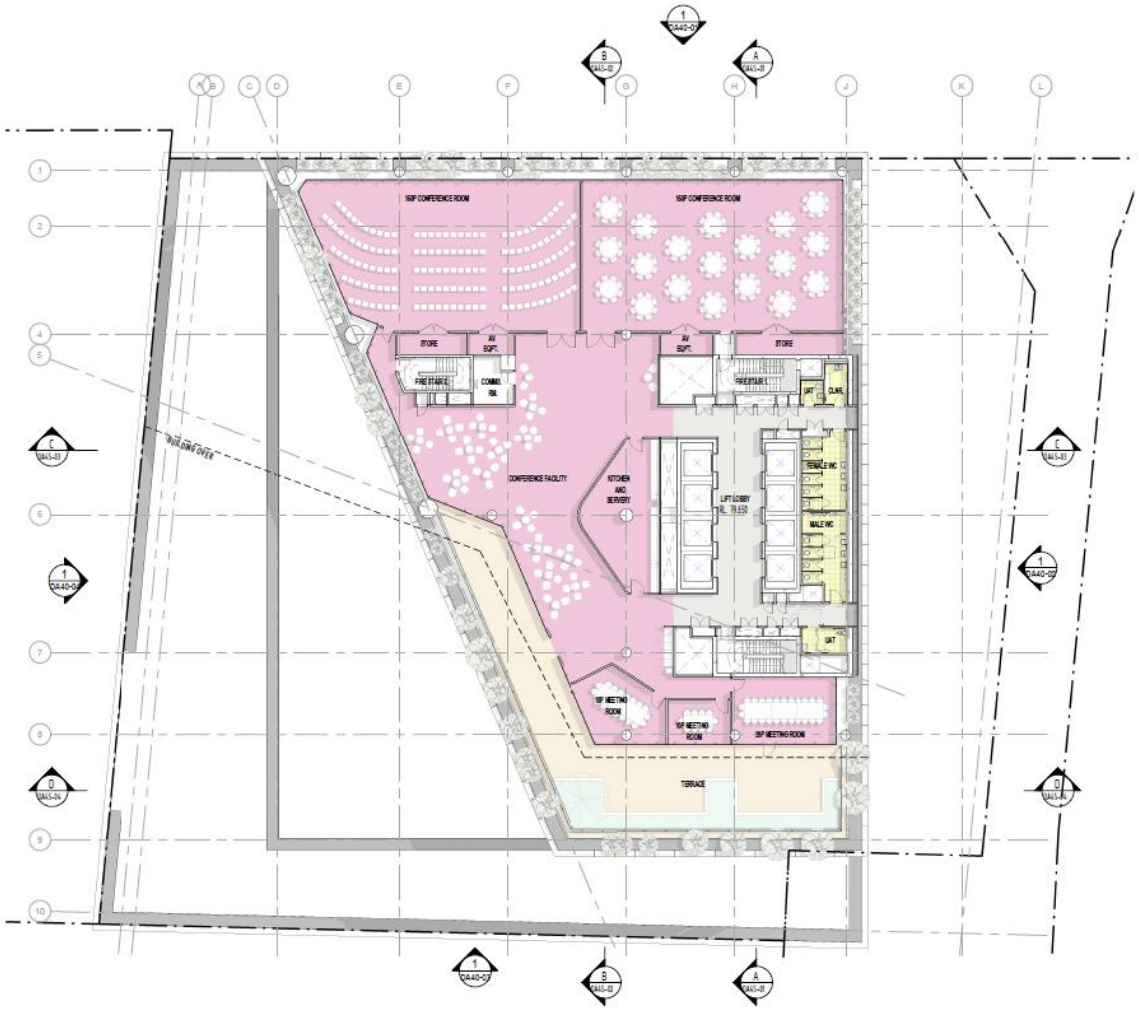
Picture 33 – Level 12

Source: Lyons

3.6.7. Level 13

Level 13 (nominally 900m² NLA) has been designed to accommodate a leasable Conference Facility for the University, catering for up to 300 persons. A generous floor to floor height (approximately 5m) has been provided, allowing for larger flat floor conference rooms with increased ceiling heights along the northern boundary, and breakout to the terrace on the south. A kitchen exhaust allowing for kitchen facilities.

Figure 31 – Level 13 – Conference Facility



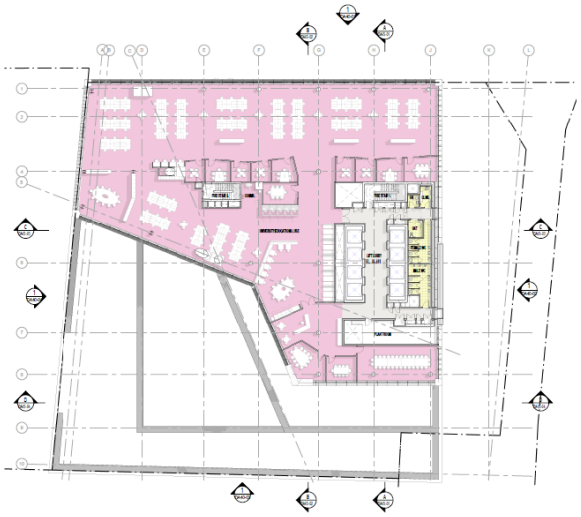
Source: Lyons

3.6.8. Levels 14, 15, 16, 17 and 18

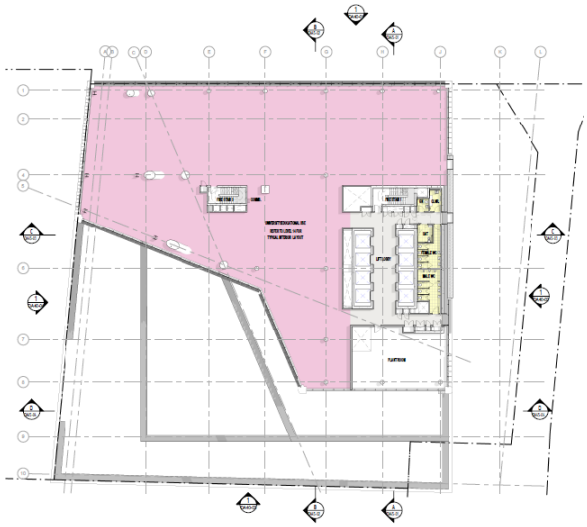
Upper tower levels from Level 14 to 18 occupy the cantilevered form of the building which protrudes 22m to the west. Floors 14 to 18 will provide for other University and education uses and will be fitted out appropriately. An indicative fit-out is shown on Level 14 in **Figure 32**. This indicative layout will be applied across levels 15, 16 and 17. Terraces are provided to Level 16 and Level 18 overlooking Bankstown CBD to the south, as well as Level 17 to the north.

The north east corner of the Level 18 floor plate accommodates most of the 'roof' services plant, including building back-up generator, hydraulics plant, and external cooling towers. Additional smaller plant rooms are incorporated within the floor plates at Level 14, 15 and 17, serving tenancy needs and plant requirements where the building core reduces.

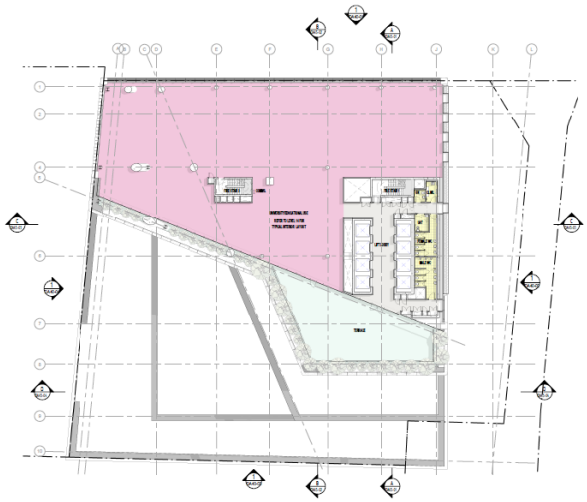
Figure 32 – Levels 14, 15, 16, 17 and 18 Floor plans



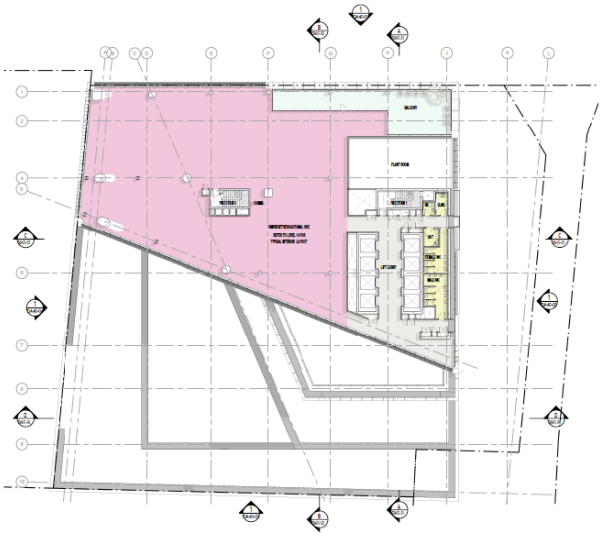
Picture 34 – Level 14



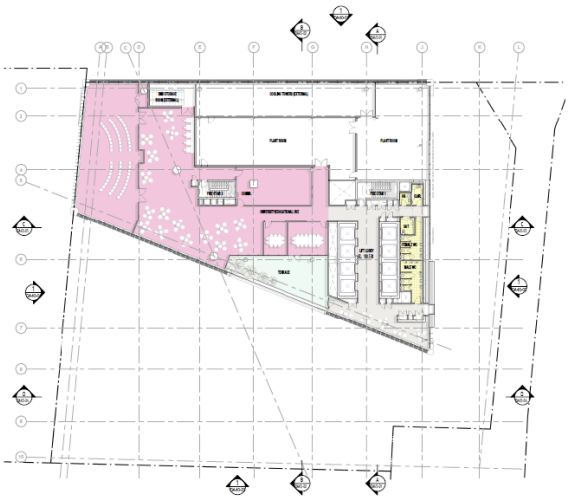
Picture 35 – Level 15



Picture 36 – Level 16



Picture 37 – Level 17



Picture 38 – Level 18

Source: Lyons

3.6.9. Vertical Circulation

The vertical circulation with lifts and escalators are designed to facilitate fire egress and high volume movement of travel between the different levels.

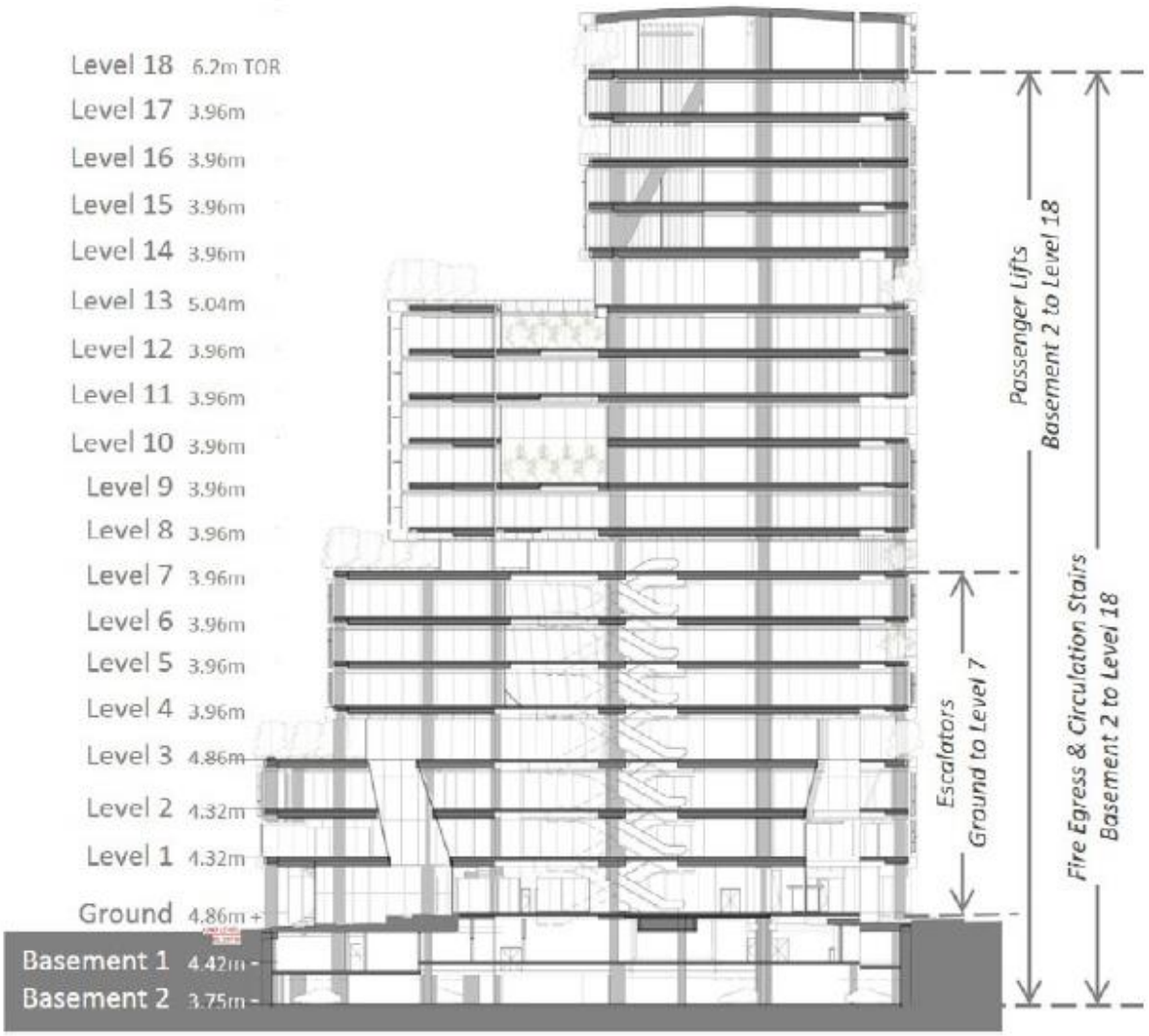
There will be 8 lifts that make up the core:

- 2 lifts from the Basement levels to level 18;
- 1 lift from The Appian Way entrance to level 18; and
- 5 from Ground to level 18.

Scissor arranged escalators located near the centre of the building's floorplate will connect the floors between the Ground floor and Level 7.

There are 4 sets of fire stairs evenly distributed across the built form that connect all levels.

Figure 33 – Vertical circulation diagram



Source: Lyons

An external 'Park Stair' provides access from the Ground level to recessed balconies on Levels 1 and 2 and ultimately the Level 3 Terrace and Student Hub. The external terrace at Level 3 can also be accessed from the levels below via the external Park Stair, which incorporates sheltered outlook to Paul Keating Park from recessed balconies via Level 1 and 2. The Park Stair provides a visual connection through the lower more permeable levels of the building.

The proposal incorporates internal void spaces which run vertically from the Ground to Level 3, and from Level 4 to Level 7. The internal voids will enhance inter-level connectivity, promote the use of internal stairs and reduce demand on lift utilisation.

3.6.10. Façade

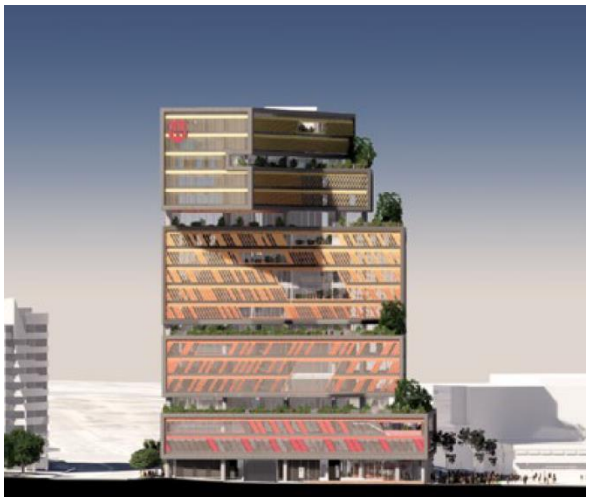
The building façades respond to the orientation and outlook of each elevation with a series of shaded curtain wall and infill systems. The system includes high performance full height double glazing from skirting to ceiling, with infill mechanical louvre and spandrel panels at the ceiling and flooring zone.

The aluminium window framing system allows for profiled sunshades and infill panels to be incorporated according to the orientation requirements:

- Western Angled Façade: Dynamic angled blades and infill (Figure 34).
- Eastern Façade: Vertical blades and infill, including a substantial area of green façade (vertical garden) (Figure 34). This is incorporated across the full height of the building, camouflaging the potentially blank face of the amenities and building services core, and providing a visual extension of the green space in the public domain below.
- Northern Façade: Horizonal shades for optimum solar control (Figure 35).
- Southern façade: Fully glazed as sun shading not required (Figure 36).

Figure 34 – Eastern and western facades

Picture 39 – Eastern Facade



Picture 40 – Western Facade

Source: Lyons

Deep glass reinforced concrete (GRC) panels delineate the edge of the façade faces, articulating the discrete forms the tower is composed from, and the balcony recesses. These balconies are designed to be read as clear recesses in the façade, with full height stainless steel Ronstan mesh providing clear visual and environmental permeability without compromising safety and security.

The GRC edge also wraps the glazed shading canopies that provide awning shelter to The Appian Way, Level 3 and Level 7 terraces. These canopies expand the opportunities to comfortably occupy these areas, providing shelter from rain and providing filtered shade from afternoon sun on the terraces.

Figure 35 – Northern façade – Rickard Road

Picture 41 – Viewed from ground level north west

Picture 42 – Viewed from north east

Source: Lyons

The tower forms are further articulated at the terrace levels by a green landscaping edge and incorporation of focal planting. Fully integrated planters sit behind and above the GRC panelling, with glass curtain walls and glazed safety balustrades set back from these façade edges. Further detail regarding each terrace level is provided in **Section 3.9**.

This combination of curtain walling, shading elements and framing enable the building to sit cohesively yet distinctly with the immediate built context of the Civic Precinct.

The proposed materiality complements its surroundings including the sheer glass skin of the Council Offices, the framed shading of the Library and Knowledge Hub, and the concrete edge articulation of the Bryan Brown Theatre and Council Chambers.

The incorporation of planting into the building's external treatment, both as green façade, planted edges and terrace landscapes, provide a link to the adjoining Paul Keating Park.

Façade Maintenance

The detailing of the façade systems is being developed with consideration for buildability, performance, safety and maintenance requirements. This includes consideration of access provisions for replacement of glazing as well as general cleaning, green façade and garden edge maintenance.

The building is proposed to include a small BMU which will operate from the main roof level, together with davit arms on terraces, suspension system to the underside of the main cantilever, and access restraint rails for canopy access.

Figure 36 – Southern façade - photomontage

Source: Art + Form

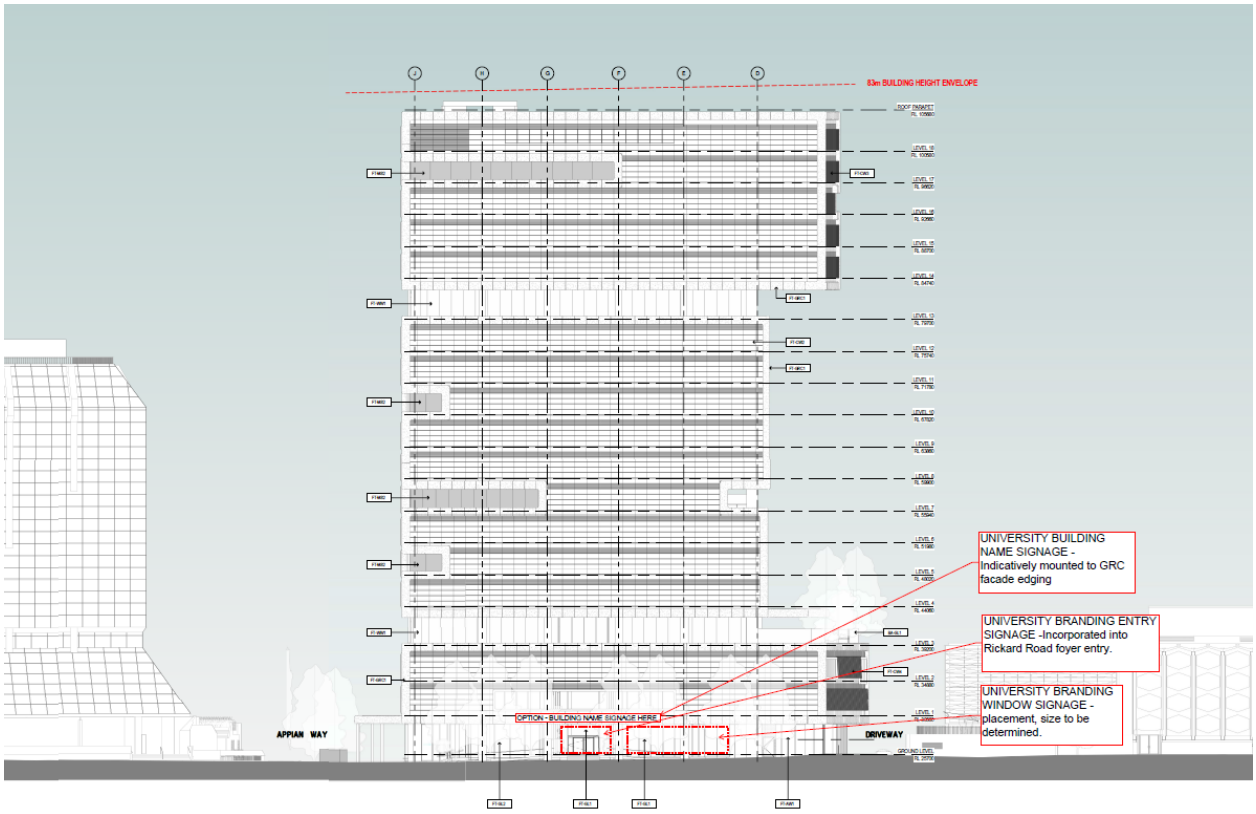
3.6.11. Signage

The proposal seeks approval for signages for business identification purposes, as identified on the elevation plans in **Appendix D**.

Signage displaying the university name will be located above the ground floor entrance along with additional WSU branding signs on the ground floor façade of the northern, southern and eastern facades. 3D, illuminated university branding signage will be located on the upper portion of the eastern and southern façades illustrated in **Figure 37** to **Figure 39.** The WSU logo will be featured on the podium of the southern façade and at the upper portion of the western façade as seen in **Figure 40.** University parking entrance signage will be located at the ground floor façade at the western elevation.

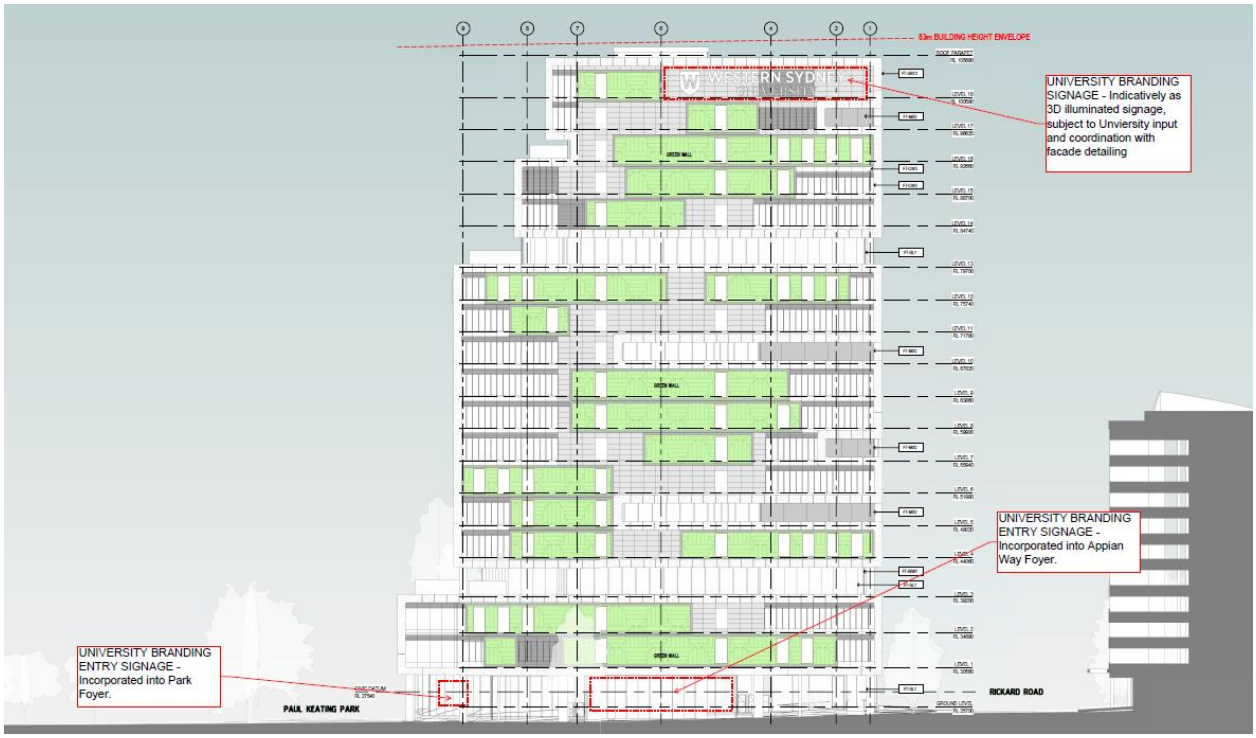
Smaller zones will be present on each of the retail tenancies on the ground floor. These will be subject to a separate approval process..

Figure 37 – Signage – Northern Facade



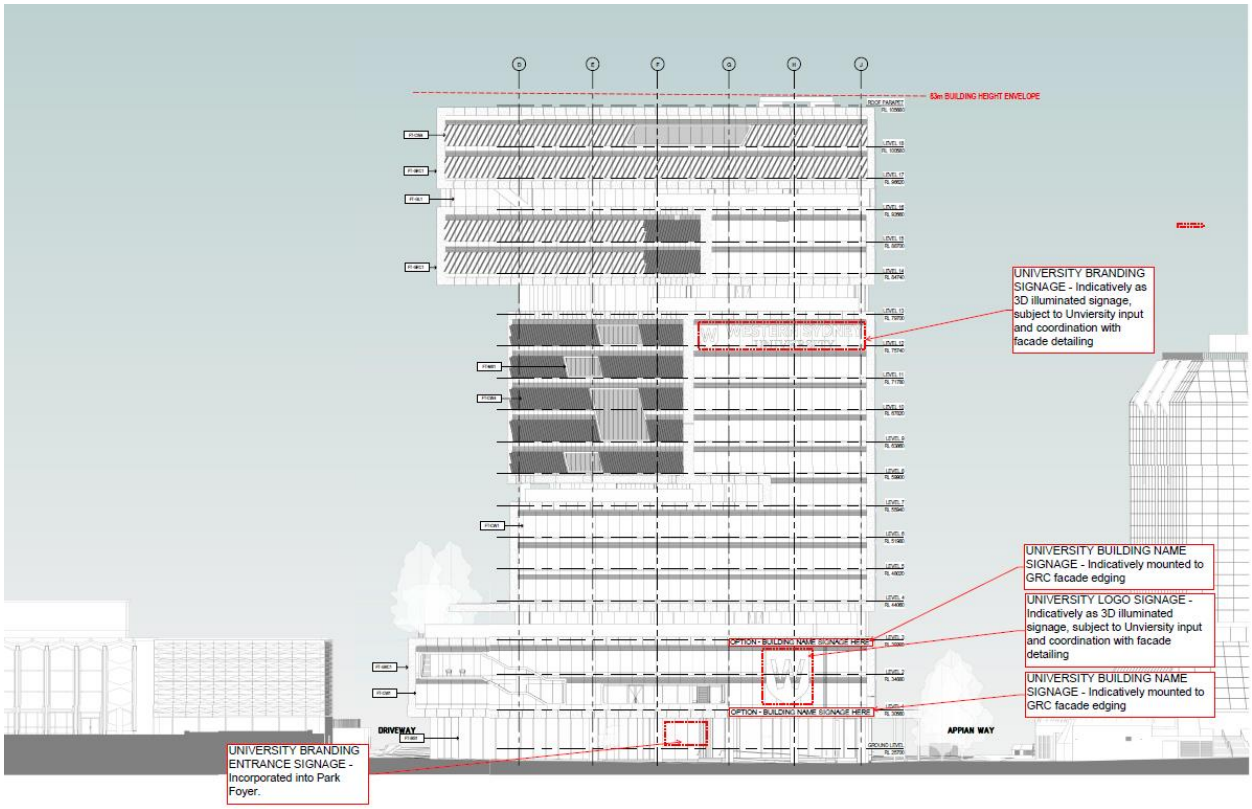
Source: Google Earth

Figure 38 –Signage – Eastern Facade



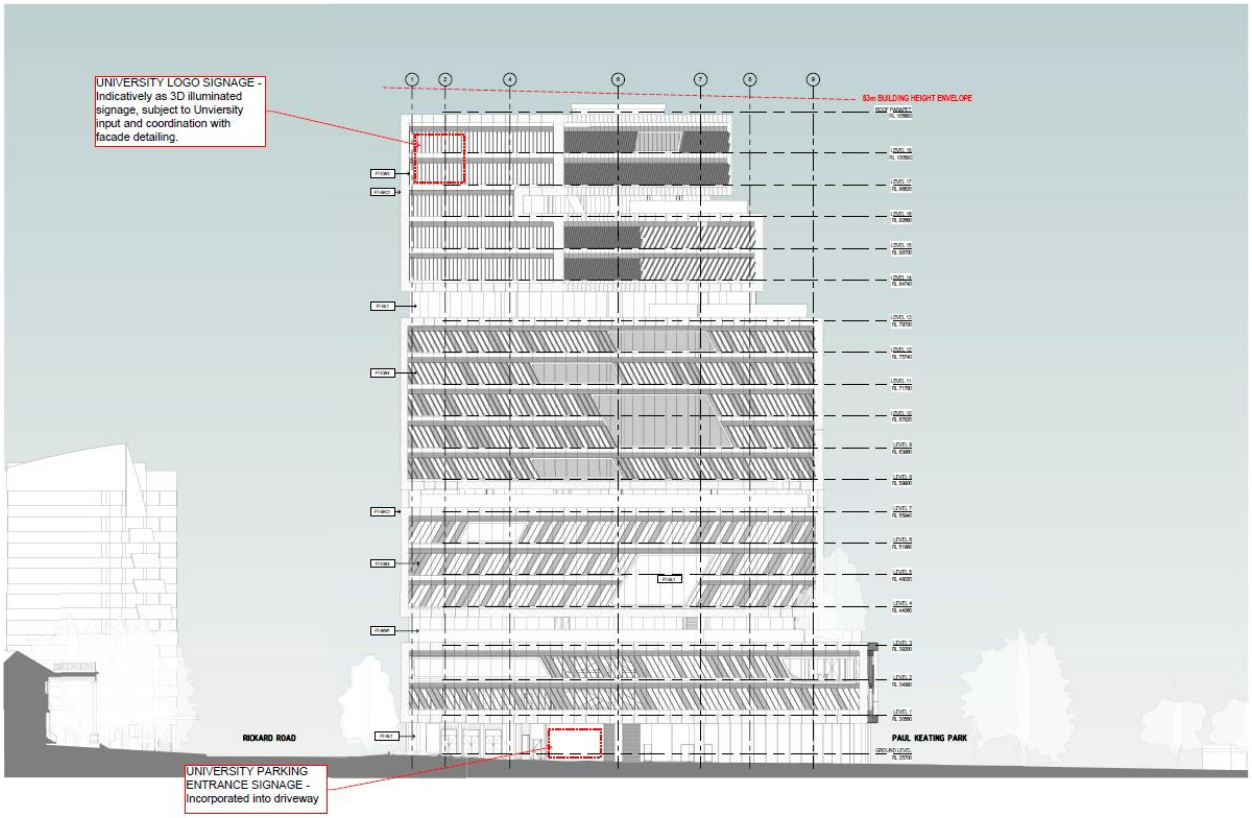
Source: Lyons

Figure 39 –Signage – Southern Facade



Source: Lyons

Figure 40 – Signage – Western Facade



Source: Lyons

3.7. FITOUT DESIGN

Bankstown City Campus will become a new community that will house Western Sydney University's Research, Students, Academics, Staff, Library, Badanami Centre, Academy, College and Schools, all of which will evolve over time.

The central focus of the fitout design is that the WSU BCC will be a hybridized model of seven themes, brought together in different combinations throughout the floors to reflect the requirements of each space.

The key themes are:

- **Educating**: Adapting the physical space to reflect the diversity of pedagogical delivery and ways in which 'Digital Dependents' learn, through adapting environments to support high and low technology learning.
- **Learning**: Ensuring that technology and technology-based learning approaches are suitable for future students.
- **Engagement**: Blurring boundaries between formal and informal spaces. Students and academics of WSU BCC should have a seamless experience between working, learning and socialising.
- **Research**: Creating highly flexible spaces for consulting, researching and analysing results. Removing dependencies on physical resources, making room for digital working, promotion and interaction.
- **Working**: Co-locating with corporations, markets and new clusters of research and working spaces to form new interdependent ecosystems.
- **Partnering**: Creating innovative partnerships both inside and outside of WSU to help best prepare students for entering the workforce and make efficient use of university space.
- **SMART**: Utilising the vast potential to gather and analyse of SMART data to make evidence-based predictions on student behaviour to anticipate and respond to important trends.

The BCC will be a 24/7 campus for the students with food/ beverage/entertainment offerings to assist in creation of a welcoming and inclusive social atmosphere. The interior fitout will provide an enriched experience for the diverse and multi-national student population with the objective to encourage students to enliven and utilise the campus for full days.

The space planning will support students well-being both physical, mental and academically through its programme of spaces ranging from student counselling, staff engagement, learning and research.

WSU's strong desire for social connection will be expressed in the various cultural support spaces such as the Womens Room, Spoon Room and Queer Space as well as pleasant rather than apologetic Prayer and Multifaith Rooms.

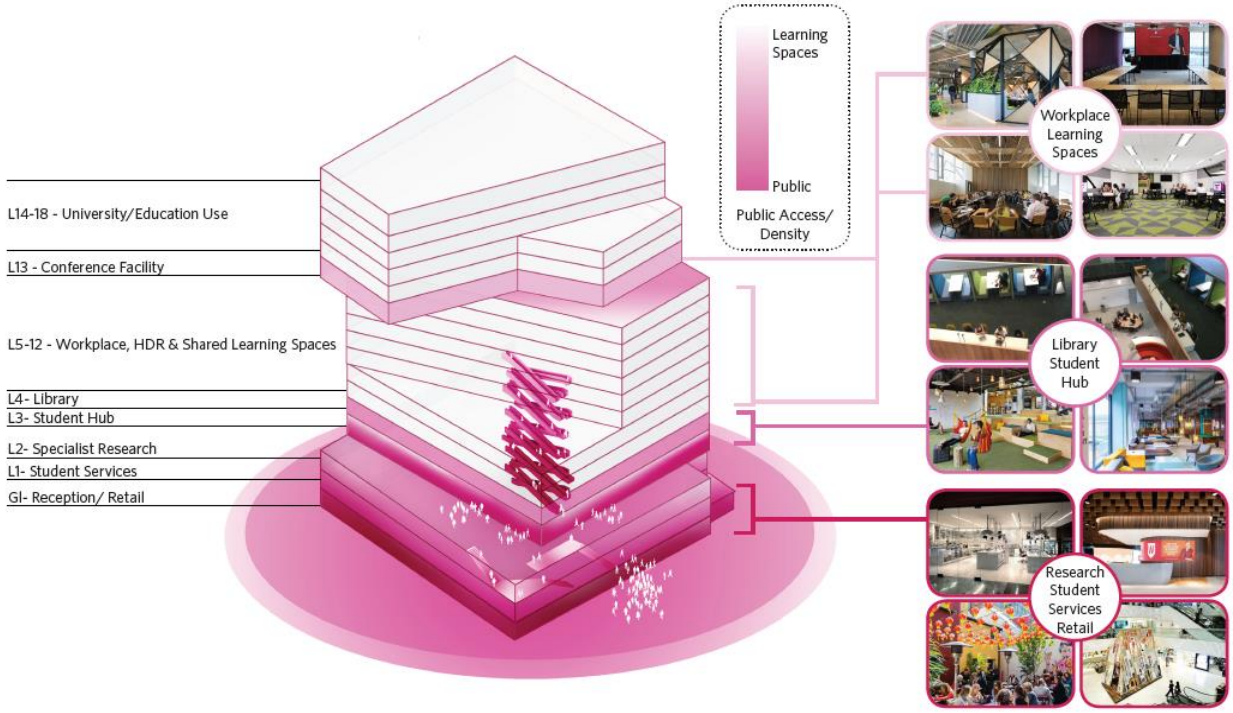
The Level 3 Student Hub and other student social gathering spaces include a variety of casual internal and external breakout/focused social and gathering spaces essential to the success of a "sticky" campus. The Student Hub will supply a large space split into individual programs that touch on the current social youth cultures. It is designed to be flexible enough to be easily updated as time goes on to ensure a constantly current social reference point.

Understanding population and movement patterns is key to designing a successful vertical campus. The expected pattern within the BCC Campus is illustrated within Figure 41 below and consists of:

- The lower levels will be densely populated with high levels of movement and community engagement. Escalators, stairs and lifts allow users to move easily between the Ground Floor through the first and second floors up to the Student Hub and terrace on Level 3.
- As you move further up the building from level 4 through to 12 population and movement will become less active and more focused as, the floors accommodate the majority of university learning spaces & workplaces.
- The conference facility on level 13 will be accessible to the public and users of the university and will be managed to ensure optimal usage.

- Levels 14 through to 18 will provide university/ education floor space with reduced movement and population.

Figure 41 – Population and movement



Source: HDR

Spaces within the fitout will include a mix of informal and formal learning spaces, academic workspaces and collaboration spaces. The fitout will be highly adaptable and technology enriched.

Formal Learning

The new vertical campus will showcase and enable highly flexible, interchangeable learning environments, to fully support and implement new and future pedagogy requirements.

Collaborative Learning Studios will enable a variety of teaching and learning activities to be undertaken at any one time ranging from 30 person / 40 person / 60 person and 250 person spaces.

Informal Learning

Informal student spaces and social spaces will create the glue that ties the BCC campus together. HDR have developed a landscape of over 800 informal spaces developed to allow a fine-grain application. For example, corridor spaces will feel inviting for students to occupy before and after classes; social spaces should allow flex among individual, group study and genuine social space; hidden spaces should allow for quiet reflective study; research and specialty spaces will allow mixed media and video content creation.

Academic Workplace

The Workplace will provide a wide array of space types to align with individual working needs, to improve collaboration and accommodate more agile work patterns. The BCC workplaces will embrace Activity-Based Working (ABW) environments to accommodate the workplaces required.

This approach creates a variety of spaces for different activities and has limited areas assigned to just one person. People use an area that suits the task they are working on, for example using a breakout space for informal meetings or a desk for writing. ABW has the advantage of freeing up large amounts of briefed area, while also improving collaboration between employees as they mix with different people as well as improving their own productivity.

A key design principle to the Workplaces is access to daylight, views and the intertwining of biophilia to encourage mental wellness, and allow staff to meet, relax and feel close to nature.

It is acknowledged that a generic environment does not help form a community and BCC will ensure the workplace forms a desirable environment for staff, students and researchers to be in.

Collaboration Spaces

Collaboration and connection to business and community is integral to the success of the campus. Creating spaces for industry connectivity, to heighten the WSU profile and provide connection between industry partners, researchers, staff and students.

The Conference facility located on Level 13 will provide access for 300 people in a dinning or presentation mode, including internal and external breakout spaces, and access to AV, external recording and kitchen facilities. Smaller meeting rooms of 20-30 person capacity are provided in addition to support the running of this level and to allow larger board meetings to be held in a discreet setting.

3.8. LANDSCAPE DESIGN

3.8.1. Public Realm

The design for WSU Bankstown Campus public realm is anchored on three core principals:

- **The Street:** Aligning The Appian Way the South improves pedestrian an visual connections train station (South) to the campus front door. By aligning The Appian Way, we create a coherent pedestrian experience and connections to Paul Keating Park. The public amenity of The Appian Way is vastly improved with the existing access road now a vibrant shared space that adds to the urban fabric of Bankstown.
- **Park:** Southern edge of campus has an important connection to an established community asset, Paul Keating Park. The design of the public realm builds on this connection, connecting the park up The Appian Way to Rickard Road.
- **Water:** The site sits within a flood zone, the ground plane aims to alleviate flooding conditions. The design is responsive the flooding overlay in numerous ways. The design of The Appian Way creates create a simplified ground plane with minimal interruption to overland flow.

Figure 42 – Public Realm Landscape Plan

Source: Aspect Studios

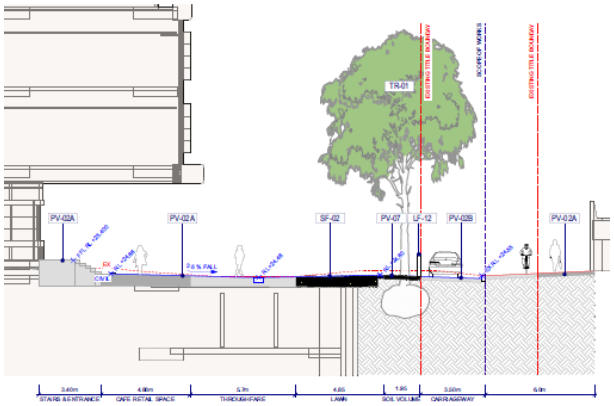
The street trees along Rickard Road will be removed and replaced with new trees along the street edge. Street furniture in the form of wooden benches and bicycle parking hoops are proposed within the Rickard Road verge.

Garden beds run along the northern frontage of the development adjacent to DDA pedestrian ramps.

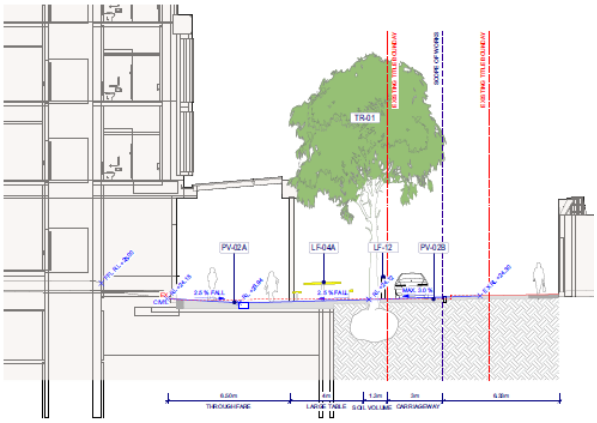
The Appian Way will consist of a pedestrian path finished in feature coloured concrete pavers separated from the proposed one way vehicular carriage way by a strip of deep soil planting.

The pedestrian path will have a two-way cross fall to a central stormwater grate. The alignment of The Appian Way is discussed in further detail in **Section 8.2**.

Figure 43 – The Appian Way Cross Sections



Picture 43 – The Appian Way Section AA



Picture 44 – The Appian Way Section BB

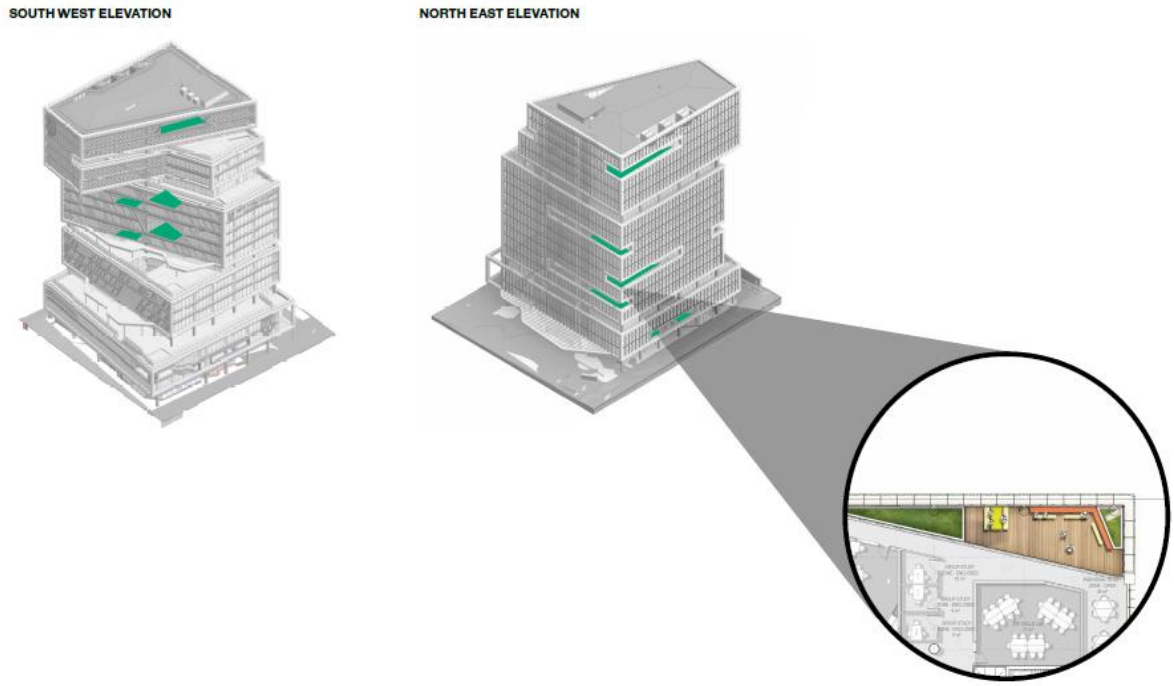
Source: Aspect

The interface with Paul Keating Park will consist of concrete pavers, timber bench seating and pockets of shade resistant planted garden beds.

3.8.2. Balconies

Balconies are located throughout the building, breaking up the façade and providing pocket nodes of activation for breakout and study and meeting for small groups (2 - 6 people). Balconies will consist of planting and timber decking to provide warm textural spaces for Students and visitors to inhabit and will all have 2-phase power to facilitate the charging of laptops and phones.

Figure 44 – Landscape Plan - Balconies

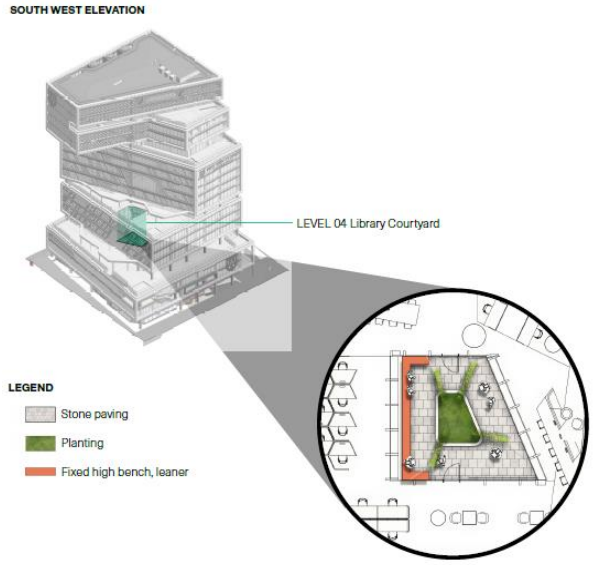


Source: Aspect Studios

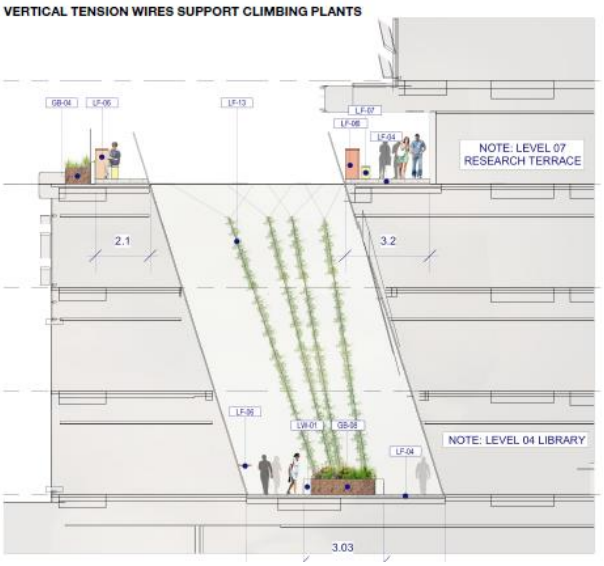
3.8.3. Library Courtyard

The Library Courtyard located on Level 4 will bring a sense of green and light to the heart of the building. A large light well void and a visual sense of green will connect the Library to the Level 7 Learning Terrace providing a green link to all floors between.

Figure 45 – Landscape Plan - Library Courtyard



Picture 45 – Library Courtyard



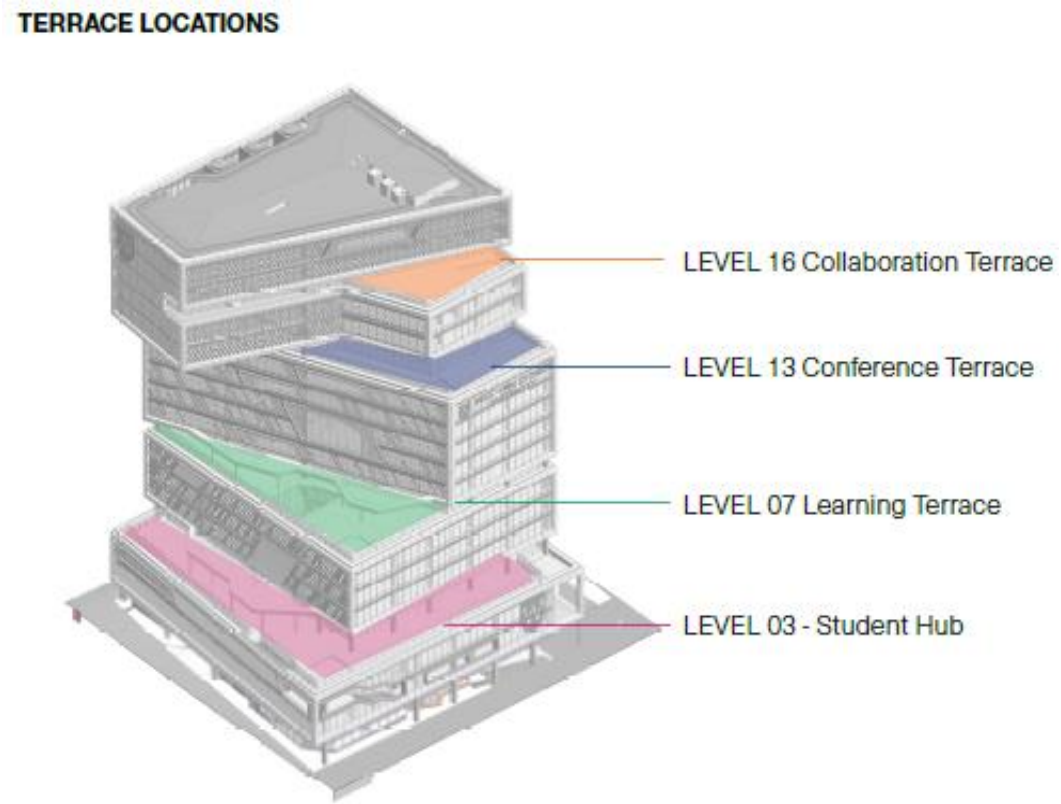
Picture 46 – Library Courtyard void

Source: Aspect

3.8.4. Terraces

The building form leads to terraces being located on Level 3, 7, 13 and 16, with a total floor area of 3,000sqm. The level 3 terrace having a direct external stairway connection to the landscaped park located immediately south of the building.

Figure 46 – Terrace Locations



Source: Aspect Studios

Level 3 Student Hub Terrace

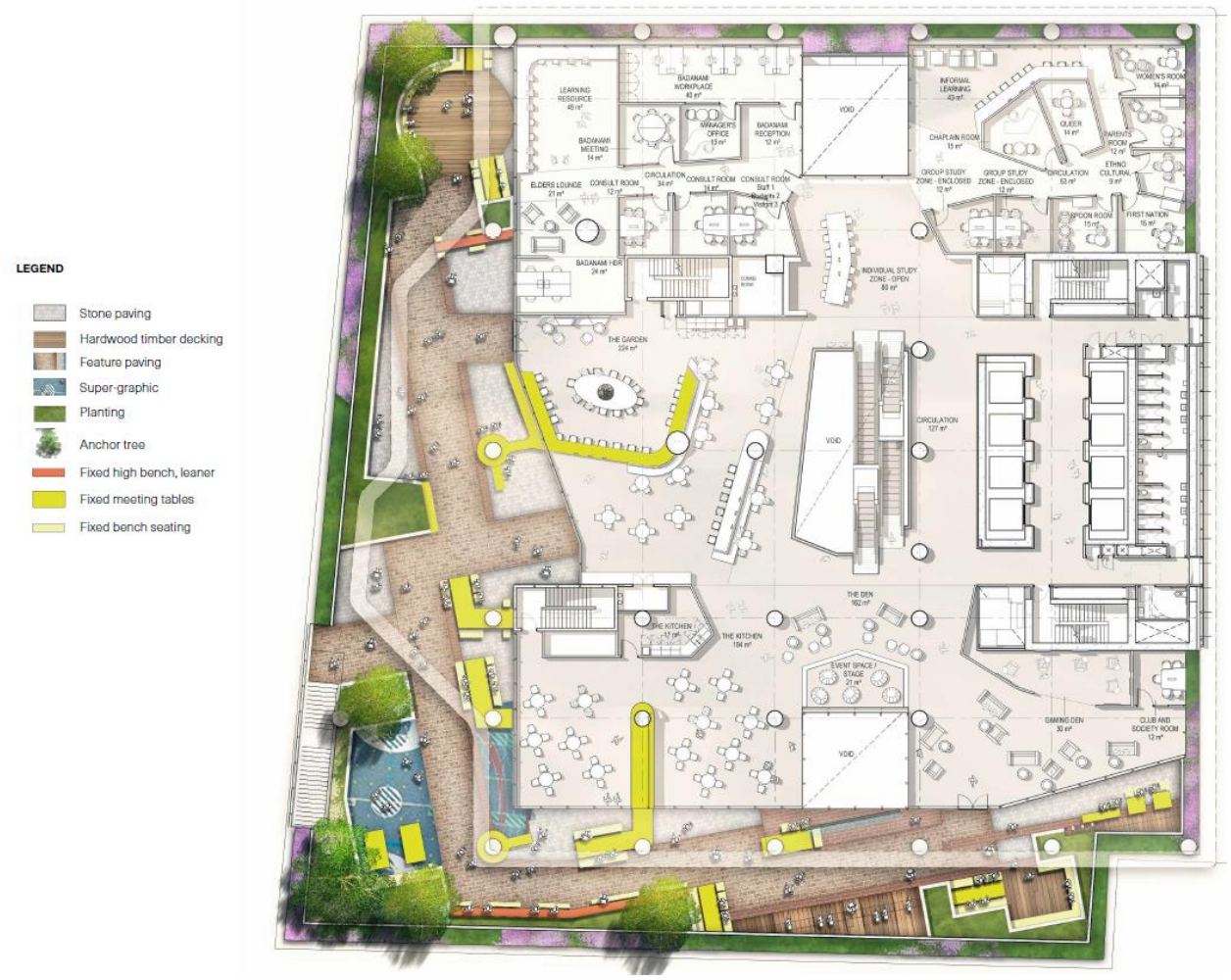
The Level 3 Student Hub terrace provides a visual green connection to Paul Keating Park.

The north eastern corner of the terrace will be designed as an Indigenous Space associated with the Bandanami, possible Yarning Circle, design to be further developed with input and engagement from WSU Indigenous Representatives and to incorporate Indigenous planting selection with cultural, medicinal or historic significance.

The remainder of the terrace will be broken into five zones:

- Study zone: multipurpose fixed tables which can be used for garden study sessions as well as medium to large events and university showcase;
- Social dining zone: a flow on from the internal dining space encouraging students to socialise;
- Recreation zone: multipurpose space with table tennis tables and other active uses along with a student veggie garden;
- Movie zone: timber platform and retractable movie screen for casual movie viewings of small university presentations; and
- Tech and gaming zone: technology enriched space with a strong link to the adjoining gaming den.

Figure 47 – Landscape Plan - Level 3 Terrace



Source: Aspect Studios

Level 7 Learning Terrace

The level 7 terrace will provide a variety of spaces for small, medium and large groups of people to study and learn. Opportunity exists for classes and meetings to be held in the larger space of the terrace. Most importantly the terrace has been designed to be multi-use and has a strong relationship to the internal programme.

Figure 48 – Landscape Plan - Level 7 Terrace

Source: Aspect Studios

Level 13 Conference Terrace

The level 13 Conference Terrace has been designed for conference spill out and informal meetings, the terrace has a strong relationship to the internal programme. Focus for the Conference Terrace has been to ensure a green outlook for students and visitor alike.

The Conference Terrace will feature a perimeter slim high bench (bar leaner height), designed for social events, makes best use of space and views.

Figure 49 – Landscape Plan - Level 13 Terrace

Source: Aspect Studios

Level 16 University/ Education Terrace

The Level 16 Terrace is designed as an open multi-use space that provides flexible opportunity for future use. An anchor tree links the terrace to terraces below and Paul Keating Park.

Figure 50 – Landscape Plan - Level 16 Terrace

Source: Aspect Studios

3.9. EXTERNAL LIGHTING STRATEGY

An External Lighting Strategy for the project has been developed with consideration of:

- user safety and access needs;
- potential forms of occupation of after dark at upper terraces and balcony spaces; and
- the opportunity for lighting to contribute to the legibility and iconic reading of the building after dark.

A key consideration in identifying potential strategies has been the types of use and activities on the adjacent sites, mitigating the potential for adverse spill and harnessing opportunities for beneficial outcomes for the public and University.

The Appian Way – Pedestrian Zone and Shared Zone

The Ground Level public domain lighting will be designed to provide a clear interface to Paul Keating Park and be in line with any future works to park and surrounding area. The lighting will comprise of functional lights (to meet all statutory lighting requirements) as well as feature/accent lighting. The integration of lighting into fixed landscape elements, such as fixed furniture, provides a design feature that will assist spatial legibility public safety.

Lighting in this area will comply with:

- AS1158.3.1: Pedestrian area (Category P Lighting) and specifically “Cat P1”; and
- AS4282 – Control of the obtrusive effect of outdoor lighting.

Vehicle Entrance

The vehicular entrance to the car park off the Library Driveway will be designed to allowing for eye adaption to take place when moving from daylight/ night to interior carpark space. Day and Night setting will be implemented with lights automatically reducing at night.

Lighting in this area will comply with:

- AS1680.2.1 Interior and workplace lighting – Specific applications – circulation and other general areas – Table D1 Item 11 – Indoor Carpark Entry; and
- AS4282 – Control of the obtrusive effect of outdoor lighting will also be adhered to through the resolution of the design.

Above ground terraces and balconies

Terraces and balconies throughout the building will be designed with light levels to encourage use at night, the lighting design will allow the interior and exterior spaces to be used as one space.

The design will comprise of functional lights (to meet all statutory lighting requirements) as well as feature/accent lighting to further enhance the prestige of the area.

Lighting in the external spaces will automatically turn on at sun set and switch off at 11pm – one hour after late night class has finished to allow students and staff to leave the building safely.

Terraces and balconies primarily face the west and south, where the lighting is not expected to have an adverse impact on existing uses. Paul Keating Park is currently in regular use in the evenings and has pole lights to facilitate social sports activities here.

3.10. ACCESS, PARKING AND TRANSPORT

Vehicular access

Vehicular access to the site is currently via The Appian Way off Rickard Road. The Appian Way, a one-way shared roadway provides both vehicular access to the car park within the subject site as well as access basement parking of the Civic Tower. The Appian Way provides a connection to Jacobs Street, located east of the site and The Appian Way also accommodates on street parking.

The development of the site will maintain vehicular access off Rickard Road via The Appian Way to Civic Tower. It is proposed to relocate vehicular access to the site from The Appian Way to the western side of the

site via the Library and Knowledge Hub driveway which also provides access to the existing Library carpark plus event and maintenance vehicle access to the Park.

The Library and Knowledge Hub driveway provides an opportunity to achieve vehicle access for the operational and parking needs of the project with minimal impact to traffic flow along Rickard Road. The proposal does not necessitate works to upgrade the Library driveway other than providing a new vehicular cross over for access to the proposed basement and ensuring clearance and sightlines at the entry point from Rickard Road.

Other traffic considerations include addressing the removal of the existing parking, including Council vehicle bays from The Appian Way, and providing emergency and maintenance vehicle access around the new building and to the existing adjacent buildings.

Pedestrian access

Pedestrian access to the site will be maintained and enhanced with a covered colonnade style east - west link along the southern boundary of the site, an active pedestrian only north - south link along The Appian Way and an enhanced public domain along Rickard Road.

University Street will provide a pedestrian link through the site from Rickard Road to Paul Keating Park.

Parking

The 68 public parking spaces currently on the site will be replaces with 70 new parking spaces for users of the building.

The parking spaces on The Appian Way will be removed to allow this shared space to be more efficiently utilised.

Within the basement a total of 90 vehicular parking spaces will be provided including 4 universal access (disabled) parking spaces. 3 loading bays will be provided including a Medium Rigid Vehicle (MRV) bay able to accommodate a garbage truck.

Public Transport

No changes are proposed to the existing public transport network.

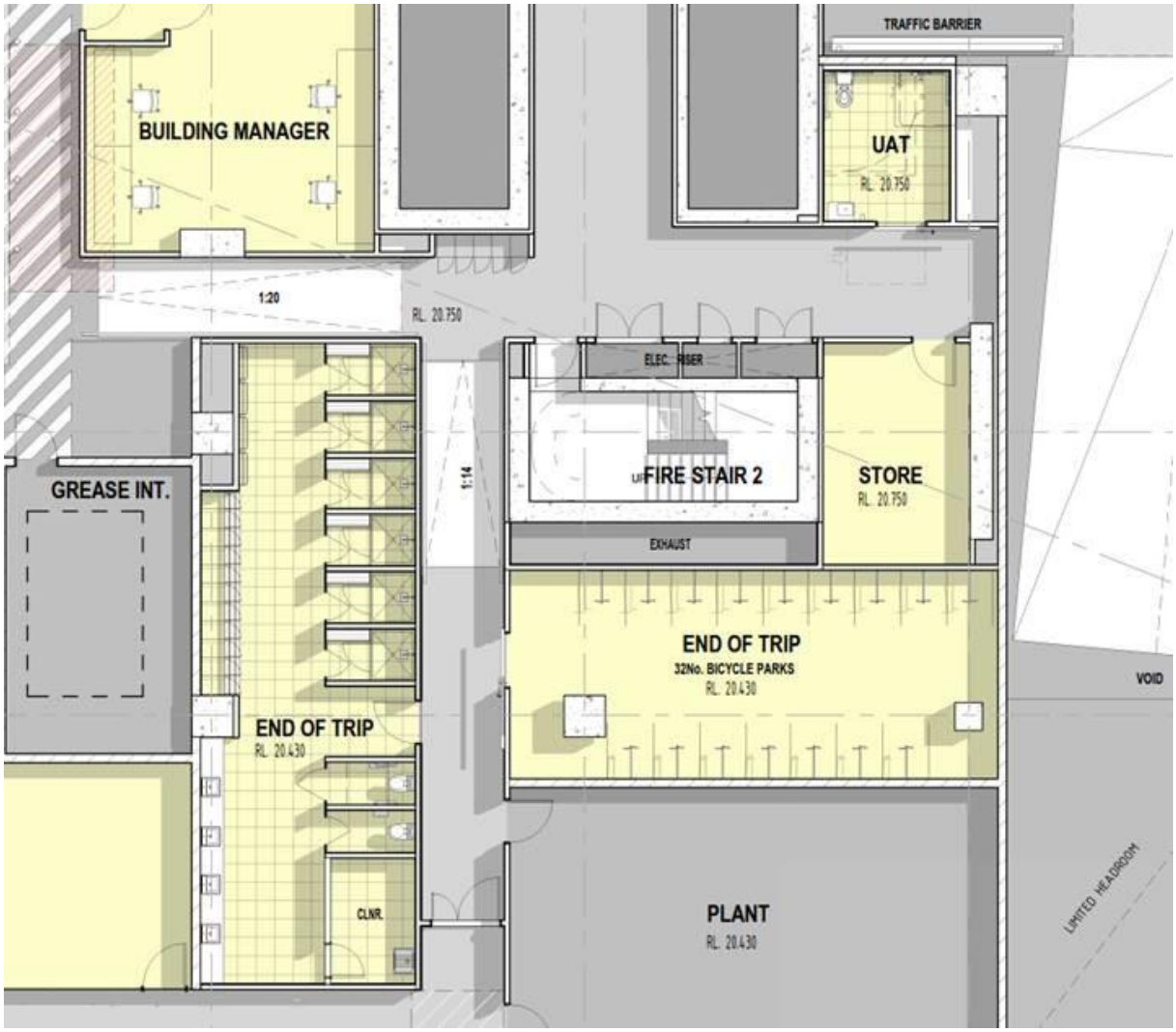
End of Trip Facilities

To maximise tenant wellbeing and building amenity, the proposal includes an end of trip (EOT) facility located within the basement of the building. The EOT facilities are located adjacent to the bike parking and accessible from the basement via lift from the Ground Floor. The Rickard Road frontage will provide public short stay or visitor bicycle loops. The proposed EOT facilities are summarised in **Table 6** below.

Table 6 – End of trip facilities summary

Component	Provision
Bicycle Spaces - Ground Level	100
Bicycle Spaces - Basement	32
Showers	7 (1 x DDA)
Toilets	3 (1 x DDA)
Lockers	32 (including DDA accessible lockers)

Figure 51 – Proposed End of Trip Facilities



Source: Lyons

3.11. CIVIL WORKS

Civil works associated with the proposed new campus are broken into Early Works and SSDA works.

Early works, which are subject to a separate development application to Council include:

- Erection of site hoardings;
- Demolition, including tree removal;
- Bulk excavation;
- Shoring, including temporary anchors;
- Disconnection and/or diversion of services; and
- Widening of the lay-back along Rickard Road leading into Appian Way, to facilitate heavy vehicle construction access.

Works subject to this SSDA include modifications to The Appian Way, Rickard Road and Library Driveway.

Modifications to The Appian Way include:

- Removal of existing carparking adjacent to the Council building;

- Relocation of intersection with Rickard Road to the east (noting that the widening of this layback will be undertaken within the early works package to facilitate construction access);
- Provision of a set-down area for drop-off and pick-up;
- Associated pavements and realignment works to establish a pedestrian only path and a shared vehicular carriageway to be separated by bollards (see **Figure 52**);
- Landscaping works including the provision of street furniture and deep soil planting; and
- Stormwater works including flush kerbs.

Modifications to Rickard Road include:

- Repurposing of redundant section of deceleration lane on Rickard Road (west of relocated driveway on The Appian Way) as a loading zone (capacity for two SRV sized vehicles); and
- Widening of the Rickard Road public footpath from 1.5m to 3m.

Modifications to Library driveway include:

- A new layback for the vehicular entrance to the basement of the proposed development. The proposed layback has been sized to adequately accommodate a MRV the largest vehicle with access to the site.

Figure 52 – Proposed Public Realm Paving

Source: Bonacci

3.12. STORMWATER AND DRAINAGE WORKS

An on-site detention tank (OSD) will be located on level 1 within the building. The OSD accepts overflows from the rainwater tank which captures runoff from the entire roof catchment. On grade areas outside the footprint of the building (which are subject to overland flooding) bypass the OSD. Details of the proposed OSD system, peak flows and storage requirements are detailed in **Section 8.8**.

The proposed stormwater strategy as detailed in the Civil Report (**Appendix I**) addresses water quantity by providing an OSD tank to reduce peak flow limiting PSD for events up to and including 100 year ARI storm.

The proposed water quality improvement measures not only improve the existing water quality condition but also meets Green Building Council of Australia “Green Star- Design & As built” Stormwater pollutant

reduction targets which provides greater water quality control over and above the requirements from Canterbury Bankstown Council.

The proposed Appian Way ground levels have demonstrated nil flooding impact to adjacent properties. Flood freeboard requirements to the proposed finished floor levels have been met.

3.13. SUSTAINABILITY INITIATIVES (ESD)

The University has committed to a target 5-star Greenstar as-built rating. Additionally, as a future proofing measure, the building is being designed to be capable of achieving a NABERS rating. The design approach for the project seeks to deliver a very low energy and highly sustainable building without complicating the design and campus operation.

Key elements that have been incorporated into the design approach include:

- Building fabric design to address different façade orientations with high insulative performance;
- Commissioning, tuning and metering to facilitate optimisation of energy performance;
- Producing a high indoor environmental quality, with access to outlook, daylight and outdoor space;
- Integration of soft landscaping into the building, including internal greening, green façade and access elevated green outdoor spaces;
- Rooftop photo voltaic energy system; and
- Harnessing more sustainable forms of transport through selection of a site with high accessibility by public transport, high walkability to other central business district facilities, and inclusion of end of trip facilities and secure undercover bicycle parking in the basement.

See **Appendix S** and **Section 0** for further discussion.

3.14. OPERATIONAL WASTE

All waste facilities and equipment are to be designed and constructed to be in compliance with the Bankstown City Council's Bankstown Development Control Plan 2015 – Part B13 Waste Management and Minimisation, and The City of Canterbury Bankstown's Waste Management Guide for New Developments, Australian Standards and statutory requirements.

The waste room for the building is located on Basement level 1. The waste room will contain the waste, cardboard recycling, paper recycling and co-mingled recycling bins for collection. The building management, waste collection staff and cleaners will be the only personnel with access to the waste room. All transportation of waste and recycling will be co-ordinated with building management or cleaners.

The recommended bins for the site are as follows:

- General Waste: 8 x 1100L MGBs collected daily (5 times weekly);
- Co-Mingled Recycling: 3x 1100L MGBs collected three times weekly;
- Carboard Recycling: 3x 1100L MGBs collected three times weekly; and
- Paper Recycling: 3x 1100L MGBs collected three times weekly.

3.15. CONSTRUCTION

3.15.1. Development Staging

The WSU BCC is scheduled to open in February 2022. To facilitate this an Early Works DA has been prepared and lodged with Canterbury Bankstown Council on 5 September 2019 (DA-697/2019):

- Erection of site hoardings;
- Demolition, including tree removal;
- Bulk excavation;

- Shoring, including temporary anchors;
- Disconnection and/or diversion of services; and
- Widening of the lay-back along Rickard Road leading into The Appian Way, to facilitate heavy vehicle construction access.

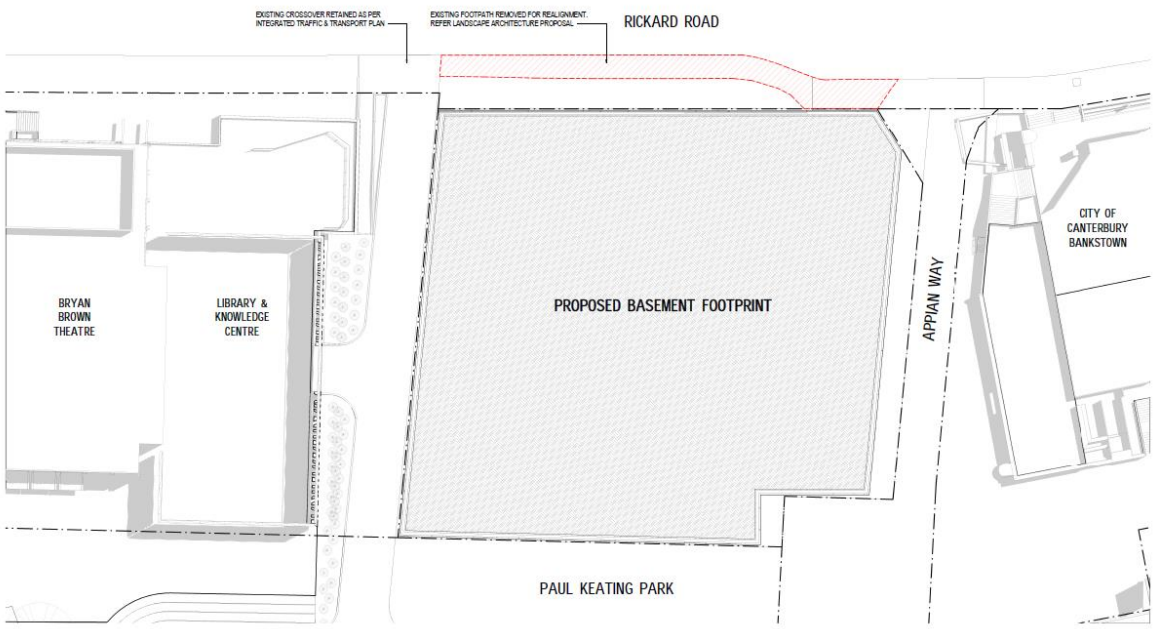
Conventional basement shoring and excavation techniques have been confirmed as appropriate by the project Structural Engineers Bonacci for the perimeter of the basement (**Appendix EE**). The approximate depth of the excavation is 12.5m and approximate volume of cut is 25,510 m³.

3.15.2. Demolition

Demolition of the existing at grade car park and its surrounding landscaping as well as The Appian Way realignment will be subject to an Early Works DA.

Realignment of the Rickard Road pedestrian footpath will form part of the SSDA scope of works and associated demolition is detailed on the Demolition Plan within the Architectural Plan Set (**Appendix D**).

Figure 53 – Proposed Demolition Works as part of the SSDA



Source: Lyons

Erosion and sediment control measures for the site will be implemented during construction to minimise erosion of the site and the risk of sediments being washed into neighbourhood properties as detailed in the Civil Report (**Appendix I**).

3.16. UTILITIES AND SERVICES

The site and adjacent Council owned properties are subject to several easements associated with services authority access and in-ground electricity and stormwater services, and carriageway.

The following key infrastructure components are outlined in detail in the Utilities Report (**Appendix K**)

- **Water Supply**: Sydney Water main within Rickard Road.
- **Sewer**: Sydney Water sewer main within Rickard Road, and additionally an existing Sydney Water sewer main traversing the southern portion of the site. To facilitate the project the relocation of the sewer outside the building footprint will be included in the Early Works DA.

- **Stormwater**: Existing box culvert running parallel to the site along The Appian Way.
- **Gas**: A 7kPa Jemena Gas main is located within Rickard Road and will provide the natural gas services.
- **Power (High Voltage)**: Ausgrid high voltage underground power cables located under the footpath along Rickard Road.
- **Communications**: There are currently not lead-in fibre cables, and no active copper lead-in cables to the site. New carrier fibre lead-in is proposed to be run from the existing service on Rickard Road. Inactive copper cables running into the site from The Appian Way will be removed and capped within the Early Works DA.

A title and easement drawing, feature and level survey, and in-ground services survey, have been prepared for the site by RPS Australia (**Appendix C**).

4. CONTRIBUTIONS

The relevant contributions plan for the site is the Bankstown City Council Section 94A Development Contributions Plan (s94A Plan), which was adopted by the former Bankstown City Council on 26 May 2009 and came into effect on 8 June 2009. The s94A Plan has been amended by Council on a number of occasions, most recently 11 July 2017. The development contributions plan applies to applications for development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EPA Act). The s94A Plan provides that the consent authority may apply a development contribution levy at 1% for all development types valued in excess of $200,000.

The s94A Plan identifies the purposes for which the levies are required. The purpose of levying contributions is to fund local infrastructure required to support new development. To this end, the s94A Plan includes a list of infrastructure items at Appendix B.

Draft Section 94A Contributions Plan 2015 (Draft s94A Plan) proposes to increase the levy for development in the Bankstown CBD from 1% to 4% for all development types valued in excess of $200,000. Council has made an application to the Department of Planning and Environment for the proposed increase. The current s94A Plan will continue to apply to development until the Minister for Planning has approved the Draft s94A Plan.

Exemptions from a levy under the s94A Plan may be considered by Canterbury Bankstown Council (Council) or the relevant consent authority for certain development, or components of development including:

- development associated with providing infrastructure funded by section 94A levies;
- development that involves rebuilding or repair of damage resulting from declared natural disasters (such as flooding or bushfires) under the NSW State Emergency Management Plan;
- applications submitted by Bankstown City Council; and
- applications submitted on behalf of Bankstown City Council for the provision of public infrastructure.

University as the Crown and Public Education Institution

WSU is recognised as the Crown by virtue of clause 226 of the EP&A Regulation. Section 4.33 of the EP&A Act provides that in relation to Crown applications, a consent authority is unable to impose a condition of consent without the approval of the applicant (WSU) or the Minister.

The University and its functions are inherently of a public nature, providing educational and research opportunities to the Western Sydney community and to the public at large. The proposed construction of a new research and teaching facility through the Bankstown City Campus is part of the University's core academic functions.

The Public Nature of the Proposed Development

The underlying purpose of Councils s94A Plan is to raise funds from private, commercially driven developments to be put towards the cost of public facilities and infrastructure which are burdened by those developments.

Imposing a levy on the University's own public infrastructure (and in doing so financially compromising the University's ability to perform its teaching and research functions) conflicts with the public tenet of the s94A Plan and would effectively divert education-based funding away from the University for other unrelated purposes, potentially with no nexus to WSU.

Whilst Council's Contributions Plan does not make explicit that Crown developments are automatically excluded from the payment of development contributions, the consent authority (in this instance the Minister for Planning) is able to apply an exemption on a merit basis. An exemption is considered appropriate as the University is a not-for-profit public institution which relies on government grants, donations, and community funding to provide new facilities for both the University community, and the wider public at large.

The levying of a development contribution would divert a portion of these public funds, which have been specifically provided for an educational purpose, to local services without any direct nexus to the impact on those services.

Crown Applications – Department of Planning Circular D6

The Department's Circular D6 "Crown Development Applications and Conditions of Consent" sets out the reasons why Crown developments should be able to seek exemptions from contributions payments.

The effect of this circular is, that where the applicant is a Crown authority and the development is for educational services, no contributions should be collected for open space, community facilities, parking, and general local and main road upgrades. As the proposed development is integral to supporting the University's academic functions it is clearly part of the University's educational services.

As stated in Circular D6:

"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."

Taking into account the significant public benefits which the proposed development, and the presence the University generally, provides, it is considered that no/ significantly reduced development contributions should be levied against the development.

Other Public Amenities Provided by the University on Campus

The exemption from payment of contributions relating to community facilities, public domain and new open space is considered appropriate, as the proposed WSU BCC will provide significant areas of accessible open space and recreation on the site, as well as a range of community facilities available to the general public. These include:

- State of the art building with 5-star Greenstar as-built rating;
- Permeable ground plane with active frontages and disabled access throughout;
- Retail and community pop up spaces on the ground plane;
- Library;
- Conference facilities;
- Badanami Institute indigenous outreach program;
- Landscaped terraces at various levels of the building that are accessible to the general public.
- Streetscape works along The Appian Way, including landscaping, bicycle parking, LED lighting, WSUD, irrigation, furniture, pedestrian facilities etc;
- Streetscape works along Rickard Road, including landscaping (street trees), bicycle parking, improved pedestrian path etc;
- Onsite flood mitigation works including upgraded stormwater assets to manage increasing runoff; and
- Water quality and quantity (OSD) infrastructure incorporated within the building.

The availability of these amenities and services on the Campus, which are maintained by the University, reduces the demand on public amenities outside the Campus.

Taking into account the significant public benefits which the proposed development, and the presence the University generally, provides, an exemption/ reduction is considered appropriate as the University is a not-for-profit public institution which relies on government grants, donations, and community funding to provide new facilities for both the University community, and the wider public at large.

WSU acknowledge the central position of the proposal within the Bankstown City Centre and understands the need to continue to work cooperatively with Council to reach agreement on an appropriate balance of development conditions that meets Council's planning responsibilities, whilst also meeting the University's need to provide crucial infrastructure. WSU invite further discussion with Council and the DPIE on this matter throughout the assessment process.

of the local infrastructure items listed at Appendix B of the s94A plan, which could directly correlate with the proposed development and that WSU would like to discuss further with Council include:

- Construct streetscape works at The Appian Way;
- Construct streetscape works at Rickard Road (implement CBD street tree plan);
- Upgrade traffic management and facilities at The Appian Way;
- Upgrade open space at Paul Keating Park in the Civic Precinct, including landscaping, amenities/facilities, LED lighting, WSUD, irrigation, furniture, pedestrian facilities etc as required;
- Upgrade stormwater assets in Salt Pan Creek sub catchment to manage increasing runoff;
- Upgrade drainage pit inlets at The Appian Way and enhance overland flow path downstream of South Terrace;
- Construct new inlet pits in Rickard Road and French Avenue to address overland flow; and
- Upgrade and construct new pollution control devices to improve water quality across Bankstown's catchments.

5. COMMUNITY AND STAKEHOLDER ENGAGEMENT

Community and stakeholder engagement has been undertaken by Urbis in conjunction with WSU in the preparation of the proposed Western Sydney University, Bankstown City Campus. This included direct engagement and consultation with:

- Adjoining landowners and occupants;
- City of Canterbury Bankstown Council;
- Government Architect of NSW;
- Bankstown Collaboration Group; and
- Other government, agency and utility stakeholders listed within the SEARs.

The community and stakeholder engagement undertaken has sought to address the requirements of the SEARs and includes:

- Details of the community and stakeholder participation strategy identifying who has been consulted and the justification for the selection, and
- Details of the results of the implementation of the strategy including issues raised and how these have been addressed.

Details of the outcomes of the community and stakeholder engagement is contained in the Consultation Report submitted in support of the proposal and provided in **Appendix P**.

Fact Sheet

A fact sheet was prepared to outline key features of the Western Sydney University – Bankstown City Campus and invite members of the community to contribute their ideas and thoughts. The newsletter also advertised details of Community Information Session held on 22 June 2019.

Urbis Engagement visited identified near neighbour, border properties to deliver a fact sheet straight to their letterbox, for selected properties determined most impacted, a letter explaining the proposal and how to utilise the dedicated feedback channels. Canterbury Bankstown Council were informed of the planned catchment area. Urbis Engagement distributed a fact sheet to the mailboxes of approximately 300 households across Bankstown including on Rickard Rd, Chapel Rd, Kitchener Parade and The Appian Way. Approximately 100 fact sheets were also delivered to Canterbury Bankstown Council for distribution.

Website

As part of the consultation process, and to ensure access to specialised information regarding the proposal, a website was developed and published. Western Sydney University ‘Western Growth’ website (westernsydney.edu.au/westerngrowth) provided information about the proposed development application, the planning process and contact information.

Media Releases and Social Media

Media releases were issued in August 2017, December 2017 and February 2019 to provide members of the local and University community information on the development. The media releases were provided to Canterbury Bankstown Express, Campus Morning Mail and other local journalists.

The project was also announced on Facebook, Twitter, Instagram and Linked In on 4 and 5 February 2019, with significant levels of exposure and response:

- Facebook – 468 reactions and 207 comments received
- Twitter – 34 reactions
- Instagram – 1,638 reactions and 5 comments received
- Linked In – 535 reactions and 25 comments received.

Community Information Session

One, three-hour information session was held on Saturday 22 June 2019 as a pop-up event at Paul Keating Park, Bankstown. Given the culturally and linguistically diverse community of Bankstown, two interpreters in Mandarin and Arabic were available for the duration of the session to assist with communicating the proposal to the local community and seeking their feedback. Approximately 70 people dropped-by during the session.

A summary of the responses to issues raised by stakeholders during the engagement process is provided **Table 7** below.

Table 7 – Community and Stakeholder Engagement: Issues and Responses

Issue Raised	Stakeholder	Response
Flooding Pre and post development flood scenarios and impacts	DPE Council	A comprehensive assessment of flooding has been undertaken using a TUFLOW two-dimensional model to analyse local flow behaviour on the site and adjoining properties, including pre and post development flood scenarios and impacts for both upstream and downstream properties in accordance with feedback from DPE and Council. The flooding analysis has concluded that there is no change to peak flows and corresponding peak flood levels downstream. Risk to life is effectively managed in providing areas of floor free refuge and the new bridge and access road will provide floor free access. The potential flooding impacts and mitigation measures are discussed in detail within **Section 8.8** of this report.
Stormwater management, drainage and flooding Existing overland flow paths, stormwater management, and water quality and quantity.	Council DPE Sydney Water	The proposed development incorporates a stormwater management system that will effectively manage stormwater flows across the site, including water quantity and water quality measures to avoid impacts on the downstream properties. The Civil Engineering Report provides a comprehensive description of the proposed measures and responds to each of the feedback provided by DPE, Council and Sydney Water. The on-site basin provides both on-site stormwater detention storage and a bioretention basin with stormwater quality improvement devices and emergency overland flowpaths during major events or blockages. WSUD measures will be implemented along the realigned Eskdale Creek to improve water quality, regulate flow rates, enhance existing landscaping and provide aesthetic benefits. The stormwater management system is described in further detail within **Section 8.8**Error! Reference source not found. of this report.

Issue Raised	Stakeholder	Response
Contamination	DPE Council	Detailed site investigations were undertaken to assess the potential contamination of the site, including unexploded ordnance as requested by Council. The assessment report (refer to **Section 8.11**) concludes the site is suitable for the proposed development pending the implementation of the recommended remediation works, including additional analysis prior to or during the demolition phase.
Consultation Emphasised importance of consultation	DPE	WSPT has liaised with adjoining landowners and occupants as well as relevant government, agency and utility stakeholders as outlined within the Consultation Report (refer to **Appendix P**).
Paul Keating Park Construction impacts. Access for community events. Over shadowing. Loss of green space.	Council Community	There will be minimal impact to Paul Keating Park during construction, whilst construction hoarding will be erected prior to construction commencing adjacent to the park, measures will be taken to prevent dust, debris and acoustic impact on the surrounding area. Access to the park for community event will not be impeded by the proposed Campus. The laneway adjacent to the Library and Knowledge Centre used for deliveries of stages, rides etc will remain. Large terraces are being provided for student recreation to prevent over utilisation of the park. A small portion of green space is being removed by the placement of the building but the site is in its majority currently a car park. The building has been designed to step back to minimise overshadowing of Paul Keating Park. Each of these matters is addressed in detail within throughout this report.
Heritage	DPE Council	The site has been assessed for both Aboriginal and non-Aboriginal heritage values as outlined in **Section's 8.5 and 8.6** of this report. The built form will not impact on the significance of the adjoining heritage item 'Council Chambers'.
Construction Traffic Construction and corresponding impacts	Community RMS Council	The Appian Way adjacent to the site will be closed during construction. Vehicles currently accessing the existing Canterbury Bankstown Council building basement car park via The Appian Way will be redirected. The proposed detour would be via Rickard Road, Chapel Road, The Mall and Jacobs Street (approx. 700m). This is anticipated to impact

Issue Raised	Stakeholder	Response
		approximately 30 vehicles in the morning peak hour. There is no impact to vehicles egressing the car park as The Appian Way is one-way southbound.
Connectivity Pedestrian congestion	RMS Community	The proposed pedestrian and cycle connections are documented in the Traffic Impact Assessment and Civil Engineering Report which are discussed in detail within **Section 8.13**.
Car Parking Access to parking for staff and students. Access to free parking for the community.	Council Community	The Bankstown DCP does not specify a parking rate for educational establishments and as such the Traffic Impact Assessment (**Appendix Q**) provides detailed justification for the proposed 94 parking spaces. This matter is addressed within **Section 8.13** of the report. The provision of 94 car parking spaces, includes four Discrimination Disability Act (DDA) compliant spaces. Parking will be for staff and tenants only, and where required for students with a disability upon approval from the University. A Green Travel Plan and education program will be delivered to inform staff and students of public transport options and encouraging use of public transport. WSU is working closely with Council which is currently undertaking master planning to guide street and transport updates in the Bankstown CBD, known as the Complete Streets Strategy. The project is ongoing, with one of the associated studies a CBD Parking Review. The aim of the review is to meet car parking needs for the future CBD for additional incoming population and development.
Building Design Spaces for equity groups. Internal building congestion for students	Community	A prayer room has been identified as part of the draft internal fit-out. Identifying spaces for equity groups will be considered as part of the operation of the campus. Vertical circulation has been given substantial consideration as part of the design with passenger lifts from Basement to Level 18, escalators from Ground to Level 7 and Fire Egress Stairs. Core student use spaces are also located in the lower half of the building, where the escalators facilitate ease of vertical movement, and the largest elevated landscapes, at Level 3 and 7, provide opportunities for individual and group breakout.

Issue Raised	Stakeholder	Response
Milperra Campus	Community	The Bankstown City campus is aligned with WSU's 'Western Growth' strategy aimed providing state-of-the-art learning, teaching and research facilities in the region's key CBDs and growth centres. The University continues to explore a range of options for the future uses of the Milperra site. No decisions have been made in relation to the timing or preferred development options at this stage.

TfNSW and RMS

TfNSW and RMS have advised they do not require additional consultation prior to lodgement of the SSD.

Ongoing

At the time of writing this report, WSU is continuing to manage an engagement program with the community and other stakeholders, to keep them informed about the project.

5.1. GOVERNMENT ARCHITECT NSW

The Government Architect NSW (GANSW) provides strategic design leadership in architecture, urban design and landscape architecture. One vessel by which they do this is the NSW State Design Review Panel (SDRP). The NSW SDRP provide independent and impartial advice on the design quality of development proposals to inform the formal recommendations of GANSW to the proponents and to the Department of Planning and Environment's assessment team.

The project team attend three SDRP sessions along with a GANSW briefing session and an interim session. **Table 8**, **Table 9** and **Table 10** below contain a summary of the issues raised within each SDRP and project team/ design response.

Table 8 – Design response to GANSW Commentary after SDRP – 1 (17 October 2018)

GANSW Commentary		Project Team/ Design Response
Site strategy		
1.	Overhanging of the building mass over The Appian Way above ground floor level is not supported. The Appian Way should be retained as a street open to the sky.	The revised massing has been significantly setback within the site boundary to accommodate a wider visual corridor along The Appian Way.
2.	The panel supports the intent of the proposal to engage with Bankstown Library and Paul Keating Park, however the appropriation of public spaces such as Paul Keating Park as an 'informal learning space' is not supported.	The revised design includes additional terraces and other 'informal learning spaces' to prevent overuse of Paul Keating Park. A total of 3,233m² of external terraces and balconies including landscaped planters, are proposed as part of the development.
Building form, bulk and height		
1.	The proposed building exceeds both the height (53m allowable/81m proposed) and FSR limits (4.5 allowable/8.4 proposed) set by council's development controls. The bulk	The building NLA was reduced by over 2000m² and the massing was reshaped to minimise overshadowing of The Appian Way and Paul Keating Park. A detailed Solar access assessment

GANSW Commentary		Project Team/ Design Response
	and mass of the building is excessive, overshadows The Appian Way and Paul Keating Park and is not supported.	has been undertaken and submitted with this EIS within the Architectural Design Report **Appendix E**.
2.	Sunlight levels to both Paul Keating Park and The Appian Way should be maximised. The project should achieve access to sunlight on 21 June between 11am-2pm to a diversity of public spaces.	Detailed shadow analysis was undertaken and the built form designed to maximise sunlight levels to public spaces: • the building form has been scaled back in floor area progressively towards the top of the building to reduce over-shadowing; • the building mass has been arranged vertically, stepping away from Paul Keating Park and the Knowledge Hub building to create a relationship with the Civic Tower and to further reduce over-shadowing; and • the building has been set back at an average of 10.5m from The Appian Way reducing the building footprint and opening up further solar access at midday.
3.	A single large building as currently proposed has the potential to deny civic life to existing public spaces by containing all activities within. Options for the campus to be housed in two (or more) buildings connected via The Appian Way should be investigated and interaction of the building users with the surrounding facilities should be illustrated.	WSU have investigated many options for the location and configuration of Bankstown City Campus and the option of splitting the campus across multiple sites was dismissed as infeasible and counter to Council's and WSU's objectives for a dynamic new centralised vertical Campus.
4.	The proposed building is essentially a large floorplate commercial building above level 4. The panel raised concerns regarding the ability of this typology to create collaborative working and teaching spaces. Alternatives to the large floor plate typology should be investigated at this early stage rather than at the fit-out stage.	The floor plate sizes appropriate for a Vertical Campus typology are necessarily larger than the floor plates appropriate for other tower forms proposed for development in the vicinity of the site, which entail residential towers with commercial facilities at lower levels. A Campus facility needs to support larger room sizes and circulation spaces to suit cohorts of students, as well as additional vertical circulation and building services infrastructure.
5.	Scalloped corners add to the perceived bulk of the building. Options to reduce the bulk and mass, which may include a slimmer but taller form, should be investigated.	The building was redesigned using design principles to ensure minimisation of the building form's visual bulk.
6.	The massing of the building does not address the existing podium alignment created by the Bankstown Library and the	The podium height has been revised to address the scale and alignment of the Bankstown Library and Civic Tower.

GANSW Commentary		Project Team/ Design Response
	Council Offices building. Options for lowering the podium datum to align with the existing condition should be investigated.	
Architectural expression		
1.	The thematic connection to the memory of Cumberland Plain woodlands on the building façade is superficial and not supported. A more rigorous application of this thematic should be explored and might influence the design of the landscaped terrace at the level 4 podium.	A revised building façade has been developed.
2.	The Appian Way should be considered as a fine-grained local retail and food street and include retail spaces with ground level frontage to support this desired outcome.	The ground floor design concept has been reworked to create a porous building at the ground and lower levels, that draws both landscape and pedestrians into and through the building.
3.	The proposed building intends to showcase connections to industry and innovation. Opportunities for reflecting these initiatives in the architecture of lower level retail spaces should be investigated.	The corners of the ground level are formed by Retail spaces, and a tiered multi-purpose space, providing settings for visual and active engagement between the University and public community, and placing educational activity and innovation on display.
4.	Lower level retail spaces should be designed as clusters which relate to specific academic faculties therefore reinforcing the idea of a city campus.	Retail spaces are proposed to be Food and Beverage tenancies supporting the users of the building with access from both The Appian Way and the internal University Street (ground floor).
Internal amenity and sustainability		
1.	The scheme does not yet demonstrate a thorough, innovative and rigorous approach to sustainability.	The building will achieve a 5 star greenstar rating with key ESD principles presented at the second SDRP. A detailed ESD assessment has been undertaken and submitted with this EIS **Appendix S**.
2.	The client is encouraged to provide more decisive information regarding the academic structure of this campus to assist the design team in developing an appropriate response, including the likely faculties to be accommodated in the building and existing and projected student numbers.	The academic program has been refined and the form of the building is deliberately and formally expressive of its role as a vertical University campus through its public porosity, the multiplicity of terraces and balconies which are all connected to the University programs proposed within each level of the building. WSU plans to offer academic programs across disciplines of teacher education, psychology, arts and humanities, business (with a focus on Small and Medium Enterprises), IT (with a focus on

GANSW Commentary		Project Team/ Design Response
		Entrepreneurship and Industry 4.0), and Non-clinical Health. These academic programs align with three key research themes for the campus, which are: • Health, Aging and Healthy Living; • Advanced Manufacturing (Focussing on SME and Industry 4.0); and • Education. In supporting these programs the University is intending to develop partnerships with local business and industry, through co-located tenancy spaces in the building, and shared use of flexible workspace facilities with research partners. The future estimated student population is 2,000 per day, with Fitout Brief for 245 staff workspaces. The facilities will also include space for future fitout for University / Education use, as and when needed by the University.
Public domain and community benefits		
1.	The panel consider that the current proposal does not provide sufficient public benefits in exchange for the proposed increase in height and FSR. The panel acknowledge that exceeding the height control may in fact benefit the proposal but only if the bulk and mass is reduced such that overshadowing is minimised, and existing public spaces, including Paul Keating Park, are not appropriated by an influx of staff and students.	The proposed building is completely self-sufficient in terms of proving student and staff outdoor open space. There are 4 open terraces, 10 recessed balconies and an elevated courtyard distributed throughout the levels of the building providing diversity of orientation and occupation. The proposed increase in height and FSR are subject to a planning proposal submitted to Canterbury Bankstown Council in December 2018.
2.	The proponent should investigate ways to maximise solar access to Paul Keating Park and The Appian Way, minimise the bulk of the built form, interface with Paul Keating Park at the ground plane, and activate all four facades at the street level.	As per above, detailed shadow analysis was undertaken and the built form designed to maximise sunlight levels to public spaces:
3.	The panel consider that the public would benefit from use of WSU's existing facilities, such as the MARCS Institute, and it should be confirmed which facilities will be relocated to the Bankstown City Campus.	The academic program has been refined and the built-form responds to its role as a vertical campus. The MARCS institute will be relocated from Milperra to BCC along with the Badanami Centre.

GANSW Commentary		Project Team/ Design Response
Additional information for next SDRP		
1.	3D studies further resolved to demonstrate a developed response to bulk, scale, overshadowing, and materiality.	Presented at both Interim Meeting and March SDRP.
2.	Typical floorplans and sections demonstrating potential and flexible use of the building for education and commercial purposes.	Presented at both Interim Meeting and March SDRP.
3.	Typical floorplans and sections to demonstrate the ability of the large floor plate to create a best practice university teaching environment.	Presented at both Interim Meeting and March SDRP.
4.	Sections describing physical and visual connections between levels to illustrate the vertical campus concept.	Presented at both Interim Meeting and March SDRP.
5.	Shadow diagrams for 21 June between 11am-2pm demonstrating access to sunlight to public spaces including Paul Keating Park and Appian Way.	Presented at Interim Meeting and represented at March SDRP.
6.	Revised landscape plan addressing the issues outlined above.	Presented at March SDRP.
7.	Details of public benefits proposed as rationale for any height and FSR exceptions to development standards.	Planning Proposal addresses this requirement.
8.	Details of sustainability targets and proposed initiatives.	Presented at March SDRP.

Table 9 – Design response to GANSW Commentary after SDRP – 2 (12.March 2019)

GANSW Commentary		Project Team/ Design Response
Site Strategy		
1.	Clarify the alignment of The Appian Way between Rickard Road and the Compass development to the south to ensure a clear spatial reading of The Appian Way from the train station to the WSU building.	The reading of The Appian Way as an open Urban Space is recognised by the design team as a key design objective, so that the public and University users experience it as a renewed pedestrian street and destination visible from North Terrace. Setting the building back further from The Appian Way would further reduce floor plate sizes, making them less appropriate for a vertical university campus.

GANSW Commentary		Project Team/ Design Response
2.	A significant area of the ground floor fronting The Appian Way is taken up by circulation cores. Ensure there is permeability and a good interface with the public domain in this area.	The design concept for the site and ground level layout has been developed in response to several functional and spatial objectives: • Negotiation of level changes across the site, from a high point at the North West corner to a low point at the South West corner, ensuring that the changes in ground level integrate with the building foyer spaces, and providing seamless equitable access for all users. • Management of flood water levels across and around the site, including establishment of the building floor level and entry points, and careful design of the landscape treatments around the building to ensure that the potential flood water doesn't impact on other properties. • Creating active and occupied frontages at ground level along Rickard Road, and engaging with the current understanding of Council's intentions for the future streetscape along The Appian Way, and extending also to the interface with the Park. • Maintaining shared use of The Appian Way for vehicles and pedestrians, and additionally responding to the Council's objective that it provides a clear pedestrian link between Rickard Road and The Mall, on the southern side of Paul Keating Park. These needs have informed the design concept of creating a porous building at the ground and lower levels, that draws both landscape and pedestrians into and through the building. Key entry points are provided at the centre of the Rickard Road and Paul Keating Park frontages, connected by an internal 'University Street' and escalator route to high student use spaces above. A Foyer space to The Appian Way provides easy access from visitor drop off bays to the internal street and the side Lift Core. In concert with the other entrances this provides a diversity of entries to the different street addresses and different visitor needs, offering Lift access to all levels. The corners of the Ground level are formed by Retail spaces, and a tiered multi-purpose space,

GANSW Commentary		Project Team/ Design Response
		providing settings for visual and active engagement between the University and public community, and placing educational activity and innovation on display.
3.	Clarify the dimension of the stairs fronting Paul Keating Park and leading to the upper terraces. As currently indicated this stair appears to be too narrow to signify public access.	The stairs on the plans presented to the SDRP were 2m wide. The design of this stair will be developed so that it is wider and provides a clearer invitation to access the Hub Terrace via this outdoor route. This will be balanced with the need to manage building security.
4.	Clarify plan alignment of the southern edge with the adjacent Knowledge Hub.	The building design has been developed to utilise the full site extent and currently extends 1.16m further south than the knowledge hub.
Building form, bulk and height		
1.	The large cantilever of the upper levels exaggerates the scale of the building but does not seem to deliver sufficient public amenity benefits in terms of reduction to overshadowing. Refine the design of these upper levels to improve the benefits to the public domain and minimise the perception of bulk and scale of the building when viewed from Appian Way and Paul Keating Park.	The process of developing the proposed building form included extensive review and comparison of the shadow impacts of different form options. This process has ensured that the proposed form addressed both the University's facility requirements and maximises solar access to Paul Keating Park and The Appian Way throughout the year. As a point of comparison, shadow study diagrams were prepared to illustrate the shadows cast by an LEP compliant development on the site, having maximum height of 53m and FSR of 4.5:1, in comparison to the proposed form, having a maximum height of 83m and FSR of 8:1. Diagrams showing these studies side by side, for hourly intervals on the Equinox and Winter Solstice, were shown at the Interim Meeting and also in question time of the second SDRP. The full solar analysis assessment is submitted with this EIS within the Architectural Design Report.
2.	Clarify and illustrate the ability of the proposal to accommodate the increase in height and FSR over the LEP base-case with minimal impacts and an appropriate benefit to the public beyond the insertion of an educational use in this location.	As per above shadow diagrams were prepared to illustrate the shadows cast by an LEP compliant development on the site in comparison to the proposed form. It should be noted that a concurrent planning proposal is seeking to increase the maximum FSR and height standards applicable to the site under the LEP.

GANSW Commentary		Project Team/ Design Response
Architectural expression		
1.	The glass canopy fronting The Appian Way does not present itself as an integral part of the building. Investigate options for creating a civic scaled space at this entry point.	The design of the building 'in the round' necessitates that The Appian Way entry acts as a University shopfront entryway along the new public pedestrian street. Creating a large Civic Scaled entranceway here would be counter to the requirement for fine grained retail and engagement along this frontage. The design of the canopy, which is integral to the amenity of this pedestrian street and retail outlets has been reconsidered to provide an architectural expression that is more closely integrated with the overall building.
2.	Investigate opportunities for expressing the structure of the cantilevered floors.	Noted.
3.	Breakdown the scale of the building through further articulation of the façade, emphasising openings and further distinguishing between vertical blocks.	The strategy for the neutral 'frame' works to distinguish and delineate the geometry of the building mass. The colouration of the façade treatments, broken at each terrace level by recessed glazed infill, also serve to break up the scale of the building form.
4.	Further develop sun shading and fenestration in response to differing orientations, urban conditions and internal functions.	A full passive sun shading control system across all facades is incorporated to meet the ESD objectives of the project. These respond to both the sun conditions of the different orientations and their visual contexts.
Internal amenity and sustainability		
1.	Provide further development of the internal fit-outs and demonstrate that the same rigorous thinking that has informed the building will be incorporated into the fit-out.	The internal fit-out is being co designed by HDR and Lyons and forms part of this SSD application.
Public domain and community benefits		
1.	The proponent should persevere to engage with Council staff to resolve parking, circulation, landscaping and amenity issues along The Appian Way. The panel supports an integrated approach to the public domain.	The strategy along The Appian Way is to clearly define pedestrian movement within this shared use zone, create a progression of useable and public green and social spaces from north to south along the axis of The Appian Way, integrate vehicular drop off into a shared street environment that is paved with high quality materials and accommodate the flow of stormwater through the landscape. These principles help to define the intended uses of The Appian Way along its extent

GANSW Commentary		Project Team/ Design Response
		and ensure it is well connected to transport links, public amenities and the broader urban context.
2.	Clarify tangible public benefits being provided by the proposal.	A multitude of tangible public benefits are provided by the insertion of a tertiary educational establishment into the Bankstown CBD. These are addressed in detail within the concurrent Planning Proposal.
Additional information for next SDRP		
1.	3D views illustrating how the building presents itself to the broader context at pedestrian level (ie from Bankstown station and similar vantage points).	Presented at June 2019 SDRP.
2.	3D studies further resolved to demonstrate a developed response to bulk, scale, overshadowing, and materiality.	Presented at June 2019 SDRP. Detailed within the Architectural Design Report **Appendix E** and **Section 1.1.1** of this EIS.
3.	Typical floorplans indicating internal layouts and fit-out.	Presented at June 2019 SDRP.
4.	Shadow diagrams for 21 June between 11am-2pm.	Presented at June 2019 SDRP.
5.	Revised landscape plan addressing the issues outlined above.	Landscape plans are submitted along with this EIS **Appendix G** and detailed both within this EIS and within the Architectural Design Report **Appendix E**.
6.	Details of public benefits proposed as rationale for any height and FSR exceptions to development standards.	This is subject to a commercial in confidence lease agreement between Council and WSU.
7.	Results of wind studies.	Results of wind studies are contained within this EIS and **Appendix BB.**

Commentary from the GANSW following the third SDRP states:

"The panel acknowledges the majority of issues raised at the previous SDRP session have been addressed by the design team, and subject to the commentary below, broadly support the architectural approach for the project."

An assessment of the proposal against areas of concern following the third and final SDRP meeting is contained in **Table 10**.

Table 10 – Design response to GANSW Commentary after SDRP – 3 (05 June 2019)

GANSW Commentary		Project Team/ Design Response
General		
1.	**Bulk and scale of building** Beyond the inclusion of a university facility at the proposed location, which the Panel supports, the project has not yet demonstrated tangible public benefits to justify exceedance of the planning controls including height, FSR, and GFA.	Whilst it is noted that the Height and Floor Area of the project are subject to a separate Planning Proposal being considered by the Council, the feedback from the last meeting has been considered in the further refinement of the design as detailed in the following section of this table.
2.	**Overshadowing to Paul Keating Park** In the absence of controls for solar access to Paul Keating Park and The Appian Way, reference is made to the City of Sydney's solar access controls for 'The Drying Green' included in the Green Square Town Centre DCP2012.	In the absence of town planning requirements for the direct solar access to be maintained to the public open space of the Paul Keating Park, playground and pedestrian mall, the project team have referred to other precedent public open spaces in Sydney. The Drying Green Park in the Green Square Town Centre Development was identified as a comparable public open space. The Green Square Town Centre DCP identifies that the Drying Green needs to: 'achieve direct sunlight each hour between 11am and 2pm for at least 50% of the park' [Clause 3.1.1 (1)(k)]. The proposed building form enables direct sun access to a diversity of public activity zones across Paul Keating Park and The Appian Way throughout the year. The building performance is comparable to the benchmark precedent of the Drying Green. The design proposal achieves at least 50% of public open space at Paul Keating Park having direct sunlight for over 4 hours in the middle of the day and early afternoon. The full shadow analysis diagrams comparing the proposal and LEP compliant scheme are provided in the Architectural Design Report.
Site strategy		
1.	Clarify the alignment of The Appian Way between Rickard Road and the Compass development to the south to ensure a clear spatial reading of The Appian Way from the train station to the WSU building. Provide a site plan illustrating this spatial alignment.	Potential reading of The Appian Way alignment has been explored, including comparison of title boundary alignments, examination of the pedestrian environmental experience, and review of the morphology of the ground and elevated built forms. This has shown that The Appian Way is not defined by a singular alignment, and varies along its length from the Bankstown Train Station to Rickard Road. Notwithstanding this, the proposed building form maintains a clear spatial reading of

GANSW Commentary		Project Team/ Design Response
		The Appian Way when viewed from both Bankstown Station and Rickard Road. Further detail on the interpretation of The Appian Way alignment is contained within **Section 8.2** of this EIS and in the Architectural Design Report (**Appendix E**).
2.	Clarify public access to the landscaped terraces via the feature stair. Provide details of how public access will be managed.	The proposed feature stair from ground level to the Level 3 terrace has been revised in response to design issues associated with visual legibility, security management, and DDA compliance to ensure equity of access for all users. In response to these issues the Park Stair has been altered to incorporate an internal stair from Ground to Level 1, transitioning to an outdoor stair from Level 1 to Level 3. Public access is available to the Level 3 Student Hub Terrace within standard hours (8am – 10pm) either via the internal escalators, lifts or Park Stair. The Stair design has been integrated with the southern entry space, providing an immediately visible vertical link from the University Street to the public engagement services and facilities on Levels 1 and 2.
Architectural expression		
1.	Incorporate a version of the proposed coloured blades to the southern façade appropriate for its orientation to integrate this façade into the overall colour and material palette.	The southern façade does not require sun shading blades and as such floor to ceiling glazing has been retained to emphasize a visual connection to PKP. In lieu of blades, coloured mullion capping is proposed to provide a continuation of the façade colour treatment across this face of the building.
2.	The panel support the introduction of planting to building terraces and facades however, the addition of vertical gardens to the eastern façade does not reinforce the overall scheme of horizontal garden terraces and should be reviewed.	The east façade has been reviewed to integrate the expression of the terraces on this building face, maintaining the recessed glazed treatment that occurs at the terrace levels. The overall treatment of the East Façade, including solid aluminium panels, green wall and inset windows, has been developed further. The design provides amenity benefits of reducing glare to occupants of Civic Tower and providing a highly visible connection from Rickard Road to the green space of Paul Keating Park.
Public domain and community benefits		
1.	The proponent should persevere to engage with Council staff to resolve parking, circulation, landscaping and amenity issues	Consultation with Council regarding these issues is ongoing. WSU are collaborating with Council in relation to the draft Complete Streets and Paul

GANSW Commentary		Project Team/ Design Response
	along The Appian Way. The panel supports an integrated approach to the public domain.	Keating Park Master Plan. The new pedestrian ground level experience of The Appian Way, as proposed within the scope of the BCC project, will establish a design precedent for the future upgrading of The Appian Way between the BCC site and The Mall.

6. STRATEGIC CONTEXT

A range of strategic planning policies and design guidelines are also identified in the SEARs that are required to be addressed. These include:

- NSW State Priorities: Premiers Priorities
- Greater Sydney Region Plan – A Metropolis of Three Cities
- South District Plan
- Future Transport Strategy 2056
- State Infrastructure Strategy 2018 – 2038 Building the Momentum
- Crime Prevention Through Environmental Design (CPTED) Principles
- Better Placed: An integrated design policy for the built environment of New South Wales (GANSW, 2017)
- CBCity 2028 (Canterbury- Bankstown Council)

In addition, the following policies and draft policies have been addressed:

- Draft Sydenham to Bankstown Urban Renewal Corridor
- Bankstown CBD Local Area Plan
- Draft Bankstown Complete Streets

The proposal is consistent with the following planning strategies, district plans and adopted management plans as detailed below.

6.1. PREMIERS PRIOIRTIES

The NSW Premier has identified 14 priority areas essential for the growth and development of NSW. These include the creation of jobs and delivery of infrastructure. The proposal will contribute to the achievement of these priorities through the provision of new education infrastructure that will contribute to the generation of new jobs, particularly in Western Sydney. One of the 14 priority areas is “Lifting Education Standards” which the proposal will inherently facilitate.

6.2. GREATER SYDNEY REGION PLAN 2018 – A METROPOLIS OF THREE CITIES

The *Greater Sydney Region Plan, A Metropolis of Three Cities* (GSRP) was released by the Greater Sydney Commission (GSC) in March 2018 and sets a 40-year vision (to 2056) and establishes a 20-year plan to manage growth and change in Greater Sydney.

The key objective of the GSRP is to create 30 minute cities within Greater Sydney, providing residents with ease of access to jobs, education and health facilities, services and recreational spaces. Bankstown is identified within the GSRP as a ‘Strategic Centre’ and a ‘Health and Education Precinct’. The Plan illustrates that existing strategic centres will need to expand to match the growing population and health and education activities should be attracted into existing centres. The Plan identifies that expansion options for existing centres will need to consider building heights and outward growth. New tertiary education facilities should be located within or directly adjacent to centres, and ideally co-located with supporting transport infrastructure.

The development will generate new, major education facilities and services that are highly accessible and contribute to the provision of a 30 minute city for students and workers. The scale and influence of the development will further grow the precinct by attracting other businesses, industries and commercial research.

The development will provide new jobs and services for the primary function of the facilities (education) and the ancillary retail uses as well as providing job growth in the overall precinct. There is an emphasis on the multi-disciplinary curriculum to collaborate with the local industry and community as well as the university’s Government and NGO partners. The new educational facilities will further diversify the range of activities

within the centre. The proposed architectural design and provision of landscaped, open space improves the walkability and pedestrian orientation of the surrounding streetscape.

The propped development is consistent with the strategic objectives and directions of the *Greater Sydney Region plan – A Metropolis of Three Cities*.

Table 11 – Greater Sydney Region Plan

Greater Sydney Region Plan		
Planning Objective	**Description**	**Comment**
Infrastructure and collaboration		
A city supported by infrastructure		
Objective 1	Infrastructure supports the three cities	The proposed Bankstown City Campus will support existing infrastructure, encourage job creation, supporting existing and future services. The proposal will contribute to the vision of a 30 minute city through the provision of new education spaces within an existing centre already well serviced by public transport and planned for future public transport enhancements.
Objective 2	Infrastructure aligns with forecast growth-growth infrastructure compact	A Metropolis of Three Cities has identified Bankstown as an area that is forecast to experience significant residential and employment growth. These areas will require new and/or enhanced local and regional infrastructure to support growth. The proposed new tertiary campus will support the forecast growth of the Bankstown CBD.
Objective 3	Infrastructure adapts to meet future needs	The proposed campus has been designed so as to be able to accommodate future growth as well as advancements in technology. The floor plans have been designed to be flexible and adapt as the academic program develops over the years.
Objective 4	Infrastructure use is optimised	The proposed Bankstown City Campus will ensure better utilisation of existing infrastructure as well as committed infrastructure. Currently public transport utilisation rates are very low in Bankstown and it is expected the proposed campus will greatly improve these rates.
A collaborative city		
Objective 6	Services and infrastructure meet communities' changing needs	The proposed campus will provide improved access to tertiary education to the broader community. The proposal co-locates education infrastructure with existing transport infrastructure as per the aspiration of the GSRP.
Objective 7	Communities are healthy, resilient and socially connected	The BCC will integrate land use and transport to encourage active modes of travel and public transport use. The development also includes basement level end of trip facilities and ample at grade bicycle parking.

Greater Sydney Region Plan		
Planning Objective	**Description**	**Comment**
		The BCC will be home to an arm of the Badanami Institute which facilitates and supports Aboriginal and Torres Strait Islander people participating in tertiary education.
Objective 8	Greater Sydney's communities are culturally rich with diverse neighbourhoods	The proposed BCC will include a Badanami Centre for Indigenous Education, an initiative of WSU to support and inspire Aboriginal and Torres Strait Islander education. The proposed academic plan has been formulated to support and reflect the defining characteristics of Canterbury-Bankstown including a focus on high tech manufacturing.
Objective 9	Greater Sydney celebrates the arts and supports creative industries and innovation	The proposed Campus will have a strong focus on research and innovation. Spaces have been provided on the ground floor where artistic, cultural and creative works are visible, valued, distinctive and accessible.
Housing the city		
Liveability:		
Objective 12	Great places that bring people together	The BCC will attract residents, workers, visitors, enterprise and investment in the Bankstown CBD. The BCC has a strong interface with the public realm and adjoining open spaces which will facilitate an active ground plane particularly along The Appian Way and Paul Keating Park interfaces.
Objective 13	Environmental heritage is identified, conserved and enhanced	An ACHAR has been undertaken which involved a call for interested parties and ongoing engagement with Registered Aboriginal Parties (RAPs). RAPs were invited to provide comment on cultural links or significance of the site. The ACHAR concludes the site is not culturally significant. The Badanami Centre for Indigenous Education, which will be housed within the campus will enhance the connection to the traditional owners of the land.
Productivity		
A well-connected city		
Objective 14	A metropolis of three cities - integrated land use and transport creates walkable and 30 minute cities	The BCC will deliver education and research based jobs in a core location that can capitalise on the proposed Sydney Metro (South Western Line) Link connecting Bankstown to the Sydney CBD reducing the time people spend travelling, increasing people's access to jobs and business' access to workers.

Greater Sydney Region Plan		
Planning Objective	**Description**	**Comment**
Jobs and skills for the city		
Objective 18	Harbour CBD is stronger and more competitive	The BCC delivers jobs in a core location that can capitalise on the proposed Sydney Metro (South Western Line) Link connecting Bankstown to the Sydney CBD.
Objective 21	Internationally competitive health, education, research and innovation precincts	Health and education precincts offer many opportunities to drive and support international competitiveness and tertiary education institutions are a key factor in the development of health and education precincts. The proposed campus will provide education facilities, and services to support the precinct and growth of the Bankstown Health and Education precinct in a highly accessible area. The campus will attract associated businesses and industries to the Bankstown area and encourage the commercialisation of research.
Objective 22	Investment and business activity in centres	The BCC will provide intensive employment opportunities, which is the principal underlying economic goal for metropolitan and strategic centres.
Objective 24	Economic sectors are targeted for success	International education is a target sector within the GSRP for economic success. StudyNSW collaborates with education institutions, industry and local government in Western Sydney on implementing programs that enhance the student experience for international students. Western Sydney University is a key provider of higher education in the Central River and Western Parkland cities.
Suitability		
A city in its landscape		
Objective 31	Public open space is accessible, protected and enhanced	The proposal will contribute to the renewal and activation of the adjoining Paul Keating Park.
An efficient city		
Objective 33	A low-carbon city contributes to net-zero emissions by 2050 and mitigates climate change	The BCC will achieve a 5 start Green Star rating through an integrated ESD design approach.
Objective 34	Energy and water flows are captured, used and re-used	The ESD design approach seeks to deliver a very low energy and highly sustainable building including through the provision of a photo voltaic energy system will be installed on the roof.

Greater Sydney Region Plan		
Planning Objective	**Description**	**Comment**
Objective 35	More waste is re-used and recycled to support the development of a circular economy	The proposal will involve the promotion of waste recycling.
A resilient city		
Objective 37	Exposure to natural and urban hazards is reduced	The proposal has been designed to accommodate a 1:100-year flood event and rainwater tanks have been incorporated to detain roof water.
Implementation		
Objective 39	A collaborative approach to city planning	The Bankstown health and education precinct is identified as a collaboration area and WSU has been involved in the place based collaboration process led by the Greater Sydney Commission.

6.3. SOUTH DISTRICT PLAN

The *South District Plan* (SD Plan) was prepared by the GSC and came into effect in March 2018. The SD Plan is a 20-year plan to manage growth within the South District to achieve the 40-year vision for Greater Sydney as set out in the *Greater Sydney Regional Plan – A Metropolis of Three Cities*. The South District includes the LGAs of Canterbury-Bankstown, Georges River and Sutherland.

The SD Plan will inform: future local strategic planning statements (see **Section 6.11**); updates to local environmental plans; the assessment of planning proposals; and the preparation community strategic plans and policies.

The SD Plan identifies the Bankstown Health and Education Precinct as a key collaboration area. The wider planning of the Collaboration Area has commenced and includes the Bankstown CBD as well as Bankstown Airport and Industrial surrounds. The NSW Government committed $1.3 billion in March 2019 for Bankstown-Lidcombe Hospital upgrades which along with the WSU Bankstown City Campus set to open in early 2022 will anchor the Health and Education Precinct.

Action 33 of the SD Plan seeks to:

- Support links to tertiary education and research facilities to grow an emerging Bankstown-Lidcombe Health and Education Precinct;
- Facilitate the attraction of office and commercial floor space and allow commercial and retail activities to innovate;
- Encourage activation of secondary streets; and
- Enhance the quality of Paul Keating Park.

Key focus areas emerging for local strategic planning in the District as outlined in the GSC : “The Pulse of Greater Sydney Implementation Report July 2019” include:

- Collaboration to coordinate major infrastructure investments with the staging and location of growth;
- Increasing investment in fine-grain street level amenity and public domain;
- Ageing demographic requires changing social and community infrastructure needs;

- A focus on active transport to connect and strengthen centres;
- Opportunities for more intense and diverse employment uses in industrial lands; and
- Importance of urban tree canopy cover and landscaped areas in responding to climate change and creating great places.

The proposed Bankstown City Campus will provide a flagship campus for a world renowned university within an identified education and health precinct. The proposed built form has been designed with a key focus on enhancing Paul Keating Park and providing a fine grained retail interface with The Appian Way. Detailed analysis of solar impact, views, bulk and scale and pedestrian permeability have been undertaken to inform the proposed design.

6.4. STATE INFRASTRUCTURE STRATEGY 2018 – 2038 BUILDING THE MOMEMTUM

The State Infrastructure Strategy 2018 -2039 – Building the Momentum sets out the government's priorities for the next 20 years, and combined with the Future Transport Strategy 2056, the Greater Sydney Region Plan and the Regional Development Framework, brings together infrastructure investment and land-use planning for our cities and regions.

The strategy provides recommendations for NSW's key infrastructure sectors in regard to accommodating the forecast population growth and ageing population. Education is identified as one of the eleven key sectors. The proposal is consistent with the following strategic objective for education:

> *"Deliver infrastructure to keep pace with student numbers and provide modern, digitally-enabled learning environments for all students."*

The BCC will fulfil the strategy's objectives for educational infrastructure as the following will be provided:

- flexible learning spaces that can be easily adapted for changing technologies and teaching practices;
- contemporary communication and digital infrastructure which will facilitate contemporary teaching and high quality digital connections;
- the campus will accommodate a substantial proportion of the expected 25% increase in enrolments over the next 20 years;
- the BCC is a vertical campus which is considered suitable for meeting growing student populations;
- the campus has been designed to appropriate respond to the flood risks in the site;
- onsite car-parking provision which is considered to be appropriate;
- the proposal will grow the population of high skilled workers in Western Sydney as to facilitate the forecast increase in university qualification requirements for future jobs; and
- the proposed focus on SME and Industry 4.0 will drive growth and innovation within the specific industries in the surrounding area.

As such, the BCC will further the objectives of the State Infrastructure Strategy 2018 – 2039 – Building the Momentum.

6.5. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN PRINCIPLES

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

Predatory offenders often make cost-benefit assessment of potential victims and locations before committing crime. CPTED aims to create the reality (or perception) that the costs of committing crime are greater than the likely benefits. This is achieved by creating environmental and social conditions that:

- Maximise risk to offenders (increasing the likelihood of detection, challenge and apprehension);

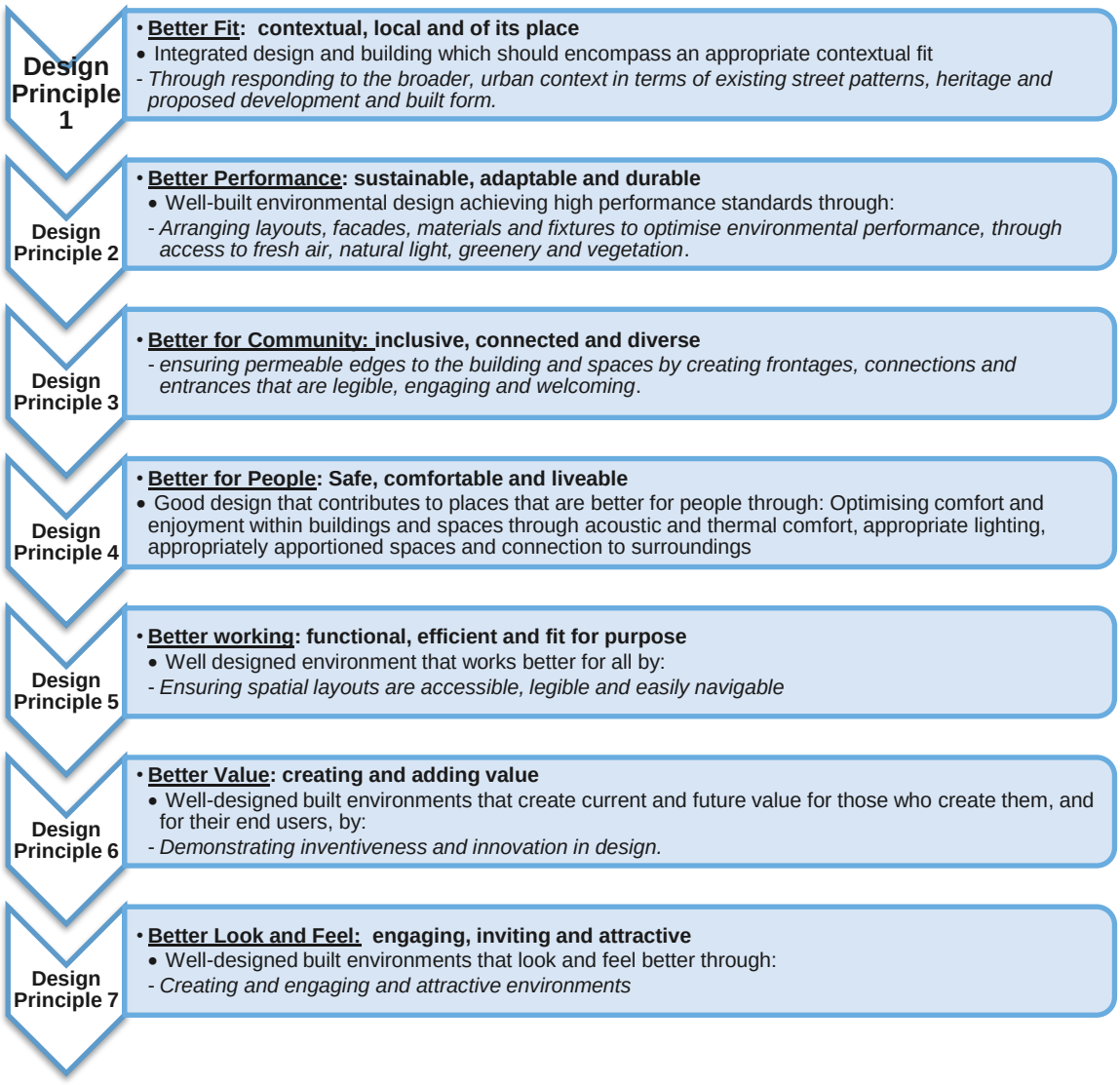
- Maximise the effort required to commit crime (increasing the time, energy and resources required to commit crime);
- Minimise the actual and perceived benefits of crime (removing, minimising or concealing crime attractors and rewards); and
- Minimise excuse making opportunities (removing conditions that encourage/facilitate rationalisation of inappropriate behaviour).

CPTED employs four key strategies. These are territorial re-enforcement, surveillance, access control and space/activity management. A CPTED report has been prepared by Urbis (**Appendix AA**) and **Section 8.18** outlines the CPTED principles and strategies that have been incorporated into the proposal to minimise risk.

6.6. BETTER PLACED

Better Placed is an integrated design policy for the built environment of NSW prepared by the Government Architect of NSW. Better Placed is about enhancing the design quality of our built environment, raising expectations and raising standards, about working better and creating better environments.

Seven distinct objectives have been created to define the key considerations in the design of the built environment. Achieving these objectives will ensure our cities and towns, our public realm, our landscapes, our buildings and our public domain will be healthy, responsive, integrated, equitable, and resilient.



The proposal has been designed with consideration of the Better Placed design objectives as detailed in **Section 3.6.1**.

6.7. CBCITY 2028

CBCity 2028 was adopted by Canterbury Bankstown Council on 26 June 2018 and reflects the community's priorities for Canterbury Bankstown's development by 2028. The proposal is consistent with the following priorities outlined within CBCity 2028:

- **Safe and strong**: the proposed BCC will effectively provide essential educational and commercial services to the local community. The BCC will also be able to accommodate different community groups and community events.
- **Clean & Green**: the proposal will provide education in regard to ecological strategies and practices. Substantial vegetation will be facilitated surrounding the development as well as on the proposed terraces and green wall. The proposed provision of parking will encourage the use of more sustainable methods of travel.
- **Prosperous & Innovative**: the proposal will facilitate state of the art facilities and equipment to educate contemporary technologies and business practices.
- **Moving & Integrated**: The proposal will encourage the use of existing and future public transport provisions as well as walking and cycling. This will be through the upgrade of The Appian Way and the provision of new bicycle parking.
- **Healthy & Active**: The proposal will integrate with Paul Keating Park and provide direct connections to and from the campus. This will encourage the use of the park. Furthermore, the vegetated terraces will also provide healthy leisure and study spaces. Furthermore, the strategy lists the provision of better schools as a method to achieving an active and healthy city.
- **Liveable & Distinctive**: the provision of a major educational facility will greatly support the growth of the city and improve liveability. The unique architectural design of the BCC will also greatly improve the distinct character of the city.
- **Leading & Engaged**: the proposed educational provisions will provide greater opportunities for locals to develop leadership, management and decision making skills to then apply to shaping Canterbury Bankstown. The university will also an encourage proactive actions within the local community as well as volunteering. Furthermore, CBCity 2018 specifically identifies the WSU Bankstown campus as a facet of the communities' ideal future.

6.8. SYDENHAM TO BANKSTOWN URBAN RENWAL CORRIDOR STRATEGY

The site is located in the Bankstown Precinct of the Sydenham to Bankstown Corridor Area, identified by the Department of Planning & Environment. Key aspects of the *Sydenham to Bankstown Urban Renewal Corridor Strategy* in relation to the Bankstown CBD include:

- Transport for NSW plan to deliver a new metro rail system and to upgrade 11 stations on the Bankstown Line.
- Bankstown has been identified as one of the centres for delivering more housing, jobs, public spaces, shops and cafes that are within walking distance of railway stations.
- Building heights are to be increased to accommodate high rise housing and mixed-use developments within 600m of Bankstown Train Station.
- There is substantial potential to redevelop sites and improve the public spaces at street level.
- The site is located at the heart of the Bankstown Precinct, where high-rise housing and mixed-use development have been identified as part of the future precinct character in the 'Land Use and Infrastructure Analysis' of the Draft Strategy.
- The Strategy indicates that high-rise housing would typically have a building height ranging from 9 to 25 storeys, depending on the scale of the centre. Bankstown CBD is a Strategic Centre, and it is anticipated it would have building heights in the higher end of the range.
- The level of infrastructure investment by the State Government on the Sydenham to Bankstown Urban Renewal Corridor needs to be justified by a substantial increase in the density around the upgraded

stations in order to provide the required levels of patronage to the railway line upgrade for Metro services.

The BCC proposal is consistent with the key aspects of the *draft Sydenham to Bankstown Urban Renewal Corridor,* which is currently under review by the DPIE and local Councils.

6.9. BANKSTOWN CBD LOCAL AREA PLAN

In September 2011, Council adopted the Bankstown CBD Local Area Plan (Local Area Plan) to transform the Bankstown CBD into the 'City for the City', a major activity and transport hub that services the City of Bankstown and the wider West Central Subregion.

The site is located within the Northern CBD Core (**Figure 17**) described in the Local Area Plan as:

> *"This precinct is located to the immediate north of the railway line. The railway station is the principal entry point to the CBD Core, followed by Chapel Road (north) and Rickard Road (east).*
>
> *The Civic Precinct and Paul Keating Park form the central focus, and the established character is distinctly commercial due to a concentration of major civic, office and retail buildings (namely Bankstown City Council, Bankstown Court House, Bankstown Police Area Command, Compass Centre and Bankstown Centro, which is a regional shopping centre).*
>
> *This precinct is highly accessible to the railway station and bus interchange, and as a result, this precinct is also characterised by taller buildings and higher densities compared to the other precincts."*

Consistency with the relevant strategic directions has been addressed within Section **6.3.2.2** of this report.

This proposal is consistent with the actions of the Bankstown CBD Local Area Plan, namely the following actions:

Action L2: Lead the way with better standards of building design.

Action L2 aims to achieve well–designed mixed use and residential development that makes the most of the location and provides interesting active street frontages. This is vital to distinguish the Bankstown CBD from other strategic centres and strengthen the liveability of the centre.

Well-designed mixed use development will help to attract corporate firms who seek buildings with contemporary facades, good quality finishes and excellent energy efficiency ratings as part of their corporate image.

Action L2 recommends preparing more detailed design controls for key strategic sites, which would make the Bankstown CBD a model of sustainable renewal and redevelopment. The key sites (for reasons including location, lot size and building age) include the Civic Precinct (Rickard Road) within which the site falls.

The Local Area Plan states that the during the redevelopment of identified key sites, built form should enhance the pedestrian environment by adding positive and active street frontages, practical mid–block connections and passive surveillance. Controls should also look to customise the heights and setbacks to achieve practical building envelopes and promote opportunities for landmark buildings and A–Grade office space.

The BCC proposes the redevelopment of an identified key site with a built form that enhances the pedestrian environment via the provision of an enhanced public domain and an active street frontage.

Action L4: Establish Sydney's best local Civic Precinct.

The site is a core location within the Civic Precinct, with interfaces to the Paul Keating Park, Bankstown Library and Civic Tower.

Action L4 promotes the development of the Civic Precinct as the primary location for local civic and administration services in the City of Bankstown.

This action identifies the need to better integrate Council's administrative office with Council's other citywide facilities in the Civic Precinct (namely the Council Chambers, Library and Knowledge Centre, and Paul Keating Park).

The BCC is consistent with Action L4 as it responds to the City's needs. It offers a unique opportunity to significantly reshape and add to the ongoing revitalisation of the Bankstown CBD, particularly in terms of completing the integration of Council's citywide facilities within the Civic Precinct.

Action I1: Plan for Additional Job Growth in the CBD Core.

This action aims to sustainably transform the Bankstown CBD by concentrating the 4,000 jobs target in the CBD Core. This is the preferred location as most residents in the City of Bankstown and the wider West Central Subregion can comfortably travel to the CBD Core within 30 minutes by public transport (i.e. rail and regional bus routes).

The CBD Core is becoming an active mixed use centre, the number of A–Grade buildings is increasing, which is a positive factor, although this is usually attached to residential development.

This follows Council's DCP amendment to require non–residential development on the lower floors, which is found to bring shops and small commercial offices to serve community needs. The employment trends indicate the Bankstown CBD will continue to emerge as a major employment precinct in the West Central Subregion, with job creation likely to occur in the retail, commercial, dining, entertainment, recreation, creative industries and education sectors.

The site is identified as a location where it is desirable to retain the ground and first floors as commercial and retail floor space to create active street frontages. The BCC includes ground floor retail tenancies with the first floor being occupied by staff and teaching uses. The proposed uses will create an active frontage to both the Appian Way and also provide passive surveillance of Paul Keating Park through the fully glazed southern façade.

Action I2: Strengthen the image and amenity of the Bankstown CBD.

This action aims to position the Bankstown CBD for the next wave of business investment. Council is aiming to strengthen the market attractiveness of the CBD Core and Bankstown City Plaza with an ongoing program of public domain and main street improvements, which include footpath widening, new street trees, better street lighting, new street furniture, murals and public art.

Action G10 lead the Way with Environmentally Sustainable Design.

Environmentally sustainable design is an approach that considers each building project from the initial planning stage to eventual decommissioning. There are five fundamental principles of environmentally sustainable design: orientation and structure design efficiency, energy efficiency, water efficiency, materials efficiency and indoor air quality. Improving building designs can save energy, water and money, while creating a more enjoyable and comfortable place to work and live.

The redevelopment of the Civic Precinct will provide the opportunity for a significant 'best practice' project to demonstrate concepts such as water reuse. The public domain works will also incorporate environmentally sustainable design; such as water sensitive landscaping works.

Action G11: Improve the Stormwater Run-off Capacity within the Bankstown CBD

Parts of the Bankstown CBD are subject to localised stormwater flooding, generally in association with the Stacey Street canal and the Salt Pan Creek canal. The affected areas include sections of Stacey Street, Cross Street, West Terrace, The Appian Way and parks. To upgrade the existing stormwater system and minimise the potential flood impact on properties, Council's priority will focus on requesting Sydney Water to upgrade the Stacey Street canal and investigate ways to upgrade the canal along The Appian Way.

The project proposes a mix of rainwater tanks and OSD to ensure post development stormwater flows are less than the existing situation thus improving the flood affectation of surrounding properties.

Action C7: Implement the Bankstown CBD Car Parking Strategy

At present, the off–street car parking supply in the CBD Core is around 5,000 spaces on private land and 2,000 spaces in Council car parks. Most Council car parks are located on the Ring Road to minimise the amount of traffic entering and congesting the local road network. At the same time, the Ring Road enables a high proportion of through traffic to bypass the CBD Core.

The Ring Road generally frames the CBD Core and comprises Rickard Road and Meredith Street to the north, Greenwood Avenue and Brandon Avenue to the west, and Macauley Avenue to the south. Stacey Street forms the eastern edge of the Ring Road. In March 2009, Council adopted the Bankstown CBD Car

Parking Strategy to better manage the public car parking supply in the CBD Core based on future residential and employment growth. The recommendations reinforce the policy position of locating the Council car parks on the Ring Road, and to dispose of certain other car parks for reasons of location and/or building age.

The BCC will provide 76 off-street car parks within the basement of the development which will service the needs of the building and promote use of public transport.

6.10. BANKSTOWN COMPLETE STREETS

The draft Bankstown Complete Streets Transport and Place Plan is a new 20-year plan, which focuses on improving transport networks and streetscapes in Bankstown. The plan was on public exhibition, from Monday 6 May to Monday 17 June. WSU provided a detailed submission to Council on the draft document and has been in ongoing discussions with Council to ensure the final Complete Streets Plan is consistent with the proposed WSU BCC.

Council within their agency response to the DPEs request for comments on the draft SEARs requested an assessment of the proposal against the draft document is undertaken as part of the SSD application.

Complete Streets states that:

"These concepts are based on high level base information and are indicative only in their resolution. Detailed site survey and analysis will be applicable to each to take the concepts to the next level of design."

The subject site is constrained by a number of parameters which have been thoroughly investigated and the most appropriate design response formulated. The WSU Project Team has undertaken this detailed site survey and analysis and formulated the most appropriate design response to the public domain.

Key themes throughout Complete Streets support the 'promoting pedestrian safety and amenity' by creating 'walkable streets' and 'people friendly environments' and it is considered this will promote safer and more vibrant streets. The provision of more active travel options, including safe cycle routes, between key destinations in the CBD including the WSU campus in encouraged. The provision of drop off zones for taxi and ride sharing services can assist in reducing congestion and provide safe collection points for staff and students. The north south link of The Appian Way from the Bankstown Train Station to the WSU site is predicted to have high pedestrian volumes and the proposed metro station will further increase pedestrian volumes along The Appian Way. Giving greater priority to active transport routes throughout the CBD will allow student and staff to move between destinations across the CBD more easily and safely.

Clear slight lines to landmark buildings, like the WSU campus and the Civic Precinct, from the Metro Station interchange will improve wayfinding. A core sight line being the north south spine connection along The Appian Way/ Northern Terrace. Leveraging from the grid pattern of the CBD to improve sightlines is supported as it will improve safety and way finding and promote walkability.

The WSU project team have determined that having a clearly delineated vehicle route in the northern section of The Appian Way is a safer and more efficient use of space. Natural traffic calming through the use of contrasting pavement, a narrow lane width and landscaping in the northern portion of The Appian Way will support the concept of The Appian Way as an Activity Spine for this key element in the Future Pedestrian Network.

Improved public transport integration with the new Metro Station interchange and a simplification of bus routes through the CBD is supported. WSU staff and students will be encouraged to travel by public transport to the CBD from locations across the LGA and the region. Improving accessibility to WSU campus by public transport will assist in forming new changing travel habits to the CBD and increase the demand for bus and rail services. It is also considered that public transport is the best way to move a large number of people to and from the CBD and create a safe pedestrian friendly environment.

Table 12 – draft Bankstown Complete Streets

Complete Streets Design Principle	WSU Design Response
General	
No net increase in public parking.	WSU propose to provide parking spaces to support users of the building as per the Bankstown DCP.

Complete Streets Design Principle	WSU Design Response
Existing 64 public parking spaces located on WSU site to be either retained on-site or relocated to another carpark. Maximum parking caps for developments within 400m of the Bankstown railway station.	No public parking is proposed.
WSU Site Area	The WSU site area as detailed within the planning proposal application and SSDA currently being prepared does not match the indicative alignment in the Complete Streets diagrams. As illustrated in **Figure** 6 – Aerial Photograph of the Site **and Figure 8** – within **Section 2** of this report, the WSU site area extends to the east rather than aligning with the Paul Keating Park eastern boundary. The WSU site also includes a portion of 375 Chapel Road to the south.
Future Weather protection. Awnings proposed for all elevations of WSU site.	The WSU BCC will provide contiguous undercover pedestrian routes around the building. An awning is proposed along The Appian Way.
Identity-focused cultural links. WSU BCCD is identified as a cultural destination although the identified trail route does not directly abut the WSU site.	The Cultural Trail is defined by a separated cycle link, funky furniture, rain gardens, unique pavers, and unique lighting. The public domain response proposed by WSU addresses all these points excluding the separated cycle link.
Large kerb radii and discourage slip lanes	A shortened deceleration lane and realignment of The Appian Way slightly east at the intersection with Rickard Road is proposed.
Introduction of on-street parking controls	This is supported as a method to encourage modal shift to more sustainable modes
Rickard Road Central	
Future Street Character Part of the ring road providing good access to the edges of the CBD and carparks and providing an attractive tree-lined gateway to the CBD.	
Provide additional street trees and underplanting to create a distinct continuous tree-lined ring road and gateway to the CBD.	The WSU proposal aligns with this design principle proposing the provision of new street trees along the roadside as per the Complete Streets Strategy.

Complete Streets Design Principle	WSU Design Response
Underground powerlines to enable full tree canopy growth	
Provide a two-way shared path along the south side. 1.8m pedestrian path 0.5m divider 2.5m two way separated bike path 2.6m landscaping with large trees	Complete Streets indicates a separate cyclist path plus pedestrian path within the title boundary of the WSU site. The provision of a separated bike path along Rickard Road is obstructed by existing built elements on either side of the WSU site, including the Civic Tower podium, the Bankstown Library and Knowledge Centre courtyard and substation along with other utilities infrastructure and a flood water culvert. The provision of an isolated portion of separated bike path along the frontage of the WSU site is deemed impractical given the existing adjoining built form prevents the provision of a contiguous bike path for any significant stretch. WSU propose that there is no segregation of pedestrians and cyclists along the WSU site frontage to Rickard Road and that the shared path proposed to the east is extended instead.
Upgrade footpath paving as per PDTM	The WSU proposal aligns with this design principle proposing concrete pavers to Rickard Road interface to match the PDTM.
The Appian Way	
Future Street character A key ‘activity spine’ that links the civic precinct and the new university to the rail and bus interchange and south to schools and parks. A shared zone environment prioritises pedestrian movement and encourages street life and retail activity.	
The Appian Way as a Shared Zone Proposes that the cars drive down the centre of the open space, in a shared pedestrian zone.	The WSU proposal realigns the vehicular carriage way to the east of The Appian Way. The one-way single lane vehicular carriage way would be part of a shared zone with a restricted speed. The proposal also allows for a drop-off/pick-up zone here would could also be used by coaches and potentially as a taxi rank in the evening. A pedestrian thoroughfare along the western boundary of The Appian Way along the subject site would allow an active pedestrian centred zone adjoining the proposed retail frontages, and be a

Complete Streets Design Principle	WSU Design Response
	continuation of pedestrian and retail activity on the southern portion of The Appian Way. A linear park would be used to separate the pedestrian activity and vehicular access area.
The Complete Streets illustrates indicative street furniture, elevated planters and other landscape elements.	Landscape treatment in the linear park including low planting and trees, with select fixed landscape elements, designed to mitigate impacts of overland flow in flood inundation conditions. Ground levels to be DDA compliant through the linear park as well as meeting flood requirements.
Priority outdoor dining area of the southern portion of The Appian Way.	The WSU project team has undertaken extensive overshadowing analysis to ensure this portion of The Appian Way is not unduly affected by overshadowing caused by the proposed WSU BCC. It is considered that restricting vehicular access will assist in creating a vibrant and pleasant eat street where people will linger in the street. A consistent approach to The Appian Way with pedestrian priority to the south is preferred.
Proposed Street Trees along Rickard Road and The Appian Way frontages of WSU site.	Street trees are supported along Rickard Road and The Appian Way.
Paul Keating Park	
Seeks an east-west pedestrian only link and active frontage along the southern boundary of the subject site. It is understood that the Council master planning of Paul Keating Park is underway and detailed work is not available.	The WSU project team has been working with council on the interface of the campus with the Paul Keating Park. The WSU campus design has allowed for an east-west pedestrian connection along the southern boundary of the WSU site. Active uses are incorporated into the southern frontage of the WSU campus. The southern frontage is to be highly porous to promote connectivity and activation of Paul Keating Park.

6.11. CANTERBURY- BANKSTOWN LOCAL STRATEGIC PLANNING STATEMENT

Council is creating a Local Strategic Planning Statement (LSPS), which will be the next step in setting the strategic direction for development within the Canterbury-Bankstown LGA.

The LSPS will interpret the vision already developed and captured in CBCity 2028 (Community Strategic Plan) and turn this into a planning blueprint to guide the future of Canterbury-Bankstown up to 2036.

Council's website states the LSPS will:

- *Provide a land use plan to protect, enhance and extend the City's green spaces and waterways;*

- *Promote housing diversity, including affordable housing;*
- *Ensure the City's centres remain productive and employment areas prosper;*
- *Protect the amenity of residential areas and advocate for strengthening public transport access to the City;*
- *Concentrate on integrated and convenient movement across the City and beyond to the cities of Sydney, Parramatta and Liverpool; and*
- *For the first time, cement the critical importance of Canterbury-Bankstown within the Sydney metropolitan area, linking to key jobs and activity centres in the North West, Macquarie Park and second Sydney airport.*

  - *https://haveyoursay.cbcity.nsw.gov.au/local-strategic-planning-statement-lsps*

The LSPS starts the process to developing a new City-wide Local Environmental Plan and Development Control Plan for Canterbury-Bankstown, along with other important strategic documents.

The Canterbury-Bankstown LSPS is expected to be released for public exhibition in coming months.

7. STATUTORY PLANNING CONTEXT

The following environmental planning instruments are relevant to the proposal and are assessed against the SSD within this section:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Environmental Planning and Assessment Regulation 2000 (EP&A Reg)
- State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)
- State Environmental Planning Policy 64 – Signage (SEPP 64)
- State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)
- Biodiversity Conservation Act 2016 (BC Act)
- Draft State Environmental Planning Policy (Environment)
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)
- Draft Environmental Planning Policy (Remediation of Land)
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
- State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (Education SEPP)
- Bankstown Local Environmental Plan 2015 (BLEP)

7.1. ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 (NSW)

The *Environmental Planning and Assessment Act 1979* (EP&A Act) sets the assessment framework for State Significant Development (SSD) and includes provisions to ensure that development proposals are subject to detailed assessment and provide opportunity of public involvement. The SEARs require that the under Section 4.38 of the EP&A Act the Minister for Planning (or his delegate) is the consent authority for SSD. Section 4.40 requires evaluation of the development application against Section 4.15 of the EP&A Act.

As such, this Environmental Impact Statement contains an assessment against Section 4.15 of the EP&A Act in **Section 8.**

7.2. ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

Section 78A(8A) of the EP&A Act requires that all development applications for SSD be accompanied by an EIS prepared by or on behalf of the applicant in the form prescribed by the regulations. Schedule 2 of the EP&A Regulation provides that environmental assessment requirements will be issued by the Secretary with respect to the proposed EIS. This EIS has been prepared to address the requirements of Schedule 2 of the EP&A Regulation and the SEARs.

7.3. STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011 (SRD SEPP)

State Environmental Planning Policy (State and Regional Development) 2011 (**SEPP SRD**) identifies development types that are of State significance, or infrastructure types that are of State or critical significance. In accordance with Schedule 1 (Clause 15) of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP), the Project qualifies as SSD as the CIV of the project is in excess of the requisite SSD threshold of $30 million for Educational Established projects (refer to Appendix A).

Pursuant to Clause 11 of SEPP SRD, development control plans (whether made before or after the commencement of the SEPP) do not apply to SSD.

7.4. STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

State Environmental Planning Policy (Infrastructure) 2007 (**ISEPP**) provides the legislative planning framework for infrastructure and the provision of services across NSW. Schedule 3 states that if a development will contain 50 or more car parking spaces and has with frontage to a classified road (pursuant to Clause 101) it must be referred to the Roads and Maritime Services (**RMS**).

Accordingly, as Rickard Road is a Classified Road (regional) the consent authority must consider any submission from the RMS, the accessibility of the site concerned and any potential traffic safety, road congestion or parking implications of the development.

7.5. BIODIVERSITY CONSERVATION ACT 2016

The purpose of the *Biodiversity Conservation Act 2016* is 'to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.'

In the case of SSD, an application must be accompanied by Biodiversity Development Assessment Report (BDAR) unless the Secretary of the Department of Planning and Environment (DPE) and Chief Executive of the Office of Environment and Heritage (OEH) determine that it is not likely to have any significant impact on biodiversity values.

A request for a BDAR waiver was prepared by ELA and BDAR wavers (**Appendix Z**) were granted by the OEH on 6 March 2019 and the DPE on 8 March 2019. Therefore, no further assessment under the Biodiversity Conservation Act 2016 is required.

7.6. STATE ENVIRONMENTAL PLANNING POLICY NO.55 – REMEDIATION OF LAND

State Environmental Planning Policy No.55 – Remediation of Land (**SEPP 55**) provides a state-wide planning approach for the remediation of land and aims to promote the remediation of contaminated land to reduce the risk of harm to human health or the environment. Clause 7(1) requires the consent authority to consider whether land is contaminated, and if so, whether the land will need be remediated before the land is used for the intended purpose.

A Detailed Site Investigation (DSI) was undertaken by Douglas Partners Pty Ltd (**Appendix M**). The study included an assessment of the geological and hydrogeological data, council documentation, aerial photographs, NSW EPA records and Heritage records and a detailed site inspection to identify potential contaminants of concern. Soil and groundwater sampling and analysis was undertaken to determine the level of potential for contamination on the site.

It was found that the site had previously been used for commercial land uses which have since been demolished between 1991 and 2003 to establish the existing car park. The EPA contamination database illustrates that the site and the adjoining properties have not been identified as contaminated sites.

Relevant mapping and records including *1:25 000 Acid Sulphate Soils Risk Mapping, CSIRO Atlas of Australian Acid Sulfate Soils* found that there is a low probability of acid sulfate soil occurrence.

The site inspection involved the drilling of twelve (12) boreholes and collection of soil and groundwater samples. The soil sample contaminants were below the Limit of Reporting (LOR) or the Site Assessment Criteria (SAC) and there was no asbestos detected at the reporting limit of 0.1g/kg. It was found that the concentration of contaminants in the groundwater were either below the LOR or SAC except for some concentrations of zinc and copper which are considered typical of groundwater conditions within an urban setting.

As such, the proposed development is considered suitable as the potential for both groundwater and soil contamination is low. The proposed SSD is appropriate following the conditions below:

- **Unexpected Finds** - DP recommends the incorporation of an unexpected finds protocol (UFP) to establish a strategy / management procedure to be followed during construction works, should unexpected finds be uncovered; and

- **Waste Classification** - A waste classification assessment should be undertaken during construction works to classify fill material for off-site disposal or potential re-use.

A Hazardous Buildings Materials (HBM) Register was also undertaken by Douglas Partners Pty Ltd (**Appendix N**) which concluded no hazardous building materials were found on the site, including asbestos containing materials, synthetic mineral fibre, polychlorinated biphenyls, lead paint systems and lead dust. As such, the register provides informative recommendations to be considered if HBM are later identified or assumed present.

The investigations concluded in both the DSI and HBM Register that subject to the provided conditions, the site will be appropriately remediated if required.

7.7. DRAFT STATE ENVIRONMENTAL PLANNING POLICY (CONTAMINATION)

The Draft Remediation of Land SEPP intends to supersede SEPP 55 – Remediation of Land as a part of the DPE's review and update of existing SEPPs. The new SEPP intends to retain the relevant objectives and provisions of SEPP 55 whilst integrating contemporary contamination management approaches.

The draft SEPP intends to alter the requirements for which remediation works require development consent (category 1) and which works that may be carried out without development consent (category 2). The updated remediation works under category 1 & 2 is based on consultation with industry experts which has determined which remediation works are complex and require specialist expertise.

As detailed in **Section 7.6: State Environmental Planning Policy No.55 – Remediation of Land**, the subject site has been determined to have minimal contaminants and HBMs. As such, it is unlikely that the proposed development will require remediation works. If there are unexpected finds during construction and remediation works are required, the appropriate consent will be sought.

7.8. STATE ENVIRONMENTAL PLANNING POLICY NO.64 – SIGNAGE

State Environmental Planning Policy No.64 – Signage (SEPP 64) sets out planning controls for advertising and signage in NSW. The SEPP requires signage to be compatible with the future character of an area, provides effective communication in suitable location, and is of high-quality design and finish.

Clause 8 and clause 13 of SEPP 64 prevents development consent from being granted to signage unless the consent authority is satisfied that it is consistent with the objectives of the SEPP and has satisfied the assessment criteria specified in Schedule 1.

A detailed assessment of the proposed signage in accordance with SEPP 64 is included at **Table 13** below, which concludes that the proposed signage is compliant with SEPP 64 and is consistent with its objectives. On this basis, it is considered that the signage satisfied the requirements of SEPP 64.

Table 13 – "SEPP 64 Schedule 1 Assessment"

SEPP 64 Provision	Comment	Compliance
Character of the Area • Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located? • Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	• The proposed signage is consistent with the civic and commercial character of the Bankstown CBD. The signage will promote the provision of educational use within the precinct and therefore highlight the public services promoted in the area. • The locality currently consists of predominantly minimalistic, capitalised identification signs at the various service buildings. As such the proposal is consistent with the existing signage within the precinct.	✓ ✓

SEPP 64 Provision	Comment	Compliance
Special areas • Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	• The proposed signage will not intrude or detract from the heritage listed Council Chambers located south west of the site. A HIS was prepared by Urbis as detailed in **Section 8.5** which concludes no adverse impacts the identified heritage item. The design of the signage has been designed so as to not detract from the aesthetics of the Paul Keating Park.	✓
Views and Vistas • Does the proposal obscure or compromise important views? • Does the proposal dominate the skyline and reduce the quality of vistas? • Does the proposal respect the viewing rights of other advertisers?	• All proposed signage will be attached to the building facades and not protrude above the structure or obscure any views. • The proposed signage will be visible with the skyline as some signs will be located at the top elevations of the building. However, the high-quality design of the signage will enhance the existing character of the civic precinct. • The proposed signage will not compete against the viewing rights of any surrounding advertisers.	✓ ✓ ✓
Streetscape, Setting and Landscape • Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape? • Does the proposal contribute to the visual interest of the streetscape, setting or landscape? • Does the proposal reduce clutter by rationalising and simplifying existing advertising? • Does the proposal screen unsightliness? • Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	• The scale, proportion and form is appropriate considering the desired streetscape character of the precinct. • The proposed coloration, lighting, scale and positioning of the signage will greatly improve the visual interest within the streetscape. They will also substantially liven the Bankstown skyline. • There is no existing signage or advertising on the site. • The proposed signs will not screen any unsightly elements. • The proposed signage does not protrude above the proposed building rather is attached to the building facades.	✓ ✓ ✓ ✓ ✓
Site and Building	• The proposed signage designs and locations are consistent with the scale	✓

SEPP 64 Provision	Comment	Compliance
• Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located? • Does the proposal respect important features of the site or building, or both? • Does the proposal show innovation and imagination in its relationship to the site or building, or both?	of the proposed building as well as its unique cantilevered design. • The proposed signage respects the use as well as the site's history of providing public services. • The proposed signs present innovation and imagination in how it is distributed and scaled to the different, distinct segments of the proposed building, including the podium and cantilevered levels.	✓ ✓
Associated devices and logos with advertisements and advertising structures • Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	• The signage's lighting devices and WSU logo have been wholly integrated with the campus structure.	✓
Illumination • Would illumination result in unacceptable glare? • Would illumination affect safety for pedestrians, vehicles or aircraft? • Would illumination detract from the amenity of any residence or other form of accommodation? • Can the intensity of the illumination be adjusted, if necessary? • Is the illumination subject to a curfew?	• The proposed signage will not result in any unacceptable glare. • The illumination will not affect the safety of pedestrians, vehicles or aircraft. • The proposed illumination will not detract from the amenity of adjoining residential properties. • The intensity of the illumination will be adjusted if required. • Illumination will be subject to a curfew if required.	✓ ✓ ✓ ✓ ✓
Safety • Would the proposal reduce the safety for any public road? • Would the proposal reduce the safety for pedestrians or bicyclists?	• The proposal will ensure that road safety is not impacted. • The proposal will not reduce safety for pedestrians or bicyclists. • The proposed signage will be positioned on the campus' facades and	✓ ✓ ✓

SEPP 64 Provision	Comment	Compliance
• Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	will therefore not obscure any sightlines.	

7.9. STATE ENVIRONMENTAL PLANNING POLICY (EDUCATIONAL ESTABLISHMENT AND CHILD CARE FACILITIES) 2017

The *State Environmental Planning Policy (Educational Establishment and Child Care Facilities) 2017* (ESEPP) aims to ensure that universities are established effectively and consistently. It incorporates standardised planning provisions relating to child care centres, schools, universities and TAFEs, streamlining approval processes.

The Education SEPP establishes consistent State-wide assessment requirements and controls and takes precedence over other environmental planning instruments. In accordance with Clause 45(1), development for the purpose of a university may be carried out by any person with development consent on land in a prescribed zone. The B4 Mixed Use Zone within which the site is located is a prescribed zone for the purposes of the ESEPP. As such, development consent is sought for the proposed works.

7.10. DRAFT STATE ENVIRONMENTAL PLANNING POLICY (ENVIRONMENT) 2017

The *Draft State Environmental Planning Policy (Environment) 2017* provides for the protection and management of the natural environment. The Explanation of Intended Effect for the draft Environment SEPP was exhibited from the 31 October 2017 until the 31 January 2018.

This draft Environment SEPP proposes to simplify the planning rules for a number of water catchments, waterways, urban bushland, and Willandra Lakes World Heritage Property by repealing and consolidating the following seven SEPPS:

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

The site is not subject to any of the above SEPPs. As such, it is unlikely to be captured by the Environment SEPP when it is gazetted.

7.11. BANKSTOWN LOCAL ENVIRONMENTAL PLAN 2015

The *Bankstown Local Environmental Plan 2015* (BLEP 2015) is the principal environmental planning instrument governing development at the subject site. As assessment against the relevant provisions has been undertaken in the subsections below.

7.11.1. Zoning and Permissibility

The site lies within the "B4 (Mixed Use)" zone under the BLEP as illustrated in **Figure 54** below. As illustrated in **Table 14**, the proposed development is entirely consistent with objectives of the B4 Mixed Use zone.

Table 14 – B4 Mixed Use Objectives

Objective	Response
To provide a mixture of compatible land uses.	The proposed educational land use is compatible with the broader range of commercial, retail, residential and recreational land uses within the Precinct.
To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.	The site provides educational land use in a location easily accessible via public transport. The proposed BCC will include a significant number of bicycle racks, bicycle storage lockers and end of trip facilities to encourage walking and cycling.
To maintain the role of the Bankstown CBD as a major metropolitan centre.	The proposed development will encourage the growth of the Bankstown CBD by providing high quality educational and enterprise uses set within an attractive and accessible environment, that will add to the activity within the area.

The proposed land use is defined as:

> *"Educational establishment"* and *"Commercial Premises"*

Educational establishments and Commercial Premises are specifically identified as being permitted with consent in the B4 zone.

Figure 54 – Extract from BLEP Zoning Map

Source: BLEP

7.11.2. Height

The Height of Buildings Map to BLEP 2015 identifies the site as being subject to a 53 metre height standard. With a height of 83 metres, the proposed development does not comply with the 53 metre height standard.

Figure 55 – Extract from BLEP Height of Buildings Map

Source: BLEP

A Planning Proposal has been submitted which proposes a maximum permissible height of 83m on the site. This planning proposal is expected to be gazetted during the assessment of this SSDA. This application has been prepared with regard to the revised controls presented in this Planning Proposal. The proposed development has been designed to maximise its resultant social benefits by maximising its GFA within in the town centre whilst minimizing visual bulk and maximising solar access to both Paul Keating Park and The Appian Way Alignment. The proposed height is derived from the relevant site constraints. As such, the proposed height is considered to accord with the objectives of the BLEP height controls. For details refer to Section 8.

7.11.3. Floor Space Ratio

The Floor Space Ratio (FSR) Map to BLEP 2015 identifies the site as being subject to a 4.5:1 FSR standard. FSR refers to the ratio of the Gross Floor Area (GFA) of development to the site area. With a GFA of 29,120 m^2, and a site area of 3,381 m^2, the proposed development has an FSR of 8:1, which does not comply with the 4.5:1 FSR standard.

Figure 56 – Extract from BLEP Floor Space Ratio Map

Source: BLEP

A Planning Proposal has been submitted which proposed a maximum permissible FSR of 8:1 on the site. This planning proposal is expected to be gazetted during the assessment of this SSDA. The FSR has been proposed in tandem with the proposed height of the development as to maximise the public benefit of the educational development. The proposed design and horizontal articulation allows the increased bulk of the building to be consistent with the existing character of the locality. The proposed FSR is considered to accord with the objectives of the BLEP FSR controls. For details refer to Section 8.

7.11.4. Heritage

Clause 5.10 – Heritage conservation applies to land on which a heritage item is located, land that is within a heritage conservation area (HCA) or land in the vicinity of a heritage item or HCA.

The is not identified as within a HCA. Council Chambers (375 Chapel Road, Bankstown) is identified as a local heritage item and is located to the south west of the site with Paul Keating Park as shown in an exert from the BLEP 2015 Heritage Map **Figure 57**. A Heritage Impact Statement has been prepared by Urbis (**Appendix T**) which concludes the proposed WSU BCC will not have a negative impact upon the heritage significance of this item.

Other heritage items in the surrounding area include the following:

- Bankstown Hotel–102 Bankstown City Plaza (Local Heritage Item #I1)
- Shop (former accommodation house)–109 Bankstown City Plaza (Local Heritage Item #I2)
- Bankstown Railway Station building and platforms–143 Bankstown City Plaza (Local Heritage Item #I3)
- Bankstown Parcels Office (former)–143 Bankstown City Plaza (Local Heritage Item #I4)
- Shop “Rosen Chambers’–346 Chapel Road (Local Heritage Item #I5)

Figure 57 – Extract from BLEP Height of Buildings Map

Source: BLEP

7.11.5. Proposed Amendments to BLEP 2015

The Planning Proposal seeks to amend the height of building (HOB) standard under Clause 4.3 and the Floor Space Ratio (FSR) standard under Clause 4.4 of the Bankstown LEP 2015 as per **Table 15**.

Table 15 – Proposed amendments to Bankstown LEP 2015

Development Standard	Existing max.	Proposed max.
Cl 4.3 Height of Buildings (HOB)	53 metres	83 metres
Cl 4.4 Floor Space Ratio (FSR)	4.5:1	8:1

7.12. BANKSTOWN DEVELOPMENT CONTROL PLAN 2015

Clause 11 of *State Environmental Planning Policy (State and Regional Development) 2011,* states that Development Control Plans do not apply to State significant development.

Notwithstanding this, the proposal has been assessed against the key relevant controls of the *Bankstown Development Control Plan 2015* (BDCP 2015) **Table 16**.

The DCP identifies 3 precincts of distinctive functional and physical character that make up the mixed use areas in the Bankstown CBD. These are the Northern CBD Core, Southern CBD Core and Bankstown City Plaza precinct. The BCC is located within the Northern CBD Core.

The Civic Precinct and Paul Keating Park form the central focus of this precinct, and the established character is distinctly commercial due to a concentration of major civic, office and retail buildings (namely Bankstown City Council, Bankstown Court House, Bankstown Police Area Command, Compass Centre and Bankstown Central, which is a regional shopping centre).

This precinct is highly accessible to the railway station and bus interchange, and as a result, this precinct is characterised by taller buildings and higher densities compared to other precincts. The desired character is to have the Northern CBD Core precinct continue to function as the heart of the City of Bankstown, with a mix of retail and commercial activities on the ground and first floors, and high density living above.

Envisaged development will generally be in the form of tall buildings to create an identifiable skyline image for the Bankstown CBD. The tallest buildings will generally locate around Paul Keating Park to define the

Civic Precinct and to take advantage of the amenity provided by the park. The railway station will continue to be the principal gateway to the Bankstown CBD and a generator of high pedestrian movements. Pedestrian access to and from the station will therefore remain a high priority, and it is proposed to create a friendly first impression.

Figure 58 – Bankstown CBD Precincts

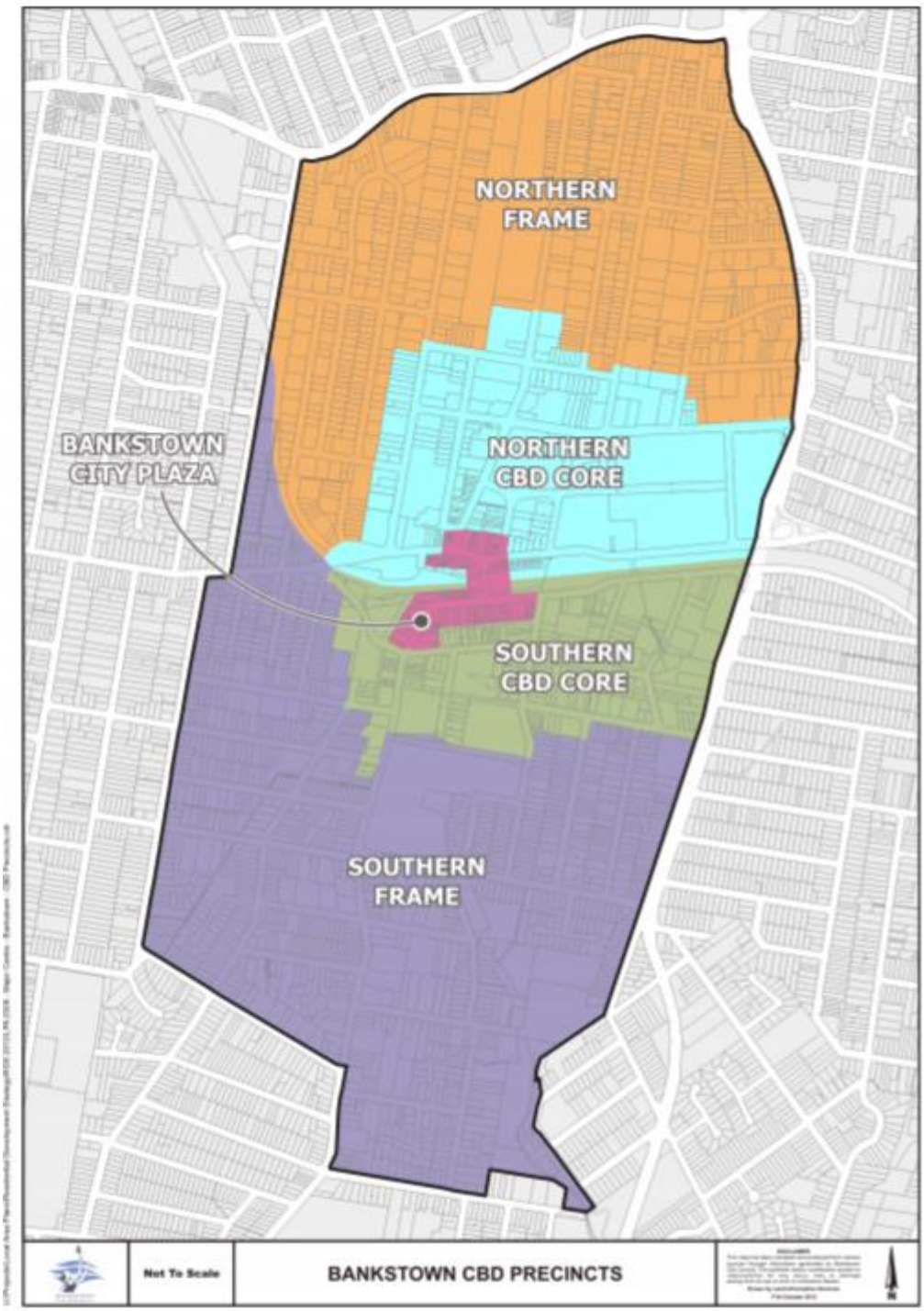


Figure 59 – Northern CBD Core Precinct

Source: Bankstown DCP

Table 16 – Bankstown DCP 2015 Compliance Table

Component	Comments
Part A1 Centres	
1. Desired Character	The proposal is consistent with the desired character for the Northern CBD Core Precinct as: • It will contribute towards the precincts established character as a commercial core by providing a mixed use development that provides commercial retail and education land uses. • It is located and designed to complement Paul Keating Park and promote the park's function as a central focus point. • It will of a high density and height, wholly capitalizing on the site's proximity to the railway station and interchange. • It will provide ground floor retail premises that will be immediately accessible from the public domain. • The development will contribute towards the Northern precinct's identifiable skyline.

Component	Comments
	• The proposed realignment and upgrade to The Appian Way will support pedestrian travel north from the Railway Station
2.1 Building Form • Development must comply with the minimum street setback of Nil metres • The proposed development must consider whether the proposed setbacks respond to site conditions, surrounding context and the desired future character of the precinct.	• The proposed development complies with the nil setback requirement. • The proposed setbacks that form the development's podium, tower and cantilever has been specifically designed as to respond to the existing built form and open spaces in the locality. For details, refer to **Section 3.6** and **Section 8.2.**
2.6 Building Orientation • The proposed development should be orientated as to maximise solar access in mid-winter with maximised glazing facing north and avoidance of glazing facing east and west.	• The proposed orientation and provision of glazed facades as well as sunshades and louvres ensures that insulative and energy performance is maximised throughout the site. The proposed north façade will be glazed. For details, refer to **Section 3.13, Section 3.7** and **Section 8.17**.
2.7-2.8 Building Design • Development must articulate facades to achieve a unique and contemporary architectural appearance • Development must use colour, modulation and articulation to improve the appearance of blank party walls	• The proposed development has substantial façade modulation with its unique building form, resulting from the building's unconventional tower shape and cantilevered design. • The material selection for the proposed louvres contains a mix of different finishes of a sandstone colour scheme. Furthermore, a vertical garden façade system will be installed to provide a striking appearance. For details, refer to **Appendix E, Section 3.7** and **Section 8.2**
3.2 Active Street Frontages • The frontage along Rickard Road is identified as an essential area for commercial and retail floor space. • Design must ensure ground floor is same general level as the footpath and directly accessible from the street. • Ground floor provides a positive street address in the form of entries, lobbies and clear glazing. This is to promote passive surveillance.	• The proposed frontage along Rickard Road will be activated by the proposed ground floor retail tenancies that front the public domain. • A majority ground floor will be slightly raised as to appropriately address the flooding restrictions that apply to the site. However, the ground floor retail tenancies and lobby area will be directly accessible from the street. • The proposed ground floor area will provide numerous entries into the various retail tenancies as well as the lobby area. A majority of the ground floor podium will be glazed, allowing clear sightlines into the publicly usable spaces and exhibitions. For details, refer to **Appendix E.**

Component	Comments
3.3 Vehicle footpath crossings • Car park entries, driveways and loading docks must locate on lanes and minor streets.	• The proposed vehicular entrance will be via the Library and Knowledge Hub driveway which is located to the east of the site, separate to Rickard Road and The Appian Way.
Part B2 Commercial Centres	
5.1-5.6 Façade design	• The proposed facades and ground floor designs has been addressed in the assessment against **BDCP 2015, Part A1 Centres** above.
5.10 Attic and roof design • Development must incorporate a high quality roof design with a unique architectural appearance and combines high quality materials and finishes.	• The proposed roof design will be a flat design with a minor protrusion to accommodate lift and stairway access. This roof design is consistent with the civil and commercial towers that exist within the locality.
5.13 Awnings • A traditional box awning must be provided continuously along retail streets and an awning design that isn't a traditional box is acceptable if it is an integral features of the building design or if it isn't susceptible to degradation.	• A glazed awning is proposed at the east elevation, covering the pedestrian thoroughfare which will be parallel to The Appian Way relocation. This awning has been designed to integrate with the unique architectural design of the campus building. The awning's glazing will be properly maintained to ensure that there isn't any visual degradation.
5.19-5.20 Lighting	• All light emissions will be appropriately controlled as detailed in **Section 3.10** and the lighting strategy within the Architectural Design Report **Appendix E.**
5.23 Access to sunlight	• The access to sunlight assessment is assessed in **Section 8.4.**
5.27 Landscaping • The proposed development must provide at least 1 street tree per 5m of primary frontage.	• The appropriate street trees will be provided as detailed in **Section 3.9.**
5.28-5.29 Entrances	• The entrances to the development are appropriately positioned as detailed in **Section 3.7** and **Section 5.**
5.31-5.35 Building design and natural surveillance	• The appropriate security and natural surveillance design strategies are detailed and assessed in **Section 8.16.**

Component	Comments
Part B4 Sustainable Development	
The Objectives of Part B4 of this DCP are: • To have the design and operation of development incorporate water conservation measures • To have the design and operation of development incorporate energy efficient practices.	The objectives of Part B4 of BDCP 2015 are met through the strategies and designs outlined within **Section 8.17** and **Appendix S.**
Part B5 Parking	
2.1 Off-street parking spaces	• The proposed parking rates is considered to be acceptable. Refer to **Section 8.13** and **Appendix Q.**
2.7 Parking requirements for people with disabilities	• The proposed development includes 4 universal access parking spaces.
3.2-3.3 Parking Location	• The appropriate compliance with Australian standards are detailed in **Appendix Q** and **Appendix Z.**
Section 4 Access driveway width and design	• The appropriate driveway dimensions and layout has been integrated. Refer to **Appendix D** and **Appendix Z.**
Section 5 Other Considerations	• The appropriate dimensions, provision of loading zones, security systems, pedestrian access and bicycle parking will be provided. Refer to **Section 8.16, Appendix D, Appendix Z** and **Appendix BB.**
Part B7 Educational Establishments	
	Part B7 of the DCP supplements the Bankstown LEP 2015 by providing additional objectives and development controls to facilitate best practice in the design and function of educational establishments and other certain facilities in the Bankstown. The development controls include traffic management, building envelopes, play areas and landscaping generally only relate to primary and secondary schools not tertiary schools.
Part B12 Flood Risk Management	
	The appropriate assessment and response strategies are detailed in **Section 8.9, Appendix I** and **Appendix J**
Part B13 Waste Management and Minimisation	
	Refer to the waste management plan provided at **Appendix DD**.

8. ENVIRONMENTAL IMPACT ASSESSMENT

This section describes the way in which the key issues identified in the SEARs have been assessed. It provides a comprehensive description of the specialist technical studies undertaken regarding the potential impacts of the proposed development and recommended mitigation, minimisation and management measures to avoid unacceptable impacts.

8.1. SUITABILITY OF THE SITE

The proposed WSU Bankstown City Campus follows on from the successful delivery of innovative and state of the art learning, teaching and research facilities in the Parramatta CBD and more recently the Liverpool CBD.

The site at located at 74 Rickard Road, is owned by Canterbury - Bankstown Council, and subject to a lease agreement between the Council and the WSU.

The site is suitable for the proposed development and will achieve the following key planning outcomes with resultant community benefits:

- The proposal is consistent with Greater Sydney Region Plan: A Metropolis of Three Cities which supports the establishment of Health and Education within strategic centres. The proposed development maximises floor space in the Civic Precinct of a strategic centre, supported by proposed transport and infrastructure investment.
- Consistency with the vision for Bankstown CBD set out in the Sydenham to Bankstown Urban Renewal corridor. The proposal reflects an appropriate built form and scale that is commensurate with the vision for Bankstown CBD Station Precinct as expressed by the emerging scale of development on adjacent and surrounding lands. The concept will also leverage off significant investment in the current and future transport infrastructure accessible to the site, providing increased education and employment opportunities in a well serviced location.
- Increasing tertiary education in a highly accessible location. The relocation of the academic programs form the Milperra Campus and introduction of new programs in the Bankstown CBD campus will increase opportunities for tertiary education attainment.
- Improved Pedestrian access and connectivity. The proposal delivers a high quality landscaped public domain that links to the adjacent Paul Keating Park, The Appian Way and the future Council customer service centre. The BCC includes key plaza, seating areas and landscaping to provide shade, and link to pedestrian linkages through the site, providing for future connectivity. The provision of The Appian Way pedestrian pathway will enhance the public domain and significantly contribute to the quality of the pedestrian footpath network within the immediate locality.
- A high standard of architectural, urban and landscape design: Lyons Architecture (Base building design), Aspect Studios (Landscape Design) and HDR (Fitout Design) have prepared a design response which responds to the opportunities and constraints of the site and context, as well as feedback received from Council, it's urban design consultant, as well as the NSW Government Architect and Design Review Panel.
- A strong focus on collaborative research and employment opportunities through fostering of strong research links with industry and facilitating student placements, internships and graduate opportunities.

Some other potential benefits of locating the BCC within the Bankstown CBD are, as follows:

- Increased capacity to conduct and showcase research and teaching relevant to the region;
- Allow the exhibition of current research and its impact and relevance to local industry;
- Enable industry led research and development and provide a unique opportunity for local businesses to exchange knowledge and link with other national and international research precincts;
- Link to the joint venture and start-up businesses and contribute to the objectives of the regional economic development supported by Canterbury Bankstown Council;

- Partnerships with Council to expand social infrastructure including the Knowledge Hub: Spaces within the building are to be publicly accessible to expand social infrastructure and engage with the surrounding public domain; and
- Economic benefits for existing business and new business to cluster in the City Centre that service the new vertical campus with mutual benefits for students and staff.

Following an analysis of the site and its surrounding context and the applicable State and local planning policies, it is considered that the proposed development is consistent with the strategic and statutory planning provisions which apply to the site. Accordingly, the site is considered suitable for the proposed use.

8.2. BUILT FORM AND URBAN DESIGN

The design process considered a range of issues around the impact and integration of the proposed development with its immediate surroundings. This considered visitors and occupants of the existing and future residential neighbours, public buildings and open space. The size of the proposed building has been considered in relation to the current and future context of the site.

Consultation with the GANSW and the Council identified a range of issues which have been key to the development of the proposed design as detailed in **Section 5.1**.

Key impacts include:

1. Alignment of The Appian Way

Council have identified The Appian Way as a future pedestrian prioritised street link connecting Rickard Road to The Mall and Bankstown Train Station, with open space above and new building frontages providing active “Eat Street” retail tenancies.

The GANSW and SDRP have emphasized the importance of creating a clear alignment of The Appian Way with the following comments received:

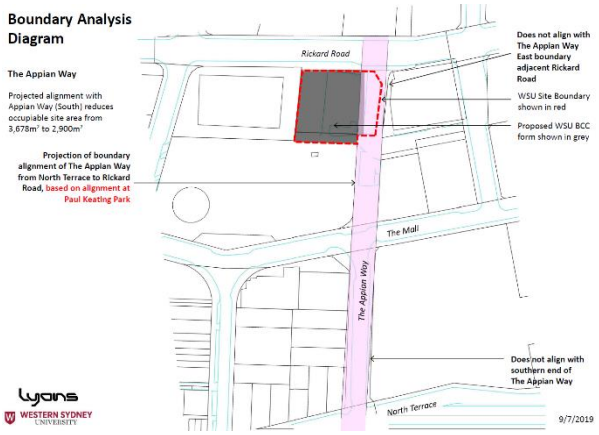
- Overhanging of the building mass over The Appian Way above ground floor level is not supported. The Appian Way should be retained as a street open to the sky.
- Clarify the alignment of The Appian Way between Rickard Road and the Compass development to the south to ensure a clear spatial reading of The Appian Way from the train station to the WSU building.

The reading of The Appian Way as an open urban space is recognised by the design team as a key design objective, and this space has been designed so that the public and University users experience it as a vibrant active pedestrian street and destination. The building massing has been significantly setback within the site to accommodate a wide visual corridor along The Appian Way visible from North Terrace.

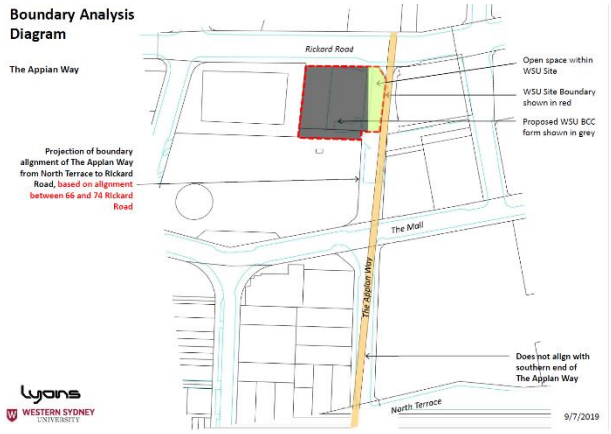
There is an absence of a singular alignment for The Appian Way as illustrated in **Figure 60** below. The BCC is alignment is based on pedestrian experience of the ground plane, and the existing built forms as illustrated in **Figure 61**.

The BCC maintains an open view corridor along The Appian Way to provide a visual connection through the Bankstown CBD. Setting the building back further from The Appian Way would further reduce floor plate sizes, making them less appropriate for a vertical university campus.

Figure 60 – The Appian Way Alignment



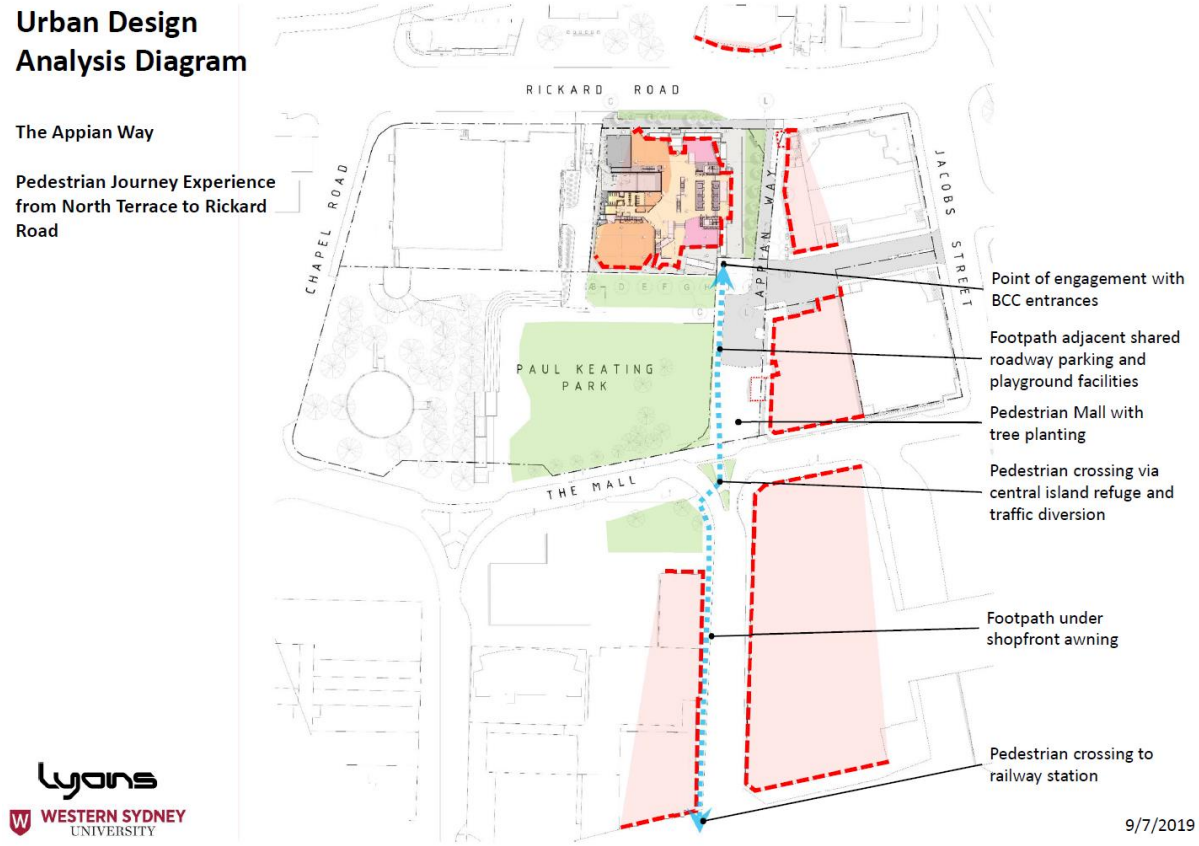
Picture 47 – Aligned from South



Picture 48 – Aligned from North

Source: Lyons

Figure 61 – The Appian Way interaction with BCC



Source: Lyons

2. The Appian Way Landscape Design

The landscape strategy along The Appian Way is to clearly define pedestrian movement, create a progression of useable and public green and social spaces from north to south along the axis of The Appian Way, integrate vehicular drop off into a shared street environment that is paved with high quality materials and slow the flow of stormwater with deep pockets of landscape. The careful combination of these principles helps to define the intended uses of The Appian Way along its extent and ensure it is well connected to transport links, public amenities and the broader urban context.

Larger areas of lawn to the north and south create inviting point of entry, capture the lunch time sun and offer a meeting point conveniently located adjacent to retail spaces that spill out into The Appian Way. The extent

is bound by several large deciduous shade trees and large areas of dense under planting which aim to capture, and filter site run off and offer more intimate zones for respite as a counter pint to the busy lawns and pedestrian spine.

Trees are positioned to the east of the building basement to take advantage of a deep soil zone and are aligned to create and strengthen a tree lined boulevard further defining intimate spaces seating zones and a shared street environment for occasional traffic and drop off. Seating is intended to create vibrant social zones.

3. Relationship with Adjoining Buildings

To ensure a scalar relationship to adjoining civic buildings is created, the lower building form has been aligned with the form of the adjoining Library and Knowledge Centre parapet. This level is also closely aligned with the top of the chamfered glazed base of the Council Building.

The mid building form is in alignment with Civic Tower, providing a consistent datum to all the Civic Precinct buildings fronting Rickard Road.

4. Use of Paul Keating Park

Both Council and the SDRP requested WSU develop a built form which would mitigate overuse of Paul Keating Park and ensure that the University didn't take over the existing public domain through appropriate connection to the building and the provision of sufficient outdoor amenity for users of the building

Open spaces are provided throughout the BCC to support outdoor group breakout and more reflective study activities and prevent over utilisation of Paul Keating Park. The steps in the building form create a series of substantial terraces, providing break-out space and access to outdoor amenity, complementing the shared uses and destinations on these levels.

The lower terrace, Level 3 aligns with the Student Hub facilities and provides a mix of socially engaging spaces. The mid terrace at Level 7 aligns with the top of the escalators and teaching spaces. Level 13 terrace aligns with the Conference facilities and providing spaces to support meeting activities and breakout between conference sessions. Level 16 provides outdoor amenities for education uses. The terraces at Level 3 and 7, and the ground level open space along The Appian Way, are also provided with integrated glazed canopies. These extend the scale of shelter and comfort in these key outdoor spaces during a broader range of weather conditions.

5. Market Appropriate Floor Plates

Key to achieving the delivery of an internationally competitive education and innovation precinct is delivering floor plates that will attract and retain targeted sectors and therefore the proposed massing of the development has been driven by the delivery of appropriate floor plates to meet WSU's functional requirements.

In developing the proposed floor plates (approximately 2,400m² for the podium and 1,600m² for the mid to high-rise), WSU have identified that the educational teaching space design and strategy is constantly evolving, as such floor plates must be future proofed to remain optimal. Key future proofing strategies that have driven the proposed floor plates include:

- Large contiguous spaces;
- Ability to subdivide;
- Ability to connect vertically; and
- Access to outdoor spaces.

As a result, the proposed floor plates are large and contiguous, which requires balanced urban design and planning to ensure the functional requirements are met within an appropriate building envelope.

6. Landscaping and Public Domain

A detailed landscape scheme has been prepared by Aspect and is illustrated in the Architectural Design Report (**Appendix E**) and Landscape Plans (**Appendix G**). The landscape scheme has been designed with the flexibility to integrate with the proposed upgrades to Paul Keating Park once they are undertaken.

The proposal makes a significant contribution to the public domain through the provision of a renewed pedestrian The Appian Way and upgrades to Rickard Road pedestrian pathway. The landscape quality of the development will be further enhanced through the provision of landscaped terraces and balconies.

Summary

Consideration of these issues has informed the Urban Design Principles, outlined in Section **3.6.1**, the generation of the Proposed Building Form, outlined in **Section 3.7**, and the review and reduction of the proposed floor area of the project.

As discussed above, the proposal provides an appropriate built form response to its context as it:

- provides an articulated and stepped building form, relating the building to the Library and Knowledge Hub to the west and the Civic Tower to the east;
- allows a flexible building envelope, whilst minimising the visual impact of the development;
- meets the functional requirements of WSU, including large, flexible and efficient floor plates for the building; and
- provides for pedestrian circulation and landscape softening within the ground plane.

Cumulative Impacts

Notwithstanding the complexity of responding to the surrounding built form, the proposal establishes an appropriate relationship with the surrounding development through an innovative design solution, which has been developed through a rigorous design process. The proposed building height has been modulated, providing a 4 storey podium, a 10 storey midrise and a 5 storey tower.

This proposal provides a transition in building height from the Library and Knowledge Hub to the west to the Civic Tower to the east as illustrated in **Figure 62**. The stepped nature of the built form allows for landscaped terraces on levels 7, 13 and 18 to soften the vertical built form and enhance the building's amenity.

Figure 62 – South western elevation

Source: Lyons

The general building massing proposed within this SSD DA were carefully considered throughout the design process, with the alternative building massing approach given support by Council and the GANSW.

Mitigation Measures

The proposal has been subject to rigorous urban design testing and assessment throughout the Planning Proposal and detailed design process to develop the optimal built form and urban design outcome. The key drivers for the proposed built form and its evolution are detailed within this EIS.

Council is currently undertaking several strategic design projects to address broader Urban Design opportunities, with input from WSU as a key stakeholder. These include the creation of an Urban Design Framework for the Northern CBD Core, strategies around engagement with the future Sydney Metro station, the Complete Streets Strategy, and a Masterplan for Paul Keating Park.

WSU and the design team for the BCC have engaged with Council around these strategies, including meeting with the Council's design consultants for the Urban Design Framework and Paul Keating Park Masterplan, and providing feedback to the Draft Complete Streets Strategy.

The project team and WSU anticipate further consultation with the Council as these strategies are refined and developed, in order to ensure the successful integration of the BCC with the future context and public realm.

8.3. VISUAL IMPACT

A series of photomontage views are provided (**Appendix F**), illustrating the impact of the proposed building compared to the existing situation when viewed from the public domain and key vantage points around the site. The views used as part of the assessment are consistent those specified within the SEARS and include:

- the southern end of The Appian Way, adjacent to the railway corridor looking northward;
- the southern end of Paul Keating Park looking northward;
- The Mall, looking between Civic Tower and the Hoyts building, looking north west;
- Council Chambers looking north east;
- the corner of Rickard Road and Lady Cutler Avenue, looking west;
- the view from the corner of Chapel Road and Rickard Road, looking east;
- Apex Reserve looking south toward Bankstown City Centre; and
- Wattle Street, opposite Mt Lewis village centre, looking west.

In addition the following views were also assessed:

- Conway Road looking South;
- Rickard Road from Meredith Street looking East;
- South Terrace view looking North from Restwell Street; and
- Stacey Street Bridge looking North West.

As detailed throughout this EIS, the proposed development has been subject to rigorous design testing throughout the design process. WSU and the design team has placed an intense focus on presenting an appropriate visual outcome for the site and the surrounding context and it is through these intensive processes that the proposed development has emerged.

Existing Environment

The existing development on site comprises an at grade car park and low level landscaping. Key clear views towards the site include vistas along Rickard Road from the East and West, and additionally from the South, from the Railway station approach along The Appian Way. From the north, direct views to the site are generally obstructed at ground levels by the surrounding mid height mixed use and residential apartments. The top of the Council Building can be seen from more distant elevated vantage points including from Apex Park adjacent to the Hume Highway, Mt Lewis Shops on Wattle Street and the Stacey Street railway overpass.

These views of the site, together with closer proximity views from the immediate surrounding streets and the Park have been considered in the development of the design and are included in the SSDA documents.

Assessment

Consideration of views and vistas to the site were key considerations in the development of the building form. The site and proposed height mean that it will be clearly visible along view corridors along The Appian Way, along Rickard Road, and from more distant vantage points.

The impact of the proposal is assessed as follows:

- It will act as a landmark to identify Paul Keating Park and the Civic Precinct.
- Together with the Council Offices building, it will also act as a bookend marking the north end of the future pedestrian prioritised The Appian Way.
- The building will transform the view out from adjacent buildings that currently overlook the undeveloped site.
- The heritage significant architectural elements of the Council Chamber Building will not be dominated by the proposal;
- The building form converses with the adjoining built form with the Podium aligning with the Library and Knowledge Hub and the mid tower creating a “soft datum” aligned with the Civic Tower; and
- The proposal is not out of character or inconsistent with the massing and scale of new and existing development within the Bankstown CBD. Specifically, the proposals articulated façade and modulated roof form creates a dynamic and interesting skyline.

Figure 63 – Visual Impact Assessment

Picture 49 – The Appian Way looking North Existing

Picture 50 – The Appian Way looking North Proposed

Picture 51 – Paul Keating Park looking North Existing

Picture 52 – Paul Keating Park looking North Proposed

Picture 53 – The Mall, looking between Civic Tower and the Hoyts building, looking north west Existing

Picture 54 – The Mall, looking between Civic Tower and the Hoyts building, looking north west Proposed

Picture 55 – Council Chambers looking north east Existing

Picture 56 – Council Chambers looking north east Proposed

Picture 57 – Corner of Rickard Road and Lady Cutler Avenue, looking west Existing

Picture 58 – Corner of Rickard Road and Lady Cutler Avenue, looking west Proposed

Picture 59 – View from the corner of Chapel Road and Rickard Road, looking east Existing

Picture 60 – View from the corner of Chapel Road and Rickard Road, looking east Proposed

Source: Art + Form

Picture 61 – Apex Reserve looking south toward Bankstown City Centre Existing

Picture 62 – Apex Reserve looking south toward Bankstown City Centre Proposed

Picture 63 – Wattle Street, opposite Mt Lewis village centre, looking west Existing

Picture 64 – Wattle Street, opposite Mt Lewis village centre, looking west Proposed

Picture 65 – Conway Road looking South Existing

Source: Art + Form

Picture 66 – Conway Road looking South Proposed

Picture 67 – Rickard Road from Meredith Street looking East Existing

Picture 68 – Rickard Road from Meredith Street looking East Proposed

Picture 69 – South Terrace view looking North from Restwell Street Existing

Picture 70 – South Terrace view looking North from Restwell Street Proposed

Picture 71 – Stacey Street bridge looking north west Existing

Picture 72 – Stacey Street bridge looking north west Proposed

Source: Art + Form

The following changed outlooks and view impacts are noted:

- **Council Offices**: Distance from the BCC: minimum Lower levels 26.1m, Upper levels 31.8m. The fully glazed west façade currently overlooks the site and is highly exposed to western sun in the afternoon throughout the year. The BCC will shade the building and offers outlook to green façade, as well as the colour treatment and play of shadows shifting across the façade during the morning.
- **Knowledge Hub**: Distance from the BCC: 12.5 to 14m. The east façade, which accommodates study seating and circulation between the façade adjacent to bookstacks, currently overlooks the site through the folded horizontal shade screens. These screens break up the view out and provide shade to morning sun. The BCC will shade some morning sun.

- **Rickard Road residences**: Distance from the BCC: 32m. The residential apartments diagonally across Rickard Road from the site currently have substantial open outlook across the site and Paul Keating Park. As the BCC is on the south side of Rickard Road it won't shade the residential buildings. The buildings retain a clear view south down The Appian Way, although the southwest outlook from the residences will be reduced in scale. The outlook to the BCC will include the colour treatment of the horizontal shading plus the green edge planting on Levels 3 and 7 and new street trees.

- **Paul Keating Park**: Although defined by a perimeter concrete path and pole lighting, the park is not currently contained along the edge of the site. It merges spatially with the existing carpark. The building will occupy this existing void between the Knowledge Hub and Council Offices, with the Podium aligning with height of these existing forms and offering a highly permeable, occupiable and active sheltered edge at ground. The terracing and landscape planting concepts for the building form above, provide new elevated green spaces and backdrop to park activities

- **Compass Site Development**: Distance from the BCC: Minimum 94m. This residential and commercial development will include apartment towers up to a similar height to the BCC. The lower retail space along The Mall will receive some shading from the BCC for a short period in the middle of winter. The residential apartments will look across the park to the BCC, including the new elevated green spaces, and able to view the overall elevation colour treatment and iconic cantilever.

It is also noted that the site has significant strategic potential, and this is reflected in the uplift recommended in the concurrent Planning Proposal. Having regard to the above, it is not reasonable for existing residents and owners of the surrounding developments that currently receive views over the subject site to expect that these views will be maintained in perpetuity. The retention of these views is only contingent on the subject site not being redeveloped pursuant to Council's vision.

In view of the above, and with regard to the detailed renders in the VIA, the visual impact of the proposal is considered to be acceptable, having regard to its built form and materials, when viewed from the locations tested.

As noted in the EIS, the architectural design of the proposal has had regard to a number of design considerations in addition to view impacts, including the need to facilitate market appropriate floor plates, reflect the high accessibility and amenity of the locality, minimise overshadowing, provide an extension of The Appian Way and make a positive contribution to the future built form context of the Bankstown CBD. The design outcome by Lyons is considered to be the most appropriate balance of these considerations and the proposal will have an overall positive visual impact on the locality.

Mitigation Measures

No mitigation measures.

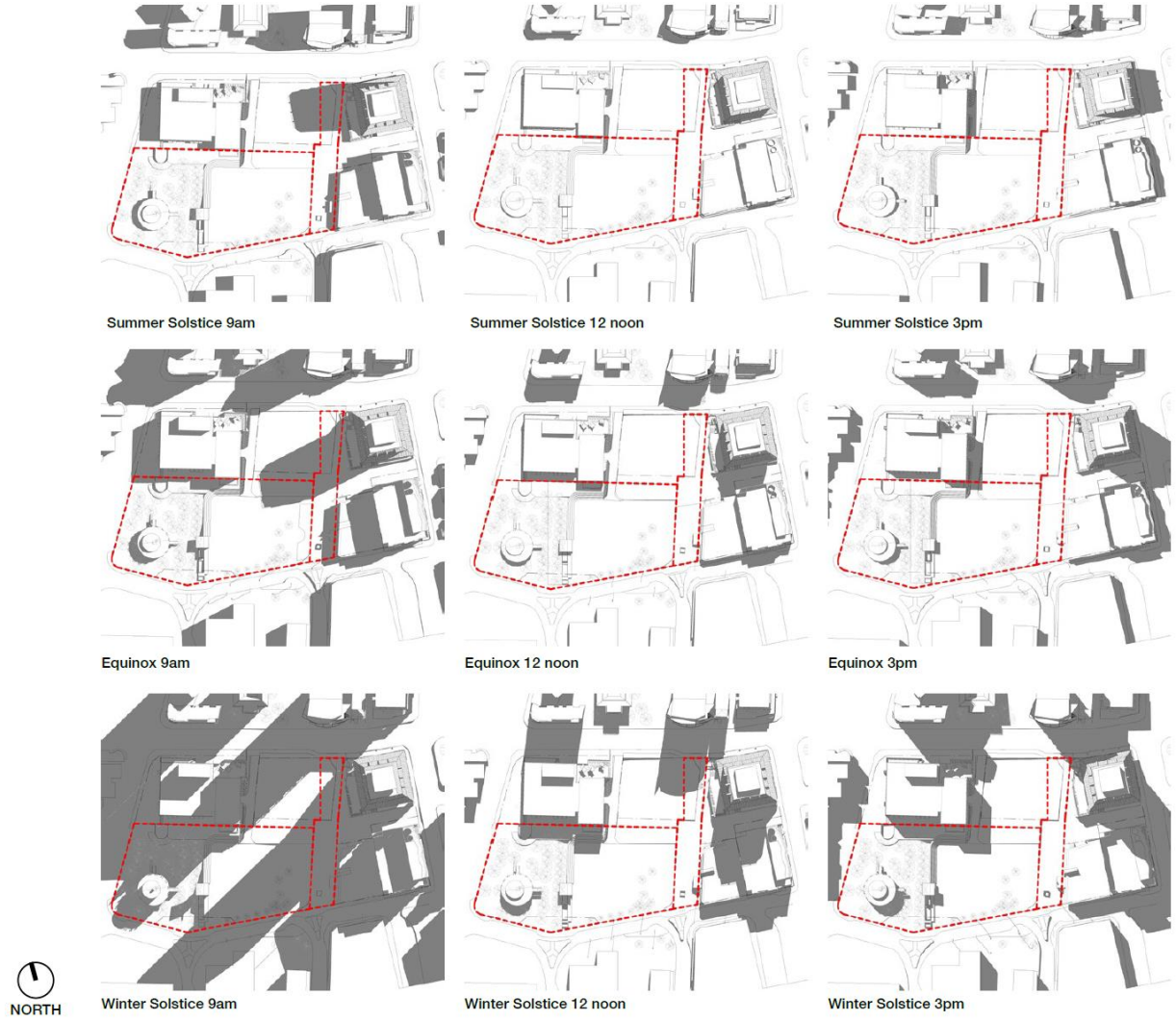
8.4. SOLAR ACCESS

The site is located on the northern side of existing public open space (Paul Keating Park and The Appian Way) and as such the potential shadow cast by the building has been a key concern during the design process, with the minimisation of the shadow impact being a primary design objective.

The site is currently shaded in the morning by the Council Offices (12 storeys) to the East, and late afternoon by the lower height Knowledge Hub to the west.

The solar impact of the proposed development was a key consideration in the formulation of the Planning Proposal request submitted to Council for the proposed amendment to the height and FSR controls. The methodology used to assess the potential solar impacts was formulated in consultation with Council.

Figure 64 – Existing Solar Access to surrounding public domain



Source: Lyons

Methodology

In order to optimise solar access to the adjoining public spaces of Paul Keating Park and The Appian Way throughout the year thorough shadow analysis of progressive iterations of the building mass, delivering the required NLA, and retaining open space along The Appian Way, have generated the proposed building form. This form presents the best outcome for public solar access, given the required floor area, and provides distinctive skyline interest.

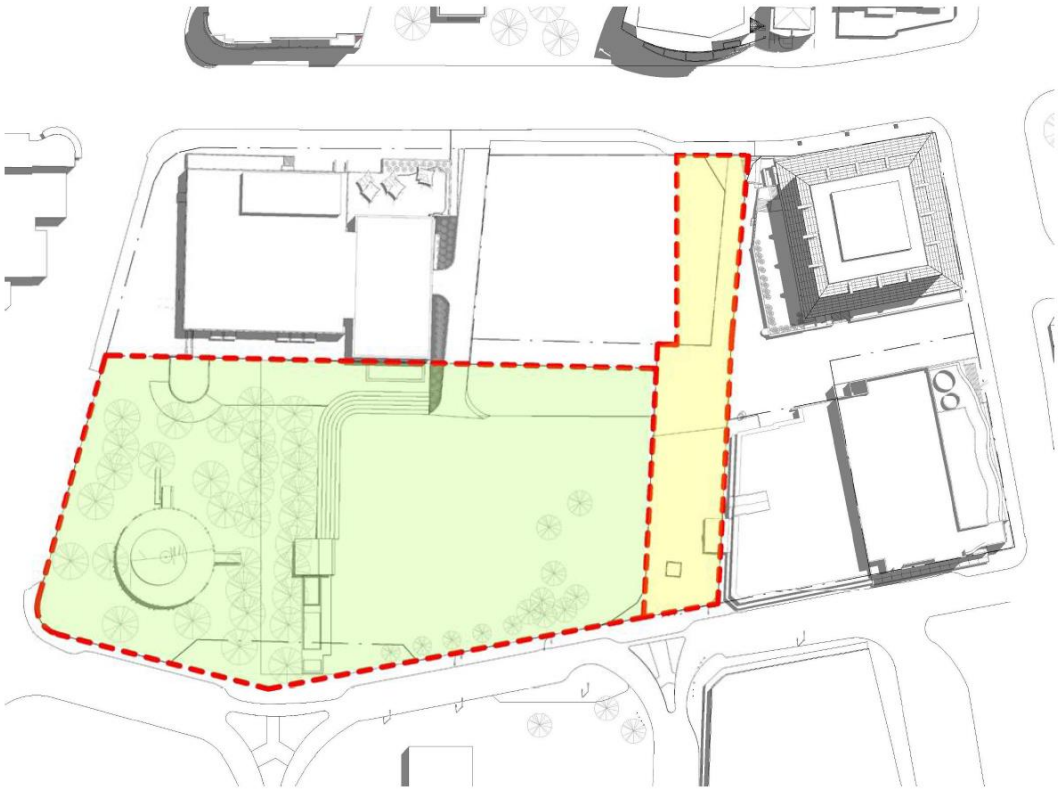
During the development of the proposed building form comprehensive tests of the shadow impacts on Paul Keating Park and The Appian Way were undertaken. This incorporated the use of BIM software to make accurate and detailed comparison of three-dimensional form adjustments by examining the shadows cast.

Lyons has prepared a shadow analysis of the proposal which is provided in within the Architectural Design Report (**Appendix E**). This detailed analysis illustrates the shadow cast by the proposal at hourly intervals between 9am-3pm at the winter and summer solstices as well as the Equinox.

In the absence of LEP or DCP solar access controls in relation to public open space, the project team have referred to other precedent public open spaces in Sydney. The Drying Green Park in the Green Square Town Centre Development was identified as the most directly comparable public open space. The Green Square Town Centre DCP identifies that the Drying Green needs to: 'achieve direct sunlight each hour between 11am and 2pm for at least 50% of the park' [Clause 3.1.1 (1)(k)].

For the purposes of this assessment, the area defined as Paul Keating Park and the area defined as The Appian Way is shown in **Figure 65**. The methodology used to assess the potential solar impacts was formulated in consultation with Council and the GANSW though the SDRP.

Figure 65 – Delineation of Paul Keating Park and The Appian Way for Solar Analysis



Source: Lyons

Assessment

As illustrated in **Table 17** below the post development scenario results in five (5) hours of solar access to greater than 50% of the extent of Paul Keating Park.

Table 17 – Solar Access to Paul Keating Park Results Winter

Time	Existing Portion of Paul Keating Park with Solar Access	Proposed Portion of Paul Keating Park with Solar Access	Achieves 50%
9am	31%	0%	No
10am	65%	18%	No
11am	85%	42%	No
12pm	88%	55%	**Yes**
1pm	88%	68%	**Yes**
2pm	87%	76%	**Yes**
3pm	84%	79%	**Yes**
4pm	67%	62%	**Yes**
5pm	23%	23%	No

As illustrated in **Table 18** below, the portion of Appian in proximity to the development receives two (2) hours of solar access to greater than 50% of its extent.

Table 18 – Solar Access to The Appian Way Results Winter

Time	Existing Portion of The Appian Way with Solar Access	Proposed Portion of The Appian Way with Solar Access	Achieves 50%
9am	5%	4%	No
10am	21%	21%	No
11am	56%	52%	Yes
12pm	80%	68%	Yes
1pm	78%	14%	No
2pm	86%	3%	No
3pm	99%	28%	No
4pm	100%	35%	No
5pm	26%	17%	No

The detailed solar assessment process informed the key massing principles of the podium and shaped tower form, and enabled the fine tuning the spatial placement of building volume, refining the exact floor shapes and height shifts associated with the proposed form.

In particular a key response was to rotate the top portion of the tower, stepping the form back from the Paul Keating Park, reducing the shadow cast onto the public open space whilst maintaining floor space within the maximised height.

The proposed building form enables direct sun access to a diversity of public activity zones across Paul Keating Park and The Appian Way throughout the year. The building performance is comparable to the benchmark precedent of the Drying Green. The design proposal achieves at least 50% of public open space at Paul Keating Park having direct sunlight for over 4 hours in the middle of the day and early afternoon.

The full shadow analysis diagrams comparing the proposal and LEP compliant scheme are provided in the Architectural Design Report.

Mitigation Measures

Mitigation measures were undertaken during the development of the building envelope concept design as detailed above.

Cumulative Impacts

The cumulative impact of the proposal and adjoining development on Paul Keating Park have been assessed as per the previous sections. No future development is envisaged which will impact on the solar access of Paul Keating Park.

8.5. EUROPEAN HERITAGE

A Heritage Impact Statement prepared by Urbis provides an assessment of the heritage significance of the proposed development site, the adjoining heritage item at 375 Chapel Road and the heritage character of the surrounding civic precinct. The heritage assessment was undertaken in accordance with the NSW Heritage Division guidelines ‘Assessing Heritage Significance’ and ‘Statements of Heritage Impact’.

Existing Environment

The locality has historical context as a civic precinct as the block used to and partially still contains a library, administrative office, town hall and council chamber. The Council Chambers is a heritage item (item I6), located at the south west edge of the lot at 375 Chapel Road. The item is of heritage significance as it is historically linked with the civic purpose of the block and it is the only heritage item in the local area. The Council Chambers was constructed in 1963, designed by Kevin Curtin. Of note, the Administration Office and Town Hall were designed by Kevin Curtin and Partners to deliver the Civic Precinct. The site surrounding the heritage item contains mature trees and interpretation plaques regarding Bankstown's Mayors and the history of Bankstown City Council Chambers.

The proposed development site is located within the civic block and once contained the Canterbury-Bankstown District Ambulance Station that was demolished in 1994 and replaced by the existing at grade car park and landscaping.

The existing car park and landscaping has no historic significance on a local or state level and has no representative value. There is no evidence that the site has importance in the local community,

Heritage Significance of the Civic Precinct

The former ambulance station did not historically comprise the same typology of community building as the remainder of the block. Whilst providing a public service, the station was not designed by Kevin Curtin and Partners and did not have the same links with the community and local government compared to the other civic structures. Furthermore, there is no evidence of remnants of the former ambulance station within the subject site. As such, the use of the site for a non-civic purpose is considered historically appropriate.

Heritage Significance of the Council Chambers

The existing site does not contribute to the heritage nature of the Council Chambers. Whilst the existing site provides views towards the Council Chambers, the heritage item operated at a time where the subject site and the area to the west has substantial buildings and wasn't open space. The Council Chamber was designed to be in close physical association with the Administration Building (which was demolished in 1999) and the Town Hall. Historically, there were no significant views towards the Council Chambers from Rickard Road as the vegetation, ambulance station and administration building would have obfuscated it. Therefore, the aesthetic significance of the Council Chambers is not historically vested in the open space to the east and the subject site and the view impacts of the proposed development are acceptable.

There will be no physical impact anticipated on the heritage item from the proposed development nor will there be any unacceptable impact on the curtilage surrounding the item.

The historical context of the area, with different buildings occupying the subject site as well as the unique siting of the Council Chambers illustrates that there is no discernible historic subdivision impacted by the proposed development.

The proposed development will be consistent with the character of the Bankstown Civic Precinct.

Mitigation Measures

The mature vegetation around the Council Chambers will be retained and the landscaping on the proposed building allows it to mesh with the existing vegetated nature of the area.

Cumulative Impacts

No cumulative impacts are anticipated.

8.6. ABORIGINAL CULTURAL HERITAGE

Urbis undertook an Aboriginal Cultural Heritage Assessment (ACHA) as per the relevant section of the National Parks and Wildlife Act 1974 (NPW Act) and the National Parks and Wildlife Regulations 2009 (NPW Reg). The ACHA process included the:

- Comprehensive background research of all available archaeological and cultural heritage information for the Subject Area in context with the scope of the Project.
- Analysis and interpretation of the background research.

- Consultation with the Registered Aboriginal Parties (RAPs).
- Summarising of results and providing recommendations for the proposed development in relation to Aboriginal cultural heritage and archaeological resources.

Existing Environment

There are no registered Aboriginal sites within, or near to, the site and it is highly unlikely that unregistered Aboriginal objects are survived the high level of disturbance caused by historical land use.

Analysis of historical aerial photographs that cover the site indicates that it is highly unlikely that any unregistered Aboriginal sites survive within or near the site. The site is highly disturbed, entirely cleared and surrounded by residential development by 1930. By 1961, the Subject Area had been developed into a small complex of buildings, surrounded by residential areas and established streets. These activities likely resulted in high disturbance of subsurface deposits, particularly due to foundations that would likely have been dug to support the larger buildings in the site.

By 1983, a new complex had been constructed on the site, with some areas of landscaping around the buildings. The construction and landscaping of this complex would have resulted in further significant disturbance to the subsurface deposits. The geotechnical investigation results suggest that there has been extensive disturbance to subsurface deposits, with little to no natural soil remaining across the Subject Area.

Overall, the site has been the subject of high to extreme disturbance resulting from the continuous development of the central Sydney area. Extensive clearing, the construction of buildings, roads, carparks, and associated infrastructure have changed the original environment and created a highly artificial landscape within and near the site.

Assessment

The results of the search support the idea that material signs of Aboriginal occupation aren't common in the area as generally. The most frequent aboriginal items are located in areas closer to Georges River, the raised flats and ridgelines between water sources, as well as advantageously placed open flats. It is unlikely that the site was intensively occupied in a way that would leave archaeological records.

Furthermore, the modification of the site and the development of the Bankstown Civic precinct would have most likely disturbed or removed any potential archaeological deposits if they existed. The site is located in a highly developed urban area, with high levels of ground disturbance, land clearance, soil removal and other development which further reduces the likelihood for archaeological relics to remain within the site.

The ACHAR concluded that:

- There are no registered Aboriginal objects and/or archaeological sites within the Subject Area;
- There are no landscape features with potential for Aboriginal objects or archaeological deposits located within the Subject Area;
- The Subject Area has been the subject of high to extreme levels of disturbance since the 1960s at the latest; and
- The original soil profile has been entirely removed from the Subject Area during the last 50 years and replaced with extensive levels of fill material.
- No Aboriginal cultural heritage values have been identified by the RAPs.

Mitigation Measures

The following mitigation measures were recommended:

- The Proponent should continue to consult with the Aboriginal community in regard to the Project.
- The Proponent is encouraged to include the RAPs in the discussion of the potential of the interpretation of the Aboriginal history and cultural heritage values of the Bankstown area.
- In the unlikely event that previously unknown Aboriginal object(s) and/or sites are discovered during the demolition of the existing building, works must stop and an appropriately qualified archaeologist and members of the Gandangara Local Aboriginal Land Council (GLALC) contacted to assess the nature, extent and significance of the identified object(s) and/or sites.

- In the unlikely event that suspected human remains are encountered during the demolition of the existing building, all work in the area that may cause further impacts, must cease immediately and the following measures must be implemented.
    - The location, including a 20m curtilage, should be secured using barrier fencing to avoid further harm;
    - The NSW Police must be contacted immediately;
    - Notify OEH's Environment Line on 131 555 as soon as practicable and provide available details of the remains and their location;
    - No further action is to be undertaken until the NSW Police provide written clearance for the identified remains;
    - Should the remains be identified as Aboriginal, the GLALC must be notified; and
    - A suitably qualified archaeologist and/or anthropologist with forensic training must be contacted.

Cumulative Impacts

No cumulative impacts are anticipated.

8.7. AERONAUTICAL IMPACTS

An Aeronautical Impact Assessment has been prepared by Landrum & Brown Worldwide which assesses the proposed development and the accompanying construction cranes against the relevant aeronautical requirements. The proposed maximum building height of 106.78m AHD and the proposed Construction Crane height of 125m AHD were assessed against the following which dictate the operation of Bankstown Airport and Sydney Airport:

- Obstacle Limitation Surfaces (OLS) including Inner Horizontal Surface (IHS) and Outer Horizontal Surface (OHS);
- Procedures for Air Navigation Services – Aircraft Operations (PANS OPS);
- Aircraft Category (CAT) A/B Circling Area Minimum Descent Altitude (MDA);
- CAT C Circling Area MDA;
- Building Restricted Area (BRA);
- Terminal Area Radar (TAR); and
- Radar Terrain Clearance Chart (RTCC).

The report also contains an assessment of the building height and construction crane height infringes in the context of existing and future technologies and procedures.

Existing Environment

The site is located in between two airports, Sydney Airport which is located 12.4km south-east of the site and Bankstown Airport which is located 4.45km south-west of the site. Whilst the existing site in its undeveloped form does not have any impact on the aeronautical operations of the area, multiple existing structures within the Bankstown CBD currently infringe on the Bankstown Airport OLS.

Aircraft operating off visual flight rules (VFR) must conduct circuit operations within 2nm of the Aerodrome Reference Point (ARP). The site is 2.4nm from the ARP. The existing Bankstown Rail Station functions as a good reference point to keep aircraft within the 2nm limit for flight operations.

There are currently new technological advancements that will affect future flight operations, especially regarding the vertical guidance system at Sydney Airport which will be adopted by Bankstown Airport at a future date.

Assessment

OLS:

The site is in the Inner Horizontal Surface (IHS) of Bankstown Airport where the height limit is 51m AHD, therefore the proposed building infringes on the Bankstown Airport IHS. However, the development will not adversely affect the safety or regularity of operations of aircraft as per International Civil Aviation Organisation (ICAO) Annex 14, Aerodrome Design and Operations requirements. It should be noted the existing LEP height controls permit a maximum height of development which infringes the current Bankstown Airport IHS and there are multiple existing buildings which currently infringe upon the Bankstown IHS.

The proposed site is located within the outer horizontal surface (OHS) of Sydney Airport which has a height limit of 156m AHD, and as such the proposed development does not infringe on the Sydney OLS.

PANS OPS:

The proposed development was assessed against the CAT A/B and CAT C instrument flight rules (IFR) circling areas for Bankstown Airport. The circling area MDA for CAT A/B has a minimum obstacle clearance (MOC) of 108.1m. CAT C has a MOC of 135.9m. As such, the proposed WSU campus building will not breach either of these.

The proposed construction crane height of 125m will infringe on the PANS OPS height for CAT A/B by 16.9m. A breach of 16.9m should not have any significant impact on flight safety or regularity of flight operations. This breach is considered acceptable for a period of no more than 3 months under a controlled activity approval.

The proposed building or construction crane does not infringe on the PANS OPS of Sydney Airport or any other airport.

BRA:

There is a navigation aid at Bankstown Airport which includes a Non-Directional Beacon (NDB) which establishes a building restricted area (BRA) which is a 3000m radius sensitive zone around the navigation aid antenna site. The proposed development site is located outside the BRA and therefore, the proposed WSU and construction crane should not impact the operation of the navigation aids.

TAR:

The Sydney TAR has a clearance plane at the development site of 50.42m and the Cecil Park TAR has a height of 363.7m. As such, the proposed WSU campus infringes on the Sydney TAR and it does not infringe on the Cecil Park TAR. However, as the two surveillance systems have overlapping coverage, the signal shadow effects on radar clearance planes will be reduced. The breach is considered acceptable. The proposed construction cranes won't impact the surveillance equipment.

RTCC:

The proposed development will not infringe on any RTCC protection surface.

Mitigation Measures

OLS:

The ICAO Assembly Resolution A33-16 Global Aviation noted the need to provide straight in instrument approaches with vertical guidance to prevent future controlled flight into terrain (CFIT) accidents worldwide. Australia has the Baro Vertical Navigation criteria (VNAV) approach for all certified and registered airports. Sydney Airport has its runways provided with a straight in approach with vertical guidance, Bankstown Airport Runway 11C currently has a straight in approach but no vertical guidance but the appropriate instrument landing system will be installed in the future. This future system will reduce the need to restrict obstacle growth and the OLS surfaces will be updated and aligned with the PANS OPS surfaces. The use of circling approaches in poor weather conditions will be considerably decreased. An application for the permanent infringement of the Bankstown Airport OLS has been submitted to Bankstown Airport.

PANS OPS:

Infringement by the temporary cranes can be approved for a maximum of 3 months via a short term controlled activity permit. Airservices may temporarily increase the CAT A/B Circling MDA by approximately 17 metres to compensate the infringement and it is considered that it will not impact on the IFR for aircraft

operating at Bankstown Airport and it will not affect flight safety or flight arrival regularity. The appropriate assessment will be conducted by Airservices regarding the temporary increase in the MDA.

TAR:

The infringement is unlikely to affect the ATC surveillance coverage as the Cecil Park TAR covers the same area and with a recent Automatic Dependent Surveillance Broadcast (ADS-B), it provides a similar service to the TAR installations. Airservices will conduct their own assessment to determine any impact the development will have on the Sydney TAR or other systems like ADS-B.

Cumulative Impacts

The infringements of the construction crane will have no cumulative impacts as it will be removed once its function within the development of the campus is completed. The future vertical guidance technologies will mitigate the building's impacts onto the Bankstown Airport OLS. It is highly unlikely that any new airports will be established within the surrounding region. As such, the proposed development will have no long term adverse aeronautical impacts.

8.8. FLOOD & STORMWATER IMPACTS

A Civil Stormwater and Flooding Report prepared by Bonacci Group provides an assessment of how the proposed development will impact water quantity, water quality and flooding within the locality. The assessment utilised the following programs to model the existing and expected environment:

- DRAINS modelling was used to calculate the permissible site discharge (PSD) within the site and assess the water quantity before and after the proposed development.
- MUSIC modelling was used to assess the water quality both pre and post development.
- TUFLOW was used to create a site-specific hydraulic model to assess the flood impacts of the proposed development.

In addition to the computer software listed above, the following was also utilised during the assessment process:

- Kinematic Wave Equation was used to calculate the time of concentration for each storm event.
- Intensity Frequency Duration (IFD) data used from the Bureau of Meteorology's 'Australian Rainfall and Runoff 2016'.
- The Council flood study BMT WBM 2011 Salt Pan Creek Stormwater Catchment Study was used to map the existing site flood conditions.
- The flooding digital elevation model was formed using the 1 metre LIDAR obtained from ELVIS (Elevation Information System) NSW Government Spatial Services with a ground survey patched over the LIDAR.

The assessment was conducted against the provisions of:

- BCDCP 2015;
- SEARS;
- Green Building Code of Australia;
- Canterbury Bankstown Stormwater System Report; and
- Landcom 2004 Soils and Water Managing Urban Stormwater.

Existing Environment

The existing site slopes from north to south, especially along The Appian Way. There is an existing sag pit on Rickard Road. The existing water flow travels across the carpark, landscaping and The Appian Way and is captured by the existing pit and pipe network which discharges the water into the culvert located east of the site. Existing onsite detention (OSD) is located at the south west corner of the site and will not be affected by the proposal. This OSD is assumed to service the Bankstown Library.

Existing Water Quantity.

The existing site is approximately 41% pervious. The current PSD on the site is as follows:

Table 19 – Current Permissible Site Discharge

Area (ha)	PSD (Permissible Site Discharge) (m^3/s)			Time of Concentration minutes
	5yr	20yr	100yr	
0.3673	0.095	0.136	0.167	5

Existing Water Quality

The existing site is used for at-grade carparking and as such, does not contain any water quality treatment measures.

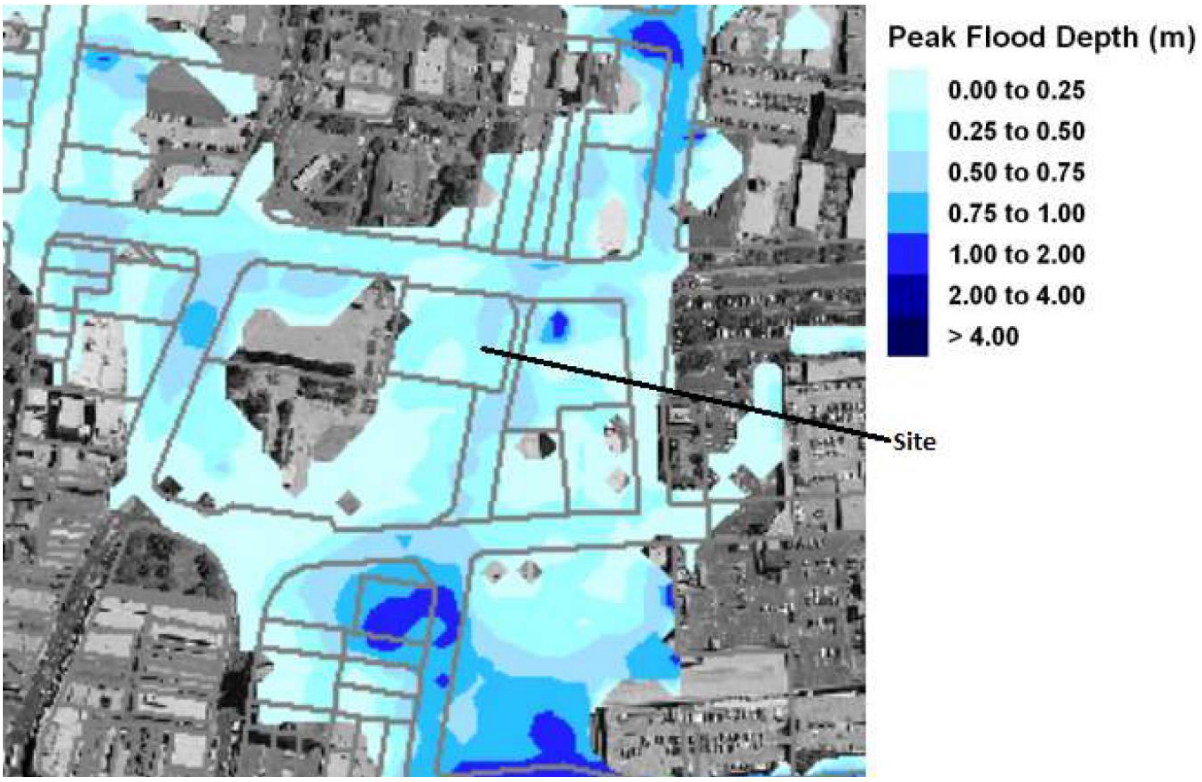
Existing Flooding

The site is within the Salt Pan Creek catchment, which is a tributary of Georges River and is subject to a 100 year ARI flooding event. While the site is subject to overland flooding, it is unlikely to be affected by backwater conditions from Salt Pan creek.

Currently, the upstream catchment falls into the sag kerb pit on Rickard Road which is then connected to the existing culvert located on the southern eastern side of The Appian Way and Rickard Road intersection. During major storms, water flows down The Appian Way to Bankstown Station, with some of the stormwater being captured by the pit and pipe network that exists south of the site. The majority of water flow during the 1% AEP is concentrated at The Appian Way with the carpark experiencing a shallow sheet flow.

The site is subject to stormwater flooding and is categorised as being Medium to High Risk with The Appian Way experiencing the most flood affectation.

Figure 66 – Probable Maximum Flood (PMF) Extent



Source: Bonacci, extracted from BMT WBM SPC Flood Study

Existing Stormwater

Existing stormwater infrastructure exists for the proposed development site. Stormwater runoff for the existing carpark sheet flows from the north to the south from Rickard Road towards Paul Keating Park. Part of this runoff is captured by kerb inlet pits located near the southern site boundary. Runoff on The Appian Way is captured by a sag pit at the south eastern corner of the site. It is assumed these pits drain towards the 2.4mx1.5m box culvert running parallel to The Appian Way. As the site is flood affected the 2.4m x 1.5m culvert forms a major channel conveying much of the flood waters past the site.

The development is required to comply with the relevant stormwater standards and provisions:

- Habitable floor levels are to be 500mm above the 100 year ARI flood level;
- Driveways to basement car parking areas are to incorporate a crest point with a surface level of at least 100mm above the 100 year ARI water surface level
- Nil impact as a result of the development on 100 year inundation levels and on adjoining properties
- On-Site Detention (OSD) must be designed and constructed to control stormwater runoff from development sites such that for 5 to 100 year ARI events, peak stormwater discharges from the site do not exceed predevelopment stormwater discharges
- Water quality pollutant reduction targets to the following:
    - Gross Pollutants: 85%
    - Total Suspended Solids: 80%
    - Total Nitrogen 30%
    - Total Phosphorous 30%

Water Quality

The proposed development will result in a large portion of the site being roofed and impervious, with 95% of non-roofed areas assumed to be impervious. The proposed OSD will collect overflows from the rainwater tank. The rainwater tank collects the stormwater runoff from the entire roof catchment and the overflow will be distributed to the OSD through downpipes.

The ground level areas, outside the footprint of the proposed campus, will bypass the OSD. Ultimately, the peak flows from the site will be reduced as a result of the provision of an OSD tank as illustrated below and determined by DRAIN modelling.

Table 20 – Resultant Permissible Site Discharge

Scenarios	Area (ha)	PSD (Permissible Site Discharge) (m^3/s)			Time of Concentration minutes
		5yr	20yr	100yr	
Existing	0.3673	0.095	0.136	0.167	5
Proposed OSD + bypass	0.3673	0.091	0.114	0.135	5

The results illustrate the post development scenario and proposed OSD will reduce the peak flows of permissible site discharge (PSD) to the existing situation. The proposed methods of water quantity control will not result in the development impacting the downstream properties.

Water Quality Impact

The proposed development will not result in adverse impacts on the surface water and groundwater quality. The conversion of the existing car park into a building with roof catchments will inherently result in the water quality significantly improving. The development's water sensitive urban design will improve the water quality throughout the area.

During assessment, the site has been separated into sub-catchments based on different WSUD measures. The 0.316ha roofed area will be treated differently to the remaining 0.050ha pedestrian area. The roof water will drain into the proposed 45kL rainwater where the water is treated and re-used. Overflow from the rainwater tank will be transferred into the OSD and then discharged into a stormwater pit fitted with an enviropod, located on The Appian Way. The rest of the site discharges directly into the stormwater pit.

The MUSIC modelling shows that the surface waters will be treated in a way that achieves the targets specified by the Green Building Council of Australia Green Star – Design & As Built Stormwater.

Table 21 – Post-Development Treatment Train Effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	2.69	1.03	61.6
Total Suspended Solids (kg/yr)	121	22.6	81.3
Total Phosphorous (kg/yr)	0.454	0.144	68.2
Total Nitrogen (kg/yr)	5.93	1.82	69.3
Gross Pollutants (kg/yr)	80.2	0.0905	99.9

As the site's groundwater is located approximately 8 metres below the proposed development, it is expected that the development will not impact it.

Flooding

The proposed development will maintain the existing overland flow path as to prevent any impacts onto neighbouring properties. This will be conducted by compensatory lowering of the ground level at The Appian Way. The Appian Way ground levels were modelled in TUFLOW which considered the levels and gradients required to result in nil adverse flood impacts. The intention is for The Appian Way to increase water conveyance and flood storage.

The proposed development will result in the flooding being localised around The Appian Way and Rickard Road. As such, the areas around the adjoining properties will receive a reduction or nil-change in flood levels. Some areas downstream of the site are currently flooded but will become dry as a result of the proposed development.

The hydraulic model created shows that the development will be compliant with Council's 100 year ASRI impact requirements and is acceptable at the 1% AEP Flood Depth, 5% Flood Depth and PMF Flood Depth.

A 500mm freeboard has been provided at the main north entry and the retail areas adjacent to The Appian Way has been set 500mm above the 1%AEP RL. The proposed fire stair entrance that provides egress into the basement is set 100mm freeboard above the 1% AEP flood RL. As such, the development will be compliant with Council's habitable flood freeboard requirements.

Mitigation Measures

In consultation with the City of Canterbury Bankstown Council engineers, Civil Engineers Bonacci Group have investigated strategies to manage flood levels and overland flow paths, and confirm freeboard and entry protection measures. The outcomes of these investigations are incorporated into the design of site landscaping, building footprint, ground floor levels and stormwater and rainwater infrastructure.

- Habitable floor levels are to be 500mm above the 100 year ARI flood level;
- Driveways to basement car parking areas are to incorporate a crest point with a surface level of at least 100mm above the 100 year ARI water surface level; and
- All landscaping and public domain built up elements are to be minimised to ensure the development does not impact on the 100 year ARI inundation levels and on adjoining properties.
- An on-site refuge (i.e. first level or above) is to be provided onsite during operation of the University.

- Evacuation drills are designed to increase flood awareness within the site population. These drills are to be undertaken twice yearly to familiarise the employees and contractors of the procedures when responding to a flood event. It is an opportunity to outline flood levels and the dangers of entering flood water.

Additional investigations into existing stormwater infrastructure in particular the existing OSD assumed to service the Library and Knowledge Hub and ongoing discussions with Council regarding broader catchment works to reduce flood affectation.

A Flood Emergency Response Plan has been prepared (**Appendix J**) to promote a satisfactory awareness of expected flood behaviour and risks, identify measures to become flood prepared and recommend a course of action during and after flood events.

Cumulative Impacts

Climate Change is expected to affect the flooding impacts caused by the proposed development. As such, 0.5% AEP and 0.2% AEP events are used as proxies for climate change. The expected change is acceptable with the biggest increase in flood level due to climate change being approximately 30mm at the north east building corner.

No adverse cumulative impacts are expected regarding water quantity and water quality.

8.9. ECONOMIC IMPACTS

The analysis of the economic impacts uses REMPLAN economic modelling to assess the potential direct and indirect economic benefits of both the construction and operations of the Campus. REMPLAN is an Input-Output model which captures inter-industry relationships within an economy. It can assess the area-specific direct and supply-chain flow-on transaction impacts of a development in terms of output, employment, wages and salaries and value-added. The analysis has reported the economic impacts of the Campus at the Canterbury Bankstown LGA, Greater Sydney and New South Wales levels. Economic impacts on Bankstown City Centre are identified through the direct impact of on-site activities.

REMPLAN uses either the value of investment, costs or employment generation as the primary input. For this analysis, the value of total upfront investment has been used as the key input to assess the benefits of the construction phase, whereas future employment on the university site is the input to assessing the on-going economic benefits of the operation phase. Where employment estimates were not available for the retail, office and food service operations floorspace plans were used. Urbis industry benchmarks for employment per square metre were used to estimate the number of FTE employees utilised by this floorspace, by industry category.

It should be noted that the results presented in this report are estimates only based on the existing state of economic activity in the area.

REMPLAN also models the impact of tourist spending on local economies. It uses the latest Tourism Research Australia on average expenditure of tourists which is then put through an input-output model to estimate economic impacts.

The primary inputs on which the economic benefit estimates are based were provided by WSU. These inputs included construction cost and floorspace area breakdown.

Urbis has also calculated the impact of social factors where possible. Social value has been estimated using financial proxies for changes which will have positive and/or negative effects the university brings to the Canterbury Bankstown region. For example, the value of new student population's likely significant positive impact on volunteering activity in the area can be estimated using UK Social Values Bank calculations of the value of the activity to the community.

Cost-benefit analysis has been conducted according to NSW Treasury Guidelines. A timeframe of 30-years has been used to calculate the net present value and benefit-cost ratio for the WSU BCC, with the recommended benchmark social discount rate of 7 percent. Sensitivity analysis was also conducted using the recommended lower and upper bound social discount rates of 3 and 10 percent, respectively. Economic impacts and social values on the Canterbury Bankstown LGA level were included in the analysis. Operations impacts were included as annually recurring costs or benefits.

The economic benefits from WSU BCC precinct will go beyond what is estimable from REMPLAN and social value estimates. Urbis has undertaken a review of the available evidence around the catalytic benefits a

university campus would have on a metropolitan economy like Bankstown. These catalytic benefits include and go beyond the increased educational capital development of local residents, to increased inward investment and innovation activity in the area.

Similarly, there may be negative impacts of the precinct development which are not captured in the cost-benefit analysis. Urbis has conducted a qualitative review of these factors such as the negative impact on congestion in traffic and public transport, and construction phase impacts on local businesses such as retail stores, food outlets and other services which rely on foot traffic and/or will be disrupted by noise or congestion.

Existing Environment

Canterbury Bankstown LGA has a history of industrial-based employment, with the sectors of health care and retail emerging more recently to serve the growing Western Sydney population.

In 2018, the estimated total output for the LGA was $35.2 billion. Manufacturing, Construction and Rental, Hiring and Real Estate are the top three industries which generate around 55% of overall output across the LGA.

Manufacturing and 'Health Care and Social Assistance' provide 26.2% of jobs and are essentially even in provision of employment. The employment profile of the LGA reflects the traditionally industrial base (Manufacturing), with emerging sectors such as Construction, Health and Social Assistance and Retail Trade that complement the growth of the Western Sydney population. Currently 9.6% of jobs in the LGA are in the Education and Training Sector.

Table 22 outlines the housing profile for the suburb of Bankstown and Canterbury Bankstown LGA against the Sydney Metropolitan average. Bankstown has a greater proportion of apartments than the CB LGA or Sydney metropolitan average.

Table 22 – Housing type 2016 Census

Dwelling Type	Bankstown	Canterbury Bankstown LGA	Sydney Metropolitan Average
Separated house	33%	58%	57%
Semi-detached	11%	16%	14%
Flat, unit or apartment	55%	26%	28%

Economic Sustainability Analysis

There are several factors influencing economic sustainability of the WSU BCC. Some of which include financial obligations of WSU, enrolment growth, competition and student choice, value of the Australian dollar in comparison to international markets and changes in government policy and visa requirements.

Figure 67 – Economic Impact Matrix

	Consequence			
Likelihood	**Insignificant**	**Minor**	**Medium**	**Major**
Unlikely (<10%)	Low	Low	Moderate	Moderate
Possible (≈ 10-50%)	Low	Moderate	Moderate	Moderate
Likely (≈ 50-90%)	Low	Moderate	High	High
Almost Certain (>90%)	Moderate	Moderate	High	Very High

Source: Urbis

Table 23 – Potential Factors Influencing Economic Sustainability of the Proposed Project

Potential Factors Influencing Demand	Commentary on Potential Impact	Level
Overall solvency of WSU	The overall solvency of WSU would be affected if the university could not meet its financial obligations. This event would be unlikely as indicated by the recent expansion of the campuses, as well as, federal funding into tertiary education and research grants.	**Low**
Student Enrolment Growth (lower than expected enrolment growth would have a negative impact on demand)	Enrolment growth is a major driver of higher education. WSU has not yet finalised forecasts for enrolment growth at their WSU BCC, but challenges in hitting enrolment targets pose the largest risk to universities financial stability and planning.	**Low**
Higher Education Competition (international competition for students continues to grow rapidly)	Australia is supported by high quality educational infrastructure in comparison to developing countries and represents an attractive location for international students. WSU has historically served the local market but, has recently been recognised in the top 500 universities worldwide (QS University Rankings 2019), indicating some global recognition. Bankstown CBD is more desirable than the Milperra location in terms of access to amenity and making the WSU BCC more competitive than previously positioned. The new state-of-the-art facility will also help competitive positioning among Australian and international universities.	**Low**
Australian Dollar (the value of the Australian Dollar significantly affects the affordability of studying within Australia)	The value of the AUD has generally fallen against other key market currencies including China, India, Singapore and the USA in the last few years. This means that studying in Australia has become cheaper, in relative terms. There is anecdotal consensus among economists that it is unlikely to rise significantly from this level in the short to medium term.	**Low**
Government Policy Changes (changes such as visa policy and university deregulation can influence the number of student enrolments)	Changes such as visa policies, capped places and university deregulation can influence the number of student enrolments. The Federal Government's decision to cap the amount of Commonwealth Grant Scheme (CGS) funding has left universities with funding at the 2017 level. It is projected that the shortage of funding is the equivalent of 10,000 university places in 2018. Examples of changes that have had a negative impact on international student enrolments have been noted in the UK where government policy on student visas has changed, however we are not aware of any current policies in the Australian context that would negatively impact international student growth prospects. Potential fee deregulation for domestic students will have to be monitored as impacts of this potential changes are difficult to estimate.	**Low**
Student Desires (the changing needs and	The student cohort constantly evolves as generations pass through the higher education providers and student accommodation will need	**Low**

Potential Factors Influencing Demand	Commentary on Potential Impact	Level
wants of the student cohort will constantly change how student accommodation is provided)	to keep pace of their changing needs and wants. It is important that the existing facilities evolve in line with student desires across areas such as catering, technology, common facilities and other services.	

Source: Urbis

8.9.1. Direct Benefits

Construction Phase: REMPLAN modelling shows that an investment stimulus of $286 million has the potential to create benefits over the construction phase. The construction phase includes early works, base building construction and interior fit-out. Early works including clearing of vegetation, site clearing, excavation and augmentation of existing services and utilities. While the early works are not included as a part of this SSDA the economic impacts have been included in this assessment to cover all costs and benefits of the project in comparison to the base case where there is no change to the site.

The project will sustain 675 jobs at any time during of the construction phase in the Canterbury Bankstown LGA. This jobs number includes 198 direct jobs and 477 supply-chain jobs. Up to $162.7 million in gross value added (GVA) will be generated over the construction phase. This equates up to $82 million per annum over an assumed construction period of 18 months.

Operations Phase: The major economic benefits from the WSU BCC proposal will be experienced in the operations phase. The overall Campus has the potential to deliver 716 direct ongoing jobs. The number of direct jobs for the proposed development is estimated by referring to floorspace employment benchmarks (employment estimates draw on the findings of the City of Sydney 2018 Floorspace and Employment Survey and Urbis floorspace benchmarks).

Impacts of Campus operations on economic activity within the Canterbury Bankstown LGA will amount to $138.3 million a year in GVA. Tertiary education will have a $112.0 million impact on GVA including a $26.4 supply-chain impact in the LGA. Operating Expenses for WSU BCC are projected to be $4.5 million per year and provide the following benefits for the local community:

- GVA of $2.0 million per annum to the local economy.
- Full time employment of up to 4 workers involved in building operations.

Annual operating impacts of WSU BCC activities will generate $114.3 million in annual wages and salaries.

Impact of Bankstown City Centre: According to the South District Plan, Bankstown CBD has a baseline target for jobs growth from 2016 to 2036 of 4,900 and a higher target of 12,900. WSU BCC operations are forecast to provide a lift of 720 jobs in the Bankstown CBD. This represents nearly 14.7% of the Baseline Jobs growth target and 5.6% of the higher target.

Jobs growth fostered by the proposed WSU BCC is concentrated in education and knowledge-intensive industries, two areas recognised as key growth channels for Bankstown CBD to 2036. WSU BCC is projected to support 667 education and research jobs. Local supply-chain impacts on the Bankstown CBD will be significant. The major local industries to benefit through increased demand for their output will be in the professional, scientific and technical services, manufacturing and administrative and support services.

The supply-chain activity flowing from technical, vocational and tertiary education in the Canterbury-Bankstown area has its greatest impact on the manufacturing sector with every dollar of education output using six cents of manufacturing output. The other key sectors significantly impacted by higher education include administrative and support services, professional, scientific and technical services, rental, hiring and real estate and information media and telecommunications.

8.9.2. Indirect Benefits

Regional Supply Chain Impacts: Indirect supply chain impacts are those felt within industries that supply goods to the industries directly affected by the project. For consistency with other items only the supply chain impacts on the Canterbury Bankstown LGA region are included in the cost-benefit analysis.

Most of the economic impacts will be experienced directly on Campus providing 720 jobs and contributing $112.0 million in annual GVA. Supply-chain activity generated from operations on Campus will facilitate demand for 175 jobs in the Canterbury Bankstown LGA, an additional 71 jobs elsewhere in Greater Sydney and an additional 16 jobs in areas of New South Wales outside of Greater Sydney. The overall impact on employment in New South Wales will be an additional 982 positions.

Conference and Event Attendance: Economic benefits are likely to result from conference and event attendance at the WSU BCC, with visitors to the WSU BCC expected to contribute to economic activity in the region. Based on economic analysis from the REMPLAN model on tourism economic impacts in the Canterbury Bankstown LGA, the average spend per trip for a domestic day visitor is $105, with average spend increasing to $726 for domestic overnight visitors (based on an average stay of 3 nights) and $2,302 for international visitors (based on an average stay of 22 nights).

While tourism economic impacts provide a comparable proxy for use in calculations, it is difficult to estimate the precise proportion of domestic and overseas visitors that may comprise conference and event attendees at the WSU BCC. The composition of attendees will also be influenced by the nature of events hosted by WSU i.e. multi-day academic conferences, local lectures, internal university events.

It may be possible to approximate the number of people that may be in attendance for events and conferences at the WSU BCC. Based on an analysis of the floorspace occupancy of the WSU BCC' facilities, there is opportunity for WSU to host up to 320 guests in their conference facilities and terrace space, and up to 250 guests in their tiered multipurpose space. Data provided by WSU on event and meeting room booking information from the One Parramatta Square campus for 2018 indicated that a total of 197 events were hosted over the year, with an average occupancy rate of 29%. Assuming a similar occupancy rate and number of events, up to 32,564 individuals may attend. WSU has indicated that they intend to facilitate significantly more events at their WSU BCC in comparison to One Parramatta Square and as such this estimate represents a lower bound estimate.

Catalytic Impacts of the University: Catalytic impacts relating to the establishment of the WSU BCC encompass the productivity and economic performance benefits which flow from the opening of a university campus in an urban economy.

Key catalytic economic benefits which would be attributable to proposed WSU BCC development, according to thematic areas that have been modified from the European Commission framework. Include:

- Human capital:
    - Increase in opportunities for higher educational attainment for local students, and others across Sydney and NSW;
    - Increase in local human capital, from students seeking part-time work close to WSU BCC and retention of graduates in local employment opportunities; and
    - Improvements productivity as a result of increase in skilled local labour supply, with flow-on effects to wages and economic growth.
- Knowledge transfer and development:
    - Increase in knowledge transfer due to proximity to civic institutions such as the Bankstown Library and the Bankstown Town Hall, and potential to share facilities;
    - Opportunities for community-based technology and knowledge development to occur through use of WSU BCC amenities and spaces (e.g. public lectures, conferences, events);
    - Strategic partnerships and outreach between WSU and key regional stakeholders and businesses; and
    - Academic consulting and leadership opportunities.
- Business innovation:
    - Contributions to local business innovation due to focus on entrepreneurship and small-to-medium enterprises in academic program, specifically in areas of health, advanced manufacturing and education;
    - Deliberate linkages fostered between academics and business/industry by WSU; and

- Efficiencies arising from proximity of campus to manufacturing industry in region, new airport, and highly connected public transport .

- Regional development:
    - Enables Bankstown CBD to become a hub for innovation, research and technological development;
    - Supports local economic and social development indirectly by attracting commercial and retail businesses to area; and
    - Offers cultural amenities by offering access to facilities, spaces and events that can enrich the local community.

Public open space: The WSU BCC will be adding 2,181m2 to the public space available in Bankstown CBD. The value of the WSU BCC's contribution to public space in the Bankstown City Centre has been evaluated as $276,000 using the equivalent land rent from an area of 2,181m2 would costs in the area.

Increased volunteering: The introduction of university campuses to an area is often associated with flow-on improvements in the surrounding community. The increase in prosocial behaviour in the area resulting from the introduction of a new university campus will be reflected in increased volunteer activity of the additional students. University students volunteer at higher rates than the population average.

The WSU BCC will likely create strong links between university students and organisations in the Canterbury Bankstown community which can facilitate this increased volunteer activity. Although volunteers contribute time and effort for no pay, their labour contribution can be estimated based on benchmarks wages as $1,207,000.

8.9.3. Direct Costs

Construction Costs: Construction will involve a direct cost to WSU over an 18-month period. The build is estimated to involve a $216 million investment in the base building with another $70 million on the interior fit-out to total $286 million. While the early works are not included in the SSDA they are included in this assessment as a component of the consideration of the entire project.

Operating Costs: Operating costs for running the WSU BCC building have been estimated to run at $4.5 million per year. This estimate is based on a total WSU BCC NLA of 26,270m² using Rawlinsons 2019 guide operating costs for high rise office buildings. A large part of this cost, $1.4 million, is council rates and taxes which are both a cost to the WSU BCC and revenue to government and therefore cancel out in the cost-benefit analysis. These operating cost estimates exclude GST.

8.9.4. Indirect Costs

Loss of parking: Currently the site is a Council car park with 60 spaces. This car park generates no revenue for Council as it is a 2-hour free zone. However, the loss of parking has an opportunity cost to the area due to the loss of 60 spaces. An estimated economic value $657,000 per annum in will be lost by building over the car park. The economic value was calculated using prices for a park in a proximate carpark to the site. The loss is somewhat mitigated by the reduction in car park maintenance cost for Council. This reduction in car parking is consistent with Councils current position on the provision of public parking within the Bankstown CBD, as outlined in the Draft Complete Streets Plan.

Traffic congestion: Traffic congestion has economic costs due to impacts on travel times. Rising travel times increase the cost of movement thereby reducing the efficiency of the regional economy and stifling economic activity. The ARUP Traffic and Parking Report (**Appendix Q**) indicates that the impact on traffic congestion will be negative but minimal, given the proximity of the site to public transport options. Congestion is likely to occur along Rickard Road and Appian Way. There are concerns with the limited provision of parking on the site, which may have knock-on effects on congestion in the area due to displacement of cars from parking on other sites. However, this is likely to be managed by the increasing availability of public transport alternatives, such as the Sydney Metro.

Public transport congestion: The WSU BCC site will heavily rely on public transport to serve its students. The public transport system is well-positioned to handle this increase in demand. The ARUP Traffic and Parking Report (**Appendix Q**) states that the site is centrally situated in the public transport system, being near Bankstown train station as well as being served by 16 bus routes. The transition to Sydney Metro in 2024 will provide extra capacity. Sydney Metro will result in an extra seven trains arriving at Bankstown

station per hour, an increase of 87.5%. WSU are working with Council on strategic transport planning for the Bankstown CBD and broader LGA.

Construction phase noise: There is likely to be minimal impact of construction phase noise on local residents and businesses, due to the relatively short duration of the construction phase (18 months) and the nature of the surrounding area. Given the relative lack of street-level businesses and residences proximate to the site, construction noise resulting from the WSU BCC will not significantly impact negatively on the surrounds. WSU are committed to working with effected stakeholders to minimise impacts.

8.9.5. Cost-Benefit Analysis

A cost-benefit analysis of the WSU BCC proposal estimated a net return of $1.5 billion over a 30-year time horizon under the benchmark case. The benefit-cost ratio (BCR) has been estimated to be 5.8 under the benchmark discount rate of 7%, with a high and low range estimates of 7.9 and 4.8 respectively.

The cost benefit analysis has found that the economic benefits significantly outweigh the costs.

8.9.6. Rental Housing Impacts

The anticipated impacts of the proposed project on the Bankstown rental market are minimal.

1. WSU BCC will attract a broader range of students, but its location also opens up greater housing choice: The WSU BCC's location in the CBD will attract a broader range of students than the existing Milperra campus, likely increasing the proportion of mobile students and the number of students who are seeking housing close to the Campus. However, high quality train services to Bankstown Station (400m from WSU BCC) will allow students to live in a wider range of suburbs.

2. Mobile student counts are small in comparison to size of housing market: Most mobile students (83%) are already living in the local housing market or commuting to WSU BCC from other housing markets, so the new WSU BCC location's impact on the housing market is anticipated to be low. The anticipated increase in mobile students is likely to be balanced by increased accessibility of the WSU BCC and housing choice for students.
Even if a purpose built student accommodation (PBSA) facility is not constructed and in the unlikely scenario that all mobile students were to enter the housing market in the Bankstown suburb, the additional students would represent just 2.1% of total beds within the local housing market (9,420 dwellings with an average of 2.6 beds per dwelling).

3. PBSA accommodation has potential to add to overall housing supply: Student accommodation has been considered on sites not traditionally available to residential construction, such as shopping centre air space development (enabled by simpler ownership and operating structure of single owner student accommodation compared to strata residential development). Such a project would mean that development of a student accommodation site would not necessarily absorb a potential residential development site and allow for more total housing to be developed within the Bankstown local housing market.

Mitigation Measures

Rental Housing Impact Mitigation: As WSU finalises and confirms forecasting for enrolments at the new WSU BCC, if the proportion of international students increases substantially beyond that projected in this analysis (thus increasing demand for student accommodation), WSU will ensure that demand for Student Accommodation will assessed, and provision will be made by the University or through a 3rd party provider within the LGA. This facility should be considered as part of their ongoing review of their overall housing strategy across all campuses. Such a facility would minimise impacts on the local housing market.

Economic Impact Mitigation:

To enhance connections to businesses in Canterbury Bankstown the following might be considered:

- Use of conference space
- Shared use of office space
- Advertising on campus
- Connections between WSU BCC staff and local businesses

- Sponsorship by local business on campus
- Connecting local business with student groups.

Encourage local first supplier agreements when the WSU BCC requires services for:

- New construction activity

  Building and facilities maintenance
- Catering
- Event services and management
- Market stall places.

Cumulative Impacts

The WSU BCC will have significant economic benefits and direct and indirect employment opportunities locally and within the Canterbury Bankstown LGA. It is anticipated that the construction will also contribute to direct and indirect employment through the supply-chain within the LGA.

While there will be some costs associated with the base building, interior fit out and annual operating costs. However, the WSU BCC is expected to support jobs direct and indirect jobs and generate to the local economy.

The anticipated impacts of the proposed project on the Bankstown rental market are minimal. The WSU BCC is likely to attract a broader range of students and increase the number of students seeking housing close to the WSU BCC. However, the site is accessed by good public transport networks allowing students to live within the broader suburbs. Students relocating from the Milperra Campus predominantly reside in the local housing market and the WSU BCCs impact on the housing market is anticipated to be low.

8.10. SOCIAL IMPACTS

Social impact assessment (SIA) is the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions which may include policies, programs, plans and projects.

The significance of potential impacts is assessed by comparing the consequence level of impact against the likelihood of the impact occurring. The consequence and likelihood scale is provided in **Figure 68**.

Figure 68 – SIA Consequence Matrix

			Consequence level				
			1	2	3	4	5
			Minimal	Minor	Moderate	Major	Extreme
Likelihood	A	Very likely	A1	A2	A3	A4	A5
	B	Likely	B1	B2	B3	B4	B5
	C	Possible	C1	C2	C3	C4	C5
	D	Unlikely	D1	D2	D3	D4	D5
	E	Rare	E1	E2	E3	E4	E5

Low		Moderate		High		Very high	

Source: Urbis

The following criteria are used to assess the consequence level of a potential social impact:

- Duration – The timeframe over which the impact occurs or the frequency of potential impacts.
- Extent – The geographical area or the number of people affected.
- Severity – Scale or degree of change from the existing condition as a result of an impact.
- Sensitivity – The extent to which people or an environment can adapt to or mitigate the impact.

The following scale outlines the likelihood of a potential impact occurring throughout the project lifecycle, without mitigation.

- Rare – Extremely unlikely that the impact will occur, at any stage throughout the project lifecycle.
- Unlikely – Unlikely that the impact will occur, at any stage throughout the project lifecycle.
- Possible – Possible that the impact will occur, at any stage throughout the project lifecycle.
- Likely – Likely that the impact will occur, at any stage throughout the project lifecycle.
- Very likely – Very likely that the impact will occur, at any stage throughout the project lifecycle.

The identified impacts are assessed both prior to and after the implementation of management measures. Management measures are designed to reduce negative impacts and to enhance positive impacts. They can take different forms that are implemented in the planning, construction or operational stage of a proposal.

The SIA concludes with an assessment of the overall impact level of a proposal. This is informed by the sum of all identified impacts and considers the likely impact on the status quo if the proposal does or does not proceed

Existing Environment

The following section contains a brief analysis of the characteristics of Bankstown (suburb) based on data from the ABS, DPE and BOCSAR. The full demographic data set is contained in Appendix A.

In 2016, Bankstown had a population of 32,113 people, representing 9% of the Canterbury Bankstown LGA's population. Key findings of the suburb's current population include:

- Bankstown has a relatively high young adult population, with 26.0% of the population aged 20 to 34 years, which is higher compared to Canterbury Bankstown LGA and Greater Sydney (22.4% and 23.1% respectively).
- Like Canterbury Bankstown LGA and Greater Sydney, the suburb is characterised as a family area with the majority (76.1%) of households being family households.
- There is a high level of cultural diversity, with a third (37.1%) of the population born in Australia compared to around half in Greater Sydney (49.6%) and NSW (57.1%). Furthermore, just under a fifth (17.7%) of residents speak English only at home, compared to 34.1% and 57.1% in Canterbury Bankstown LGA and in Greater Sydney respectively.
- Unemployment is higher in Bankstown (10.8%) compared to Canterbury Bankstown LGA (8.2%) and Greater Sydney (6.0%)
- The proportion of students currently attending university is slightly lower in Bankstown (17.0%) and Canterbury Bankstown LGA (17.3%) compared with Greater Sydney (19.2%).
- Almost one quarter (20.0%) of the Bankstown population have attained a bachelor degree or higher. This is slightly more than Canterbury Bankstown LGA (19.7%) however lower than Greater Sydney (28.3%).
- Socio-Economic Indexes for Areas (SEIFA) data indicates the Bankstown is extremely disadvantaged. Bankstown is in the bottom 20% of all NSW suburbs for relative socio-economic advantage and disadvantage.
- Bankstown's disadvantaged status is also evident through the area's low median personal weekly income ($453) which is lower than Canterbury Bankstown LGA ($502) and Greater Sydney ($719).
- The suburb is relatively dense. Over half (54.5%) of the dwellings in the suburb are flats or apartments, compared with 25.9% in Canterbury Bankstown LGA and 28.1% in Greater Sydney.
- Canterbury Bankstown LGA is expected to experience strong population growth, increasing by 39.5% between 2016 and 2036. The LGA will experience strong growth in young adults (15-29 years), with this age group accounting for a fifth (19.4%) of the total population in 2036.
- BOCSAR data indicates that the site is in a hotspot for non-domestic assault, break and enter (non-dwelling), malicious damage to property, motor vehicle theft, steal from motor vehicle and robbery. Over the past two years (September 2017 to September 2018), Bankstown had significantly higher crime rates compared to Canterbury Bankstown LGA and NSW.

Assessment

The SEIA provides a detailed assessment of the significant social impacts of the WSU BCC. The impacts are assessed with any planned mitigation measures to determine the residual impact level. The assessment process used to determine each impact level is described in the methodology section above.

Table 24 – Social Impacts

Social Impact	Impact Level (without mitigation measures)	Mitigation / Enhancement Measures	Residual Impact
Enhancing the identity and brand of Bankstown	High positive impact	Branding and marketing strategy to promote the WSU BCC.	Very high positive impact

Social Impact	Impact Level (without mitigation measures)	Mitigation / Enhancement Measures	Residual Impact
Increased engagement in higher education	High positive impact	Integration of education space to encourage strong research links with industry to facilitate student placements, internships and graduate opportunities. Inclusion of Badanami Centre for indigenous education.	Very high positive impact
Enhanced social and cultural activities	High positive impact	Inclusion of Badanami Centre for indigenous education which shares the culture, language, history and contemporary experiences of the indigenous population with the community.	Very high positive impact
Improved safety and activation	Positive impact	Mitigation and management measures identified in the CPTED Assessment. The design and landscaping elements, retail tenancies, through site links and open space will enhance the visual appearance of the site and encourage casual surveillance. The WSU BCC will implement access and safety control for an enhanced sense of safety on the site. The WSU BCC will have a high positive impact for pedestrians and users of the site.	High positive impact
Pressure on rental prices	Low negative impact	NA	Low negative impact
Change to community profile	Low negative impact	High-quality landscaped public domain that provides a link to Paul Keating Park and the future Council customer service centre and includes a key plaza with seating and landscaping to encourage use by the local community.	Low negative impact
Pressure on community infrastructure	Negative impact	The new WSU BCC will provide open space and community	Low negative impact

Social Impact	Impact Level (without mitigation measures)	Mitigation / Enhancement Measures	Residual Impact
		infrastructure to meet the needs of the incoming students, staff and visitors. The open space on Appian Way and the Level 3 terrace contains shade, seating, tables, power outlets, free wifi and other embellishments. In comparison, the area of Paul Keating Park immediately south of the WSU BCC consists largely of a grassed area with some unshaded terrace seating. It is therefore highly likely that most students, staff and visitors will be attracted by the higher level of open space quality to remain on campus. Similarly, the library on Level 4 of the WSU BCC campus will be designed to cater	
Pressure on transport, traffic and parking	Moderate negative impact	Preparation of a Green Travel Plan to encourage staff and students to use sustainable modes of travel.	Low negative impact
Construction	Moderate negative impact	Preparation and implementation of Construction Management Plan and Constriction Traffic Management Plan.	Low negative impact

Mitigation Measures

The following measures along with those in **Table 24** should be considered by Western Sydney University to enhance the student and academic use of community facility and open space provision at WSU BCC and to support local business and employment opportunities within Canterbury Bankstown LGA.

- Consider partnership opportunities with local secondary high schools to enhance exposure of the University to high school students. This could include hosting local school education competitions, awards nights or other events.
- Implementation of scholarship opportunities for local students to enhance participation rates of local students in tertiary education.
- Continue to work with Council to scope opportunities to provide programs and organise events at the WSU BCC to foster relationships between the local community, students and staff of the University.

- Encourage students to utilise the WSU BCC open space and Level 3 terrace to reduce potential pressure on existing open space. The following may be incorporated into student areas:
    - Make the spaces comfortable in all climatic conditions with the provision of shade in summer and heaters in winter
    - Use design features and operational policies to ensure students do not feel pressured to buy from food and beverage businesses in order to access open spaces on Appian Way and the Level 3 terrace.

Conclusion/ Cumulative Impacts

Based on the assessment in this report, it is expected the proposal will deliver long term positive social impacts for the Bankstown CBD. The high architectural quality will likely enhance the brand and identity of Bankstown and the creation of an accessible, high profile university campus will increase engagement levels of local residents in tertiary education. The WSU BCC proposes open space, publicly accessible areas and community infrastructure that will meet the needs of students, staff and visitors. The open space and publicly accessible areas have been well targeted to user needs and are likely to be more attractive to students, staff and visitors than the surrounding open spaces. The size of WSU BCC and number of incoming students do not warrant the provision of social infrastructure beyond the proposed the library.

8.11. CONTAMINATION AND HAZARDOUS MATERIALS

A Hazardous Building Materials Assessment (**Appendix N**) and a Detailed Site Investigation (DSI) Report (**Appendix M**) were undertaken by Douglas Partners.

The purpose of the DSI is to evaluate the contamination status of the site and its suitability, from a contamination standpoint, for the proposed development and to provide recommendations for further works, if deemed necessary. It should be noted that bulk excavation of the site is not included in the SSDA scope of works rather is included in an Early Works DA (DA-697/2019).

The investigation comprised a review of site history information, a site walkover, intrusive sampling, laboratory analysis for contaminants of concern and interpretation of results with reference to current NSW EPA guidelines and NSW State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55) guidelines.

Based on the site history review, it is evident the site has previously been used largely for commercial land use, and the surrounding land use has changed from residential to commercial overtime. Sometime between the years 1991 to 2003, all structures within the site were demolished and the site has since been used as a council car park. Considering the age of the former structures, it is likely that hazardous building materials, including asbestos containing material (ACM) were used in the construction materials. The demolition of the structures could therefore impact the area, especially if the demolition practices were poorly controlled.

The following searches determined that the site does not contain any significant level of contamination:

- The EPA regulatory notices search, NSW Contaminated Sites Notified does not list the site as contaminated;
- The Section 10.7 Planning Certificate did not indicate that there are any listed site contamination matters; and
- Safework NSW found no records of storage of hazardous chemicals.

The investigation involved drilling of twelve boreholes and collection of soil and groundwater samples to assess the site's contamination status. Based on the laboratory analysed samples, all contaminant concentrations were below the adopted site assessment criteria (SAC). On this basis, Douglas Partners considers the site to have a low potential for contamination.

Soil and Groundwater Contamination Assessment:

The site investigation was conducted in accordance with the seven step data quality objectives (DQO). The following checks and investigations were conducted with the collected soil samples:

- The soils were checked for actual acid sulphate soil (AASS) and potential acid sulphate soil (PASS) by measuring the pH values after adding certain elements.

- The soil sampling was submitted to Envirolab Services Pty Ltd for house QA/QC procedures.
- The Soil Assessment Criteria was applied in the investigation which identified the human and ecological receptors for potential contamination. Samples were assessed against the investigation of the Protection Council (NEPC) National Environment Protection (Assessment of Site Contamination) Measure (NEPM, 1999) amended 2013 (NEPC, 2013).
- Health Investigation Levels were assessed to analyse the potential for human health risk from chronic exposure to contaminants. Health Screening Levels assessed the risk onto human health by inhalation and direct contact pathways.
- Ecological Investigation Levels and Ecological Screening Levels assessed the risk to terrestrial ecosystems by potential contaminants.
- The presence of asbestos containing material was investigated.
- Groundwater Investigation Levels were assessed against the National water quality management strategy. Australian and New Zealand guidelines for fresh and marine water quality, 2000 (ANZECC & ARMCANZ); and Australian Drinking Water Guidelines.
- The potential contamination of groundwater was assessed against the Health Screening Levels published in NEPC (2013) and CRC CARE (2011)

Hazardous Building Materials HBM were not identified in the nominated area inspected by Douglas Partners. Limited or no access was available to certain areas of the site. Inaccessible areas should be assumed to contain HBM unless assessment of these areas by a Competent Person confirms otherwise.

HBM should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2017 (WHS Regulation) and relevant Codes of Practice, Australian Standards and guidelines.

Mitigation Measures:

Based on the site history review and laboratory results, Douglas Partners considers the site to be suitable for the proposed development, subject to the following conditions:

- Unexpected Finds - Douglas Partners recommends the incorporation of an unexpected finds protocol (UFP) to establish a strategy / management procedure to be followed during construction works, should unexpected finds be uncovered; and
- Waste Classification - A waste classification assessment should be undertaken during construction works to classify fill material for off-site disposal or potential re-use.
- HBM should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2017 (WHS Regulation) and relevant Codes of Practice, Australian Standards and guidelines.

8.12. GEOLOGY AND GROUND WATER

A Geotechnical Investigation (Appendix FF) was undertaken by Douglas Partners to provide information on the subsurface soil and rock profile and groundwater conditions across the site for design and planning purposes.

The investigation comprised the drilling of five rock cored boreholes and seven shallow auger boreholes. Three groundwater monitoring wells were installed to enable field testing of permeability and measurement of groundwater levels. Laboratory testing was carried out on selected soil and rock samples.

Geology Assessment

The 1:100,000 series geological map for Sydney identifies that:

- the site is underlaid by rock of the Ashfield Shale formation which is of the Wianamatta Group.
- There are no igneous dykes or other major faults in the area; and
- the site straddles the boundary of Blacktown Soil Landscape and Glenorie soil landscape.

Boreholes to depths of approximately 25m and standard penetration tests were undertaken at every 1.5m depth interval to analyse soil strength and collect samples.

The boring results found the ground profile is composed of:

- Filling - pavement materials at the carpark locations, comprised of asphalt concrete, the road base and a layer clayey filling proposed of gravel at depths ranging from 0.8m and 2.0m.
- Residual soil of clay or silty clay at a lower depth between 2.7m and 3.8m
- Bedrock – the upper bedrock layers typically comprising shale or laminite with some interbedded sandstone showed considerable variation between test locations. A generalised profile is summarised below:
    - extremely low and very low strength to depths of between 4.2 m and 6.8 m;
    - variable strength, typically low to medium strength with significant thicknesses of very low and low strength as well as medium and high strength layers; and
    - medium to high strength siltstone and sandstone with some very high strength layers below depths of between 12.2 m and 14.8 m.

With the identified soil profile, conventional earthmoving equipment will suffice for the excavation of the very low strength rock. Low strength rock will require moderate ripping whilst medium and high strength rock may require hard and very hard ripping and rock hammering.

Some rock cores have fractured zones and dipping joints that may become unstable. The appropriate support will be required for the proposed excavation and construction works.

The excavation works may cause ground movement. Properly anchored walls may experience lateral deflections of less than 0.1 or 0.5% of the excavation depth. There may also be stress relief movement when excavating the high strength laminate.

Groundwater Assessment:

In situ permeability testing in the standpipe monitoring wells was carried using the rising or falling head test method, whereby the standing water in each well was first measured then water pumped out of or into the well so as to lower or raise the standing water level in the well, whereupon its depth was again measured to commence the test.

The water depth in each well was then measured at regular time intervals as it fell back to the initial groundwater level. The equation of Hvorslev (1949) was then used to estimate the permeability of the subject strata, in this case, the bedrock.

Table 25 – Summary of Groundwater Level and Permeability Measurements

Borehole	Ground Surface Level (RL, AHD)	Groundwater Depth (m) (and RL)	Permeability (m/s)
BH1	24.9m	8.6 (RL 16.3m)	6.0 x 10-6
BH4	24.3m	7.9 (RL 16.4m)	6.2 x 10-6
BH5	23.8m	8.9 (RL 14.9m)	5.7 x 10-8

Groundwater depths have been measured within the rock from monitoring wells on the site with depths ranging from RL 14.9m to RL 16.4m as summarised in **Table 25**. The proposed basement will be excavated to a depth of RL17.18m via a separate Early Works DA, construction of the basement (subject to this SSD) will need to incorporate mitigation measures to combat groundwater uplift pressure.

The groundwater recorded has relatively high permeability and as the proposed basement level is below the groundwater level, then water flows into unlined excavations will need to be mitigated.

Acid Sulphate Soils Assessment

Reference to the Acid Sulphate Soil Risk Map (produced by the Department of Land and Water Conservation) indicates the site is within an area of no known occurrence of acid sulphate soils (ASS).

The site however is located within 1 km of an area mapped as disturbed terrain, potentially containing Acid Sulphate Soil (ASS). Samples of soil were screened for preliminary signs of actual acid sulphate soil (AASS) and potential acid sulphate soil (PASS).

Based on the ASS mapping and the laboratory testing it is considered that the soils are unlikely to contain AASS or PASS.

Mitigation Measures

Excavation:

Excavation and shoring are subject to a separate Early Works DA which will implement the ongoing recommendations of Douglas Partners including but not limited to:

- The excavation activities will implement shoring for the medium and high strength siltstone and sandstone layer of 12.2 and 14.8m. The shoring will require ground anchors or internal props. Temporary ground anchors may be used to support the excavation or shoring systems with the appropriate bond strength.
- It should be noted that permission will be required from adjacent property owners prior to installing bolts/anchors below their land. Due consideration should also be given to buried services and possibly basements on surrounding properties.
- Different foundational designs will be used for the different foundational stratum, the rock strength dictating the pressure of the foundation.
- The proper vibration mitigation measures will be required based on the experience of DP and reference to AS2670 that the maximum component PPBi of 66mm/sec be employed to mitigate risk of architectural damage. A vibration trial may be undertaken.

It is recommended that survey monitoring of the shoring walls and adjacent buildings should be carried out in critical areas to measure the vertical and lateral movements. The monitoring should be carried out using precise levelling techniques to 0.5 mm accuracy, with measurements taken on a weekly basis during the basement construction period.

Groundwater Measures:

The groundwater level measured within the rock from monitoring wells has been measured at depths between 7.9 m to 8.9 m below ground. Relatively high permeabilities have been recorded in the fractured rock. As the proposed basement level is below the groundwater level it is expected that water flows into unlined excavations could be significant.

Temporary support for excavation will be required to prevent groundwater inflow to the site to prevent the risk of large groundwater inflows which would require disposal off site and potentially drawdown of groundwater surrounding the site.

During excavation (subject to a separate Early Works DA) and construction, dewatering, possibly by ‘sump-and-pump’ methods, will be required inside the cut-off walls.

The design groundwater uplift pressure for any hydrostatic slabs should be calculated taking into account the potential groundwater level rises. This uplift resistance may be applied by the weight of the building, friction piles or ground anchors or a combination of these. In normal circumstances the weight of the finished structure (for buildings of more than about four storeys) is used to resist uplift in the long-term so temporary dewatering needs to continue until the dead load of the structure is sufficient to restrain the structure from upward movement.

A tanked basement would generally require the incorporation of a hydrostatic raft slab to resist uplift loads and to support the column/building loads, possibly with locally deepened beams and pads.

Cumulative Impacts

No cumulative impacts are expected.

8.13. STRUCTURAL IMPACTS

The proposed BCC consists of an 83 m high tower has 18 stories above ground with 2-story of under ground carpark, and also a 22 m cantilever from level 14 up. The building consists of a foundation system of pad-footings sitting on rock and a 600mm dia soldier pile shoring system. The core located at the mid-eastern side of the building, consists of 8 lift cores and two stair cores that is joined together by header beams.

The floor plates are prestressed concrete one-way slabs and band beams except for the cantilevered slab on levels 14-18 which consists of composite slabs supported by steel beams and inclined concrete-filled-steel-tube (CFST) columns jointing with prestressed tie beams and diaphragms in the slab system on levels 14,16 & 18.

The roof structure will be a light-weight non-trafficable steel roof. The construction of this building will be conventional except for the cantilevered section. The construction methodology and sequence for the cantilevered section is detailed

Assessment

The structural floor components shall be designed and constructed to contain any deflections under service loads within limits for structural integrity, visual appearance, avoidance of excessive floor slopes, prevention of cracking in floors, walls and ceilings, proper installation and operation of machinery and equipment, traffic or the building occupants, and avoidance of ponding.

Floor slopes within the building are going vary over time due to creep and shrinkage effects. This risk can be mitigated via pre-setting the floor levels at the cantilevered edge and provide additional topping to the required floor levels to satisfy the relevant acceptable Australian Standard requirements.

Building sways (Deflection) subject to service wind loads shall satisfy:

- Total lateral deflection to not exceed height/500.
- Inter-storey deflection to not exceed inter-storey/500 or 12mm, whichever is lesser.

Mitigation

Recommendations of the Structural Engineer should be implemented to prevent: variation in floor slopes over time due to creep and shrinking effects; building sways (deflection); building movement due to gravity loads; steel roof deflection; and crack control in slabs.

Gravity movement criteria causing changes to floor slopes should be explained in detail in the Project Brief, so that the end user is aware of the movements that may occur over the building life.

Cumulative

No cumulative impacts are expected.

8.14. TRAFFIC, PARKING AND ACCESS IMPACTS

A Transport Management and Accessibility Plan was prepared by Arup in support of the Bankstown City Campus and provides assessment of the expected traffic generation resulting from the proposal, against the existing and future infrastructure provisions. The assessment takes the following into account:

- Existing Pedestrian Network
- Existing Cycle Network
- Existing Arterial Network / Performance
- Existing Public Transport Provision/ Capacity
- Existing Parking on-site / within the Bankstown CBD
- Proposed Sydney Metro
- Rapid Bus Routes
- Bankstown Complete Streets Project (BCSP)

Existing Pedestrian Network:

Figure 69 – Existing Pedestrian Network

Source: Arup

The existing locality provides adequate pedestrian connections between the various interchanges / stations and the proposed development sites. There are pedestrian footpaths bounding every road and crossing signals at all major intersection. Zebra crossings and raised tables are provided at the inter sections between The Mall and Featherstone Street/ The Appian Way/ Jacobs Street.

Existing Cycling Network:

The existing cycling network is limited, requiring travel long existing roadways with traffic. There is currently no cyclist infrastructure surrounding the development site. Analysis by the BCSP has determined that there is currently a total of 148 cyclists within the CBD during the morning peak.

Existing Road Network:

The following key state roads connect the development site with the rest of Greater Sydney.

- **Stacey Street (A6):** West of the site, runs north to south, connecting with the Hume Highway, M5 and connects the site with Lidcombe and Parramatta
- **Hume Highway (A22):** North of the site, runs east to west, connecting the site with the Inner West, Fairfield, Cabramatta and Liverpool
- **M5:** South of the site, runs east to west and connects the site with the broader motorway network, with further connection expected with the future WestConnex works.
- **Canterbury Road / Milperra Road (A34):** South of the site, connects the site with other suburbs such as Punchbowl, Marrickville, Milperra, Moorebank and Liverpool.

The following are the local roads that service the development site:

- **Rickard Road** fronts the subject site to the north, running east to west and accommodating two lane traffic in each direction with additional turn lanes at intersections. It functions as the main arterial distributor for the existing site, the Bankstown Library and the Knowledge Centre car park.
- **Chapel Road** runs north to south and connects with Hume Highway and Marion Street. Mostly one lane traffic in each direction, south of Rickard Road and there is on-street parking.

- **Jacobs Street** provides access to the Council car park connection to the Bankstown Central and is used by buses accessing the interchange. There is unrestricted on street parking north of Rickard Road.
- **The Mall** runs east to west and is a traffic calmed street with raised pedestrian crossings. Between Featherstone Street and The Appian Way, there is one-way eastbound travel only. Short term on street parking borders the road.
- **The Appian Way** runs north to south between Rickard Road and North Terrace. It currently provides limited vehicular access and parking whilst accommodating pedestrianised segments of thoroughfare.
- **Civic Drive** runs east to west between Jacob Street and The Appian Way and provides access to the Civic Tower driveway. It also accommodates an on-street loading zone and short term parking.
- An access road fronts the west boundary of the development site, running north to south and provides access to the Library and Knowledge Centre car park driveway, with vehicle movement restricted to left-in, left-out at Rickard Road.

Existing Parking:

The Bankstown CBD currently accommodates 865 on street parking spaces, 1666 off street council spaces and over 5000 private off street parking. The existing site contains 43 spaces and The Appian Way accommodates 18 spaces.

Existing Road network:

Vehicular access to the site is currently via The Appian Way off Rickard Road. Rickard Road is located immediately north of the site which is a regional road consisting of three lanes running east to west and two lanes running west to east. Rickard Road provides a direct connection to the A6 Highway located to the east of the site. The A6 provides connections between Bankstown to centres north and south of Bankstown, including Lidcombe. The A6 also connects the site to other major, arterial roads and subsequently, the rest of the Greater Sydney.

The Appian Way, a one-way shared roadway provides both vehicular access to the car park within the subject site as well as access basement parking at the Bankstown Civic Tower. The Appian Way provides a connection to Jacobs Street, located east of the site and The Appian Way also accommodates on street parking. This on street parking is composed of 18 visitor spaces and 18 council staff parking spaces.

The development of the site needs to maintain this through access route off Rickard Road as access to both the Council Building and The Appian Way parking is not possible from Rickard Road via Jacobs Street.

The western side of the site is bordered by the Library and Knowledge Hub driveway, providing access to the existing Library carpark plus event and maintenance vehicle access to the Park. The Council has confirmed that this access use needs to be maintained. This driveway provides an opportunity to achieve vehicle access for the operational and parking needs of the project with minimal impact to traffic flow along Rickard Road. This may necessitate works to upgrade the road including ensuring clearance and sightlines at the entry point to accommodate the new BCC traffic.

Other traffic considerations include addressing the removal of the existing parking, including Council vehicle bays from the site, and providing emergency and maintenance vehicle access around the new building and to the existing adjacent buildings.

Current Arterial Performance:

A Traffic analysis was conducted on 5 September 2018 between the hours of 7am – 10am and 4pm – 7pm. This found the intersections between Rickard Road / Chapel Road and Rickard Road / Jacobs Street to have no congestion or significant queuing during the AM peak hour. Aside from some queuing during the PM peak hours along Chapel Road, no other significant queuing or congestion was observed.

Spot counts were undertaken, illustrating the low level of activity at the existing driveways that surround the existing site:

Table 26 – Existing Level of Activity

Driveway Location	Observed 15-minute count	
	In	Out
Bankstown Library underground car park	3	1
Left-turn from Rickard Road to at-grade car park and Bankstown Civic Tower Car Park	18	N/A
Driveway from Jacobs Street	21	3

Existing Bus Network:

The surrounding area currently contains a Bus interchange adjacent to the Bankstown train station, an interchange adjoining Bankstown Central and numerous, individual stations that are scattered across the locality. The Bankstown CBD is currently serviced by 16 bus routes that connects Bankstown with surrounding centres and suburbs. Routes servicing areas to the south typically start / terminate from the Bankstown Central Interchange.

Transport for NSW (TfNSW) has found that the existing bus occupancy on a typical day has no capacity issues during the AM peak period with most services having 'many seats available' when travelling towards Bankstown. All bus services leaving Bankstown during the PM peak period also have no capacity issues with exception of the M91 towards Parramatta which has 'standing room only'.

The buses servicing Bankstown during peak periods is presented below:

Table 27 – Estimated bus capacity

Terminus	Buses per hour per direction	Capacity per direction	Capacity of AM Inbound and PM outbound services only
Bankstown Station	21	1,449	1,449
Bankstown Central	15	1,035	1,035
Through Routes	22	1,518	3,036
Total	**58**	**-**	**5,520**

It is anticipated that the demand for bus services is approximately 12% of capacity during the AM peak and 8% during the PM peak.

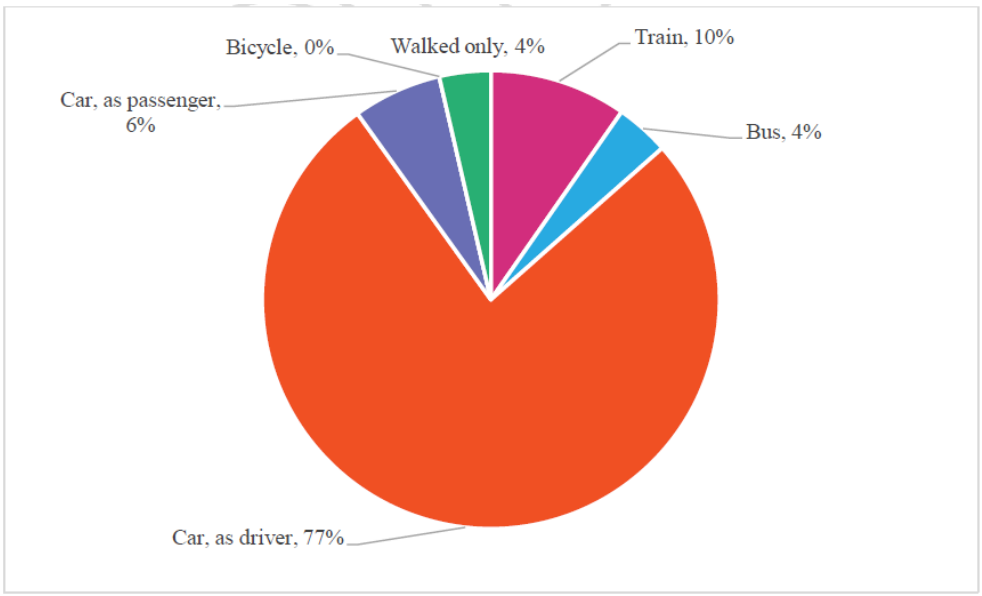
Existing Rail Network:

The Bankstown Station is serviced by the T2 and T3 lines, the T3 line operating between the city and Liverpool via Bankstown.

Existing Travel to Work Mode Share:

The following applies to the approximately 5,0000 people employed within the ABS Destination Zone in which the development site is located (DZN) 115710002.

Figure 70 – Existing Travel to Work Mode Share (DZN 115710002)



Source: Arup

Assessment

Forecast Distribution of Mode Share

Below is the expected distribution of mode share in travelling to the proposed WSU Campus:

Table 28 – Forecast Distribution of Mode Share

Mode	Staff	Students
Walk	7%	10%
Cycle	5%	5%
Car Driver	15%	5%
Car Passenger (incl. drop-off)	3%	5%
Bus	25%	30%
Train/Metro	40%	40%
Other	5%	5%
Total	**100%**	**100%**

Staff are expected to commute from Bankstown (60%), Canterbury (10%), Liverpool (10%), Merrylands (5%), Hurstville (5%) and other (10%). Many of these suburbs are within 20min walk or cycle as well as being serviced by bus and rail.

Forecast Increase in Commuters and Private Vehicle Use

It is forecast that the proposed development will result in the following increase in commuters during the morning and evening peak:

- 2159 people will arrive at the proposed campus during the AM peak
- 1446 people will depart the proposed campus during the PM peak
- 53 cars will arrive at the proposed campus during the AM peak

- 49 cars will depart the proposed campus during the PM peak
- 102 car passengers will be dropped off during the AM peak
- 67 car passengers will be picked up during the PM peak

Furthermore, it is expected that 50% of car passengers will be dropped off at The Appian Way. For drop offs, it is assumed that all arrivals will be from Rickard Road. It is expected that 80% of vehicles will arrive via Stacey Street and Rickard Road. Egressing vehicles must turn left onto Jacob Street and a 50/50 split is expected regarding eastbound or westbound movements from Rickard Road.

Impacts on Arterial Performance

The resultant impacts on the Rickard Road / Chapel Road and the Rickard Road / Jacobs Street intersections were assessed. The performance during both the AM and PM peak hour were assessed. It was found that the forecast average delay (sec) was at most, increased by 2 seconds as a result of the new development. The forecast increase in the Degree of Saturation was found to be, at most, 0.11.

This shows that the proposed development will have no significant impact on the functions of the surrounding intersections. The level of service will continue to be satisfactory and no road upgrades will be required.

Impacts on Parking:

It is anticipated that 5% of students will travel to and from campus by private vehicles, creating a demand of 200 spaces. This makes up 3% of the parking within the Bankstown CBD.

The proposed development will remove 43 existing at grade parking and 18 The Appian Way parking spaces for 95 new car park spaces, including 4 DDA bays. This does not comply with the parking requirements for educational Establishments in the BDCP 2015. However, the standard provided there is considered inappropriate as it mostly applies primary and secondary school sites. The accessibility of the site by public transport, the centres strategic objective to encourage healthy/ sustainable methods of travel, the existing parking provisions in Bankstown and the small provision of retail as part of the development have all informed the proposed car parking provisions. It is considered that the provision of new parking will be sufficient.

Forecast Increase in Public Transport Use

Most employees, university students and staff will use public transport to commute to the new BCC. The anticipated usage distribution is as follows:

- Bus (AM Peak): 631
- Bus (PM Peak): 419
- Train/Metro (AM Peak): 863
- Train Metro (PM Peak): 579

Impacts on Bus Capacity

As illustrated earlier, a majority of existing services have no capacity issues, with many services having ‘many seats available’. Furthermore, transport for NSW are expecting to increase the bus service levels for routes linking Bankstown with suburbs to the west and north. The rapid bus routes will connect the major metropolitan centres with 11 new high frequency bus routes, three suburban routes being planned for Bankstown. As such, the expected increase in bus usage will be sufficiently accommodated by the existing and future bus network.

Impacts on Train Capacity

In addition to the existing suburban rail lines, a new Metro is expected to convert the Bankstown rail line between Bankstown and Sydenham on 2024. The service will have a capacity of 1,100 passengers in each metro and it will operate every 4 minutes. Train services will continue to operate regularly during peak times to and from Lidcombe and Liverpool. As such, there will be significant capacity available to facilitate the proposed increase in train patronage.

Increase in Bike Use / Pedestrians

It is expected that 5% of tenants, staff and students will travel by bike. This means it is expected that there will be a further 108 bicycle trips during the AM peak period. It is forecast that there will be 206 trips by foot alone during the AM peak period. A further 863 pedestrians will be from the metro/train stations and 631 will be from the bus interchanges.

Mitigation Measures

As the impacts to the surrounding road network, bus capacity and train capacity have been determined to be nominal, no mitigation measures are proposed for these elements.

The existing bicycle and pedestrian infrastructure is lacking in regard to the expected increase in its usage. The proposed development in addition to the Bankstown Complete Streets Project (BCSP) will accommodate this. The BCSP intends to improve the pedestrian and cyclist only links throughout the area, notably, The Appian Way and the area between the development site and Bankstown Station.

The provision of new, safe bike networks as part of the BCSP will be the main contributor in achieving the cycling mode provision. The proposed development will include 35 bike spaces in the level 1 basement and there will a further 100 spaces in the surrounding public area which is sufficient for the expected 108 bicycle trips.

The development and BCSP intends to convert The Appian Way into a low speed, two way shared zone with improved pedestrian crossings at the North Terrace and The Mall. There will also be improvements to Jacob Street which is expected to accommodate pedestrian trip between the campus and the northern bus interchange. The upgrades to the pedestrian routes are expected to accommodate the anticipated demand.

The locations of the existing public transport nodes have informed the locations of entry points into the building. Given the high service of public transport nearby the site, it is anticipated that the new campus will predominantly be accessed by foot, approaching the campus from the south via The Appian Way.

It is anticipated that the pedestrian appeal of this route will increase in the future, with potential transformation of The Appian Way into a shared zone, as proposed in the draft Complete Streets strategy Master Plan, and the alignment of entries to the future Metro Station and bus interchange to the south.

Cumulative Impacts

It is expected that The Appian Way will support increased pedestrian traffic due to the planned “Eat Street” redevelopment.

8.15. BCA AND ACCESSIBILTY

Group DLA undertook a preliminary compliance assessment of the proposal with the Building Code of Australia 2019 (“BCA”). **Table 29** outlines items have been considered non-compliant and require further review against the detailed design at Construction Certificate stage, or may be able to be justified as a Performance Solution.

Table 29 – BCA Areas of further investigation

Item	Query or Deemed To Satisfy (DTS) Non Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements
1	The external wall to the Western Façade is required to achieve an FRL in accordance with Specification C1.1 of the BCA 2019. It is understood a performance solution will be developed to remove the requirement for this FRL due to the laneway directly adjacent.	Performance Solution by Fire Engineer	C1.1, Specification C1.1	CP1
2	The class 6 areas on the ground floor will have an FRL of 120/120/120 in Lieu of 180/180/180 and will not be fire separated from the Class 9b lobby areas.	Performance Solution by Fire Engineer (to rationalise & reduce to 120/120/120)	C1.1, Specification C1.1	CP1
4	Extended Travel Distances: **Base Building** Distance to a Point of Choice will exceed 20m up to approx. 23m at level 18 North Corner Distance to an exit will exceed 40m up to approx. 43m at the Ground Floor Extended Travel Distances: **Fitout (levels Ground-13)** Travel distances to a point of Choice will exceed 20m up to a maximum of 25m throughout Travel Distances to the nearest exit will exceed 40m up to a maximum of 47m at the Ground Floor. Travel distances between alternate exits will exceed 60m up to a maximum of 90m in several locations throughout.	Performance Solution by Fire Engineer	D1.4, D1.5	DP4, EP 2.2
5	Atrium smoke exhaust system to be sized for class 2, 3, 5 & 9 parts but will have class 6 areas opening into it.	Performance Solution by Fire Engineer	G3.2, Spec G3.8,	EP2.2

Item	Query or Deemed To Satisfy (DTS) Non Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements
6	Where the atrium smoke exhaust system integrates into the zone smoke control system riser, smoke dampers will be used in lieu of sub-ducts	Performance Solution by Fire Engineer	G3.4, Spec G3.8,	EP2.2
7	The zone pressurisation system on Ground- level 2 fire compartment may not achieve a 20 Pa pressure difference between an upper level in the event of a fire on the upper levels	Performance Solution by Fire Engineer	E2.2, Spec E2.2a	EP2.2
8	Travel from The Fire Control Room at ground floor to a road or open space involves a level change of approximately 700mm in lieu of the required 300mm.	Performance Solution by Fire Engineer	Specification E1.8	EP1.5, EP1.6
9	The Atrium Well spanning from Ground – Level 7 containing the escalators, as well as the Southern Atrium spanning from Ground to Level 3 must have a minimum width throughout of not less than 6m.	Performance Solution by Fire Engineer	G3.2	CP2
10	Atrium bounding construction will not comply with DtS requirements as fire curtains are proposed.	Performance Solution by Fire Engineer	G3.4, G3.5	CP2, EP2.2
11	Atrium will not utilise visual warning devices “EVACUATE” signs.	Performance Solution by Fire Engineer	G3.8, Spec G3.8	EP4.2
12	Fire Hose Reel on Ground floor not located within 4m of an exit	Performance Solution by Fire Engineer	E1.1	EP1.1

Group DLA prepared an Accessibility Report (**Appendix Y**) to provide an accessibility compliance assessment of design documentation against the Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards), the access provisions of the Building Code of Australia 2019 (BCA) and referenced Access Standards to ensure reasonable access provisions for people with disability.

The report recommends ongoing detailing of the access provisions, design requirements and recommendations outlined within **Table 30**.

Table 30 – Recommended access provisions and design requirements

Item	Requirement	Assessment	Recommendation
4.1	Site Linkages & Public Domain Areas (Ref: DDA & AS1428.1)	Accessibility in the public realm has been considered and overall circulation and gradients are capable of providing reasonable access in accordance with the relevant standards. There is limited detail on the drop off zone and whether the shard zone will be on grade and/or will have kerb-ramp access.	Landscape documentation that details the step-free accessways with access features, the accessibility strategies as The Appian Way shared zone and any other relevant design standards.
4.2	External Access to the Building (Ref: BCA/Access Code Clause D3.2 & AS1428.1)	All building entrances can be accessed via external ramps and stairs from the allotment boundary. The external ramps are well integrated into the design and have precedence of the stairs. The proposed ramp accessways and stair linkages can achieve BCA/ Access Code requirements.	Refer to Item 4.10 and Item 4.11
4.3	Accessible Car-Parking (BCA/Access Code Table D3.5, AS2890.6)	The provided accessible car-bays exceeds the BCA requirement. They are located in reasonable proximity to the B1 level passenger lifts. The provision and positioning of accessible parking can achieve BCA/ Access Code requirements.	Documentation must confirm that the vehicle aisle leading to the accessible car spaces and the accessible spaces achieves the required minimum height and/or other relevant built and indicatory provisions.
4.4	Building Entrances (BCA/Access Code Clause D3.1, 3.2, AS1428.1)	The proposal includes 5 accessible entrances and 1 non-accessible entrance. The proposed entrances are appropriately accessible. The entry access into the building is capable of achieving compliance with the BCA/ Access Code requirements.	Both the accessible and non-accessible entry doors require the compliance with appropriate design elements (e.g. clear width opening, circulation space). Directional signage is also required from the non-accessible entrance, leading to accessible entrances.
4.5	Emergency Egress (Ref: BCA D2.17, BCA/Access Code D3.3, AS1428.1)	The proposal includes 5 fire-isolated stairs and the proposed design indicates an off-set stair tread configuration is achievable at a majority of the fire-isolated stairs. The accessible entrances and ramps ensure that people with disability can egress from the building during an emergency.	All fire-isolated stairs need to accommodate fire access features including a continuous, consistent height handrail and luminance contrasting step nosing that is slip resistant.
4.6	Paths of Travel – Accessible Area Circulation requirements (Ref: Clause	The base-build paths of travel, the various external landscape terraces, balconies and courtyards as well as the development's internal fit-out design	Documentation must confirm that the base-build doorways, level surface transitions / threshold ramps, doors, floor surfaces and fit out design will comply with the

Item	Requirement	Assessment	Recommendation
	D3.1, D3.3, AS1428.1)	generally comply with the relevant requirements.	relevant design standards. The fit-out design must be shown to provide the required door clearances, door circulation, turning spaces, passing spaces and circulation areas.
4.7	Exemptions – Areas not required to be accessible (BCA/Access Code Clause D3.4)	Multiple areas, including restricted use service rooms and plant rooms are exempt from access requirements. The Building Manager room at level B1 is required to be accessible.	Detailed documentation must confirm that the building manager room at level B1 is appropriately accessible. Any general, day-to-day store rooms need to be accessible.
4.8	Passenger Lifts (BCA/Access Code Ref: Clause E3.6 and D3.3)	The development has 8 passenger lifts with continuous accessible paths of travel to all levels of the building that are required to be accessible. The indicative plans show the spatial provision for all lift passengers satisfies the minimum requirements. A destination Control system is considered for the development.	Detailed dimensions and design for the lifts need to demonstrate compliance with the access standards. An ongoing access review is required for the Destination Control System.
4.9	Walkways (BCA/Access Code Ref: Clause D3.3)	The development includes a 1:20 walkway within The Appian Way lift lobby that can achieve compliance with the access requirements.	Detailed documents need to be provided demonstrating the walkways will have the appropriate form and design (e.g. gradients, edge protection)
4.10	Ramps (BCA/Access Code Ref: Clause D3.3, 3.11)	The proposed development includes external and internal ramps. The indicative plans show that they will achieve compliance with access standards.	Detailed documents need to demonstrate that the ramps have the appropriate recession from the sit boundaries/adjacent path of travel. Any WSU Design Standards should also be considered and addressed.
4.11	Stairs (BCA/Access Code Ref: Clause D3.3)	The proposed development includes external and internal stairs. The indicative plans show that they will achieve compliance with access standards.	Detailed documents need to demonstrate that the ramps have the appropriate recession from the sit boundaries/adjacent path of travel as to accommodate the required handrail extensions. Other standard accessibility design standard need to be integrated and WSU Design Standards should also be considered and addressed.

Item	Requirement	Assessment	Recommendation
4.12	Escalators (BCA/Access Code Ref: Clause D3.8)	The development includes centrally located escalators that provide access up to level 7. No tactile ground surface indicators (TGSI) are detailed, but otherwise the escalators can achieve compliance with the access standards.	Detailed documents need to demonstrate the inclusion of TGSIs at the proposed escalators. Any WSU design standards should also be considered and addressed.
4.13	Accessible and Ambulant Sanitary Facilities (BCA/Access Code Clause F2.4)	The proposed design indicates that there are male, female, unisex, gender neutral toilets and other facilities including a sanitary facility/shower, ambulant cubicle and squat toilets are generally capable of achieving compliance with the access standards.	Detailed documents need to showcase that the sanitary facilities have the appropriate dimensions and/or fit-out as well as design elements as to satisfy the relevant BCA/ Access Code standards. Any WSU design standards should also be considered and addressed.
4.14	Accessible Adult Change Facilities (BCA 2019 – Clause F2.9 and Specification F2.9)	A Changing Places Facility will be provided. This is not a BCA requirement for this building classification. The facility is designed in accordance with the Changing Places Information Guide & Technical Standard (CPIG&TS) – June 2017, Option 2.	Detailed documents need to showcase the internal fit-out is designed in accordance with the CPIG&TS. Of note, the 2.4m ceiling height requirement exceeds the minimum ceiling height for standard sanitary facilities under BCA. This 2.4m ceiling height standard should be complied with.
4.15	Wheelchair Seating Spaces (BCA/Access Code Table D3.1, Clause D3.9 and Table D3.9)	The plans indicate that there will be 2 areas with fixed tiers that will accommodate seating. This includes multipurpose tiered space at ground level with loose, flexible seating on fixed tiers. A raised element on the northern side can provide edge protection. There is also a tiered dining space at the southern retail tenancy, ground level. This seating will not be accessible for mobility impaired as required under BCA/Access Code Table D3.1.	Detailed documents need to demonstrate that the multipurpose tiered space has the appropriate access standards (e.g. handrails, TGSIs) The raised element at the north needs to be developed as to meet the intent of AS1428.1 and safety by design. A design review is required for the tiered dining area as to provide continuous accessible path of travel. Any WSU design standards should also be considered and addressed.
4.16	Signage (BCA/Access Code Clause D3.6, Specification D3.6)	No details regarding the signage and provisions for accessible, ambulant and other accessible facilities have not been provided.	Future documents need to detail the statutory signage strategy that satisfies the BCA/Access Codes. Any WSU design standards should also be considered and addressed.

Item	Requirement	Assessment	Recommendation
4.17	Hearing Augmentation (BCA/Access Code Clause D3.7)	Hearing augmentation will be required at numerous area, rooms, meeting and/or teaching spaces.	Detailed documents need to showcase the appropriate integration of in-built amplification, hearing augmentation systems and public announcement screens. The areas that accommodate the hearing augmentation needs to be appropriately designed. Any WSU design standards should also be considered and addressed.

All the recommended detailed documentation to be provided is achievable and will occur prior to the CC stage.

In general, the proposed design has demonstrated that reasonable access provisions for people with disability can be achieved and that the design is capable of compliance with the relevant statutory accessibility requirements achieved through a combination of compliance with the deemed to satisfy (DTS) provisions and the Performance Requirements of the BCA.

Mitigation Measures

A detailed BCA assessment with integrated Section J provisions will be required prior to Construction Certificate along with referral to the NSW Fire Brigade due to Category 2 Fire Safety Provisions considered as a performance solution due to DtS non-compliances identified within a design, and the floor area of a fire compartment exceeding 2000 m² or the floor area of the building exceeds 6000 m².

Further development and refinement of detailed design requirements, such as internal fit-out design, and details of stairs, ramps, lifts, sanitary facilities and other access features will be included within future construction documentation and assessed prior to Crown Building Approval Stage/Construction Certificate Stage.

In addition to meeting statutory requirements, this report advises how the proposed development intends to integrate enhanced access provisions, universal design principles and additional guidelines (WSU Design Standards) to further the objectives of the Disability Discrimination Act (DDA) and ensure a welcoming and inclusive new Educational facility for all.

8.16. PEDESTRIAN WIND

A pedestrian wind study was undertaken by Windtech Consultants Pty Ltd in which wind speeds throughout the proposed development and surrounding streetscape were assessed against the Gust Equivalent Mean (GEM) and annual maximum gust winds criterion. This was undertaken by positioning a 1:300 detailed, scale model of the proposed development and the surrounding area within a boundary layer wind tunnel. The modelled area includes the buildings and topography within a 375m radius of the site.

The analysis also considers the greater surrounding terrain and height, with a range of 2.8km from the edge of the modelled area. This was then calculated with the regional wind model to determine the wind speeds at the site. 16 wind directions were then assessed against the model. The wind speeds were then measured by Dantec, hot-wire probe anemometers with the sample wind lengths ranging between 30 minutes and 1 hour. 50 points throughout the proposed site were assessed against the relevant criterion.

The Bankstown region has three principal wind directions: north-east / south-east to south / west. No part of the existing site exceeds the GEM and Annual Gust criterion. Several of the 50 points had their existing wind speeds measured to compare against the proposed wind speeds. This includes the following:

Table 31 – Measured, existing wind speeds

Point	Location	GEM Result (maximum exceedance: 5%)	Annual Gust (maximum speed: 23m/s)	Result
Point 9	South-East corner of the site	3%	18m/s	Pass
Point 14	South-West corner of the site	0%	14m/s	Pass
Point 22	North-East corner of the site	4%	18m/s	Pass

Assessment

Of the 50 study points, 22 points are located at the proposed ground floor, 22 points are located at the terraces and balconies between levels 2 and 18 of the WSU campus and 6 points are located at the surrounding footpaths. The assessment did not take into account any existing or proposed screens or vegetation. The results of the assessment found the following points to exceed the GEM criteria and the Annual Gust Safety Criterion:

Table 32 – Points that breach criteria

Point	Location	GEM Result	Annual Gust	Result
Ground Floor				
Point 9	South-East corner of the site	6%	21m/s	Fail
Point 14	South-West corner of the site	15%	23m/s	Fail
Point 22	North-East corner of the site	6%	19m/s	Fail
7th Floor				
Point 25	North-East Terrace	11%	21m/s	Fail
13th Floor				
Point 39	South-West corner of terrace	16%	24m/s	Fail
Point 40	West side of terrace	7%	15m/s	Fail
Surrounding Streetscape				
N/A				

Aside from the points listed above, all other areas are considered to be suitable for their intended uses as they pass both the GEM and the Annual Gust criterion.

Mitigation Measures

The report provides the following recommendations to ensure that the wind conditions are for all outdoor trafficable areas within and around the site is suitable for their intended uses.

- Retain the densely foliating evergreen trees along The Appian Way and Paul Keating Park on the ground level.

- An impermeable, full height screen should be placed along the eastern perimeter of the Level 7 north-east terrace.
- A 2.1 metre high, impermeable screen around the entire Level 13 terrace, densely foliating evergreen landscaping at the south west corner of the terrace, and localised mobile screening.

Cumulative Impacts

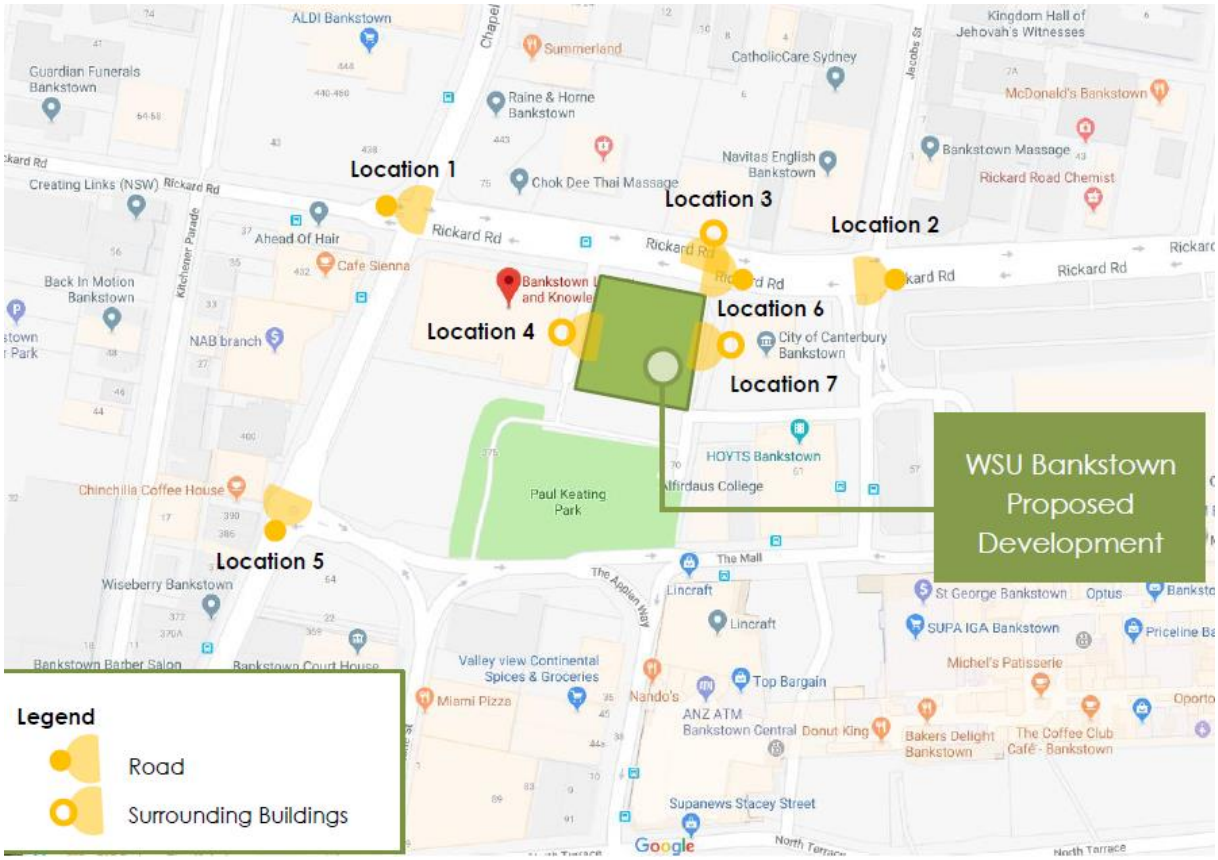
The proposed WSU campus may encourage further contemporary, high rise developments in the 375m radius, local area which will in turn increase the amount of wind tunnelling within the site and the overall local area. Furthermore, the proposed development and any subsequent high rise structures may alter the regional terrain and height. However, as Bankstown is identified as a key centre within Sydney's strategic documents, the built landscape of the region is projected to change over the long term. As such, the proposed WSU campus is considered not to have any significant, long term adverse impacts.

8.17. REFLECTIVITY

An external glare study was undertaken by Inhabit Australasia Pty Ltd in which the impact of the proposed façade solar reflections onto roads and existing buildings surrounding the proposal were assessed from 7 critical view locations. These critical view locations include the following:

- Location 1: Motorist heading east on Rickard Road
- Location 2: Motorist heading west on Rickard Road
- Location 3: Residents at 63 Rickard Road
- Location 4: Occupants of Bankstown library and knowledge centre
- Location 5: Motorist travelling north on Chapel Road
- Location 6: Motorist heading west on Rickard Road before Jacobs street
- Location 7: Occupants of Bankstown community services centre (Civic Tower)

Figure 71 - "Analysis Locations Map"



Source: Inhibit Australasia

The assessment of the resultant glare was undertaken utilizing models in the Radiance plug-in for Rhinoceros, a program and method which is consistent with the industry standard. The Radiance programme 'Evaglare' was used to identify glare sources from each of the 7 locations which were then assessed against the DGI scale.

The existing site does not contain any buildings and as such, does not generate any solar reflections or glare. The existing high rise developments in the surrounding locality does generate some glare, however this was not considered within the assessment report by Inhibit Australasia. The surrounding high rise structures and the surrounding vegetation may reduce the generated glare at the lower levels of the proposed development during particular hours. The overshadowing of existing developments and their impacts on the resultant glare caused by the proposed development have been integrated into Inhibit Australasia's model analysis. Furthermore, the locations utilized for the analysis already experience notable amounts of intolerable glare as a result of direct sunlight exposure.

Assessment

The results of the glare analysis are summarised in **Table 33** below.

Table 33 – Summary of Reflected Glare Issues and Comments

Location	% of Annual Daylight hours with Intolerable Glare due to WSU Facade	Problem times	Comment/ Mitigation
1: Motorist heading east on Rickard Road	2%	18:00 December, January and February	Reflected glare is equivalent to glare from direct view of the sun in the morning.

Location	% of Annual Daylight hours with Intolerable Glare due to WSU Facade	Problem times	Comment/ Mitigation
			Glazing on the western façade must have a reflectivity of 7% or less to remove the glare issue
2: Motorist heading west on Rickard Road	0%	N/A	No glare issues detected
3: Residents at 63 Rickard Road	4%	13:00 – 15:00 April May, June, July and August	Reflected glare is equivalent to glare from direct view of the sun in the late afternoon. It is expected that balconies will act as vertical shading and reduce the impact of reflected glares Residents may utilise blinds in the event of glare issues.
4: Occupants of Bankstown Library and Knowledge Centre	2%	15:00 March and October. 16:00 October and November.	It is expected that the significant sun-shades on the library façade will reduce the impact of the reflected glare. The exterior glazing on the library will only transmit a portion of the reflected light.
5: Motorist heading north on Chapel Road	1%	17:00 October	The simplified glare model does not include surrounding trees and greenery. Trees appear to block the line-of-sight between the assessed viewpoint and proposed development.
6: Motorist heading west on Rickard Road before Jacobs Street	0%	N/A	No glare issues detected.
7: Occupants of Bankstown community Services Centre (Civic Tower)	2%	7:00 – 9:00 January, November and December	Reflected glare is equivalent to glare from direct view of the sun in the late afternoon. Occupants may utilise blinds to for the 2% of annual daylight hours where intolerable glare is present.

The results indicate that intolerable glare is seen in all locations. However, most of this intolerable glare is due to direct exposure to the sun, and not due to reflected glare from the proposed WSU façade. At locations 2 and 6 - looking west on Rickard Road - there is no intolerable glare due to the building façade.

At location 1, facing east on Rickard Road, there is intolerable reflected glare due to the proposed building's western façade at 6pm in January and February. A glazing reflectivity of 7% or less is required to alleviate this issue.

This issue is present for approximately 1-2% of annual daylight hours throughout the year. Additionally, the intolerable DGI result is comparable to the glare that motorists experience in mornings during summer, from direct exposure to the sun.

At location 5, facing north on Chapel Road, there is intolerable reflected glare due to the proposed building's south-east façade at 5pm in October. This location has been deemed low-risk as the modelling did not account for trees that appear to block the line-of-sight between the viewpoint and proposed building, expected to reduce the glare intensity.

The reflected glare impact to surrounding buildings is significant, however, it is expected that architectural details not accounted for in the model, such as balconies and shading devices, will block some of the reflected glare. Additionally, occupants may utilise blinds if the glare issue is present.

Mitigation Measures

The façade development and design changes have improved the external reflectivity outcome with a 12-20% lower reflected glare intensity achieved by the current façade compared to the initial façade concept. The resultant glare that will impact the neighbouring buildings will be further reduced by the existing architectural details of the surrounding buildings including existing sun-shades, balconies and blinds.

Regarding further mitigation of solar glare impacts, the report recommends that the western building facades should have a reflectivity of 7% or less to remove the glare issue at location 1. Existing trees should be retained or replaced to help reduce glare at location 5.

The proposed new WSU campus will have vertical sunshades, evenly distributed across the entire north, east and west facades. There will also be horizontal louvres at every level spandrel zone. These sunshade devices will be provided at a high frequency, with shallow openings between them. As such, they are expected to sufficiently mitigate the intensity of solar reflections generated by the campus.

Cumulative Impacts

The proposed development's architectural design will adequately mitigate the solar glare generated by the glazed façades. However, the minor, residual solar reflection caused by the development will still contribute to the overall glare within the area. Furthermore, the new campus may incentivise more contemporary, high rise developments in the area. Such developments may also increase the overall glare generated in the area.

The results have been generated with certain material properties specified. These values are intended to be conservative. However, for the glare assessment to remain applicable, material finishes on the building façade must have reflectivity values equal to or lesser than those specified in the Reflectivity Assessment (**Appendix DD**). Increased material reflectivity or variation in surface finish may contribute to additional glare and unforeseen issues.

8.18. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

A Crime Prevention Through Environmental Design (CPTED) was prepared by Urbis and assesses the proposed development against the 4 key CPTED principles. The principles are as follows:

- Surveillance
- Access Control
- Territorial Reinforcement
- Site and Activity Management

The development was assessed against the provisions of the following relevant policies:

- NSW Crime Prevention and Assessment of Development Applications (2001)
- City of Canterbury Bankstown, Bankstown Development Control Plan (2015)
- City of Canterbury Bankstown, Community Safety and Crime Prevention Plan 2016-2019 (2016)

Furthermore, a current community and crime profile was considered during the assessment and a site inspection was conducted on 22 February 2019. BOCSAR was used to identify the crime hotspots that are present as the development site.

Existing Environment

The site has been identified as a hotspot for the following criminal activity:

- Steal from Motor Vehicle
- Motor Vehicle Theft
- Break and Enter – non-dwelling
- Non-domestic Assault
- Robbery
- Malicious Damage to Property

Overall, the Bankstown LGA has a significantly higher crime rate compared to Canterbury Bankstown LGA and the NSW.

During the site inspection, no significant issues were identified with two minor instances of graffiti observed. It is noted that currently, there is minimal pedestrian and vehicular activity in the precinct overall, although there is high activity in the children's park. There is currently CCTV within the precinct and at the entry to the Library and Knowledge Centre basement parking.

Assessment

As the proposed development is located in a site that is a hotspot for a variety of opportunistic crimes, the following elements of the proposed development have been identified as priority areas: car parking / entry and exit points / external layout / maintenance and management. As such, the development has been properly designed as to mitigate and deter these identified crimes.

Mitigation Measures

The proposed development will provide car and bicycle parking with access controlled by boom gates, swipe access and roller shutter doors for after hours entry and exit. This will appropriately deter and inhibit "steal from motor vehicle" and "motor vehicle theft".

The development includes having retail front the ground level pedestrian zone along The Appian Way, activating the street frontage ang generates casual surveillance at the entry and exit points. There will also be CCTV surveillance around the key entry and exit points at the north, south and east entry points.

The design of the building ensures that sight lines along The Appian Way pedestrian zone are uninterrupted and that landscaping creates an open, inviting and active space. Furthermore, an intruder detection system will be implemented with a building managers office at Basement 1.

Other design details will be easily implemented within the detailed drawings and plans provided during the CC and operational phases. This includes substantial, informative signage, restriction to entrances into the during after hours and lighting.

A Plan of Management will be prepared handling protocols regarding security, rubbish, graffiti removal, lighting and landscape maintenance, operating hours and emergencies. A Construction Management plan needs has been provided as to reduce conflicts between pedestrian, cyclist and vehicle movement.

Cumulative Impacts

The increased population and activity of the proposed development and the subsequent development in the area spurred by the proposed development will decrease the overall crime rate in the area.

8.19. ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

The *Environmental Planning and Assessment Regulation 2000* (clause 7(4) of Schedule 2) defines the Principles of Ecologically Sustainable Development as follows:

a) The **precautionary principle**, namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

   i. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

   ii. an assessment of the risk-weighted consequences of various options,

b) **inter-generational equity**, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

c) **conservation of biological diversity and ecological integrity**, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

d) **improved valuation, pricing and incentive mechanisms**, namely, that environmental factors should be included in the valuation of assets and services, such as:

   i. polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

   ii. the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

   iii. environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

A sustainable design statement was prepared by Umow Lai, which assesses the proposed development against the relevant sustainability measures and the criteria listed within the SEARs. This includes analysis of the passive design features, energy efficiency, indoor environment quality, water conservation, sustainable materials, transport, waste management and other relevant WSUD initiatives.

The following sections detail how the proposed design specifically responds to each of these principles:

Precautionary principle

The design for the Bankstown City Campus follows the precautionary principal by applying best practice environmental sustainable design throughout the project. Much of this design has been undertaken to prevent irreversible damage to the environment. For example, the large solar photovoltaics array covering all available areas of the roof of the building will ensure that a significant proportion of electricity comes from renewable sources. This reduces the harm to the environment that occurs through fossil fuel based power generation.

A risk weighted assessment basis is also followed to assess the merits of various sustainable design options. An example of this is the Climate Adaptation Plan that is being developed to allow the project team to identify key risks associated with climate change over the expected lifetime of the project. The Plan includes a risk assessment to analyse varying degrees of climate change severity over future time scales based on scientific research. The risk assessment process identifies design initiatives that can be implemented to ensure that risks are lowered to an acceptable level. The significant planting of vegetation across the building is driven by a desire to improve the local thermal environment while adding to local ecology.

Inter-generational equity

The project sustainable design initiatives are intended to maintain or enhance the health, diversity and productivity of the environment for the benefit of future generations. Key among these issues is climate change, which represents the single greatest threat to the health, diversity and productivity of the environment for the benefit of future generations. The project combats climate change through the design of the building being very energy efficient and also through the use of renewable electricity sources for part of the power consumed by the building.

Other areas of intergenerational equity are also addressed in the sourcing and supply of raw materials used for the construction of the building. Key materials for use in the building such as timber, steel and PVC are responsibly sourced to limit their impact on future generations. The project is also in close consultation with members of local indigenous communities to ensure that the wishes of the traditional custodians of the land are respected.

Conservation of biological diversity and ecological integrity

Conservation of biological diversity and ecological integrity is a fundamental consideration for the project sustainable design. The Bankstown City Campus occupies a relatively minor area of limited ecological value (a former car park) and so therefore has minimal existing biological diversity and ecological integrity. The project is seeking to significantly improve its ecological integrity through the planting of various forms of vegetation. This includes large areas of planting including trees on the terraces that step up the building and also green wall elements.

The project will also benefit biological diversity and ecological integrity through the sourcing of materials and resources required for the construction and operation of the facility. Construction materials such as timber will be supplied using sustainable forest certification schemes that ensure that biological diversity and ecological integrity is protected and maintained. Similarly various other materials used in the project will be sourced with Environmental Product Declarations that are designed to protect biological diversity and ecological integrity.

The conservation of water resources is also a fundamental consideration in the design. Low water consuming fittings are to be specified throughout the project. In addition the roof area is used to capture a substantial volume of rainwater that reduces potable water consumption and therefore reduces pressure on ecological systems caused by water scarcity.

Improved valuation, pricing and incentive mechanisms

Western Sydney University is developing the Bankstown City Campus for its own use and will be the long term occupant and operator of the facility. The University is also responsible for the provision of all resources needed for the building and the management of all waste produced. This closed cycle from production to disposal ensures that the University bears the cost of containment, avoidance or abatement of any pollution associated with the development.

Sustainability is fully integrated through the design and construction of the Bankstown City Campus to ensure that the strong environmental goals set for the facility are achieved in the most cost effective way. Detailed energy, water and environmental impact modelling is used throughout the design process to optimise the performance and effectiveness of the project.

Assessment

The Intergovernmental Panel on Climate Change has declared that buildings consume 32% of the world's resources and are the biggest source of emissions and energy consumption. As such, new developments are required to focus on sustainability and achieve compliance with the relevant standards and provisions. The proposed development will generate a substantial footprint considering the scale of the development, the proposed population to be supported and the breadth of development's functions.

The development requires compliance or consideration of the following:

- Clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000
- Section J of the National Construction Code
- The Green Star Design & As Built

Furthermore, the development is identified as requiring 60 points out of 100 to achieve a 5 star Australian Excellence rating. The proposed project will achieve 65.5 points including a point 'buffer'.

Mitigation Measures

The proposed BCC has been designed with the following ESD approaches:

Building Fabric and Massing

- **Building Fabric**: the proposed building walls, ceilings and suspended floors will provide the appropriate building insulation. This will control the internal temperature and meet/ exceed the minimum NCC requirements.
- **Preliminary Glazing Performance**: the proposed external shading system will minimise the solar load across the building's façade by limiting unwanted solar exposure. The different glazing configurations will be high performance low-E glazing which provides excellent solar control and daylight transmission properties.
- **Air tightness**: the target air leakage rate is $5m^3/hr.@50Pa$ which is considered standard for an air conditioned office type buildings in the UK. This will contribute towards the energy efficiency of the development.

Management Strategies

- **Commissioning**: the appropriate contractors and trader will conduct pre-commissioning, commissioning and quality monitoring. This includes monitoring of air pressure, energy performance and energy monitoring.
- **Building Users Guide**: a building users guide will be prepared for future tenants and building management to achieve the planned environmental performance
- **Construction Management**: An Environmental Management Plan will be provided during construction works by an appropriately accredited contractor
- **Metering**: electrical and thermal metering will be provided in accordance with Green Star requirements.

Indoor Environment Quality

- **Indoor Air Quality**: Monitoring of CO_2, air ventilation, air filtration and a fan coil system will improve the indoor air quality
- **Daylight**: the proposed glazing technology will allow transmission of visible daylight whilst rejecting a high proportion of solar radiation, providing a balance between daylight, views, glare control and energy efficiency. 45% of the total floor area will receive a Daylight Factor equal or greater than 2% which will achieve 1 point for the relevant Green Star credit.
- **Lighting**: the proposed development will integrate LED light fixtures, specified for their energy efficiency, high colour rendering index and long life span. Perimeter daylight dimming and occupancy centres will control lighting levels.
- **Thermal Comfort**: the façade insulation, shading and air conditioning will ensure core zone comfort is maintained in accordance with ISO7730.
- **Noise**: building services will achieve an ambient internal noise level in accordance with AS/NZS 2107:2000 and acoustic testing will be conducted by registered professionals.
- **Minimisation of Internal Air Pollutants**: materials used will minimise off-gassing of Volatile Organic Compounds and Formaldehyde

Energy Efficiency

- **Building Façade**: provides passive temperature control and lighting
- **Energy Efficient Air Conditioning Design**: the development will include an in-ceiling fan coil with multiple efficiency measures. Further the air conditioning system will include efficient electric motors, water-cooled chillers, condensing gas boilers and variable speed pumping systems. Plant energy will be monitored and optimised.

- **Electrical Design Initiatives**: LED lighting will be energy efficient and daylight sensors will provide daylight compensation control and motion sensors, ultrasonic occupancy sensors and switches will also be used.
- **Renewable Energy – Solar PV**: the proposed on-site Solar PV arrays will provide 134,000 kWh annually
- **Preliminary Energy Modelling**: the development will result in the following Green Star Energy Points:

Table 34 – Preliminary Green Star Energy Results

Category	Minimum Points	Target Points
Façade Reduction	1.4	1.6
GHG Emission Reduction	4.6	4.9
Renewable Energy	1.0	1.0
Peak Energy Demand	1.9	2.0

Transport

- **Car Parking**: 15% of proposed car park spaces will encourage smaller, more efficient vehicles and dedicated charging bays can easily be implemented during a later stage of this development
- **Cyclist Facilities**: the development includes bike parking and end of trip facilities to encourage cycling

Water Efficiency

- **Rainwater collected** by the 45kL rainwater tank and collected fire protection system test water will be reused on site.
- **Landscaping** will be **water sensitive**
- Basins, pans, sinks, urinals and showers will have **water efficient fittings.**

Materials

- **Recycling Waste Storage**: a dedicated storage area will collect, separate and recycle the different recycling materials collected on site
- **Waste Reduction**: Construction and refurbishment materials will have significant recycled content and utilise Environmental Management Systems in its manufacturing
- **Steel**: sourcing of steel will be in accordance with Green Star requirements

Land Use Ecology and Emissions

- **Sustainable Sites**: roof materials will be considered to minimise heat island effects.
- **Stormwater Management**: Stormwater runoff quantity and quality will be controlled

Emissions

- **Refrigerators**: the refrigerators used will be in HVAC systems which have zero Ozone Deletion Potential
- **Light Pollution**: The building is designed to minimise light pollution; no light is directed beyond the site boundaries or up to the sky
- **Watercourse Pollution and Reduced Flow to Sewer**: the proposed development includes OSD
- **Insulant ODP**: The thermal insulation will avoid the use of ozone depleting substances

Cumulative Impacts

No adverse cumulative impacts are anticipated.

8.20. ACOUSTIC AMENITY

Methodology

An Acoustic Services report was prepared by Norman Disney & Young and provides a detailed assessment of the anticipated acoustic impacts of both the construction and operational phases of the proposed development.

The noise loggers were used to measure existing background sound levels and were located adjacent to residential properties on Rickard Road and Chapel Road, Paul Keating Park as well as commercial properties as outlined in **Figure 72**. The noise loggers collected 15 minute samples during daytime, evening and night time, no significant drift was noted during equipment calibration and all meteorological conditions were appropriately removed from the results. The logger locations were used for assessment against the resultant noise produced by the proposed development.

Figure 72 – Location of Noise Receivers

Source: Norman Disney & Young

The predicted noise levels caused by the construction and operation of the campus was assessed against the following criteria:

- Project trigger noise criteria;
- Project trigger noise levels for emergency equipment; and
- Sleep disturbance noise levels.

The *NSW Noise Policy for Industry (NSW NPfI)* provided assessment methods for controlling intrusive noise impacts and maintaining noise amenity. This was applied to the closest residential receivers to assess the acceptable amenity and intrusive noise levels.

The assessment and management of construction noise impacts was undertaken against the *NSW Interim Construction Noise Guideline*.

The assessment of acceptable vibration levels was based upon the *German Standard DIN 4150-3 Structural Vibration Part 3: Effects on building and Structures.*

These guidelines were used to recommend noise and vibration mitigation methods and assess whether there would be any acoustic impacts caused by the development.

During the assessment of acoustic impacts, the standard construction hours were considered to be 7:00-18:00 Monday to Friday and 8:00 to 13:00 on Saturdays.

Existing Environment

The existing ambient noise levels are illustrated in **Table 35** below.

Table 35 – Existing Noise Levels

Location	**Noise Index**	**Noise Level, dB re 20µPa**		
		Daytime **7:00 – 18:00**	**Evening** **18:00 – 22:00**	**Night-time** **22:00-7:00**
L1 – 1-5 Jacobs Street, Bankstown NSW	L_{A90} (RBL)	54	54	41
	$L_{AEQ, period}$	65	65	60
L2 – 402-410 Chapel Road Bankstown NSW	L_{A90} (RBL)	54	51	42
	$L_{AEQ, period}$	64	63	61

The external noise management levels at the different receivers are as follows:

- Commercial premises (External Noise Management Level): 70 $L_{eq,15mins}$ [DBA]
- Passive Recreation area (External Noise Management Level): 60 $L_{eq,15mins}$ [DBA]
- Residential Properties on Rickard Road (External Noise Management Level): 46 to 64 $L_{eq,15mins}$ [DBA]
- Residential Properties on Rickard Road (RBL): 41 to 54 $L_{A90,15mins}$ [DBA]
- Residential Properties on Chapel Road (External Noise Management Level): 47 to 64 $L_{eq,15mins}$ [DBA]
- Residential Properties on Chapel Road (RBL) 42 to 54 $L_{A90,15mins}$ [DBA]

Construction Noise and Vibration Assessment

The sound levels generated by the construction activities have been based off the DEFRA BS5228 and AS2436 databases.

The assessment includes all the individual pieces of equipment during construction works. The L_{eq} sound pressure levels were measured for the following activities and is summarized below:

- **Demolition Activities**: exceeds all external noise management levels (85 to 93dBA)
- **Earthworks**: exceeds all external noise management levels (77dBA)
- **Piling** (bored drilling) exceeds all external noise management levels (79dBA)
- **General Construction**: exceeds all external noise management levels except *Generator, power for Site Cabins (3kW)* (65 to 79dBA).
- **Generator, power for Site Cabins** (3kW) doesn't exceed the commercial premises external noise management level (at 65dBA)
- **Noisy Activities when Building is Enclosed**: exceeds all external noise management levels (73 to 81dBA)

Noise generation in exceedance of >75dBA qualifies as 'highly noise affected management level' regarding residential land uses. As some of the expected construction works exceed 75dBA, the affected residential properties will require community consultation and a Construction Noise & Vibration Management Plan (CNVMP).

The report found that the expected construction activities will have little to no impact on the surrounding buildings in regard to vibrations. The construction works will be compliant with the vibration limits as long as all compacting equipment is used within safe working distances. The NSW RMS provides the minimum safe working distances as per the CNVG regarding human response to vibration and prevention of cosmetic damage to buildings in the area. The guideline covers the following critical equipment:

- Vibratory Roller
- Small Hydraulic Hammer
- Medium Hydraulic Hammer
- Large Hydraulic Hammer
- Jackhammer

Construction Mitigation Measures

Adjoining properties and residents will be notified of upcoming works to inform them of the nature and timescale of the construction works. A contact point will be available 24 hours a day to receive any complaints and a project representative will respond to all complains as soon as possible.

As the construction methodology is not finalized, a detailed construction and vibration management plan and qualitative construction noise will be conducted and provided prior to the issuing of a construction certificate (CC) in accordance with AS2436-2010 and all other relevant guidelines. An acoustic contractor will undertake measures and assessment prior to the generation of the management plan.

Generic standard noise mitigation strategies recommended include the following:

- Appropriate time management, reducing intrusive works during more sensitive time periods and preventing the use of the nosiest equipment simultaneously
- Avoid any unnecessary intrusive noise generation
- Utilize the most appropriate travel routes to reduce noise impacts
- Use less noise intense equipment where reasonable and feasible
- Install temporary noise barriers/ absorption where appropriate
- Position intrusive activities in the appropriate areas
- Some activities should be restricted to day period

In regard to vibration, compliance with the RMS minimum safe working distances should effectively reduce any potential adverse impacts.

Operational Acoustic and Vibration Assessment

It is expected that the operation of the WSU campus would lead to negligible vibration impacts and will comply with the stipulated vibration limits.

It is expected that there will be two sources of intrusive noise generation once the proposed WSU campus is operational. The following Building Services Plant Noises were assessed against the intrusive and amenity criteria.

- **Load Bank**: Located at level 18 on the north side of the building. Assuming there is a noise barrier at the north façade, the use of the load bank during emergency situations will, in a worst case scenario at night, result in an emission that complies with the emergency scenario 56 dBA maximum at the boundary of the nearest residential apartments on Rickard Road.
- **Emergency Generator**: Will be installed in the generator room on level 18 and is expected to require heavy acoustic enclosure and walls/ attenuators. The emergency generator noise will comply with the 56 dBA emergency scenario criteria.

As such, the operation of the WSU campus is expected to result in little to no ongoing acoustic impacts to surrounding land uses.

Operational Mitigation Measures

HVAC equipment should be treated using a combination of the generic/ standard noise reduction strategies as follows:

- Selection of low noise units;
- Strategic location of equipment away from most sensitive receivers;
- Duct internal acoustic lining (where appropriate);
- Acoustic attenuators (where appropriate);
- Acoustic louvres; and
- Acoustic barriers (if exceed the above recommendations).

All mechanical services noise emissions from the development will be designed to satisfy the boundary noise requirements of the NPfI. These will be reviewed in detail as the design of the development progresses.

The overall building envelope, internal partitions and building services equipment will be designed in accordance with the recommended internal design sound levels under AS/NZ2107:2016 and Development Near Rail Corridors and Busy Roads – Interim Guideline.

Cumulative Impacts

No cumulative impacts are expected.

8.21. CONSTRUCTION IMPACTS

Archerfield Partners has prepared a Preliminary Construction Management Plan (CMP) for the proposed development. A copy of the Preliminary CMP is provided in **Appendix L**.

The Preliminary CMP has been prepared considering each of the specialist technical reports that have been submitted with the SSDA and in accordance with the SEARs. It is proposed to serve as a reference document for the selected principal contractor and a final CMP will be prepared prior to commencing site works.

Arup has prepared a preliminary Construction Pedestrian and Traffic Management Plan which can be found as Appendix C of the Traffic Management and Accessibility Plan (**Appendix Q**) which will also be finalised by the contractor selected for the construction works when further detail is progressed. The CTMP will consider temporary interruptions to vehicular and pedestrian traffic during the works. It will ensure public safety is maintained and any interruption to the use of public space is minimised.

Figure 73 – Proposed construction vehicular routes

Source: ARUP

The Final CMP is proposed to address the following issues:

- Designated areas for stockpiling and recycling waste according to specific streams.
- Waste handling, management and storage procedures.
- Disposal procedures.
- Staff training on the contents and requirements of the WMP.
- Emergency Management.

It is anticipated that the final CMP will be required as a condition of consent and the implementation of the agreed measures will ensure the potential impacts of the proposed development will be mitigated, minimised and/or managed to avoid unacceptable impacts on the site or the locality, including traffic, health, safety, amenity and the environment.

8.22. DANGEROUS GOODS

A dangerous goods review was undertaken by Salus Risk (**Appendix O**) which assessed the various hazardous elements within the proposed development including the diesel fuel storage and the dangerous chemicals used in relation to the cooling towers. The storage and handling of these elements were assessed against the requirements and guidelines included in the following:

- The Australian Dangerous Goods Code 7th edition
- NSW Work Health and Safety Act 2011
- NSW Work Health and Safety Regulation 2011
- NSW Workcover Code of Practice for 'Managing risks of hazardous chemicals in the workplace' 2014

The following installations were assessed:

- Basement Level 2 Diesel Tanks
- Ground Level Diesel Fill Point
- Level 18 Diesel Generators
- Pipework
- Water Treatment Chillers

Assessment

The following design features were found to be acceptable, with no further action required:

Basement Level 2 Diesel Tanks (2 x 8,000L underground tanks):

- **Separation**: the tanks are appropriately separated from the boundary, between the tanks and from other fill points.
- **Direct In-ground tanks**: The tanks are properly surrounded and covered in appropriate materials to support the expected loads from above the tank.
- **Ignition Sources**: No requirement to exclude ignition sources nor will equipment installed need to be rated from use in a hazardous zone.

Ground Level Diesel Fill Point:

- N/A

Level 18 Diesel Generators:

- **Separation**: The generators do not have any separation requirement from protected or public places.
- **Ignition Sources**: No requirement to exclude ignition sources nor will equipment installed need to be rated from use in a hazardous zone.
- **Fire Protection**: A portable foam-type fire extinguisher will be provided with a rating of at least 2A 20B.

Pipework:

- N/A

Water Treatment Chillers:

- **Storage**: The class 8 corrosive substances are in the appropriately sized storage with good natural ventilation and spill containment. The appropriate dangerous goods signage will be provided, ignition sources do not have to be controlled.

Mitigation Measures

The report provides further safety and structural design recommendations that will be can be easily facilitated at the construction certificate stage to ensure strict compliance with the relevant guidelines and provisions:

Basement Level 2 Diesel Tanks (2 x 8,000L underground tanks):

- **Spill Containment**: A method of containing spills will be implemented into the development as per EPA publication 347.1, October 2015
- **Support and Loads**: The loads from the building foundations and support loads aren't transmitted onto the tanks and the tanks will be properly anchored to deal with the potential hydrostatic pressure
- **Backfilled Underground Tank Chamber**: If the tanks are installed in an underground chamber, they will be designed in accordance with AS 1940, clause 5.13.3 regarding design and fill specifications
- **Corrosion Protection**: The tanks and its associated anchorage and pipping will integrate methods of corrosion protection

Ground Level Diesel Fill Point:

- **Fill Point**: The appropriate signage, spill catchment, contents gauges and overfill alarms will be provided. The fill point appears to be appropriately accessible from vehicle unloading positions
- **Vent**: Tank vents will be installed, separate from the filling pipe and will need to be of the appropriate size, location, height above ground for the discharge point. Emergency vents will not be required as the diesel is not considered flammable.
- **Signage**: Identification and warning signage will be implemented

Level 18 Diesel Generators:

- **Ventilation**: The appropriate level of ventilation is accommodated, and the louvres will be opened to an extent as to ensure that they allow natural air movement
- **Spill Containment**: The generators will have suitable spill containment is accordance with the EPA publication 347.1, October 2015

Pipework:

- **Pipework Construction**: The pipework between the generators and the tanks will be composed of the appropriate materials and dimensions. The following materials should be avoided, including copper and plastic. The proper physical protection, electrical earthing and bonding corrosion, fire protection will be considered where relevant.
- **Emergency Shutoff**: An emergency shut-off valve/ device will be installed.

Water Treatment Chillers:

- **Emergency Response**: The appropriate emergency response procedures will be accommodated with protective gear and a wash down area.
- **Transport**: The appropriate transport procedure will be established.

Cumulative Impacts

No cumulative impacts are anticipated.

8.23. OPERATIONAL WASTE

An operational Waste Management Plan (WMP) has been prepared by Elephants Foot and is provided at **Appendix CC**. Waste management strategies and auditing are a requirement for new developments to provide support for the building design and promote strong sustainability outcomes for the building. It is EFRS's belief that a successful waste management strategy contains three key objectives:

1. Promote responsible source separation to reduce the amount of waste that goes to landfill, by implementing convenient and efficient waste management systems;

2. Ensure adequate waste provisions and robust procedures that will cater for potential changes during the operational phase of the development; and

3. Compliance with all relevant council codes, policies, and guidelines.

To achieve these objectives, a WMP has been prepared by Elephants Foot which identifies the different waste streams likely to be generated during the operational phase of the development. Associated information includes: how the waste will be handled and disposed of, details of bin sizes/quantities and waste rooms, descriptions of the proposed waste management equipment used and information on waste collection points and frequencies.

Assessment

The following table shows the estimated volume (L) of garbage and recycling generated by the building in operation. A five-day operating week has been assumed. It has also been assumed that all operations within the university building will share bins, waste room and collection service.

Table 36 – Estimated Waste Generation

Building Area	**NLA** (m^2)	**Garbage Generation Rate** (L/100m^2/day)	**Generated Garbage** (L/week)	**Recycling Generation Rate** (L/100m^2/day)	**Generated Recycling** (L/week)
Food and Beverage Retail Tenancies	300	175	2,625	690	10,350
Ground Level Open Space (University Street)	1,289	5	322.25	10	644.5
University Operations	20,399	25	25,498.75	3	3,059.85
Conference Facilities	1,051	70	3,678.5	225	11,823.75
Offices for University/ Education USe	6,130	16	4,904	12	3,678
Total	29,169		37,028.5		29,556.1

The recommended bins for the site are as follows:

- General Waste: 8 x 1100L MGBs collected daily (5 times weekly)
- Co-Mingled Recycling: 3x 1100L MGBs collected three times weekly
- Carboard Recycling: 3x 1100L MGBs collected three times weekly
- Paper Recycling: 3x 1100L MGBs collected three times weekly

The waste storage room on basement level 1 accommodates the required bin provision. The collection of waste by a private contractor will allow the removal of waste to be tailored to suit the final operational characteristics of the building. As such no adverse impacts are anticipated as a result of waste storage and collection from the site.

Mitigation

In order to appropriately manage and mitigate any adverse impacts arising from waste, the different components of the WMP should be implemented in the operation of the proposed development. The waste room will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- Waste room floor to be sealed with a two-pack epoxy;
- Waste room walls and floor surface is flat and even;
- All corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- A cold-water facility with hose cock must be provided for washing the bins;
- Any wastewater discharge from bin washing must be drained to sewer in accordance with the relevant water board. (Sydney water);
- Tap height of 1.6m;

- Storm water access preventatives (grate);
- All walls painted with light colour and washable paint;
- Equipment electric outlets to be installed 1700mm above floor levels;
- The room must be mechanically ventilated;
- Light switch installed at height of 1.6m;
- Waste rooms must be well lit (sensor lighting recommended);
- Optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- If 660l or 1100l bins are utilised, 2 x 820mm (minimum) door leafs must be used;
- All personnel doors are hinged, lockable and self-closing;
- Waste collection area must hold all bins – bin movements should be with ease of access;
- Conform to the building code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured

Waste and recycling rooms must have their own exhaust ventilation system either Mechanically exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum. Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise or odour problem. Or, Naturally with a permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area.

Cumulative Impacts

A private waste collection company will be utilised and as such no cumulative impacts are expected.

9. SECTION 4.15 ASSESSMENT SUMMARY

The proposed development has been assessed in accordance with the matters of consideration listed in Section 4.15 of the *Environmental Planning and Assessment Act 1979* as outlined in the table below:

Table 37 – Section 4.15 EP& A Act 1979 Table

s4.15(1)(a)(i) Any environmental planning instrument
The proposed development is permitted with consent in accordance with *Bankstown Local Environmental Plan 2015* and complies with each of the relevant aims and matters for consideration as outlined within **Section 7.11** of this EIS. The proposal also satisfactorily addresses each of the other relevant environmental planning instruments applicable to the site and the proposed development as outlined within **Section 7.**
s4.15(1)(a)(ii) Any proposed instrument that is or has been placed on exhibition
The development has been assessed against all proposed or publicly exhibited environmental planning instruments applicable to the site and the proposed development as outlined within **Section 7.**
s4.15(1)(a)(iii) Any development control plan
Pursuant to clause 11 of *State Environmental Planning Policy (State and Regional Development 2011)* a development control plan does not apply to State significant development. However, detailed consideration has been given to relevant controls within the Bankstown DCP2015 including compliance with parking rates and stormwater management requirements as outlined within **Section 7.11**.
s4.15(1)(a)(iiia) Any planning agreement
There are no planning agreements applicable to the subject site or to this development application.
s4.15(1)(a)(iv) The regulations (to the extent that they prescribe matters for the purpose of this paragraph)
There are no applicable regulations to this development application.
s4.15(1)(a)(v) Any coastal zone management plan (within the meaning of the Coastal Zone Management Act 1979 that apply to the land to which the development application relates
No coastal zone management plans apply to the subject land.
s4.15(1)(b) The likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality
A comprehensive assessment of the proposal having regard to relevant matters for consideration including: Context and setting, access, transport and traffic, public domain, utilities, heritage, water, soils, waste, noise and vibration, natural hazards, technological hazards, safety, security and crime prevention, social impacts in the locality, economic impact in the locality, site design and internal design, construction and cumulative impacts. Recommended mitigation and management measures have been identified and are to be adopted to minimise impacts of the proposal on the site and the local context.
s4.15(1)(c) The suitability of the site for the development

The site is considered suitable for the proposed development for the reasons outlined in this EIS. The site close to existing transport corridors and within an established CBD. The site has been identified within strategic planning documents as suitable for the development.
s4.15(1)(d) Any submissions made in accordance with the Act or Regulations
The proposal will be publicly exhibited as part of the assessment process in accordance with the requirements of the consent authority. The applicant has undertaken consultation with surrounding landowners/occupants and relevant government agencies in accordance with the SEARs. The outcomes of the consultation have been incorporated into the building design and associated site works. Details of the consultation undertaken as part of this EIS process is detailed in the Consultation Report submitted in support of the proposal.
s4.15(1)(e) The public interest
The proposed development is considered to be in the public interest given its expected positive social and economic impacts to the locality and Western Sydney.

10. RISK ASSESSMENT AND MITIGATION MEASURES

The SEARs require an environmental risk analysis to identify potential environmental impacts associated with the proposal. This analysis comprises a qualitative assessment consistent with AS/NZS ISO 31000:2009 *Risk Management–Principles and Guidelines* (Standards Australia 2009). The level of risk was assessed by considering the potential impacts of the proposed development prior to application of any mitigation or management measures. In accordance with the SEARs, the ERA addresses the following significant risk issues:

- The adequacy of baseline data.
- The potential cumulative impacts arising from other developments in the vicinity of the Site; and
- Measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for 'likelihood' and 'consequence'.

Table 38 – Risk Descriptors

Likelihood		**Consequence**	
A	Almost certain	1	Widespread and/or irreversible impact
B	Likely	2	Extensive but reversible (within 2 years) impact or irreversible local impact
C	Possible	3	Local, acceptable or reversible impact
D	Unlikely	4	Local, reversible, short term (<3 months) impact
E	Rare	5	Local, reversible, short term (<1 month) impact

The risk levels for likely and potential impacts were derived using the following risk matrix.

Table 39 – Risk Matrix

		LIKELIHOOD				
		A	B	C	D	E
CONSEQUENCE	1	High	High	Medium	Low	Very Low
	2	High	High	Medium	Low	Very Low
	3	Medium	Medium	Medium	Low	Very Low
	4	Low	Low	Low	Low	Very Low
	5	Very Low	Very Low	Very Low	Very Low	Very Low

The results of the environmental risk assessment for the proposed development are presented in **Table 40** and are based upon the range of technical and specialist consultant reports appended to the EIS. The table has directly related mitigation measures responding to each impact also based upon the range of technical and specialist consultant reports appended to the EIS.

It is considered that with the mitigation measures required the impacts resulting from the proposal will be acceptable.

Table 40 – Mitigation Measures and Environmental Risk Assessment Table[1]

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
Built form	• The built form will detract from the amenity of the area.	D	1	Low	• Ongoing consultation and engagement with Council in relation to relevant strategic design projects underway in the vicinity of the site. These include but are not limited to the creation of an Urban Design Framework for the Northern CBD Core, strategies around engagement with the future Sydney Metro station, the Complete Streets Strategy, and a Master Plan for Paul Keating Park.
Traffic and Transport	• Increased traffic generation • Increased parking on local roads	C	3	Medium	• Based on the existing intersection performance and the likely traffic to be generated from the proposed development, all key intersections will perform at an acceptable level of service during the peak periods. • Sufficient parking is accommodated within the development to meet the needs of the proposal and the number of parking spaces is in line with the Bankstown DCP. • WSU will encourage student travel by existing public transport networks and raise awareness of the future public transport options including the Sydenham to Bankstown Metro corridor. • A Loading Dock Management Plan (LDMP) can be prepared to limit servicing to outside peak commuter periods, therefore minimising the interaction of peak hour with servicing vehicles. • Construction traffic will be managed in accordance with the management principles outlined within the Traffic Impact Assessment in **Appendix Q**.
Infrastructure and Utilities	• Adequate connection to infrastructure and utilities.	E	4	Very Low	• Ongoing consultation and design development with the relevant utility providers will be undertaken

[1] We note that while this analysis has been undertaken in accordance with the SEARs, this methodology was designed principally in relation to processes impacting on natural ecological systems and is highly dependent upon 'reversibility'. In an urban context where buildings are designed to be relatively permanent, rankings are skewed upwards, and of questionable real meaning.

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
	• Impacting on existing infrastructure below the site.				throughout the design development and construction process.
Contamination	• Exposure of contamination or hazardous materials during construction and operation.	D	3	Low	• The DSI prepared for the site (refer to Appendix M) confirms that the site is suitable for the proposed education and commercial uses and that there is not likely to be any significant contamination risks to human health or ecology within the site. • The Hazardous Materials Assessment (Appendix N) undertaken the site HBM should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2017 (WHS Regulation) and relevant Codes of Practice, Australian Standards and guidelines.
Flooding	• Increased flood affectation of surrounding properties. • Risk to users of the building.	C	2	Medium	• In consultation with the City of Canterbury Bankstown Council engineers, Civil Engineers Bonacci Group have investigated strategies to manage flood levels and overland flow paths and confirm freeboard and entry protection measures. The outcomes of these investigations are incorporated into the design of site landscaping, building footprint, ground floor levels and stormwater and rainwater infrastructure. These needs have been of particular concern in developing the design of building entrances, including ensuring that legibility, accessibility and spatial connectivity are achieved in the design. • The main ground level is elevated above the site to provide the 500mm freeboard required for 1:100 year flood events, during which the site is subject to inundation (see **Section 8.8** for further details). In order to accommodate the flow of floodwater it has also been necessary to minimise the footprint of the building including all elements built up above the

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
					existing ground level such as external access stairs and ramps, and landscape features.
Overshadowing of public domain	• Increase in shadowing to surrounding public domain, including Paul Keating Park	B	1	High	• Whilst this risk has been thoroughly mitigated throughout the design process undertaken to date, ongoing design development should ensure minimisation of shadows cast on the public domain.
BCA and Accessibility	• Risk of inadequate fire protection measures. • Adequate access for people with a disability	D	4	Low	• A detailed BCA assessment will be required prior to Construction Certificate along with referral to the NSW Fire Brigade due to Category 2 Fire Safety Provisions considered as a performance solutions. • Further development and refinement of detailed DDA design requirements, such as internal fit-out design, and details of stairs, ramps, lifts, sanitary facilities and other access features will be required prior to Construction Certificate and assessed prior to Crown Building Approval Stage/Construction Certificate Stage. In addition to meeting statutory DDA requirements, the proposed development will integrate enhanced access provisions, universal design principles and additional guidelines (WSU Design Standards) to further the objectives of the DDA.
Soils and Water	• Potential stormwater impacts • Potential geotechnical impacts and instability of future development	D	4	Low	• Stormwater and water quality measures will be implemented in accordance with the Overland Flow Assessment and Stormwater Management Report within the Civil Report at **Appendix I** in conjunction with this, the Ecologically Sustainable Development Report at **Appendix S**. • Excavation and shoring are subject to a separate Early Works DA which will implement the ongoing recommendations of Douglas Partners. Proper vibration mitigation measures will be required to mitigate risk damage to adjoining buildings and survey monitoring of the shoring walls and adjacent buildings should be carried out to measure the

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
					vertical and lateral movements. The monitoring should be carried out using precise levelling techniques to 0.5 mm accuracy, with measurements taken on a weekly basis during the basement construction period. • Recommendations by Douglas Partners should be implemented during the design and construction of the proposed building particularly in relation to ground water geostatic pressure and potential impacts.
Structural	• Structural instability of the built form.	C	2	Medium	• Recommendations of the Structural Engineer should be implemented to prevent: variation in floor slopes over time due to creep and shrinking effects; building sways (deflection); building movement due to gravity loads; steel roof deflection; and crack control in slabs. • Gravity movement criteria causing changes to floor slopes should be explained in detail in the Project Brief, so that the end user is aware of the movements that may occur over the building life.
Visual Impacts	• Visual impact to views to and from the site and adjoining heritage items.	B	1	High	• The proposal achieves a reasonable balance between the protection of private views and the protection of public domain views. • The proposal does not impede on any identified significant view corridors and makes a significant contribution to the streetscape through the provision of a contemporary building that has achieved design excellence.
Heritage and Cultural Value Impacts	• Impact on heritage items within the site and the surrounds. • Impact on cultural heritage (Aboriginal)	E	3	Very Low	• The proposed development will not result in any unreasonable or significant impact on the significance or value of the surrounding Items of Heritage Significance. Paul Keating Park Master Plan should consider retention of the mature vegetation around the Council Chambers and the landscaping on the proposed building should be

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
					maintained to ensure the BCC aligns with the existing vegetated nature of the area. • An unexpected finds protocol will be implemented throughout construction. Depending on the nature of the find and its confirmation as a European or Aboriginal object, then the relevant regulatory authorities would be contacted for further advice. • Additional consultation with the local indigenous community throughout the development of the project is recommended.
Noise and Vibration	• Increase in noise levels during construction activities • Adverse noise impacts on proposed uses, such as traffic noise • Adverse noise impacts from proposed uses on surrounding receivers	C	4	Low	• The proposal is to provide the recommended minimum glazing construction set out within Appendix I. • Mechanical plant noise emissions can be controlled to acceptable levels at the nearest noise sensitive receivers with attenuation to the intake and discharge paths to the Level 18 plant room. A detailed review of all external mechanical plant and equipment will be undertaken at CC stage (once plant selections and locations are finalised). • Use of outdoor areas to be limited to 7am to midnight unless an acoustic assessment is conducted during the fit-out stage that considers additional noise control measures. • Acoustic and vibration management measures will be implemented through refinement of the CMP at the construction stage.
Waste	• Generation of waste and pollutants	D	5	Very Low	• Adequate waste storage facilities will be provided to service the mix of uses. • Waste management and minimisation principles outlined within the WMP (**Appendix CC**) and the CMP will be implemented (**Appendix L**).

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
Reflectivity	• Detrimental impact on pedestrians and users of adjoining developments.	C	3	Medium	• The façade development and design changes have vastly improved the external reflectivity outcome with a 12-20% lower reflected glare intensity achieved by the current façade compared to the initial façade concept. The resultant glare that will impact the neighbouring buildings will be further reduced by the existing architectural details of the surrounding buildings including existing sun-shades, balconies and blinds. Regarding further mitigation of solar glare impacts, the report recommends that the western building facades should have a reflectivity of 7% or less to remove the glare issue at location 1. Existing trees should be retained or replaced to help reduce glare at location 5.
Aeronautical	• Detrimental impact on the safe functioning of proximate airports.	D	1	Low	• An application for the permanent infringement of the Bankstown Airport OLS has been submitted to Bankstown Airport. Infringement by the temporary cranes can be approved for a maximum of 3 months via a short term controlled activity permit. Once this permit is received Airservices may temporarily increase the CAT A/B Circling MDA by approximately 17 metres to compensate the infringement.
Social Impacts	• Crime and public safety whilst operational. • General disruption to community associated with large scale construction. • Over utilisation of adjoining public open space (PKP).	D	2	Low	• The campus will operate in accordance with WSU's security measures and integrate recommendations of the CPTED report into the detailed design. • The visibility of lighting and activity within the building will serve to increase the amenity and evening safety of Paul Keating Park. • Provision of social breakout spaces and outdoor amenity within the site development are critical to ensuring that the public domain is not negatively impacted by the University population. The design includes a variety of outdoor spaces supporting different modalities of use, comfort and amenity,

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
					developed to work cohesively with the adjacent internal spaces.
Economic Impacts	• Economic benefits to the local community not captured.	D	3	Low	• Encourage use of local business for construction and operational phases of the development.
Rental Market	• Rental market impacts due to increased demand caused by WSU BCC students.	D	3	Low	• As WSU finalises and confirms forecasting for enrolments at the new WSU BCC, if the proportion of international students increases substantially beyond that projected in this analysis WSU should consider a dedicated student accommodation facility and undertake a detailed demand study for PBSA.
Wind Impacts	• Adverse wind environment and pedestrian discomfort	C	3	Medium	• Inclusion of horizontal screening, such as a canopy along • Inclusion of planting or localised screening, such as an art work in the south western corner of the site. • Inclusion of 1.5m impermeable balustrades surrounding the Level 3, 13 and 18 terraces.
Construction Impacts	• Noise, dust, air quality and traffic impacts	B	4	Low	• Construction activities will be performed in accordance with the preliminary CMP (**Appendix L**) and construction traffic management plan (**Appendix Q**)
Biodiversity	• Loss of biodiversity	E	3	Very Low	• Given the developed nature of the site, there are not likely to be any impacts on threatened species, populations or ecological communities or their habitats.
Dangerous Goods	• Potential environmental or safety issues associated with the storage and use of Hazardous substances.	D	4	Low	• Safety and structural design recommendations within the Dangerous Goods Assessment will be incorporated into the development at construction certificate stage. These include the formulation of appropriate emergency response procedures and equipment (protective gear and a wash down areas) along with the formulation of appropriate transport procedures.

Matter	Potential Impact	Likelihood	Consequence	Risk Level	Proposed Mitigation Measure
Lighting	• Light spill into any surrounding sensitive receivers	D	3	Low	• All lighting emissions from the site will be controlled in order to comply with the requirements of AS4282 and AS/NZS1158.3.1 • Consideration of lighting direction and positioning to minimise direct glare; • Controlling the hours of operation and intensity of light levels for lights that may have visual spill impact; • Fitout design of lower levels adjacent Rickard Road, incorporating a perimeter circulation zone, so that higher light level facilities are not positioned directly on facades; • Acknowledging that the open space of Paul Keating Park is used in the evenings and has night lighting.

11. SUMMARY OF MITIGATION MEASURES

This EIS assesses the proposed development in relation to relevant planning instruments and policies and considers the likely environmental impacts of the proposal, including:

- **Built form and Urban Design**: Ongoing consultation and engagement with Council in relation to relevant strategic design projects underway in the vicinity of the site. These include but are not limited to the creation of an Urban Design Framework for the Northern CBD Core, strategies around engagement with the future Sydney Metro station, the Complete Streets Strategy, and a Masterplan for Paul Keating Park.
- **Traffic and Transport**: the potential impacts on the local road network have been assessed, including likely traffic generation for heavy and light vehicles. Mitigation measures include the upgrade of the Great Western Highway and Brabham Drive intersection, delivery of a new roundabout at the intersection of the new access road at Ferrers Road and new pedestrian and cycle connections.
- **Contamination**: the potential for site contamination has been identified through an intrusive soil assessment and analysis. The potential for contamination is considered low. However, an unexpected finds protocol should be followed and a waste classification assessment should be carried out prior to disposal of any fill material off site. HBM should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2017 (WHS Regulation) and relevant Codes of Practice, Australian Standards and guidelines.
- **Flooding**: the potential flooding impacts have been assessed using a TUFLOW model considering the proposed finished ground levels for the design and the on-site stormwater management system. The assessment concludes there is no change to the peak flows and corresponding peak flood levels. Flood free refuge and flood free access will be available to the site. All landscaping and public domain built up elements are to be minimised to ensure the development does not impact on the 100 year ARI inundation levels and on adjoining properties. A Flood Emergency Response Plan has been prepared to promote a satisfactory awareness of expected flood behaviour and risks, identify measures to become flood prepared and recommend a course of action during and after flood events. While there is a low risk of flooding, future tenants should incorporate flood management procedures in their standard emergency risk management plans.
- **Hazard and Risk**: Safety and structural recommendations within the Dangerous Goods Assessment will be incorporated into the development at construction certificate stage. These include the formulation of appropriate emergency response procedures and equipment (protective gear and a wash down areas) along with the formulation of appropriate transport procedures.
- **Aeronautical**: An application for the permanent infringement of the Bankstown Airport OLS has been submitted to Bankstown Airport. Infringement by the temporary cranes can be approved for a maximum of 3 months via a short term controlled activity permit. Once this permit is received Airservices may temporarily increase the CAT A/B Circling MDA by approximately 17 metres to compensate the infringement.
- **Stormwater**: Appropriate mitigation measures have been incorporated to manage water quality and quantity, including an OSD basin. Sediment and erosion control measures will be implemented during the demolition and construction phases to avoid downstream impacts.
- **Geology**: Excavation and shoring are subject to a separate Early Works DA which will implement the ongoing recommendations of Douglas Partners. Proper vibration mitigation measures will be required to mitigate risk damage to adjoining buildings and survey monitoring of the shoring walls and adjacent buildings should be carried out to measure the vertical and lateral movements. The monitoring should be carried out using precise levelling techniques to 0.5 mm accuracy, with measurements taken on a weekly basis during the basement construction period.
- **Groundwater Measures**: As the proposed basement level is below the groundwater level temporary support for excavation will be required to prevent groundwater inflow to the site to prevent the risk of large groundwater inflows which would require disposal off site and potentially drawdown of groundwater surrounding the site. During construction, dewatering, possibly by ‘sump-and-pump’ methods, will be required. Due to expected groundwater uplift pressure dewatering will need to continue until the dead load of the structure is sufficient to restrain the structure from upward movement.

- **Structural**: Recommendations of the Structural Engineer should be implemented to prevent: variation in floor slopes over time due to creep and shrinking effects; building sways (deflection); building movement due to gravity loads; steel roof deflection; and crack control in slabs.
- Gravity movement criteria causing changes to floor slopes should be explained in detail in the Project Brief, so that the end user is aware of the movements that may occur over the building life.
- **Infrastructure Requirements**: the existing utility services are adequate and/or can be extended to accommodate the needs of the proposed development.
- **Heritage**: Non-Aboriginal (European) heritage has demonstrated that the site is suitable for the proposed development. The mature vegetation around the Council Chambers will be retained and the landscaping on the proposed building will be maintained to ensure it aligns with the existing vegetated nature of the area.
- **Aboriginal Cultural Heritage**: the ACHA states there is very little potential for Aboriginal objects to be present on the subject site and no cultural heritage value was identified. Mitigation measures have been included to manage any unexpected finds during the demolition and construction phases, as well as additional consultation with the local indigenous community throughout the development of the project.
- **BCA and Accessibility**: A detailed BCA assessment along with an integrated Section J compliance assessment will be required prior to Construction Certificate along with referral to the NSW Fire Brigade due to Category 2 Fire Safety Provisions considered as a performance solutions.
  Further development and refinement of detailed DDA design requirements, such as internal fit-out design, and details of stairs, ramps, lifts, sanitary facilities and other access features will be required prior to Construction Certificate and assessed prior to Crown Building Approval Stage/Construction Certificate Stage. In addition to meeting statutory DDA requirements, the proposed development will integrate enhanced access provisions, universal design principles and additional guidelines (WSU Design Standards) to further the objectives of the DDA.
- **Noise and Vibration**: The proposal is to provide the recommended minimum glazing construction set out within the Acoustic and Vbration assessment prepared by NDY. Mechanical plant noise emissions can be controlled to acceptable levels at the nearest noise sensitive receivers with attenuation to the intake and discharge paths to the Level 18 plant room. A detailed review of all external mechanical plant and equipment will be undertaken at CC stage (once plant selections and locations are finalised). Use of outdoor areas to be limited to 7am to midnight unless an acoustic assessment is conducted during the fit-out stage that considers additional noise control measures.
- **Reflectivity**: The façade development and design changes have vastly improved the external reflectivity outcome with a 12-20% lower reflected glare intensity achieved by the current façade compared to the initial façade concept. The resultant glare that will impact the neighbouring buildings will be further reduced by the existing architectural details of the surrounding buildings including existing sun-shades, balconies and blinds. Regarding further mitigation of solar glare impacts, the report recommends that the western building facades should have a reflectivity of 7% or less to remove the glare issue at location 1. Existing trees should be retained or replaced to help reduce glare at location 5.
- **Waste**: the demolition and construction phases of the future development have been assessed in detail, with recommended measures to re-use, recycle and dispose of waste.
- **Construction Impacts**: the preliminary construction management measures are considered appropriate to manage potential impacts on the site and locality during the demolition and construction phases. The preliminary CMP will be updated to incorporate any conditions of consent imposed on the DA.

Each of the recommended mitigation measures has been reviewed in detail and it is considered that they can be incorporated as conditions of consent for the DA and implemented during the construction and operational phases to avoid unacceptable environmental impacts.

12. EVALUATION AND CONCLUSION

This EIS has been prepared to assess the environmental, social and economic impacts of the proposed Western Sydney University, Bankstown City Campus. The EIS has addressed the issues identified in the SEARs has been prepared in accordance with Schedule 2 of the *Environmental Planning & Assessment Regulation 2000.*

The development will not result in any unreasonable impacts on or as a result of flood risk, noise generation, waste generation, technological hazards or stormwater quality as demonstrated in this EIS.

The development is expected to result in positive social and economic impacts on the region as a result of employment generation and the provision of essential business infrastructure to support a robust economy and to satisfy economic demand. The proposal will provide a financial return for reinvestment in the ongoing management and development of the site as a world class educational establishment.

Having regard for the biophysical, economic and social considerations, including the principles of ecologically sustainable development, the proposed development is justified for the following reasons:

- The proposed development is permissible with consent on the site under the provisions of *Bankstown Local Environment Plan 2015* and satisfactorily responds to the aims and matters for consideration listed within the LEP;
- The proposal is consistent and compatible with the strategic land use and transport policies and will deliver a substantial investment in Western Sydney with significant construction and ongoing employment opportunities close to the growing residential population;
- The proposed building has been sited and designed to satisfactorily address State and local environmental planning instruments and guidelines, including compliance with relevant local strategic plans;
- The environmental impacts associated with the demolition, construction and operational phases of the development have been comprehensively assessed and can be appropriately mitigated to avoid unacceptable impacts to the site or locality;
- The development will provide positive local, regional and national economic impacts through the provision of employment and essential education infrastructure;
- The development can be adequately serviced by essential infrastructure without unreasonable demands on existing networks; and
- The issues identified during the stakeholder consultation have been incorporated into the final design and can be implemented in the construction and operation of the proposed development.

Based on the above matters, it is considered the proposed development is in the public interest and is recommended for approval.

DISCLAIMER

This report is dated 19 August 2019 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Western Sydney University (**Instructing Party**) for the purpose of Environmental Impact Statement (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A CAPITAL INVESTMENT VALUE

APPENDIX B SEARS

APPENDIX C SITE SURVEY

APPENDIX D ARCHITECTURAL PLANS

APPENDIX E ARCHITECTURAL DESIGN REPORT

APPENDIX F PHOTOMONTAGES

APPENDIX G LANDSCAPE PLANS

APPENDIX H CIVIL DRAWINGS

APPENDIX I CIVIL AND FLOOD REPORT

APPENDIX J FLOOD EMERGENCY RESPONSE PLAN

APPENDIX K UTILITIES REPORT

APPENDIX L PRELIMINARY CONSTRUCTION MANAGEMENT PLAN

APPENDIX M SITE INVESTIGATION REPORT

APPENDIX N HAZMAT REPORT

APPENDIX O DANGEROUS GOODS ASSESSMENT

APPENDIX P CONSULTATION REPORT

APPENDIX Q TRAFFIC REPORT

APPENDIX R SOCIO-ECONOMIC IMPACT ASSESSMENT

APPENDIX S ESD REPORT

APPENDIX T HERITAGE IMPACT STATEMENT

APPENDIX U ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT (ACHAR)

APPENDIX V ACOUSTIC AND VIBRATION ASSESSMENT

APPENDIX W AERONAUTICAL ASSESSMENT

APPENDIX X BCA REPORT

APPENDIX Y ACCESSIBILITY REPORT

APPENDIX Z BDAR WAIVER

APPENDIX AA CPTED REPORT

APPENDIX BB PEDESTRIAN WIND ASSESSMENT

APPENDIX CC WASTE MANGEMENT PLAN

APPENDIX DD REFLECTIVITY ASSESSMENT

APPENDIX EE STRUCTURAL REPORT

APPENDIX FF GEOTECHNICAL INVESTIGATION

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