

WESTERN SYDNEY
UNIVERSITY

# BANKSTOWN CITY CAMPUS DEVELOPMENT

## Architectural Design Report SEARs Response

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lyons

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# Introduction




*View from The Appian Way*



*View from Rickard Road*

Lyons has been engaged by Western Sydney University (WSU) as Base Building Architect for the new WSU Bankstown City Campus. Lyons have worked with a design consultant team appointed by the University in order to develop the design for this project, including HDR (Interior Fitout Architect), Aspect Studios (Landscape Architect) and Urbis (Town PLanning), who have had input into this Design Report.

This report has been prepared in response to the Planning Secretary's Environmental Assessment Requirements for the Development Application for State Significant Development (SSDA). This redevelopment of the site is subject to a concurrent Planning Proposal to Canterbury-Bankstown Council, to amend the LEP development standards for FSR and Height of Buildings.

The design proposal for this project considers the broader planning framework for the Civic Precinct of Bankstown CBD and the role the site plays in Bankstown itself. In formulating the design for the new WSU Bankstown City Campus the design consultant team has:

- Visited the site and its immediate and broader context
- Considered the current planning controls and strategic urban planning for Bankstown CBD and the site, including planning proposals near the site.
- Reviewed Better Placed guidelines for Good Urban Design, published by the NSW Government Architect.
- Considered the key vantage points and urban context of the site, including surrounding property use and physical access to the site by foot, bicycle, car and public transport.
- Considered international and national examples of best practice for the design of vertical campus and educational facilities in city centre locations.
- Met with NSW Government Architect and Canterbury Bankstown Council's staff and consultants for pre-lodgement meetings to understand views, issues and opinions, revising and developing the design in response to their input.
- Collaborated with design consultants including Façade, Structural, Civil and Building Services Engineers, and specialist consultants including Environmentally Sustainable Design, Vertical Transport, DDA, Wind, Acoustic, Facade Access and Maintenance and Quantity Surveyor, to fully consider all functional and performance aspects of the design proposal.
- Undertaken consultation with the University staff and students, including identifying lessons learned from previous projects and users functional requirements, to inform the base building design parameters and fitout design brief.
- Explored and tested a range of design options encompassing the building form and massing, façade treatments, and ground level interfaces, to ensure the proposal entails a well-considered and high-quality design outcome.

This report provides a detailed description of the architectural design, including analysis of the site, the objectives and the design inputs that have informed the proposal, and articulating the qualities and level of design excellence that the project provides.

# 1.0 Architectural Design Statement








The Bankstown City Campus (BCC) project is a key component of the University of Western Sydney's 'Western Growth Program' and presents an opportunity to contribute to the regeneration and activation of the Bankstown Central Business District, creating an iconic landmark for Bankstown. The BCC will expand upon the public services and facilities in Bankstown's Civic Precinct, 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.

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 and impacts on 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 work fully 'in the round', engaging with the distinct immediate interfaces of high-volume road, pedestrian mall, public park and driveway, and being a visible landmark from both nearby and more distant vantage points.

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. 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.

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 Masterplan 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.

Internally the building has been designed to support community engagement activities, 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 elevated cantilevered form and provides space for University Education use, as and when needed by the University. These levels also incorporate small inset balconies and a south facing terrace at Level 16.

As well as accommodating the proposed distribution of the program, 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, research partners, and the broader Canterbury Bankstown community.

# 2.0 Project Brief & Design Objectives

## 2.1. University Objectives

This project, entailing a stand-alone vertical campus will facilitate relocation of teaching, research and staff facilities currently located at the WSU Bankstown Campus at Milperra. This is a key component of the University of Western Sydney's 'Western Growth Program' which aims to bring educational opportunities and world-class research expertise to Greater Western Sydney.

At the commencement of the design process the University provided an outline of core principles to inform the design:

**A bold and future facing external presence that signals the University's intentions in the region:**

- 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- 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);
- Attractive retail tenancy opportunities at the ground floor that enhance the user experience;
- An activated rooftop that offers a distinctive experience for users;
- Ground floor space that connects to the community and extends the precinct, being open, integrated, flexible and permeable.




### 2.1.1 Academic Plan:

The academic programs offered at the BCC will reflect its status as a flagship campus for the University, in a region with culturally and linguistically diverse population, strong manufacturing industry and highly connected by public transport. The campus will accommodate a mix of student cohorts and provide long term flexibility to accommodate the current and future academic programs.

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 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. These 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 also intending to develop partnerships with local business and industry, as well as research based collaboration.

### 2.1.2 Functional Brief Outline:

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 connections with local business, industry and community. Facilities incorporated into the Campus 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, varying from large open terraces through to smaller sheltered balconies, offering a variety of landscape settings with varied aspects and outlook to suit different weather conditions and times of day.

A detailed outline of the functional brief is provided in Appendix A 'Interior Fitout Design', together with full breakdown of the functional spaces in Appendix E 'Briefed Area Schedule'.

| **Functional spaces** | **Briefed Area $m^2$** |
|---|---|
| Circulation | 5,496 |
| Research *(MARC and Psychology)* | 399 |
| Schools Workspaces | 1,338 |
| Staff shared support spaces | 2,307 |
| Postgraduate student spaces | 178 |
| 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 & support spaces | 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 Net Lettable Area (NLA)** | **29,110** |
| *Space Management Target* | *- 3,000* |
| **Base Buidling Briefed Net Lettable Area (NLA)** | **26,200** |

## 2.1.3 Building Population:

In regards to the University community that will use the campus, the future estimated student population is an Effective Full Time Student Load (EFTSL) of 2,000 students per day, and fitout for 245 staff workspaces.

The maximum population that the building can accommodate will be set by regulatory requirements relating to the egress capacity of fire stairs and exits. From a design perspective, the anticipated working populations will be within the maximum limit, and are informed also by the toilet provisions associated with the building classification. These populations are summarised in the table below. The vertical transportation strategy has also been informed by these parameters to ensure the satisfactory ease of movement within the vertical campus.

These population parameters provide capacity to meet the needs of the fitout brief, together with capability to meet the future growth and changing needs of the University.

## 2.1.4 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 student, staff, research partners, tenants and public users of this stand-alone Vertical Campus. The brief for the project entails a Net Lettable Area of 26,200 sqm (As defined by Property Council Guidelines for NLA – Office Buildings). This includes area allocations to meet the University functional needs, retail tenancy space and scope to meet future University growth and changing needs.

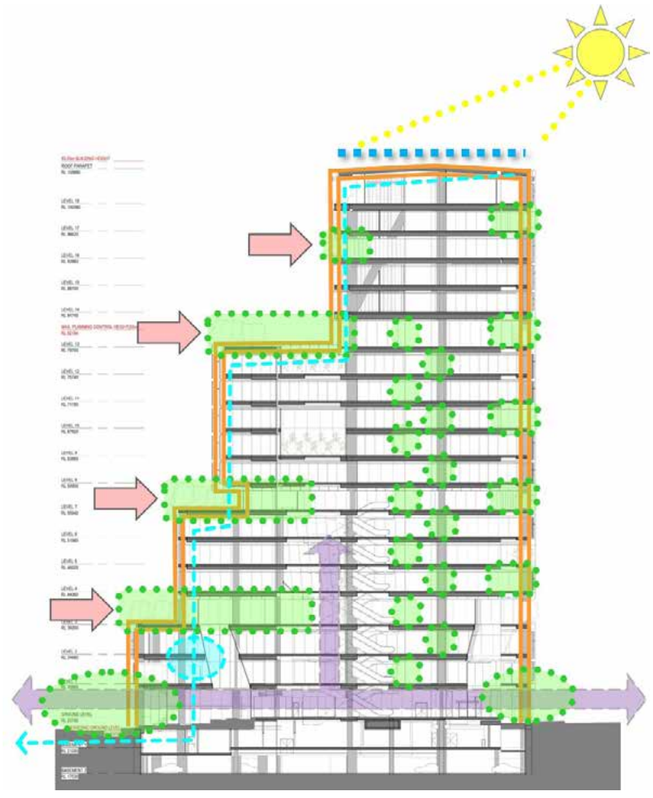
The briefed area exceeds the FSR permitted on the site and is being addressed under a concurrent Planning Proposal to Canterbury-Bankstown Council, to amend the LEP development standards.

| Usage | Level | GFA $m^2$ | NLA $m^2$ | External Area $m^2$ | Estimate Occupancy Population | Life Safety Maximum Population | Toilet Population | Toilet Calculation Basis |
|---|---|---|---|---|---|---|---|---|
| Upper Tower – University / Education Use | Level 18 | 785 | 607 | 79 | 65 | 200 | 150 | Class 5 Office employees |
| | Level 17 | 1122 | 945 | 107 | 111 | 200 | 150 | |
| | Level 16 | 1232 | 1092 | 327 | 104 | 200 | 150 | |
| | Level 15 | 1434 | 1288 | 0 | 126 | 200 | 150 | |
| | Level 14 | 1504 | 1358 | 0 | 134 | 200 | 150 | |
| Conference Facilities & Terrace | Level 13 | 1059 | 905 | 342 | 320 | 320 | 320 | Class 9b Schools-Students |
| Mid Tower – Learning spaces, University Staff Workspaces, Research. | Level 12 | 1395 | 1255 | 67 | 200 | 320 | 150p or 200p | Class 5 Office employees or Class 9b Schools-Students |
| | Level 11 | 1423 | 1284 | 39 | 200 | 320 | 150p or 200p | |
| | Level 10 | 1339 | 1202 | 88 | 200 | 320 | 150p or 200p | |
| | Level 9 | 1403 | 1264 | 62 | 200 | 320 | 150p or 200p | |
| | Level 8 | 1399 | 1260 | 21 | 200 | 320 | 150p or 200p | |
| Learning Spaces & Terrace | Level 7 | 1191 | 1042 | 673 | 198 | 320 | 320p or 180p | Class 9b Schools-Students or Class 5 Office employees |
| Lower Tower – Learning spaces, University Staff Workspaces, Research. | Level 6 | 1909 | 1759 | 0 | 320 | 320 | 320p or 180p | |
| | Level 5 | 1862 | 1711 | 40 | 320 | 320 | 320p or 180p | |
| Library | Level 4 | 1897 | 1740 | 50 | 320 | 320 | 320p or 180p | |
| Student Hub & Terrace | Level 3 | 1462 | 1314 | 1192 | 243 | 440 | 320p | Class 9b Schools-Students |
| Engagement, Research & Student Services | Level 2 | 2546 | 2401 | 85 | 440 | 440 | 440p | |
| | Level 1 | 2362 | 2214 | 62 | 440 | 440 | 440p | |
| 'University street' Concierge, Tiered Multipurpose Space & Retail. | Ground Level | 1649 | 1466 | excl | 612 | 440 plus Retail | 350p plus 250p | Class 6 Retail (food /beverage) and Class 9b Schools-Students |
| End of trip facilities, Plant, Loading, Carparking, Parking. | Basement 1 & 2 | 160 | 515 | 0 | minimal | 440 | N/A | N/A |
| **TOTAL** | | **29,133** | **26,622** | **3,233** | **4,753** | | | |

### 2.1.5 Environmentally Sustainable Development:

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 objectives 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;
- 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.



*Sustainable principles section diagram*







*Vertical campus precincts left to right: Swanston Academic Building, RMIT University; Adelaide Health & Medical Science Building, Adelaide University; NeW Space, University of Newcastle*

## 2.2. Vertical Campus objectives

The creation of a stand-alone Vertical Campus necessitates a distinct set of objectives to be addressed in the design of a multistorey building. 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 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 for Vertical Campuses include the following:

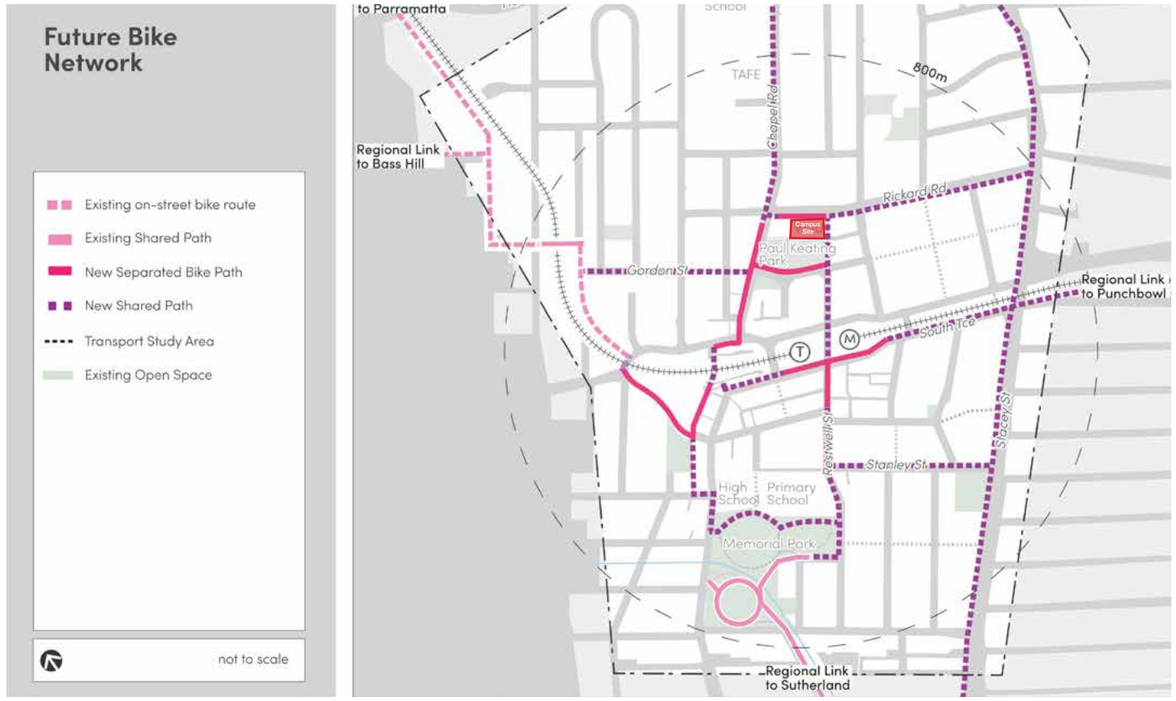
- The diversity of a traditional ground based campus needs to be organised in a vertical configuration. This requires a variety of internal, external and concealed service spaces, as well as spatial, material and social diversity.
- Vertical Campuses will create an instant critical mass of occupants. 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 effect 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.

## 2.3. Landscape Design objectives

The Landscape Design Objectives relate to both the creation of a Vertical Campus, and to the placement of a major development within the Civic Precinct. The design objectives, outlined in detail in the Landscape Design Report in the Appendices to this report, therefore 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, associated with the progression of a pedestrian street along the Appian Way, from Rickard Road to Bankstown Station, the connection of the Park to the development and to Rickard Road via The Appian Way, and the response to water flow across the site. As well as informing the Landscape Design, these core principles need to be considered in the development of the Building form, the Ground Floor design, Traffic planning and the Facades. Crime prevention principles, including provision of clear sightlines and passive surveillance are also closely connected with the Landscape Design Objectives.

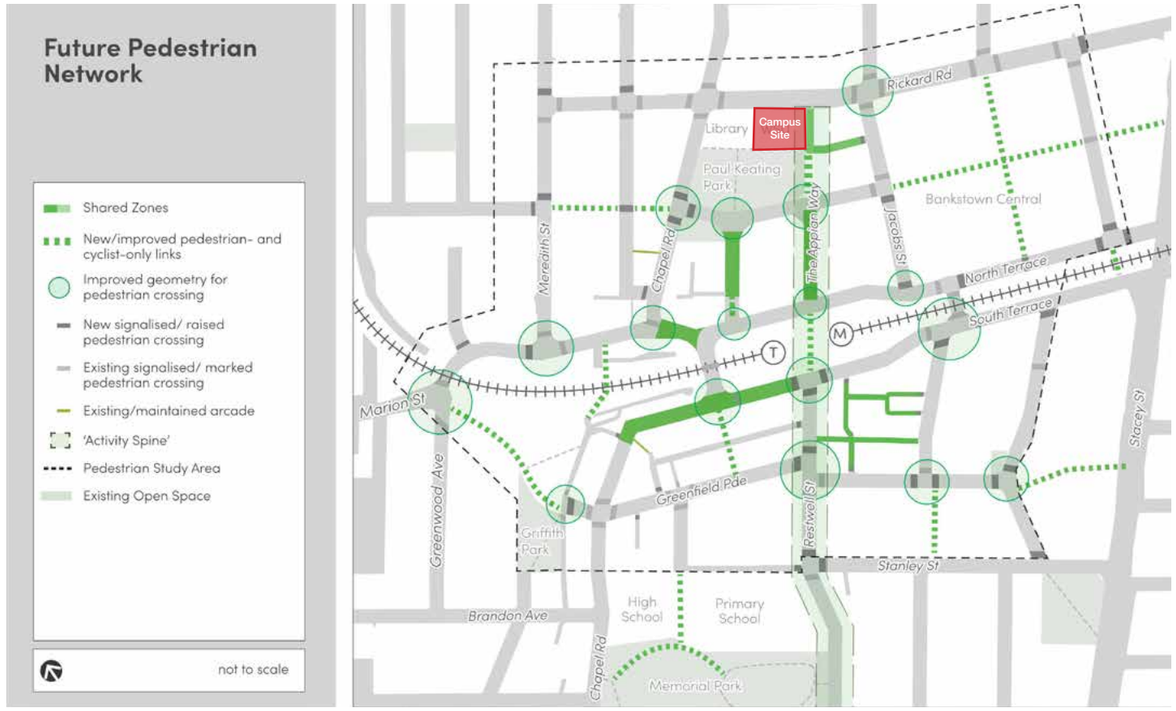
Opportunities for landscape to be brought into the building have also been identified as a key objective for the Interior Fitout. Design objectives that are reflected in both the Landscape and Interior Design reports include the integration of activities between the external occupiable spaces and adjacent internal spaces, and internal greening elements.




*Draft Complete Streets Strategy proposed bicycle network. Source: Bankstown Complete Streets DRAFT – April 2019*



*Photograph looking North along The Appian Way to Rickard Road from The Mall*




*Draft Complete Streets Strategy proposed pedestrian network including pedestrian prioritised Activity Zone along The Appian Way. Source: Bankstown Complete Streets DRAFT – April 2019*

# 3.0 Site & Context Analysis

## 3.1. Development Site Boundary

The development site, located at 74 Rickard Road along with a portion of 375 Chapel Road, is owned by Canterbury Bankstown Council, and subject to a Lease agreement between the Council and the University. The Development Lot entails the whole of Lot 5 DP777510 and an adjacent portion of Lot 6 DP777510, totalling a site are of 3,678sqm as indicated in the  diagram.




## 3.2. Site Features

There are no existing structures on the site, which is currently occupied by an on-grade asphalt carpark and an area of open grassed landscape in the western half of the site. The site is relatively flat, with a fall of approximately one metre across the site from the north-western to the south-eastern corner. 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 carriageways.

A title and easement drawing, feature and level survey, and in-ground services survey, have been prepared for the site by RPS Australia. These are provided as a separate document within the SSDA.







*Existing site photographs viewed from the Knowledge Hub steps, and along Rickard Road.*

## 3.3. Site Surroundings

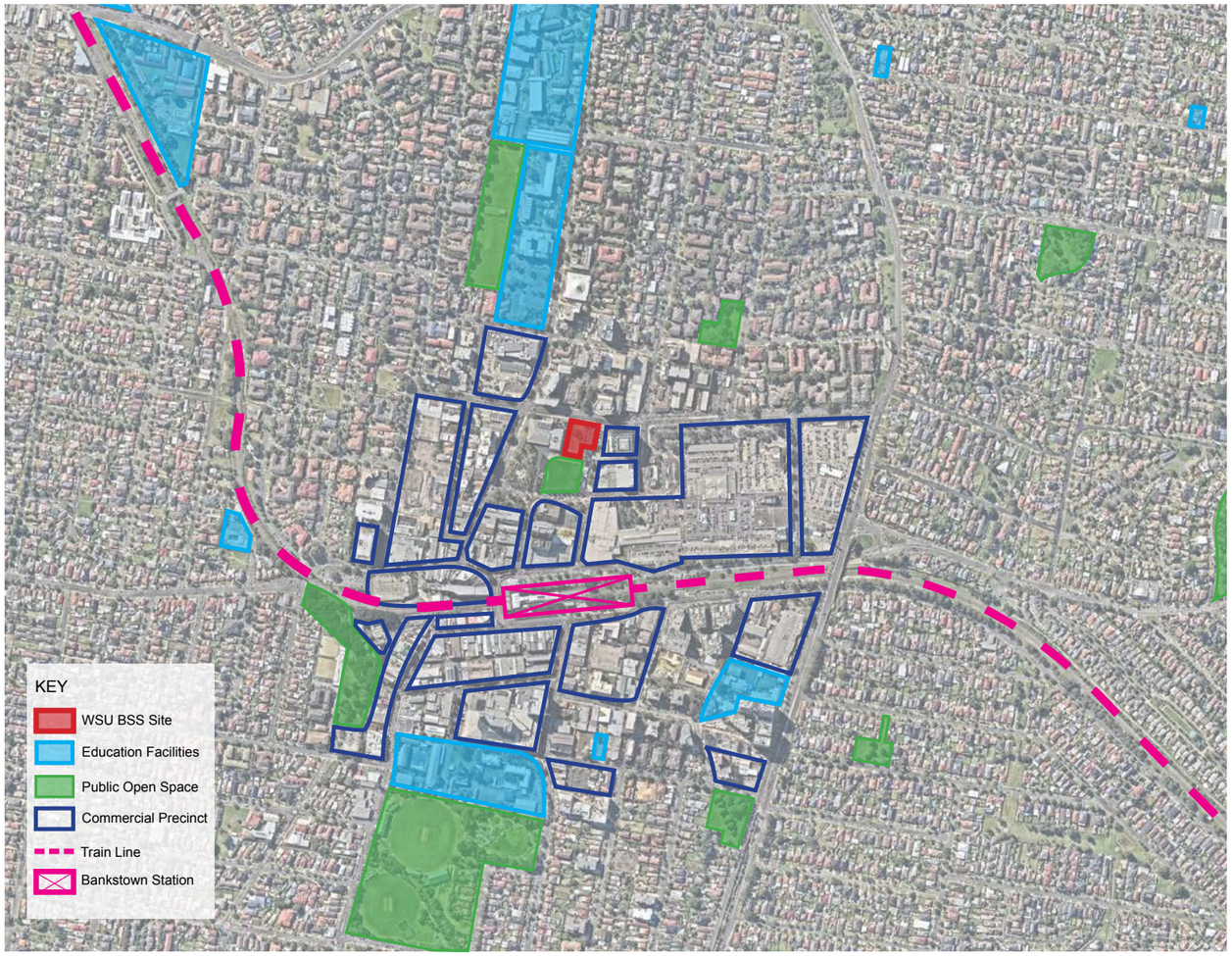
The site is located within the 'Civic Precinct' of the Bankstown CBD, and currently provides open lawn space and at grade public parking, contiguous with Paul Keating Park and road along Appian Way, to the south and east of the site. The site presents both a challenge to mediate the varying scales of its immediate surroundings, and opportunity to create a landmark building reinforcing the Bankstown Civic Precinct and the axis of The Appian Way.

The Bankstown Library and Knowledge Centre, located on the western side of the site, 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.

The Paul Keating Park is the focal public open space of the Bankstown Civic Precinct and is used for large scale cultural and community celebrations and events, as a venue for smaller community group activities, and informal park and playground use by the local community. The park was created after the former Bankstown Council administration building was destroyed by fire in 1997. The original Administration building, and the remaining Council Chambers building, which is a registered local heritage building, were opened in 1963.

To the east of the site is the Bankstown Civic Tower which houses Bankstown City Council along with commercial tenants. Access from Rickard Road to the Council building basement is via the existing carpark on the site, along a shared roadway, as the right turn in off Jacobs Street is not permitted. 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 and Bankstown Train Station. A second bus interchange is located on the southern side of the train station.

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.



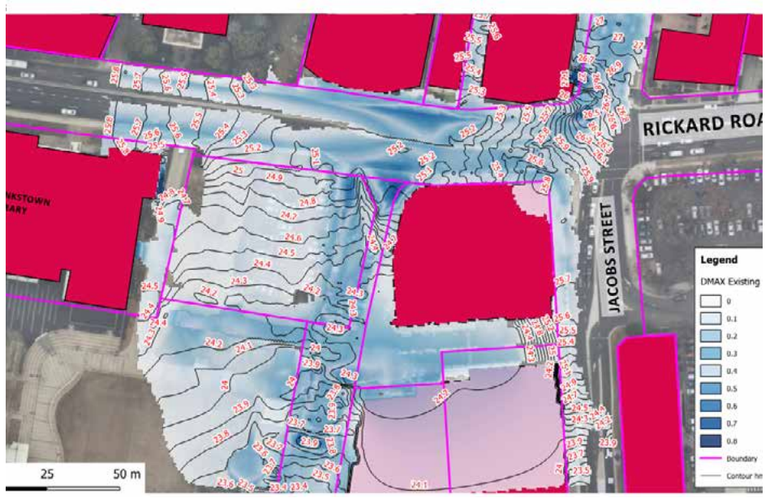

*Bankstown CBD satellite map with key commercial, educational and open green space highlighted*




*Bankstown CBD satellite map identifying key adjacent sites.*

## 3.4. Overland Flow

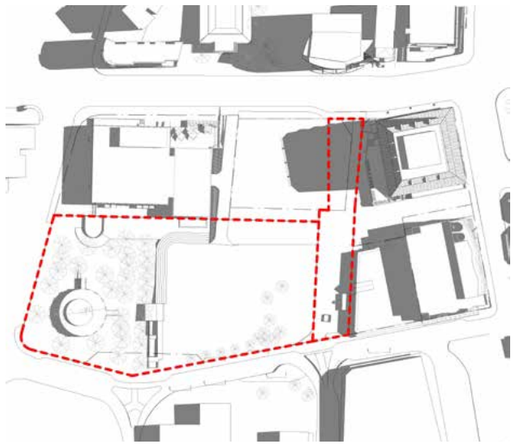
The site is subject to stormwater flooding and is categorised as being Medium to High Risk. In consultation with the City of Canterbury Bankstown Council engineers, Civil Engineers Bonacci Group have investigated strategies to manage flood levels and overland flow paths, and confirm freeboard and entry 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.



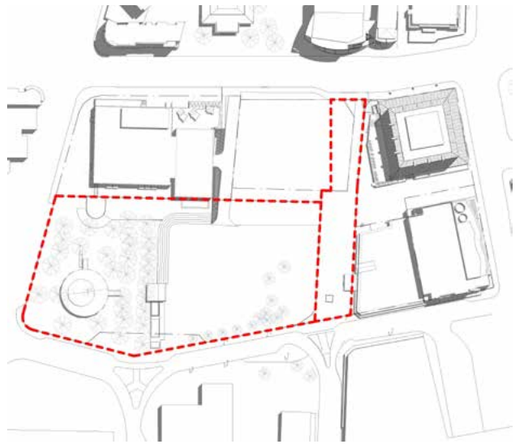

## 3.5. Orientation and solar access

The site is located on the south side of Rickard Road, oriented slightly North East. The site is currently shaded in the morning by the Council Offices (12 storeys) to the East, and to lesser extent by apartments on the North side of Rickard Road

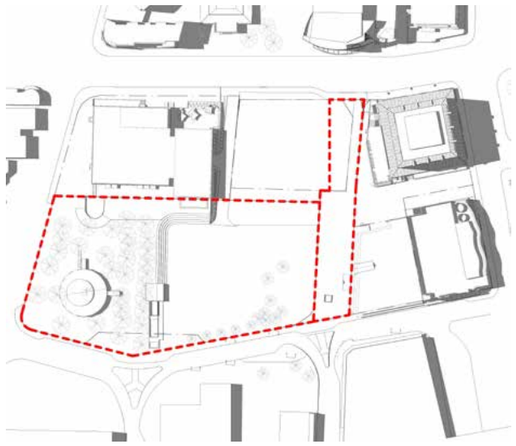
As the site is located on the North side of existing Public Open space the potential shadow cast by the building has been a key concern during the design process, with the minimisation of the shadow impact being a primary design objective. Refer to Section 4 and Appendix C.



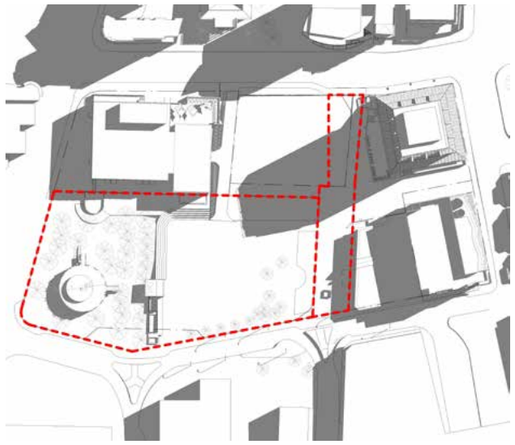
Summer Solstice 9am



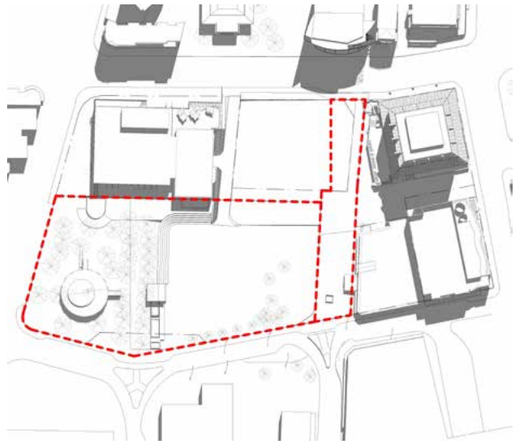
Summer Solstice 12 noon



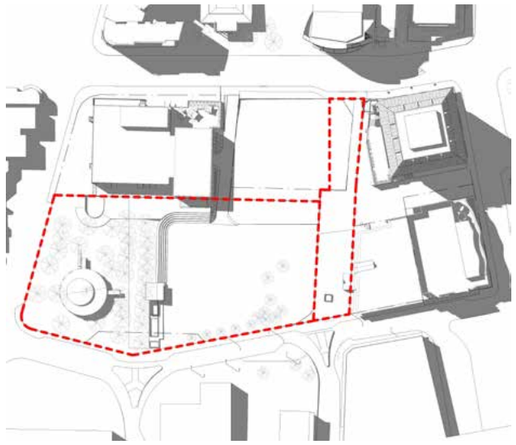
Summer Solstice 3pm



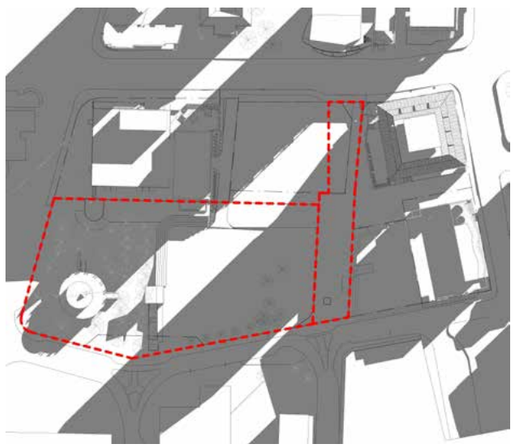
Equinox 9am



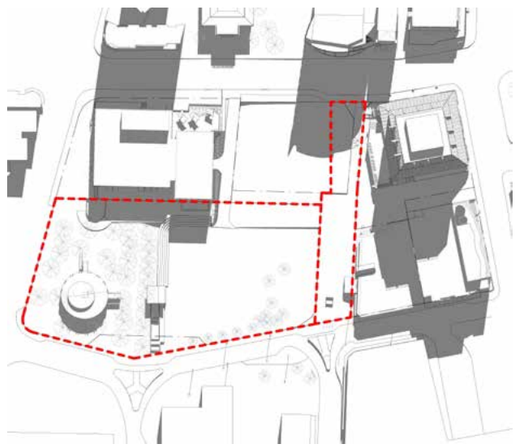
Equinox 12 noon



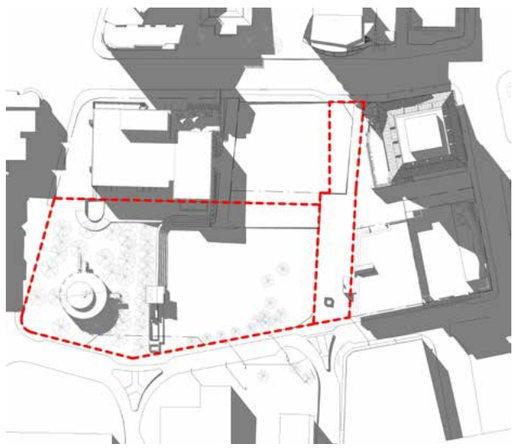
Equinox 3pm



Winter Solstice 9am



Winter Solstice 12 noon



Winter Solstice 3pm

NORTH

## 3.6. Acoustic Context

An Acoustic survey of the site has been undertaken by the Acoustic Consultants, NDY, and is outlined in a separate report within the SSDA. The site is located within a mix of sensitive uses and noise sources. The sensitive uses include residential properties to the north side of Rickard Road, as well as the public facilities of the Knowledge Hub and Theatre, and Council offices. Other sensitive users located further from the site may include the Council Chambers and residential properties on Chapel Road and future development of the Compass Site, south of Paul Keating Park. More active noise sources include traffic noise along Rickard Road and intermittent events held at Paul Keating Park.

## 3.7. Wind Analysis

The predominant prevailing winds at the site come from the North-West, with winds coming from other directions, including the south to a lesser extent. Wind analysis for pedestrian comfort has been undertaken to inform the design of the project, and to assess the impact of the proposed design on the surround public areas. Details of this investigation and impact are included in a separate Wind Study report within the SSDA.

## 3.8. Transport and Access Context

Traffic Engineering advice for the project is being provided by Arup, who have prepared a detailed Transport Planning and Accessibility Impact statement as a separate report within the SSDA. In addition to understanding the existing transport context, including the pedestrian, cyclist, public transport and vehicle networks, the design team has reviewed and responded to the Council's draft 'Complete Streets' strategy. This document provides a design framework and masterplan for the future development of streets in Bankstown CBD, including both Rickard Road and The Appian Way, with a focus on pedestrian activity and amenity.

### 3.8.1 Public Transport

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 300m (5 minute walk) south of the site, and provides access to Sydney CBD and Liverpool. 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. An additional bus interchange is located on the southern side of Bankstown Train Station.

### 3.8.1 Bicycles and Pedestrian

The locations of the existing public transport nodes will inform 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 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 the future Metro Station and bus interchange to the south.

Although the site is not currently in close proximity to any dedicated bicycle paths, the Draft Complete Streets Strategy does identify the desire 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 (Refer Section 2.3). The p[roject brief includes bicycle parking for staff and students, as well as End of Trip facilities for staff.

### 3.8.3 Vehicles

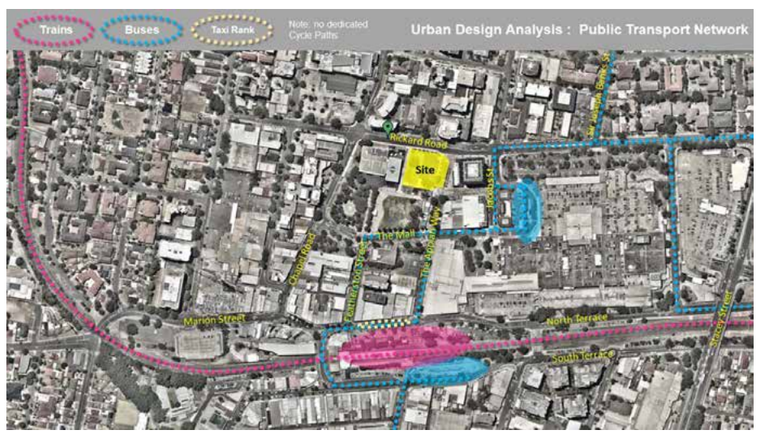
The existing site currently provides public lawn space and an at-grade carpark, which is accessed by a one-way shared roadway off Rickard Road. This also provides access from Rickard Road into the parking and service areas under the Council Building, and to public parking adjacent the Appian Way shops and playground. The development of the site needs to maintain this through access route off Rickard Road as access to both the Council Building and Appian Way parking is not possible from Rickard Road via Jacobs Street.

Additionally the western side of the site is bordered by the 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.




*Urban Design Analysis Diagram: Pedestrian Network including open public space.*




*Urban Design Analysis Diagram: Public transport network including interchange nodes.*



*Artist impression of the future Bansktown Metro station (looking North East).*
*Source: www.sydneymetro.info*




*Aerial visualisation of existing development context.*




*Aerial visualisation of potential future development context, including Compass Site & Kitchener Road developments, and LEP height volumes.*

## 3.9. Utilities and Services Infrastructure Context

Further to the existing services easements in and around the site noted in Site Features above, existing site utilities and servicing investigations have been undertaken by the project Services Engineers, NDY. The following key infrastructure components are outlined in detail in the Utilities Report which forms part of the SSDA documents:

- 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 site. To facilitate the project it is proposed that this sewer is diverted outside the building footprint.
- Stormwater : Existing box culvert running parallel to the site along Appian Way.
- Gas : Gas main located within Rickard Road
- 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.

## 3.10. 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 FSR limits nominated in in the City of Bankstown LEP. A separate Planning Proposal application has been made to the City of Canterbury Bankstown to increase the permitted Height from 53m to 83m, and 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 in association with the planned construction of a Metro station, due to the age and capacity of existing building stock.

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.

It is understood that the 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 Stratgy, and a Masterplan for Paul Keating Park.

WSU and the design team for the BCC have engaged with the 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.

# 4.0 Design Strategies and Process

## 4.1. Urban Design Principles

The development of the site is based on Urban Design principles that have been established with input from officers of the Canterbury Bankstown Council and consultation with the GASNW and 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 to ensure an outstanding urban outcome.

1. **Better Fit:** contextual, local and of it's place
2. **Better Performance**: sustainable, adaptable, durable
3. **Better for Community:** inclusive, connected, diverse
4. **Better for People:** safe, comfortable and livable
5. **Better Working:** functional, efficient, fit for purpose
6. **Better Value:** creating and adding value
7. **Better Look and Feel:** engaging, inviting, attractive




*Urban Design Diagram Principle 1*

**1.** **Building size** is considered in relation to the current and future context of the site. The University brief requires **26,200sqm NLA**. The FSR proposed for this development is subject to a separate Planning Proposal Application with the City of Canterbury Bankstown. [Better Fit, Better for People]



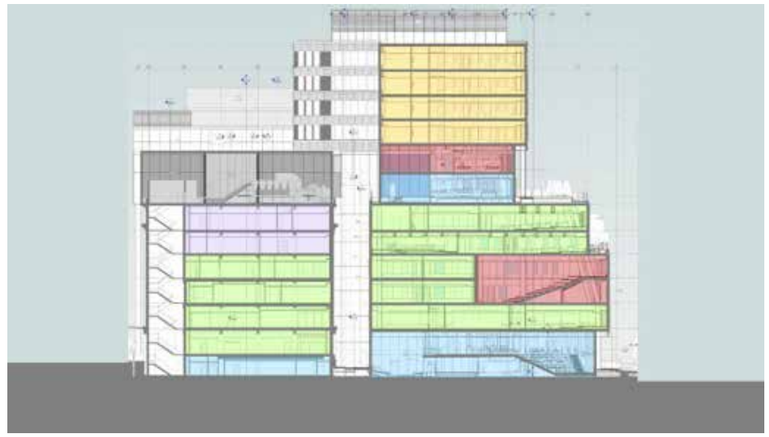

*Urban Design Diagram Principle 2*

**2.** Preserve **open space** along the Appian Way alignment. 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]



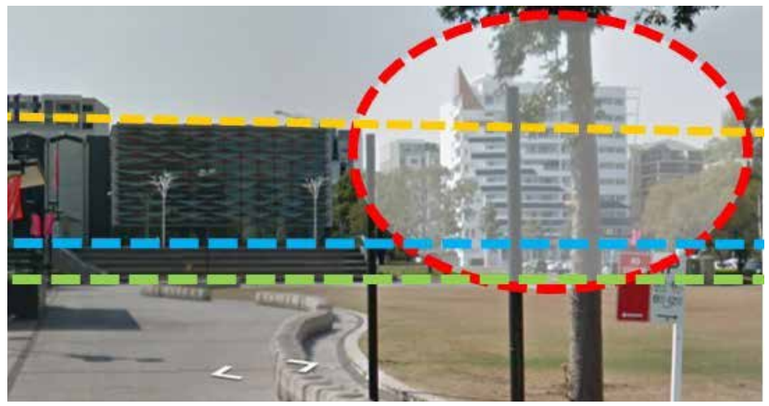
*Urban Design Diagram Principle 3*

**3.** Optimise **solar access** to a diversity of public spaces at Paul Keating Park and 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. [Better for Community, Better Look and Feel].



*Urban Design Diagram Principle 4*

**4.** 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]



*Urban Design Diagram Principle 5*

**5.** **Align the lower building form** with the adjacent Bankstown Library and Knowledge Hub. The form of the building has also been considered in relationship to the adjacent Council building, and future Compass Site residential towers. The scale and proportion of the building form are optimised with the existing and future urban context. 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]

*Urban Design Diagram Principle 6*



**6.** 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.** 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** 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;
- 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] (Refer Appendix A).

## 4.2. Design Considerations

The design process has involved the exploration and analysis of form and massing on the site, addressing the University's brief and testing the performance of different forms and design strategies against the site and context issues. Performance and outcomes of the design process have been reviewed with the University, with Canterbury Bankstown Council and with the Government Architect NSW (through the State Design Review Panel process). Key issues that the design process engaged with are outlined below.

### 4.2.1 Overland flow

Water flow modelling has been undertaken by Bonacci, Civil Design engineers for the project, to test the form and levels of the Ground Floor of the building and providing design parameters for site landscaping. The design team has investigated a range of options to protect the building and basement from potential ingress of floodwaters, including exploring active and passive measures. As the option of using floodgates for active protection of entrances is not supported by the local authority, the building has been designed to provide compliant freeboard above current predicted 100 year flood levels.

### 4.2.2 Ground floor permeability

The provision of active edges to the site, especially to The Appian Way, Rickard Road and Paul Keating Park frontages are key objectives for the ground floor design. Creation of a porous interface between University space and the public domain helps to build community connections with higher education and enables the University to showcase research and learning programs. Ease of physical access also supports the economic viability of integrated and adjacent retail tenancies. The University is targeting AS1482.2, to provide an equitable and easily navigable environment for all users, whilst also incorporating the required floor heights for flood protection. The creation of a porous interface also needs to be balanced with clear hierarchy and legibility for access from different approaches, and coordinated with management of overall building security and CPTED principles.

### 4.2.3 Urban legibility

In developing different options for a building form that provides the required space for the Vertical Campus, a key consideration has been how the form sits with the existing and future Urban forms. Due to its size and siting it has been critical to consider how the building works in the round. This includes examination of key vistas and views toward the site, particularly along Rickard Road and The Appian Way, from Paul Keating Park, and from the other Civic Precinct buildings. How the building presents from more distant vantage points has also been considered. This analysis has informed the overall massing of the form, including the heights and scale of key volumes, as well as the use of façade articulation devices, including inset balconies, corner treatments and shading composition, to visually moderate and break down the form.

### 4.2.4 Shadow Analysis

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. This 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.



*Existing site photo: Panorama looking South along The Appian Way across the playground, and East towards the Knowledge Hub*

## 4.2.5 Façades

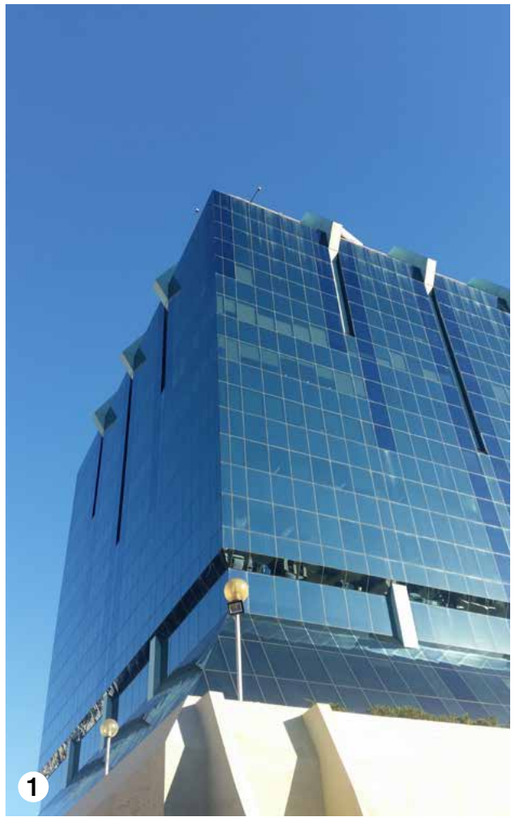
The design of the façades responds of a range of considerations. The façade contributes substantially to the building's Urban legibility, in terms of how the building is identified from distant and close vantage points, and from different directions. As such, it is important for the building to singularly identifiable yet visually articulated, and to sit well with the varied neighbouring buildings in the Civic Precinct. The façade design proposal also considers technical issues associated with the façade performance from an environmental perspective (including thermal, acoustic, daylighting and glare considerations), buildability and long-term performance and maintenance requirements.

## 4.2.6 Landscape

Incorporation of open spaces, including roof terraces and balconies, are critical for the creation of a Vertical Campus, and are key components of the building form. Careful consideration has been given to how the large terraces can work in conjunction with the internal space brief, with this analysis informing the types of space and activity that each elevated landscape provides. The inclusion of smaller inset balconies, which have a role in articulation and modulation of the building volume, contribute to the diversity of outdoor spaces and amenity that can be accessed. Overall, this enables the Campus to provide appropriate, accessible and supportive outdoor amenity within the project, mitigating potential impacts that the University community may have on the existing public domain. Additionally at the ground level, the design team, including Landscape Architect Aspect Studios, have consulted with the Council on current strategic projects informing the future interface of the ground plane. Key projects currently underway include the Complete Streets strategy and Masterplan for Paul Keating Park.

## 4.2.7 Structure and Services

The development of the building design has also been informed by input from Structural and Services design consultants. Key servicing requirements and principles for the building, including vertical transport strategy and preferred structural clear spans, have been tested and developed as the design has progressed. In order to ensure the long-term flexibility of the building to meet both current and future University needs a number of core structure and servicing principles have been established. These include the maximum floor population capacities, identifying areas with higher structural floor loadings, and incorporating façade louvre zones that provide flexibility for mechanical air handling design.













**Existing Precinct Buildings:**

1/ Council Offices: fully glazed facade with chamfered base and top

2/ Knowledge Hub: fully glazed facade with folded angled sunshading and white edge surround

3/ Bryan Brown Theatre: expressed concrete ribs to facade and window modules.

4/ Existing entry to The Appian Way at Rickard Road

## 4.3. 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 (Refer section 4.1) and the Proposed Building Form (Refer section 4.4).

### 4.3.1 Typology Model Analysis

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.



*Massing Typology 1*

**Typology Model 1: Maximised floor plate and minimised height**

- **Height:** Shortest Model.
- **Solar Access:** minimises length of winter shadow across the park (north south extent) but increases width and duration of the shadow onto the park.
- **Urban legibility and vistas:** Doesn't 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.
- **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.



*Massing Typology 2*

**Typology Model 2: Minimised floor plate and maximised height**

- **Height:** Tallest Model. Floor plate as required to keep overall height to approx. 83m.
- **Solar Access:** Increases depth of shadow across the park (north south extent) but decreases the shadow width and duration on the 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.



*Massing Typology 3*

**Typology Model 3: Tower with Podium**

- **Height:** Slightly lower than Model 2, due to increased floor plate at lower levels.
- **Solar Access:** Retains some benefits of Model 2, with reduced width and duration of the shadow onto the park from the upper portion of the building.
- **Urban legibility and vistas:** Tower form is set back from the east site boundary but doesn't provide clear space above 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.



*Massing Typology 4*

**Typology Model 4:  Additive Building Form**

- **Height:** Similar to Model 2, with varied floor plate sizes to podium, mid and upper tower forms.
- **Solar Access:** Retains the benefits of Model 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.
- U**rban legibility and vistas:** Whole building form is set back from the east site boundary to provide clear space above 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 at roof terraces, plus potential for smaller breakout 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.

## 4.3.2 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. 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 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 this design option from GANSW and the Council identified a range of issues 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 needed to 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 take over 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 FSR for the site under the City of Bankstown LEP. The FSR and Height of development permitted on the site is being addressed through a separate Planning Proposal with the Council.

Consideration of these issues has informed the Urban Design Principles, outlined in Section 4.1, the generation of the Proposed Building Form, outlined in Section 4.4, 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 4.5.



*Massing form of the Initial Design Option*

## 4.4. Proposed Building Form

The following sequence of Massing Strategy Diagrams outlines how the form has been generated, with reference to the Urban Design principles in Section 4.1 and the options analysis in Section 3. 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

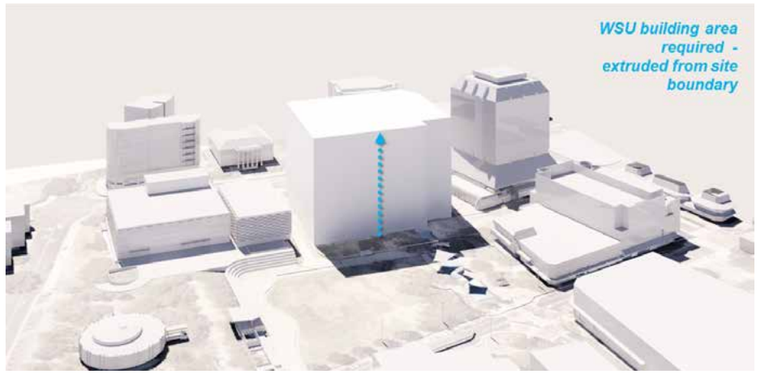
**1.**

The site has an area of 3,678sqm and sits on the North side of Paul Keating Park.




**2.**

The spatial volume of the building, generated by extruding the Site area to the height needed to create the required floor area (26,200sqm NLA).




**3.**

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




**4.**

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




**5.**

The form above the horizontal break is set back to enable the alignment of the podium form to be read.



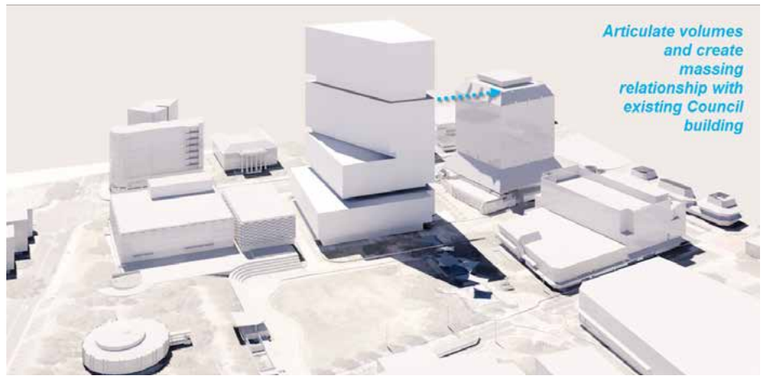

**6.**

To reduce the bulk of the tower form when seen from the Park and Appian Way, the upper portion of the tower is narrowed at this end, and shaped as a taller wedge



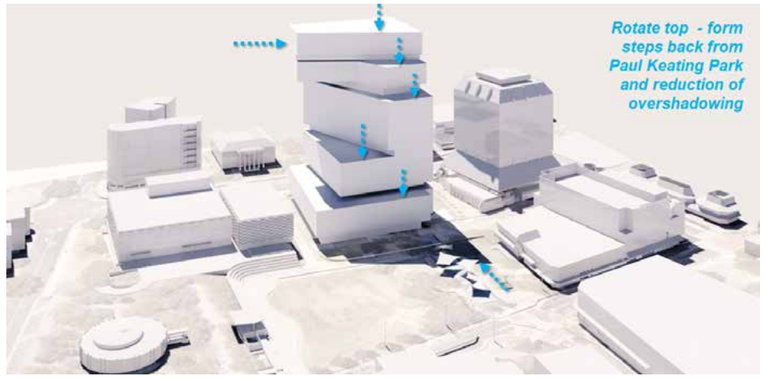
## 7.

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




## 8.

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




In order for the Building Form to facilitate a Vertical Campus, key connection and activation infrastructure needs to be incorporated into the Building. These infrastructure elements will ensure that the fitout can provide the diversity of a campus in a vertical setting, enhancing the serendipitous encounters that foster a student-centred academic community. The design also addresses long term Campus flexibility, and the capability to respond to changing educational and research needs, through considered coordination of the building services and structural design of the building.

To provide the connectivity and functionality of a Vertical Campus, key infrastructure needs to articulate and connect through the resultant form.

## 9.

To provide efficient access between floors Escalators are proposed up to Level 7, plus open-air stairs on the Park side. These are supplemented by Lifts and Egress stairs.




## 10.

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 at 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. Open space here can support outdoor group breakout and more reflective study activities.




Level 13 terrace aligns with the Conference facilities and providing spaces to support meeting activities and breakout between conference sessions. Level 16 provides an outdoor space for group events. 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.

## 11.

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.




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.



## 4.5. GANSW Consultation

In addition to addressing the Design Objectives outlined in the GANSW Better Placed guidelines, the project team has engaged in consultation with the GANSW through the State Design Review Panel (SDRP) process. This has included three SDRP sessions plus an additional informal review with staff from the GANSW. The key feedback that has informed the development and resolution of the proposed design include the following:

**SDRP 1 - 17th October 2018:**

- Revision of the siting strategy to maintain The Appian Way as street, open to the sky above.
- Revision of the building form to address the informal learning needs within the development, and exploring the expression of the building as a Vertical Campus.
- Reviewing the size of building required, including justifying the floor plate sizes needed for a Vertical Campus typology,
- Reconfiguration of the building form to ensure access to sunlight for a diversity of public spaces, including at mid-winter.
- Address the existing podium form alignment of the Knowledge Hub and Council Offices.
- Design the Appian Way ground frontage as a fine-grained local retail food street.
- Address potential impacts on the public domain to ensure positive community benefits.

**GANSW Informal Meeting - 27th November 2018:**

- General support for the revised building form including stepping the building back from The Appian Way and inclusion of landscape terraces.
- Improvement of solar access, particularly to The Appian Way noted, and comparison to an LEP Compliant scheme requested.
- Demonstrate the integration of The Appian Way with the existing public domain.

**SDRP 2 – 12th March 2019:**

- Clarify the alignment of The Appian Way between Rickard Road and the Compass Development to ensure a clear spatial reading of Appian Way from the train station to the Campus.
- Clarify the alignment with the Knowledge Hub.
- Ensure good permeability and connection with The Appian Way and Paul Keating Park.
- Refine the design of the Appian Way awning to integrate it with the building.
- Further develop the articulation of the façade, sun shading and fenestration in response to the different orientations, internal functions and urban conditions.
- Continue engagement with Council to ensure an integrated approach to the public domain.

**SDRP 3 – 5th June 2019:**

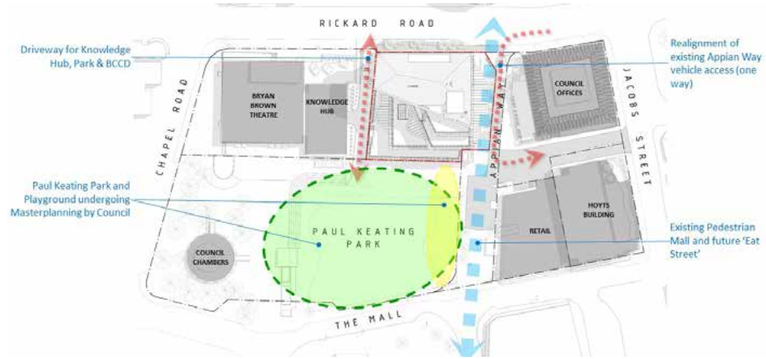
- Supporting the overall architectural approach to the project, whilst noting concern about the bulk and scale of the project (associated with the overall height and floor area).
- Reiteration of the importance of solar access to public open space and pursuing an integrated approach to the public domain.
- Requesting further clarification of the spatial alignment of The Appian Way from Rickard Road to the train station.
- Querying of the relationship between vertical (East façade) gardens and horizontal terrace gardens.

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. Further design progression since the last SDRP meeting, has included the following key aspects of the proposal:

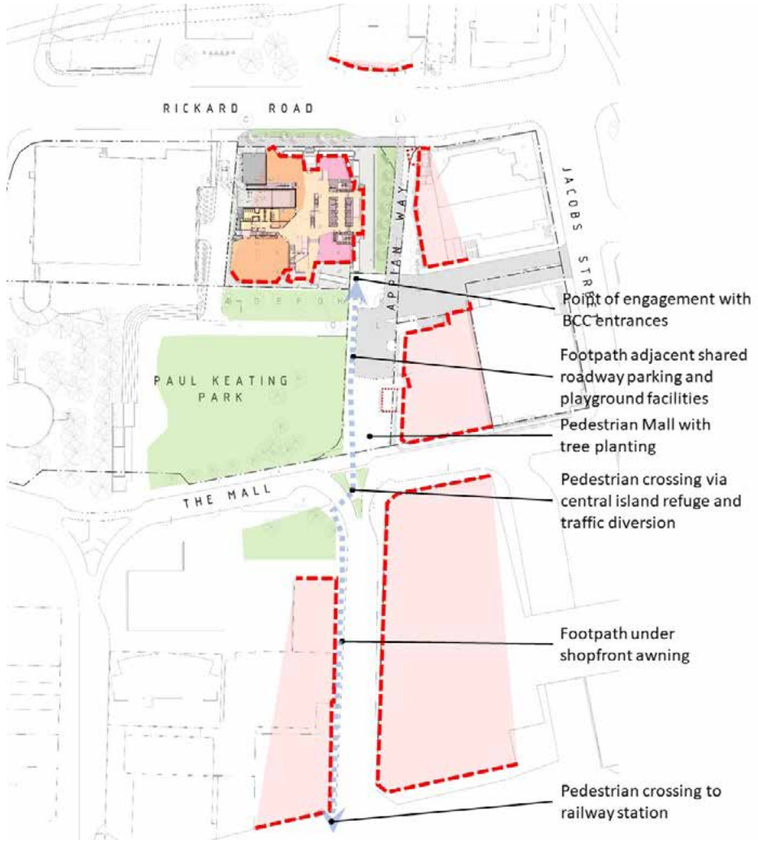
- Revision of the ground floor plane levels in response to advice from the Council. This necessitated raising the floor levels at entrances from The Appian Way and Paul Keating Park, to address 1:100 year flood levels plus freeboard. Prior to this advice the use of floodgates had been proposed, enabling to the two retail tenancies and The Appian Way foyer to match the ground level externally. This design change has informed review of the way that the retail tenancies interface with the public domain, incorporating external decks and occupiable terrain to navigate the level differences along Rickard Road, The Appian Way, and Paul Keating Park.
- Refinement of the façade design, including reviewing the visual reading of the East and South façades from key vistas, and refinement of the façade material treatments to provide continuation of the terrace level expression along the East Façade.

Further commentary is also provided in relation to the spatial alignment of The Appian Way, and the design approach that has been taken to the alignment with surrounding forms and sightlines. Detailed examination of the pedestrian experience walking from the Railway Station and Bankstown Central shopping centre to the site, plus review of satellite images, lot boundaries and kerb lines indicates that the existing urban fabric doesn't have singular alignment associated with the pedestrian access routes and vistas along The Appian Way and along the southern side of the Knowledge Hub.

The alignment of the East face of the BCC has been informed instead by the broader principle to maintain a clear open space above The Appian Way, enabling the open space to be read from the Railway Line. Additionally the east façade alignment is informed by the pragmatics of occupying a non-rectilinear site, setting an orthogonal grid with the Rickard Road boundary, following the precedent of the adjacent civic buildings. The project provides a strong landscaping gesture via the new avenue of trees, to ultimately connect from Rickard Road to The Mall. The design principles of this key open space are described in further detail in the Landscape Design Report (Refer Appendix B).




*Context Diagram highlighting key connections and adjacencies in the Civic Precinct.*




*Context Diagram highlighting the pedestrian experience and ground level built form along The Appian Way*

# 5.0 Base Building Design

## 5.1. Floor to Floor Heights

The floor to floor heights for the building have been developed to provide appropriate spatial amenity for the large floor plates and room types required within the Campus and coordinating structural needs with building services spatial requirements. The overall height of the building is subject to a concurrent planning proposal with the Canterbury Bankstown Council.

Typical floor to floor heights of 3960mm have been adopted for most floor levels, with higher floor to floor heights proposed at the following levels:

| Level | Floor to floor height | Facilities |
|---|---|---|
| Level 13 | 5040mm | Conference Facilities including large seminar spaces and breakout areas for groups. |
| Level 3 | 4860mm | Student Hub level including large open group congregation spaces. |
| Level 2 | 4320mm | MARCs Institute research facilities, including public engagement, plus generous open informal learning areas. |
| Level 1 | 4320mm | Campus Student Services, plus generous open informal learning areas and capacity for specialised showcase facilities, such as Maker Space, 3D printing and XR Lab exhibition space. |
| Ground Level | 4860mm (Minimum) | University street primary circulation foyer, Retail outlets, University Showcase space and multi-purpose tiered theatre. |

Basement floor heights vary with driveway ramps levels tailored to suit spatial needs for truck access, plant rooms and reticulation of services to the building core risers, and to accommodate ground level requirements above.

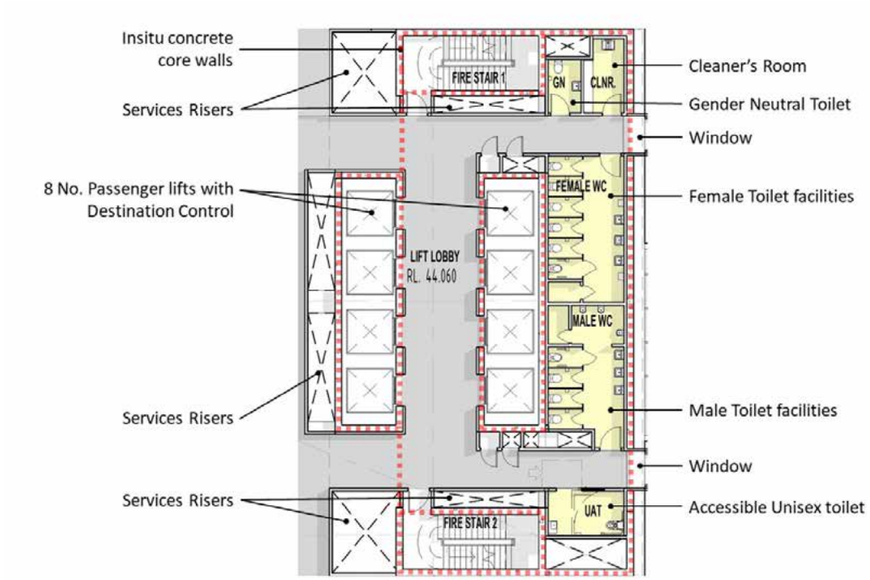
## 5.2. Building Core

The Building Core has been developed to serve the whole of the base building form, as the floor plate cuts back from the podium to mid and upper tower shapes. The core is located on the east side of the building enabling the vertical transport, primary services risers (including Mechanical, Smoke Exhaust, Electrical and Communications) and amenities to be efficiently aligned for the full building height. Additionally, this location maximises access to daylight and outlook by work and study spaces from all levels, whilst enabling the lift lobby foyer to interface directly with The Appian Way.

As the floor plate size and populations contract up the height of the building, the number of egress stairs required reduces. In addition to the two load bearing fire egress stairs in the core, two non-load bearing fire stairs are located towards the west side of the building, with the overall spacing of fire stairs ensuring that each floor plate type has appropriate distance and capacity coverage for egress. The core Comms infrastructure riser is positioned next to Fire Stair 3, providing continuous data infrastructure for the full building height.




*Section diagram indicating floor to floor heights and vertical circulation*




*Plan diagram of typical building core arrangement*

## 5.3. Basement Levels

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 Knowledge Hub driveway. The ramp, which will have roller shutter for afterhours security control, is being designed to accommodate Medium Rigid Vehicles and rear lift refuse vehicle, enabling loading and waste collection activities to occur away from public open space at street level. Additionally, the entry level of the ramp will provide the required 100mm freeboard for protection of the basement from flooding.

The Building Manager's office is positioned to enable oversight of this entrance, with internal boom gates controlling vehicle access to the lower level of parking. Two lifts land at the basement levels, providing passenger access for parking and End of Trip Facility users, as well as goods loading, to all levels of the Campus above. Parking adjacent to the Managers office includes the truck loading bay, positioned next to the Waste Store, Van loading bays, Disabled parking bays and standard car bays for visitor or contractor parking. Parking spaces on the lower level will be allocated to building users and are not proposed to include public parking or student parking.

The upper level of the Basement accommodates core building services plant, including Mechanical chillers and cooling water pumps, Carpark and Multipurpose tiered space air handling systems, Fire water storage and pumps, Main Switchroom, Communications infrastructure, Grease interceptor trap and metering for Gas and Water. As well as core services infrastructure, space is allocated for operational needs including storage needs associated with different Campus activities and centralised Cleaner's Store.

In addition to parking the lower level of the Basement accommodates Diesel tanks and pump for the Level 18 back up generator. The fill point of the Tanks is located at ground level adjacent to the Knowledge Hub driveway and is addressed in the Dangerous Goods Report for the project.

## 5.4. Ground Level and Entrances

The Ground floor of the building addresses a complex and competing range of technical issues whilst providing a very open, engaging and active interface between the University and its surroundings.

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 (Refer Section 3.4 Overland Flow). 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. Transition between the site and internal ground levels has been carefully considered in order to generate a design that not only addresses the technical parameters for flood protection, and exceeds the minimum DDA requirements, but also provides a visually permeable and highly engaging interface, particularly towards Paul Keating Park, The Appian Way, and Rickard Road.

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 approach. From these two approaches, arriving at the corners of the building, visitors have a choice of entry direction via generous ramped walkways adjacent to fixed seating and occupiable terrains including generous deck extent and integrated planters. Steps also 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.

The corner Retail tenancies, located at the Eastern corners can be entered from outside, with opportunities for opening windows or service points and are also open to the internal 'University Street'. This provides the tenancies with ability to serve both public and University customers, enhancing their economic viability. A third 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. This space is designed to be capable of supporting retail (food and beverage) tenancy for future flexibility.

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. A stair near the south entrance provides an alternative route up to student amenities and external spaces. The generous foyer also supports function events occurring in the Multi-Purpose tiered theatre. This space is located on the South East corner with outlook to Paul Keating Park, providing a generous window into the life and activity of the University.

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 the Basement from the existing Knowledge Hub driveway. The Ground Floor Amenities have capacity to serve the retail tenancies and building users. They are designed to provide equal access to a diverse range of users, incorporating a Gender-Neutral toilet and Changing Places Type 2 facility, in addition to facilities required for regulatory compliance.













**Design Visulisations:**

1/ Approaching the southern entrance and retail terrace from The Appian Way
2/ Looking north from The Appian Way to the south east corner of the BCC
3/ Looking to the north east corner of the building and the new building and the new linear park on The Appian Way, from Rickard Road
4/ Entering the 'University Street' from Rickard Road

## 5.5. Podium and Tower Levels

Above Ground Level, the building is composed of a sculpted tower and podium, as outlined in Section 4.3. Levels 1 and 2 are the largest floor plates with area of nominally 2,300m2NLA. These floors, with higher floor to floor heights, offer flexible expansive floor for public engagement, research, showcase and learning programs.  They are readily accessed from the University Street at ground level via the escalators, and additionally can be glimpsed through the north and south voids and accessed via the open Park Stair or Lifts.

Capping the Podium form and situated between high student occupancy levels above and below, Level 3 has been identified as the Student Hub level. This provides valuable 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 on campus, 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.

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 courtyard on Level 4, providing external breakout from the Library and adding to the diversity and amenity of these levels. Levels 7 is the topmost level served by the escalators. The Learning Terrace here is regarded as a key study destination as well as being capable of hosting outdoor teaching sessions.

Levels 8 to 12 (nominally 1250m2NLA) form the narrower mid-tower, with access via the lifts. The levels are expected to accommodate a variety of University Workspaces with outlooks to the west and south, and Learning Spaces to the North.  A series of balconies are provided in the western façade allowing for external study and social breakout from the centre of the floorplate. Level 13 (nominally 900m2NLA) has been designed to accommodate a 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.

Upper tower levels from Level 14 to 18 occupy the cantilevered form of the building. These levels provide capacity for other University and education uses. 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, for other services and plant requirements where the building core reduces.



*Aerial view looking north east*



*Aerial view along Rickard Road from the north west*



*Aerial view looking over The Appian Way from the south east*

## 5.6. Façades

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 – Horizonal shades for optimum solar control to the North, Vertical blades and infill on the East, and dynamic angled blades and infill on the angled west facades. The South façade, where shading is not required, presents a fully glazed face.

Across the whole of the building, 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.

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 the Landscape Design Report appendix within this report.

The East façade also incorporates a substantial area of vertical garden. 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. As well as offering a positive contribution to the outlook from the existing and future adjacent developments this vertical garden will be highly visible from key views towards the site, contributing to the character and recognition of both Bankstown and the Civic Precinct.

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, vertical garden 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.

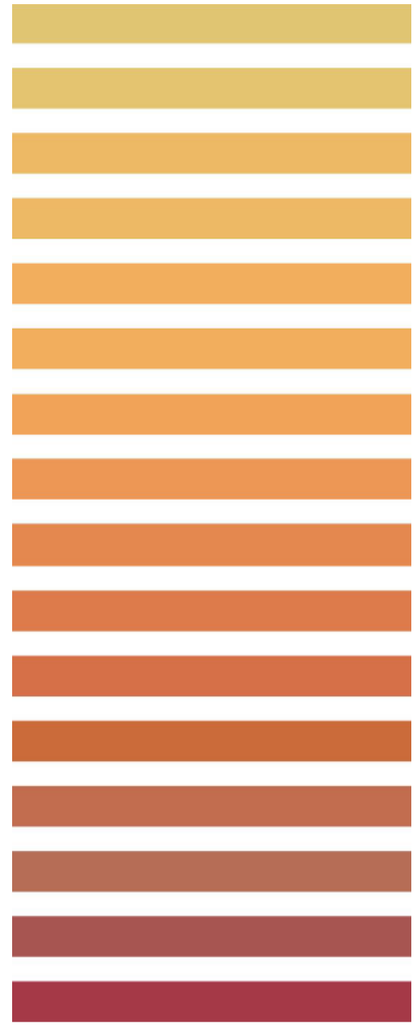
This combination of curtain walling, shading elements and framing enable the building to sit cohesively yet distinctly with the immediate built context of the Civic Precinct. The materiality complements and resonates with the sheer glass skin of the Council Offices, the framed dynamic shading of the 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, in the façade, planted edges and terrace landscapes, additionally provide a substantial and visible expansion of the green space in the Civic Precinct. This serves to support and reinforce the public amenity offered by Paul Keating Park and The Appian Way.



*South facade and site context visulisation*



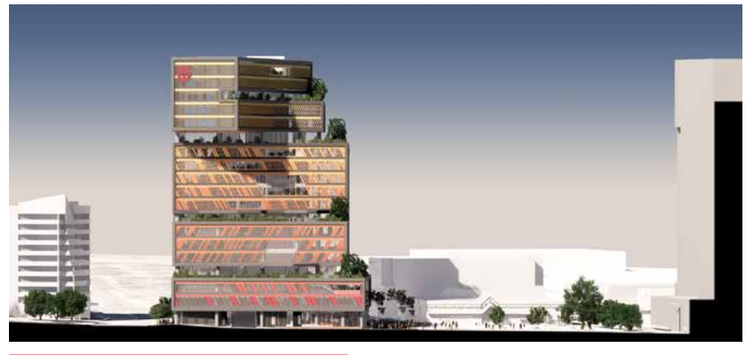
*East facade and site context visulisation*



*Facade colour spectrum*



*North facade and site context visulisation*



*West facade and site context visulisation*

## 5.7. Building Services

Building services and plant rooms have been integrated into the overall building form minimising their visible impact from key site lines and views to the site. This includes locating primary plant and services in the Basement and level 18 plant rooms and enclosure, supplemented by secondary plant rooms at levels 1, 14, 15 and 17. Additionally the Substation is located at Ground Level adjacent to the Knowledge Hub driveway and designed to meet the authority's installation and access requirements. This position strategically maximises the active ground level frontages along Rickard Road, The Appian Way and Paul Keating Park.

Louvre requirements for Mechanical services and plant room ventilation requirements have been integrated into the façade treatment. This includes horizontal bands of louvres above the ceiling levels for flexibility in both initial fitout and future reconfiguration of in-ceiling mechanical services, plus dedicated panels of louvres serving specific plant room needs.

The inclusion of the primary upper plant rooms within the building form at Level 18 provides a large unobstructed roof area to be utilised for solar photo voltaic array. The detailed layout of the array, which contributes to the Environmentally Sustainable Design strategy for the campus, will be coordinated with the requirements of rooftop fans, cooling tower enclosure and the façade access strategy (proposed as BMU perimeter track with supplementary davit access systems and suspension systems to terrace edges and re-entrant façade areas). The use of Motor-room-less Lifts also serves to minimise the overall height of the building form above Level 18.

## 5.8. Structural Design

The building is designed with a concrete structure incorporating a vertical structural core around the lift shafts and pair of fire egress stairs. The concrete column grid is laid out to accommodate the variations in floor plate, to provide the larger spans necessary to fit teaching spaces efficiently, to coordinate with the layout requirements of carparking and loading circulation in the Basement, and additionally to address the cantilever.

As outlined in the Structural report that is incorporated into the SSDA documentation, the structure uses a combination of prestressed concrete one-way slabs and band beams for most floors, with the cantilevered slabs on Levels 14 to 18 incorporating steel beams and inclined concrete filled steel tube columns. The design of the slabs includes provisions for higher floor loadings for Library bookstacks and future research agendas. Additionally the loading and spatial requirements for the Terrace landscapes has been considered and incorporated.

Aside from the cantilever, which has been designed with consideration of the construction sequence and ultimate loading requirements, the construction of the building and basement adopt a conventional construction methodology.

## 5.9 Environmentally Sustainable Design Strategies

As identified in the University's Objectives (Refer Section 2.15) it is intended that this project will demonstrate the leading edge of ESD for inner city educational developments. The project is targeting 5 star Green Star rating (Design and As Built Version 1.2), incorporating a range of strategies with particular focus on Innovation, Transport, Emissions and Indoor Environmental Quality. These features are fully integrated into the building design, embedded in the site, and in the design approach across the Architectural, Interior and Landscape design strategies. A full outline of the project strategies and benefits is provided in the ESD report included in the SSDA Documentation.



*Design visulisation looking east along Rickard Road*



*Design visulisation, aerial view of the north east corner and down The Appian Way to the station*

## 5.10. Materials Palette

The Materials Palette has been developed with input from Façade and ESD consultants, and with consideration for the following key issues:

- Meeting the thermal, acoustic and environmental performance targets for the project.
- Overall capital and ongoing operational costs and maintenance requirements.
- The existing surrounding building materials, to ensure an appropriate fit with, and response to, the immediate context.
- The Architectural expression of the project.

The incorporation of an ombre colour graduation across the façade is a key feature of the building expression, and research is being undertaken to develop material finishes specification that will provide the desired qualities and durable performance. The coloured elements are proposed to entail 16 shades of powdercoat finish applied to aluminium window framing, sun shades, fixed louvres and curtain wall infill panels. Alternative use of prefinished terracotta for some facade components are also being investigated for the project.

The proposed Materials Schedule below should be read in conjunction with the Digital Materials Sample board, Interior Fitout and Landscape Materials Schedules included in the Appendices to this report.

**General Notes**

Aluminium composite panels and products are not proposed as part of the external façade system.

Colour finish specifications for cladding material to be confirmed subject to samples and product data review. Feature colour spectrum comprises 16

| Code | Name | Location | Description |
|---|---|---|---|
| BA-GL1 | Glass Baustrade | Terrace Levels 3, 7, 13 and 16. | Glear glass balustrade, minimum 1800mm height above top of adjacent surface on occupied side. Point fixings to stanchions at 1500mm centres, Stainless steel handrail at 900mm height where adjacent to occupiable floor area. |
| BA-GL2 | Glass Baustrade | Park Stair | Glazed balustrade with feature translucent red colour integral finish, minimum 1200mm high with Stainless steel handrail, patch fittings. |
| FT-AW1 | Metal clad wall | Ground Level, Substation | Prefinished aluminium panels, nominally 4mm thick, face fixed to concealed subframe mounted to Blockwork wall. Fire rated wall performance.<br>Colour: Charcoal. |
| FT-AW2 | Metal clad wall | Ground Level, Carpark Entrance & Amenities enclosure | Prefinished aluminium panels, nominally 4mm thick, face fixed to concealed subframe mounted to Blockwork wall.Thermal wall performance.<br>Colour: Charcoal. |
| FT-CW1 | Curtain Wall, no shading | South Façade | Curtain wall system spanning slab to slab comprising aluminium framing (1500cts) with high performance double glazing (Proposed neutral colour, low iron glass with low emissivity coatings). Spandrel infill from 2700mm height ceiling level to top of skirting at floor above, comprises fixed mechanical prefinished stormproof metal louvre zone and glazed spandrel with back pan infill.<br>Shading: No Shading.<br>Louvres: Grey finish |
| FT-CW2 | Curtain Wall with horizontal shading | North Façade | As per FT-CW1 Curtain wall and spandrel infill.<br>Shading: 5 No. 350mm deep horizontal prefinished aluminium shading blades at 660mm centres.<br>Louvres: Level specific feature colour . |
| FT-CW3 | Curtain Wall with vertical shading and infill panels. | East Façade, West Façade Level 14 to 18 | As per FT-CW1 Curtain wall and spandrel infill.<br>Shading: 350mm deep vertical prefinished aluminium shading blades at 700mm centres to East elevation, 500mm centres to West Elevation.<br>Louvres: Level specific feature colour.<br>Infill panels to East Facade: level specific feature colour, prefinished aluminium panels nominally 4mm thick, Mounted to front of concrete structural wall. |
| FT-CW4 | Curtain Wall with angled shading and infill panels. | West Façade Level 1 to 18 | As per FT-CW1 Curtain wall and spandrel infill.<br>Shading: 350mm deep slanted shading blades at 750mm spacing. Orientation varies to different façade faces.<br>Louvres: Level specific feature colour.<br>Infill panels to East Facade: level specific feature colour, prefinished aluminium panels nominally 4mm thick, integrated in curtain wall framing in place of glazing, installed to nominally 25% of curtain wall from Level 1 to 12 only. |
| FT-GRC1 | Glass Reinforced Concrete | Façade corners | Glass reinforced concrete, curved corner moulding profile to detail. Integral finish with protective coating. Includes integrated LED edge lighting as per External Lighting design strategy. |
| FT-GW1 | Green Wall with bay windows | East Elevation | Vertical garden wall system comprising growing medium support substrate and planting with irrigation. To future detail with input from specialist contractor.<br>Includes expressed aluminium surround in feature level colour.<br>Bay windows: Aluminium framed bay windows with fixed glass. High performance double glazed (Proposed neutral colour, low iron glass with low emissivity coatings). |
| FT-MS1 | Mesh Screen | Inset Balconies to West and South facades | Ronstan mesh screen to façade opening, Stainless Steel. Includes stainless steel handrail to inside face, integrated with mesh screen detailing.<br>Includes expressed aluminium surround in feature level colour. |
| FT-MS2 | Mesh Screen | Inset Balconies to North and East facades | Ronstan mesh screen to façade opening, Stainless Steel. Includes stainless steel handrail to inside face, integrated with mesh screen detailing. |
| FT-SF1 | Soffits | Terraces and balconies | Prefinished aluminium panels, nominally 4mm thick, face fixed to concealed frame system, with insulation over for thermal envelope to occupied spaces. |
| FT-SF2 | Soffits | Ground Level | Prefinished aluminium panels, nominally 4mm thick, face fixed to concealed frame system, with insulation over for thermal envelope to occupied spaces. |
| FT-SF3 | Soffits | Cantilever | Prefinished aluminium panels, nominally 4mm thick, folded edge feature profile, face fixed to concealed frame system, with insulation over for thermal envelope to occupied spaces.<br>Integrated suspension access rails as per Facade Access and Maintenance strategy. |
| FT-SG1 | Shopfront Glazing | Ground Level | Single storey shopfront glazing system, stick framed with clear glass, incorporating automated and manual entrance doors and openable windows:<br>*Foyer shopfront:* Single glazed, clear glass with glass mullions, Aluminium frame surround to automatic sliding doors.<br>*Retail shopfront:* Clear glass with aluminium framing including feature large box section framing and ledge to openable window sections. Glazing type to achieve thermal performance to be confirmed.<br>*Multi-purpose Tiered space:* Aluminium framing with high acoustic performance glazing to Acoustic design specifications. Fixed glazing. |
| FT-WW1 | Window wall | Terrace Levels 3, 7, 13 and 16. | High performance double glazed (Proposed neutral colour, low iron glass with low emissivity coatings) unitized single storey window wall. |
| RS-MC1 | Metal Deck Roof | Level 18 | Colorbond finish Metal deck roofing on steel framing with with high performance thermal insulation and roof spacers below. Includes support for roof mounted plant. Stainless steel box gutters. |
| RS-GL1 | Canopy Roof | Ground, Level3 and Level 7 Canopies | Frit finish to glazed roofing, Prefinished steel framing, integrated access restraint system, stainless steel gutters, GRC edging integrated with main façade edging. |

## 5.11. Lighting Strategy

The External Lighting Strategy for the project has been developed with consideration for the essential 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.

### 5.11.1 Appian way – Pedestrian Zone and Shared Zone

This area shall be designed to requirements of AS1158.3.1: Pedestrian area (Category P Lighting). The specific Category this space has been deemed to satisfy is “Cat P1”, this will allow a clear interface to Paul Keating Park and be in-line with any future works to park and surrounding area. AS4282 – Control of the obtrusive effect of outdoor lighting will also be adhered to through the resolution of the design. The lighting 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. The integration of lighting into fixed landscape elements, such as fixed furniture, provides a design feature that will assist spatial legibility public safety.

### 5.11.2 Vehicle Entrance

This area will be designed to the requirements of AS1680.2.1 Interior and workplace lighting – Specific applications – circulation and other general areas – Table D1 Item 11 – Indoor Carpark Entry, allowing for eye adaption to take place when moving from daylight to interior carpark space. Day and Night setting will be implemented with lights automatically reducing at night.  AS4282 – Control of the obtrusive effect of outdoor lighting will also be adhered to through the resolution of the design.

### 5.11.3 Above ground terraces and balconies

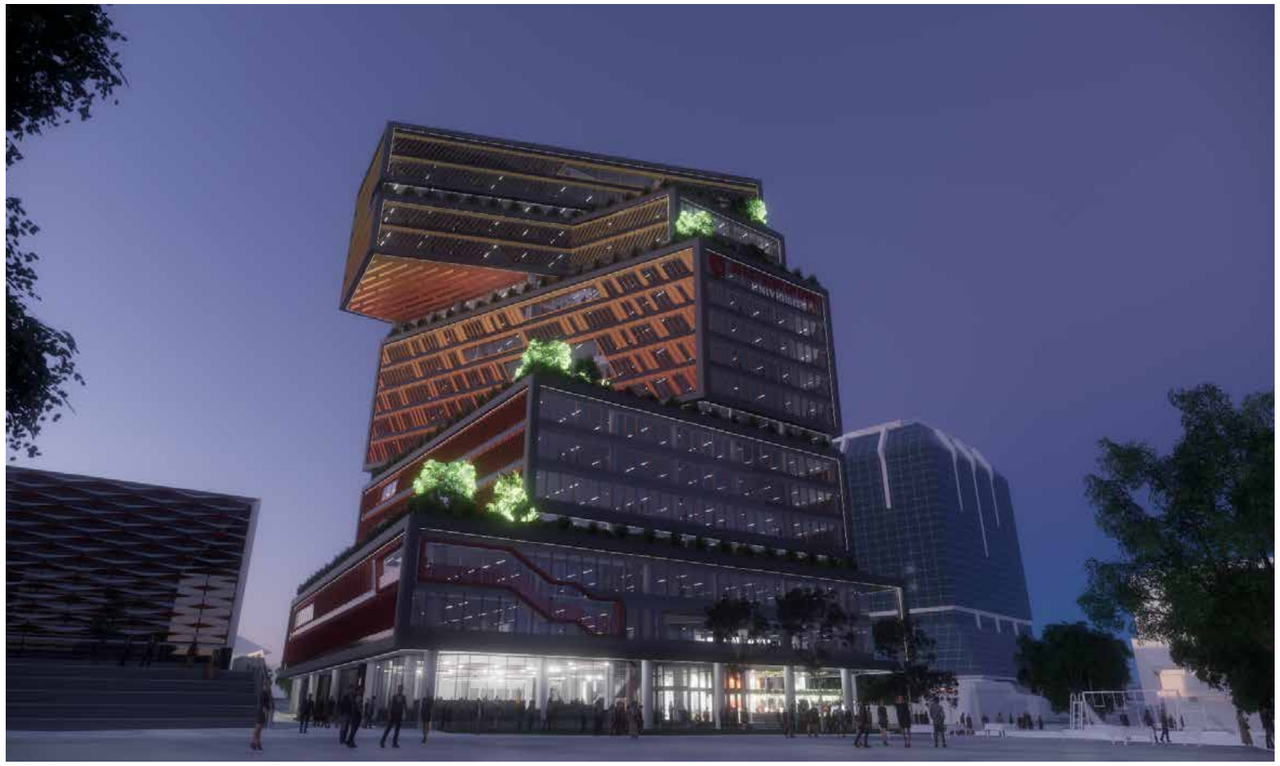
These areas will be designed to light levels to encourage use at night, the lighting design will allow the interior and exterior spaces to be used as one space. The design will comprise of functional lights (to meet all statutory lighting requirements) as well as feature/accent lighting to further enhance the prestige of the area. The lighting in these spaces will automatically turn on at sun set and switch at 11pm – one hour after late night class has finished to allow students and staff to leave the building safely. It is noted that these terraces 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.

### 5.11.4 Architectural illumination design intent

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 while minimising any unwanted/obtrusive lighting to relevant adjacent properties. Potential spill light to residential properties across Rickard Road needs to be managed.



*Dusk close-up visulisation with strip lighting integrated into GRC edges as seen from the south*



*Dusk visulisation as seen from Paul Keating Park*

The feature lighting proposed for the building façade will help make this a landmark building, enabling clear reading of the building form at night. This is proposed to be achieved through LED lighting technology which is highly energy efficient, compact and with minimal spill. To further promote the legibility of the building, visibility of the landcape and connection with the park, uplighting of the feature south corner trees at each terrace level is proposed.

All external and landscape lighting will comply will AS4282 – Control of the obtrusive effect of outdoor lighting. This compliance will be achieved through:

- Selection of quality luminaires with tight beam control, minimising wasted light;
- Smart dimming systems;
- Timers;
- Directing luminaires towards the premises;
- Glare Shields (if needed).

# 6.0 Environmental Amenity

As outlined in Section 4 of this report, 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 information below details potential impacts on existing amenity and highlights how high amenity will be maintained.

## 6.1. Solar Access

### 6.1.1 Analysis process

As outlined in Section 4.2.4 Shadow Analysis, 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 addresses both the University's facility requirements and maximises solar access to Paul Keating Park and Appian Way throughout the year, as per the Urban Design Principles (Refer Section 4.1).

### 6.1.2 Benchmarks

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 the most directly comparable public open space. The Green Square Town Centre DCP 2015 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)].

### 6.1.3 Outcomes

Shadow study diagrams have also been prepared to illustrate the shadows cast by a development complying with the current LEP on the site, having maximum height of 53m and FSR of 4.5:1, centred on the site, in comparison to the proposed form, which has a maximum height of 83m and FSR of 8:1. It is noted that the maximum height and FSR permissible on the site are subject to a concurrent Planning Proposal.

Diagrams showing these studies side by side, for hourly intervals on the Summer Solstice, Equinox and Winter Solstice, are provided as an Appendix to this report. These diagrams demonstrate that, although the building is considerably larger than the LEP compliant form, the shadows are comparable.

The proposed building form also enables direct sun access to a diversity of public activity zones across Paul Keating Park and the Appian Way throughout the year, as per the Urban Design Principles. The building performance is comparable to the benchmark precedent of the Drying Green. The design proposal achieves at least 50% of public open space (including Paul Keating Park and The Appian Way) having direct sunlight for 3 hours in the middle of the day and early afternoon.

## 6.2. Visual Amenity and Views

As identified in Section 4.2.3 Urban Legibility, 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 up the Appian Way, along Rickard Road, and from more distant vantage points. 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 Appian Way.

As a separate document in the SSDA a series of photomontage views are provided, showing both the existing view and with the BCC in situ. Additionally, where relevant views are provided including the proposed Compass Site residential development.

The building will transform the view out from adjacent buildings that currently overlook the undeveloped site. 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 visual interest from the colour treatment and play of shadows shifting across the façade.

**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 increase shading of 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 south-west 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 7and 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. The ground level interface provides external seating and shelted space for observing the park and 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.




*Visulisation from Rickard Road and Jacob Street junction looking east, noting the visual alignment of podium forms and green facade to The Appian Way*



*Valisation from the BCC looking south west across Paul Keating Park'*

## 6.3. Other Visual impacts

### 6.3.1 Spill Lighting

The potential for spill lighting to impact upon existing sensitive users, particularly nearby residences on Rickard Road, is addressed in the Lighting Strategy (Refer Section 5.11). The overall form of the building substantially reduces this risk by positioning the campus outdoor spaces, which will require some evening lighting, away from the Rickard Road residences. Other potential negative impacts on amenity of existing users will be avoided by:

- 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 floor space adjacent to Rickard Road, incorporating a perimeter circulation zone, so that rooms requiring higher light level are not positioned directly on facades.
- Acknowledging that the open space of Paul Keating Park is used in the evenings and has night lighting. The visibility of lighting and activity within the building will serve to increase the amenity and evening safety of this public open space.

### 6.3.2 Reflectivity and Glare

The potential for the new building to act as a source of reflective light and glare has been assessed by the façade consultants and is included in a separate report within the SSDA. This analysis identified where and when different faces of the façade have potential to cause glare issues for motorists and adjacent building occupants. The resolution of the façade design responds to these potential instances where practicable, including nomination of glass and material reflectivity, the incorporation of green façade and modulation of the façade to reduce glare risks.

## 6.4. Acoustic Impact

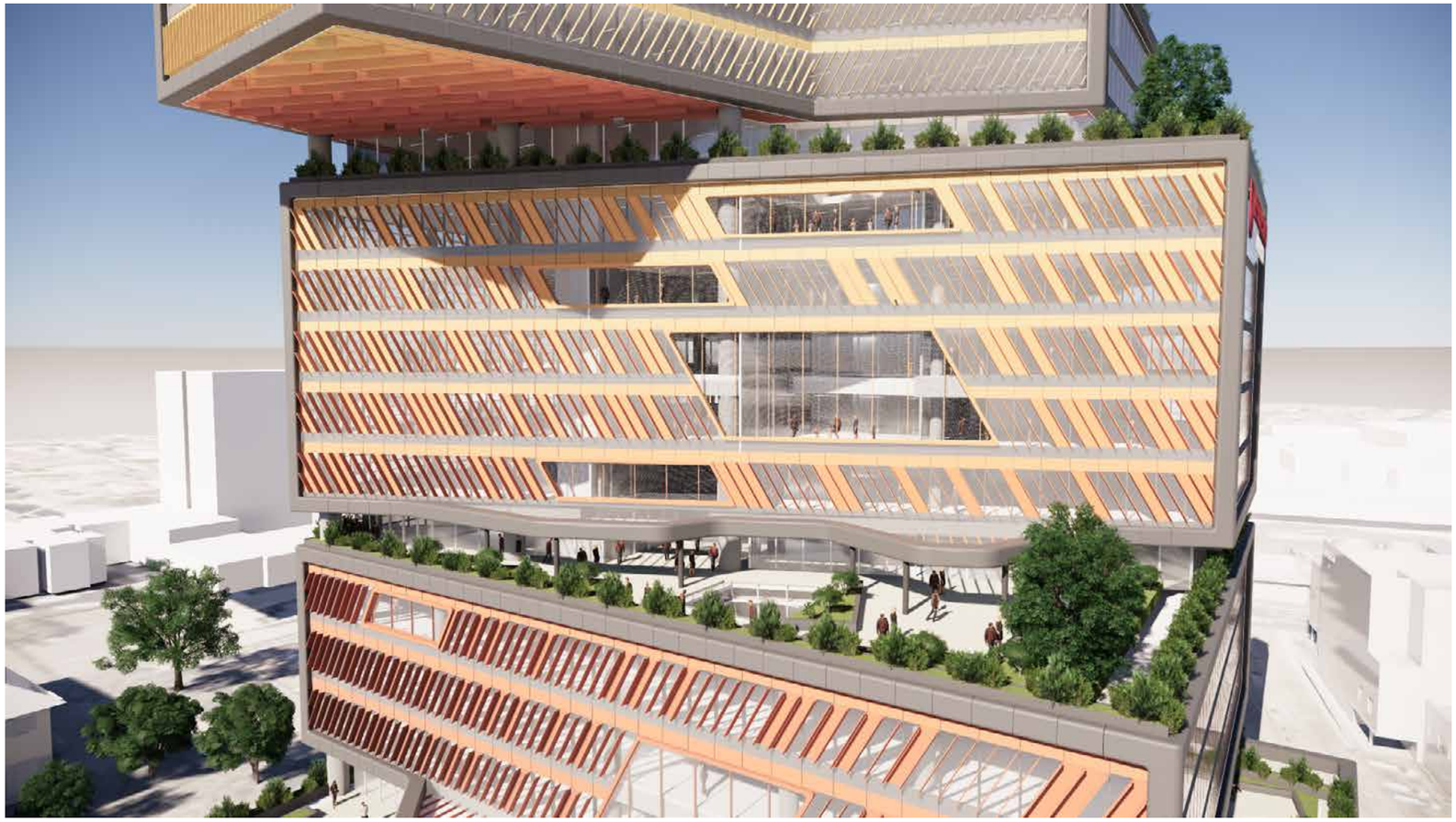
Potential noise sources from the building include building services plant noise and noise from activity associated with the use of the building itself. The Acoustic Report provided as a separate document in the SSDA investigates the existing acoustic environment and background noise, as this is critical for both the design of the building façade, to ensure that the internal acoustic environment is suitable for the Vertical Campus environments within, and to ensure that noise output from the building doesn't impact on the acoustic amenity of adjacent sensitive receivers.

The potential adverse impacts will be addressed through active and passive measures. This includes the design and specification of the building envelope and louvres to control mechanical and plant noise. The outdoor space of the vertical campus is primarily located away from the most sensitive noise receivers, and additionally management of hours of outdoor access may assist with controlling adverse noise output from these areas. It is also noted that loading and waste collection are contained within the basement, minimising potential noise impact on neighboring sites.

## 6.5. Wind Impacts

The potential impact of the project on the local wind context, particularly on the existing pedestrian context at Ground Level, has been reviewed by WindTech and is included in the SSDA as a separate report. The results of the study indicate that wind conditions for most trafficable outdoor locations, both within the vertical campus, and around the development, will be suitable for their intended uses. Where there is potential for strong winds to impact on pedestrian and user comfort or safety, advice has been provided for incorporation of landscaping and built screen elements to mitigate these risks.

These measures have been incorporated into the design proposal where practicable. The inclusion of perimeter screens to all terrace levels and landscaping tree plantings proposed in The Appian Way and on the Terraces address these risks as an integral part of the design. Additionally, some mitigation measures beyond the site, to the south side of the building, will be discussed with the Council with a view to integrating these works with the longer term landscape design for Paul Keating Park.



*Elevated view of the west facade and Level 7 terrace highlighting integration of the outdoor space into the vertical campus*

# APPENDIX

A. Interior Fitout Design (HDR)

B. Landscape Design (Aspect Studios)

C. Shadow Diagrams

D. Digital Materials Sample Board

E. Briefed Area Schedule (HDR)

# APPENDIX A

## Interior Fitout Design (HDR)

# Western Sydney University Bankstown City Campus Interior Fit-out Design Report, SEARs Response

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4.1 Interior Narrative
4.2 Space Typologies & Materiality
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# 1.0 | The Bankstown City Future Campus

University Campuses have existed in one form or another for almost 1000 years, and are constantly changing and adapting to meet a variety of demands in learning and research.

Recognizing the challenges and changes that Western Sydney University are facing, this SEARs report sets out a fresh model for thinking about how the Bankstown City Campus should respond and adapt. Our starting point is that learning exists at the confluence of three overlapping aspects:

## People, Technology and Place

Each one of these aspects can be further broken down into seven elements for the changing demographics of future students, academics and researchers that, together, represent the future of the Bankstown City Campus. These seven factors 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 central focus of the SEARs report is that the WSU BCC will be a hybridized model of each of these themes, bringing them together in different combinations when designing the new campus spaces, to transform how the university operates, locally and globally, and to enable the future's students to unlock their full academic potential.

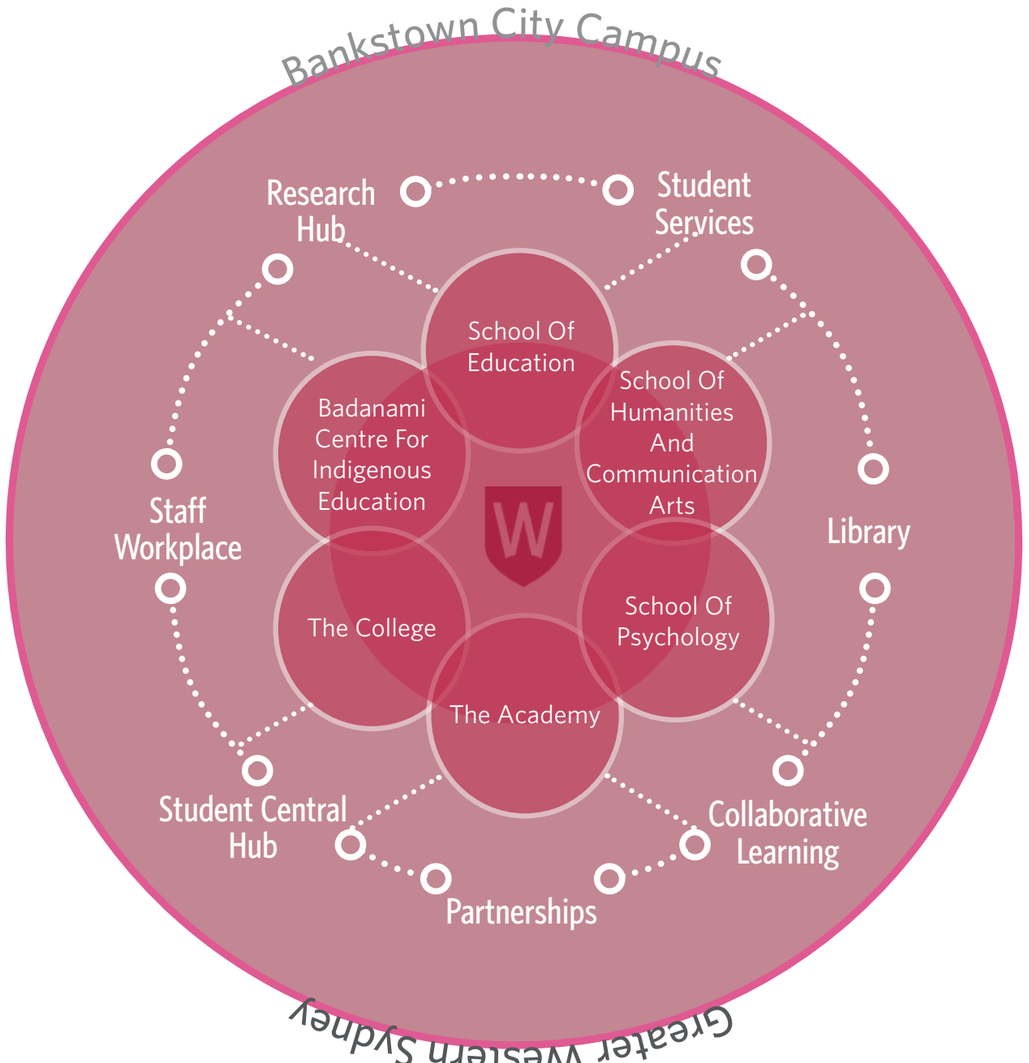
Weaving these themes into the fit out design of campuses will best position WSU to meet the needs and challenges of educating the next generation of students and researchers at Bankstown City Campus and continue providing excellent education into the future.



## WSU Bankstown City Campus Community

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.

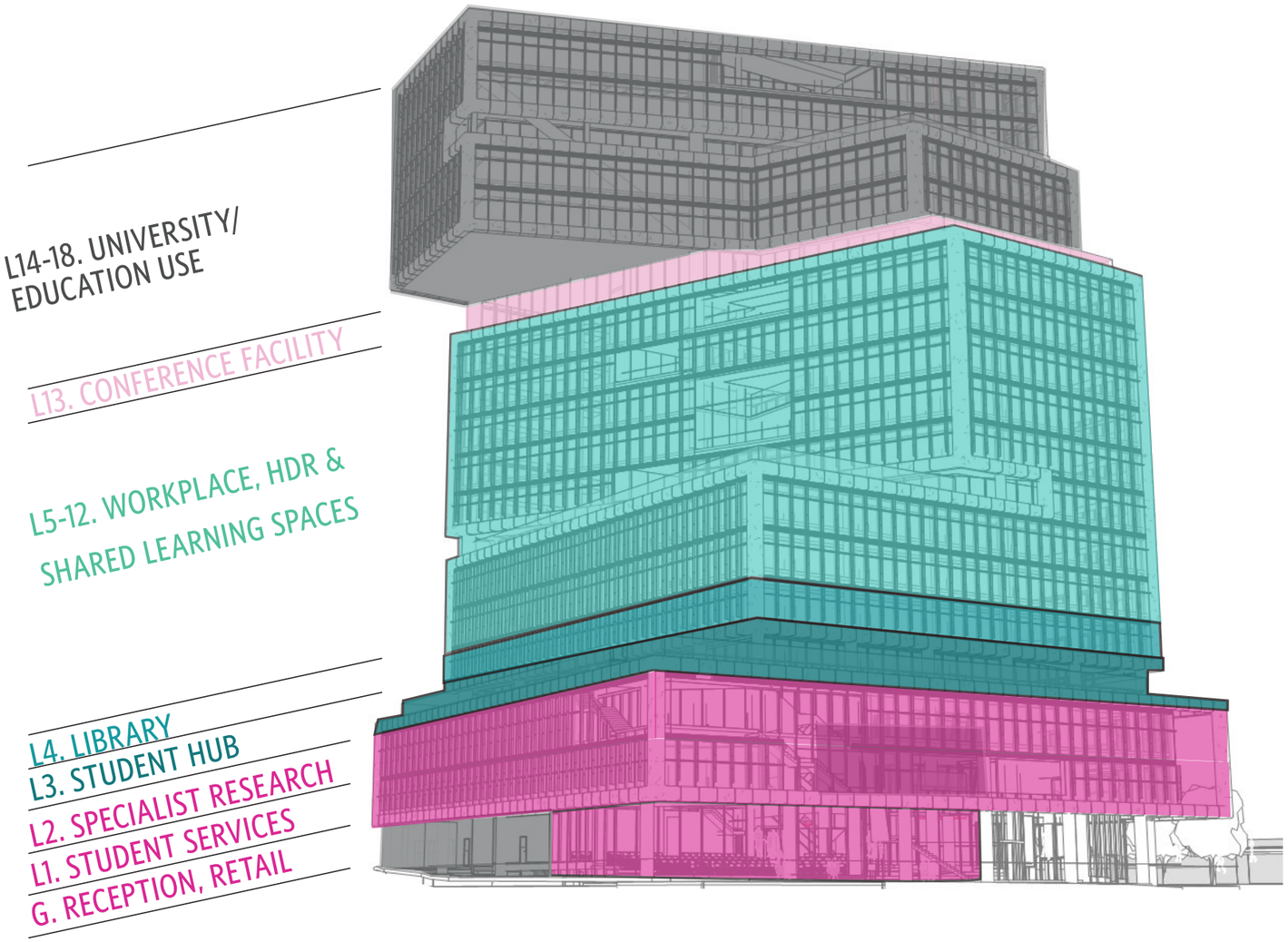
With the Schools being within the center of the BCC Campus, the Research, Staff, Student Hub, Library, Partnerships and Collaborative Learning spaces become the glue that tie the BCC Community together. These co-existing, collaborating relationships are the crucial elements that will shape BCC's unique community.



# 2.0 | Distribution of Program

The mapping of WSU's departments known as "blocking and stacking" is a fundamental development of the interior fitout, planning and operations of the building.

Working closely with Lyon's base build scheme, floor plate areas, vertical transport and structural grid, HDR has developed the schedule of accommodation, staff and student population movements, community need and presented the following arrangement to maximise all these opportunities.




Level 14-18
- Lobby, Bathrooms & Utilities
- Warm Shell Fitout for Future Growth of University
- Workspaces and Non-Laboratory Research

Level 13
- Function / Conference Spaces
- Meeting Rooms
- Catering Kitchen

Level 5-12
- Executive and Academic Workspaces
- Professional Staff & Coordinators
- Post Graduate Research Students
- Meeting Rooms & Collaboration Zones
- Staff Video Recording
- Staff Lounges & Kitchenettes
- School of Education Specialist Learning Spaces
- 30p, 60p Learning Studios
- Shared Skills Laboratories
- Group, Individual & Quiet Study Zones
- Student Lounges & Kitchenettes

Level 4
- Library Collection & Services
- Staff Support Zones
- Literacy Transition Learning Spaces
- 30p Learning Studio
- Group, Individual & Silent Study Zones
- Student Video Recording
- Lounges & Kitchenettes
- Multi-faith Prayer Spaces

Level 3
- Student Hub
- Student Reps, Clubs and Societies
- Student Support Spaces
- Badanami Centre For Education

Level 2
- Psychology Learning Laboratories
- MARCS Testing & Observation Rooms
- Research Write-Up Space
- 30P Learning Studios

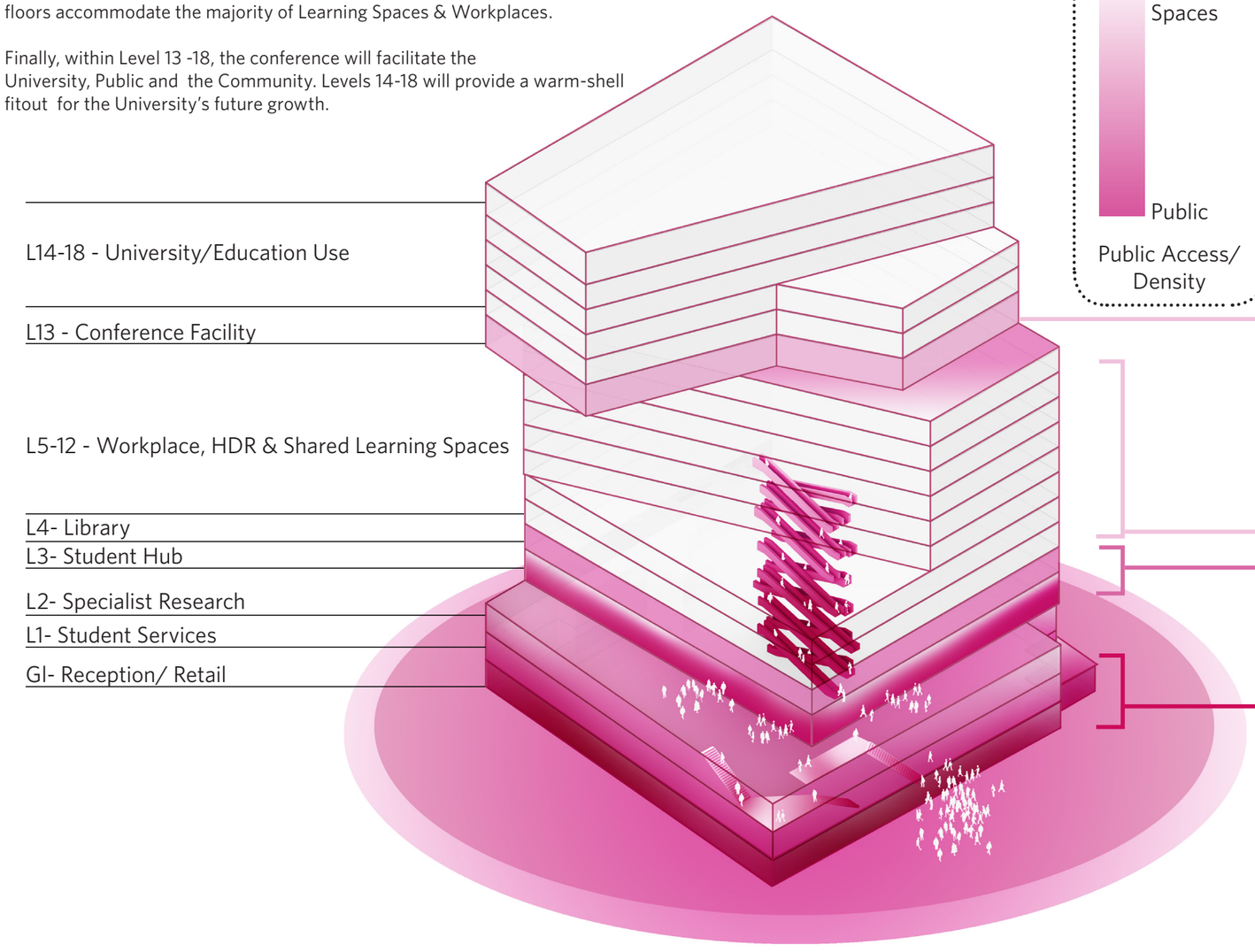
Level 1
- Immersion Lab Showcase
- Student Services Hub
- Professional Experience Office
- Student Life & Engagement Office
- Student Representative Council
- Group, Individual & Quiet Study Zones

Ground Floor
- Reception
- Retail
- Multi-Purpose Tiered Space

## Population & Movement

Population and movement within the BCC Campus will be dense with public/ community engagement from Ground Floor-L3 Student Hub. Levels 4-12 population and movement will become Student and Academic focused, as the floors accommodate the majority of Learning Spaces & Workplaces.

Finally, within Level 13 -18, the conference will facilitate the University, Public and the Community. Levels 14-18 will provide a warm-shell fitout for the University's future growth.



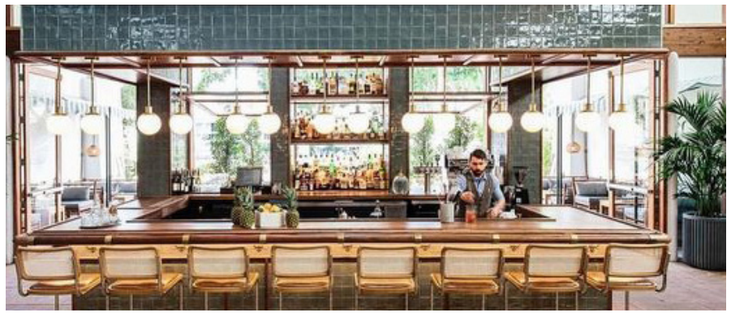
# 3.0 | Interior Planning

## 3.1 | Ground Level - Retail and Multi-Purpose Tiered Space

WSU strongly embraces the concept of industry and community partnering, with the Bankstown City Campus furthering this opportunity with many spaces at the new campus being open to the public. Local Willterbury / Bankstown residents and industry partners will have access to presentation and learning spaces such as the Conference and Events Facility, Multi-Purpose Tiered Theatre, Library areas to promote and integrate with the local business and foster community spirit and ownership. Fostering local entrepreneurship and innovation.

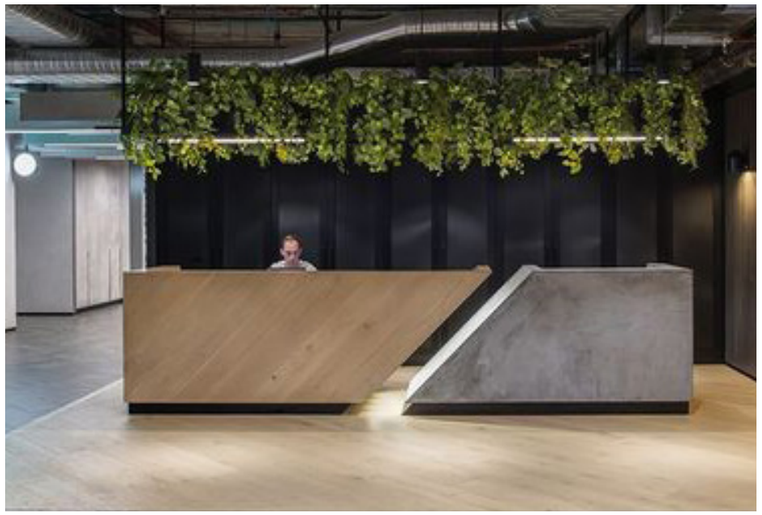
BCC's interior narrative will communicate seamlessly with the facade and finishes, allowing the journey into the campus to be an integrated one. Arrivial within the campus is aimed to bring forth an emotion of gravitas, where the homecoming of BCC to Bankstown can be communicated through an Art Installation on both the North and South entries that embodies the identities of each graduates of WSU. The Ground Floor foyer is integral in forming a public connection to the campus. The reception will be situated in a distinct area for maximum assistance, BCC's "Eat Street" F&B spaces will provide a lively landscape of eateries and social gathering spaces. Finally, the Multi-Purpose Tiered Theatre will become a space that will be provide opportunities for the public, partnerships and events such as the BNKS Poetry Slam.

The ground floor connection to the Paull Keating Park is a key factor of the interior fit out design, promoting many of the communities cultural events, arts events while show casing the learning and research activities of WSU within.

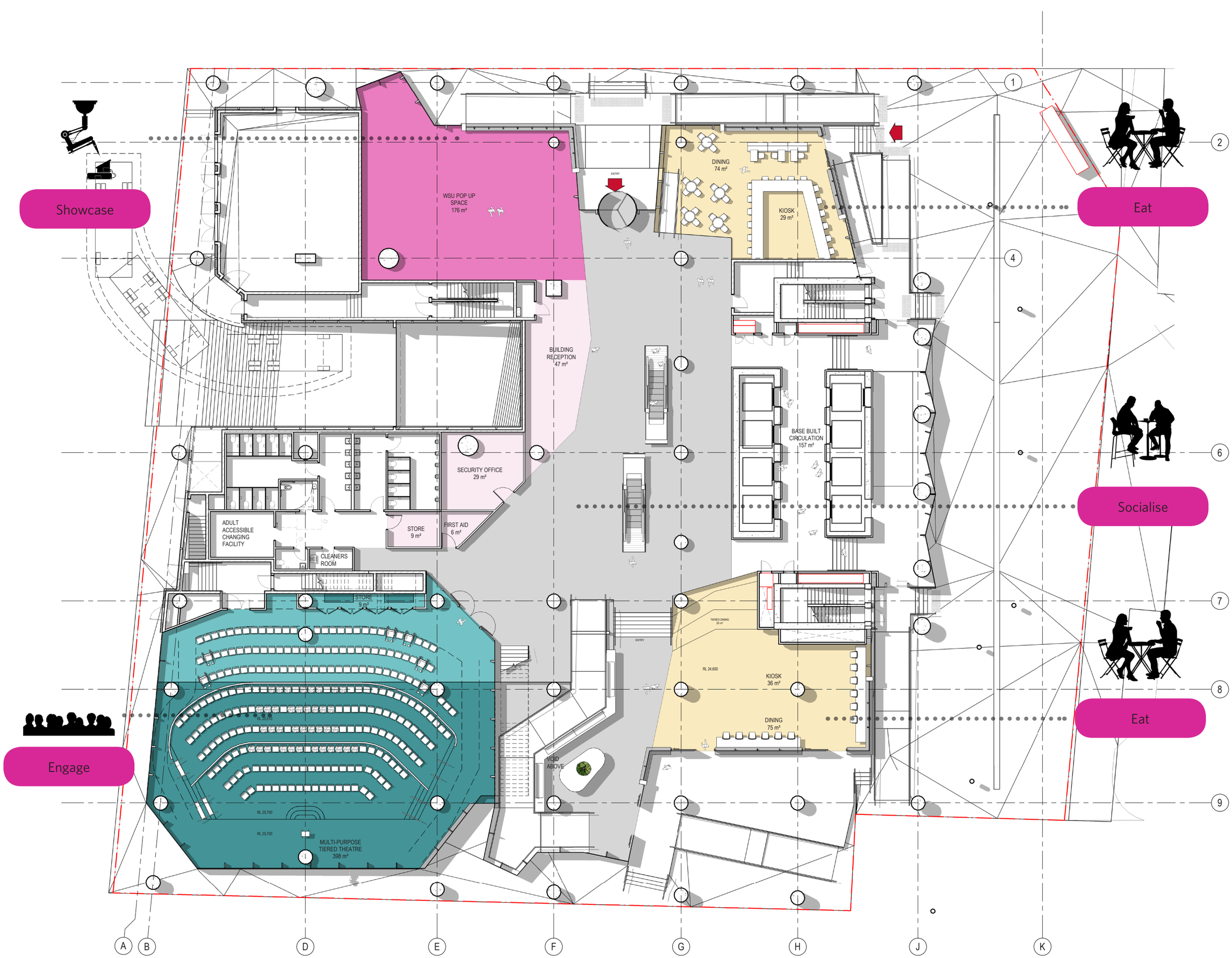











NORTH

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| REV | DESCRIPTION OF CHANGE | ISSUED TO | ISSUED BY | DA |
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| - | CONCEPT DESIGN WITH PLACEHOLDER FURNITURE | GS | SN | 07/ |

LEGEND

- BUILDING ENTRY
- SHARED BREAKOUT ZONES
- SHARED LEARNING SPACES
- SHARED STUDY ZONES
- STUDENTS HUB
- LIBRARY SUPPORT SPACES
- SPECIALIST LEARNING SPACES
- LIBRARY
- RESEARCH
- RESEARCH AND INDUSTRY POP UP SPACE
- SCHOOLS WORKPLACE
- FUNCTION SPACES
- BADANAMI CENTRE
- STUDENT SUPPORT SPACES

KEY PLAN

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HDR Pty. Limited ABN 76 158 075 220 trading as HDR

PROJECT
**WSU Bankstown Campus**
**74 Rickard Rd**
**Bankstown NSW 2200**

DRAWING TITLE
# GENERAL ARRANGEMENT PLAN - GROUND

STATUS
**CONCEPT**

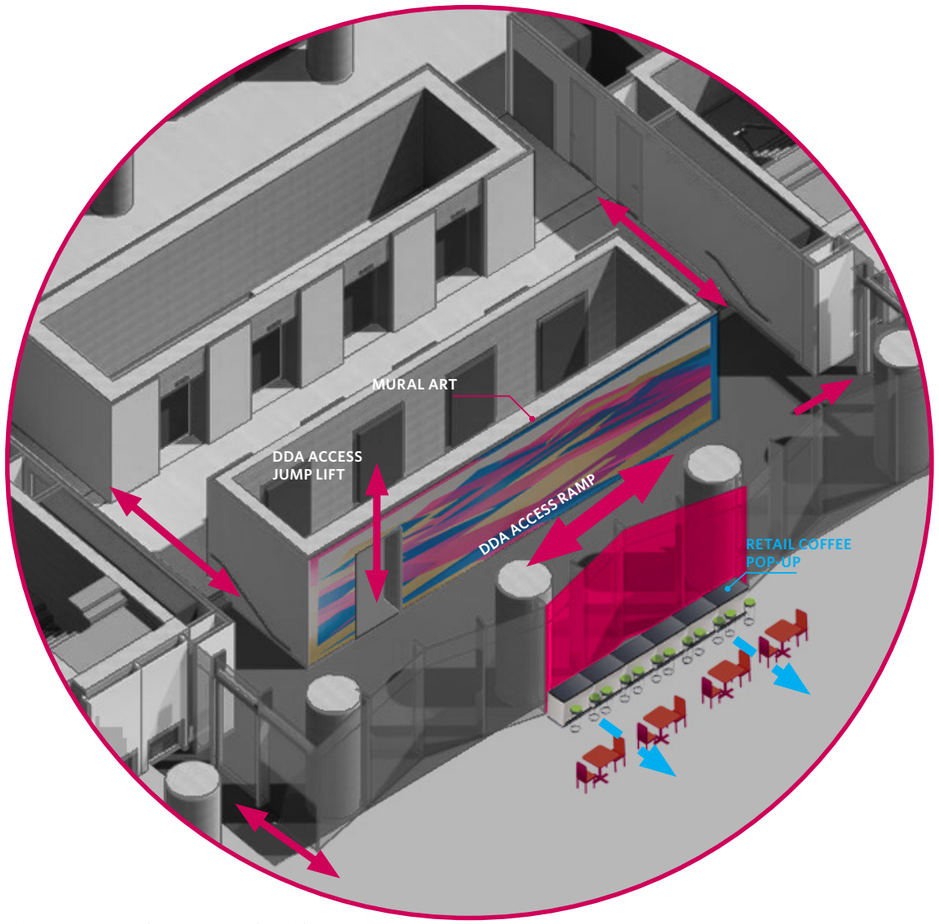
| SCALE | DATE |
|---|---|
| 1 : 100 @ B1 | 07/06/1 |

| PROJECT NUMBER | DRAWING NUMBER | ISSUE |
|---|---|---|
| 10155691 | I80-03 | - |

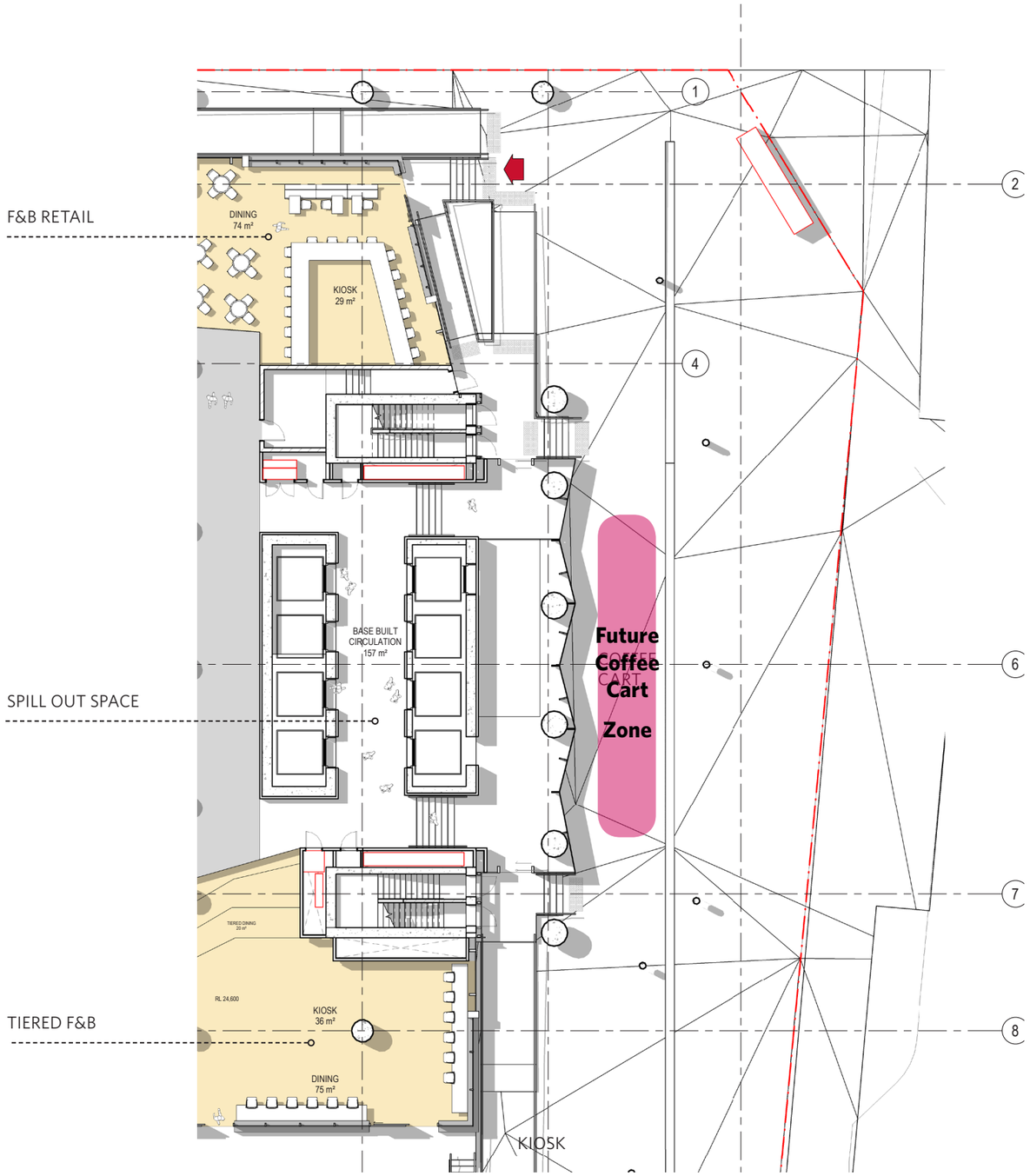
# Ground Level - Community Artwork

## Appian Way Entry

Bankstown Arts Centre is home to many community-based arts groups, presenting opportunities to explore diverse ideas and art and partner with the community. The BCC would greatly benefit from collaborating with local artists and integrating their work and collaborating trough student community art programs. . The Ground Floor Entry from Appian Way affords this great opportunity with lift core to showcase a changing gallery space.




Ground Level Plan



## Appian Way - Mural Art Precedent

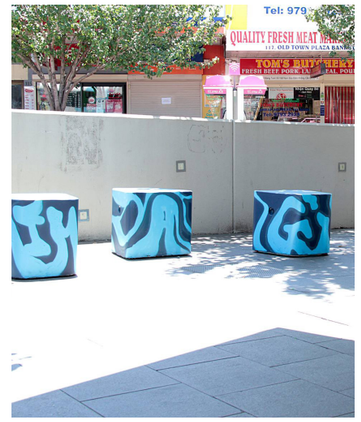
Bankstown Arts Center Mural Artist












## Appian Way Entry - Mural Art Application



MURAL ART WALL+ BANKSTOWN ARTS CENTRE PUBLIC SCULPTURES

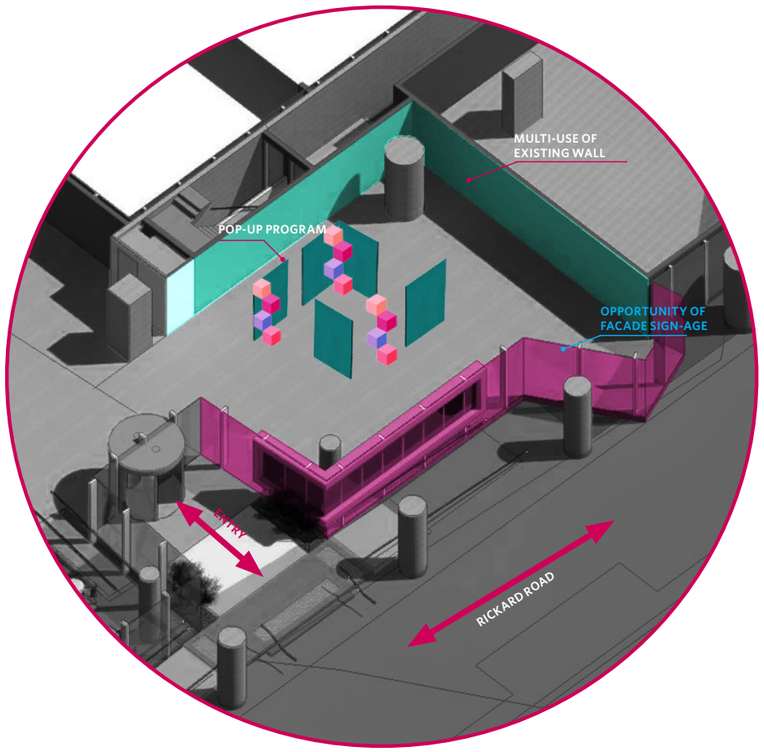


MURAL ART WALL+ BANKSTOWN ARTS CENTRE PUBLIC SCULPTURES

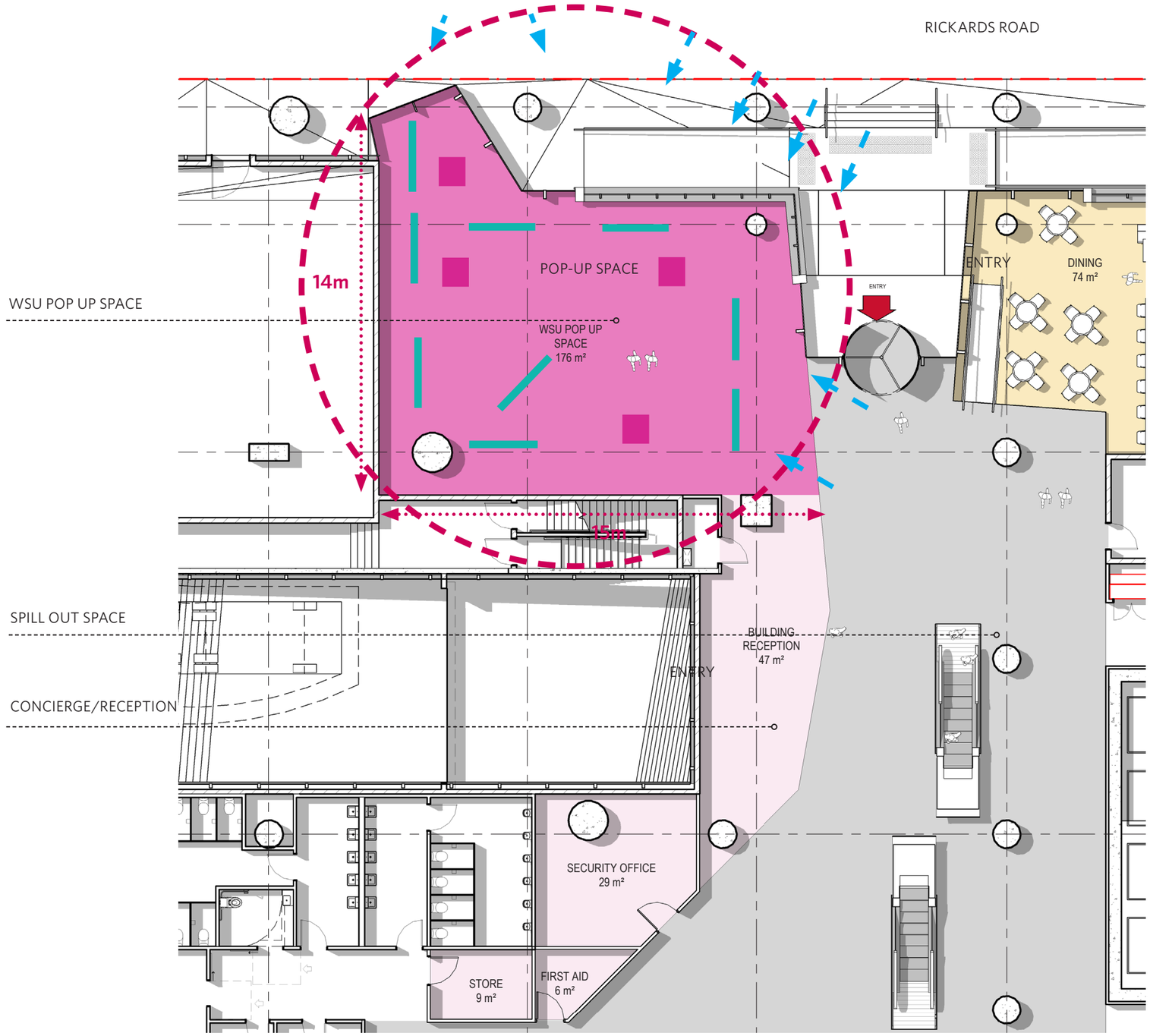
# Ground Level WSU Pop-Up Space

The Ground Level WSU Pop Up Space along Rickard Rd is in a highly visible location and gives the opportunity for WSU to showcase innovative technologies, academic programs, research and industry engagement through exhibits, workshops, displays, etc. It is an immediately accessible space that enables easy community engagement and will work as a Hub to showcase and engage with students and public alike.

As a large space of 176m2, the Pop Space has potential to be utilised as a secondary learning environment, whereby when exhibits are not present, workshops can take place. Emphasising the importance of occupying and activiating the space on a regular basis.




Ground Level Plan



## Pop Up Space Utilisation Precedents












## Rickard Rd Pop-Up Facade View Application




DIGITAL FACADE SIGNAGE- LIVERPOOL CAMPUS PRECEDENT



LIGHTING SIGNAGE

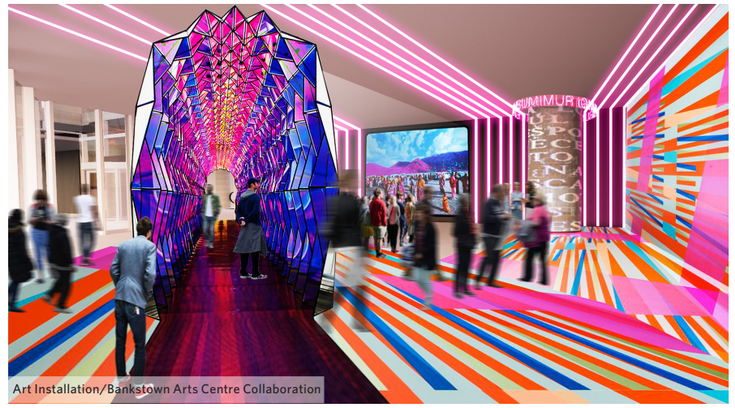


HANGING ARTWORK DISPLAY

## Pop-Up Space Utilisation Application




Open Day/ Expos



Art Installation/Bankstown Arts Centre Collaboration



WSU Workshop

# 3.2 | Level 01 - Student Services, Research & Industry Collaboration Spaces

## Student Experience

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 fitout will be highly adaptable and technology enriched allowing students to take ownership of the interior configurations to support their learning, research and socialising spaces, therby underpinning the many diverese communities within this vertical campus.

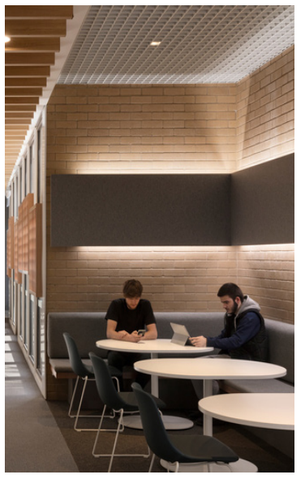
The space planning will support students well-being both physical, mental and academically through its programme of spaces ranging from student counselling, staff engagement, learning and research. WSU's strong desire for social connection will be expressed in the various cultural support spaces such as the Womens Room, Spoon Room and Queer Space as well as pleasant rather than apologetic Prayer and Multifaith Rooms.







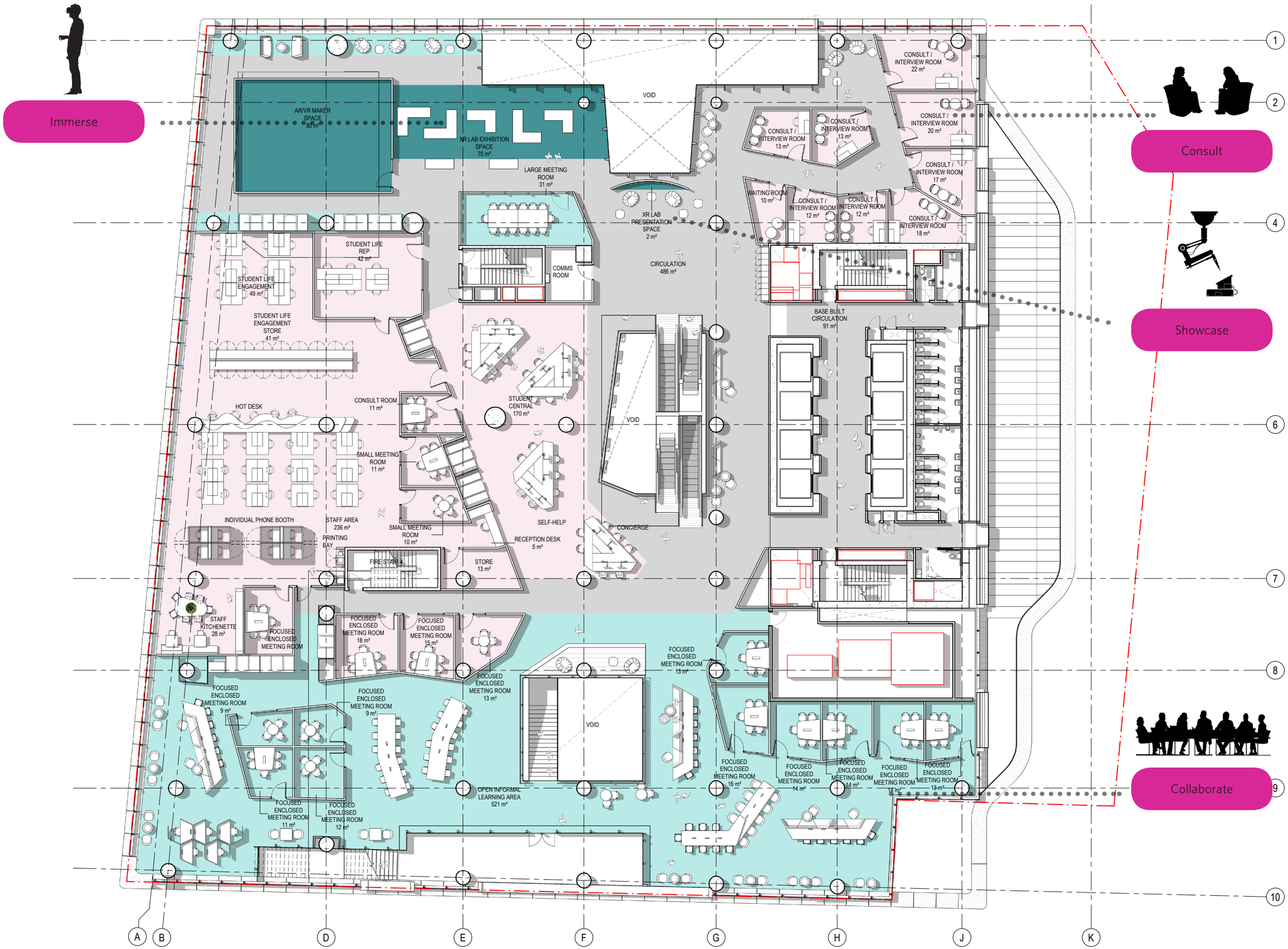






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| - | CONCEPT DESIGN WITH PLACEHOLDER FURNITURE | GS | SN | 07/06/19 |
| A | STUDENT CENTRAL / ENGAGEMENT USER-GROUP 3 | GS | SN | 10/07/19 |

LEGEND

| |
|---|
| BUILDING ENTRY |
| SHARED BREAKOUT ZONES |
| SHARED LEARNING SPACES |
| SHARED STUDY ZONES |
| STUDENTS HUB |
| LIBRARY SUPPORT SPACES |
| SPECIALIST LEARNING SPACES |
| LIBRARY |
| RESEARCH |
| RESEARCH AND INDUSTRY POP UP SPACE |
| SCHOOLS WORKPLACE |
| FUNCTION SPACES |
| BADANAMI CENTRE |
| STUDENT SUPPORT SPACES |

KEY PLAN

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PROJECT
**WSU Bankstown Campus**
**74 Rickard Rd**
**Bankstown NSW 2200**

DRAWING TITLE
# GENERAL ARRANGEMENT PLAN - LEVEL 01

STATUS
**SCHEMATIC DESIGN**

| SCALE | DATE |
|---|---|
| 1 : 100 @ B1 | 10/07/19 |

| PROJECT NUMBER | DRAWING NUMBER | ISSUE |
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# 3.3 | Level 02-Research & Industry Collaboration Spaces

## Collaboration And Community Engagement

Level 2 is the Research and Collaboration Hub. On this level the School of Pyschology and MARCS will be integrated into the campus offering. The flexible nature of the psychology laboratories paired with a large waiting, informal learning and milling space will enable the research hub to be used by students and internal researchers as well as the potential for community engagement.

The selection of learning studios on this level will be designed to be not only used for the academic program in BCC but also be utilised for community events wich can vary from education sessions to school engagement.  The flexible nature of the level ensures the opportunity for further future collaboration with industry partners thus entrenching WSU students even further into the future work-market**.**

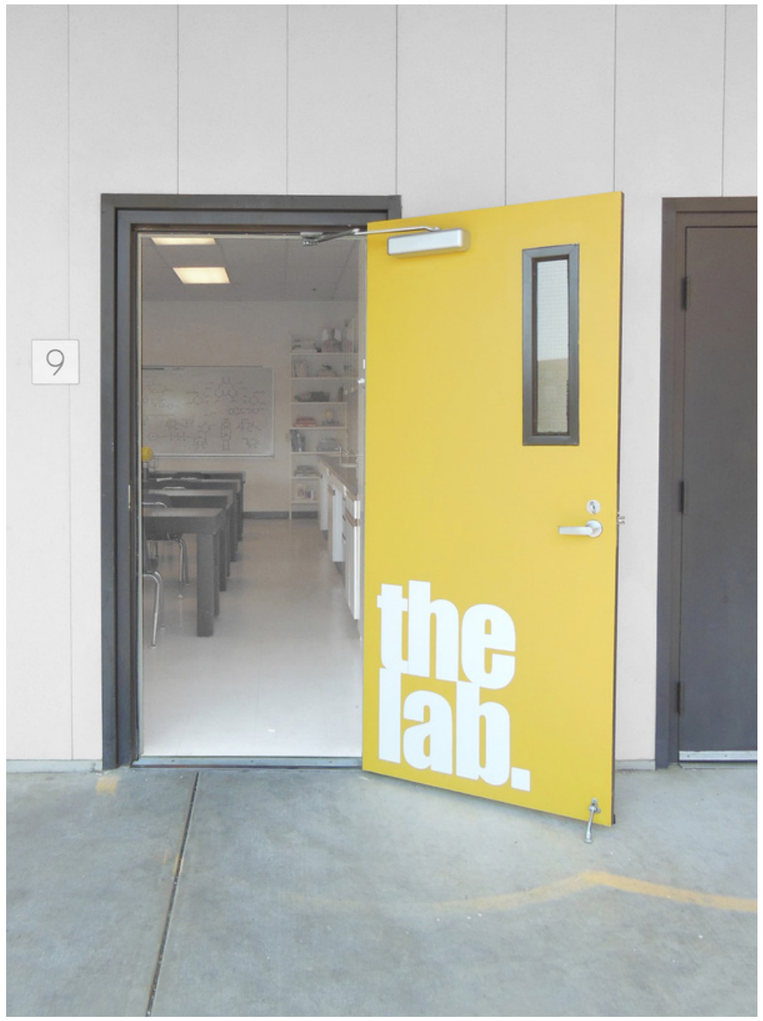
Being located at a lower level in the building it will ensure easy access for the public without having to travel through the entire building to get to an event or appointment.











Research

Project Based

30P LEARNING STUDIO 67 m²
30P LEARNING STUDIO 67 m²
VOID
GROUP STUDY ZONE - OPEN BOOTHS 15 m²
30P LEARNING STUDIO 67 m²
GROUP STUDY ZONE - ENCLOSED
GROUP STUDY ZONE - ENCLOSED
INDIVIDUAL STUDY ZONE - OPEN 70 m²
SHARED OBSERVATION AND CONTROL ROOM 57 m²
EXP LAB 8 m²
EXP LAB 8 m²
EXP LAB 8 m²
EXP LAB 8 m²
EXP LAB 8 m²
EXP LAB 8 m²
EXP LAB 8 m²
EXP LAB 8 m²
EXP LAB 8 m²
SHARED TESTING AND LEARNING LABS
COMMS ROOM
CIRCULATION 107 m²
OBSERVATION AND CONTROL ROOM 21 m²
BABY/INFANT LABS 10 m²
RESEARCH WAITING AREA 116 m²
VOID
RESEARCH STORE 14 m²
COLLABORATIVE POSTGRADUATE RESEARCH STUDENTS 147 m²
PLAY AREA
CHILDREN'S WAITING AREA 36 m²
BABY/INFANT LABS 10 m²
BASE BUILT CIRCULATION 74 m²
ARRIVAL
RESEARCH STORE 5 m²
INDIVIDUAL STUDY ZONE - OPEN 47 m²
STORE 8 m²
SHARED RESEARCH STUDENTS MEETING ROOM 16 m²
GROUP STUDY ZONE - ENCLOSED 21 m²
GROUP STUDY ZONE - ENCLOSED 21 m²
30P LEARNING STUDIO 69 m²
COLLABORATIVE - 30P SKILLS LAB 70 m²
30P LEARNING STUDIO 67 m²
GROUP STUDY ZONE - ENCLOSED 19 m²
VOID
GROUP STUDY ZONE - ENCLOSED 23 m²
OPEN INFORMAL LEARNING AREA 313 m²
1 2 4 6 7 8 9
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LEGEND

| |
|---|
| BUILDING ENTRY |
| SHARED BREAKOUT ZONES |
| SHARED LEARNING SPACES |
| SHARED STUDY ZONES |
| STUDENTS HUB |
| LIBRARY SUPPORT SPACES |
| SPECIALIST LEARNING SPACES |
| LIBRARY |
| RESEARCH |
| RESEARCH AND INDUSTRY POP UP SPACE |
| SCHOOLS WORKPLACE |
| FUNCTION SPACES |
| BADANAMI CENTRE |
| STUDENT SUPPORT SPACES |

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**Bankstown NSW 2200**

DRAWING TITLE
# GENERAL ARRANGEMENT PLAN - LEVEL 02

STATUS
**CONCEPT**

| SCALE | DATE |
|---|---|
| 1 : 100 @ B1 | 07/06/19 |

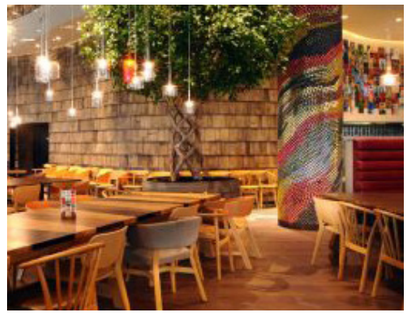
| PROJECT NUMBER | DRAWING NUMBER | ISSUE |
|---|---|---|
| 10155691 | I80-05 | - |

# 3.4 | Level 03-Student Hub

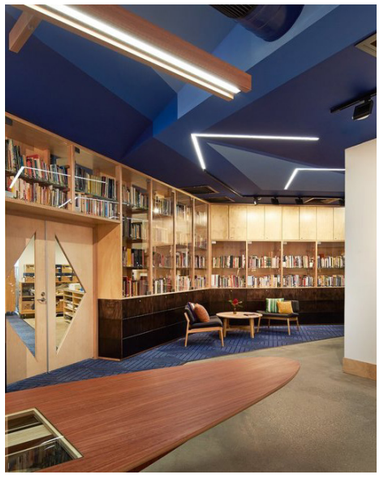
The BCC will be a 24/7 campus for the students with food/ beverage/entertainment offerings to assist in creation of a welcoming and inclusive social atmosphere. The Level 3 Student Hub and other student social gathering spaces include a variety of casual internal and external breakout/focused social and gathering spaces essential to the success of a “sticky” campus.

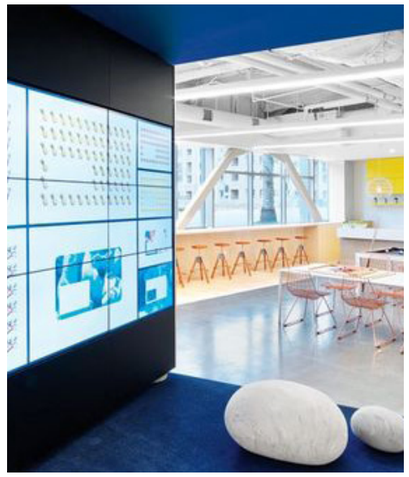
As the social heart, Level 3 Student Hub will cater with eating facilities to the building population but will also supply the glue space needed to have a permanent population within the building. It will supply a large space split into individual programs that touch on the current social youth cultures. It is designed to be flexible enough to be easily updated as time goes on to ensure a constantly current social referemnce point with the goal to create a sticky campus.


















Project Based

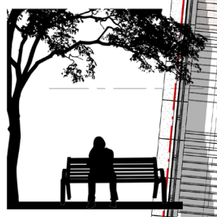


Consult



Eat

Socialise



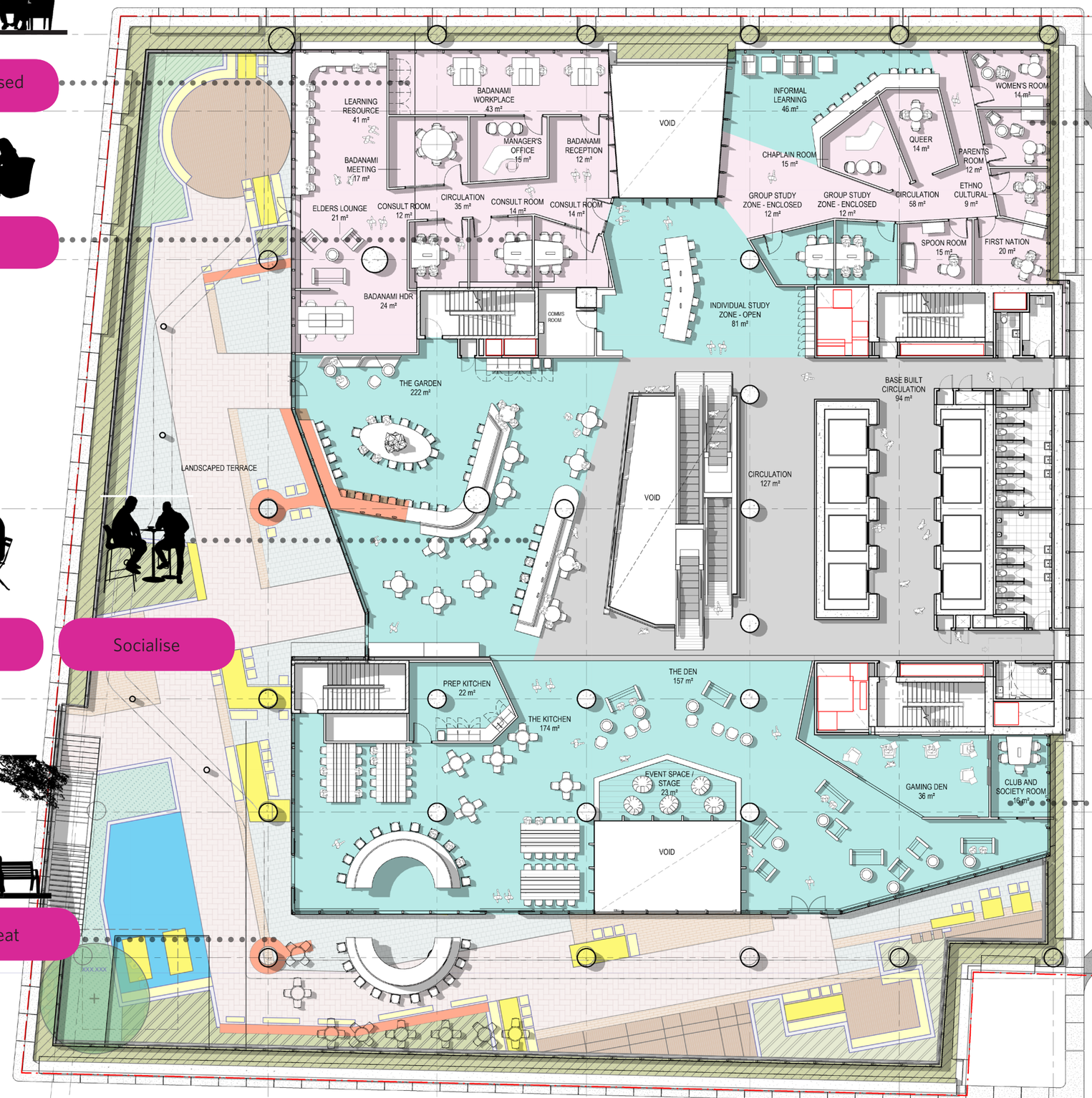
Retreat



Consult



Lounge

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LEGEND

- BUILDING ENTRY
- SHARED BREAKOUT ZONES
- SHARED LEARNING SPACES
- SHARED STUDY ZONES
- STUDENTS HUB
- LIBRARY SUPPORT SPACES
- SPECIALIST LEARNING SPACES
- LIBRARY
- RESEARCH
- RESEARCH AND INDUSTRY POP UP SPACE
- SCHOOLS WORKPLACE
- FUNCTION SPACES
- BADANAMI CENTRE
- STUDENT SUPPORT SPACES

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# GENERAL ARRANGEMENT PLAN - LEVEL 03

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## 3.5 | Level 04-Library






















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LEGEND

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| BUILDING ENTRY | |
| SHARED BREAKOUT ZONES | |
| SHARED LEARNING SPACES | |
| SHARED STUDY ZONES | |
| STUDENTS HUB | |
| LIBRARY SUPPORT SPACES | |
| SPECIALIST LEARNING SPACES | |
| LIBRARY | |
| RESEARCH | |
| RESEARCH AND INDUSTRY POP UP SPACE | |
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| STUDENT SUPPORT SPACES | |

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| 10155691 | I80-07 | - |

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# 3.6 | Level 05- 07 Learning & Research Spaces

## Formal Learning

The campus will showcase and enable highly flexible, interchangeable learning environments, to fully support and implement new and future pedagogy requirements.
43 Collaborative Learning Studios will enable a multitude of synchronous and asynchronous teaching and learning activities to be undertaken at any one time ranging from 30P / 40P / 60P and 250P spaces. Educators will be presented with opportunities to implement a variety of student-centred activities that may be technology-rich (screen-based) or analogue (production or discussion-based).

## Informal Learning

HDR has emphasised the importance of informal student spaces and social spaces to create the glue that ties the new BCC campus together. HDR presented 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.

The mix of informal space types located around the perimeter of the building facilitate a better 'learning continuity' by providing break-in and break-out space associated with formal learning rooms. An anchor of informal space helps create a critical mass of activity and occupation of the building, 'retreat spaces' will preserve the ability to time-share informal space depending on the programming of the formal courses. These spaces will have a higher level of technology integration that allows them to be used as small group learning space, or satellite learning space.













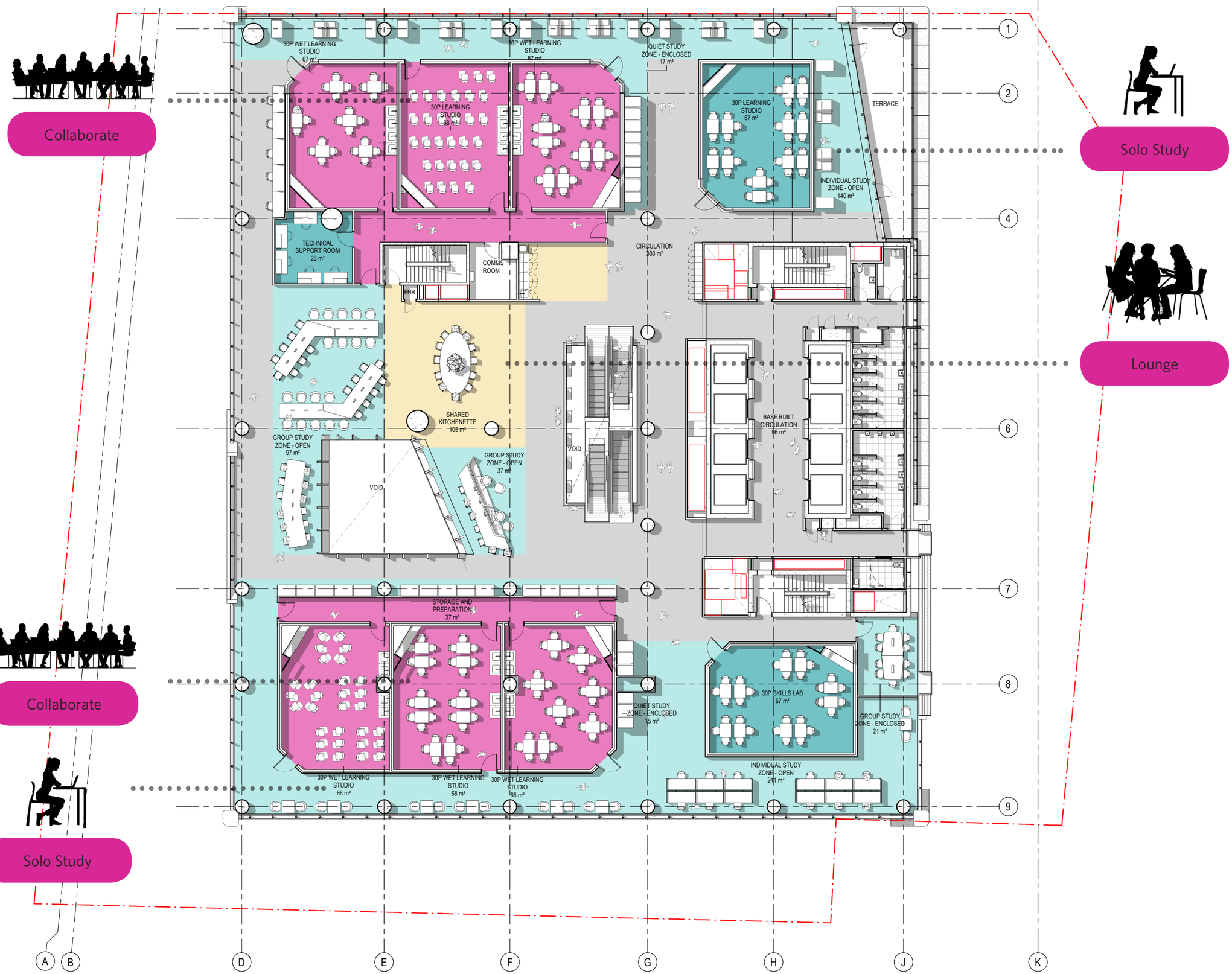


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LEGEND

| | |
|---|---|
| BUILDING ENTRY | |
| SHARED BREAKOUT ZONES | |
| SHARED LEARNING SPACES | |
| SHARED STUDY ZONES | |
| STUDENTS HUB | |
| LIBRARY SUPPORT SPACES | |
| SPECIALIST LEARNING SPACES | |
| LIBRARY | |
| RESEARCH | |
| RESEARCH AND INDUSTRY POP UP SPACE | |
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# GENERAL ARRANGEMENT PLAN - LEVEL 05

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| 1 : 100 @ B1 | 07/06/19 |

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|---|---|---|
| 10155691 | I80-08 | - |

# 3.7 | Level 08- Learning Spaces + Workplace

## 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. Careful consideration will be given to the provision of easily accessible spaces for confidential academic staff/student consultations . The BCC will break down the barriers between staff, as well as staff and students.

Our approach for the advancement of engagement is where students and staff see few or no boundaries in using spaces to meet their needs, and are more liberated in their approaches to using technologies and colonising space or equipment to make the most of the facilities for their own purposes.

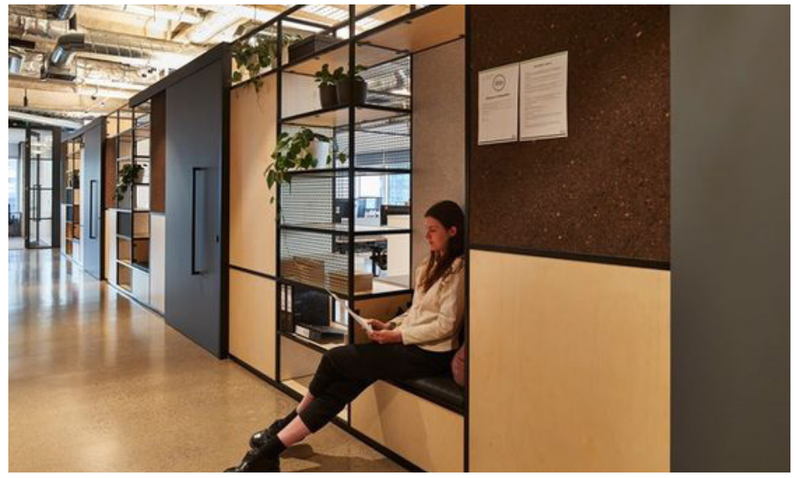
The BCC workplaces will embrace Activity-Based Working (ABW) environments to accommodate the 245 workplaces required. This approach creates a variety of spaces for different activities and has limited areas assigned to just one person. People use an area that suits the task they are working on, for example 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.

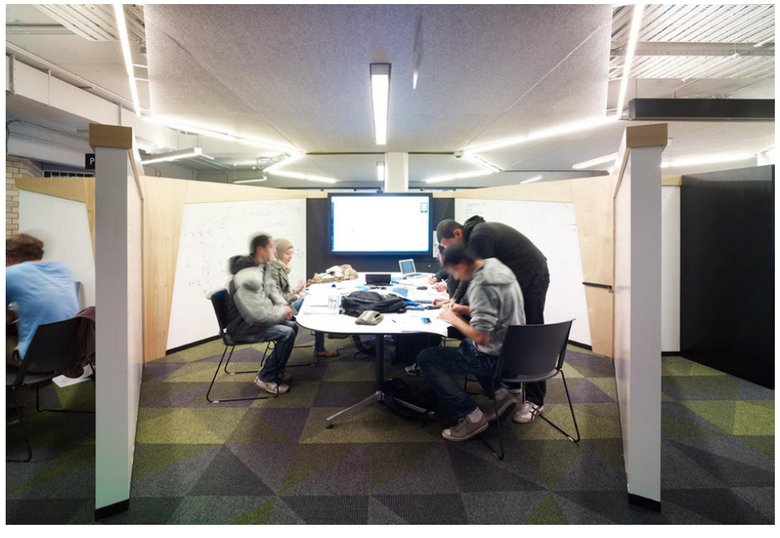
A key design principle to the Workplaces is access to daylight, views and the intertwining of biophilia to encourage mental wellness, and allow staff to meet, relax and feel close to nature. A key workplace design principle is the fine balance of flexible working environments whilst ensure the individual still feels “at home”. This will be achieved by allowing the different users to add their personal touches to the workplace setting by storing books or research papers in open shelves or pinning personal pictures up around their desk setting. 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.



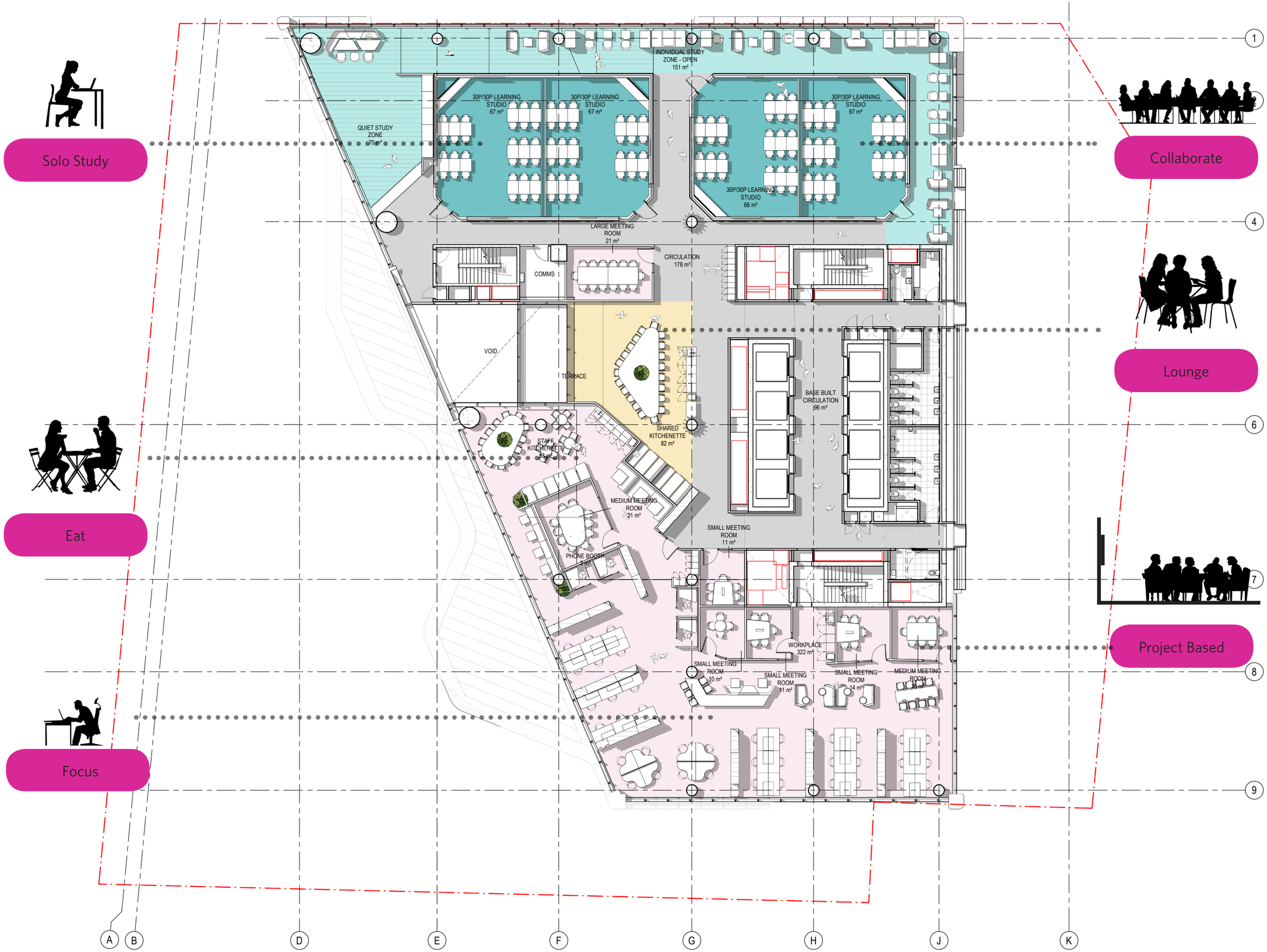










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LEGEND

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|---|---|
| BUILDING ENTRY | |
| SHARED BREAKOUT ZONES | |
| SHARED LEARNING SPACES | |
| SHARED STUDY ZONES | |
| STUDENTS HUB | |
| LIBRARY SUPPORT SPACES | |
| SPECIALIST LEARNING SPACES | |
| LIBRARY | |
| RESEARCH | |
| RESEARCH AND INDUSTRY POP UP SPACE | |
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DRAWING TITLE
# GENERAL ARRANGEMENT PLAN - LEVEL 08

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| 10155691 | I80-11 | - |

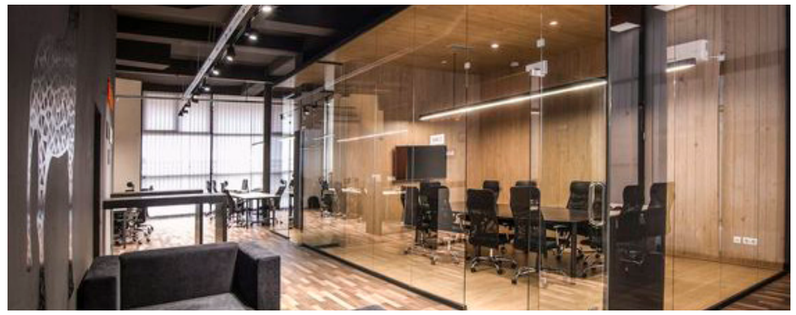
# 3.8 | Level 13- Conference Facility

## Collaboration

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.

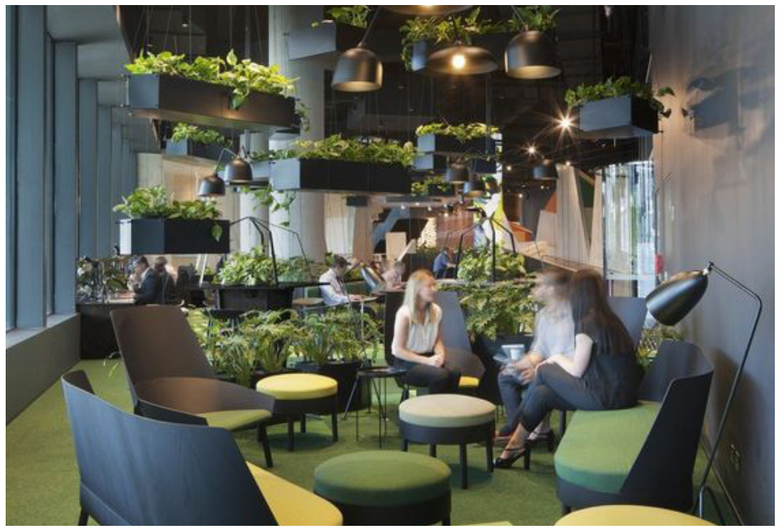
The Conference facility located on Level 13 will provide access for 300people in a dinning or presentation mode, including internal and external breakout spaces, and access to AV,external recording and kitchen facilities. Smaller meeting rooms of 20-30P are provided in additon to support the running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

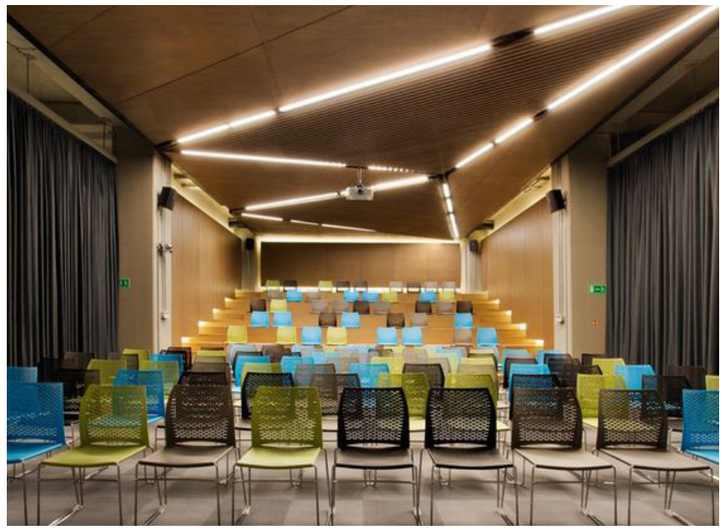


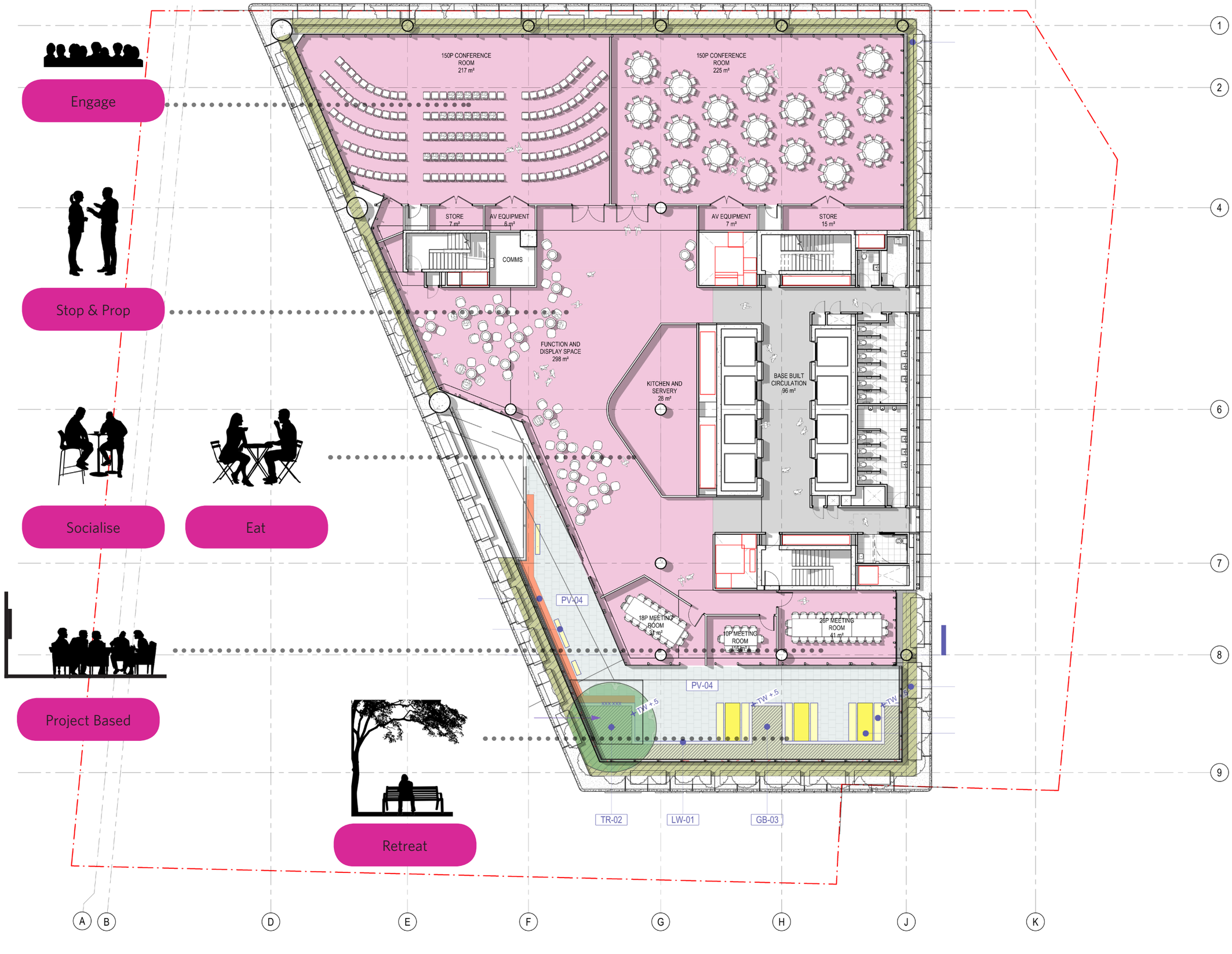











NORTH POINT

TRUE NORTH

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| REV | DESCRIPTION OF CHANGE | ISSUED TO | ISSUED BY | DATE |
|---|---|---|---|---|
| - | CONCEPT DESIGN WITH PLACEHOLDER FURNITURE | GS | SN | 07/06/19 |

LEGEND

- BUILDING ENTRY
- SHARED BREAKOUT ZONES
- SHARED LEARNING SPACES
- SHARED STUDY ZONES
- STUDENTS HUB
- LIBRARY SUPPORT SPACES
- SPECIALIST LEARNING SPACES
- LIBRARY
- RESEARCH
- RESEARCH AND INDUSTRY POP UP SPACE
- SCHOOLS WORKPLACE
- FUNCTION SPACES
- BADANAMI CENTRE
- STUDENT SUPPORT SPACES

KEY PLAN

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PROJECT
**WSU Bankstown Campus**
**74 Rickard Rd**
**Bankstown NSW 2200**

DRAWING TITLE
# GENERAL ARRANGEMENT PLAN - LEVEL 13

STATUS
**CONCEPT**

| SCALE | | DATE |
|---|---|---|
| 1 : 100 @ B1 | | 07/06/19 |
| PROJECT NUMBER | DRAWING NUMBER | ISSUE |
| 10155691 | I80-16 | - |

# 4.1 | Interior Narrative

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.

## "Encouraging Individuality whilst embracing the community"

## Bothways Principles:

Reinforced 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
- Intercultural understanding to encourage the convergence of ideas and solutions to the strengthen the WSU global community

Both Way is articulated though the interior fit out with the following principles:

## Individual - Community

A precinct that gives ownership and embrace both trust and respect. Spaces curated with acoustic solution and furniture offering that support individual space and community space.

## Past - Future

Both encapsulated with the application of natural materials re-interpreted with contemporary and technology. New and designed materials applied with methods and craft from the past for instance interpretation of weaving as a universal language unifying cross cultures and eras.

## Authentic - Designed

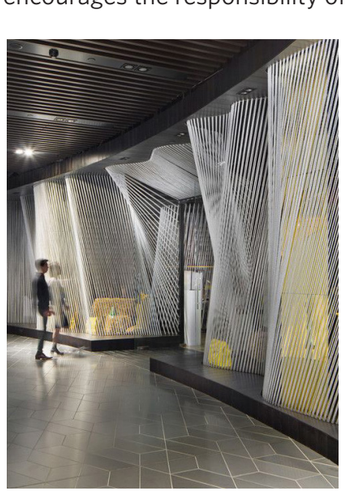
Blending natural materials (e.g timber, stone) with natural planting aims to create an emotion stimuli. The application of design and manufactured materiality compliments WSU's approach to innovation and progression whilst embracing biophilic principles.

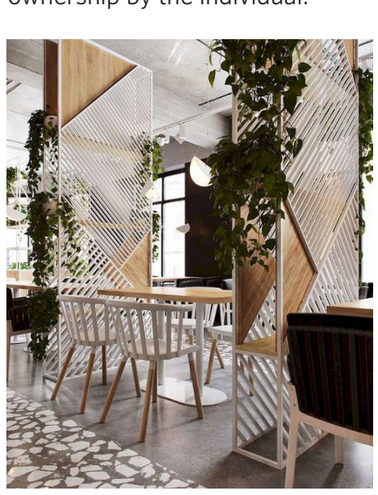
## Formal - Informal

The curation of both spaces will be a juxtaposition of materials, furniture, furnishing and colour strategy that identifies and expresses the space typologies and the variety of setting for learning, education and engagement.

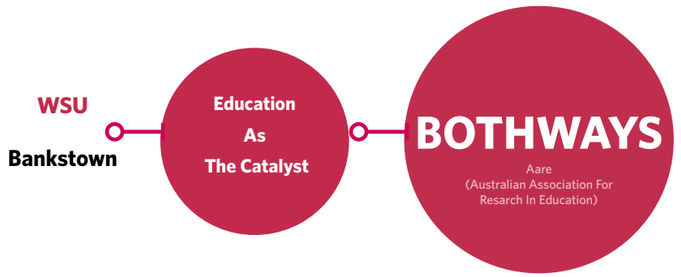
## Collaboration - Individual

Influence behaviour through effective design by creating ownership and opportunity which forms a campus community. By encourages the responsibility of  ownership by the individual.



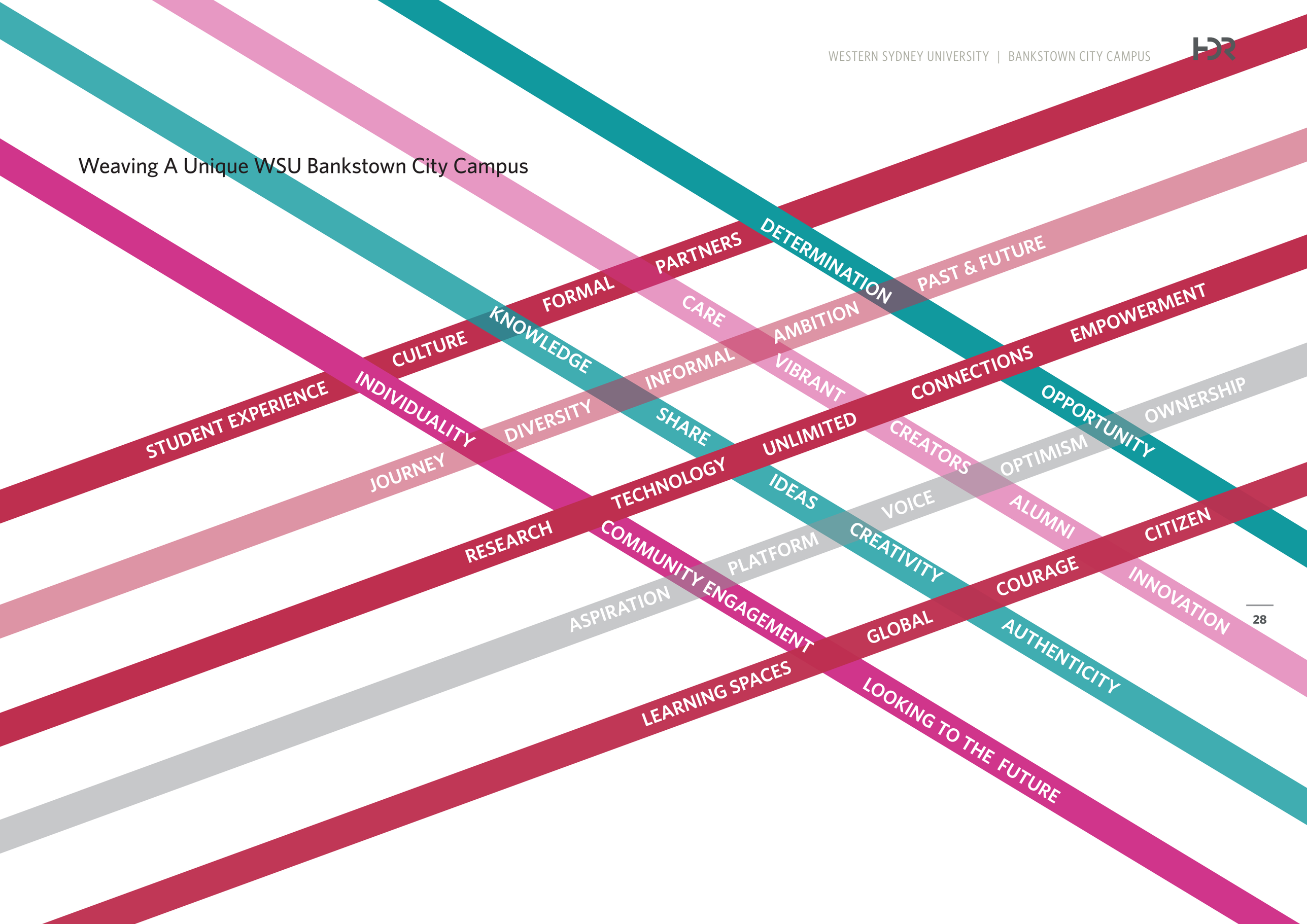









# Weaving A Unique WSU Bankstown City Campus



# Weaving of WSU Communities

Weaving, as a practiced craft is a universal cross-cultural tradition for thousands of years. While patterns and techniques differ between cultures, the basic craft of weaving will be found as a common thread within most cultures.

The analogy of weaving is used to:

- Create imaginative of spaces
- Mesh the past, present and future
- Harmonious interweave learning, working and research,
- Interlace biophiliac environments with functional spaces
- Encourage vibrant interaction and meshing of the different communities coming to the campus.

## The design process informs the interlacing of ideas, people, place, space and construction.

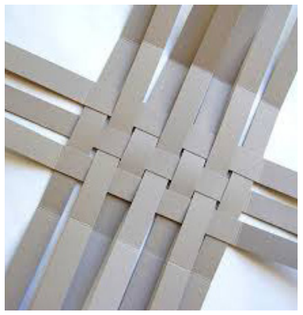
The uniqueness of each culture is encouraged within the campus by providing opportunities such as cooking spaces that support multiple cooking style, market places, multicultural diversity spaces and social hubs that celebrate differences.

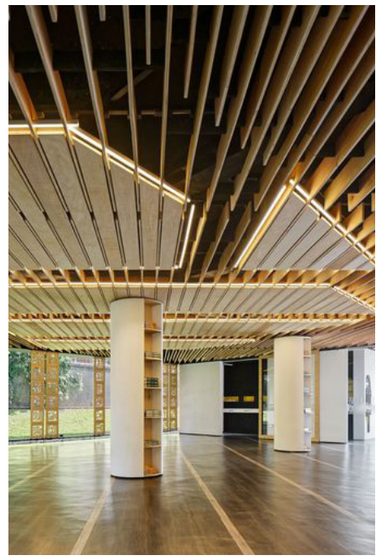
The interior interlaces environments for connection and contemplation, which are fundamental requirements for idea generation in a crowded digital world.

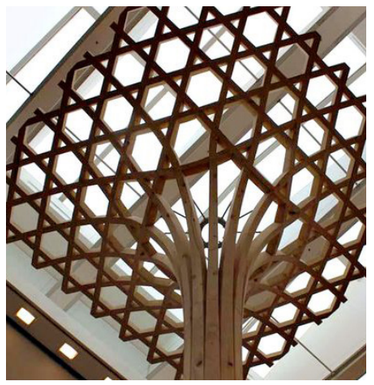
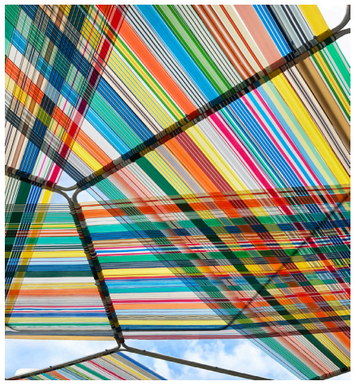
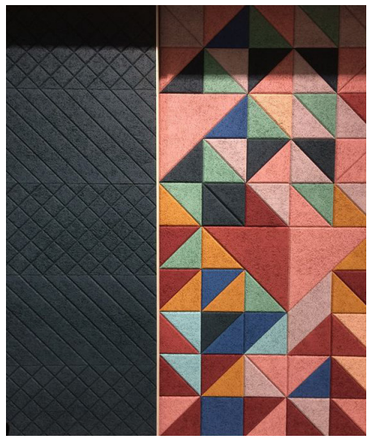
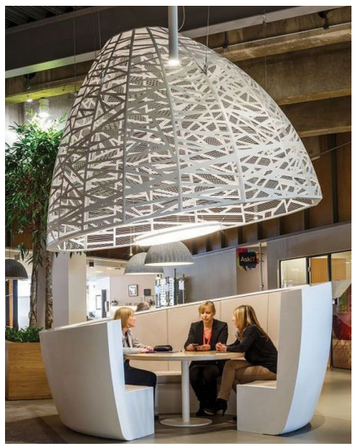
The Intertwining of culture is celebrated throughout the University with architectural references: the paneling, ceiling treatment, materiality, lighting, floor pattern etc will reference the concept of meshing and intertwining

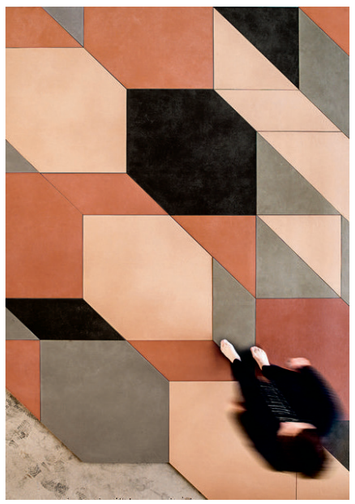
The built environment to spatial layouts and decorative patterns, is another medium by which to understand and, in turn, celebrate culture and foster a sense of belonging.

Seamlessly intertwined cultures will positively lead to a more innovative, and stimulating environment.





# Weaving of Spaces

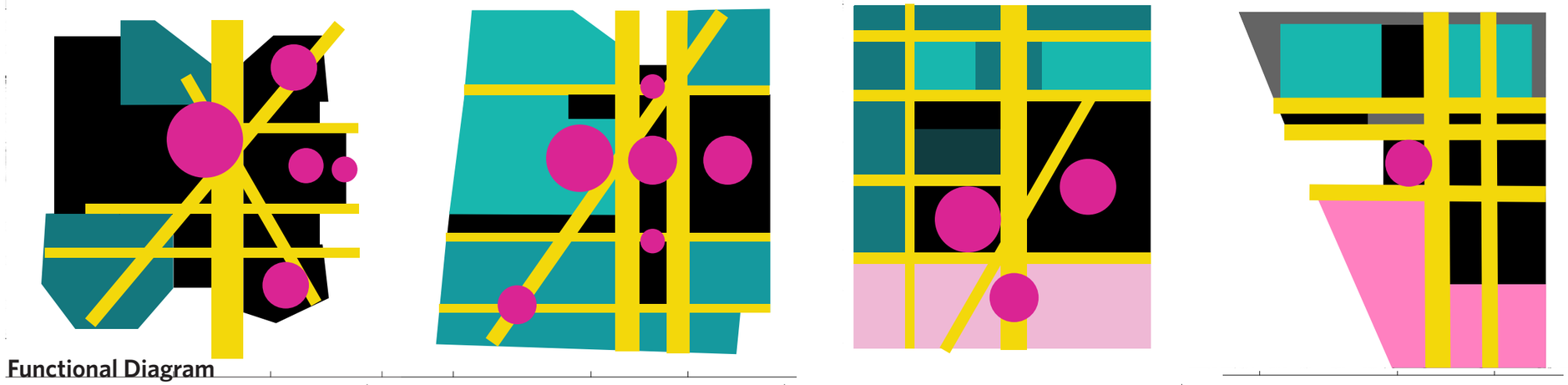
## Weaving as circulation and space planing

The weaving definition is the craft or action of forming fabric by interlacing long threads passing in one direction with others at a right angle to them. This analogy is adopted for the BCC interior planning with the intertwining of spaces and circulation.

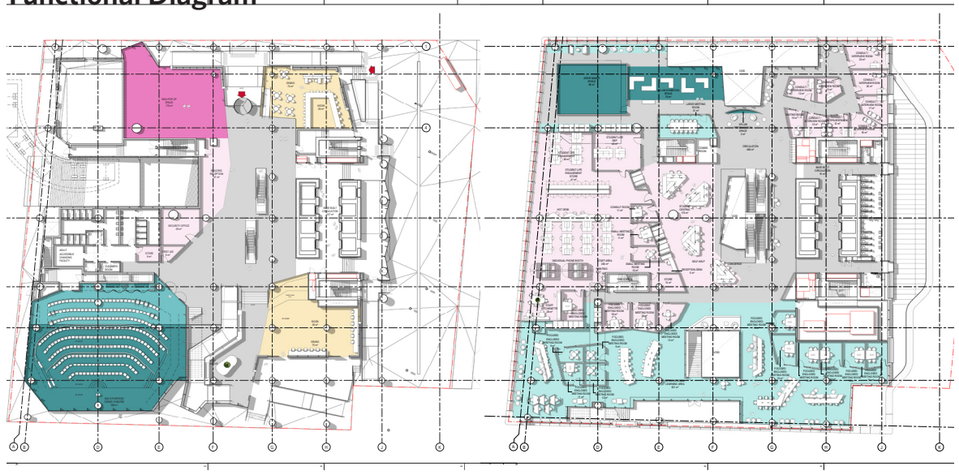
The locations of the formal and informal learning spaces, social hubs and circulation form and abstraction of the weaving analogy. Social and gathering spaces are purposely located at the inter-loop of circulation weaves as a celebration of social interaction and cross collaboration. The Learning spaces are connected through the circulation 'Intertwining" the interests of the occupants of the building.

The program and the site are inextricably intertwined in the design of the space. The informal and formal learning spaces are stitch to the fabric of the precinct through circulation patterns, built-form and landscape design. This exercise provides an introduction to the way a balance of interwoven spaces will create a harmonious urban environment.

**Planning Abstraction**



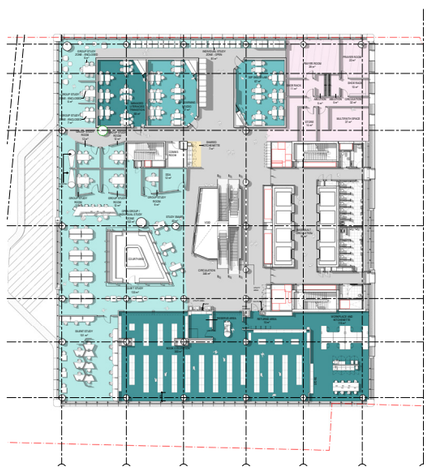
**Functional Diagram**



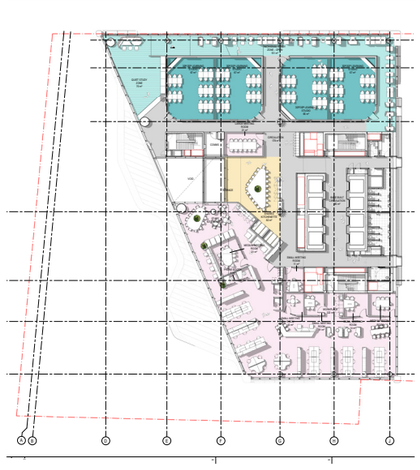
Ground Level



L1 Student Services



L4 Library



L8 Learning/Workplaces

Circulation

Learning Spaces

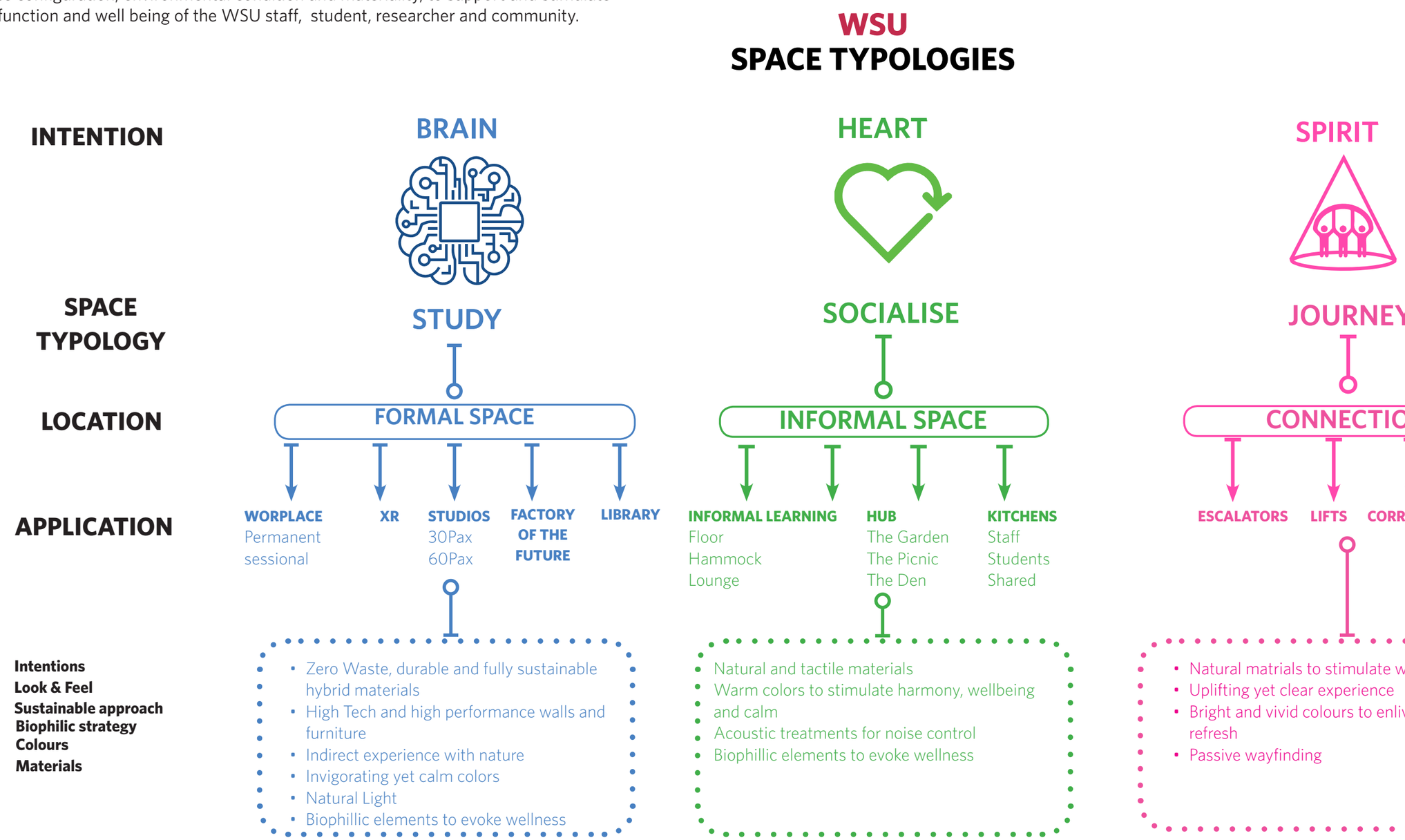
Public Spaces

Social Spaces

Workplace

## 4.2 | Space Typologies & Materiality

The physical environment has a substantial impact on the “Spirit“, “ Heart” and “Brain” of the Bankstown City Campus.  As an underlying design principle to the Weaving strategy, each space type combines elements of this key design principle, through space configuration, environmental condition and materiality, to support and stimulate the function and well being of the WSU staff,  student, researcher and community.





# Brain

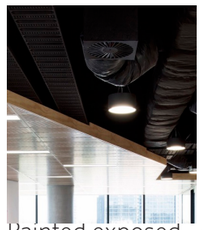
## Interior Strategy

- Encourage focus and reduce stress
- Access to natural Light and planting
- Sustainable materials
- Convey wellness
- Timber / timber laminate, powder coat, plywood, wood wool,carpet, high acoustic



Informal Learning Space - Interior Perspective

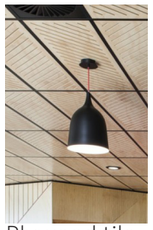
### Ceiling



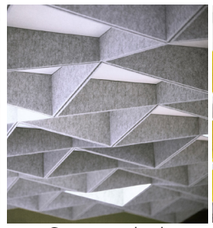
Painted exposed ceiling

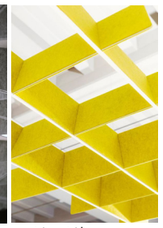


Acoustic baffles



Plywood tile





Suspended acoustic tiles



Plasterboard

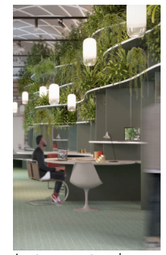


Suspended lighting

### Wall



Timber screen



Expanded metal mesh + greenery



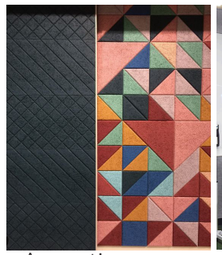
Integrated planting



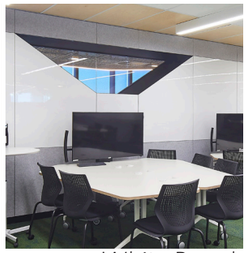
Routered timber cladding



Acoustic timber paneling

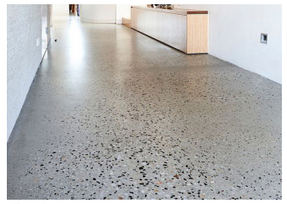


Acoustic wall paneling

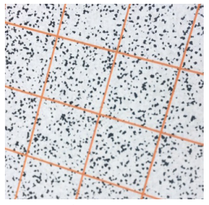


White Board

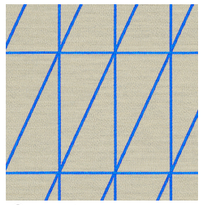
### Floor



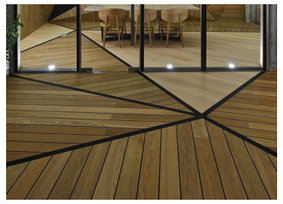
Polished concrete



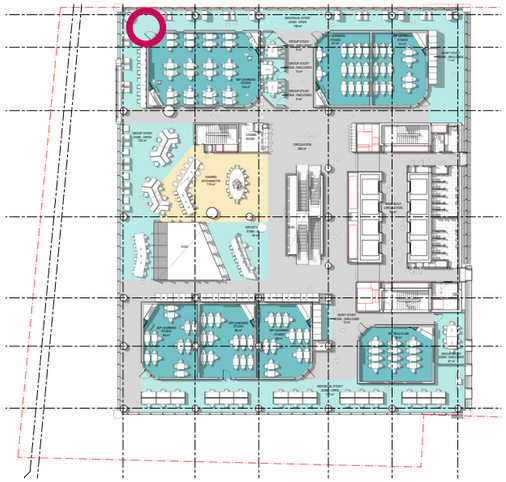
Marmoleum



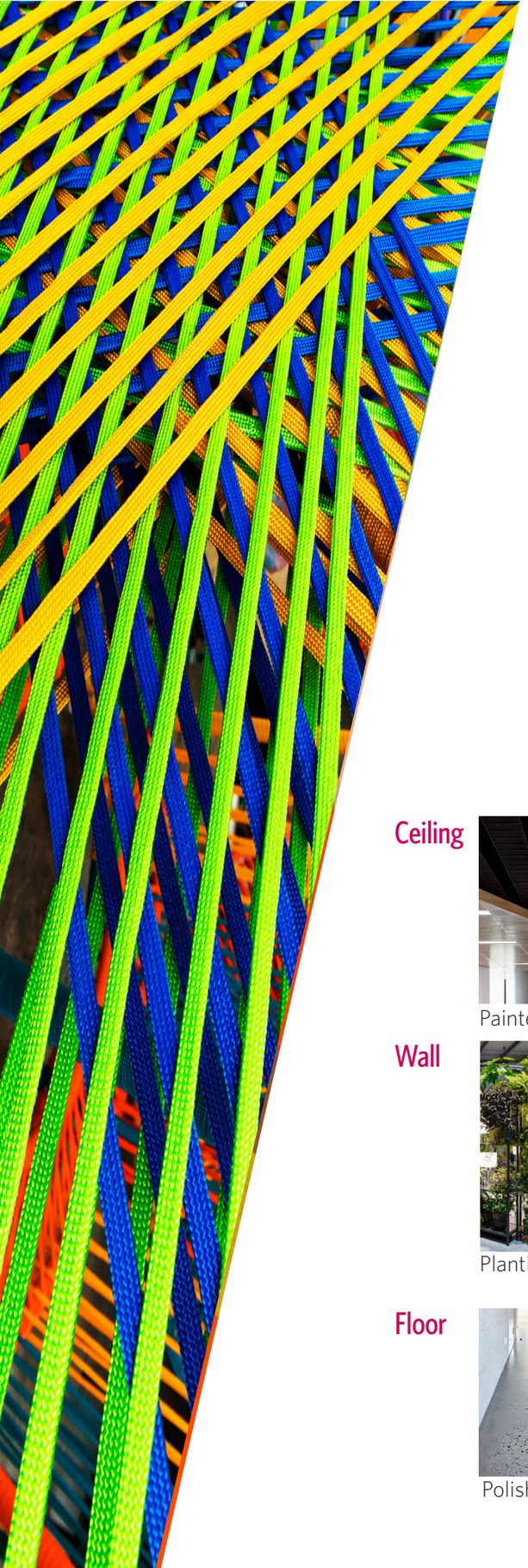
Carpet



Timber



Level 06 Key Plan



# Heart

## Interior Strategy

- Impact positively on collaboration, openness & respect
- Warm colours associated with happiness and stimulate harmony and friendliness
- Natural materials to impact positively on social interaction, collaboration, openness & respect
- Acoustically calm
- Durable materials and  forms
- Planting, image of nature, natural geometries



The Garden - Student Hub - Interior Perspective

## Ceiling



Painted exposed ceiling



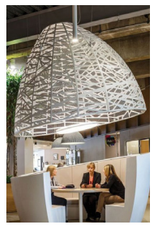
Suspended battens



Acoustic plasterboard

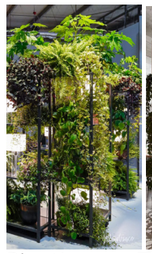


Metal mesh



Feature Lighting

## Wall



Planting



Timber screen



Timber joinery



Tiles



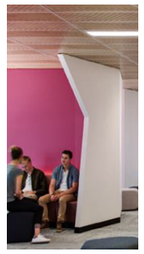
Expanded metal mesh



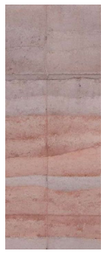
Cork



Flexible Partitions

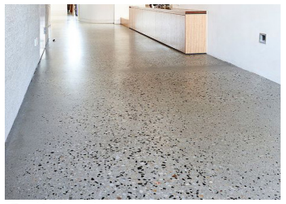


Plasterboard

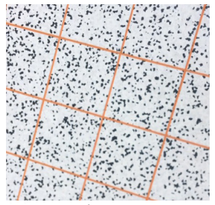


Rammed Earth

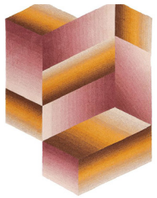
## Floor



Polished concrete



Marmoleum



Carpet



Timber



Quartz carpet



Level 03

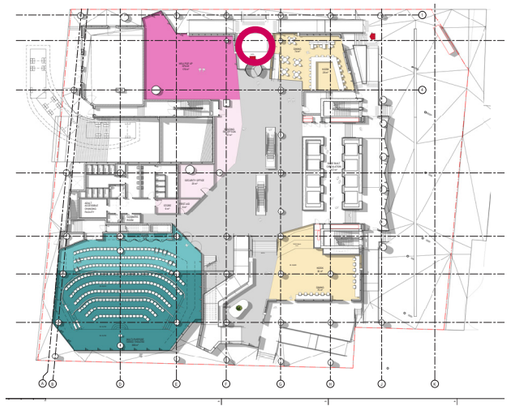
# Spirit

## Interior Strategy

- Empower emotional sense of belonging,
- Natural shapes with psychological + social benefit
- A balance of neutral colours with splashed of Vivid colours to diffuse stress and offering restoration.
- Natural materials and elements evoking nature, timber, natural weave, metal mesh.

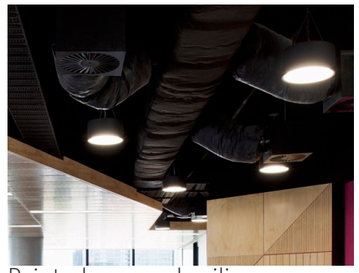


Arrival - Interior Perspective

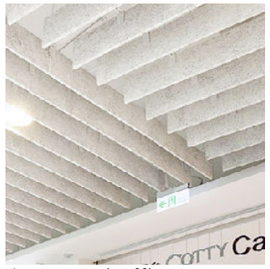


G.F - Ground Floor

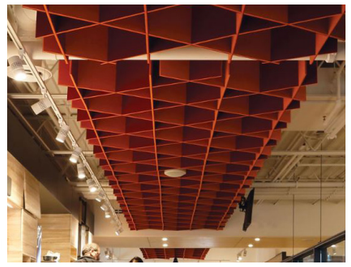
## Ceiling



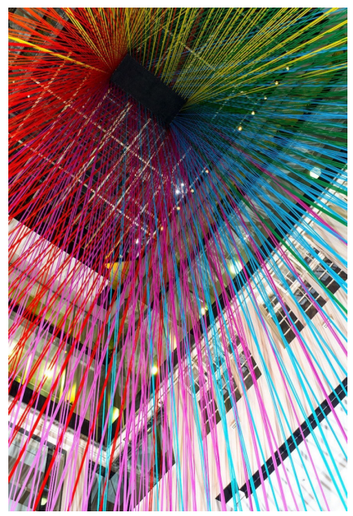
Painted exposed ceiling



Acoustic baffles

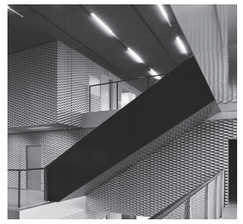


Suspended battens



Integrated Artwork

## Wall



Expanded metal mesh



MDF cladding



Timber panel



Planting

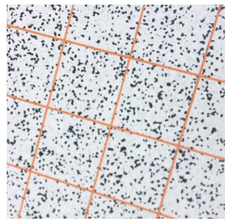


Artwork

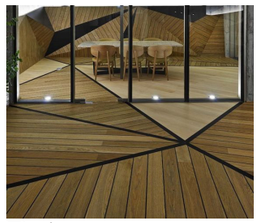
## Floor



Polished concrete



Marmoleum



Timber



Quartz carpet

# 4.3 | Environmental Strategies

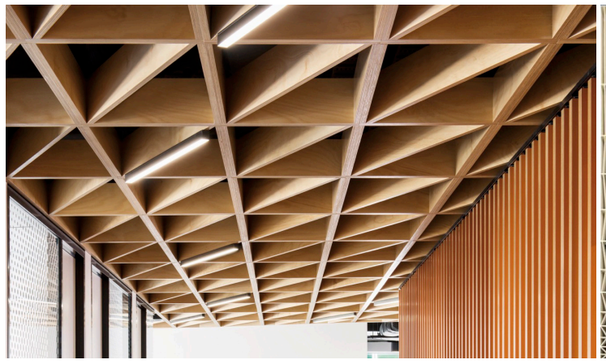
Materiality used throughout the BCC fit out will directly impact health and wellbeing. In alignment with Green Star rating, the interiors brings environmental awareness by using real and eco-friendly materials that are ethically sourced and contribute to a positive economy.

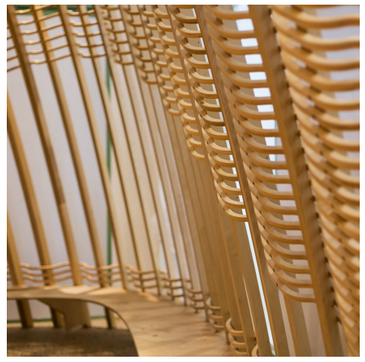
We design for waste reduction but also longevity and flexibility with the goal to design durable and timeless spaces. We aim for quality over quantity and simplicity/functionality over embellishments.

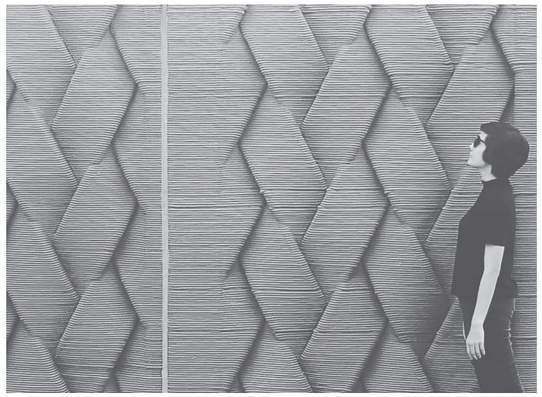
The use of durable renewable materials react to an environmental responsibility and awareness. It will also provide optimal performance, improve indoor air quality and improve thermal comfort.  The application of sustainable materials will be showcased with:

- A “zero waste” approach, such as specifying eco-friendly countertops, made up of recycled glass, paper and plastic.
- All natural,  low-maintenance and sustainable materials
- Sustainable textiles such as hemp, flax, soy, wool.

We see an opportunity for cross-collaboration with industry and peers by specifying a series of durable and fully sustainable hybrid materials that are at the forefront of research and development.

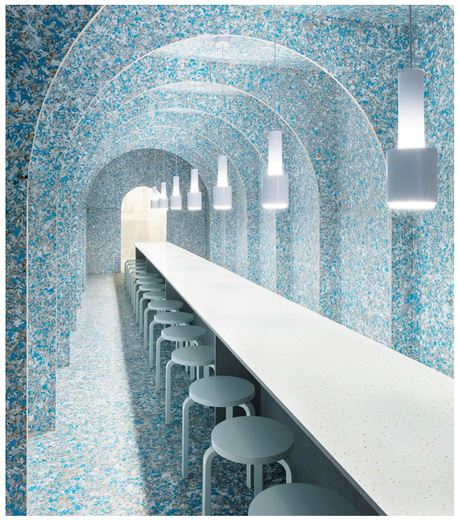










# Biophilia

Biophilic principles will be intertwined with places within the BCC to encourage people to meet, relax and feel close to nature.

Biophilic design principals requires repeated and sustained engagement with nature. It also emphasizes an emotional attachment to particular settings and places and promotes positive interactions between people and nature.

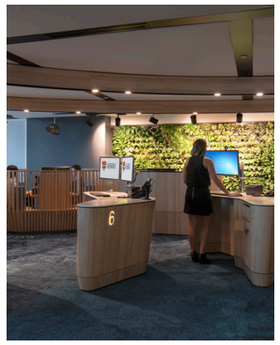
The practice of biophilic design involves the application of diverse design strategies. These include three ways of experiencing nature in the built environment: the direct experience of nature, the indirect experience of nature, and the experience of space and place. Falling within each of the three categories of experience are 24 attributes of biophilic design:

**Indirect experience of nature:**
- Images of Nature
- Natural Materials
- Natural Colors
- Simulating Natural Light and Air
- Naturalistic Shapes and Forms
- Evoking Nature
- Information Richness
- Age, Change, and Patina of Time
- Natural Geometries
- Biomimicry

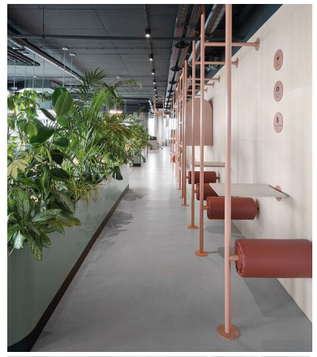
**Direct experience of nature:**
- Light
- Air
- Water
- Plants
- Animals
- Natural Landscapes
- Weather
- Fire

**Experience of space and place**
- Prospect and Refuge
- Organized Complexity
- Integration of Parts to Wholes
- Transitional Spaces
- Mobility and Wayfinding
- Cultural and Ecological Attachment to Place

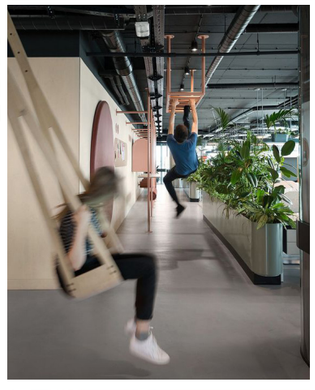










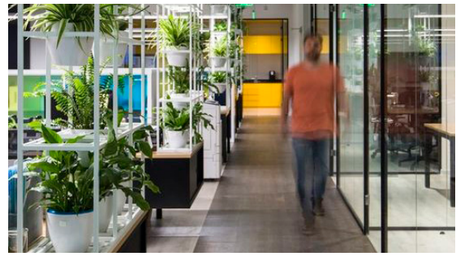


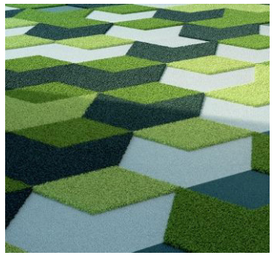




The following Biophilic principles will be applied throughout WSU:

- Using natural materials and spaces that include natural geometries such as fractals and curves, will be highly evocative and satisfying.
- The creative interplay of natural light, spaciousness, plants, and water will simulate the qualities of an exterior setting in an indoor space.
- Open space, green space, light, fitness play, and nutrition offerings through retail, vending machine and kitchen design encourage healthy eating habits.
- Engaging the community with environmental mindfulness, sustainability and wellness topics fosters a sense of accountability, ownership, enthusiasm and collaboration.
- A return and earn recycling program encourages recycling by offering incentives and provides a clean campus.
- The introduction of planting embeded within the furniture and joinery and the introduction of “Green Zones” with native species, outdoor gardens and urban farming all encouragement sustained, healthy engagement with nature





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(02) 9956 2666

# APPENDIX B

## Landscape Design (Aspect Studios)

# New Western Sydney University, Bankstown City Campus

## SEARs Report

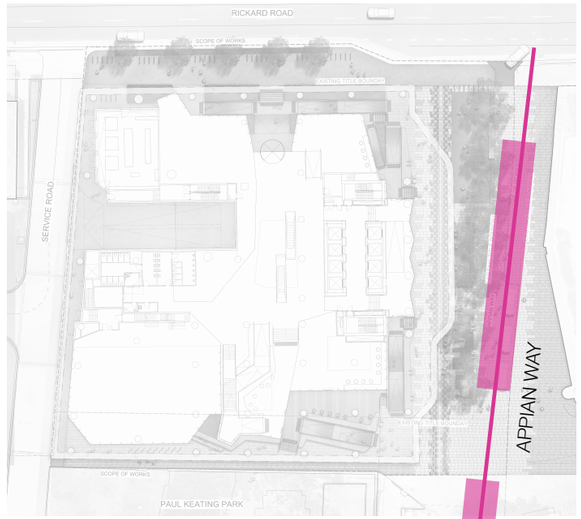
19.08.2019

lyons ASPECT Studios™

# **1.** Ground Plane, Public Realm

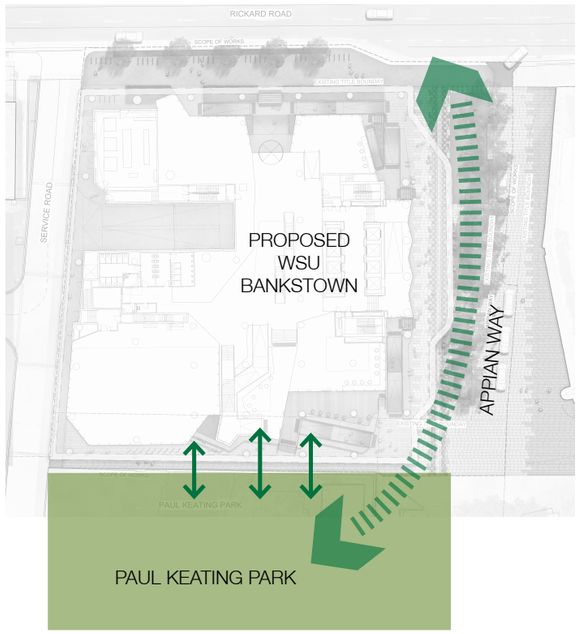
# Public Realm  Landscape Design Objectives

**STREET**



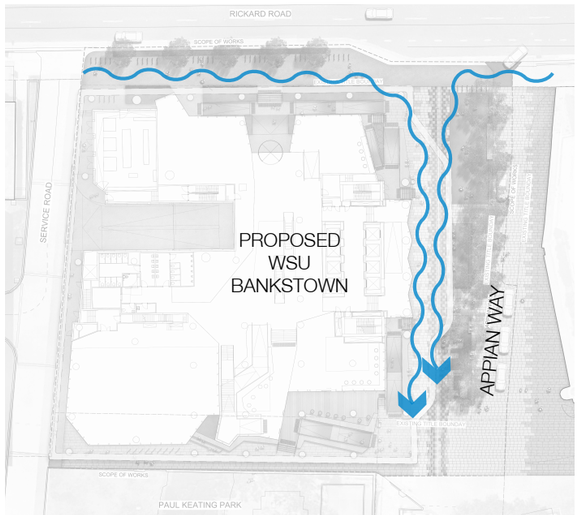

- Align Appian Way to South

**PARK**




- Connect Appian Way and WSU to Paul Keating Park

**WATER**




- Mitigate the effects of flood overlay within the design.

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

The Street

Aligning Appian Way the South improves pedestrian an visual connections train station (South) to the campus front door. By aligning Appian Way, we create a coherent pedestrian experience and connections to Paul Keating Park.  The public amenity of 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 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 Appian Way creates create a simplified ground plane with minimal interruption to overland flow.

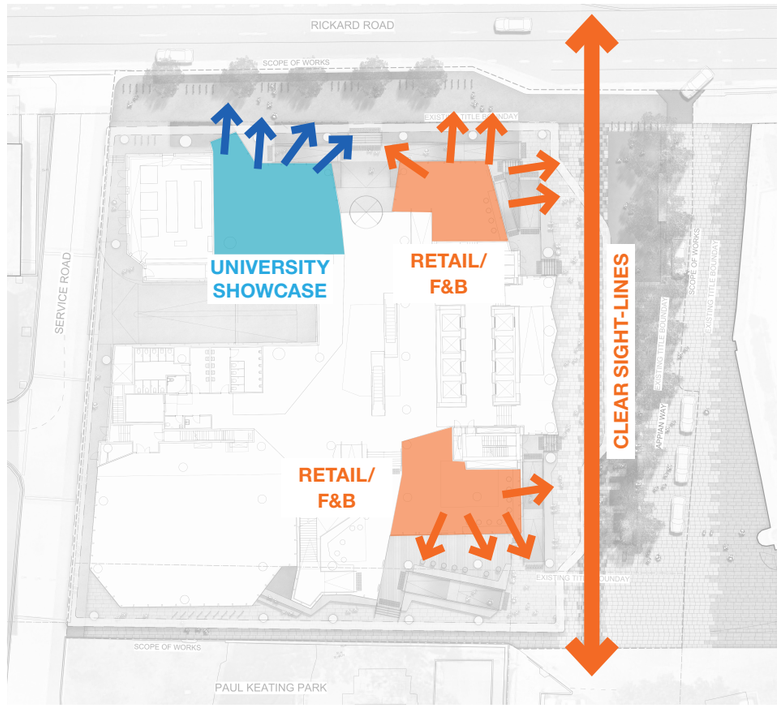
# Public Realm Landscape Design Objectives

### A NEW STREET




- The design provides a benchmark for the future development of Appian Way.
- 1,2090 m2 of new public space

### A SAFE STREET




- Increased retail activation and clear sight-lines

### A GREENER STREET



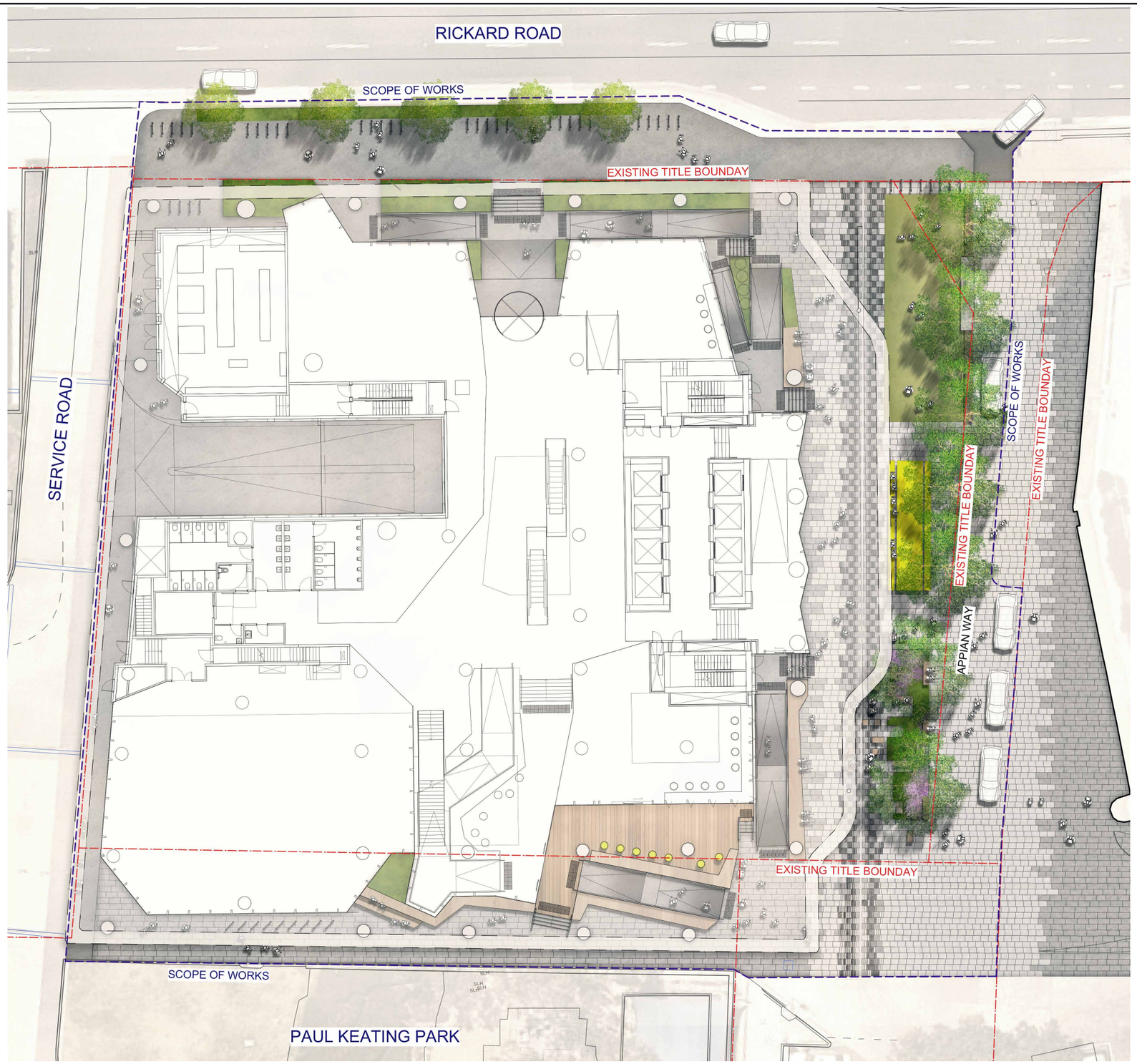

- We have prioritised space for greening. Greening for the 422m2 Appian Way includes northern lawn, amenity planting and new street trees.

# Public Realm Landscape Design Proposal , Illustrative Plan

**LEGEND**

- Stone paving
- Hardwood timber decking
- Planting
- Tree
- Large Social Meeting Table
- Fixed Furniture Elements

REFER TO LANDSCAPE DOCUMENTATION AND MATERIALS SELECTION SCHEDULE FOR FURTHER INFORMATION



# Public Realm Landscape Design Proposal , Trees & Planting

## FURNITURE TYPOLOGIES




### SOCIAL MEETING TABLE

Large social table for meeting, gathering, learning and collaboration

2-phase power allowance built into furniture elements.





### TIMBER TOPPED FURNITURE

Generous timber topped furniture activates the North and South entrances and provides places for students to wait & dwell. Timber furniture invites students to activate the threshold between the Street and the park.



### FIXED RETAIL FURNITURE

Permanent fixed furniture elements provide activation as part of retail tenancies. Fixed furniture elements provide activation to street if retail is not in open.

### GROUPED GARDEN FURNITURE

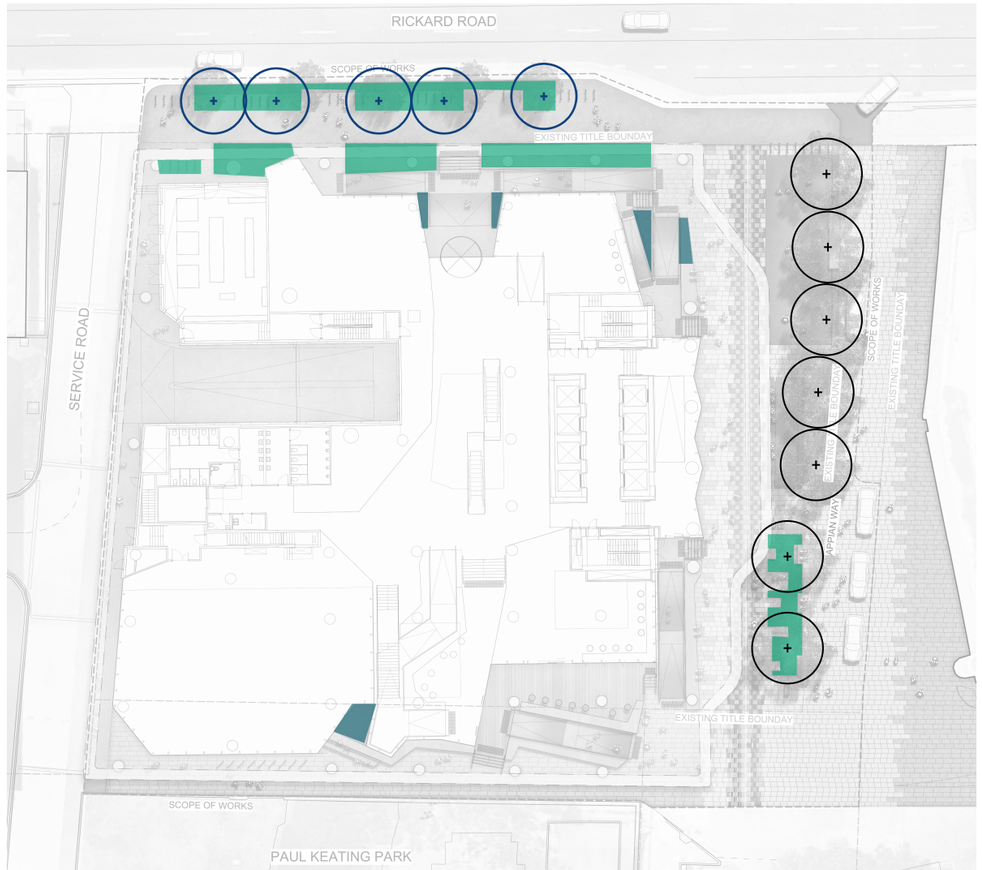
Grouped fixed garden furniture in varying arrangements encourages public and students to occupy the street.





# Public Realm Landscape Design Proposal , Trees & Planting

**PLANTING SPECIES TYPOLOGIES**




REFER TO LANDSCAPE DOCUMENTATION
AND MATERIALS SELECTION SCHEDULE
FOR FURTHER INFORMATION

## GB-01 AMENITY PLANTING



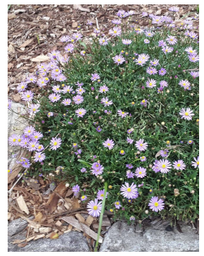
*Anigozanthos sp.*
Kangaroo Paw



*Bauera rubioides*



*Boronia pinnata*
Pinnate boronia



*Brachyscome multifida*
Cut-Leafed Daisy



*Correa glabra*
Rock Correa



*Olearia axillaris*
Coastal Daisybush

## GB-02 AMENITY PLANTING - LOWER LIGHT AREAS



*Ajuga reptans* 'Catlins Giant'
Bugle



*Heuchera micrantha* 'Palace Purple'
Coral Bells



*Liriope muscari 'Amethyst'*
Liriope



*Philodendron* 'Xanadu'
Xanadu

## TR-01 RICKARD ROAD TREES



Corymbia citriodora



Corymbia maculata



Pyrus calleryana

## TR-01 APPIAN WAY TREES



Corymbia maculata



Zelkova serrata

Species to match existing trees

# Public Realm  Landscape Design Objectives - 3D Render



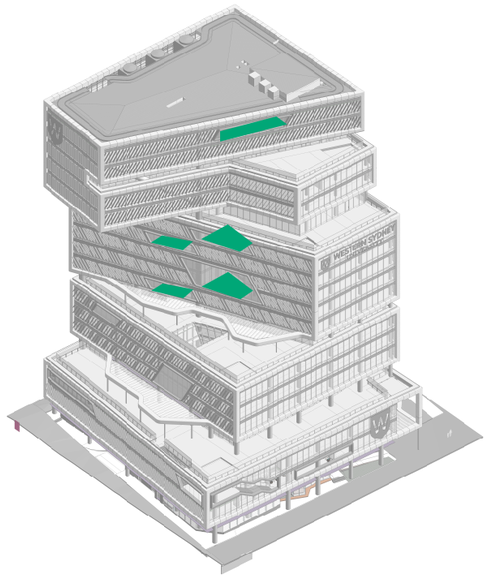
# Public Realm  Landscape Design Objectives - 3D Render



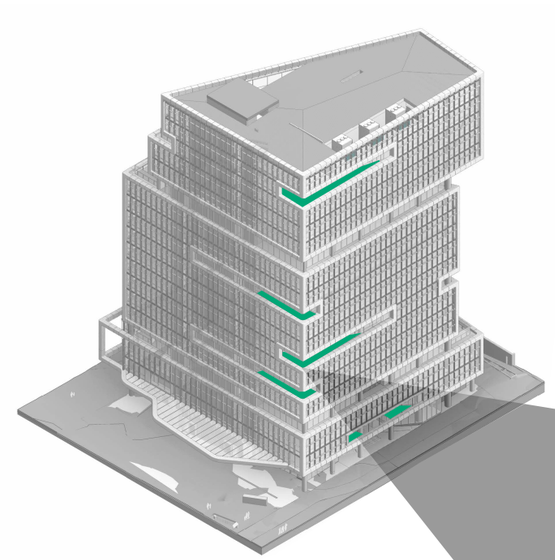
# **2.** Balconies & Library Courtyard

# Balconies, Design Objectives & Proposal

**SOUTH WEST ELEVATION**



**NORTH EAST ELEVATION**

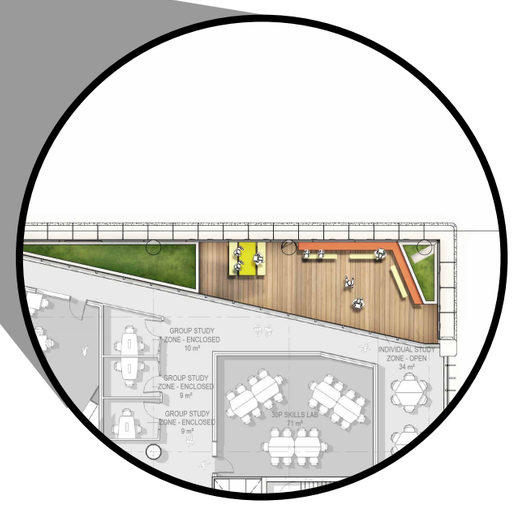


**INHABIT, STUDY, MEET & CREATE**





Balconies create intimate textual spaces that encourage learning collaboration




**LEGEND**

- Stone paving
- Hardwood timber decking
- Planting
- Fixed high bench, leaner
- Social Meeting Table

REFER TO LANDSCAPE DOCUMENTATION AND MATERIALS SELECTION SCHEDULE FOR FURTHER INFORMATION

**TYPICAL BALCONY**

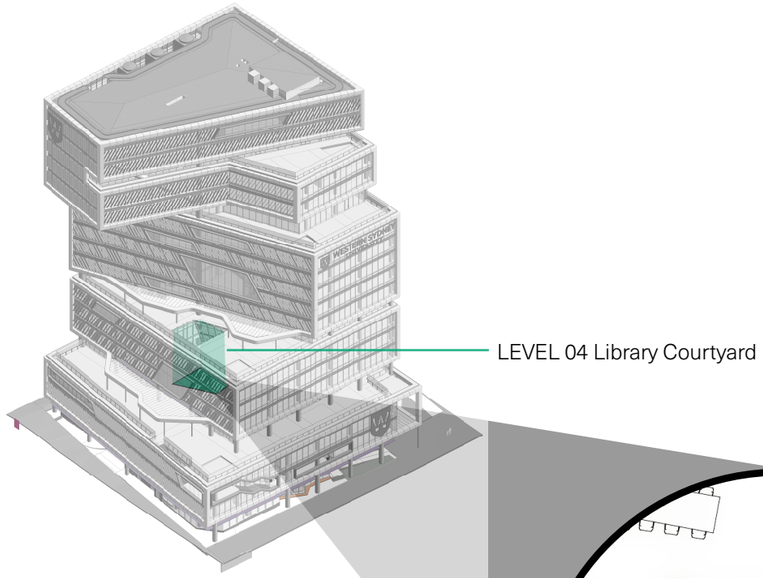
**DESIGN NOTES**

Balconies provide pocket node of activation for breakout and study and meeting for small groups of 2 – 6 people.

- Allowance will be made for 2-phase power to facilitate the charging of laptops and phones while Timber decking provides warm textural spaces for Students and visits to inhabit

# Level 04 Library Courtyard, Design Objectives & Proposal

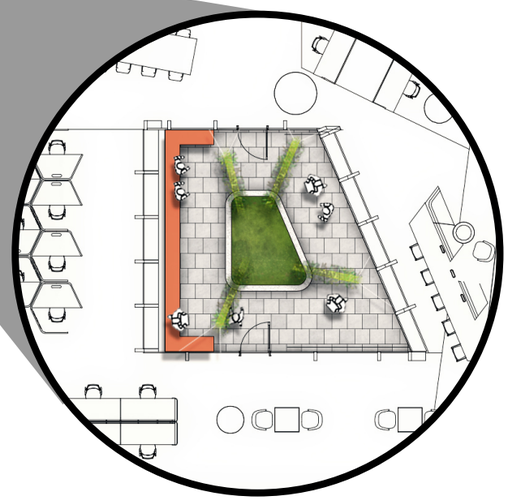
**SOUTH WEST ELEVATION**




**LEGEND**

- Stone paving
- Planting
- Fixed high bench, leaner

REFER TO LANDSCAPE DOCUMENTATION AND MATERIALS SELECTION SCHEDULE FOR FURTHER INFORMATION

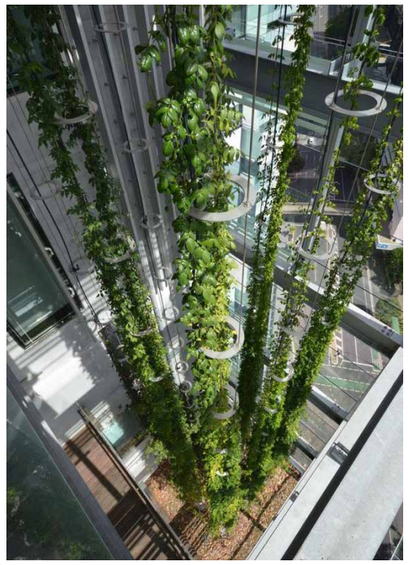


**LEVEL 04 LIBRARY COURTYARD**

**DESIGN NOTES**

Level 04 Library Courtyard brings a sense of green and light to the heat of the building. The inhabitable space invites students to study and occupy the courtyard. The visual sense of green connects the Library to the Level 07 Learning Terrace providing a green link to all floors between.

- Allowance will be made for 2-phase power to facilitate the charging of laptops and phones
- Vertical planting requires specialist grow lights to ensure the success of the vegetation.

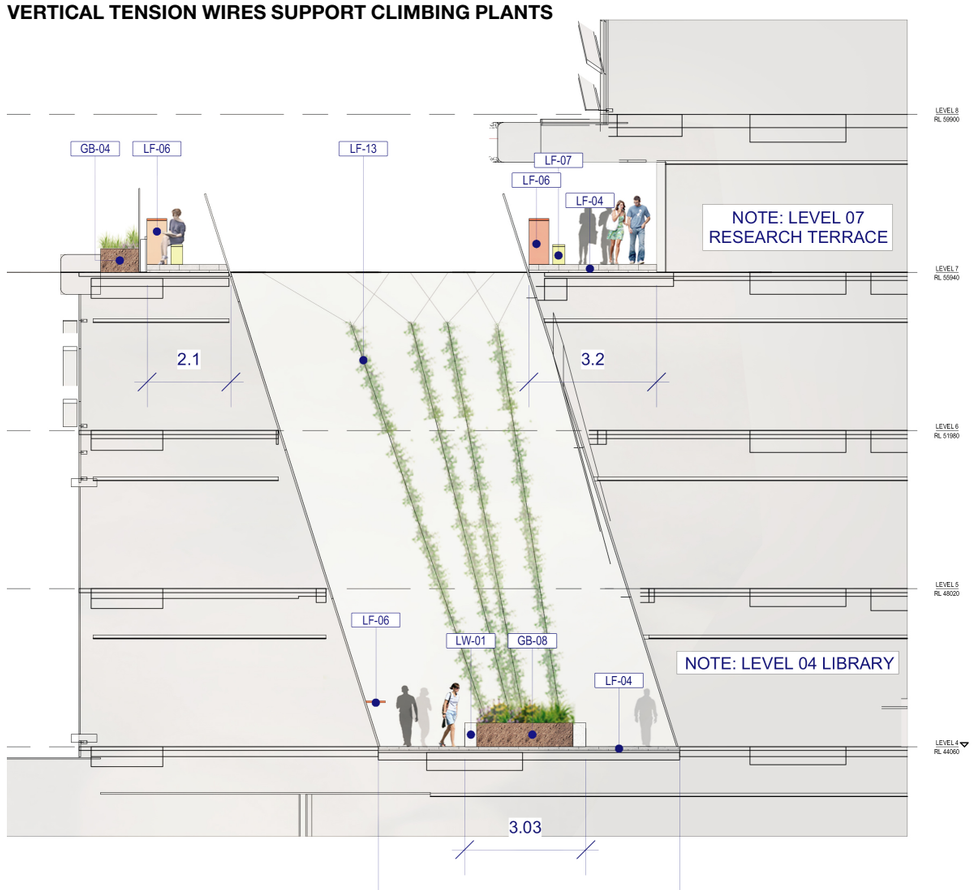




Vertical green elements bring a sense of green and light to the heart of the building

# Level 04 Library Courtyard, Design Objectives & Proposal

**VERTICAL TENSION WIRES SUPPORT CLIMBING PLANTS**




REFER TO LANDSCAPE DOCUMENTATION
AND MATERIALS SELECTION SCHEDULE
FOR FURTHER INFORMATION

**GB-08** **VERTICAL GREENING - CLIMBERS**



*Cissus antarctica*

Kangaroo Vine



*Pandorea jasminoides* 'Lady Di'

Pandorea (White flower)



*Trachelospermum jasminoides*

Star Jasmine

**GB-02** **AMENITY PLANTING - LOWER LIGHT AREAS**



*Ajuga reptans* 'Catlins Giant'

Bugle



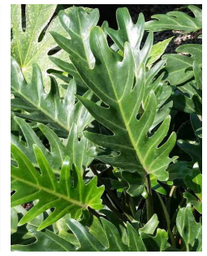
*Heuchera micrantha* 'Palace Purple'

Coral Bells



*Liriope muscari 'Amethyst'*

Liriope

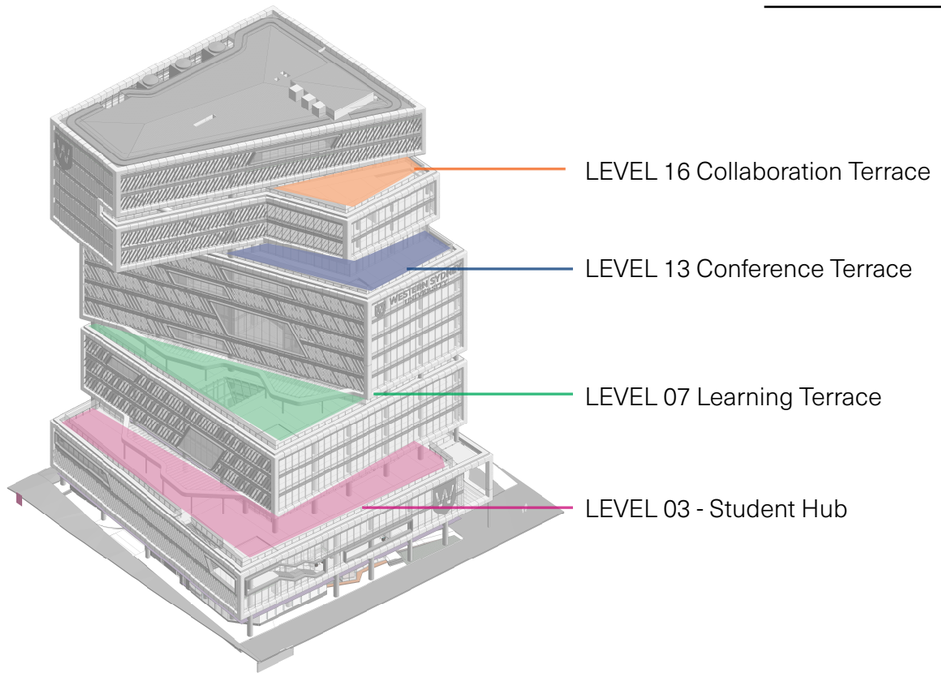


*Philodendron* 'Xanadu'

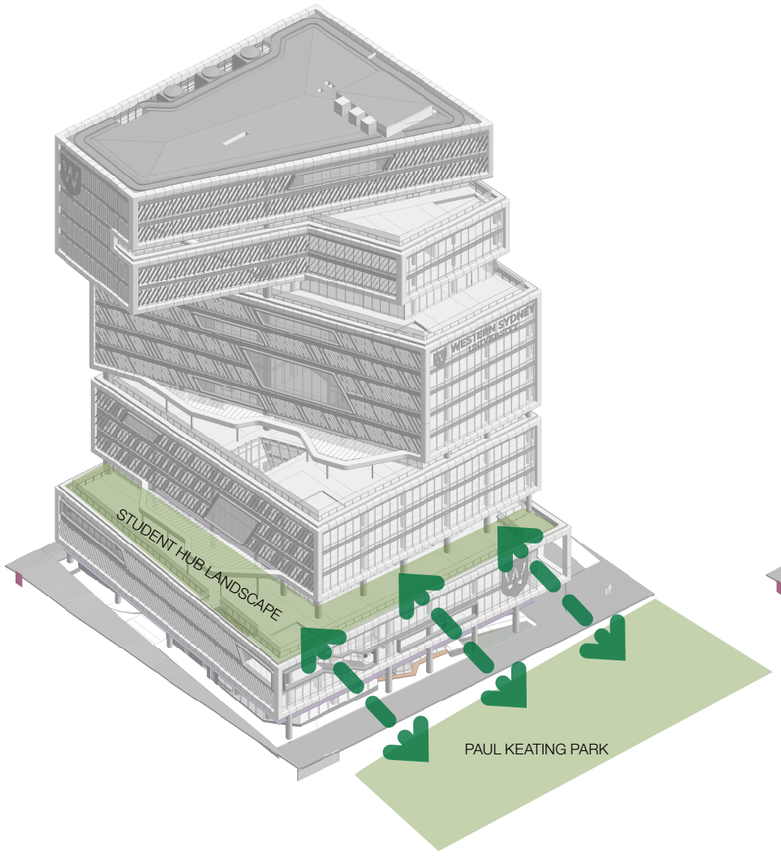
Xanadu

# 3. Terraces

**TERRACE LOCATIONS**

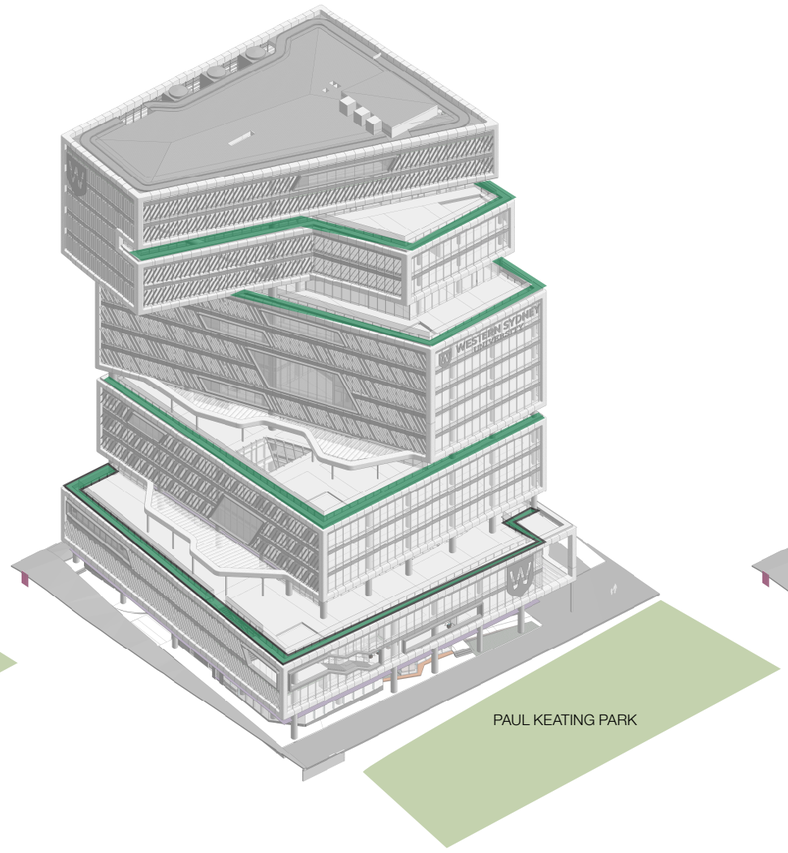


# Vertical Greening Strategy, Landscape Design Objectives



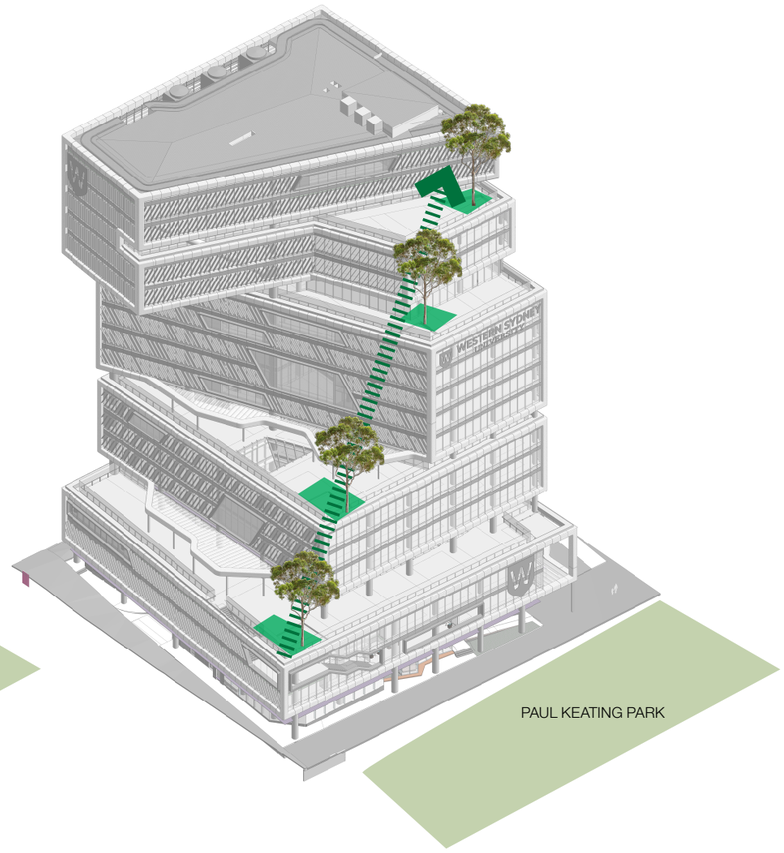

**DESIGN NOTES**

- Student Hub provides visual green connection to Paul Keating Park




**DESIGN NOTES**

- Green Edge provides vertical sense of green
- Connects building to park
- Allowance has been made in the structural slab for set-down and loading of garden bed
- Allowance has been made for irrigation & maintenance
- Planting species will be specifically chosen to site conditions including light




**DESIGN NOTES**

- Trees anchor each terrace
- Allowance has been made in the structural slab for set-down and loading of each tree and soil volume required
- Allowance has been made for irrigation & maintenance
- Anchor trees help to mitigate wind

# Level 03 Student Hub, Landscape Design Objectives

**LANDSCAPE TYPOLOGIES**




**DESIGN NOTES**

Indigenous Space AD Badanami, possible Yarning Circle, design to be further developed with input and engagement from WSU Indigenous Representatives.

Study Zone for medium to large groups provides equal amenity to internal space. Allowance for 2-phase power points and fixed furniture elements. Furniture arrangements encourage learning and collaboration in small to medium groups. This space is multi–use and provides space for medium - large events and University showcase.

Social Dining Zone has a strong relationship to internal kitchen and dining space. There is opportunity for large dining tables which have internal/external relationship. Varying arrangement of fixed furniture elements cater for small to large social gatherings and encourage interaction between students.

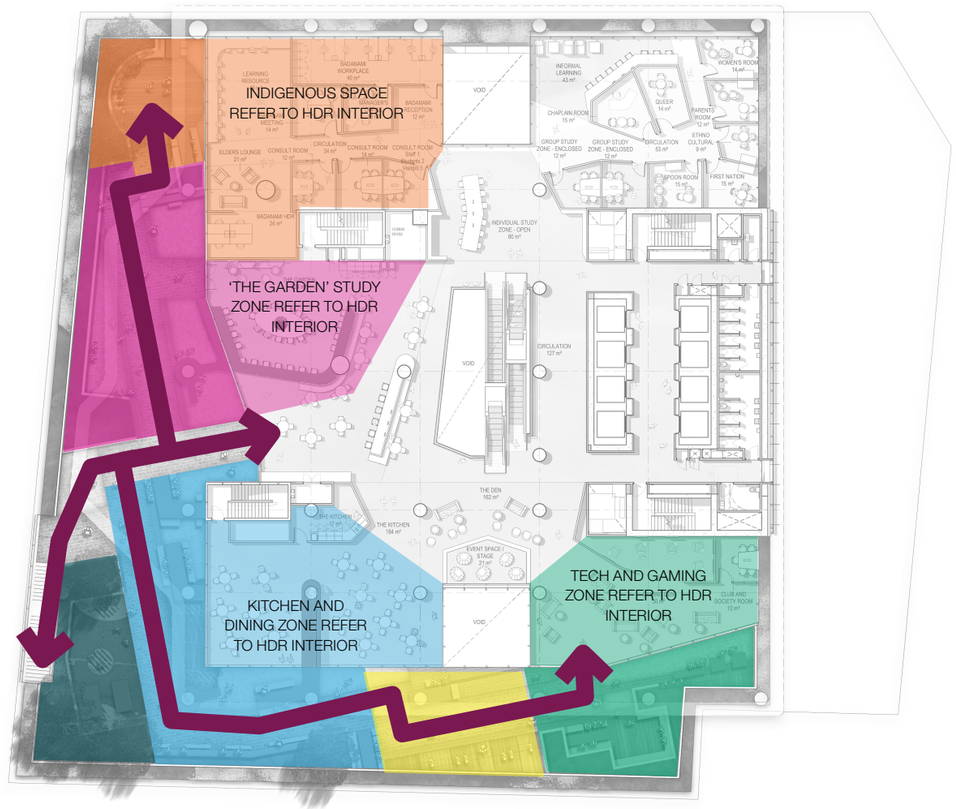
Recreation Zone. Prescribed recreation including table tennis. Bold super-graphic to include games and activities to ensure this space is vibrant and interactive. Recreation Zone includes vegetable garden and inbuilt storage for student union to store garden tools.

Movie Zone, large timber platforms form low seating for relaxed movie viewing. Opportunity for small presentations and University showcase on the pull-down movie screen. This space functions as a relaxed space for students when not in use for screenings.

Tech and Gaming Zone. This zone has a strong relationship the internal use. Furniture elements are curated to provide spaces for card games, board games and tech games to be played in small to medium groups. This space will have high amenity in terms of access to power, Wi-Fi and digital activation

# Level 03 Student Hub, Landscape Design Objectives

**THOROUGHFARE SPINE**




**DESIGN NOTES**

Thoroughfare space forms a strong spine through the Student Hub. This spine links zones, providing clear access and connecting the different uses into one cohesive space.

The Thoroughfare Spine will be indicated with a change in material to visually connect external spaces.

# Level 03 Student Hub, Landscape Design Proposal

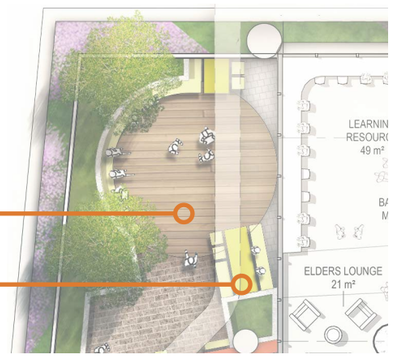
## FURNITURE AND MATERIALITY




### INDIGENOUS SPACE

Opportunity for Yarning Circles and other indigenous engagement opportunities. To be coordinated and collaborated with WSU indigenous representatives.

Dedicated learning space



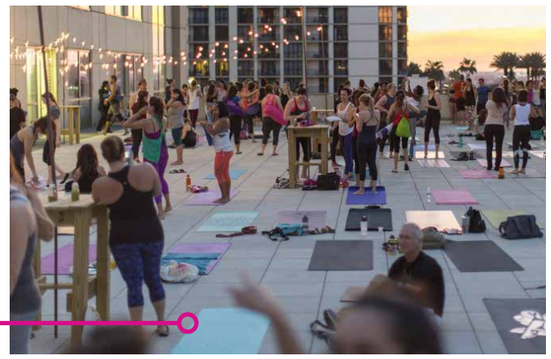



### GROUP STUDY AND EVENT ZONE

2-phase power allowance built in to furniture elements.

Open space allows for medium – large events, group activities and University show-case






ASPECT Studios™

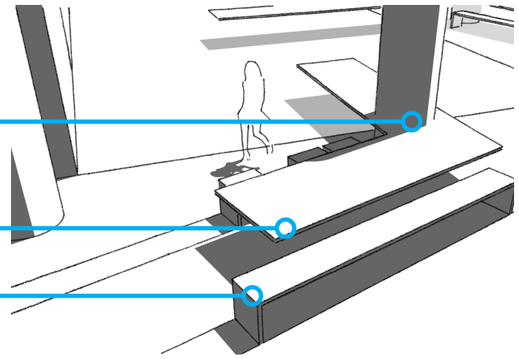
# Level 03 Student Hub, Landscape Design Proposal

**DINING ZONE**

Furniture elements integrated to columns to make best use of space.

Opportunity for large tables to have internal/external relationship.

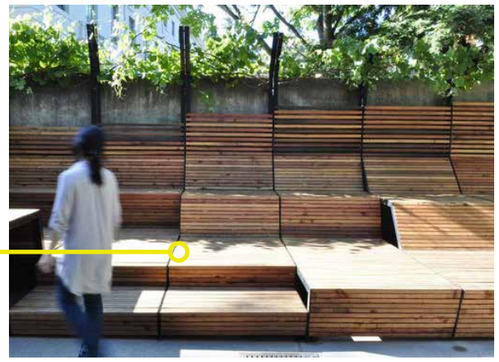
Inbuilt seating





**MOVIE ZONE**

Low timber seating for relaxing and movie viewing.

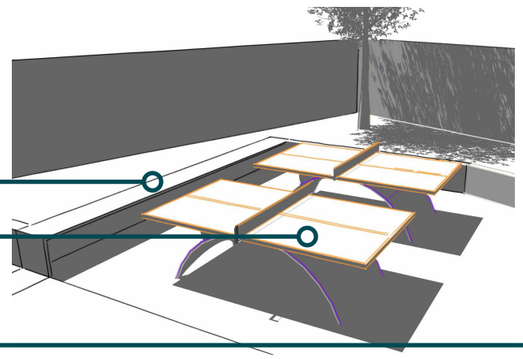


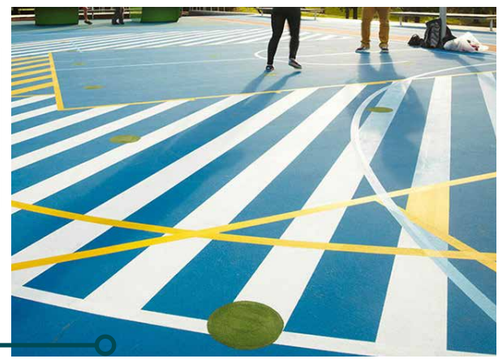
**RECREATION ZONE**

Inbuilt storage to underneath seating elements

Table tennis

Super-graphic with interactive games and activities

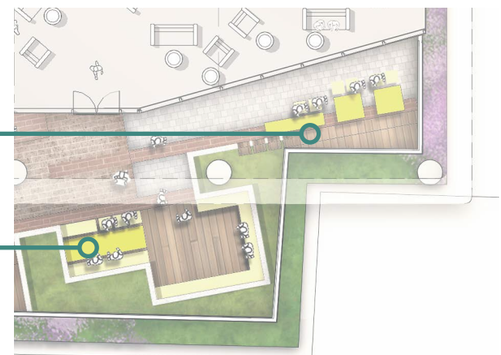




**GAMING AND TECH ZONE**

Gaming tables for small groups 2-4 people

Gaming tables for medium groups 8-12 people




ASPECT Studios™

# Level 03 Student Hub, Landscape Design Proposal

**PLANTING SPECIES TYPOLOGIES**



REFER TO LANDSCAPE DOCUMENTATION
AND MATERIALS SELECTION SCHEDULE
FOR FURTHER INFORMATION

## GB-03 AMENITY PLANTING ON STRUCTURE



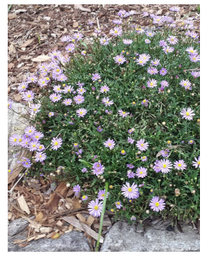
*Anigozanthos sp.*
Kangaroo Paw



*Bauera rubioides*



*Boronia pinnata*
Pinnate boronia



*Brachyscome multifida*
Cut-Leafed Daisy



*Correa glabra*
Rock Correa



*Olearia axillaris*
Coastal Daisybush

## GB-04 GREEN EDGE PLANTING



*Acacia cognata*
'Mini Cog'



*Casuarina-glauca*
'Cousin It'



*Dianella* 'Little Jess'



*Myoporum parvifolium*



*Senecio mandraliscae*



*Westringia fruticosa*

## GB-05 INDIGENOUS PLANTING



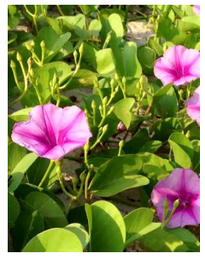
*Melaleuca alternifolia*
Tea Tree



*Eremophila sp.*
Emu Bush



*Ficus opposita*
Sandpaper Fig



*Ipomoea pes-caprae*
Goats Foot

Indigenous planting selection will be collaborated with WSU indigenous representatives. Planting selections to have cultural, medicinal or historic significance.

**GB-06** **STUDENT VEGETABLE AND HERB GARDEN**



Mixed Seasonal Veggies



*Citrus* × *meyeri*

Dwarf lemon Tree

**TR-02** **TREE ON STRUCTURE, ANCHOR TREE, SPECIES OPTIONS**



*Acer campestre* ‘Elsrijk’

Field Maple



*Brachychiton acerifolius*

Illawarra Flame Tree



*Fraxinus excelsior* ‘Aurea’

Golden Ash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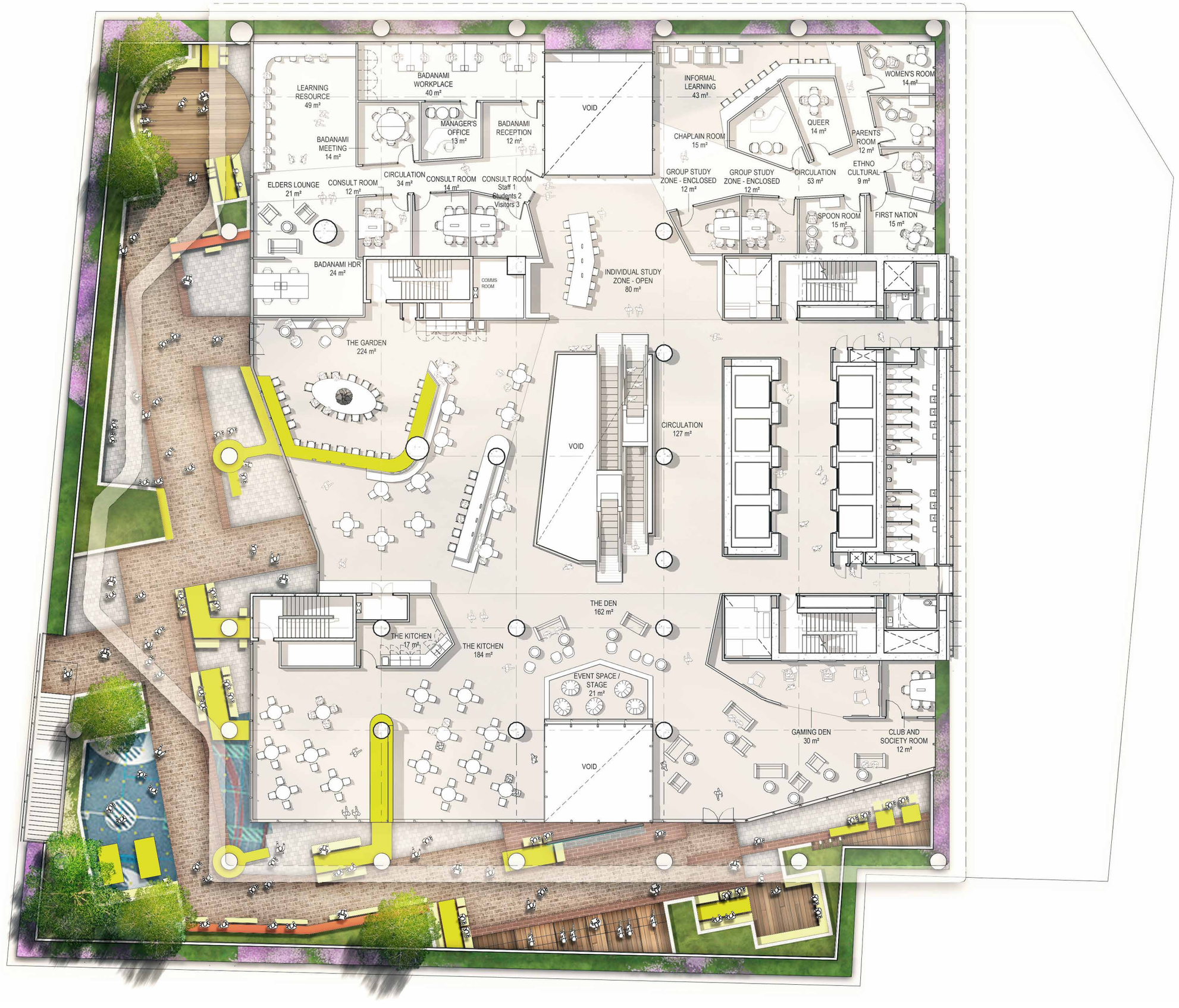
**LEGEND**

- Stone paving
- Hardwood timber decking
- Feature paving
- Super-graphic
- Planting
- Anchor tree
- Fixed high bench, leaner
- Fixed meeting tables
- Fixed bench seating

REFER TO LANDSCAPE DOCUMENTATION AND MATERIALS SELECTION SCHEDULE FOR FURTHER INFORMATION



# Level 07 Learning Terrace, Landscape Design Proposal

**LANDSCAPE TYPOLOGIES**



**SMALL GROUP STUDY & LEARNING**

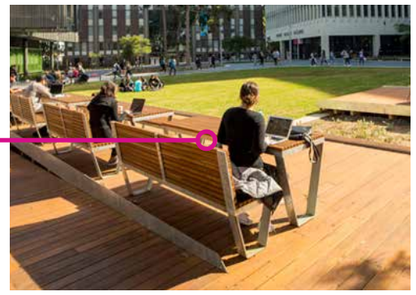
Groups of 1-2 people

Facing toward view or void



**MEDIUM GROUP STUDY & LEARNING**

Groups of 4 - 8 people



**LARGE GROUP STUDY, LEARNING AND CLASSES**

Groups of 4-20 People



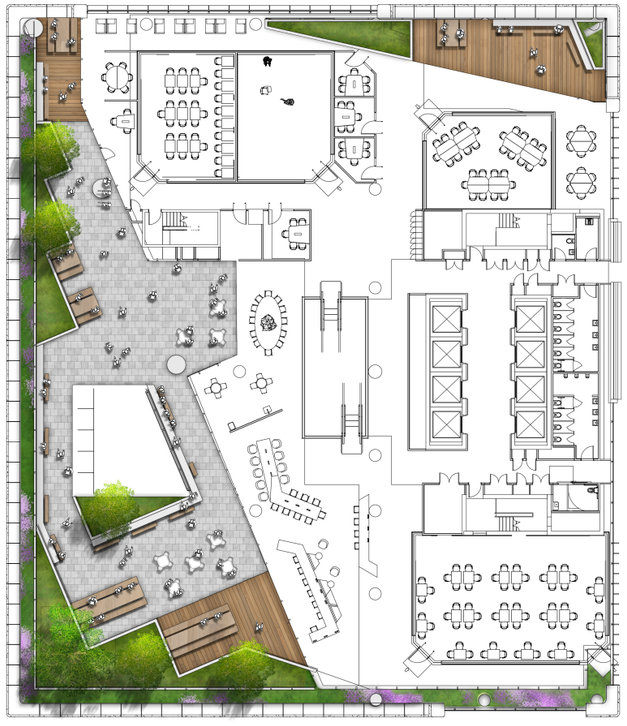
# Level 07 Learning Terrace, Landscape Design Proposal

**LEGEND**

- Stone paving
- Hardwood timber decking
- Planting
- Anchor tree
- Fixed high bench, leaner
- Fixed meeting tables
- Fixed bench seating

REFER TO LANDSCAPE DOCUMENTATION AND MATERIALS SELECTION SCHEDULE FOR FURTHER INFORMATION

**ILLUSTRATIVE PLAN**



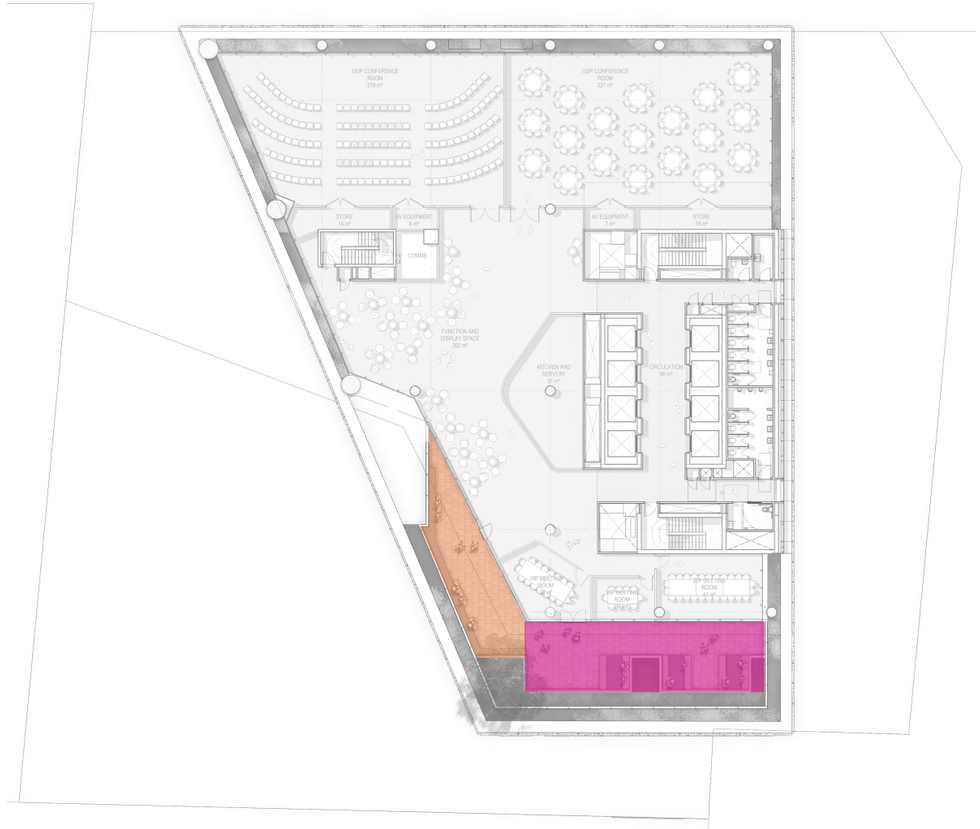
**DESIGN NOTES**

Level 07 Learning Terrace has been designed for student learning and collaboration. A dynamic selection of fixed seating and study tables activate the design and invite students to study in small to large groups. 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. Focus for the Leaning Terrace Design has been to ensure a green outlook, increased green outlook provides high visual amenity for students using Learning Terrace and internal facilities.

- Allowance has been made for 2-phase power to facilitate the charging of laptops and phones while students' study and work on the terrace
- Most of the terrace is paved with stone pavers ensuring high durability and low maintenance
- Timber decking spaces provide warm textural nooks in less trafficable parts of the terrace
- Anchor tree links Learning Terrace to terraces above, below and Paul Keating Park
- Allowance has been made in the structural slab for set-down and loading of the anchor tree
- Allowance has been made for irrigation & maintenance
- Planting species will be specifically chosen to site conditions including light

# Level 13 Conference Terrace, Landscape Design Proposal

**LANDSCAPE TYPOLOGIES**




**CONFERENCE SPILL-OUT**

Slim high bench (bar leaner height). Bench designed for social events , makes best use of space and views.

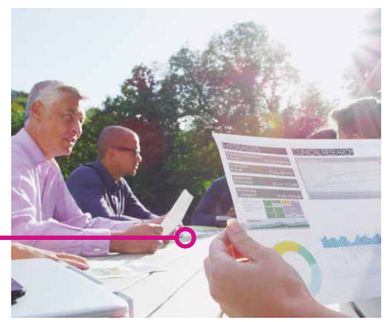




**SMALL - MEDIUM MEETINGS**

Groups of 2 - 8 people





# Level 13 Conference Terrace, Landscape Design Proposal

**LEGEND**

- Stone paving
- Hardwood timber decking
- Planting
- Anchor tree
- Fixed high bench, leaner
- Fixed meeting tables
- Fixed bench seating

REFER TO LANDSCAPE DOCUMENTATION AND MATERIALS SELECTION SCHEDULE FOR FURTHER INFORMATION

**ILLUSTRATIVE PLAN**




**DESIGN NOTES**

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.

- Timber decking replaced with stone pavers as per WSU feedback
- Anchor tree links Learning Terrace to terraces above, below and Paul Keating Park
- Allowance has been made in the structural slab for set-down and loading of the anchor tree
- Allowance has been made for irrigation & maintenance
- Planting species will be specifically chosen to site conditions including light

# Level 16 Collaboration Terrace, Landscape Design Proposal

**LEGEND**

Stone paving

Planting

Anchor Tree

REFER TO LANDSCAPE DOCUMENTATION AND MATERIALS SELECTION SCHEDULE FOR FURTHER INFORMATION



**DESIGN NOTES**

Level 16 Collaboration Terrace design is open multi-use space that provides flexibility to support future University/Education uses.

- Timber decking replaced with stone pavers as per WSU feedback
- Anchor tree links Collaboration Terrace to terraces below and Paul Keating Park
- Allowance has been made in the structural slab for set-down and loading of the anchor tree
- Allowance has been made for irrigation & maintenance
- Planting species will be specifically chosen to site conditions including light

# ASPECT Studios

## New Western Sydney University Bankstown City Campus

74 Rickard Road along with a portion of 375 Chapel Road, Bankstown

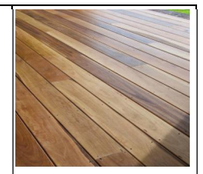
## LANDSCAPE SELECTIONS SCHEDULE

DRAFT

**Document No:** LS-00-001
**Date:** 26.06.2019
**Revision:** B Landscape SEARs Documentation

| CATEGORY | CODE | DESCRIPTION | SPECIFICATION | RECOMMENDED SUPPLIER OR OR SIMILAR APPROVED | IMAGE |
|---|---|---|---|---|---|
| **PAVEMENTS & SURFACES** | | | | | |
| | **PV-01A** | BANKSTOWN STANDARD PAVING | Materials: Granite Paving<br>Work size: 600mm long x 300mm wide x 40mm thick (Nominal thickness. To be confirmed by civil engineer)<br>Loading: Vehicle & Pedestrian grade<br>Refer to City of Bankstown Standards.<br>Slip Resistance Classification: Slip Resistance: P4 or R11 All stair nosings shall be: Slip Resistance: P4<br>Paving Joints: 5mm grouted, Colour to match adjacent paving<br>Bedding: Refer Civil engineers documentation | TBC | No Image |
| | **PV-02A** | APPIAN WAY PAVING PEDESTRAIN GRADE | Materials: Custom concrete pavers on reinforeced concrete slab<br>Work size: TBC<br>Loading:Pedestrian grade<br>Refer to City of Bankstown Standards.<br>Slip Resistance Classification: Slip Resistance: P4 or R11<br>All stair nosings shall be: Slip Resistance: P4<br>Paving Joints: 5mm grouted, Colour to match adjacent paving<br>Bedding: Refer Civil engineers documentation | TBC | No Image |
| | **PV-03** | APPIAN WAY PAVING VEHICULAR GRADE | Materials: Custom concrete pavers on reinforeced concrete slab<br>Work size: TBC<br>Loading: Vehicular grade<br>Refer to City of Bankstown Standards.<br>Slip Resistance Classification: Slip Resistance: P4 or R11<br>All stair nosings shall be: Slip Resistance: P4<br>Paving Joints: 5mm grouted, Colour to match adjacent paving<br>Bedding: Refer Civil engineers documentation | TBC | No Image |
| | **PV-03** | INSITU CONCRETE PAVEMENT - VEHICLE GRADE | Description: TBC Plain Conrete | TBC | No Image |
| | **PV-04** | STANDARD PAVEMENT ON STRUCTURE | Material: Concrete unit paving<br>Work size: TBC<br>Edges: 2mm chamfer to exposed edges<br>Loading: Pedestrian<br>Colour: 'Vega' Anston Architectural<br>Surface Finish: Acid Washed<br>Side Finish: Sawn<br>Slip Resistance Classification: Slip Resistance: P4 or R11<br>Installation Pattern: 'Stacked', rectangular tiled pattern<br>Sub base: Pedestal system<br>Sealer: Penetrative, un-tinted, to facilitate ease of cleaning<br>Sample: 1 no. unit | Anston Architectural<br>299 Johnston Street<br>Abbotsford, VIC, 3067<br>E: info@anston.com.au<br>P: 1300 788 694 |  |
| | **PV-05** | FEATURE PAVEMENT ON STRUCTURE - TYPE 01 | Material: Concrete unit paving<br>Work size: TBC<br>Edges: 2mm chamfer to exposed edges<br>Loading: Pedestrian<br>Colour: 'Vega' Anston Architectural<br>Surface Finish: Light sandblast<br>Side Finish: Sawn<br>Slip Resistance Classification: Slip Resistance: P4 or R11<br>Installation Pattern: 'Stacked', rectangular tiled pattern<br>Sub base: Pedestal system<br>Sealer: Penetrative, un-tinted, to facilitate ease of cleaning<br>Sample: 1 no. unit | Anston Architectural<br>299 Johnston Street<br>Abbotsford, VIC, 3067<br>E: info@anston.com.au<br>P: 1300 788 694 |  |
| | **PV-06** | FEATURE PAVEMENT ON STRUCTURE - TYPE 02 | Material: Concrete unit paving<br>Work size: TBC<br>Edges: 2mm chamfer to exposed edges<br>Loading: Pedestrian<br>Colour: 'Atlas' Anston Architectural<br>Surface Finish: Light sandblast<br>Side Finish: Sawn<br>Slip Resistance Classification: Slip Resistance: P4 or R11<br>Installation Pattern: 'Stacked', rectangular tiled pattern<br>Sub base: Pedestal system<br>Sealer: Penetrative, un-tinted, to facilitate ease of cleaning<br>Sample: 1 no. unit | Anston Architectural<br>299 Johnston Street<br>Abbotsford, VIC, 3067<br>E: info@anston.com.au<br>P: 1300 788 694 |  |
| | **PV-07** | SUPERGRAPIC LINEMARKING ON STRUCTURE | Description: Line marking on Laykold surfacing<br>Location:As shown on the drawings<br>Graphic:Layout as detailed<br>Product:"Laykold Line Paint UV resistant"<br>Colour:Burnt Orange (to match RAL 2009)<br>Base Surface:Laykold Advantage<br>Depth:Ensure compliance with AS1428.1 for trip hazards<br>Slip Resistance Paths Less Than 1:14:"P5 wet pendulum test (wet) or R12 oil-wet ramp test (wet)<br>To AS 4586:2013 and HB 198:2014 as per the recommendations in Table 3B"<br>Slip Resistance Ramps Steeper Than 1:14:"P5 wet pendulum test (wet) or R12 oil-wet ramp test (wet)<br>To AS 4586:2013 and HB 198:2014 as per the recommendations in Table 3B"<br>Installation:To manufacturer's requirements<br>Sample: 50mm wide band of scheduled colour on 300 x 300mm Laykold colour sample | Supplier:"APT ASIA PACIFIC PTY. LTD.<br>Factory 3 Dunlopillo Drive<br>Dandenong Victoria 3175<br>Australia<br>T: (03) 8792 8000<br>W: http://sportsbyapt.com/" |  |

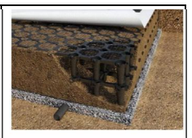


| | | | | | |
|---|---|---|---|---|---|
| | **SF-01** | HARDWOOD TIMBER DECK ON STRUCTURE | Description: Hardwood Timber Deck<br>Material: Seasoned Spotted Gum<br>Dimensions: 132mm wide x 32mm thick<br>Joints: Joints: 5mm<br>Fixings: Decking boards fixed with stainless steel countersunk square drive decking screws. Frame mounted to levelling concrete hobs on the structural slab.<br>Loading: Vehicle<br>Material: 90mm x 35mm hardwood timber decking boards. Seasoned Spotted Gum.<br>Sub-structure Design: Refer to Structural Engineers Drawings<br>Slip Resistance: Slip Resistance: P4 or R11 All stair nosings shall be: Slip Resistance: P4<br>Finish: Apply anti-slip coating "Intergrain UltraGrip" added to "UltraDeck" apply as per suppliers recommendations (Minimum 2 coats).<br>Sample: Install 1 metre width of decking area for review and approval by superintendent and/or landscape architect. | TBC |  |
| **LANDSCAPE WALLS** | | | | | |
| | **LW-01A** | RENDERED BLOCKWORK WALL<br><br>ON STRUCTURE | | TBC | No Image |
| **LANDSCAPE FIXTURES** | | | | | |
| | **LF-01** | BENCH SEATS | Description: Bench Seat<br>Dimenstions: TBC<br>Material: Powdercoated mild steel<br>Frame: TBC<br>Steel frame sizes TBC<br>Fixings: TBC<br>legs: TBC<br>Base plate: Refer to Stuctural Engineers Documentation.<br>Base plate dimension: Refer to Stuctural Engineers Documentation.<br>Submissions: Shop drawings to be issued for approval | TBC |  |
| | **LF-02** | GARDEN SEATS | Description: Garden Seats<br>Dimenstions: TBC<br>Material: Powdercoated mild steel<br>Frame: TBC<br>Steel frame sizes: TBC<br>Fixings: TBC<br>legs: TBC<br>Base plate: Refer to Stuctural Engineers Documentation.<br>Base plate dimension: Refer to Stuctural Engineers Documentation.<br>Submissions: Shop drawings to be issued for approval | TBC |  |
| | **LF-04A** | LARGE TABLE | Description: Large Table<br>Dimenstions: TBC<br>Material: Powdercoated mild steel<br>Frame: TBC<br>Steel frame sizes TBC<br>Fixings: TBC<br>legs: TBC GPo:<br>Allowance for 10no 2-phase power outlets at large table.<br>Base plate: Refer to Stuctural Engineers Documentation.<br>Base plate dimension: Refer to Stuctural Engineers Documentation.<br>Submissions: Shop drawings to be issued for approval | TBC |  |
| | **LF-04B** | MEDIUM TABLE | Description: Medium Table<br>Dimenstions: TBC<br>Material: Powdercoated mild steel<br>Frame: TBC<br>Steel frame sizes TBC<br>Fixings: TBC<br>legs: TBC<br>GPO: Allowance for 2no 2-phase power outlets per linear meter<br>Base plate: Refer to Stuctural Engineers Documentation.<br>Base plate dimension: Refer to Stuctural Engineers Documentation.<br>Submissions: Shop drawings to be issued for approval | TBC | Appearance to match above |
| | **LF-04B** | SQAURE TABLE | Description: Square Table<br>Dimenstions: TBC<br>Material: Powdercoated mild steel<br>Frame: TBC<br>Steel frame sizes TBC<br>Fixings: TBC<br>legs: TBC<br>GPO: Allowance for 2no 2-phase power outlets per linear meter<br>Base plate: Refer to Stuctural Engineers Documentation.<br>Base plate dimension: Refer to Stuctural Engineers Documentation.<br>Submissions: Shop drawings to be issued for approval | TBC | Appearance to match above |
| | **LF-06** | HIGH BENCH TABLE | Description: High Bench Table<br>Dimenstions: TBC<br>Material: Powdercoated mild steel<br>Frame: TBC<br>Steel frame sizes TBC<br>Fixings: TBC<br>legs: TBC<br>GPO: Allowance for 2no 2-phase power outlets per linear meter<br>Base plate: Refer to Stuctural Engineers Documentation.<br>Base plate dimension: Refer to Stuctural Engineers Documentation.<br>Submissions: Shop drawings to be issued for approval | TBC | Appearance to match above |
| | **LF-07** | HIGH BENCH SEAT | Description: Medium Table<br>Dimenstions: TBC<br>Material: Powdercoated mild steel<br>Frame: TBC<br>Steel frame sizes TBC<br>Fixings: TBC<br>legs: TBC<br>GPO: Allowance for 2no 2-phase power outlets per linear meter<br>Base plate: Refer to Stuctural Engineers Documentation.<br>Base plate dimension: Refer to Stuctural Engineers Documentation.<br>Submissions: Shop drawings to be issued for approval | TBC | Appearance to match above |
| | **LF-08** | LOW TIMBER CLAD SEATING | Description: Low timber clad seating<br>Overall Dimensions: varies<br>Timber Battens: 42mm x 42mm x 8mm spacings. Seasoned Spotted Gum. All exposed radius to be 5mm Frame:Painted steel frame 40 x 40 x 5mm angle. 40 x 40mm SHS braces core-drilled to base. 40 x 5mm back rest rail.<br>Fixings: 10 Guage 26mm countersunk 316 Stainless steel, Concealed, tamper proof screws.<br>Timber Finish: Pigmentless penetrative oil Frame powdercoated: Standard Finish* Black Satin (Night Sky) 19268 - satin<br>Allowance: Feature lighting integrated to underneath<br>Skate Deterrents: TBC<br>Submissions: Shop drawings to be issued for approval | TBC |  |

| | | | | | |
|---|---|---|---|---|---|
| | **LF-09** | TABLE TENNIS | Description: Table Tennis<br>Dimenstions: TBC<br>Material: Powdercoated mild steel | TBC |  |
| | **LF-10** | BIKE HOOP | Description: SS Bike hoop | TBC |  |
| | **LF-11** | LITTER AND RECYLING BIN | **LITTER BIN**<br>Type: +<br>Description: Brushed 304 grade stainless streel bin enclosure with cover<br>Dimension: W:600mm H:1310mm D:600mm Frame:<br>Brushed 304 Grade Steel Powdercoated:<br>Standard Finish* Black Satin (Night Sky) 19268 - satin<br><br>**RECYCLE BIN**<br>Type: Sturt Bin 120L Description:<br>Brushed 304 grade stainless streel bin enclosure with cover<br>Dimension: W:600mm H:1310mm D:600mm Frame:<br>Brushed 304 Grade Steel Powdercoated:Standard<br>Finish* Black Satin (Night Sky) 19268 - satin | Mos Urban Pty Ltd.<br>Suite 66, Level 6, Marlborough House 61 Marlborough Street, Surry Hills, NSW 2010 +61 2 9188 3459 www.mosurban.com |  <br>  |
| | **LF-12** | **BOLLARD FIXED TYPE 01** | Type: Bollard Fixed Insitu<br>Description: Bollard Fixed Insitu<br>Dimensions: 150NB – (168.3mm) x 3.40 / 7.11 / 10.97 Grade 304 Stainless Steel Pipe<br>Product: SSP150F C 10.97<br>Material: 304 grade polished stainless steel<br>Finish: Linished finish<br>Fixing: Sub-surface footing<br>Reflective Tape - Required to meet Univeristy Statement of requirments<br>Submissions: Shop drawings to be issued for approval | LEDA Security Products Pty Ltd<br>2/89 Enterprise Way, Sunshine West VIC, 3020<br>PO Box 1091, Sunshine West, VIC, 3020<br>03 8399 8150<br>Contact person:<br>Tom Rozsa<br>P: 03 8399 8150<br>M: 0425 743 633<br>E: tom.r@ledasecurity.com.au |  |
| | **LF-13** | VERTICAL TENSTION WIRES | Description: Vertical Tension Wires<br>Fixing:TBC | TBC |  |
| | **LF-14** | TREE GRATE | Selections TBC | TBC | No Image |
| **Landscape Softscape** | | | | | |
| | **SF-01** | LAWN | | | |
| | **GB-01** | AMENITY PLANTING<br><br>ON GROUND | Description: Amenity Planting on Ground<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: NA<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Civil Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **GB-02** | AMENITY PLANTING SHADE<br><br>ON STRUCTURE | Description: Amenity planting, on structure.<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **GB-03** | AMENITY PLANTING<br><br>ON STRUCTURE | Description: Green egde planting on structure<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |



| | | | | | |
|---|---|---|---|---|---|
| | **GB-04** | GREEN EDGE<br><br>ON STRUCTURE | Description: Green egde planting on structure<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **GB-05** | INDIGENOUS PLANTING<br><br>ON STRUCTURE | Description: Indigenous Planting on structure<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **GB-05** | INDIGENOUS PLANTING<br><br>ON STRUCTURE | Description: Indigenous Planting on structure<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **GB-06** | VEGGIE GARDEN<br><br>ON STRUCTURE | Description: Veggie Garden<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **GB-07** | VERTICAL GREENING<br><br>ON STRUCTURE | Description: Vertical Greening, grows to LF-12<br>Plant Species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on sturcture: NA<br>Topsoil Depth: 600mm<br>Soil Profile: LS-02, refer below<br>Tree Anchor: NA<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **TR-01** | LARGE TREE<br><br>ON GROUND | Description: Large Tree on ground<br>Tree species Selection: Refer to Design Report<br>Build up required on *structure* : NA<br>Setdown Required on structure: NA<br>Topsoil Depth: NA<br>Soil Profile: LS-02, refer below<br>Landscape build up: LB-01, refer Below<br>Tree Anchor: TA-01, refer Below<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| | **TR-02** | MEDIUM TREE<br><br>ON STRUCTURE | Description: Medium Tree on structure<br>Plant species Selection: Refer to Design Report<br>Build up required on structure: 600mm<br>Setdown Required on structure: 450mm<br>Topsoil Depth: NA<br>Soil Profile: LS-02, refer below<br>Landscape build up: LB-01, refer Below<br>Tree Anchor: TA-01, refer Below<br>Sub-surface Drainage Design: Refer to Hydraulics Engineer Engineers Drawings and Specification<br>Irrigation: Refer Irrigation Consultants Documentation | Supplier TBC | No Image |
| **LANDSCAPE BUILD UP** | | | | | |
| | **LB-01** | LANDSCAPE BUILD UP TYPE 1 | Type: LANDSCAPE BUILD UP TYPE 1<br>Description: Load bearing structure with soil holding capacity<br>Materials:<br>- Stratavault 600mm x 600mm 100% recycled polymers<br>- Filter fabric - Hydrophilic non-woven geotextile as per supplier recommendations<br>- Drainage cell 20mm Flo-Cell® drainage cell or approved equivalent<br>- Waterproofing layer. Refer to architects.<br>Finish: Surface over varies refer to pavements and surfaces plans and details<br>Hold Points: Adhere to HOLD POINTS as specified.<br>Submissions:<br>- 1 Unit sample<br>- Set out min. 2m2 area. | Stratavaults:<br>Citigreen<br>821 Pacific Highway<br>Sydney, NSW 2067<br>Ph: 02 6578 8250<br>Email: info@citygreen.com<br>Geo-fabric:<br>Geofabrics Australasia, 83-93 Canterbury Road, Braeside, VIC 3195. Ph. (03) 8586 9111<br><br>Drainage Cell:<br>Atlantis, 3/19-21 Gibbes St, Chatswood<br>NSW 2067. 1300 38 28 38 |  |
| **SOIL PROFILES** | | | | | |
| | **LS-01** | SOIL FOR IRRIGATED LAWN | Topsoil Type: Engineered growing media. Refer Technical Specification.<br>Topsoil depth: Varies, refer drawings. Minimum depth 200mm<br>Structural soil support: Geoweb 200mm Geoweb Slope Protection System with Tendons & ATRA Anchor Connection installed to manufacturers requirements.<br>Sub-soil: Structural foam void former, depth as required to achieve finished levels. Refer Civil Engineer's drawings.<br>Geofabric: Bidim A14. Refer Landscape Technical Specification.<br>Irrigation: Refer to irrigation drawings<br>Structural slab and waterproofing: Refer to Structural Drawings<br><br>Hold Points: Adhere to HOLD POINTS as per Technical Specification.<br>Submissions:<br>Sample: 1 Litre bag<br>Testing: Provide soil testing compliance certificates as specified. | |  <br>  |

| | | | | | |
|---|---|---|---|---|---|
| | **LS-02** | SOIL FOR IRRIGATED GARDEN BEDS AND TREE PLANTING | Topsoil Type: Engineered growing media. Refer Technical Specification.<br>Topsoil depth: Varies, refer drawings.<br>Structural soil support: Stratvaults<br>Sub-soil: Structural foam void former, depth as required to achieve finished levels. Refer Civil Engineer's drawings.<br>Geofabric: Bidim A14. Refer Landscape Technical Specification.<br>Structural slab and waterproofing: Refer to Structural Drawings<br>Testing: Provide compliance certificates as specified.<br>Hold Points: Adhere to HOLD POINTS as specified.<br>Submissions:<br>Sample: 1 Litre bag<br>Testing: Provide compliance certificates as specified. | Stratavaults:<br>Citigreen<br>821 Pacific Highway<br>Sydney, NSW 2067<br>Ph: 02 6578 8250<br>Email: info@citygreen.com |  |
| | **TA-01** | TREE ANCHORING | Type: Fytogreen Root Ball Kit - 3 Leg Deadman System<br>Product Code: Trees 2.5 - 4.5m - FRF1DMM; Tree 4.5 - 7.5m - FRF2DMM<br>Rootball Securing: Fyto-Mat | Fytogreen Australia Pty Ltd<br>3 Webbs Lane, Somerville,<br>Victoria, 3912<br>Ph: 1300 182 341<br>Email: info@fytogreen.com.au |  |

# APPENDIX C

## Shadow Diagrams

# WSU – Bankstown City Campus - Shadow Comparison Study

## LEP Compliant Model

Total Council GFA: 16,550sqm
Total NLA: Approx. 15,150sqm
Total FECA: Approx. 20,270sqm
FSR: 4.5

Height: Approx. 53m



## BCC Proposal

Total Council GFA: 29,266sqm
Total NLA: 26,200sqm
Total FECA: 42,140sqm
FSR: 8:1

Height: 83m



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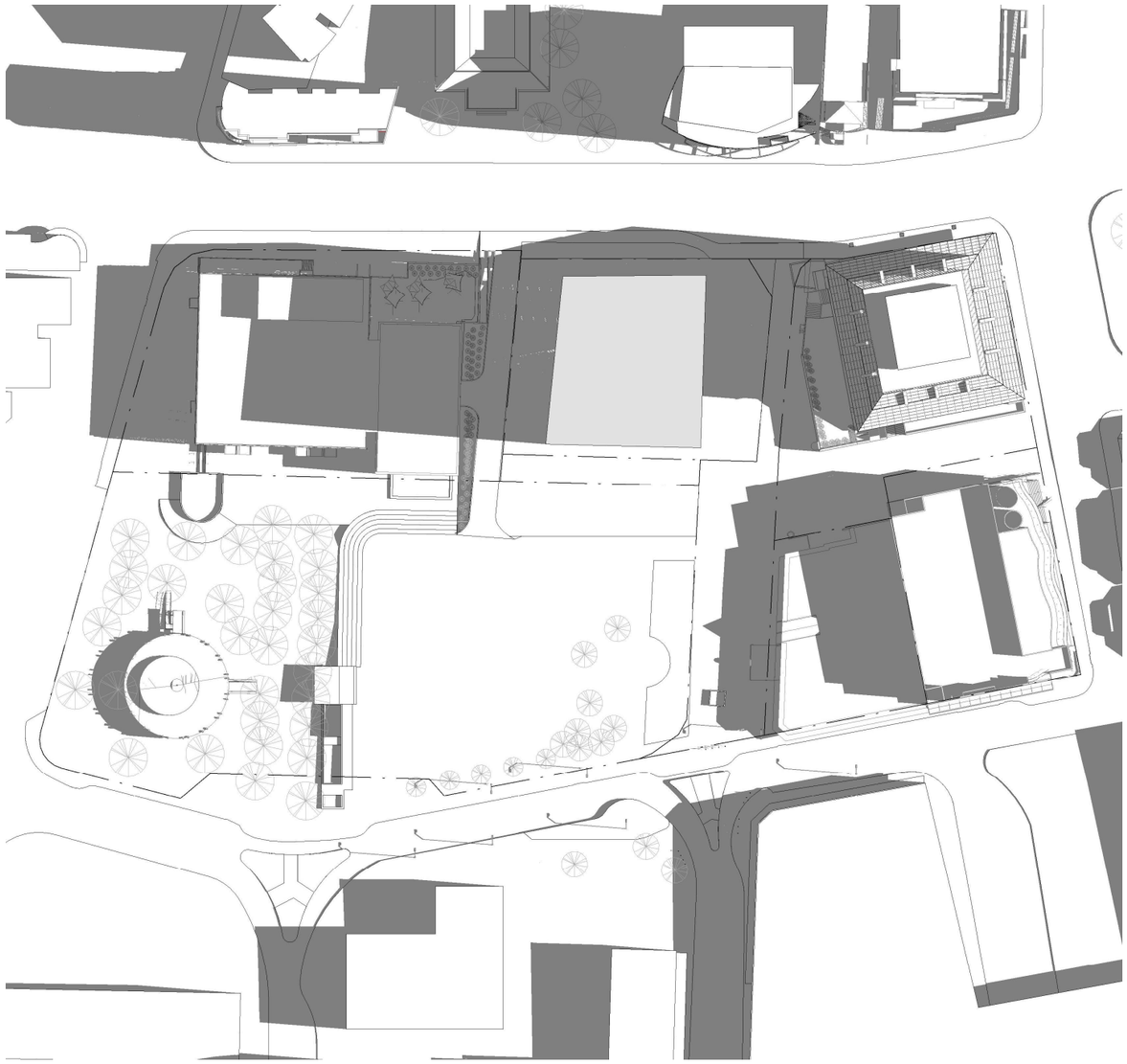

BCC Proposal



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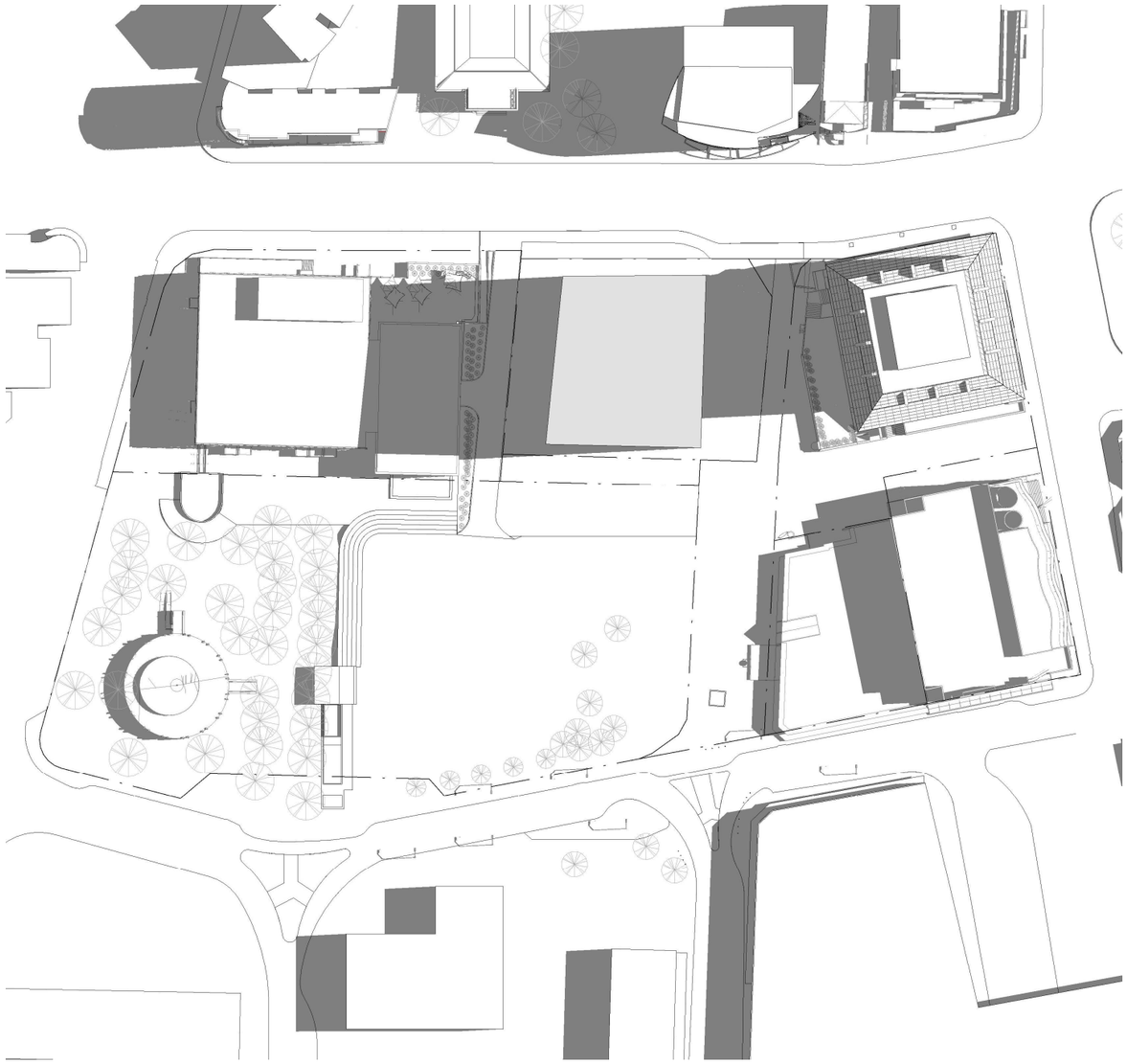

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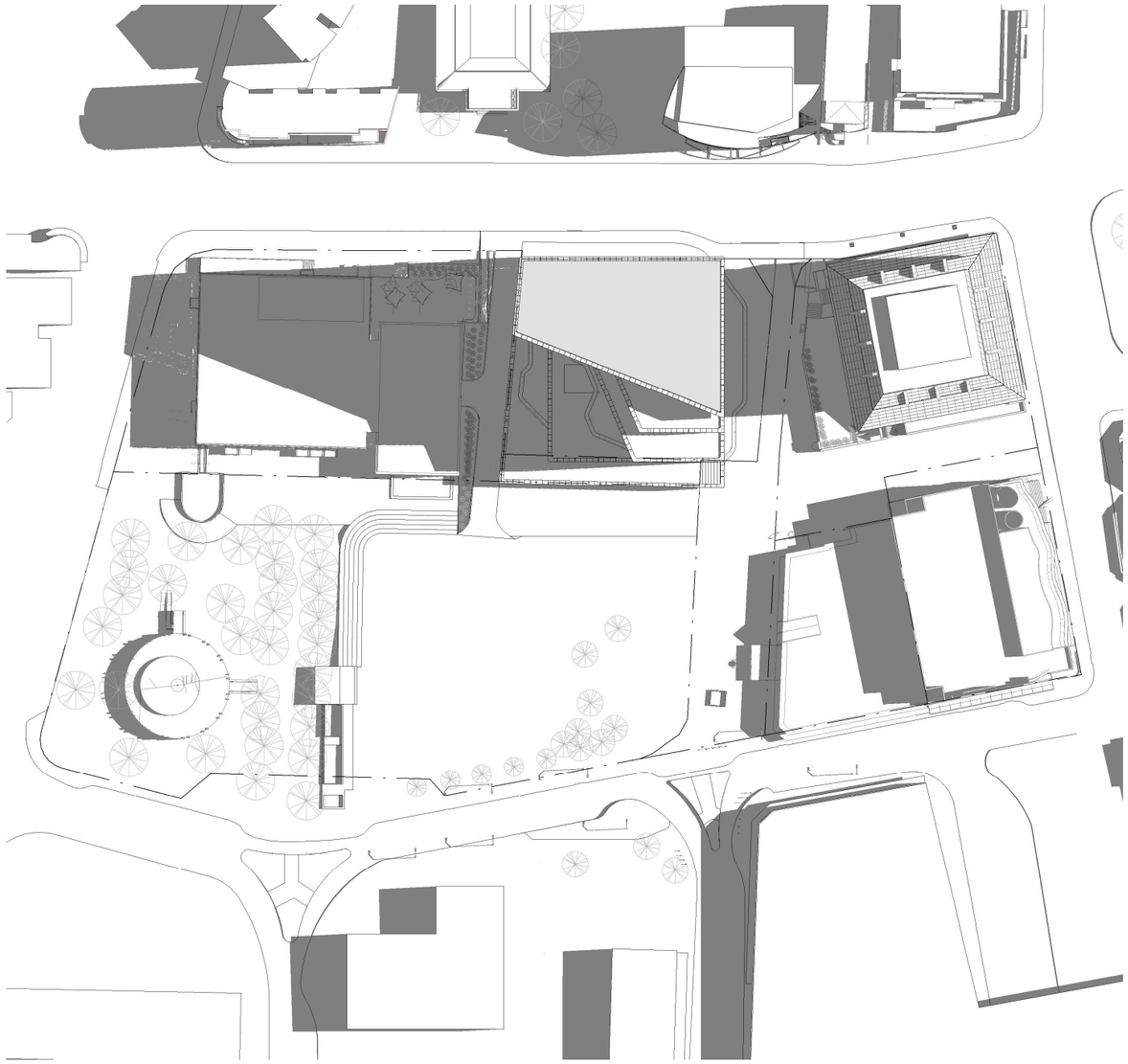

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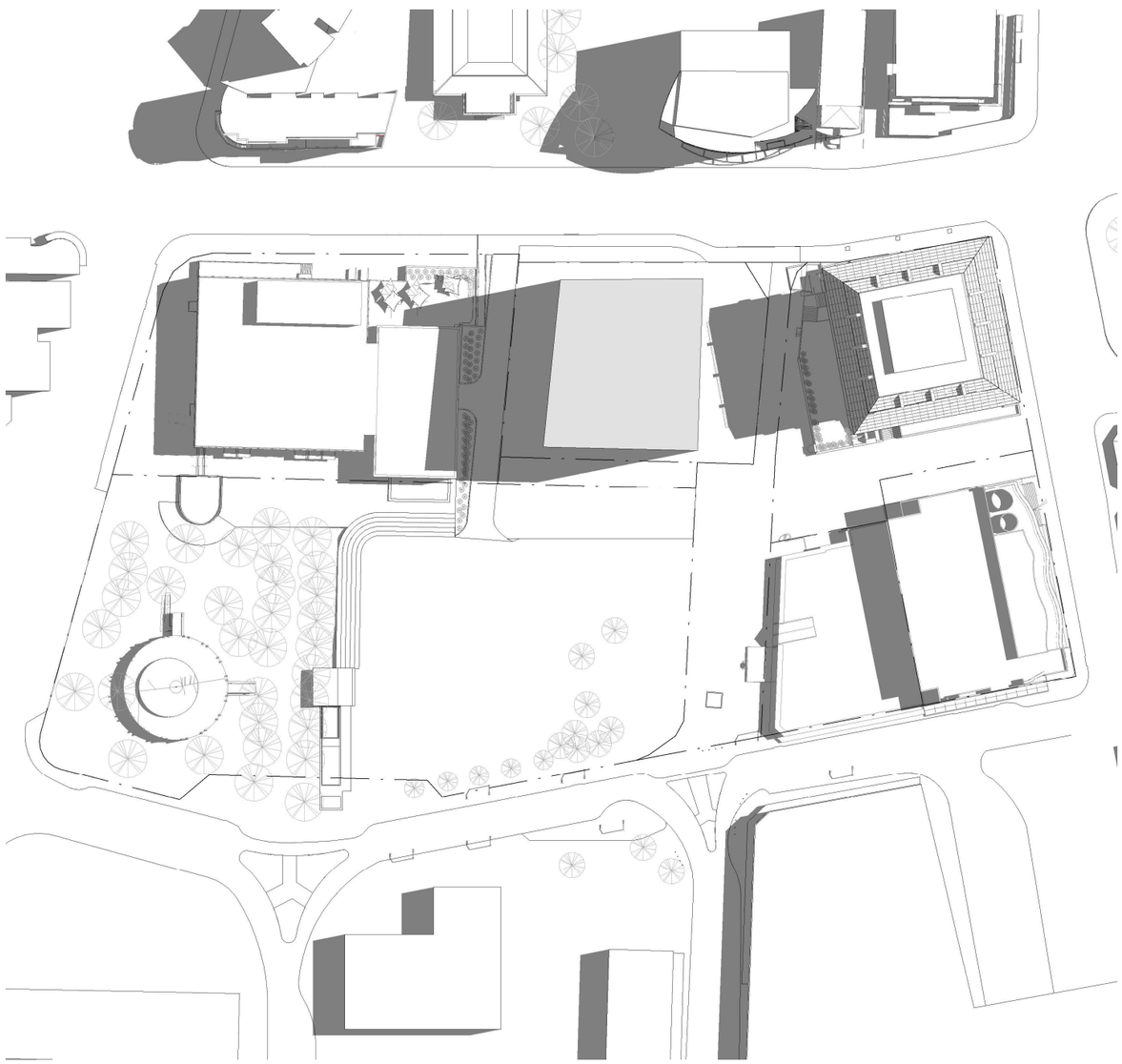

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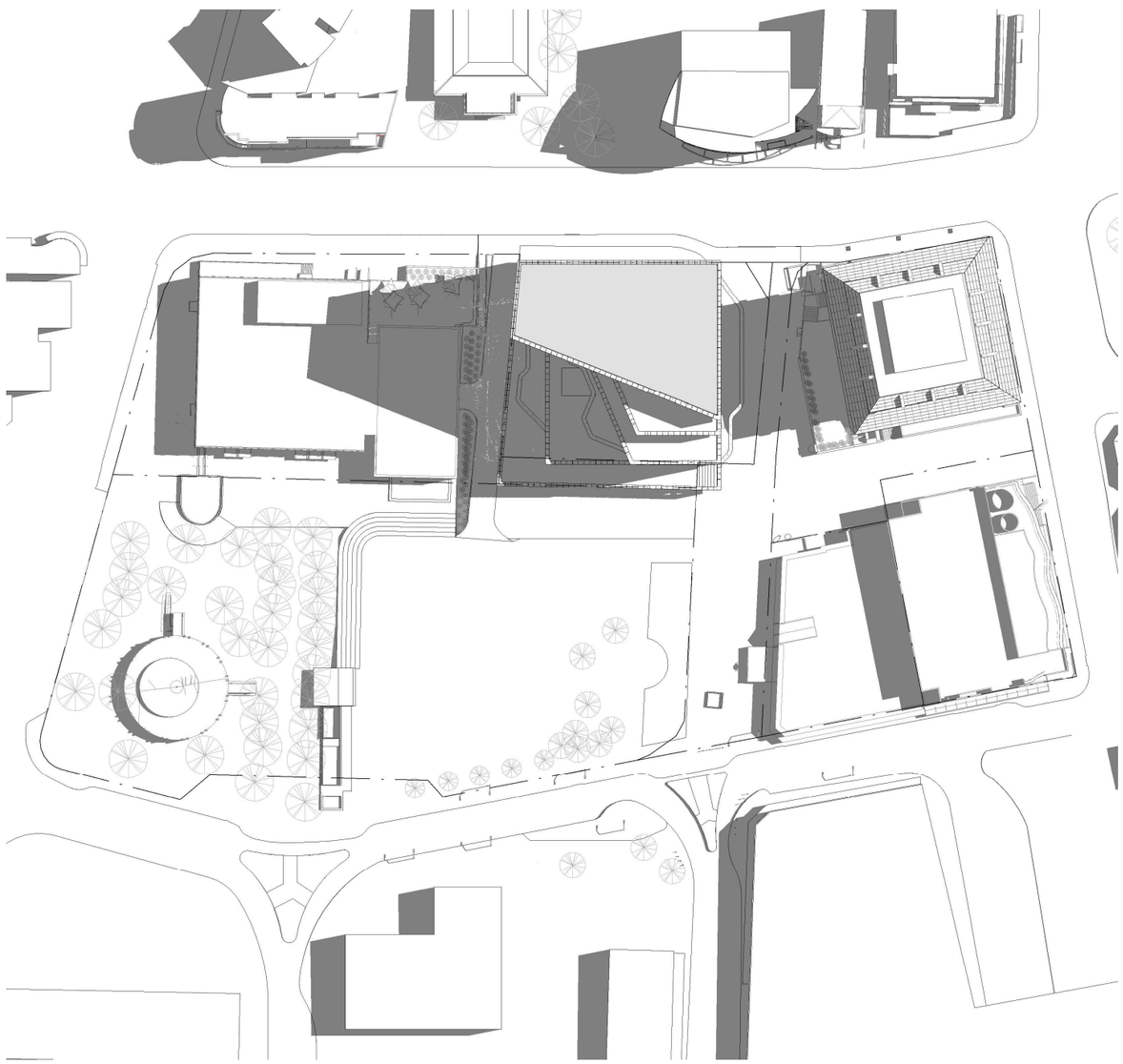

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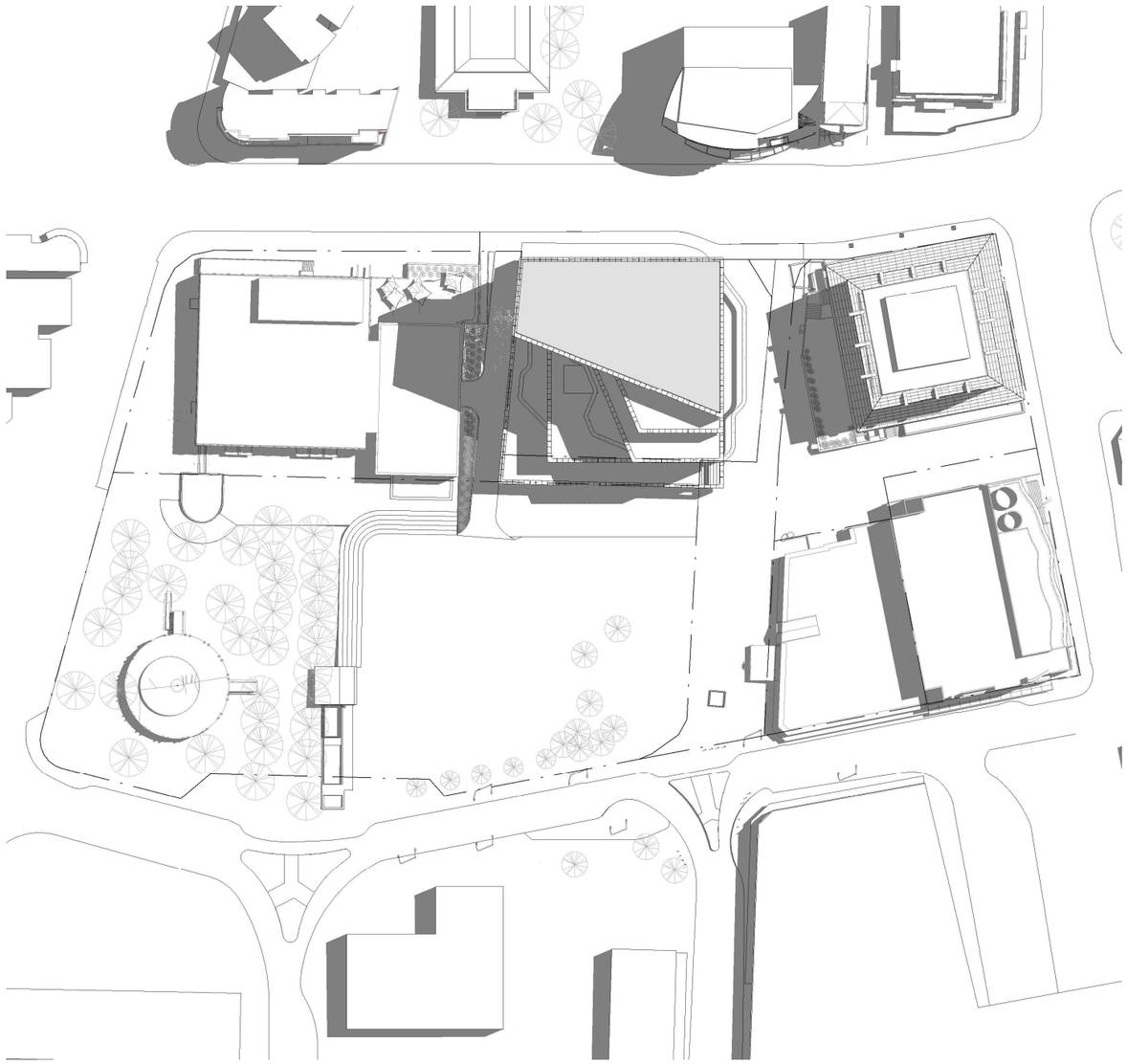
BCC Proposal



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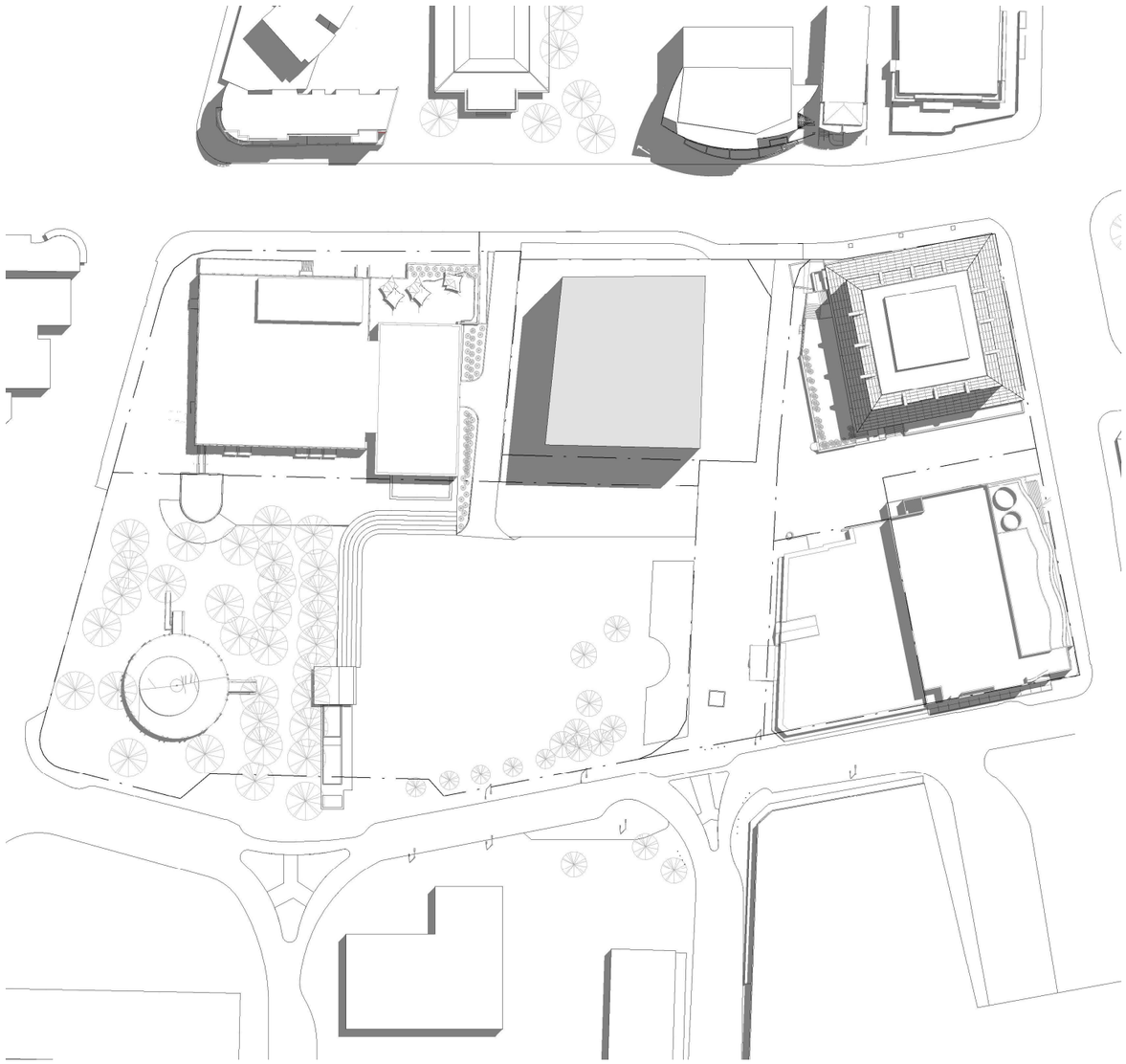

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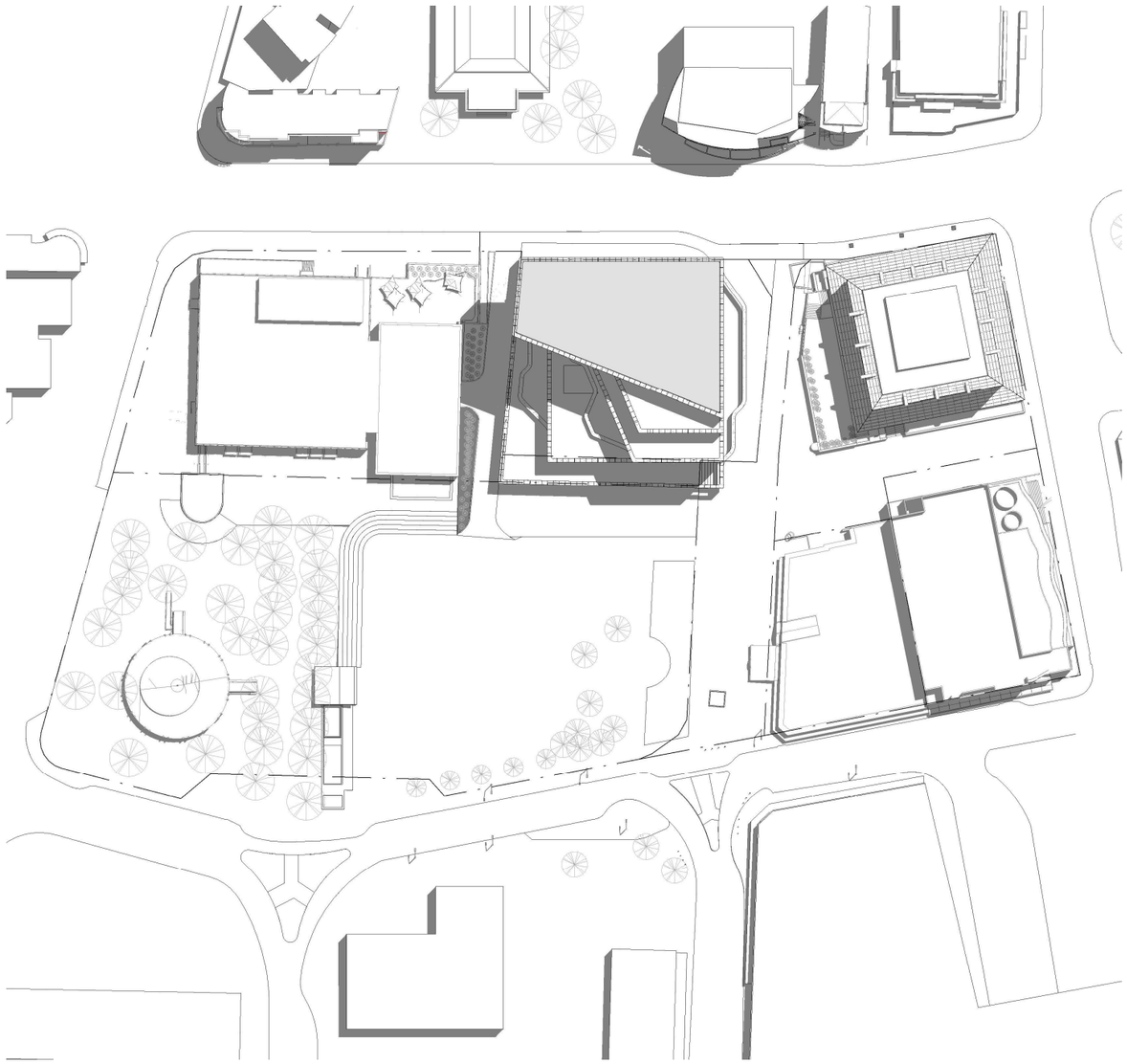

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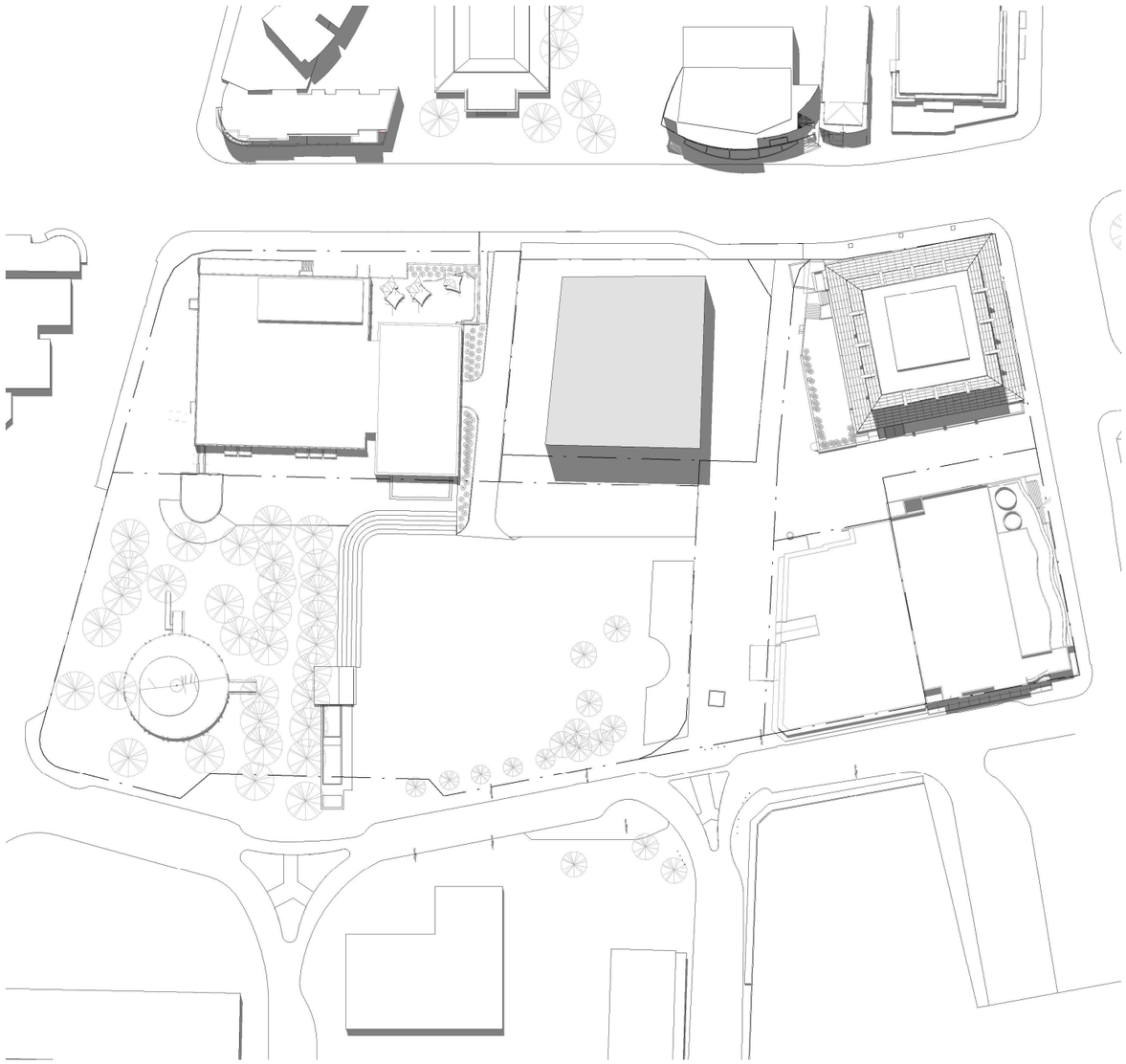

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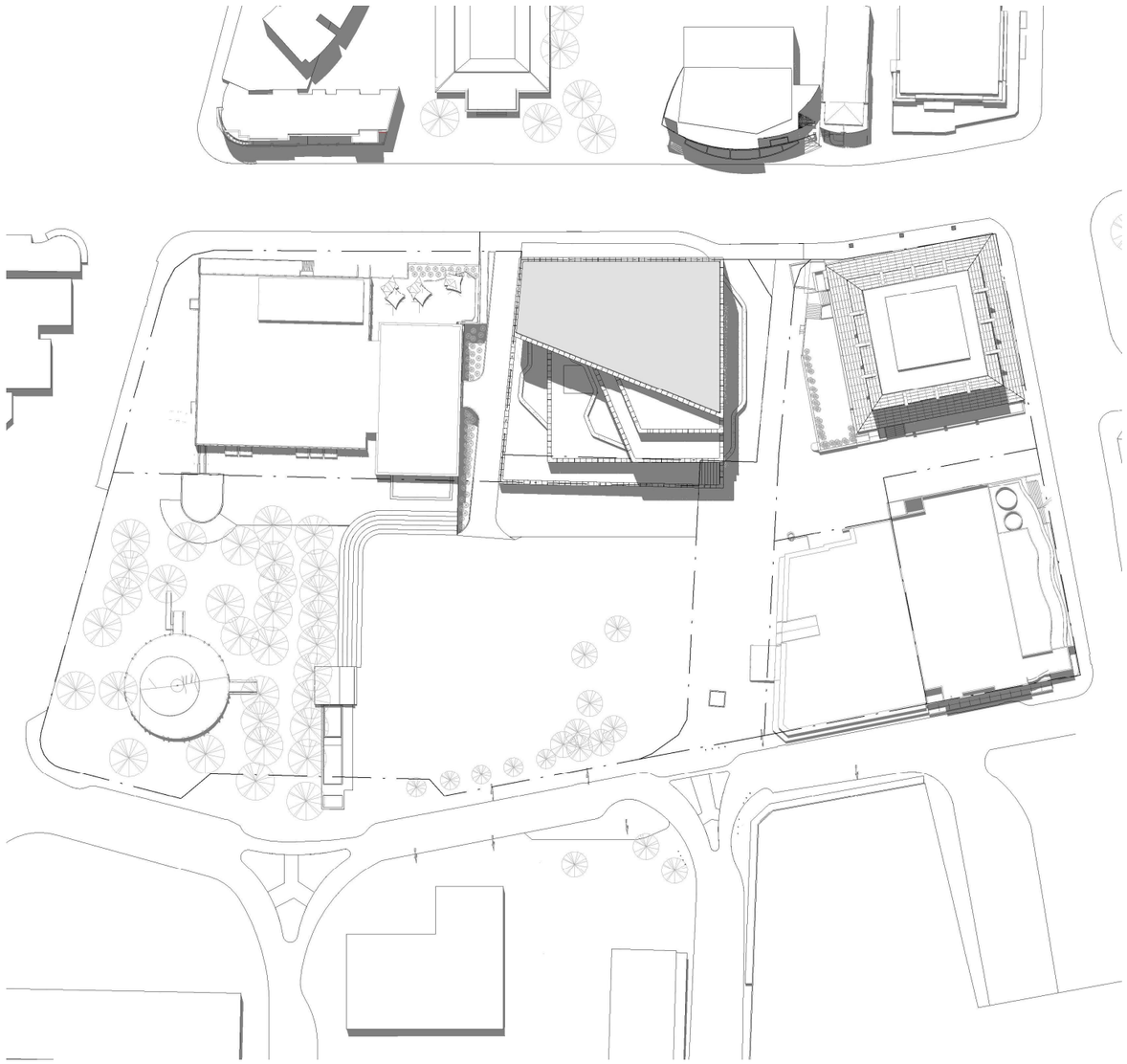

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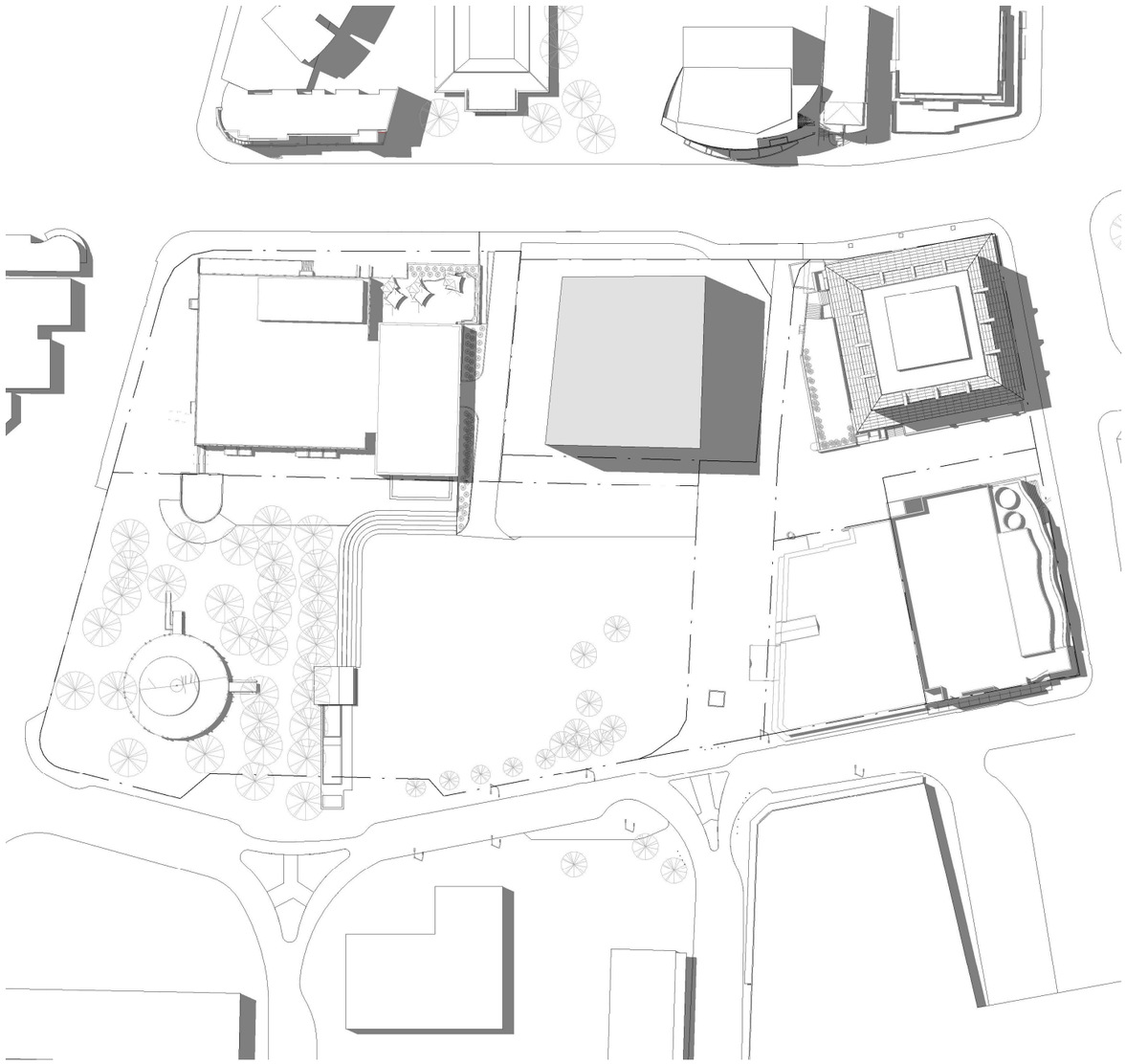

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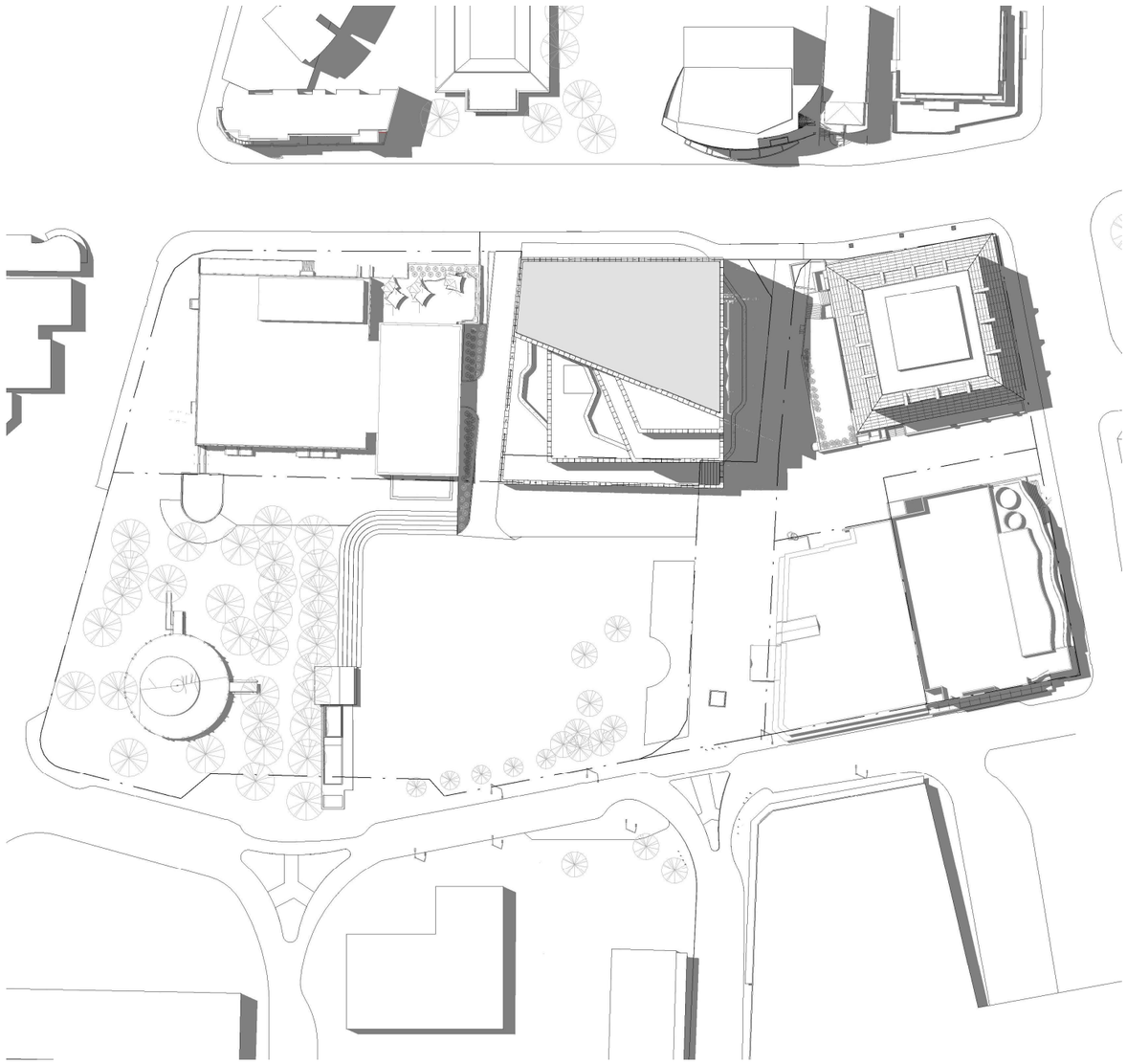

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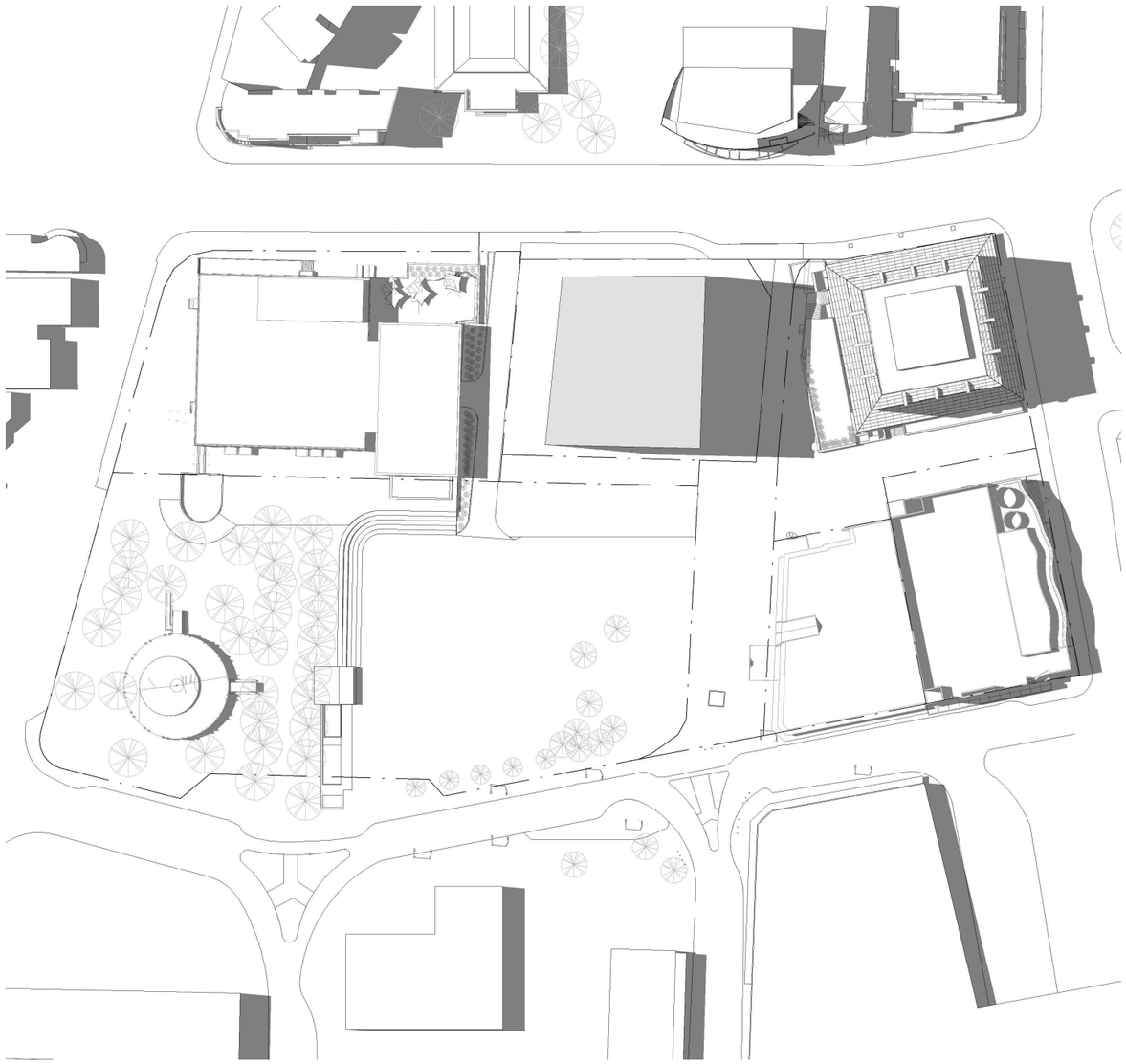

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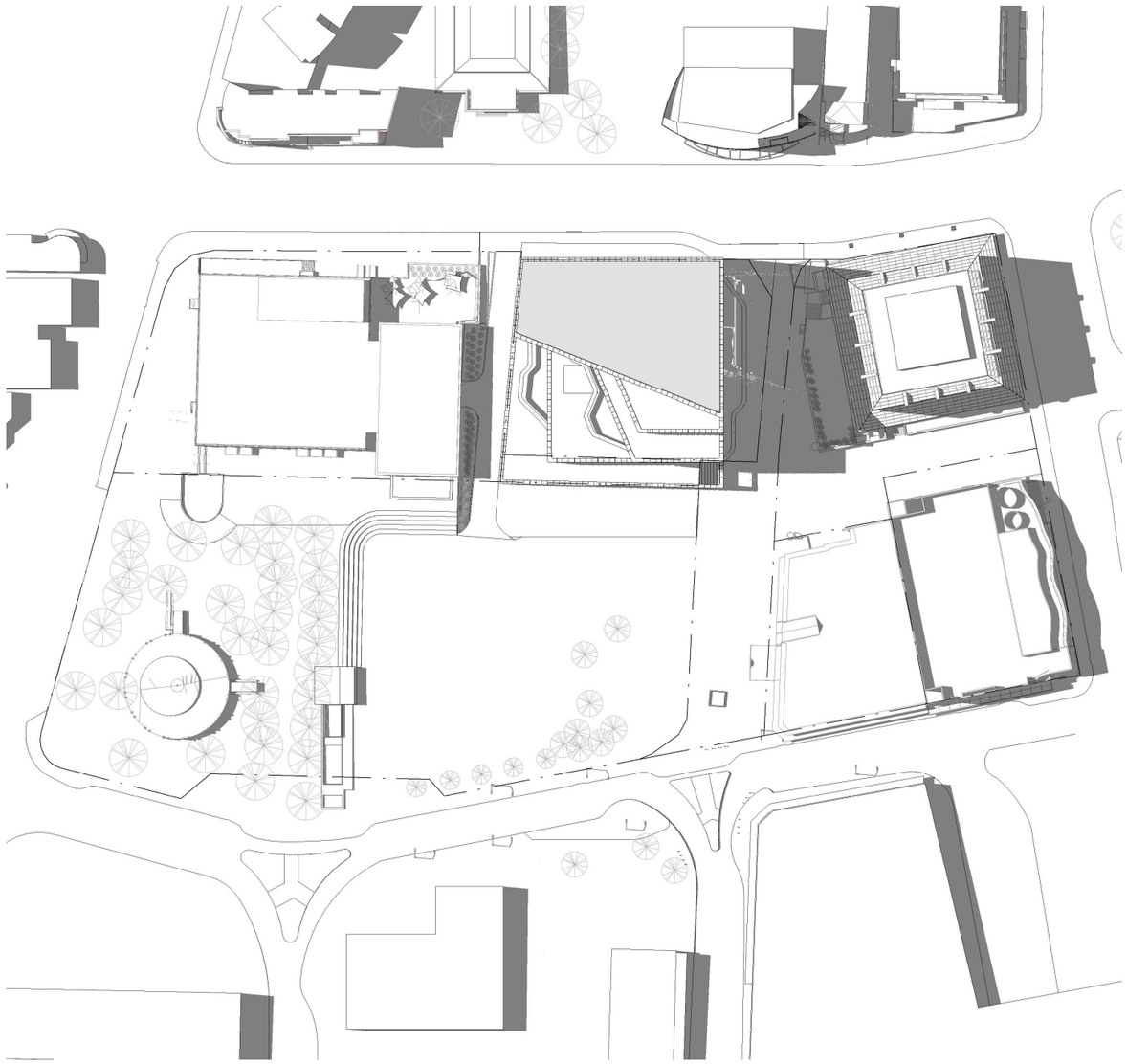

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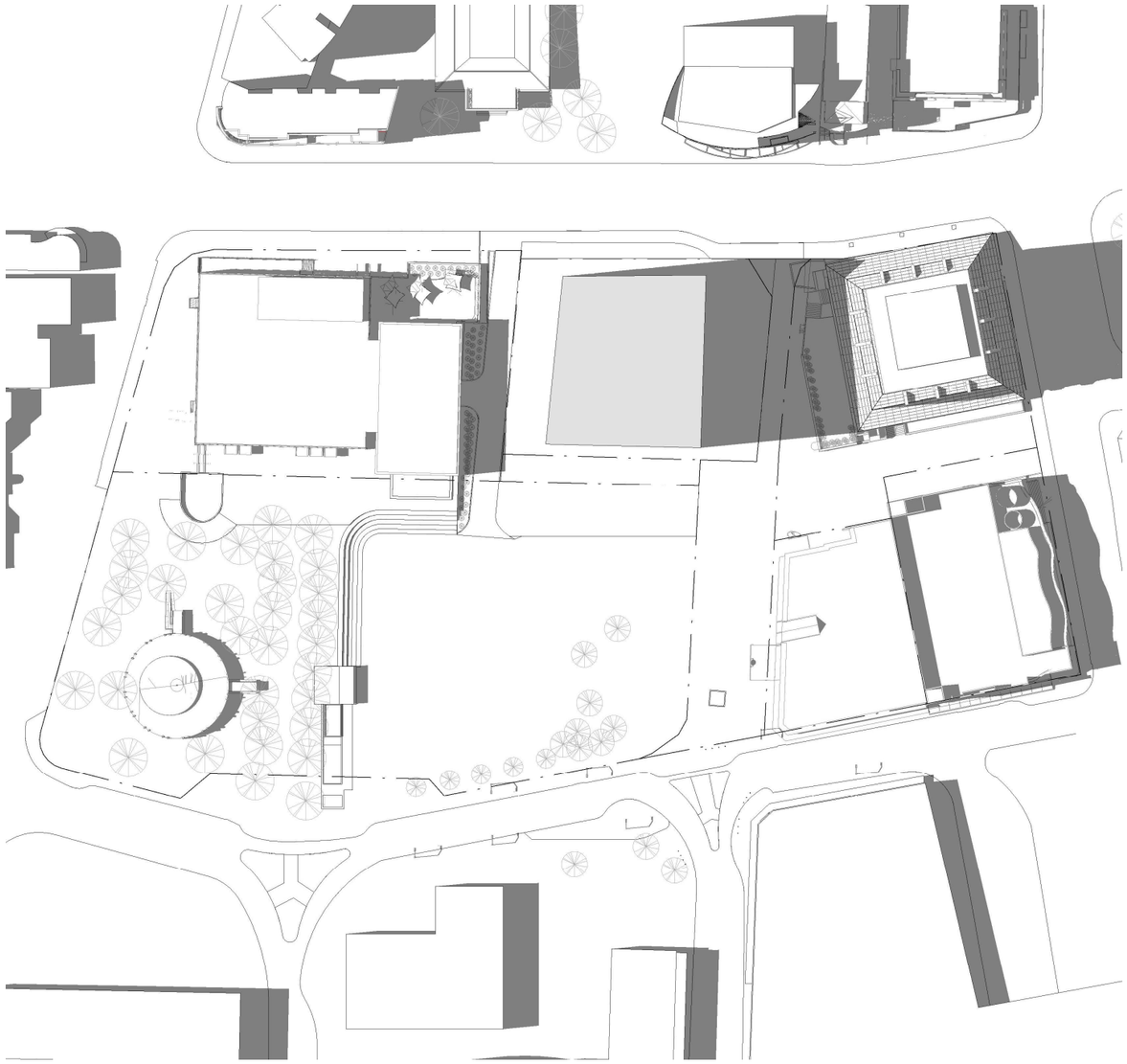

BCC Proposal



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LEP Compliant Model



BCC Proposal



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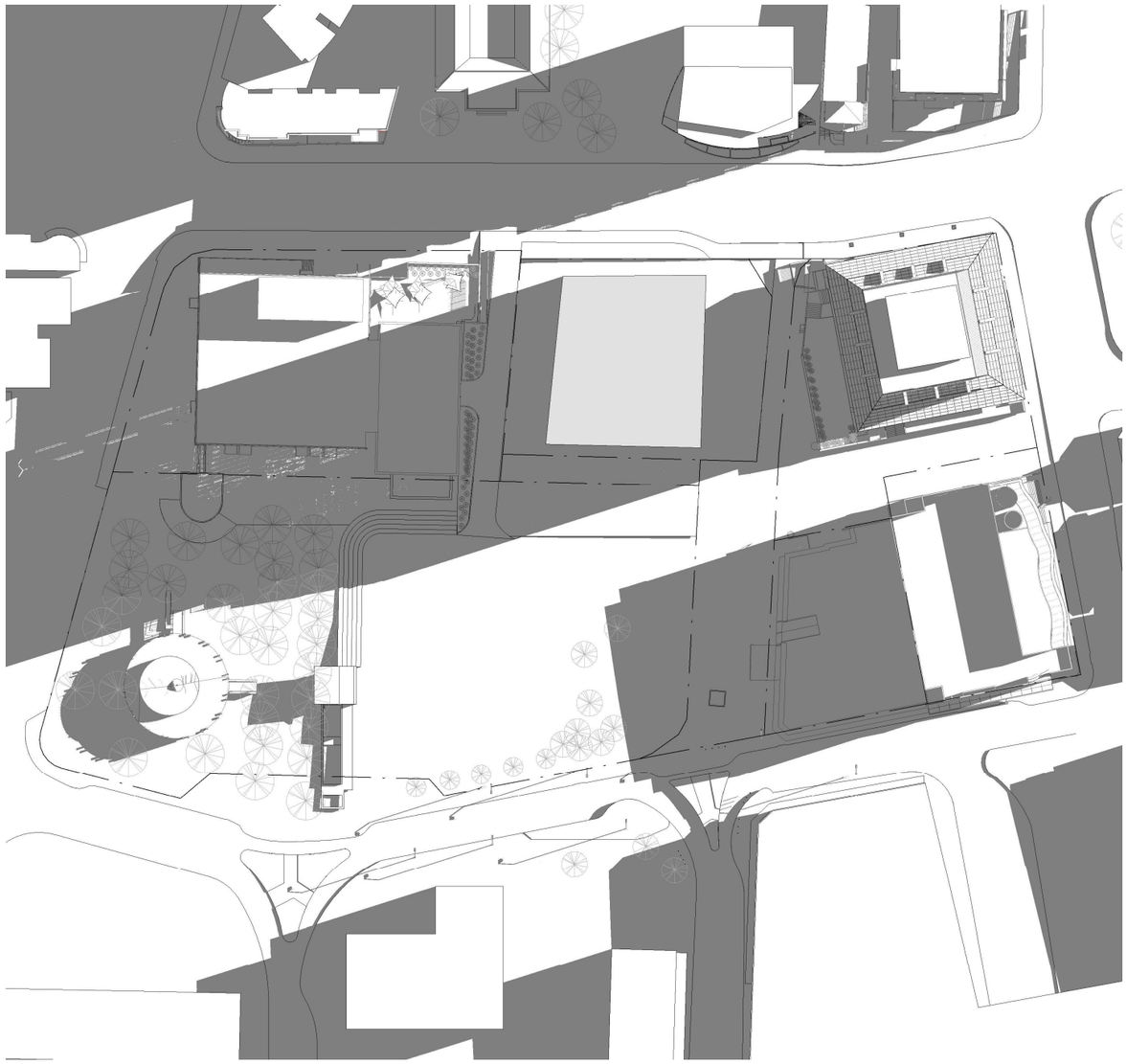

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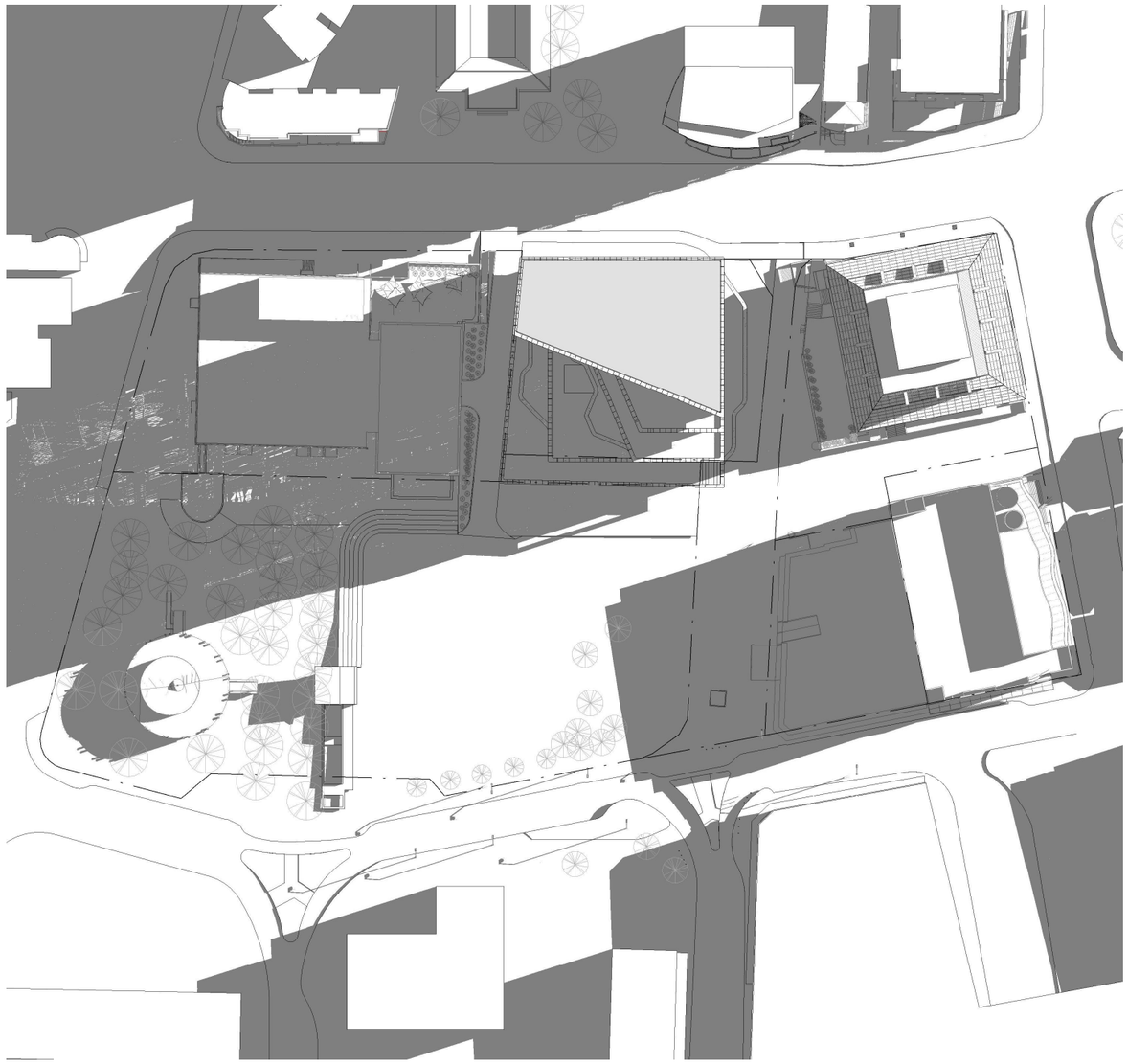

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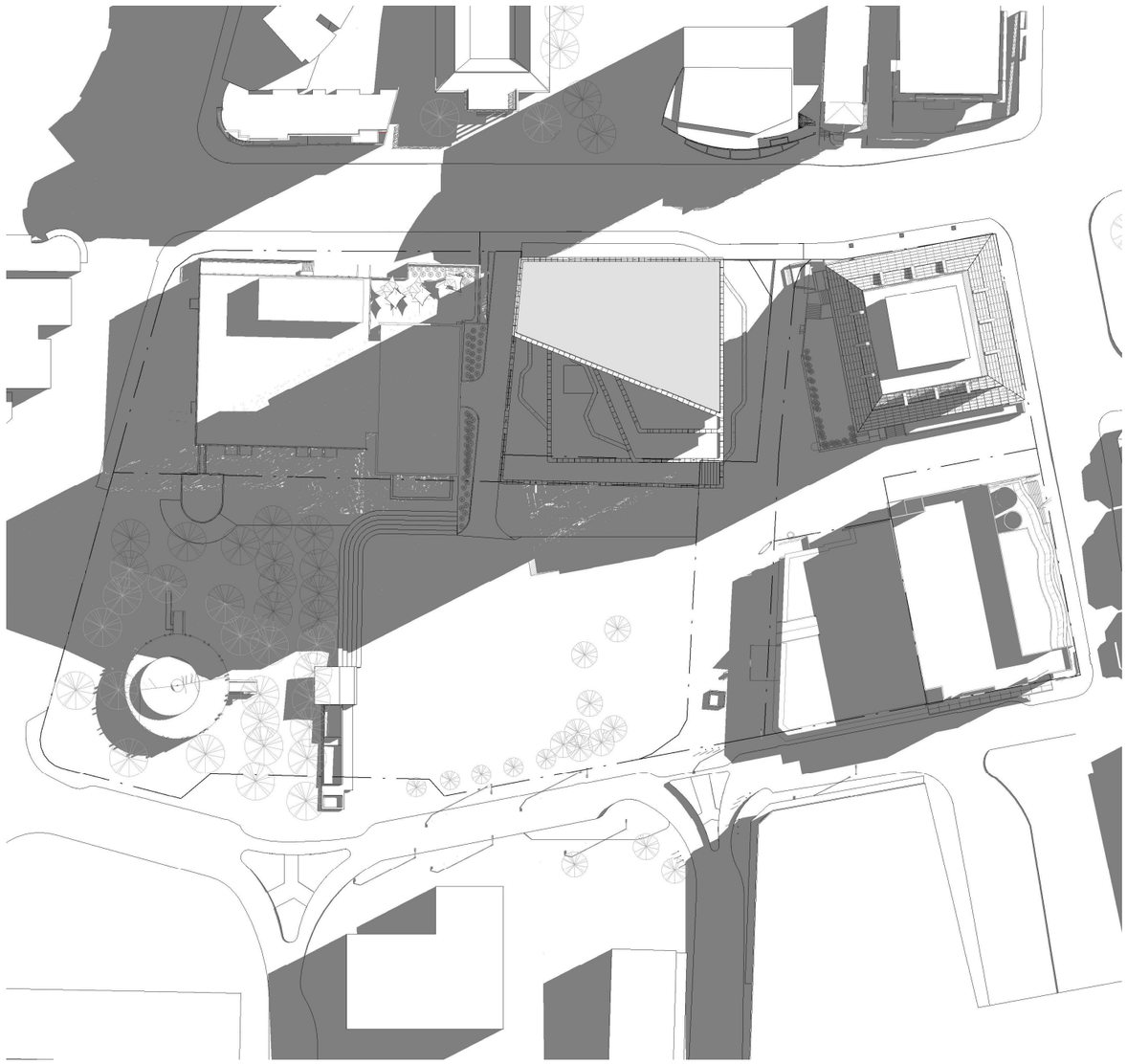

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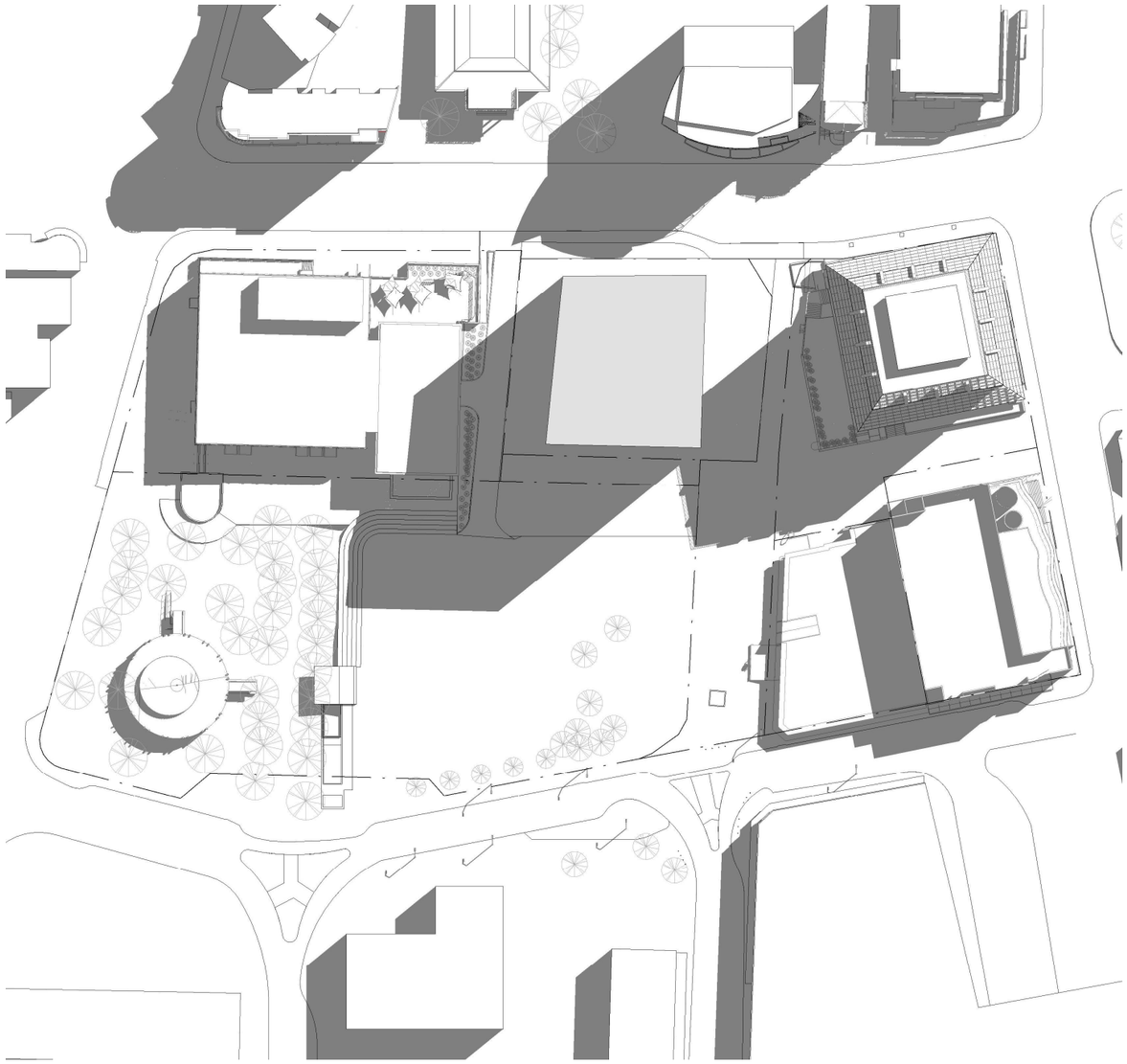

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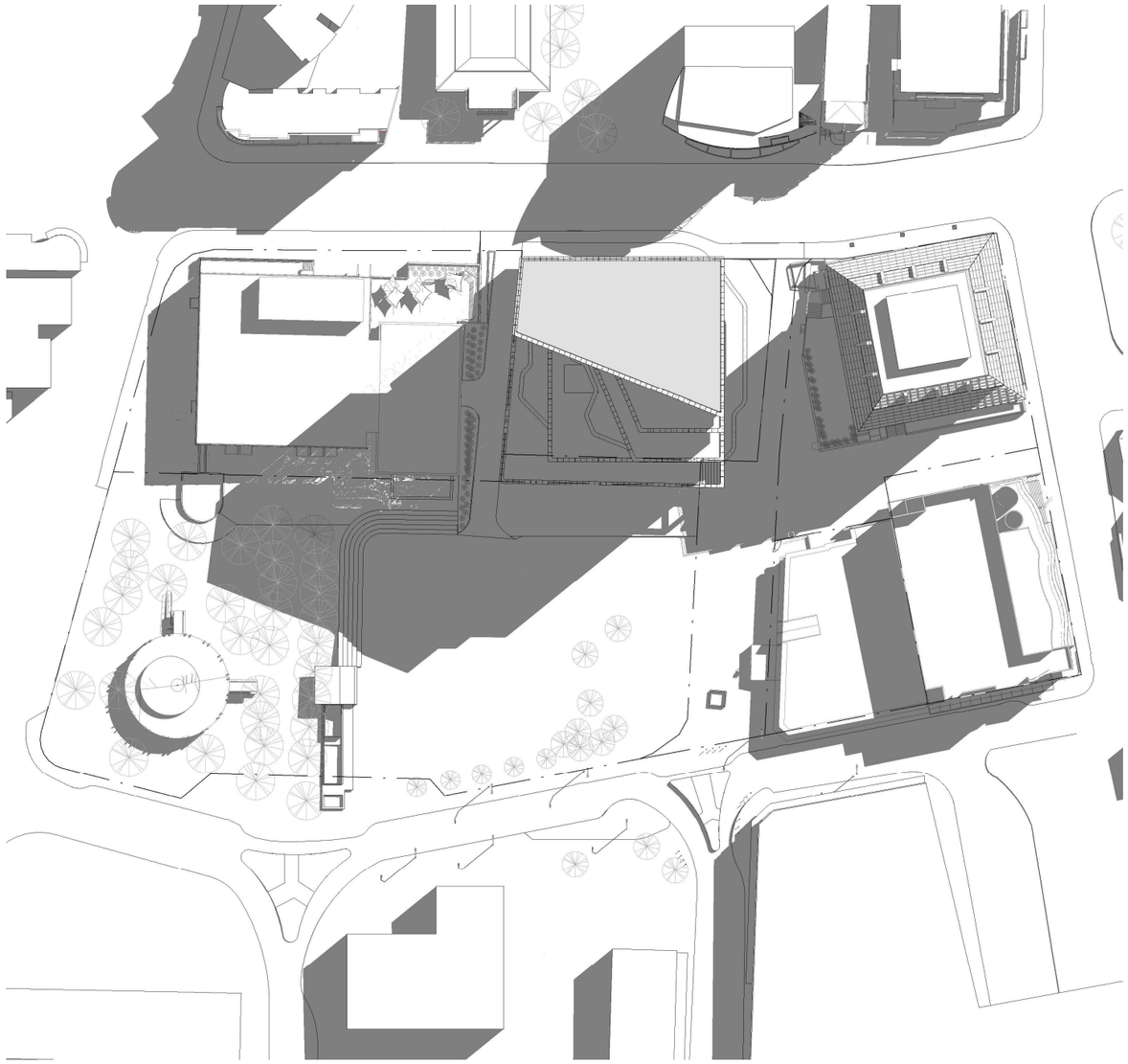

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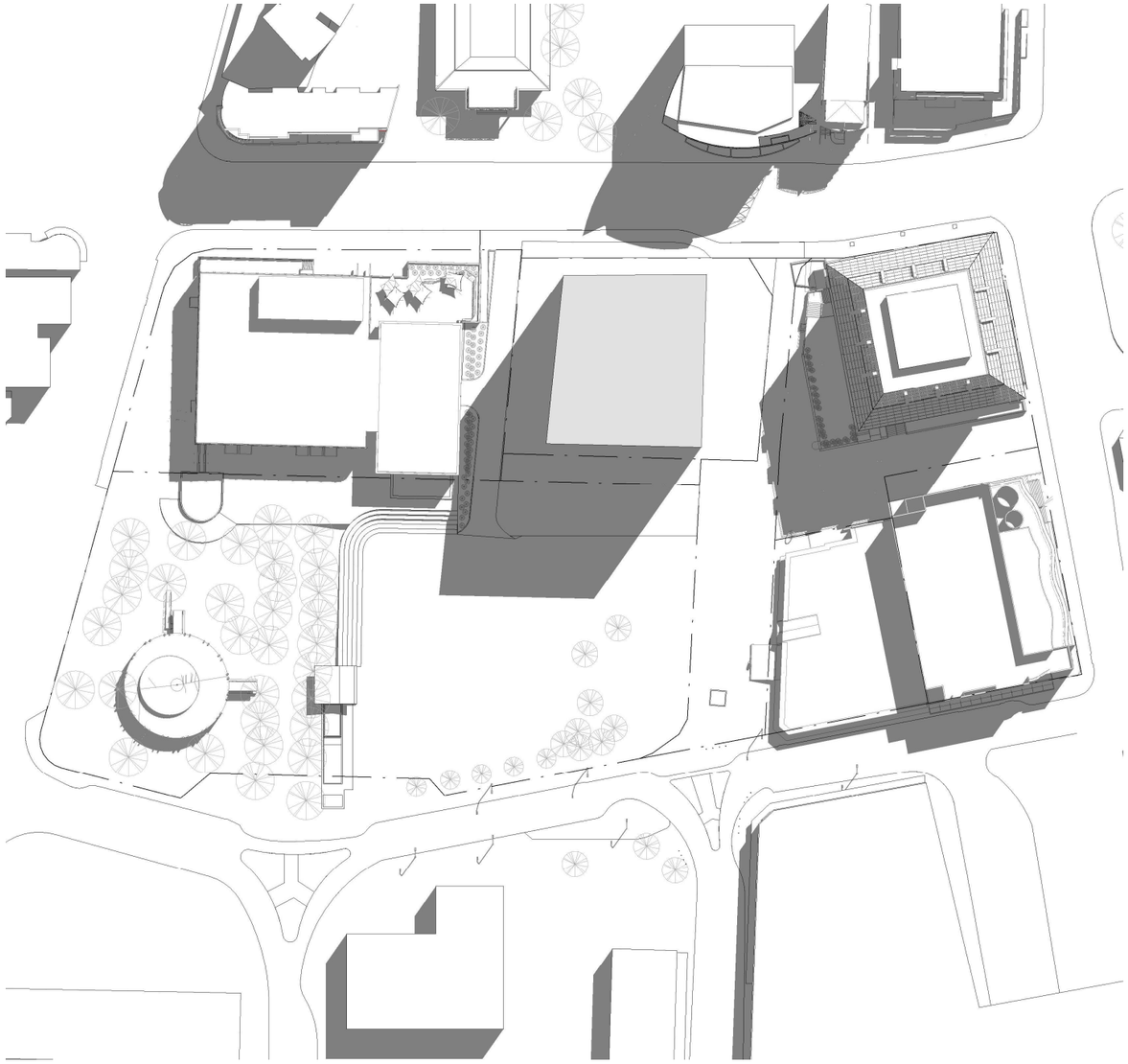

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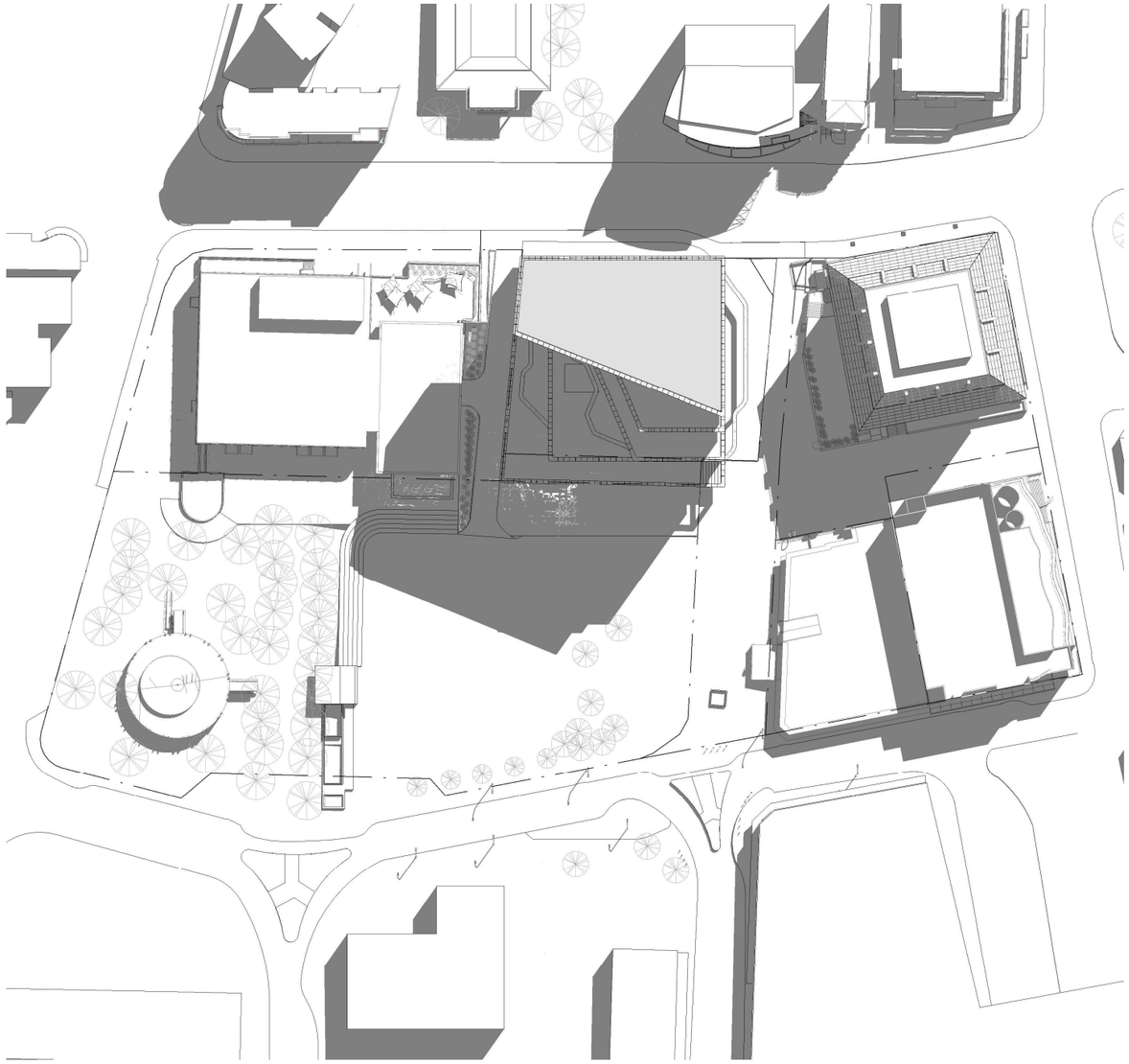

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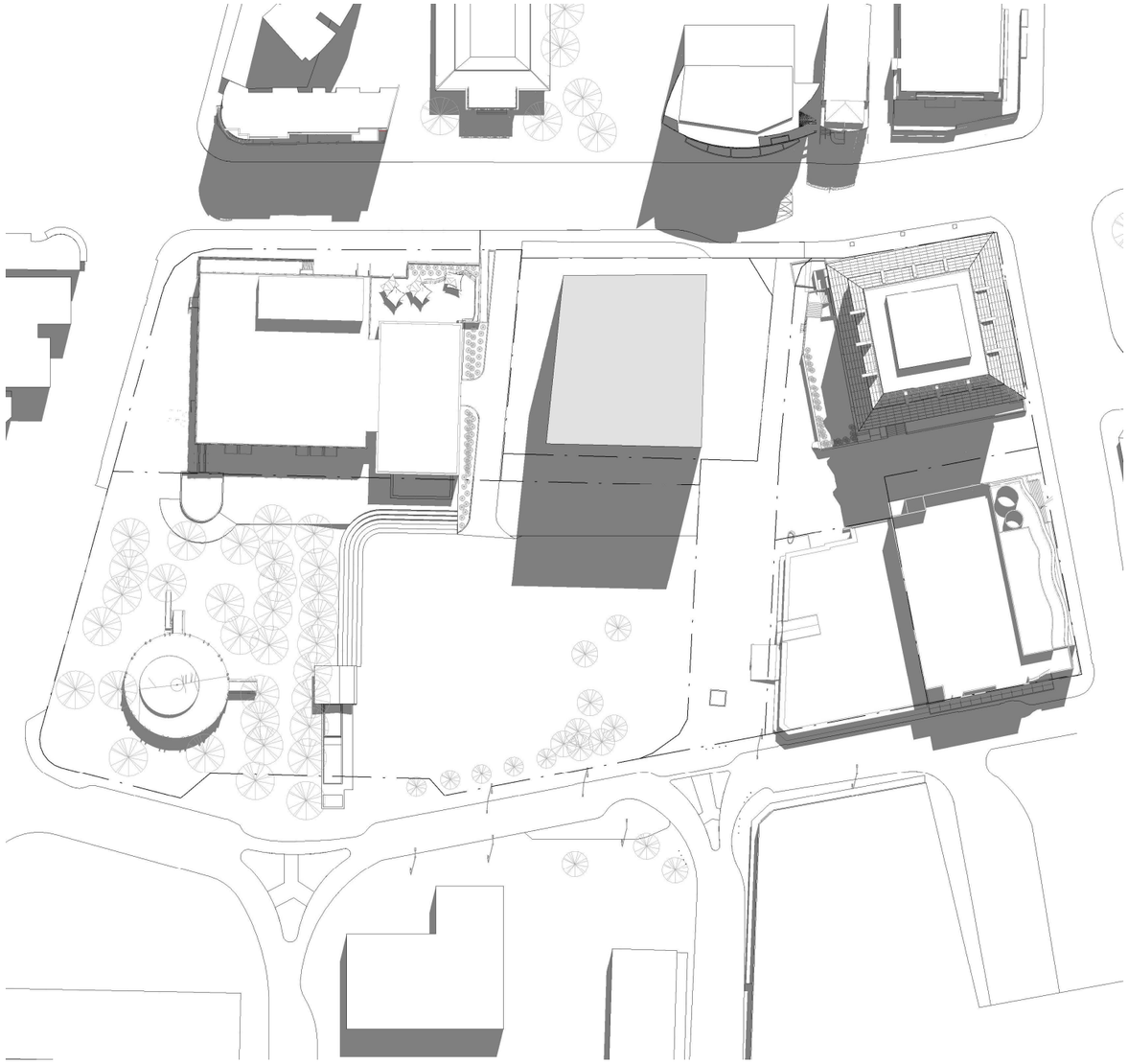

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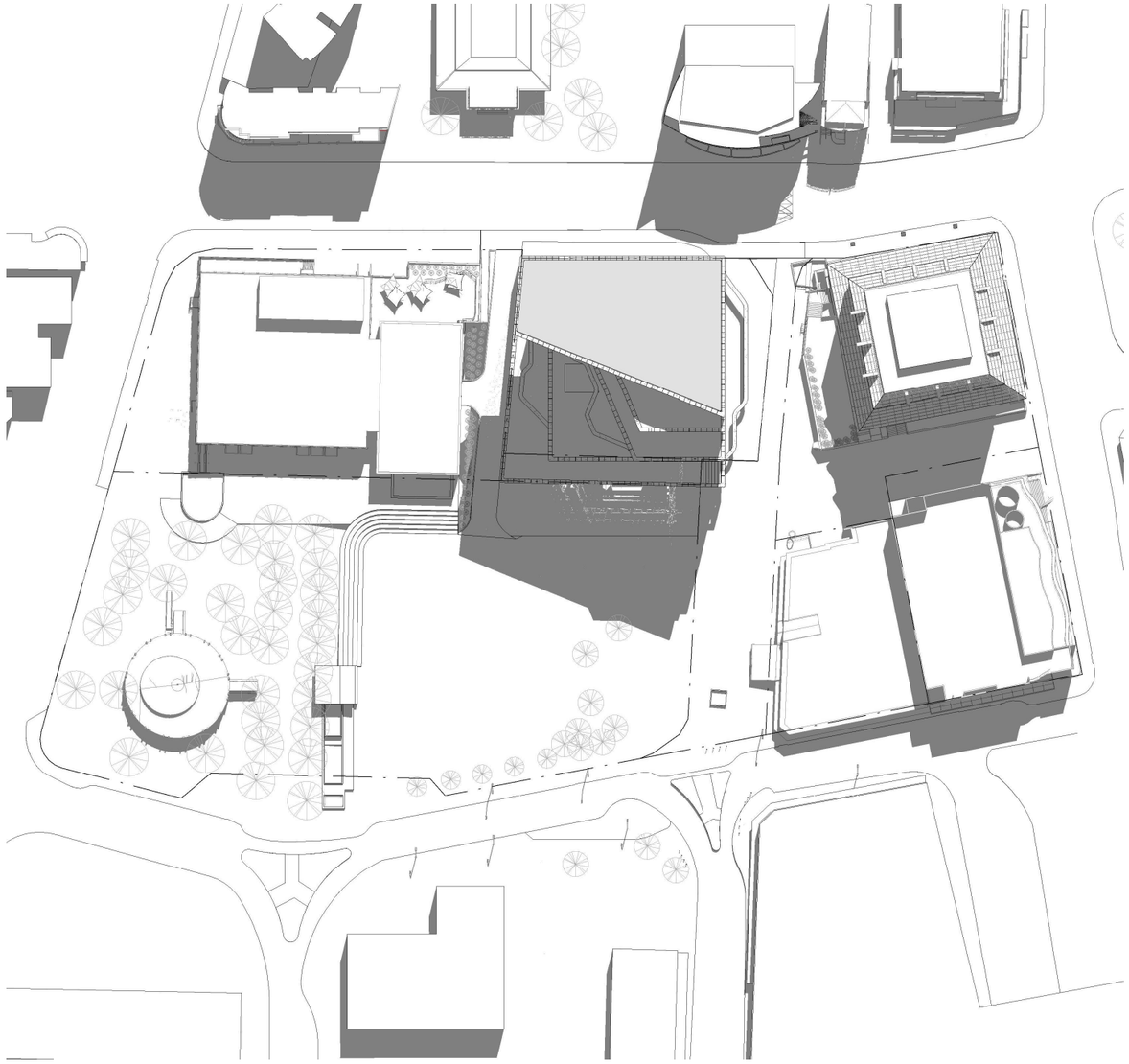

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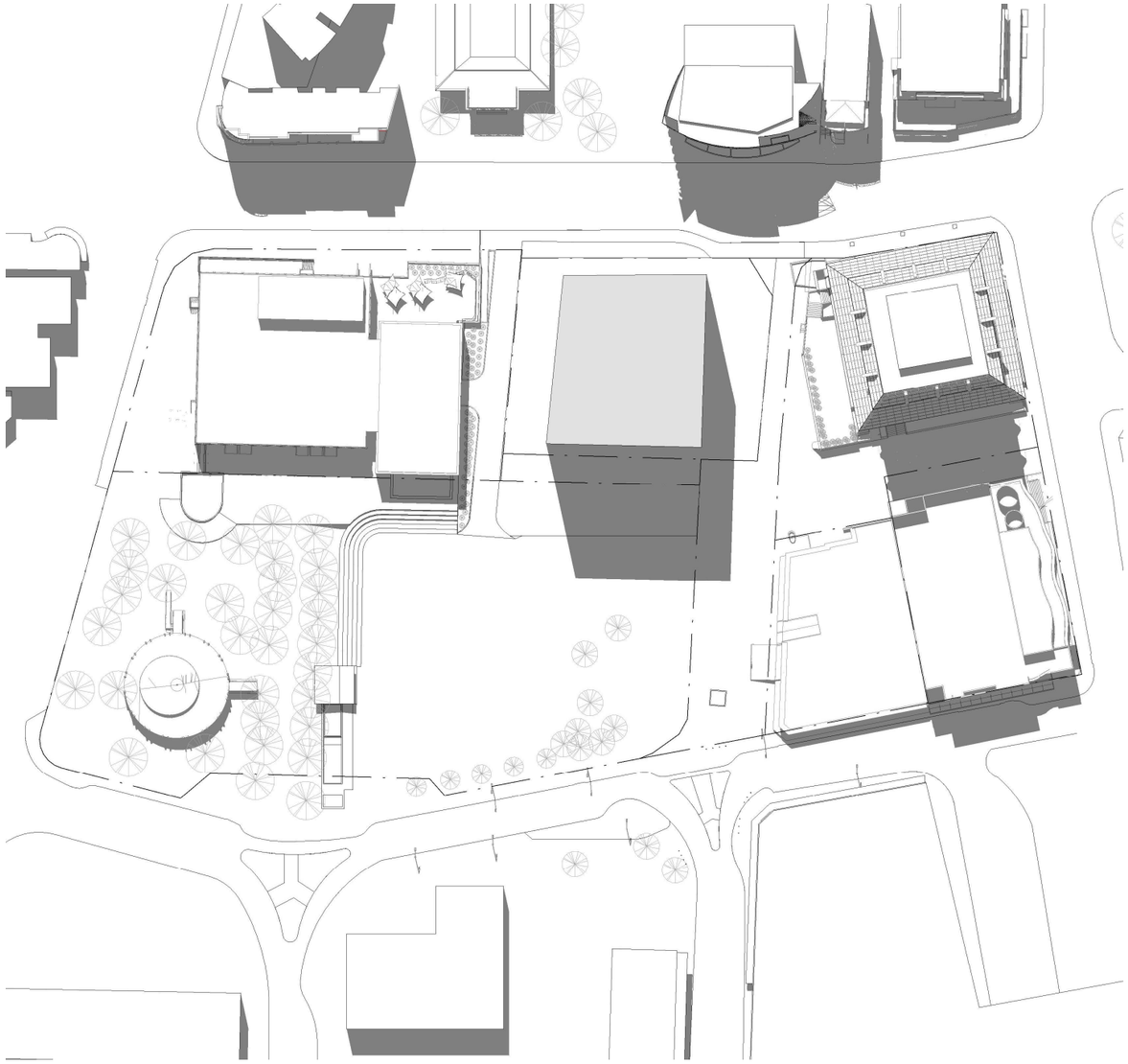

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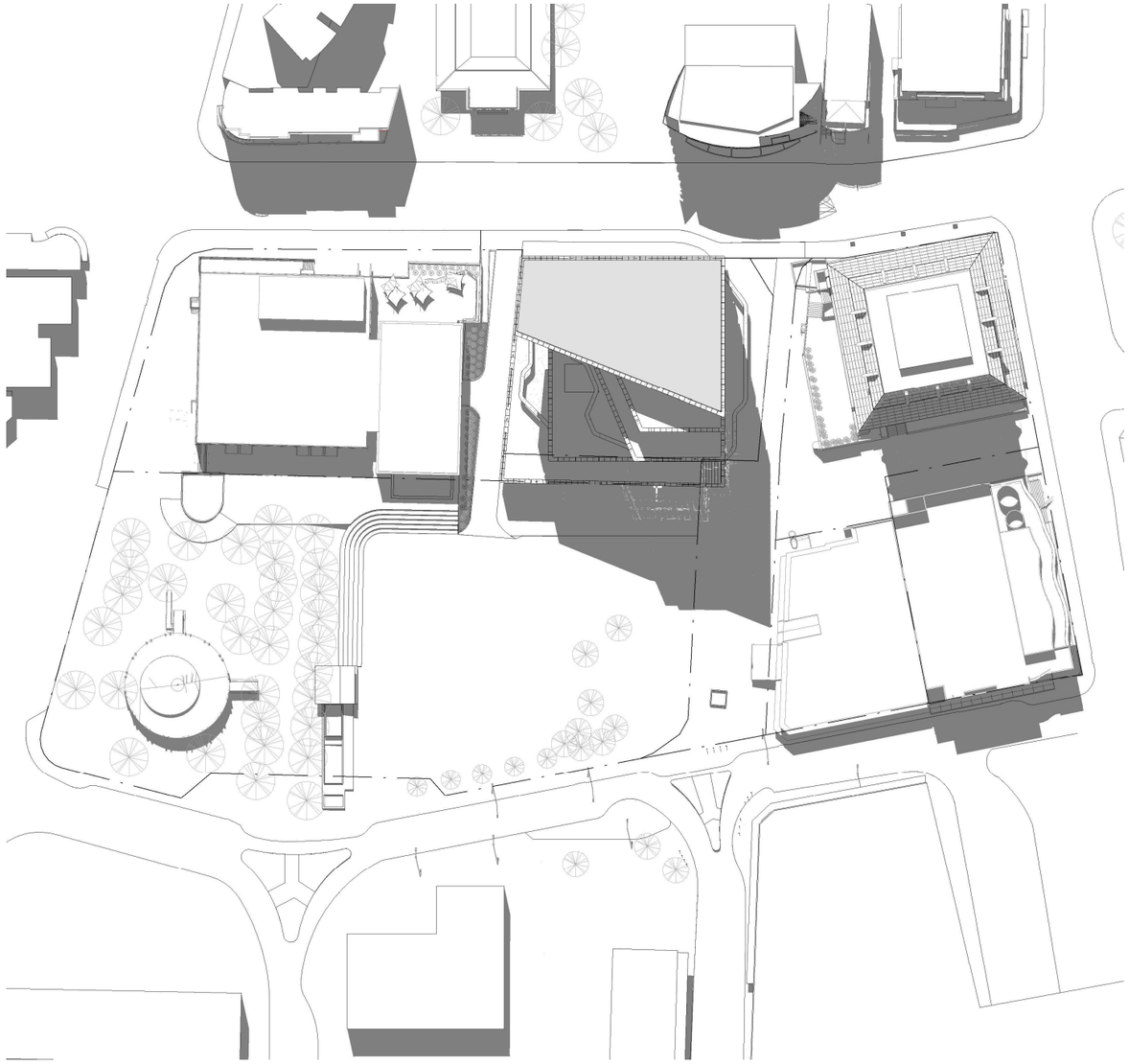

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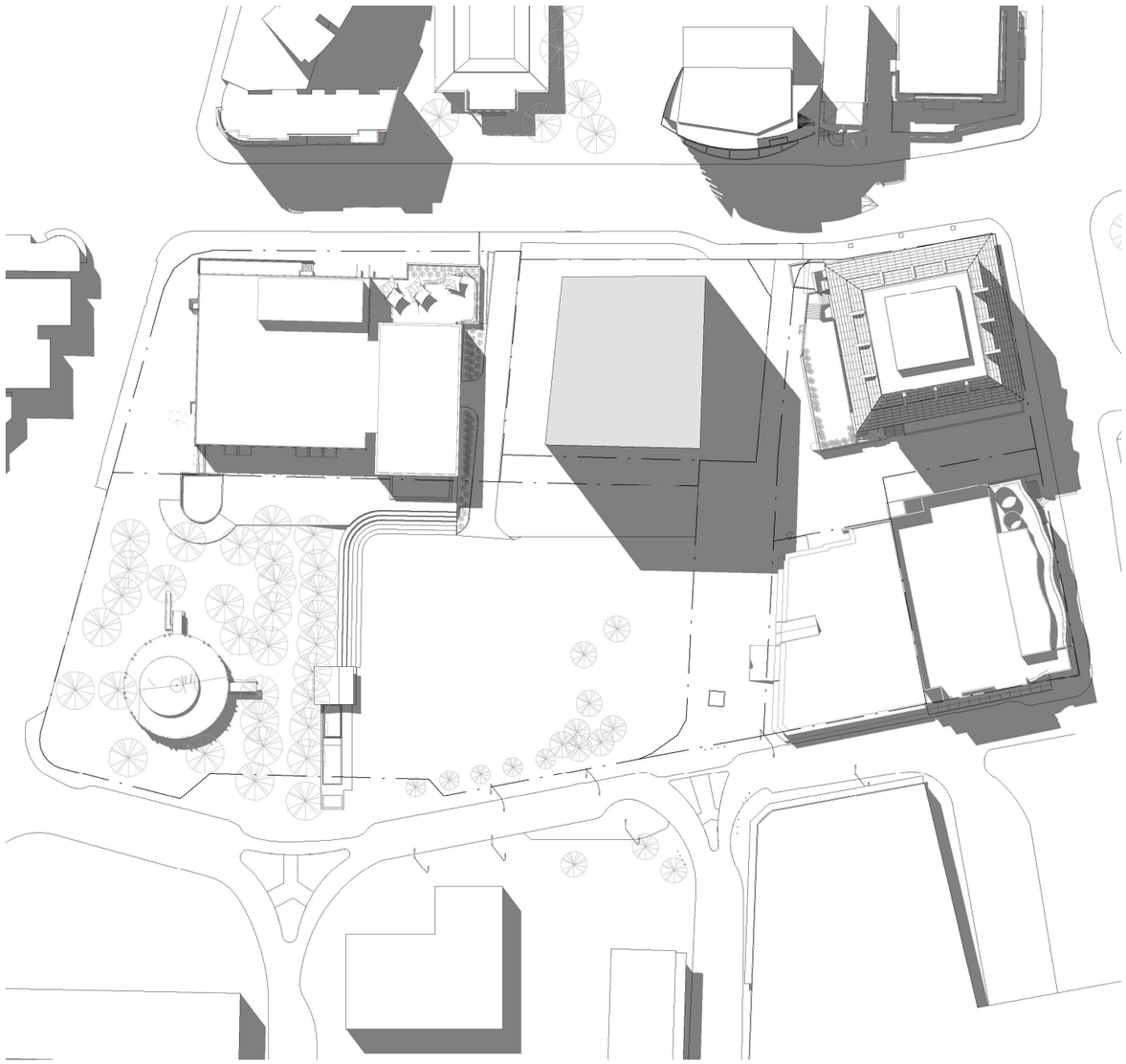

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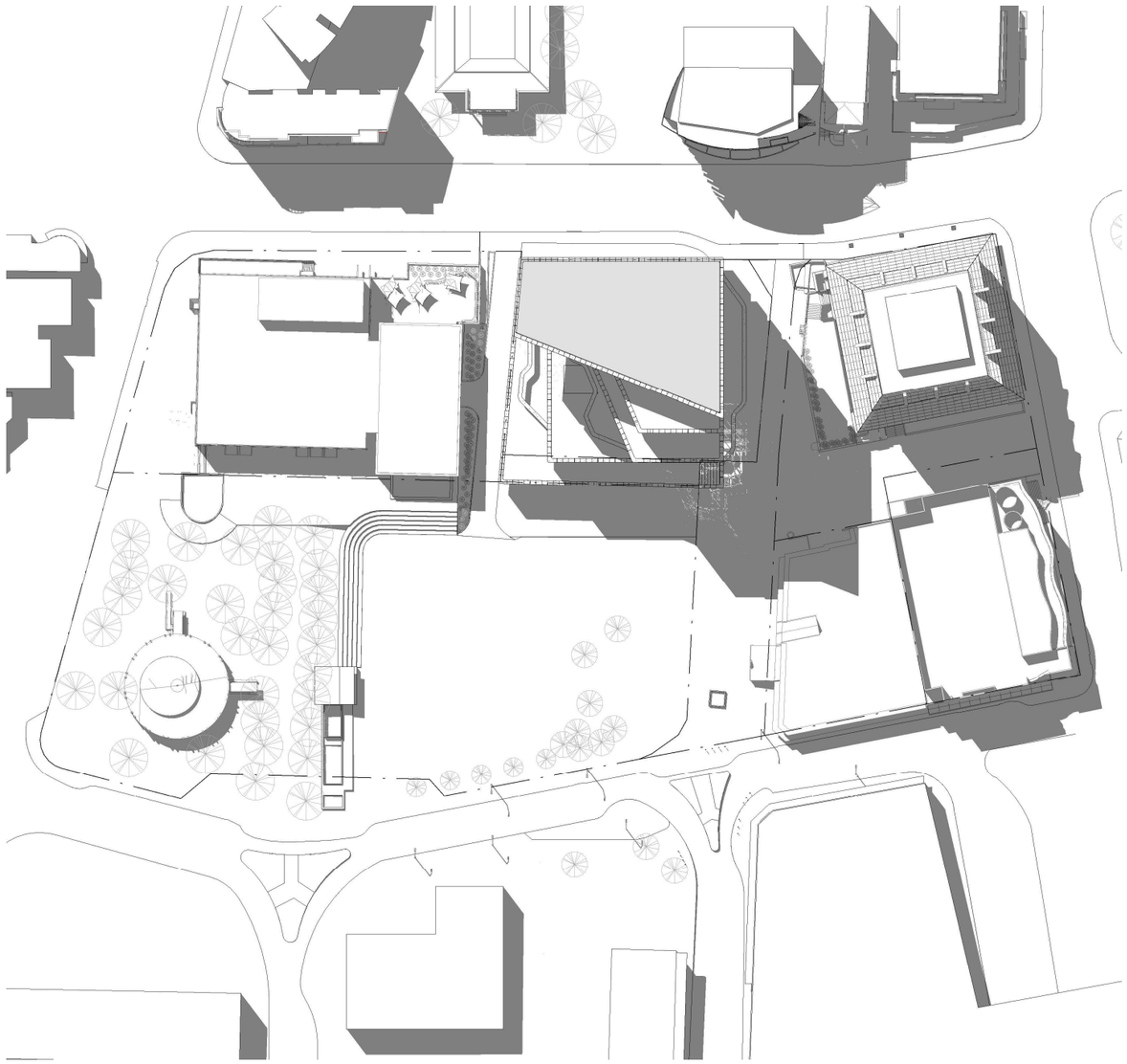

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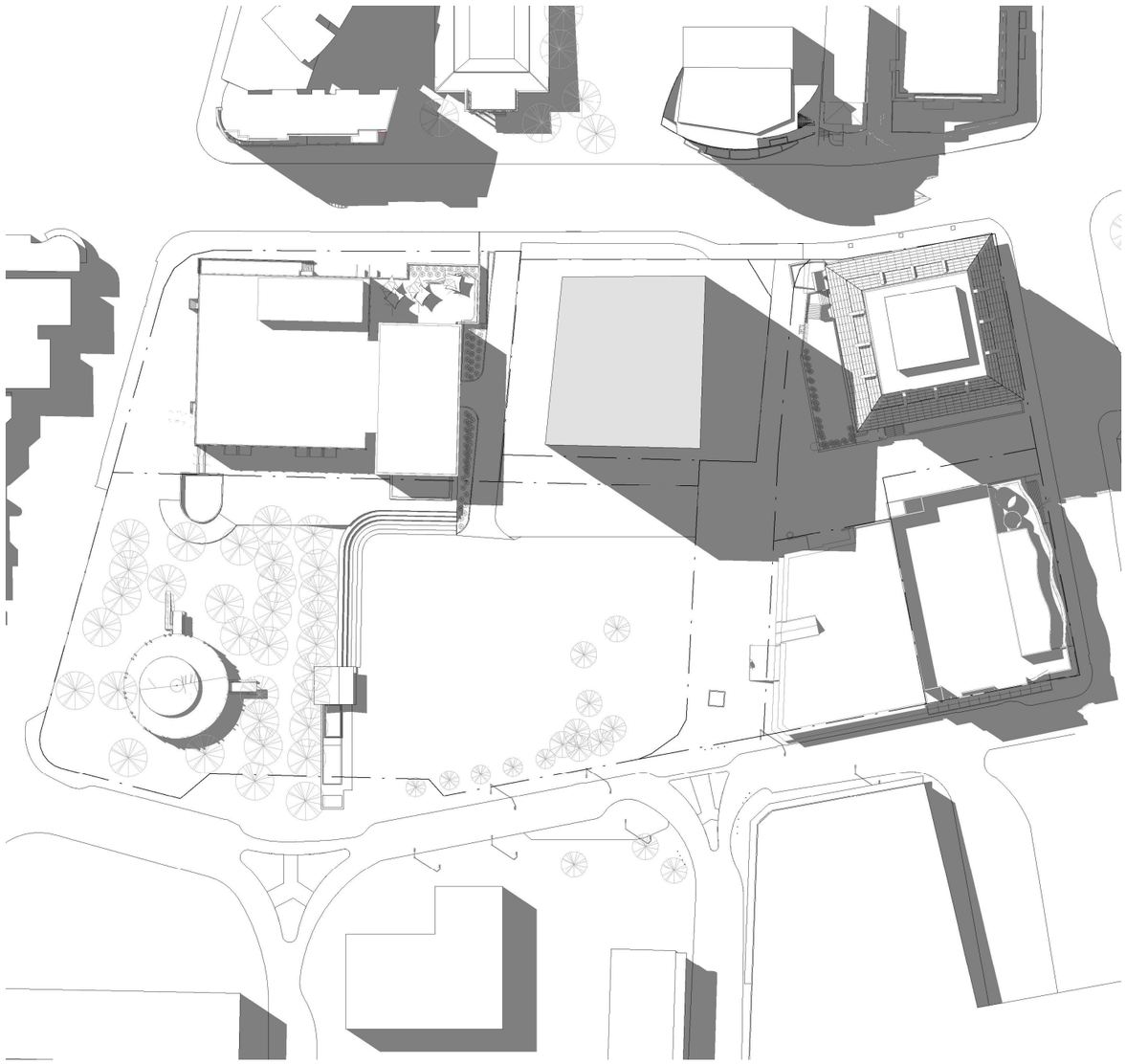

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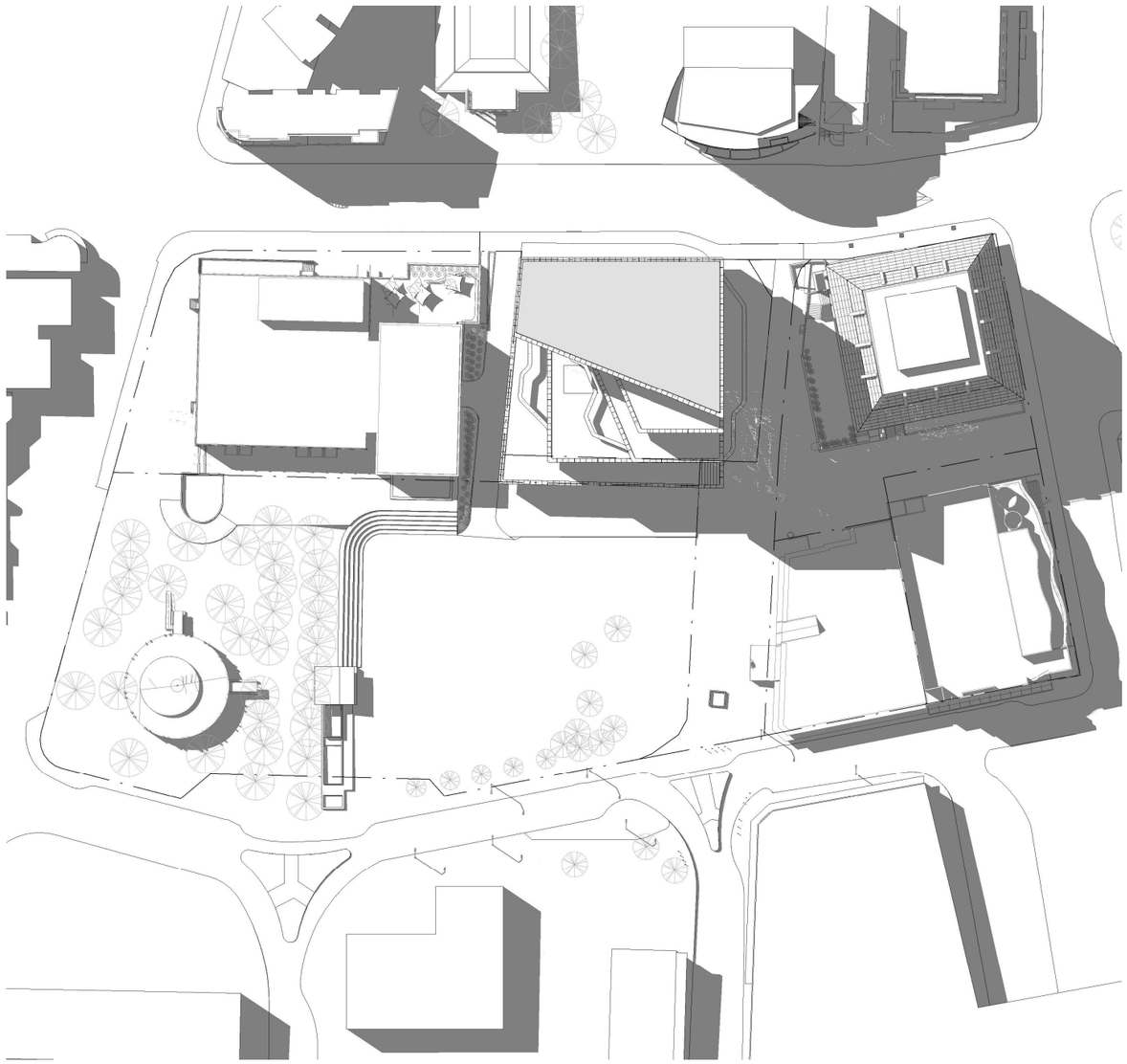

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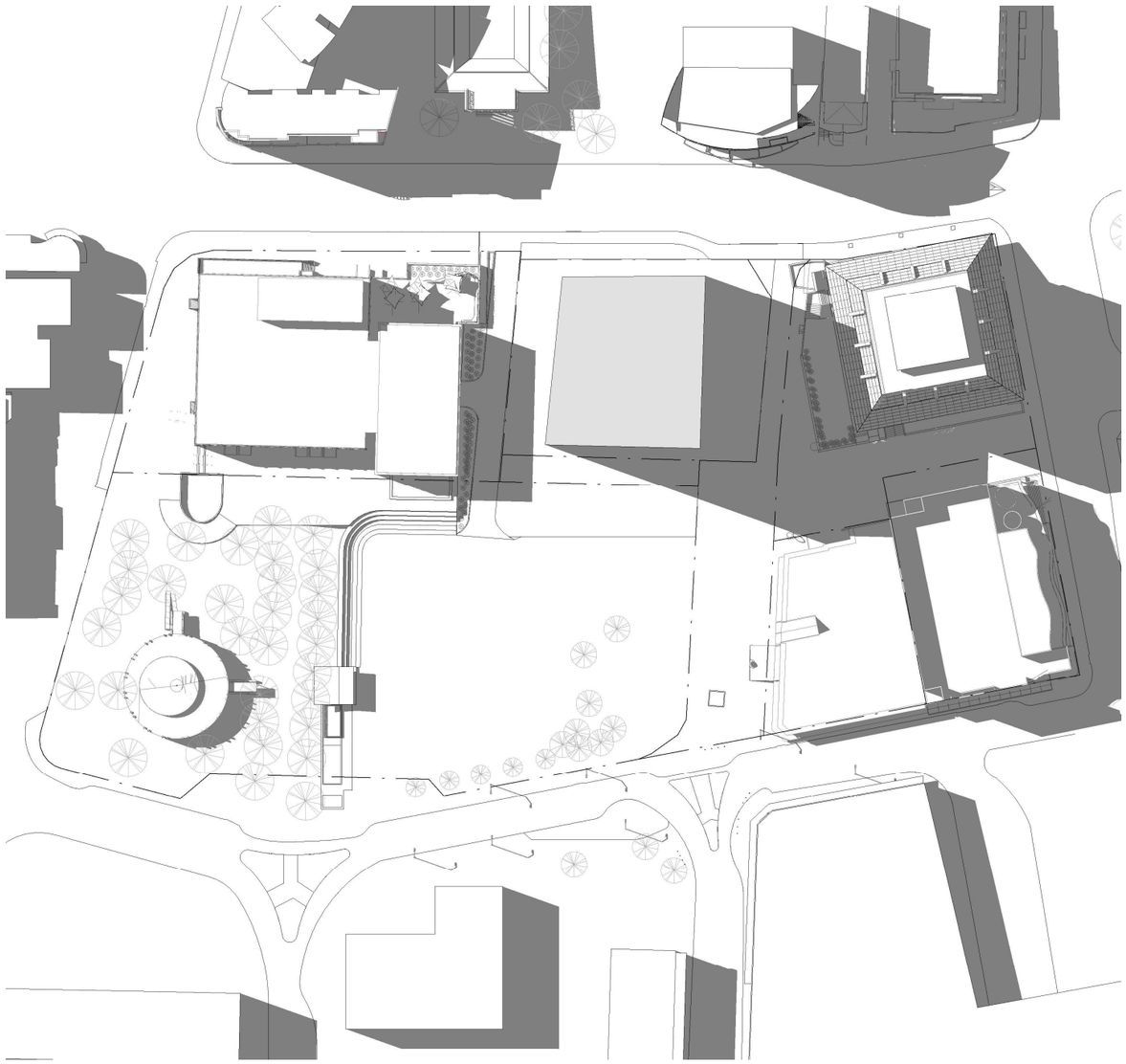

BCC Proposal



LEP Compliant Model



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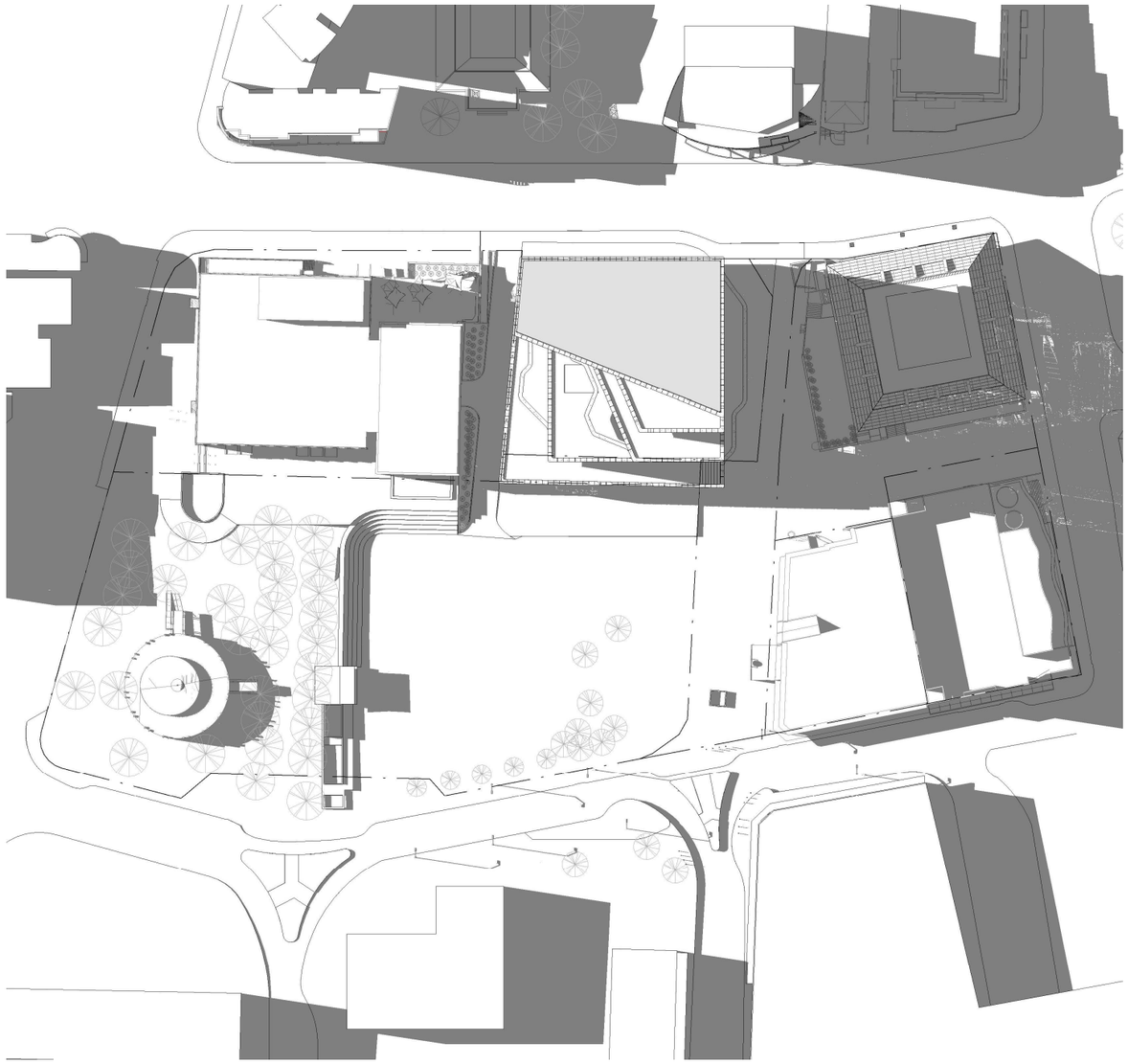

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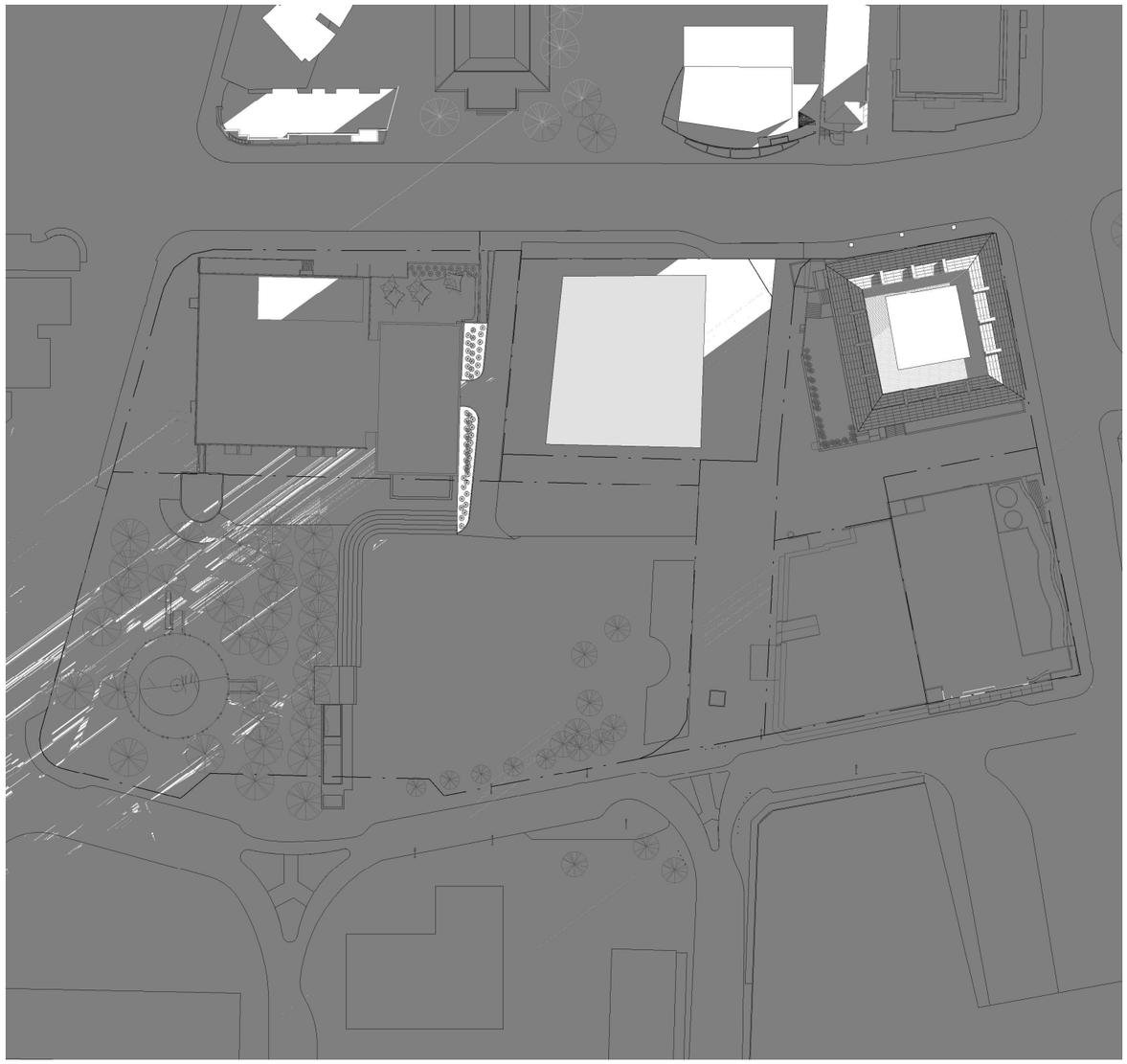

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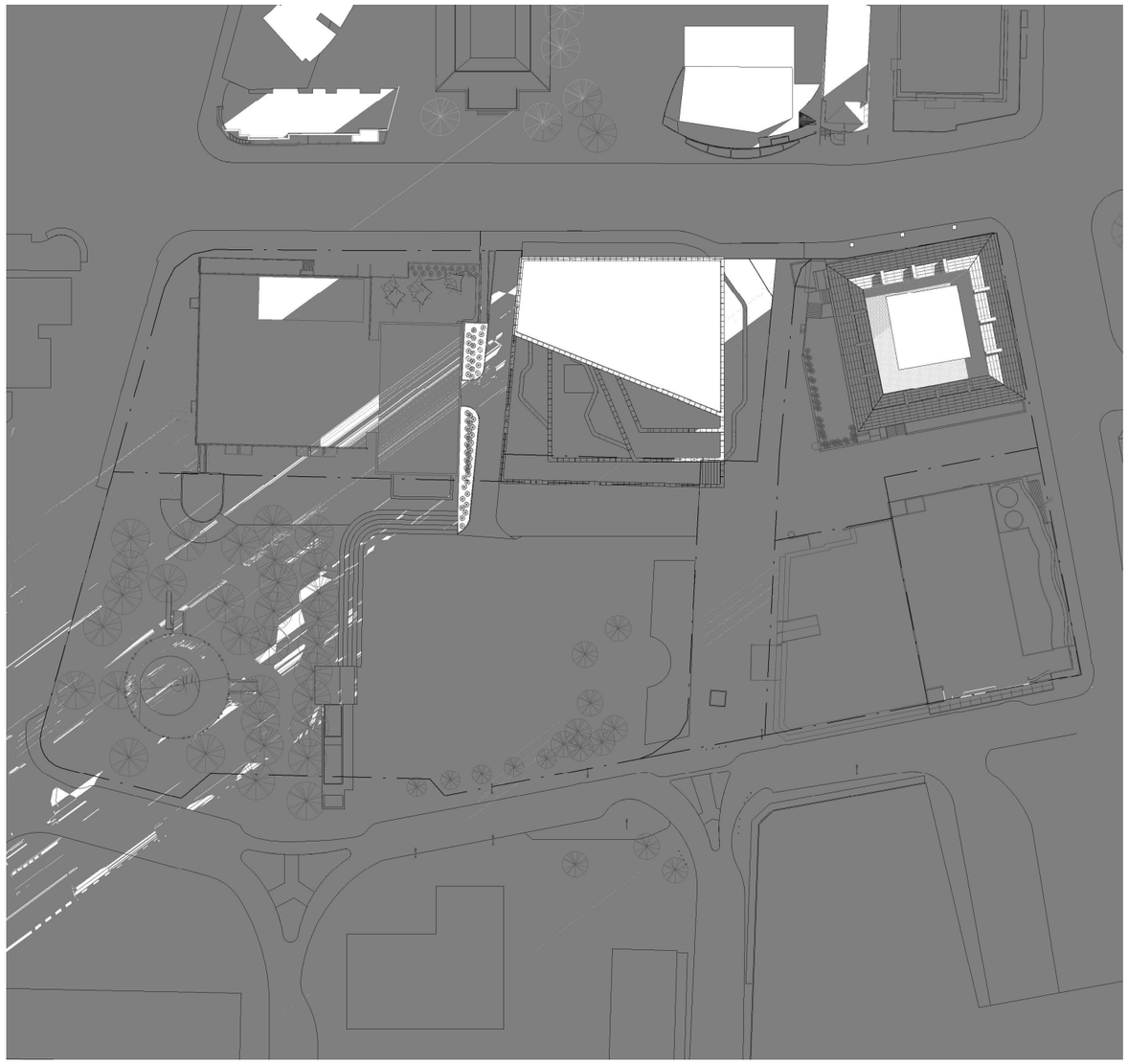

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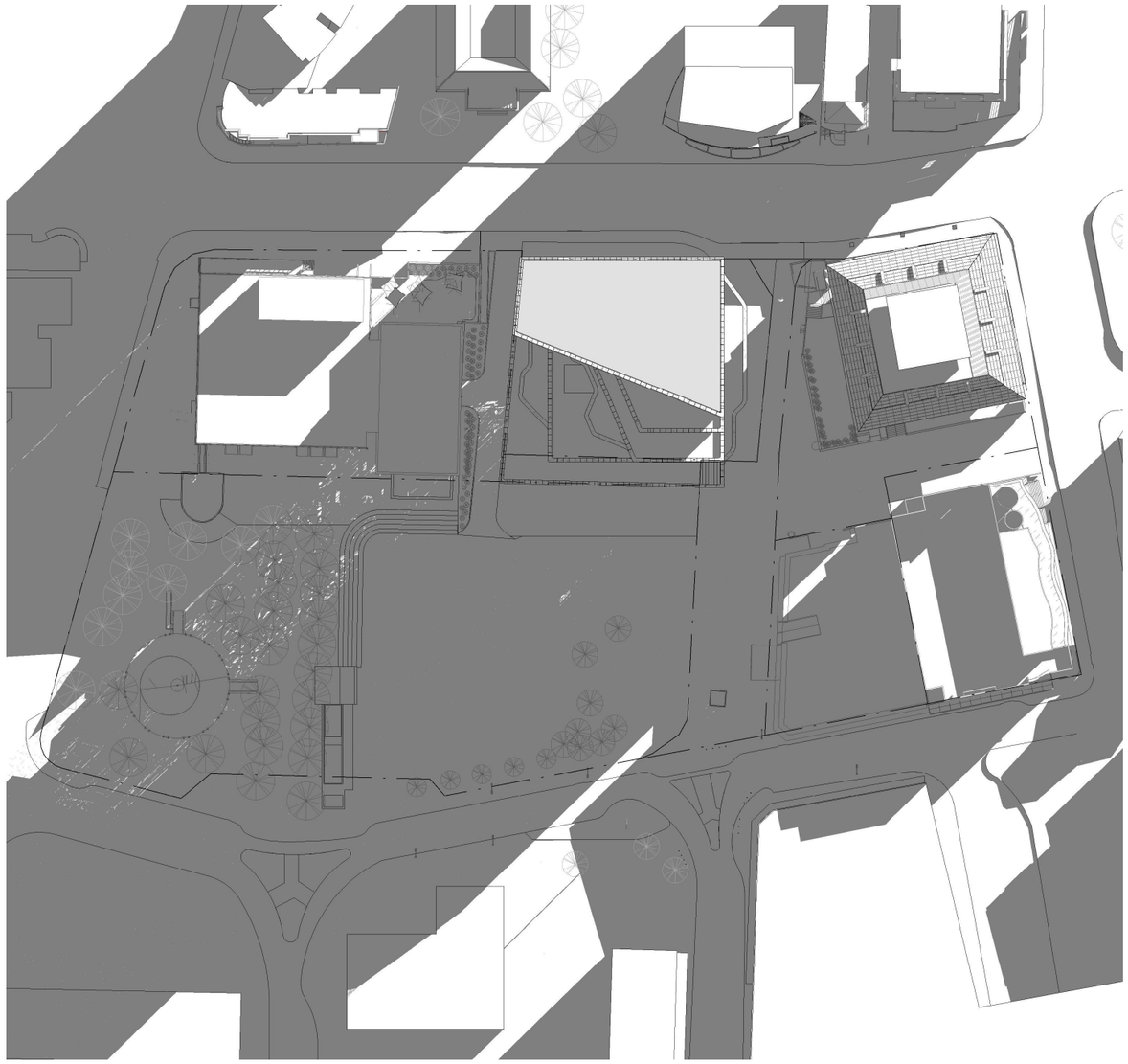
LEP Compliant Model



BCC Proposal



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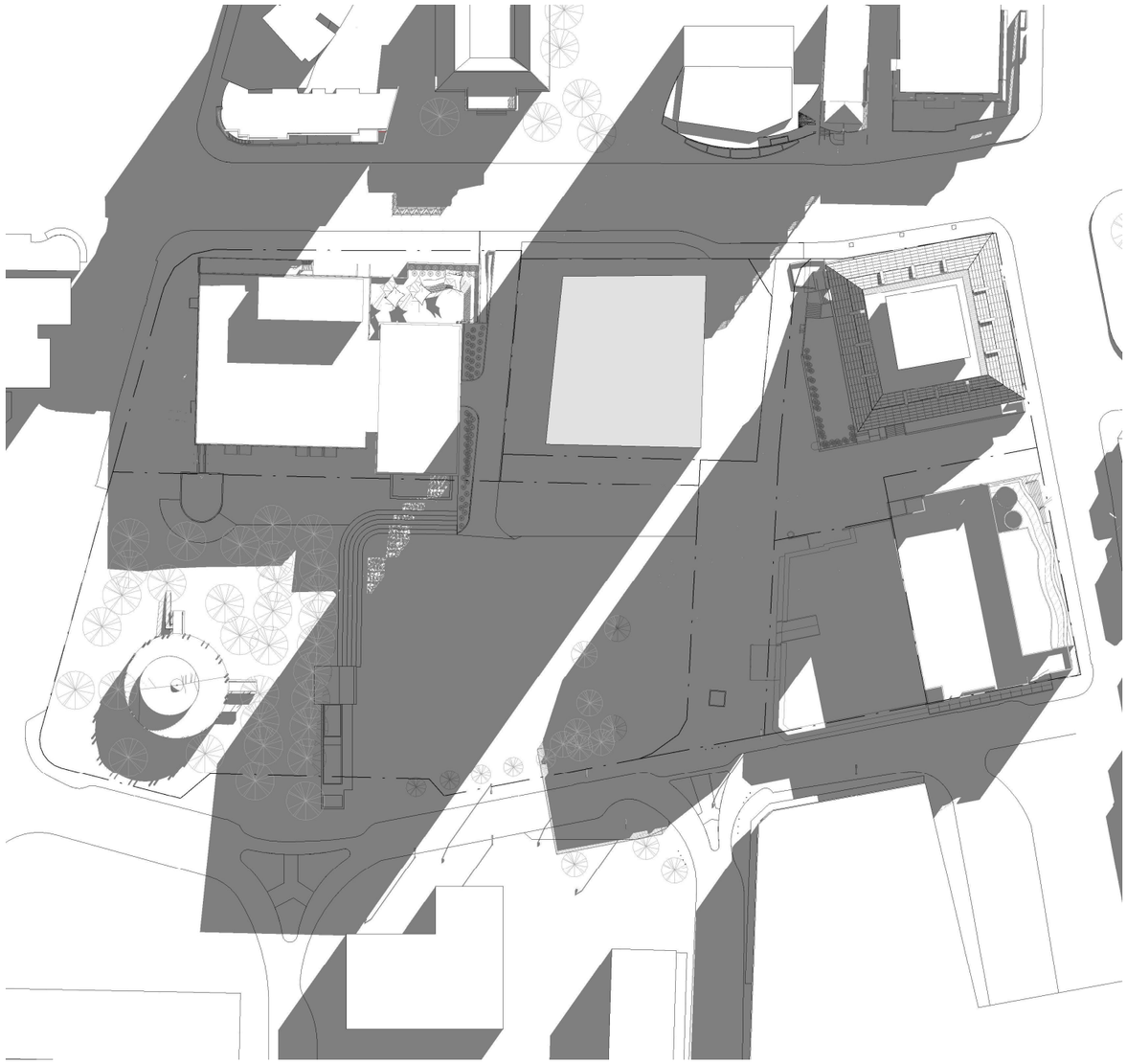

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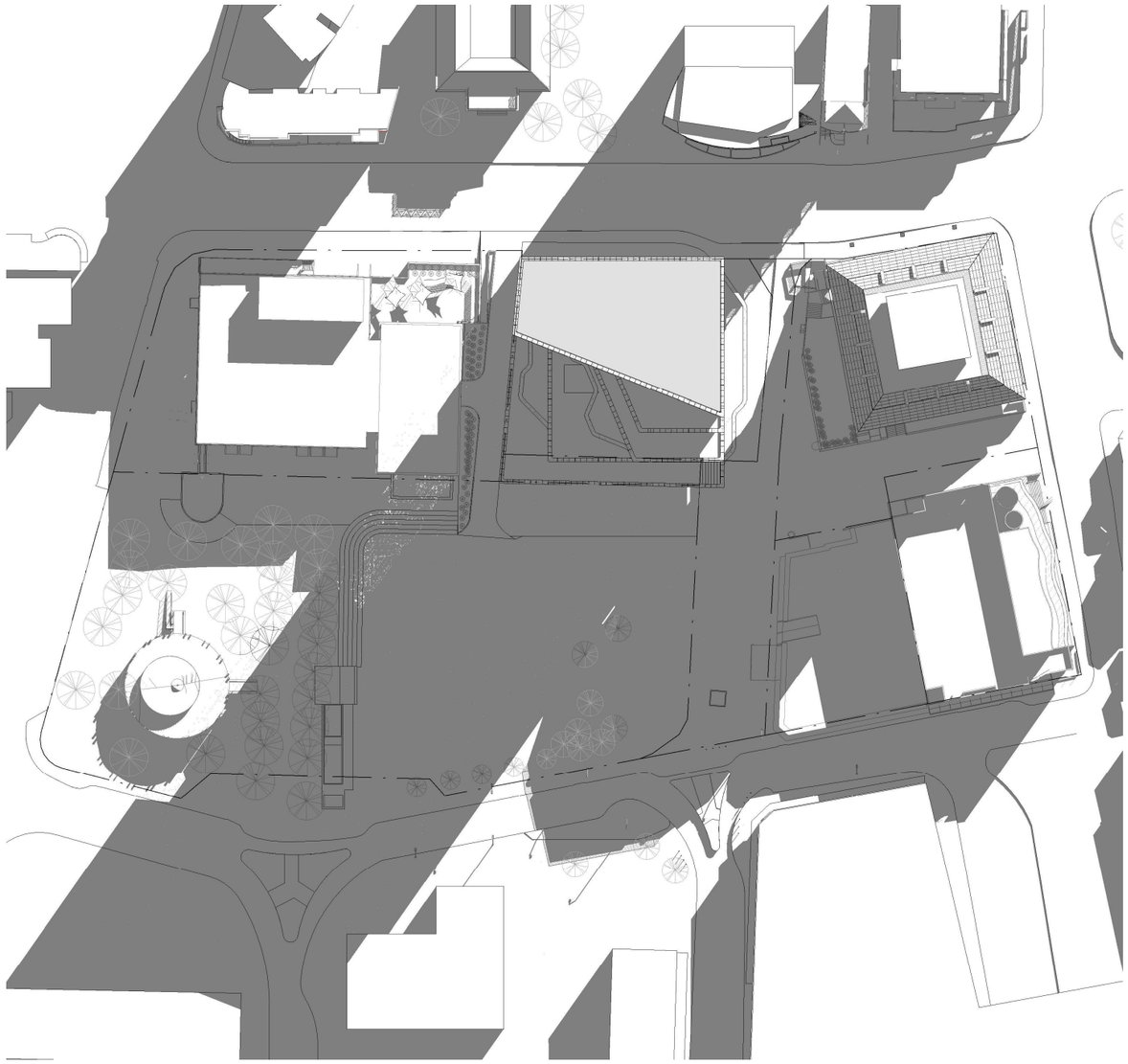

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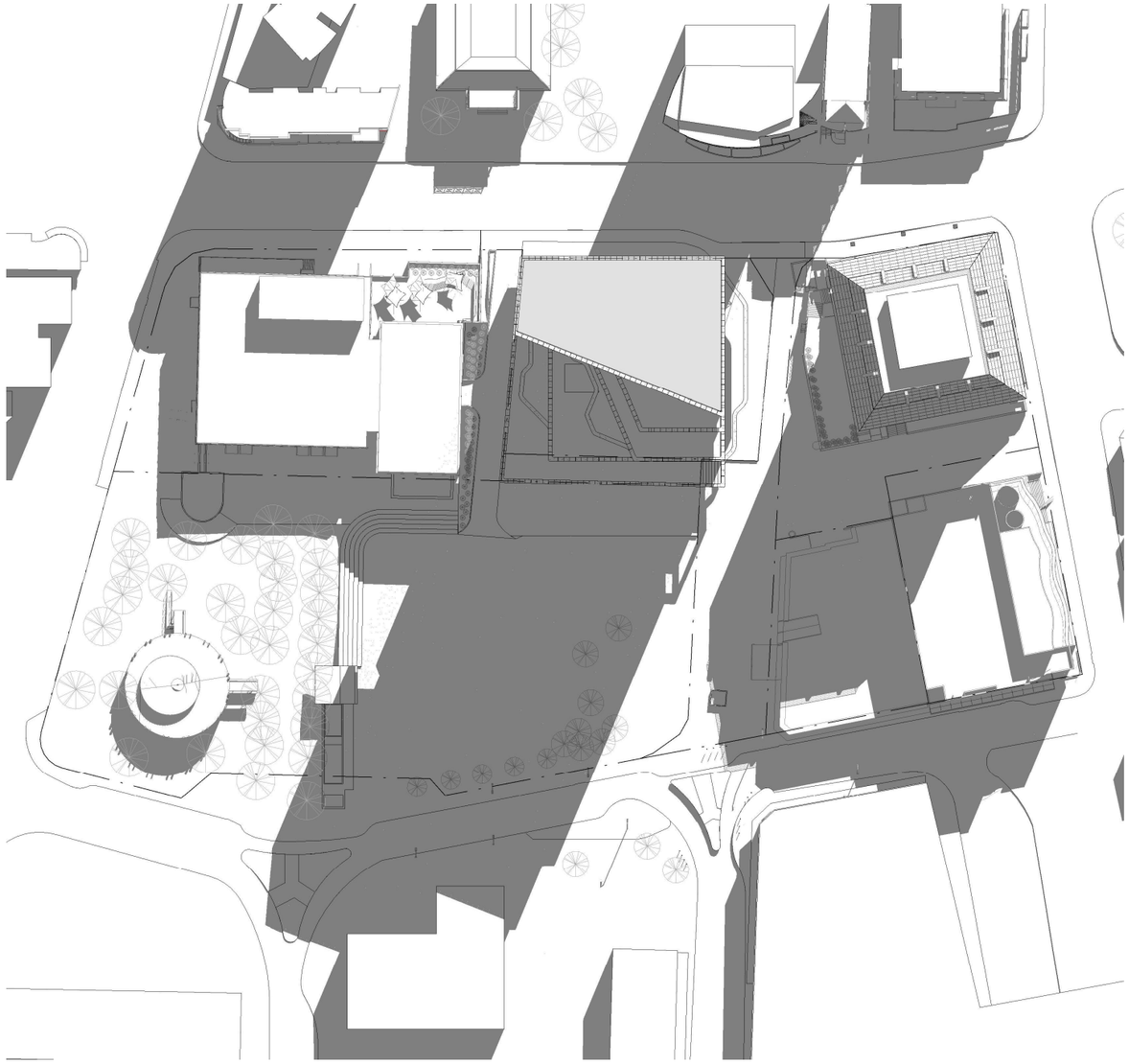
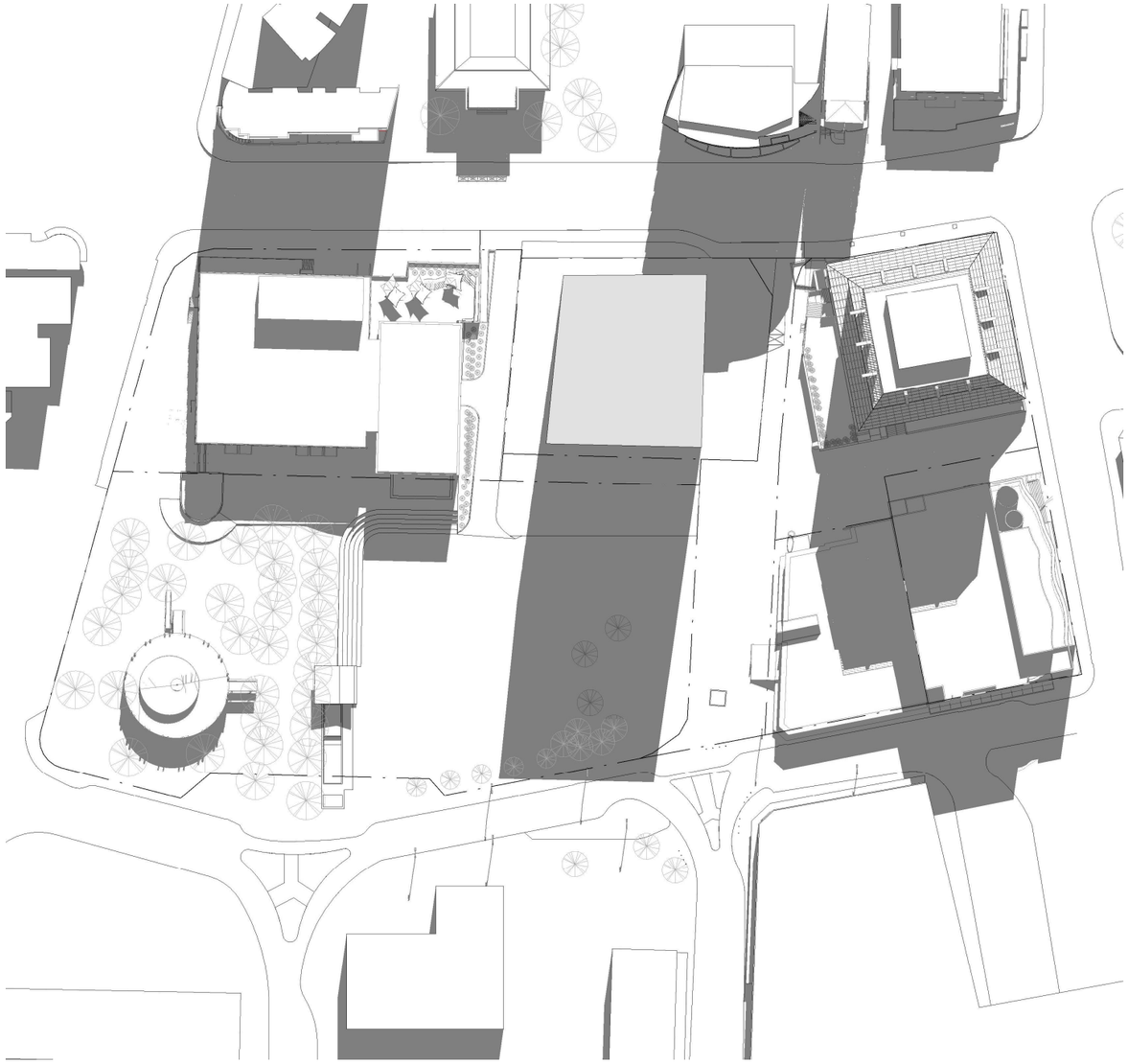
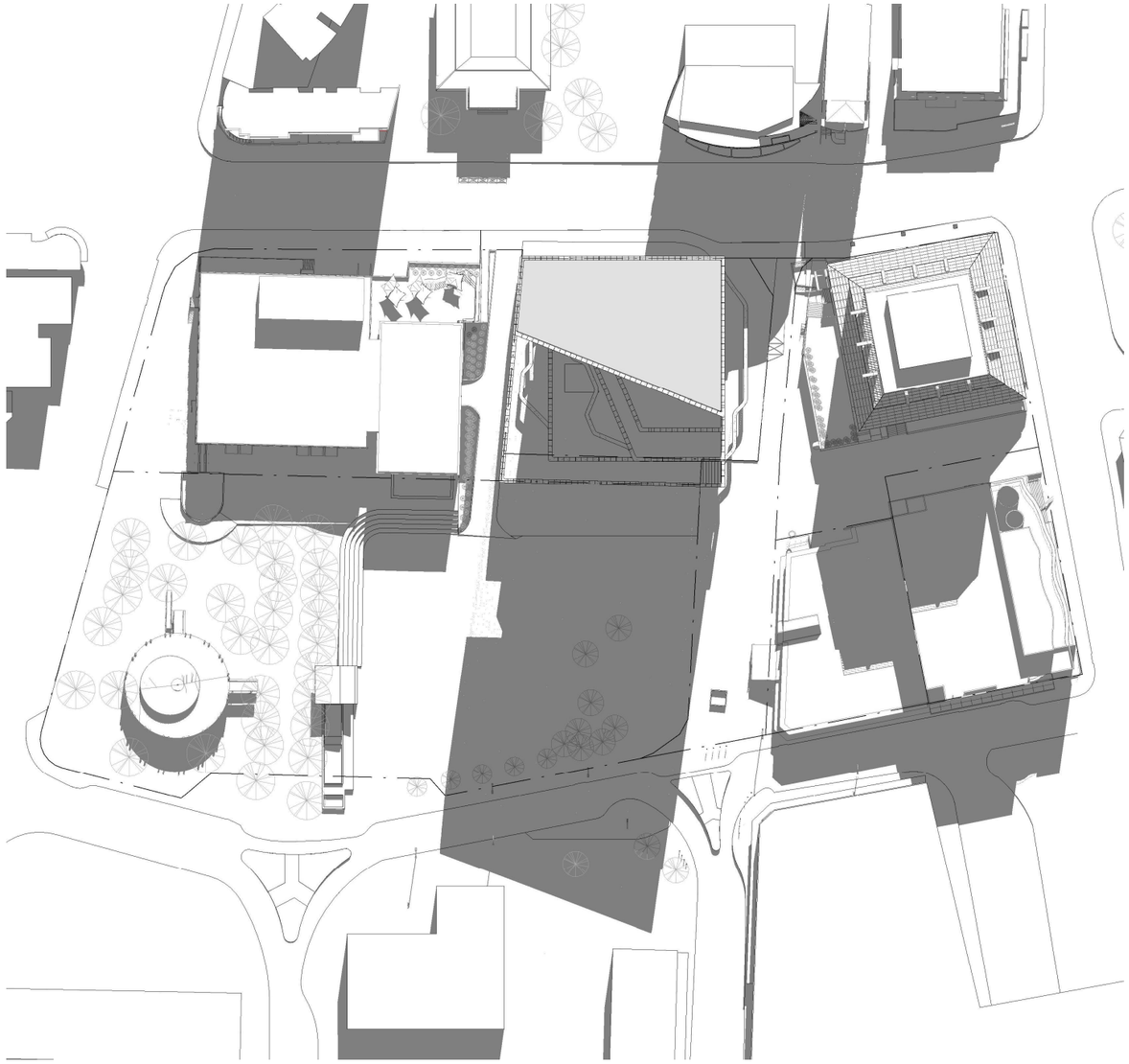


# WINTER: 12PM

LEP Compliant Model

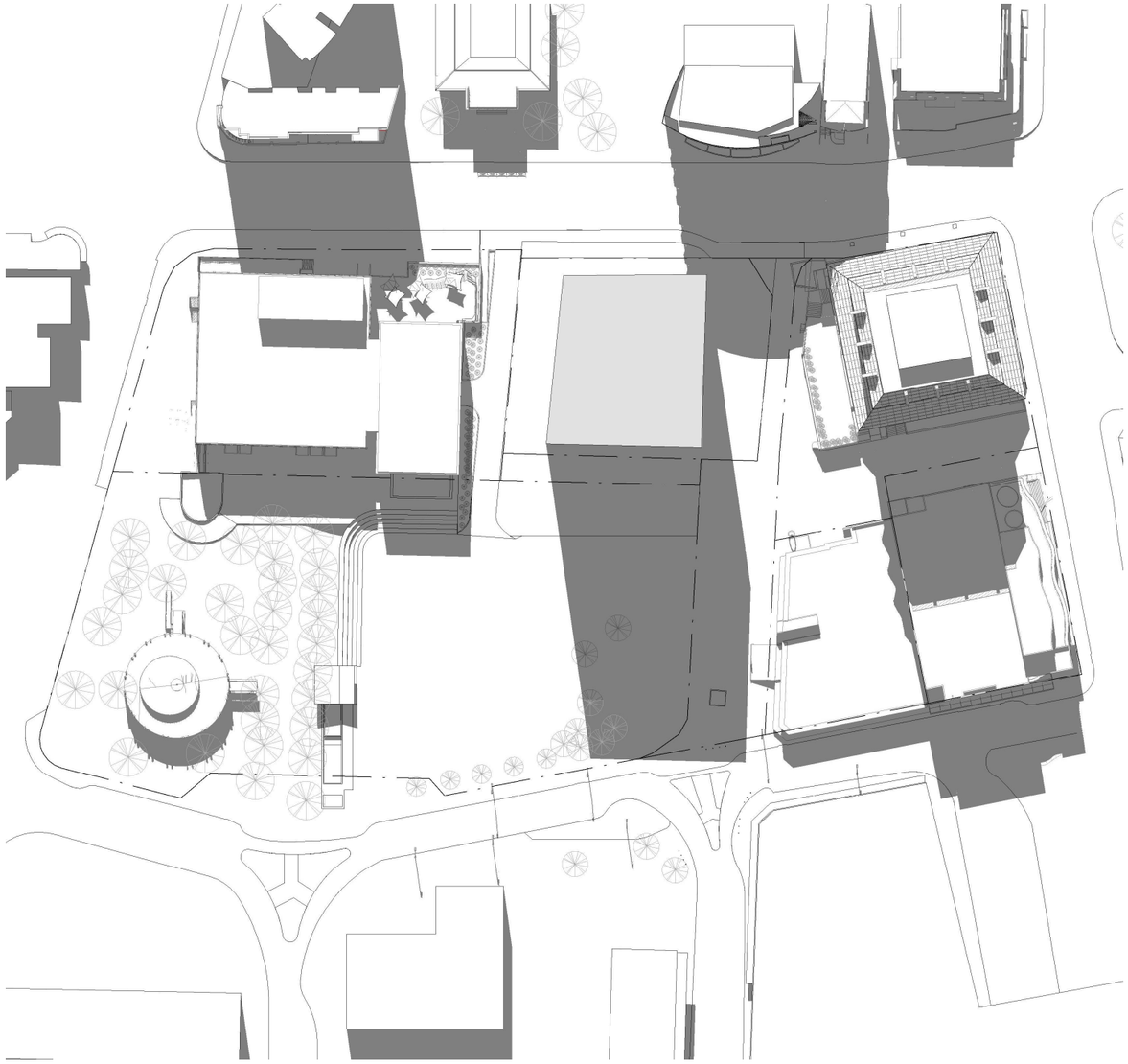


BCC Proposal

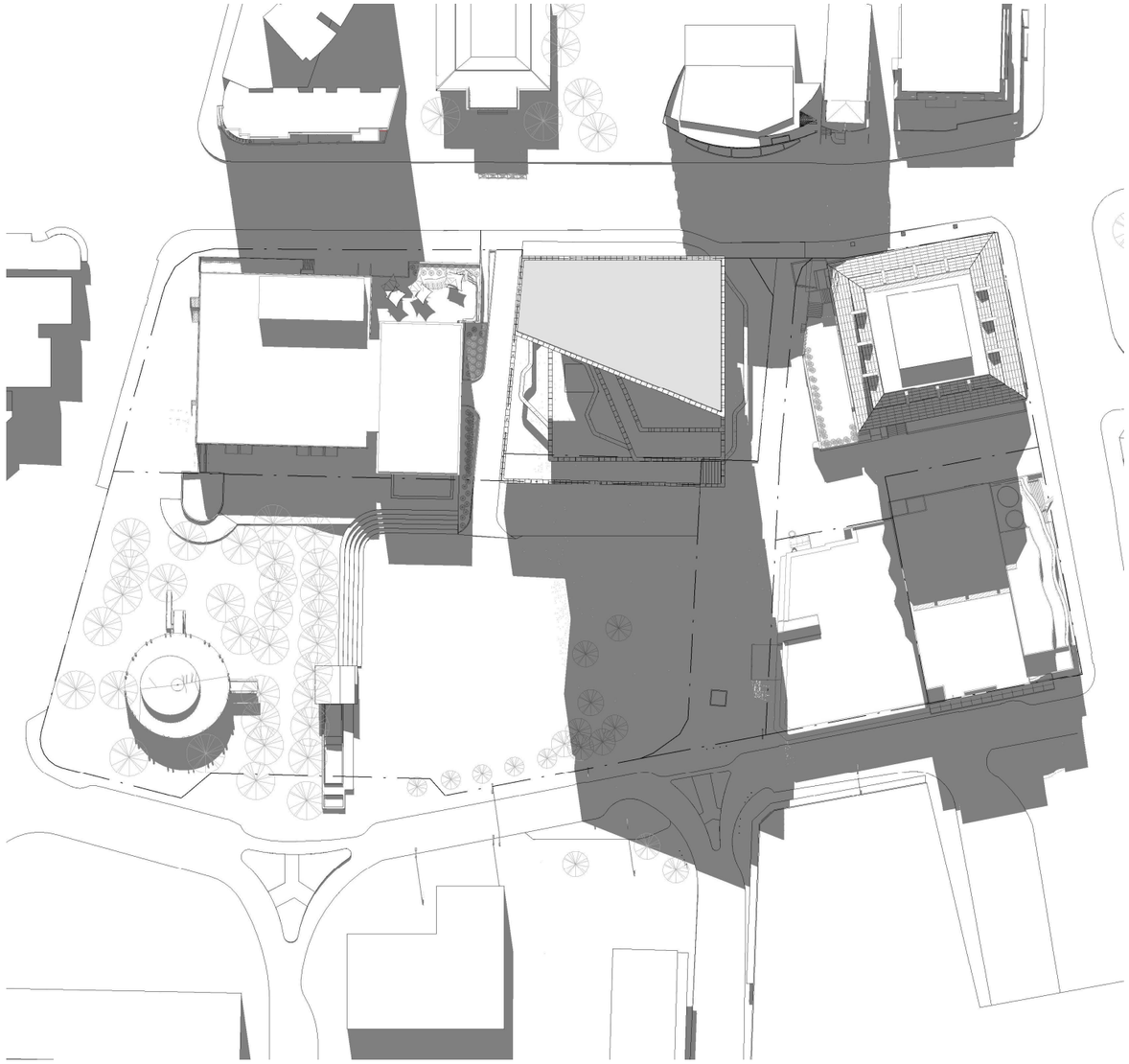


# WINTER: 1PM

LEP Compliant Model

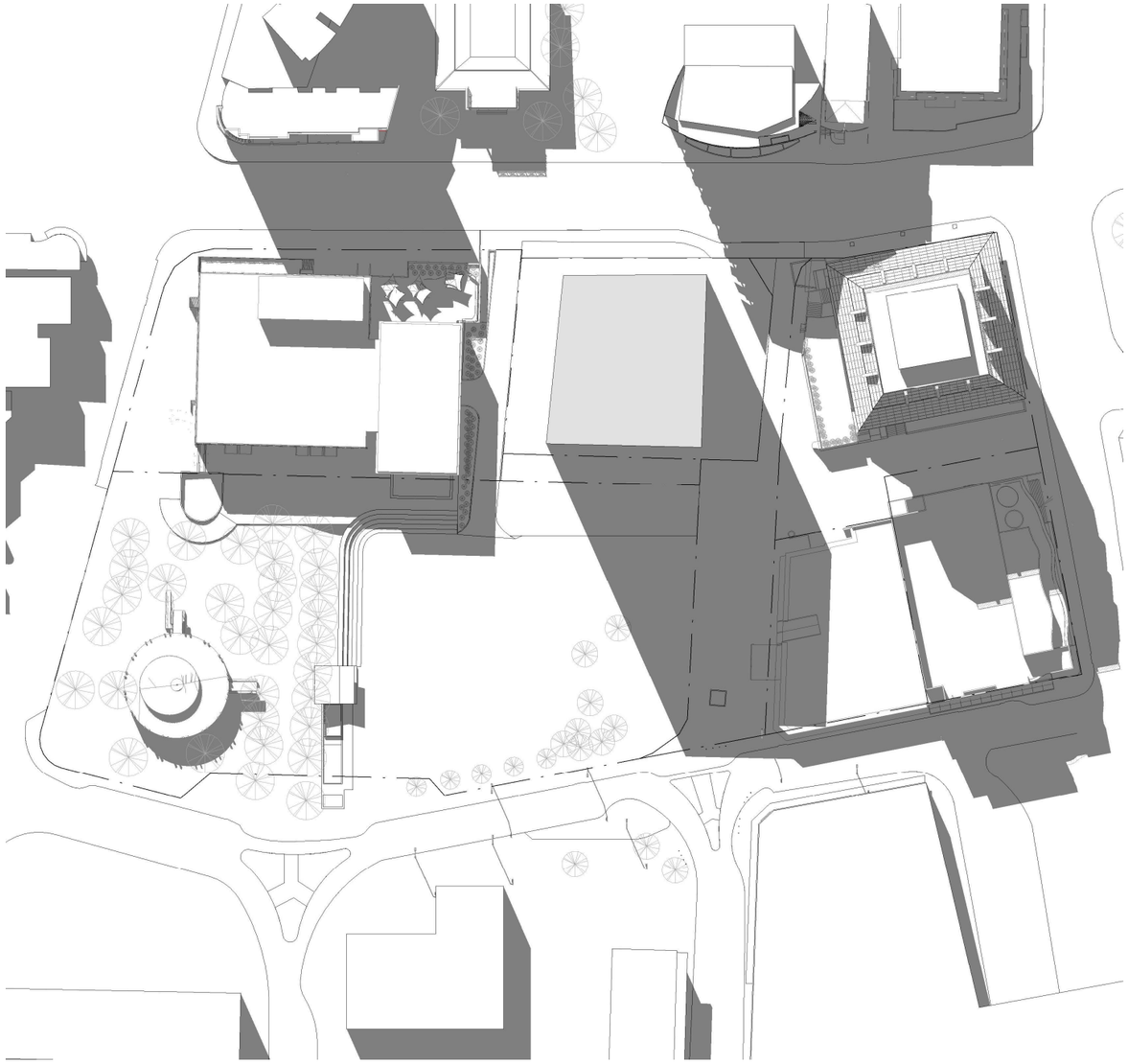


BCC Proposal

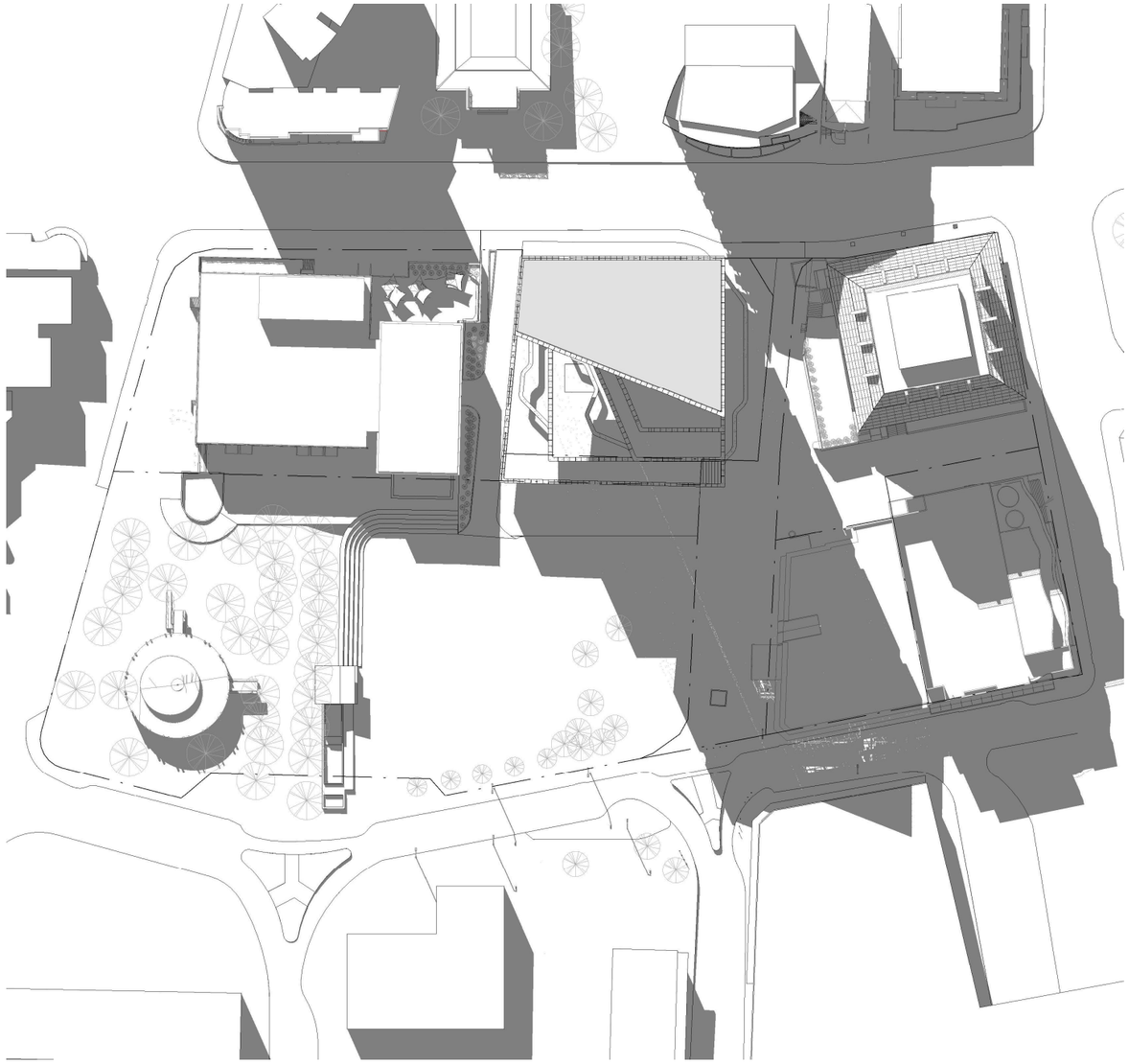


# WINTER: 2PM

LEP Compliant Model

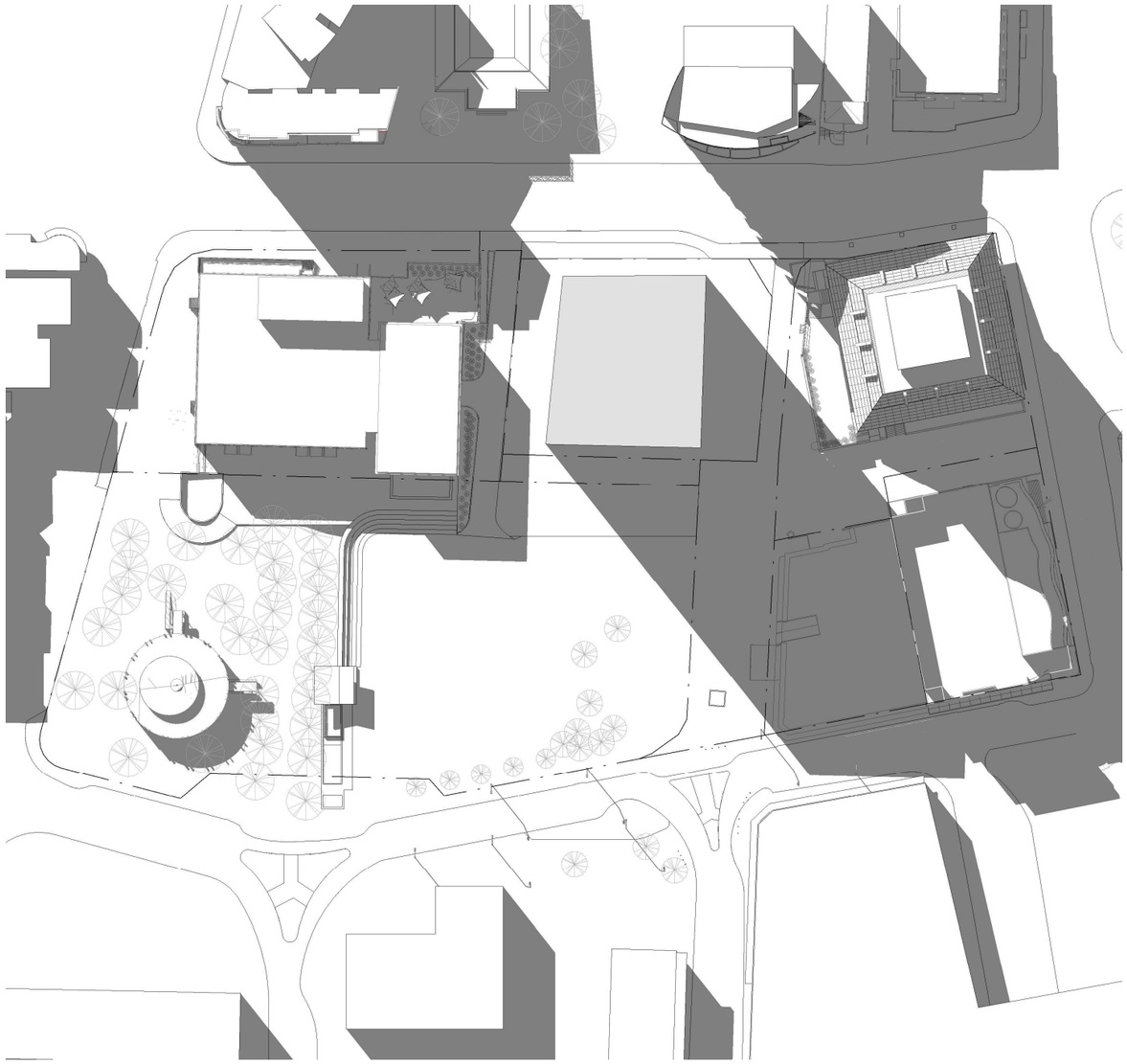


BCC Proposal

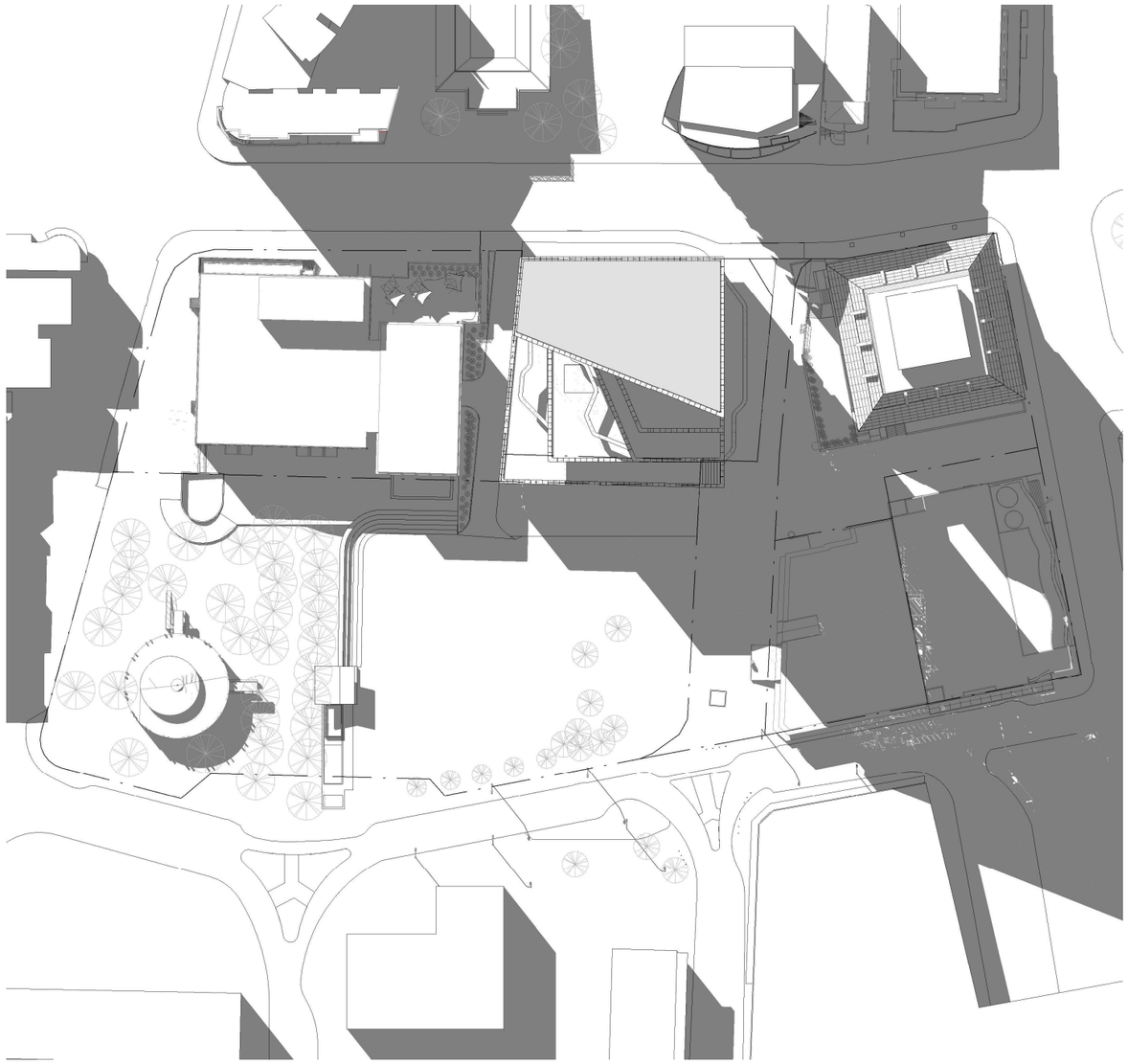


# WINTER: 3PM

LEP Compliant Model

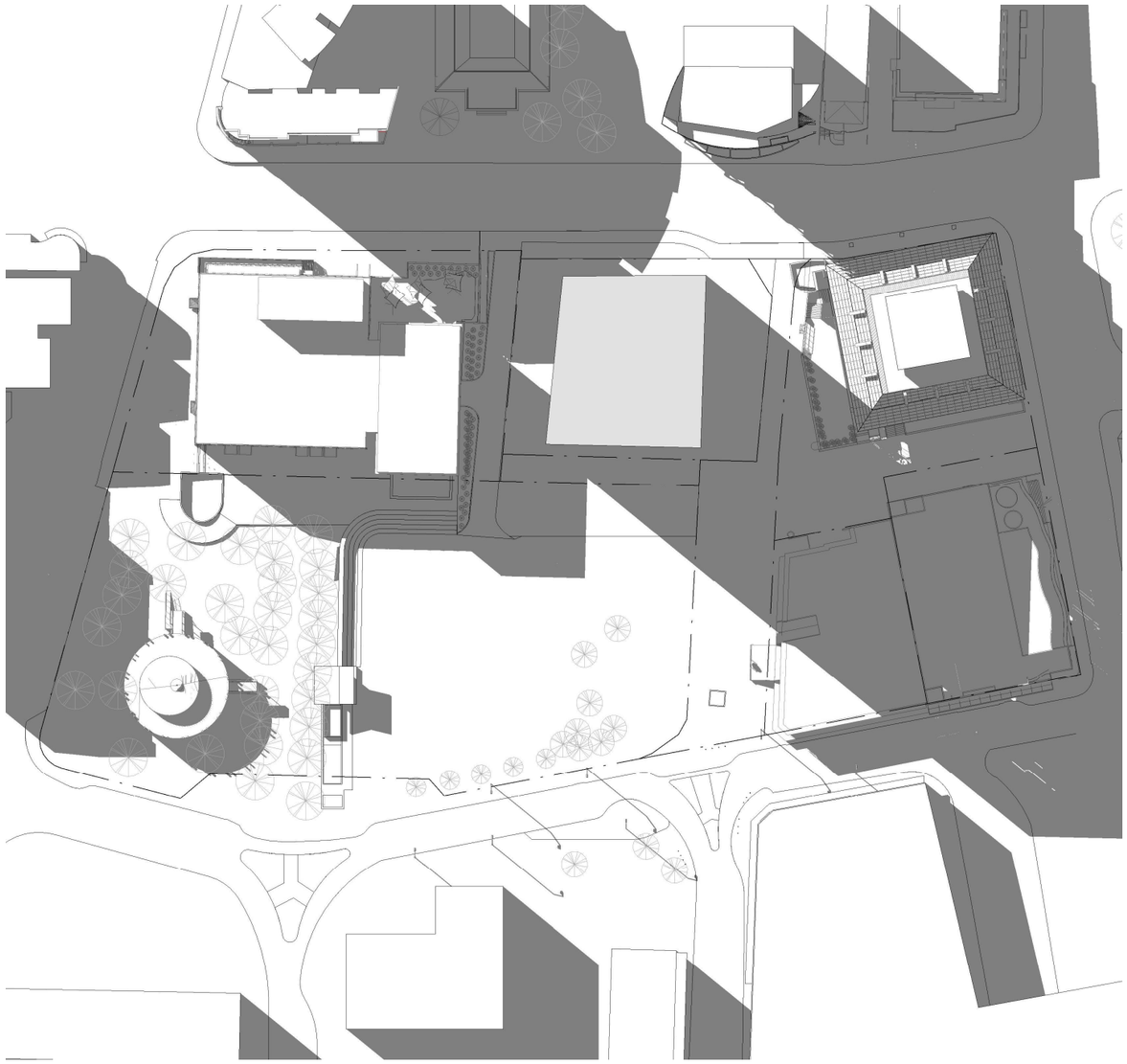


BCC Proposal

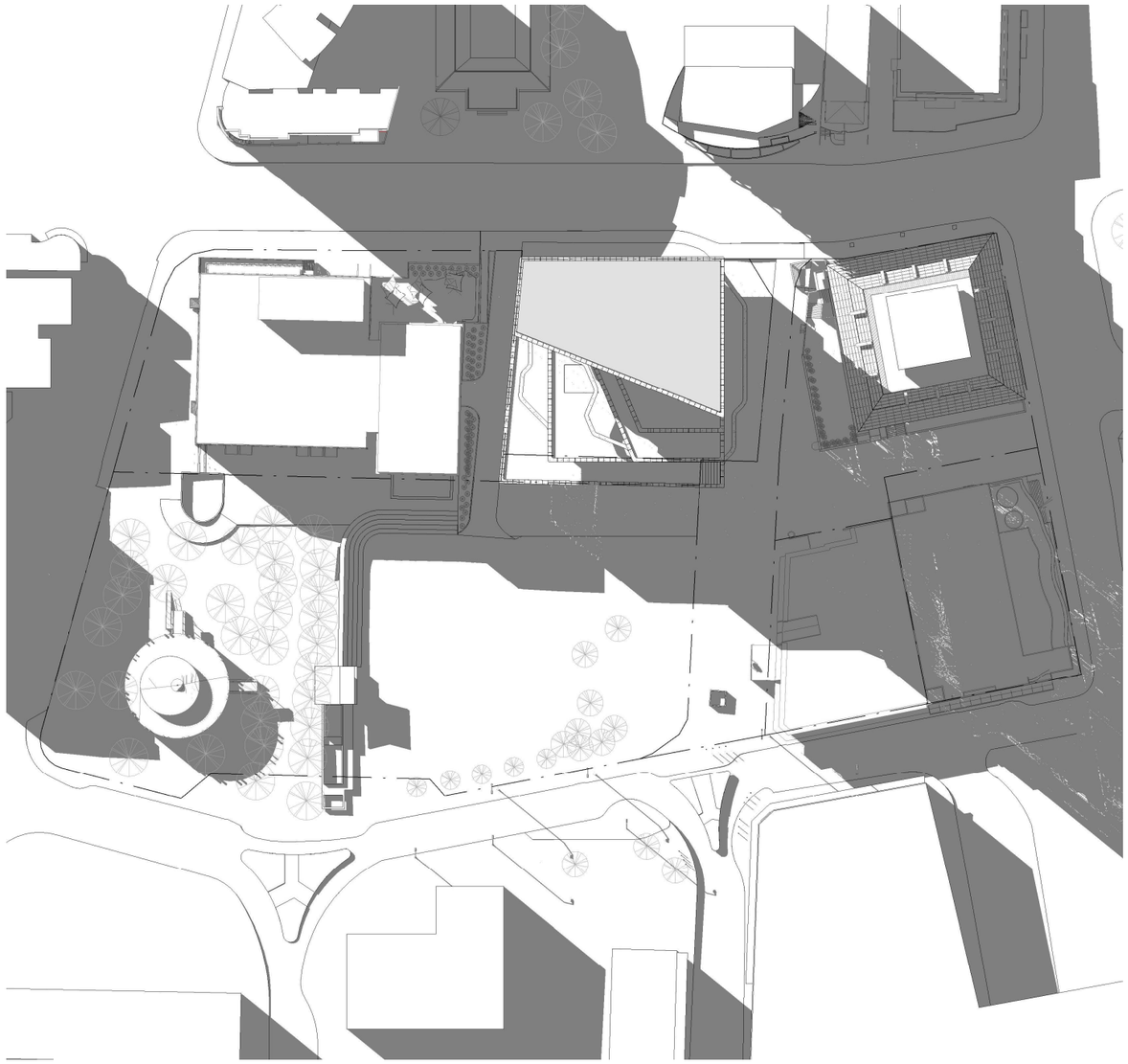


# WINTER: 4PM

LEP Compliant Model



BCC Proposal



# WINTER: 5PM

LEP Compliant Model



BCC Proposal



# APPENDIX D

## Digital Materials Sample Board

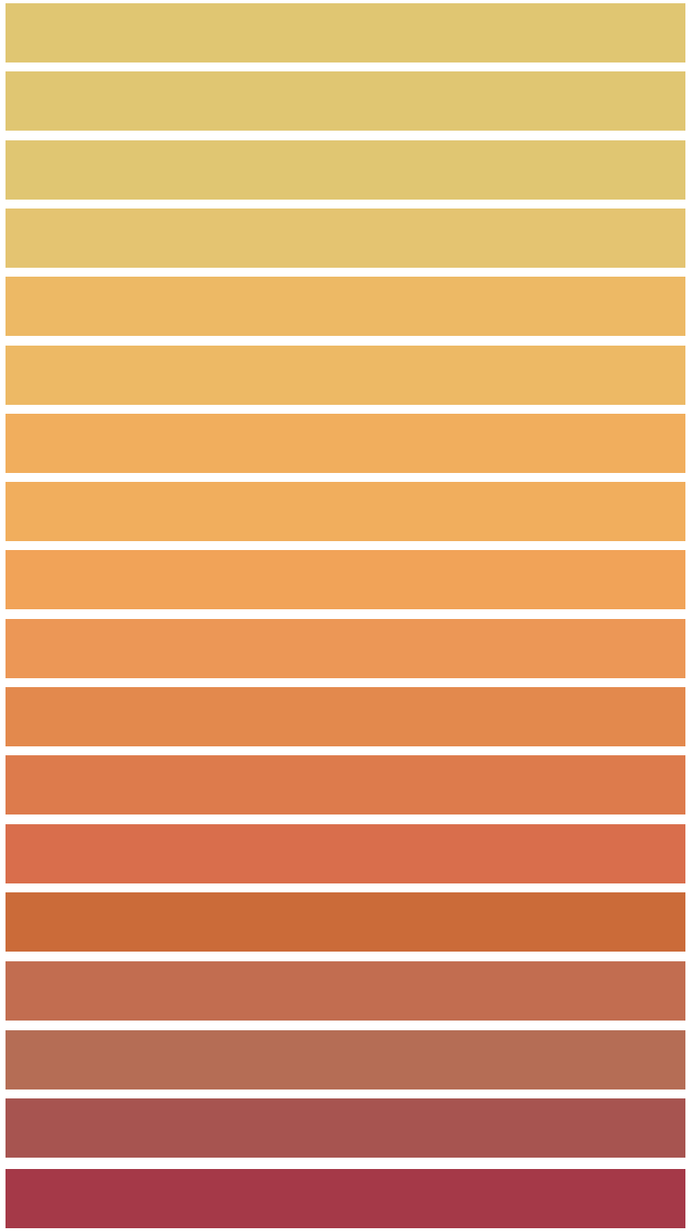
Date: 21st June 2019



Curtain Wall Glazing - Grey



Ground Level Glazing - Clear



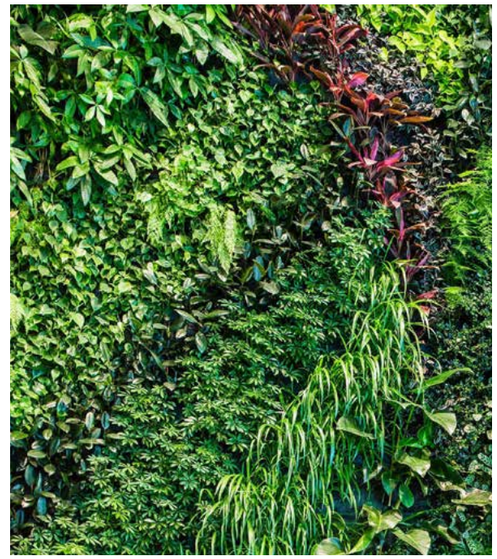
Aluminium Curtain Wall Sun Shades and Framing



GRC



Ronstan Tensile Mesh



Green Wall



White colorbond- roof



Charcoal powdercoat
- substation



Overall Building

Bankstown City Campus Development - Western Sydney Univsersity

# MATERIALS BOARD

# APPENDIX E

## Briefed Area Schedule (HDR)

## Summary of Room Schedule for Bankstown City Campus

| Room Name | Area ($m^2$) | Count |
|---|---|---|
| **CIRCULATION** | | |
| CIRCULATION | 3,247 | |
| BASE BUILD CIRCULATION (ABOVE GROUND) | 2,249 | |
| | 5,496 | |
| **RESEARCH** | | |
| MARC | | |
| BABY/INFANT LABS | 20 | 2 |
| MARC / KIDS WAITING AREA | 19 | 1 |
| MARC OBSERVATION AND CONTROL ROOM | 24 | 1 |
| | 63 | |
| PSYCH | | |
| EXPERIMENTAL LAB | 76 | 1 |
| PSYCH - 30P SKILLS LAB | 69 | 1 |
| PSYCH OBSERVATION AND CONTROL ROOM | 57 | 1 |
| RESEARCH STORE | 8 | 1 |
| RESEARCH WAITING AREA | 126 | 2 |
| | 336 | |
| | 399 | |
| SCHOOLS WORKPLACE | | |
| PSYCH | | |
| POSTGRADUATE RESEARCH STUDENTS MEETING ROOM | 15 | 1 |
| PSYCH- MARCS-THRI- POSTGRADUATE RESEARCH STUDENTS | 163 | 1 |
| | 178 | |
| SCHOOLS WORKPLACE | | |
| WORKPLACE | 1338 | 5 |
| | 1338 | |
| STAFF SUPPORT SPACES | | |
| LARGE MEETING ROOM | 85 | 4 |
| MEDIUM MEETING ROOM | 129 | 7 |
| SMALL MEETING ROOM | 226 | 17 |
| STAFF KITCHENETTE | 1867 | 6 |
| PHONE BOOTH | 33 | 20 |
| | 2307 | |
| | 3823 | |
| **SHARED LEARNING SPACES** | | |
| AR/VR IMMERSIVE TECH | | |
| AR/VR MAKER SPACE | 89 | 1 |
| AR/VR MEETING ROOMS | 27 | 2 |
| XR LAB EXHIBITION SPACE | 82 | 2 |
| | 198 | |
| SHARED LEARNING SPACES | | |
| 30P LEARNING STUDIO | 921 | 13 |
| 30P SKILLS LAB | 279 | 4 |



## Summary of Room Schedule for Bankstown City Campus

| Room Name | Area ($m^2$) | Count |
|---|---|---|
| 30P/30P LEARNING STUDIO | 1116 | 16 |
| 60P LEARNING STUDIO | 526 | 4 |
| STORE | 15 | 2 |
| MULTI-PURPOSE TIERED THEATRE | 369 | 1 |
| | 3226 | |
| SHARED STUDY ZONE | | |
| FOCUSED ENCLOSED MEETING ROOM | 162 | 13 |
| GROUP STUDY ZONE - ENCLOSED | 354 | 28 |
| GROUP STUDY ZONE - OPEN | 817 | 9 |
| GROUP STUDY ZONE - OPEN BOOTHS | 29 | 1 |
| INDIVIDUAL STUDY ZONE - OPEN | 2107 | 17 |
| INFORMAL LEARNING | 43 | 1 |
| OPEN INFORMAL LEARNING AREA | 885 | 2 |
| QUIET STUDY ZONE | 432 | 5 |
| QUIET STUDY ZONE - ENCLOSED | 84 | 6 |
| | 4913 | |
| STUDENT BREAKOUT ZONES | | |
| SHARED KITCHENETTE | 657 | 9 |
| | 657 | |
| | 8994 | |
| SPECIALIST LEARNING SPACES | | |
| SHARED LEARNING SPACES | | |
| TECHNICAL SUPPORT ROOM | 29 | 1 |
| | 29 | |
| SOE | | |
| 30P SPECIALISED LEARNING STUDIO | 426 | 6 |
| STORAGE AND PREPARATION | 78 | 2 |
| | 504 | |
| | 533 | |
| STUDENT AND COMMUNAL SHARED ZONE | | |
| BADANAMI CENTRE | | |
| BADANAMI HDR | 24 | 1 |
| BADANAMI MEETING | 14 | 1 |
| BADANAMI RECEPTION | 12 | 1 |
| BADANAMI WORKPLACE | 40 | 1 |
| CONSULT ROOM | 40 | 3 |
| ELDERS LOUNGE | 21 | 1 |
| LEARNING RESOURCE | 49 | 1 |
| MANAGER'S OFFICE | 13 | 1 |
| | 213 | |
| BUILDING ENTRY | | |
| COFFEE CART | 16 | 1 |
| DINING | 198 | 2 |
| KIOSK | 81 | 2 |

## Summary of Room Schedule for Bankstown City Campus

| Room Name | Area ($m^2$) | Count |
|---|---|---|
| TIERED DINING | 46 | 1 |
| | 341 | |
| **FUNCTION SPACES** | | |
| 10P MEETING ROOM | 16 | 1 |
| 18P MEETING ROOM | 29 | 1 |
| 26P MEETING ROOM | 41 | 1 |
| 150P CONFERENCE ROOM | 445 | 2 |
| AV EQUIPMENT | 13 | 2 |
| FUNCTION AND DISPLAY SPACE | 302 | 1 |
| KITCHEN AND SERVERY | 51 | 1 |
| STORE | 34 | 2 |
| | 931 | |
| **LIBRARY** | | |
| BOOK COLLECTION | 294 | 1 |
| LAPTOP STORE | 7 | 1 |
| MANAGED LITERACIES TRANSITION | 66 | 1 |
| RESERVE AREA | 15 | 1 |
| RETURNS AREA | 24 | 1 |
| WORKPLACE AND KITCHENETTE | 103 | 1 |
| | 509 | |
| **LIBRARY SUPPORT SPACES** | | |
| DDA | 12 | 1 |
| GROUP STUDY ROOM | 53 | 5 |
| OPEN GROUP / INDIVIDUAL STUDY ZONE | 166 | 1 |
| QUIET STUDY | 126 | 1 |
| SILENT STUDY | 91 | 1 |
| STUDY SMART | 19 | 1 |
| VENDING MACHINES | 16 | 3 |
| | 483 | |
| **WSU POP UP** | | |
| WSU POP UP SPACE | 195 | 1 |
| | 195 | |
| **STUDENT ENGAGEMENT** | | |
| LARGE ZOOM MEETING ROOM | 26 | 1 |
| STUDENT + LIFE ENGAGEMENT | 60 | 1 |
| STUDENT + LIFE ENGAGEMENT STORE | 28 | 1 |
| STUDENT LIFE REP | 42 | 1 |
| | 156 | |
| **STUDENT EXPERIENCE OFFICE** | | |
| STAFF AREA | 233 | 1 |
| STAFF KITCHENETTE | 18 | 1 |
| STORE | 8 | 2 |
| STUDENT CENTRAL | 180 | 1 |
| | 439 | |
| **STUDENT EXPERIENCE SPACES** | | |
| ADULT ACCESSIBLE CHANGING FACILITY | 20 | 1 |

## Summary of Room Schedule for Bankstown City Campus

| Room Name | Area ($m^2$) | Count |
|---|---|---|
| CONSULT ROOM | 12 | 1 |
| COUNSELLING ROOM | 107 | 9 |
| ETHNO CULTURAL | 9 | 1 |
| FIRST NATION | 15 | 1 |
| SMALL MEETING ROOM | 21 | 2 |
| SPOON ROOM | 15 | 1 |
| | 199 | |
| **STUDENT SOCIAL SPACES** | | |
| CLUB AND SOCIETY ROOM | 12 | 1 |
| EVENT SPACE / STAGE | 21 | 1 |
| GAMING DEN | 30 | 1 |
| THE DEN | 162 | 1 |
| THE GARDEN | 224 | 1 |
| THE KITCHEN | 201 | 2 |
| | 650 | |
| **STUDENT SUPPORT SPACES** | | |
| ABLUTION | 18 | 2 |
| BUILDING RECEPTION | 35 | 1 |
| CHAPLAIN ROOM | 15 | 1 |
| CIRCULATION | 28 | 1 |
| FIRST AID | 9 | 1 |
| MULTIFAITH SPACE | 29 | 1 |
| PARENTS ROOM | 12 | 1 |
| PRAYER ROOM | 61 | 2 |
| QUEER | 14 | 1 |
| SECURITY OFFICE | 25 | 1 |
| SHOE RACK | 13 | 2 |
| STORE | 34 | 2 |
| WOMEN'S ROOM | 14 | 1 |
| IT SUPPORT | 52 | 1 |
| | 359 | |
| | 4475 | |
| **UNIVERSITY/EDUCATION USE** | | |
| FUTURE FITOUT AREA | 5390 | |
| | 5390 | |
| | | |
| Total Area | 29110 | |