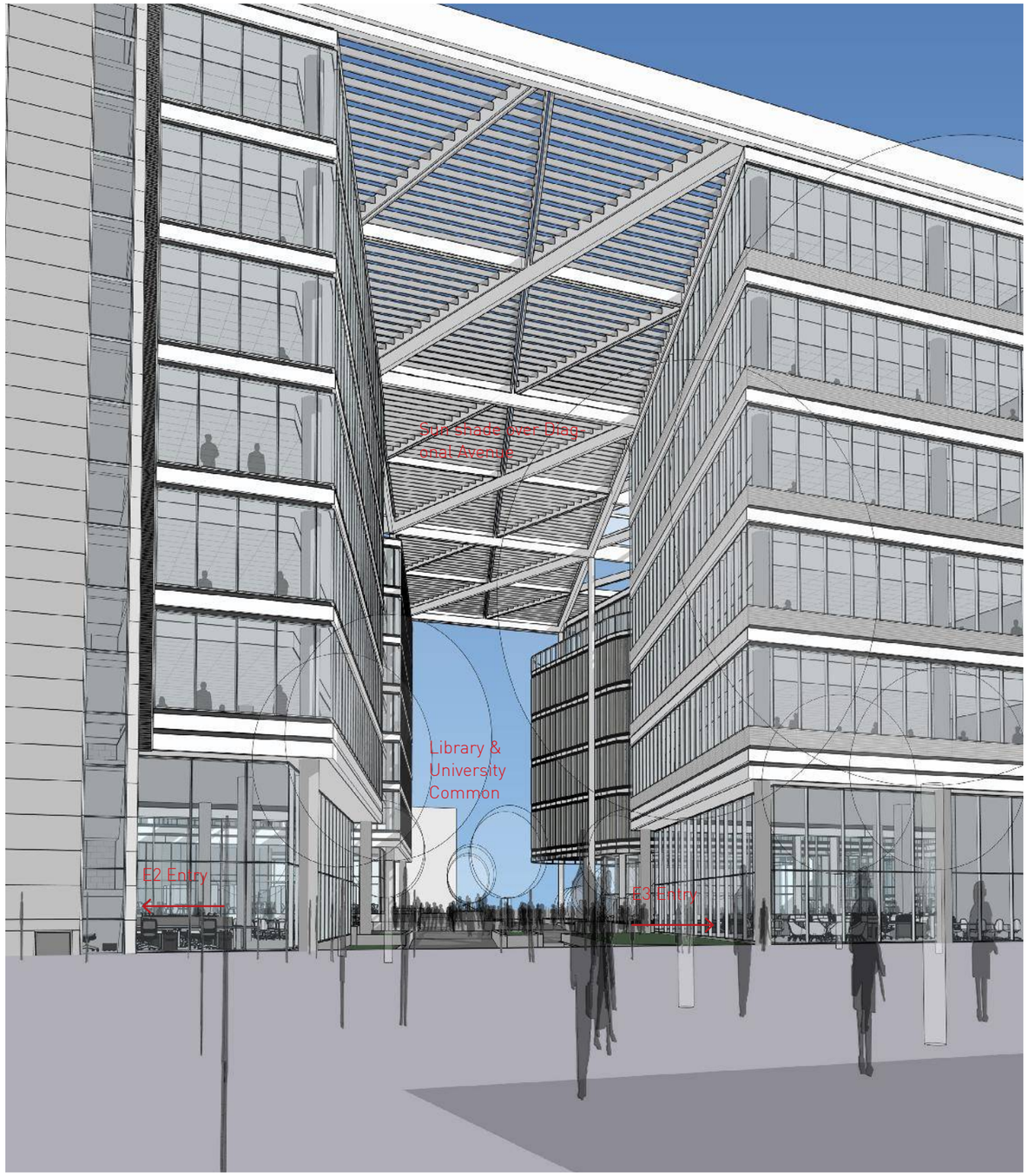
5.0 ARCHITECTURAL FEATURES

ENTRANCE AND RECEPTION

It is proposed that 8-12 University Avenue should be developed with a central focus and entrance sequence along Diagonal Avenue. The Avenue would have a shade structure fixed above which works in conjunction with the building geometry to create a strong sense of place. Similar in approach to Stanford University, the Avenue will become an active 'place' which add to the proposed network of outdoor teaching and studying spaces.



View through Diagonal Avenue

Precedent - Stanford University

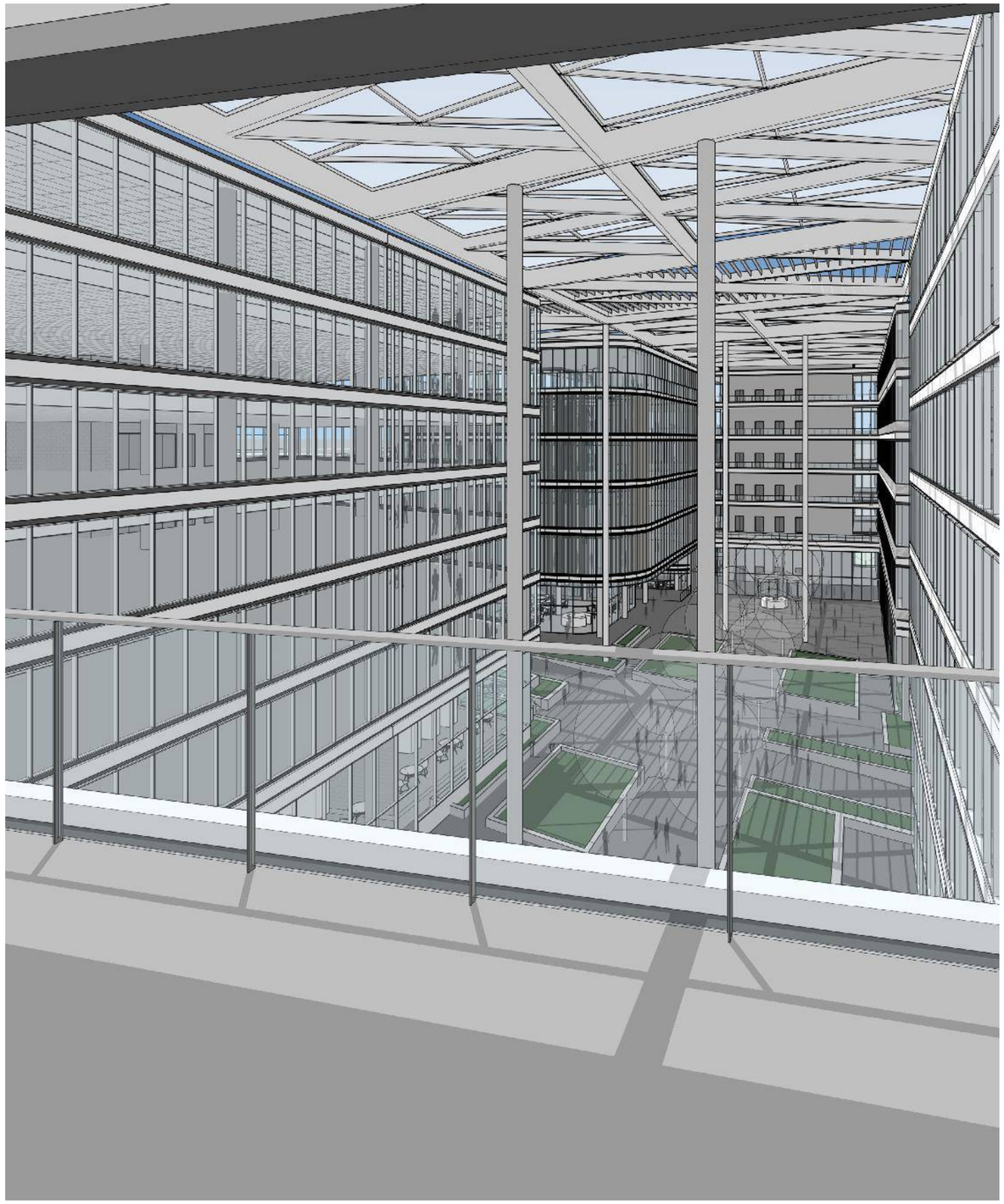
Precedent - Stanford University

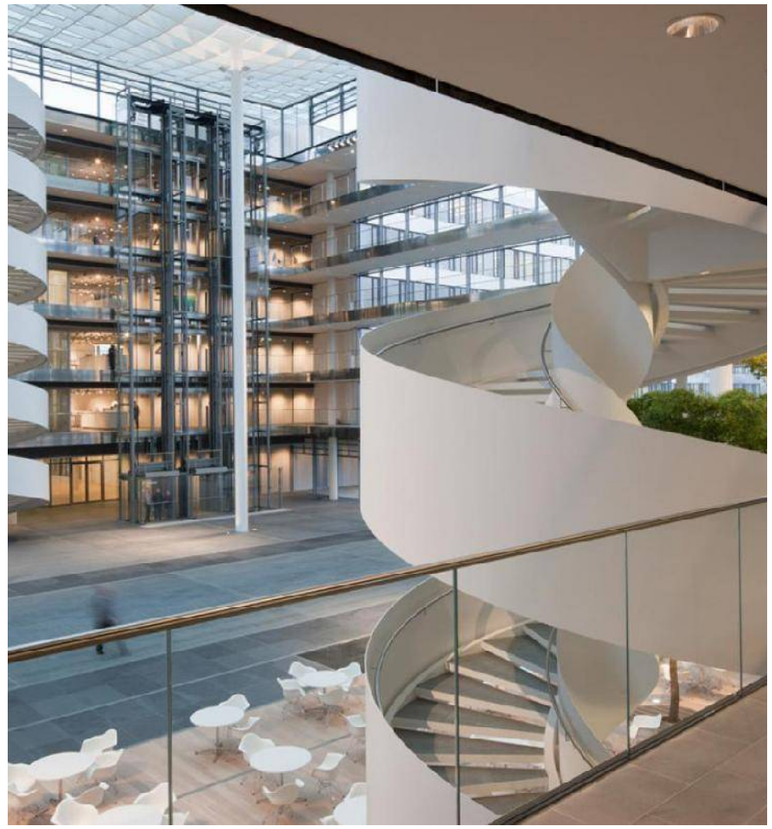
5.0 ARCHITECTURAL FEATURES

ATRIUM SPACE

A full height atrium space occupies the centre of the building bounded by the two wings of office accommodation. To the West of the atrium lies the main central core and passenger lifts.

The atrium is 23 metres wide along the East glass wall and 17 metres deep.





5.0 ARCHITECTURAL FEATURES

CENTRAL CORE & WC'S

The central core is located to the West (Site E2) or East (Site E3) of the floor plate, with the two commercial wings sitting either side. The number, location and orientation of the cores has been designed to maximise the office floor plate and the percentage of perimeter accommodation. The orientation of the centre core and lift lobby relate to the atrium and entrance arrival path. The lift lobbies form part of the bridge link on each level and are open to the atrium space.

Toilet provision is based on the requirements set out by the BCA. Separate male and female toilets are provided with a unisex disabled WC on each floor.

The central and North and South perimeter cores provide riser space for the office supply and extract air ducts. In addition this provision has been made for tenant and landlord risers and pipework requirements.

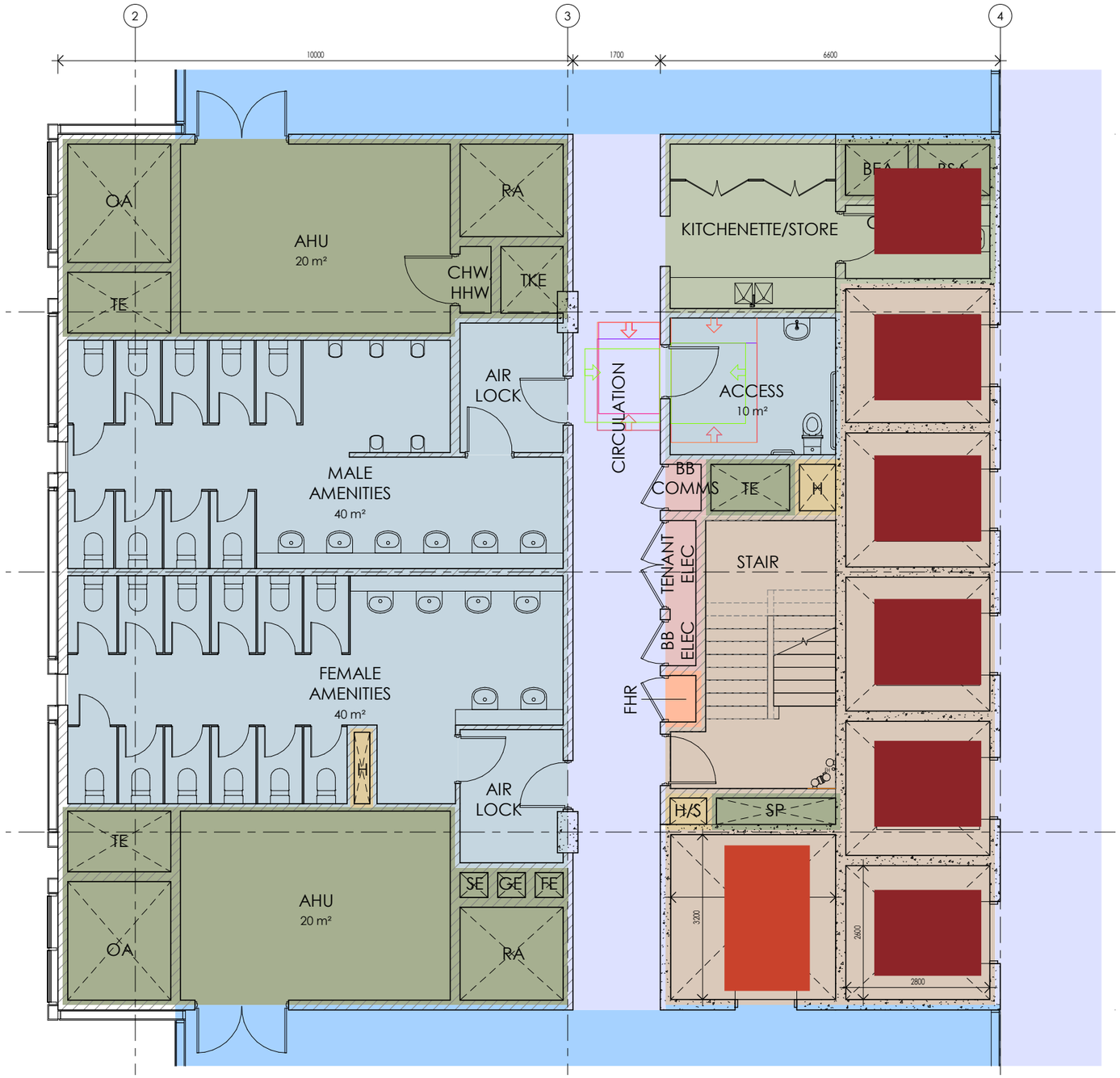
Each of the central cores has a dedicated goods lift with direct access to a loading dock located at ground level for Site E2, or lower ground level for Site E3.

This will facilitiate ease of access / movement of goods and waste, as well as ongoing building maintenance.

Legend:

Passenger Lift

Goods Lift



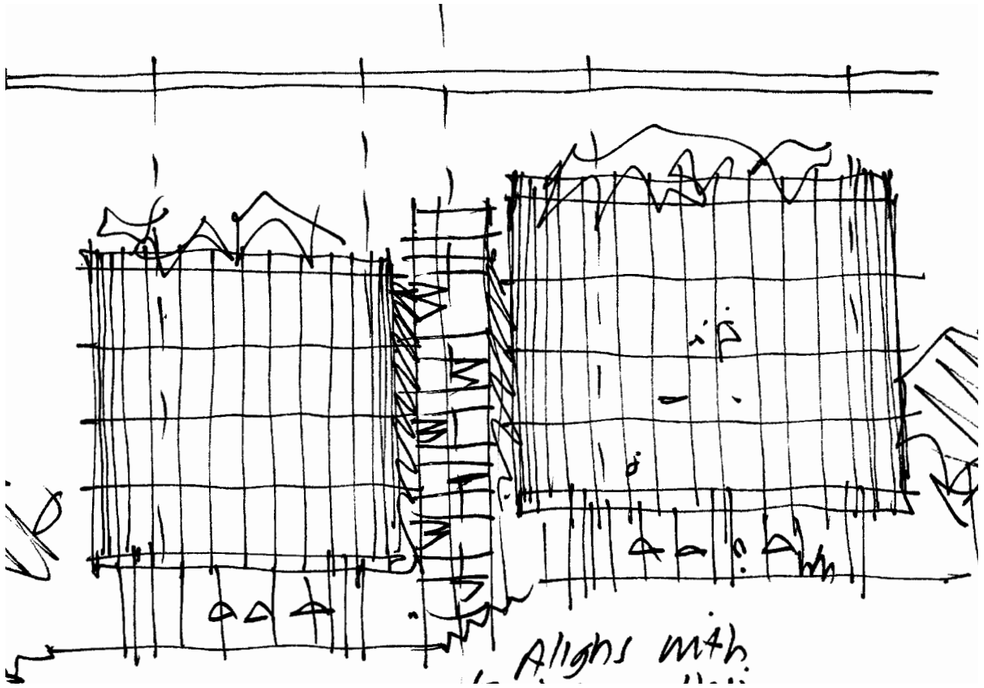
5.0 ARCHITECTURAL FEATURES

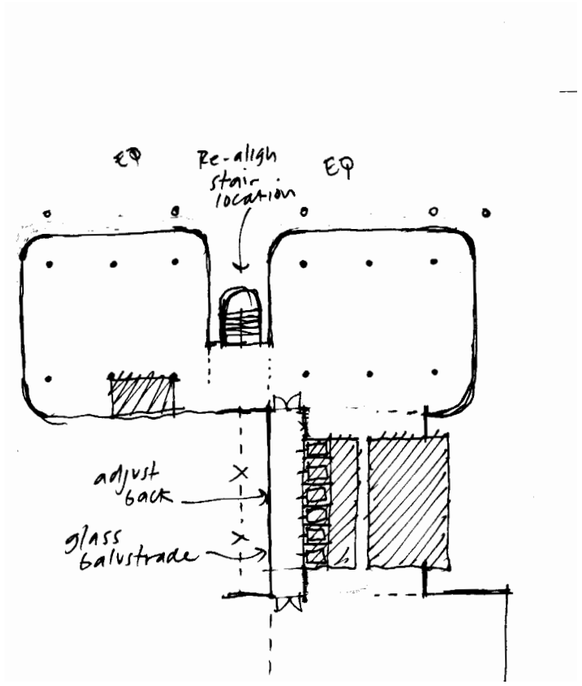
THE 'DRUMS'

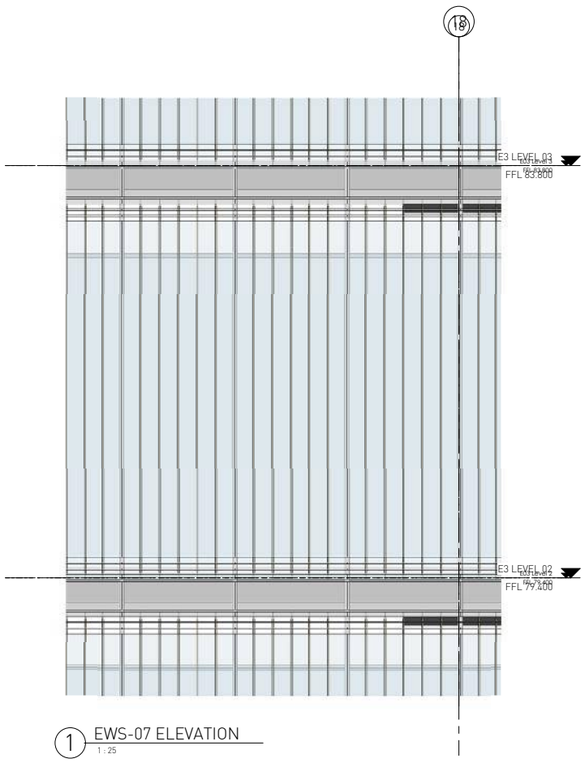
Described as the 'Collaboration Drums' located in the north east quadrant of the project the elements feature as a dynamic built form engaging both with the atria within the building and the University Common to the north.

These two drum like silos cascade down Macquarie walk reflecting the proposed landscape along Macquarie Walk.

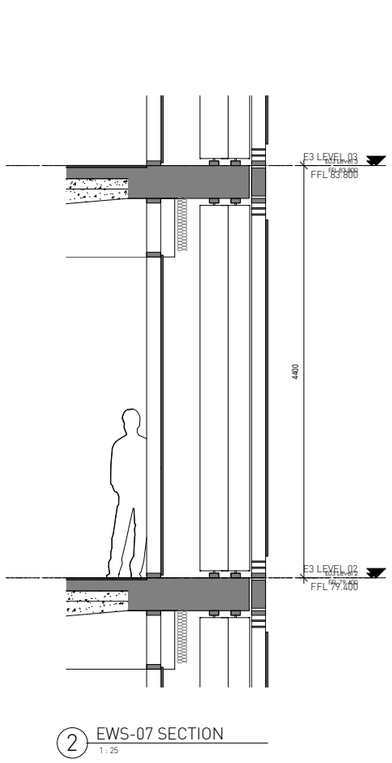
Bisected by the collaboration stair the facades of each 'drum' form features a double skin containing a series of rotating vertical louvres which moderate solar heat gain whilst maintaining views of the common and Macquarie Walk dynamical through the day.



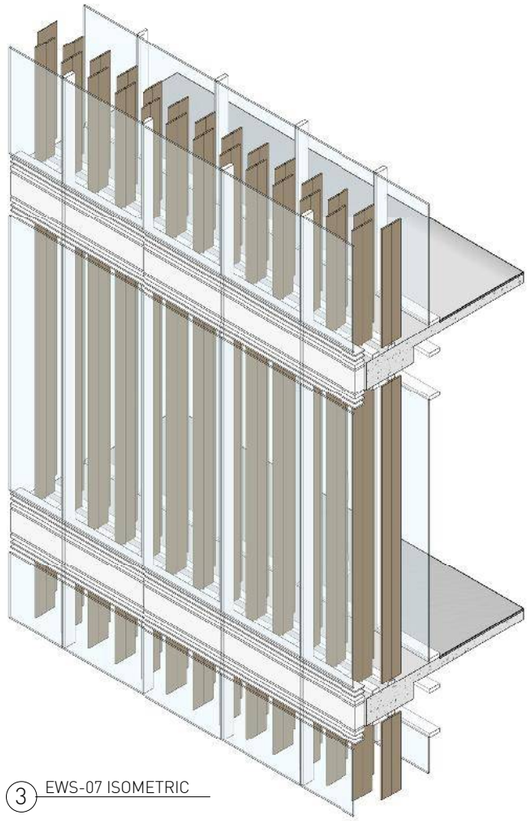




1 EWS-07 ELEVATION
1 : 25



2 EWS-07 SECTION
1 : 25



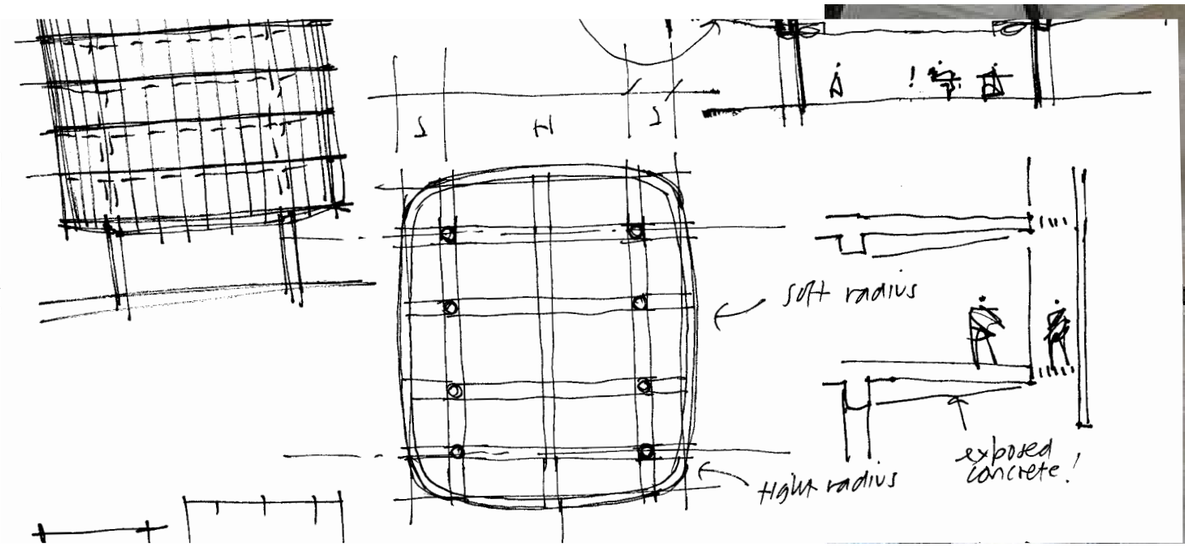
3 EWS-07 ISOMETRIC

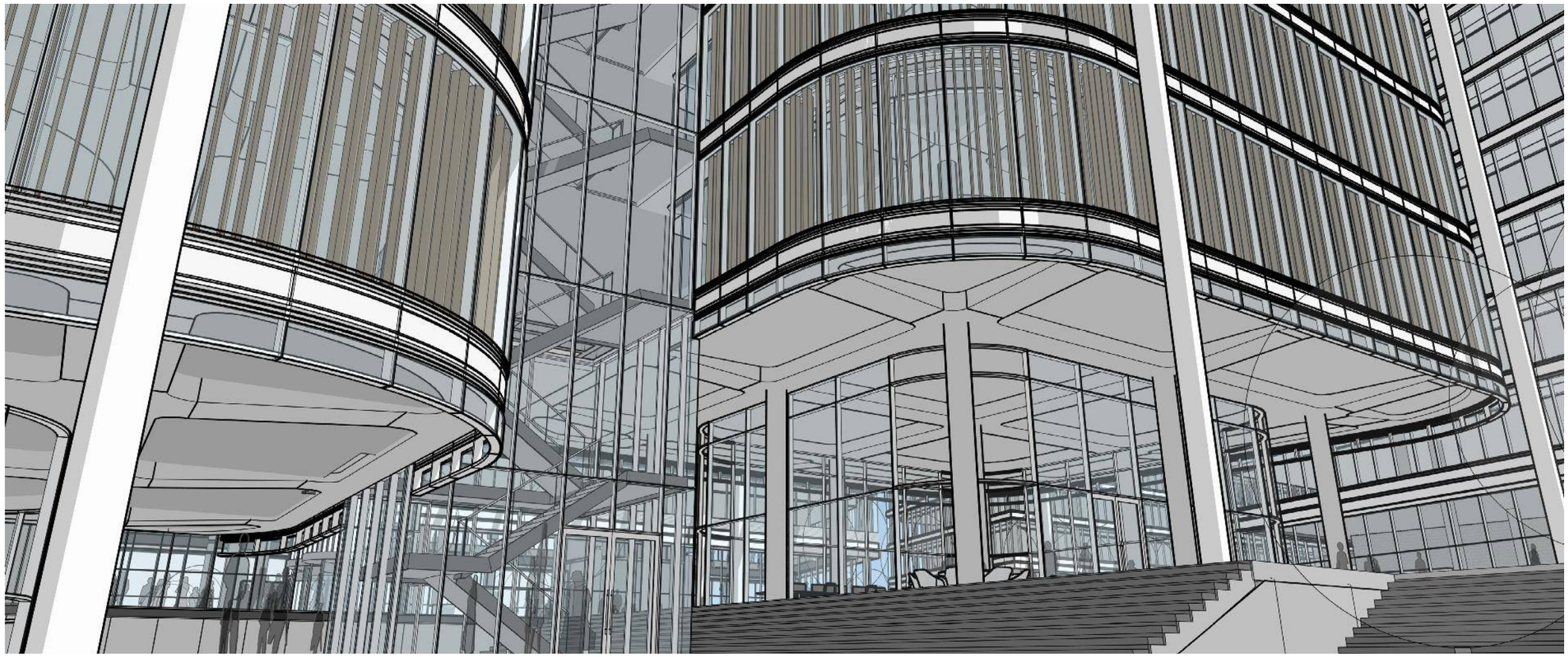
5.0 ARCHITECTURAL FEATURES

EXTERNAL SOFFIT

The ground floor soffits to each collaboration drum will have exposed structural elements consisting of tapered concrete beams.

These will function as structural components while also enhancing the aesthetic as seen from Macquarie Walk .



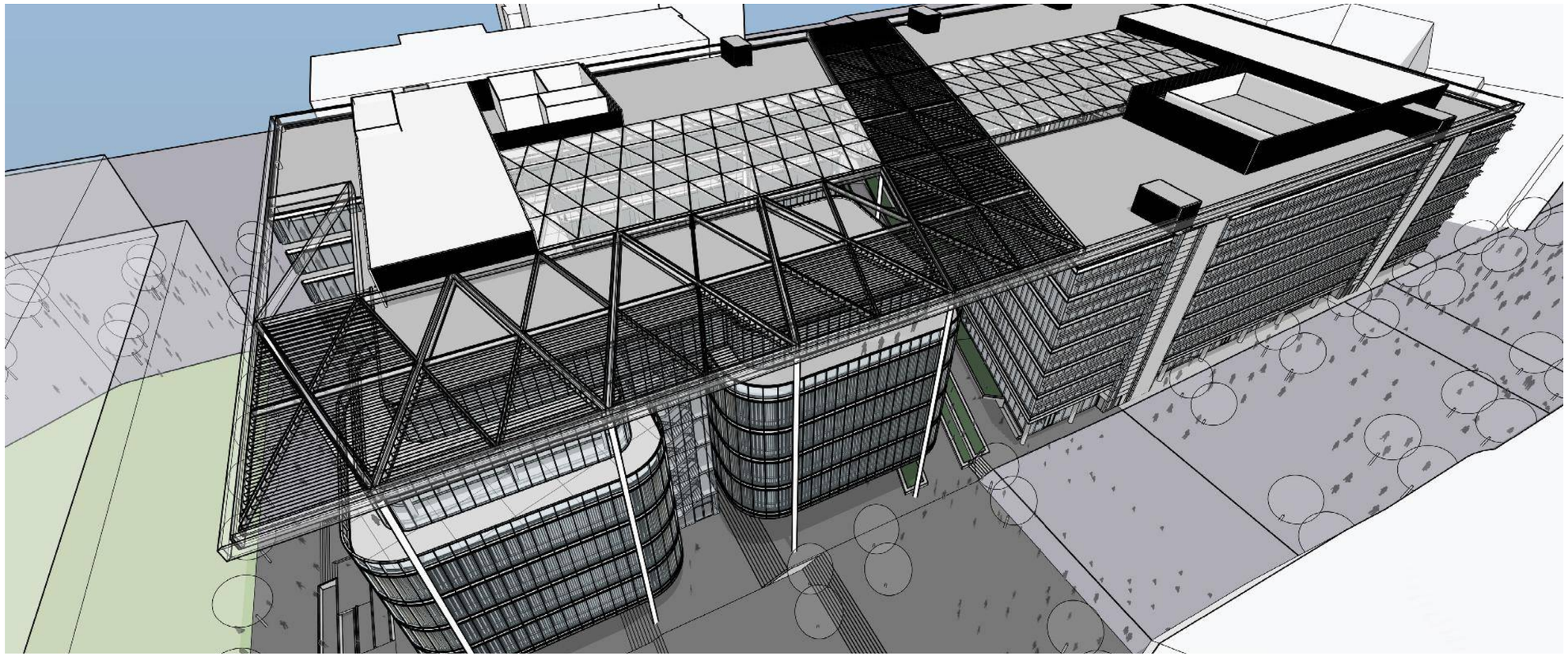


5.0 ARCHITECTURAL FEATURES

LEVEL 4/5 TERRACE

At levels 4 and 5 above the collaboration drums the facade line is stepped to modulate the building mass and provide opportunity for external roof terraces accessible by the building patrons.

These terraces provide the opportunity for communal spaces with elements of planting and afford a scenic view of the University common and the campus beyond.



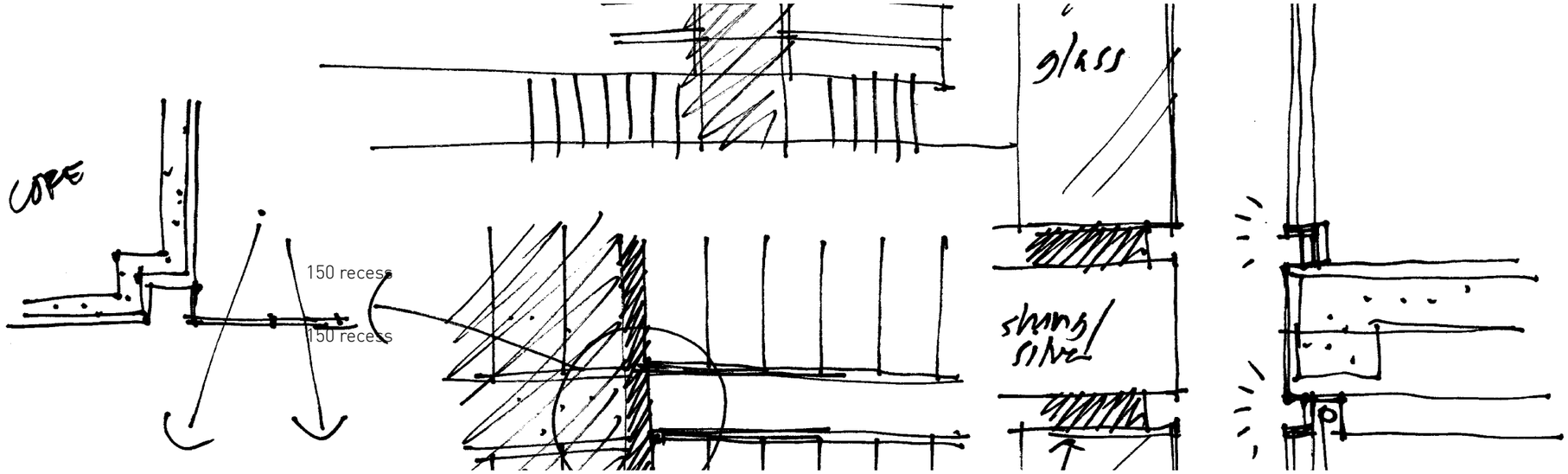
5.0 ARCHITECTURAL FEATURES

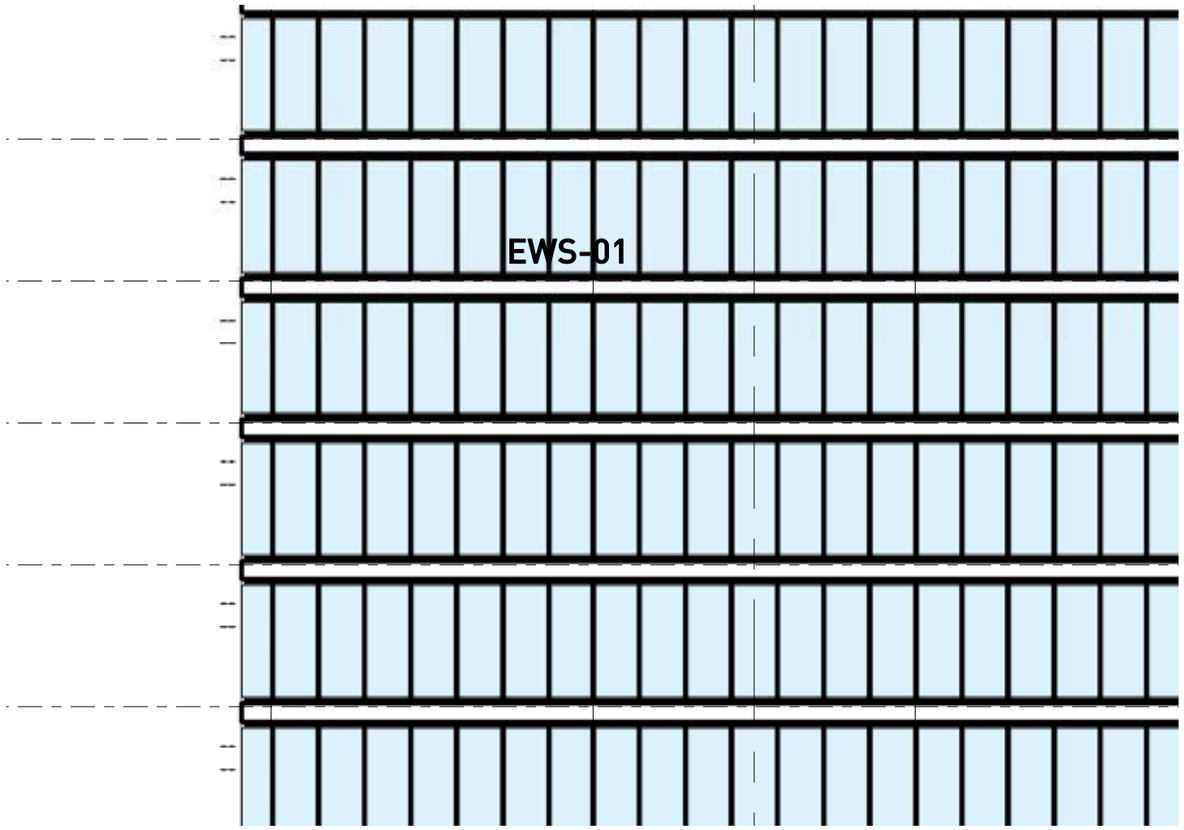
TYPICAL FACADE

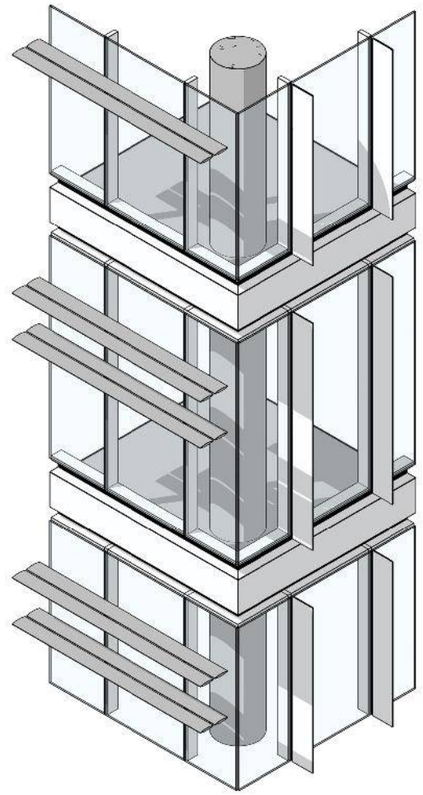
The typical facade system has been developed to express horizontal joints with clearly defined spandrels at each floor level to break down the perceived scale of built form.

Mullion spacings coordinates evenly with an 8400 building grid allow for a modular system that can house, glazed, solid or louvred panels as required.

Sun shading is deal with by both horizontal and vertical sunshade devices specified in relation to the facades aspect. Vertical sunshade is included typically to the western and eastern elevations, horizontal sunshading is providing to the north elevations.





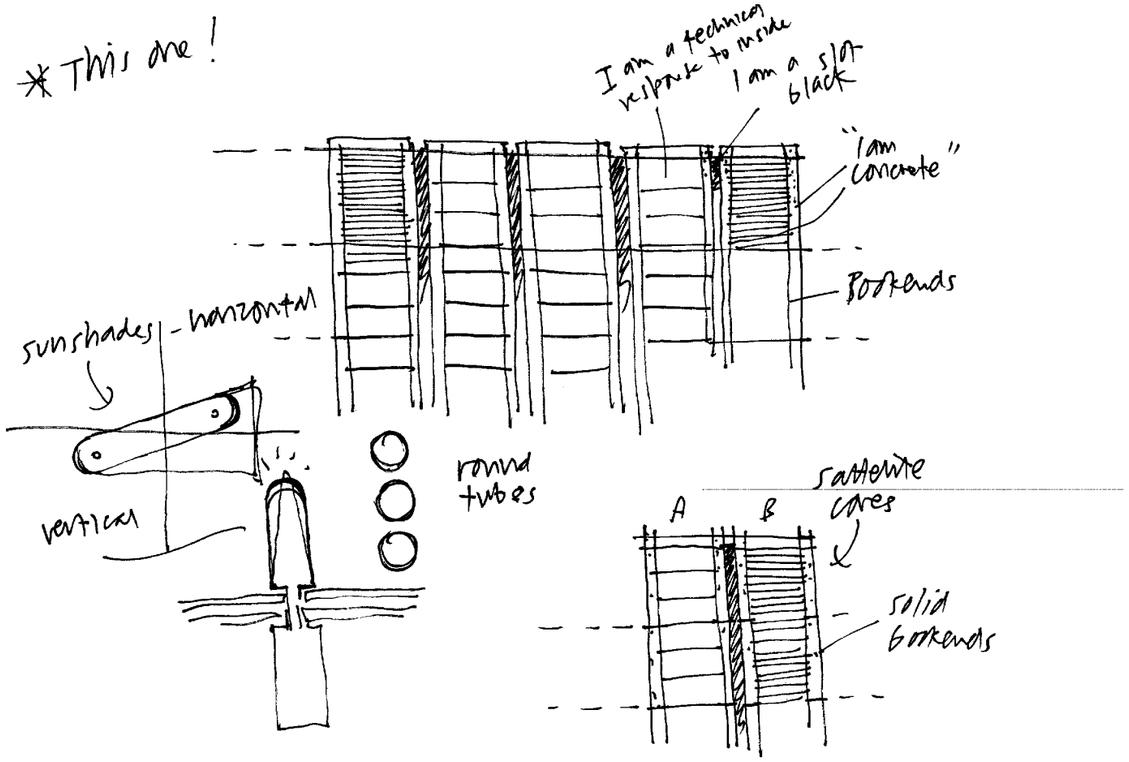


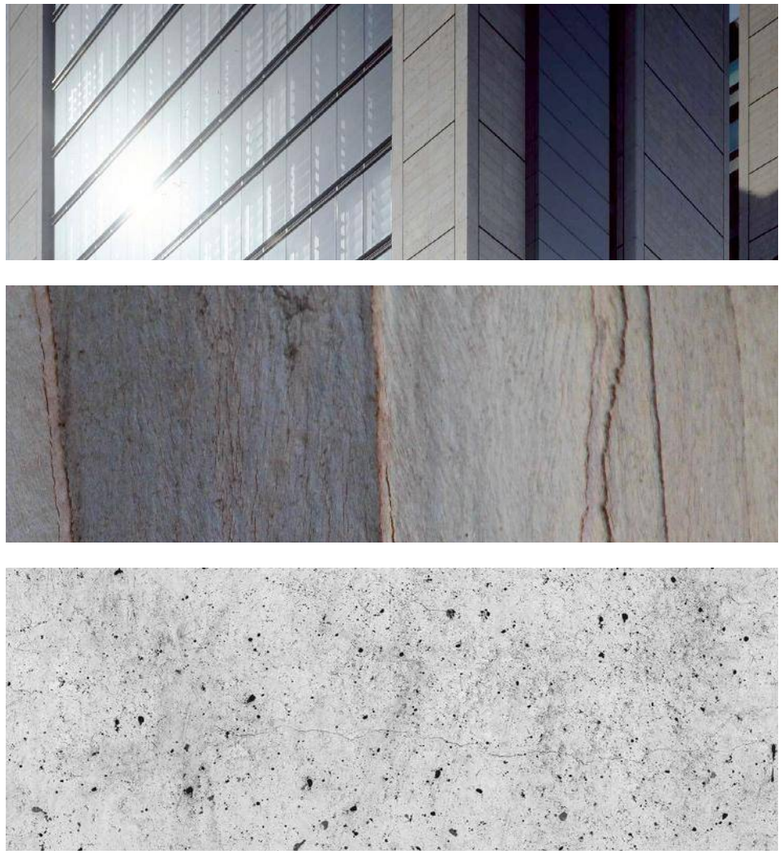
5.0 ARCHITECTURAL FEATURES

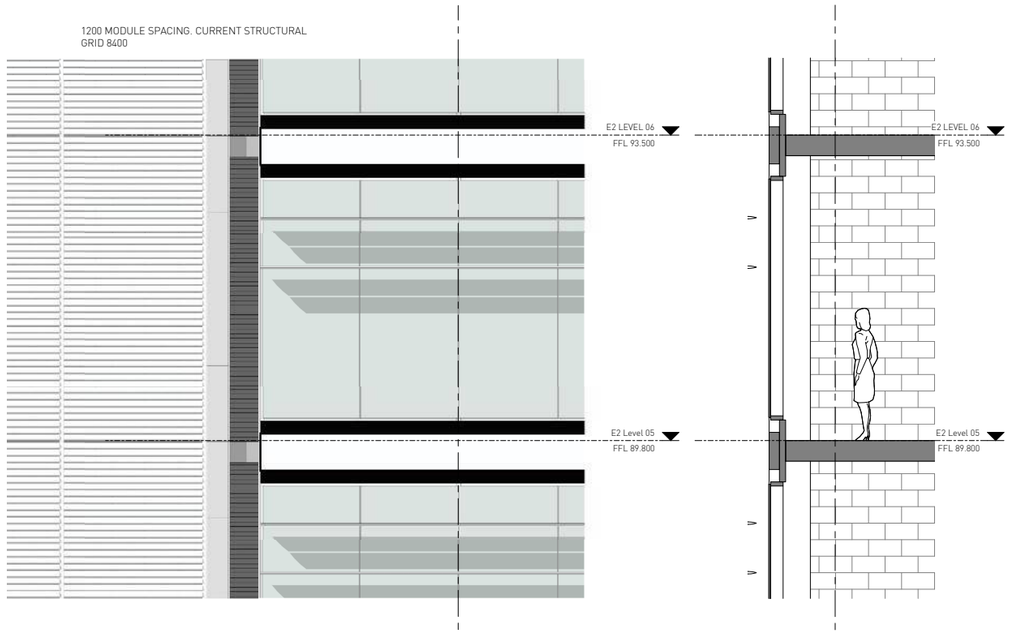
PRIMARY AND SECONDARY CORE

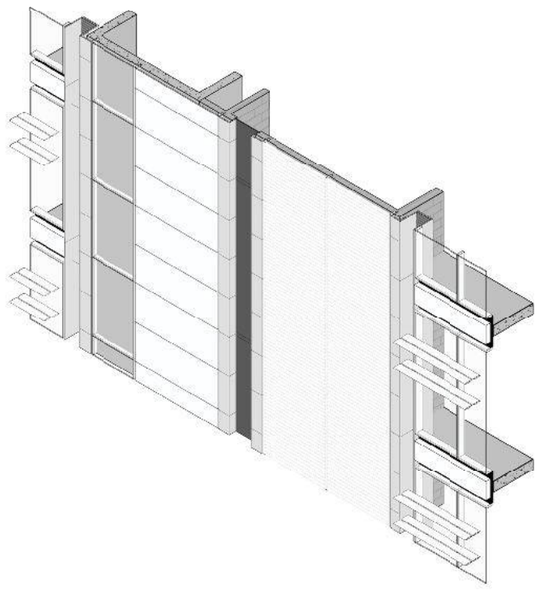
Facade systems developed for both the primary and secondary cores have been detailed with lightweight concrete panels. Their texture and colour will reflect the off-form concrete aesthetic found throughout the campus as a feature of several celebrated buildings designed by architect Walter Abraham. Equally the warm grey tones selected for the panel colour take inspiration from the grey silver bark of the eucalypts prevalent throughout the campus landscape.

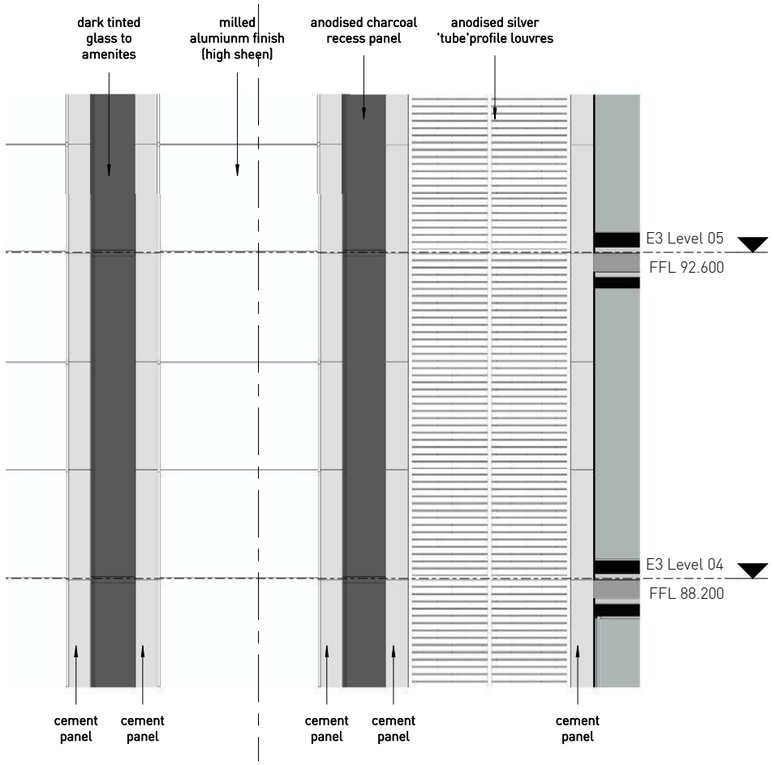
Expression of vertical joints distinguishes the core as an element independent of the typical facade system. Further articulation of horizontal panel joints creates the opportunity for functional zones of window, louvre for mechanical systems and provision of natural daylight to stairs.











5.0 ARCHITECTURAL FEATURES

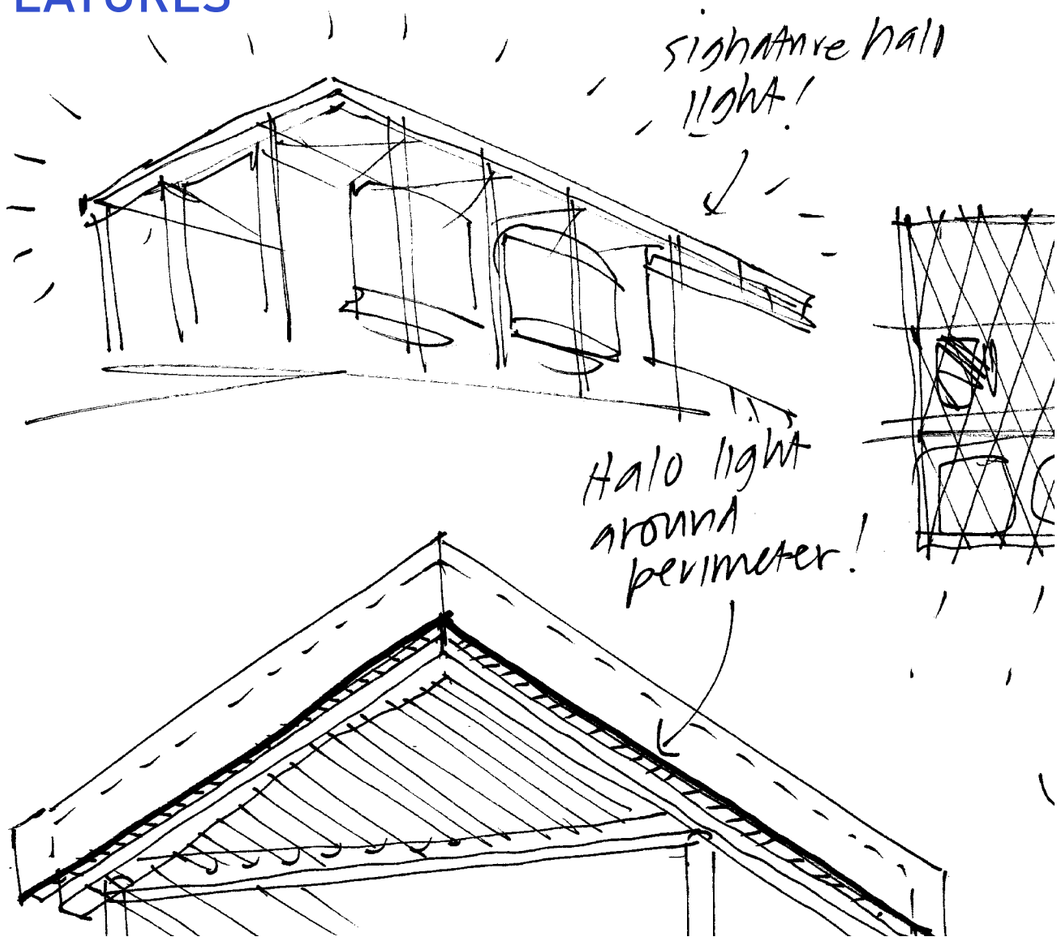
ROOF FEATURE

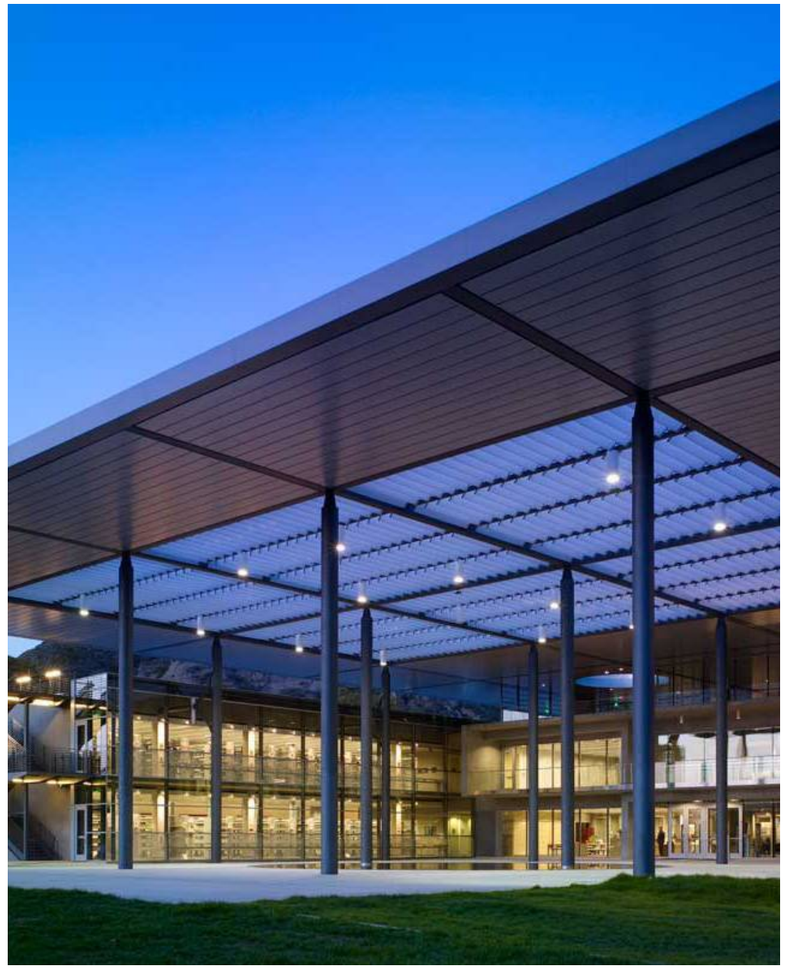
The roof feature has been designed to encompass the collection of building below into one coherent form. This approach creates a signature silhouette that will reinforce the buildings identity across the campus.

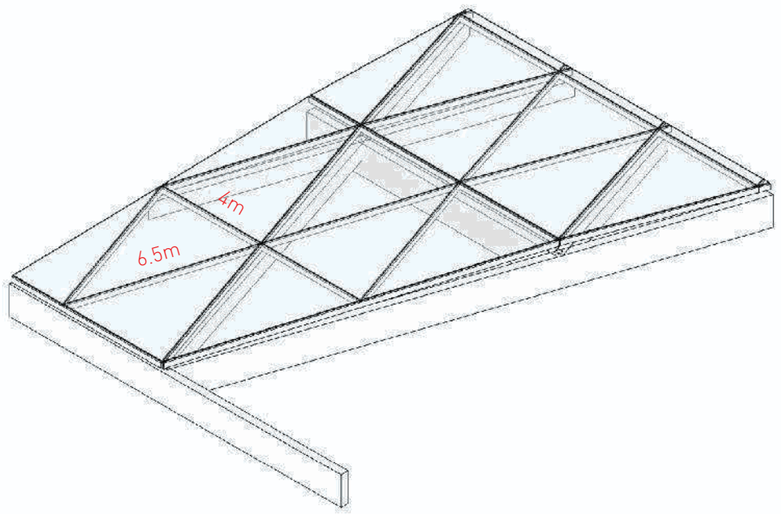
An efficient primary structure organised as a diagrid provides the opportunity to fine tune the roof treatment relative to the uses below. Panels types consist of louvre horizontal louvre to provide sunshade over the north south link and upper terraces to the collaboration drums. ETFE (Ethylene Tetrafluoroethylene) roof panels for rain protection are located over the forecourt to both buildings.

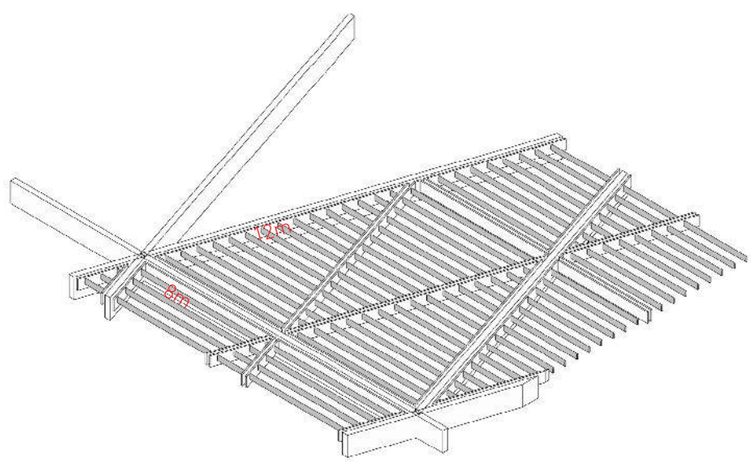
Another important aspect of the proposed design is that it will provide a "cool roof" effect to reduce the local temperature and improve the comfort of the internal and external spaces below.

The exposed roof structure and cladding will be light in colour to maximise the "cool roof" effect.

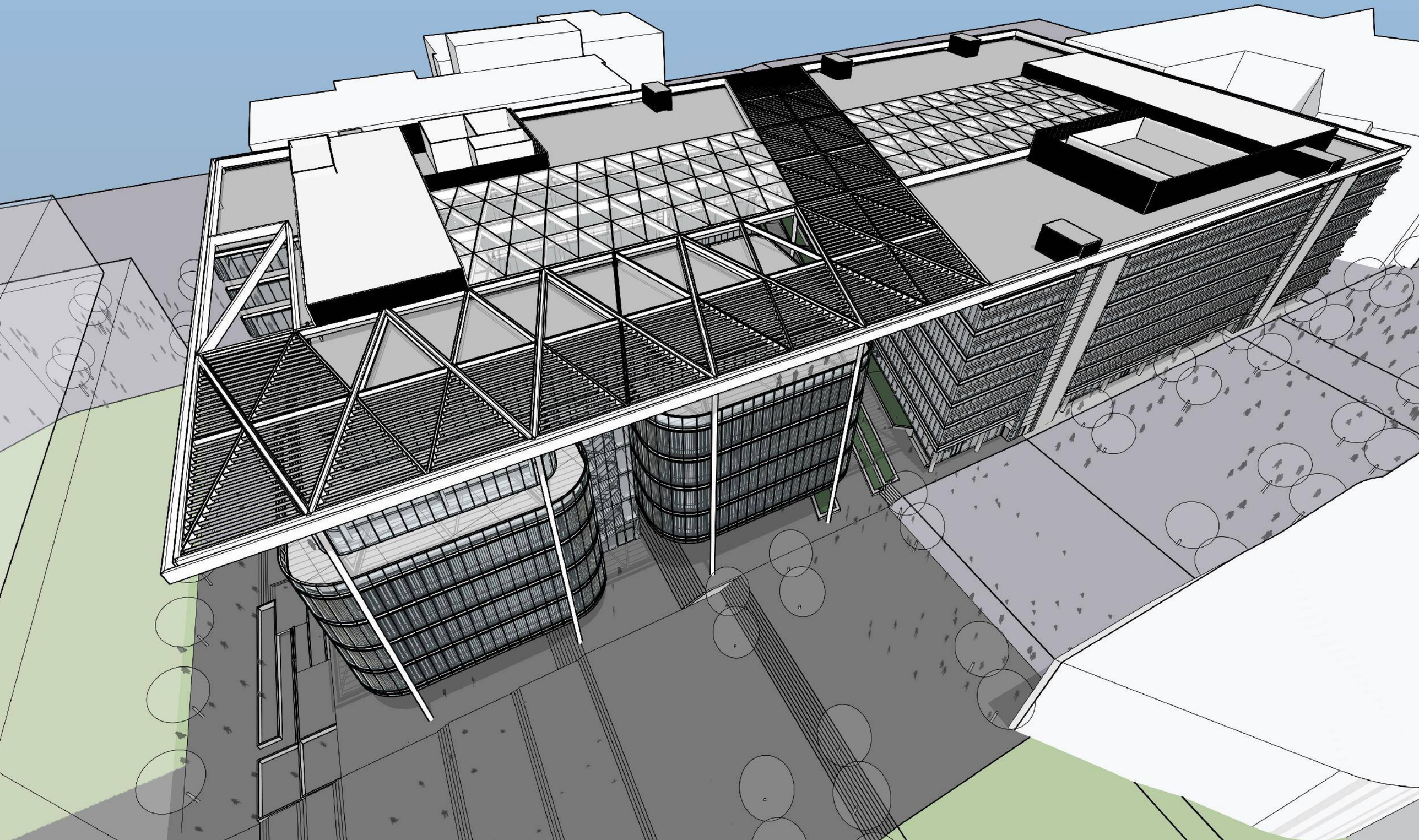








AERIAL VIEW



6.0 - NSW GA - “BETTER PLACED”

INTRODUCTION / BACKGROUND

Better Placed is a policy prepared by the NSW Government Architect in August 2017. It is an integrated policy for the NSW built environment with the purpose of improving design outcome across projects to achieve design excellence.

There are seven disctinct objectives help to define the key considerations in the design and delivery of the built environment. Each item is addressed in the following table:

OBJECTIVE 01

Better Fit

Contextual, local and of its place

Good design in the built environment is informed by and derived from its location, context and social setting. It is place-based and relevant to and resonant with local character, heritage and communal aspirations. It also contributes to evolving and future character and setting.

Response:

The site location is within the existing Macquarie University campus. As identified in the broader campus masterplan, it is located in the southern precinct adjacent to the commercial buildings known as the Cochlear Building and the Hearing Hub. To the north, there is the new Macquarie University Library and a large open grassed area know as the Common.

The contextual response is based upon an intimate understanding of the campus masterplan, its heritage and the future vision for the precinct. It responds to the clearly defined east-west grid algnment of the built fabric which is a response to improved solar orientation and greater opportunities for ecological design.

The site is bisected by a generous angular public access route which visaully and physically connects the Common to a potential new pocket park located in the open carpark area of the Cochlear Building.

The scale of the building responds to the masterplan constraints with a height limit of 36m, placing it appropriately into a the context of two existing similarly sized buildings which together will form the commercial building precinct within the University Campus.

OBJECTIVE 02

Better Performance

Sustainable, adaptable and durable

Environmental sustainability and responsiveness is essential to meet the highest performance standards for living and working. Sustainability is no longer an optional extra, but a fundamental aspect of functional, whole of life design.

Response:

Sustainability is at the heart of the proposed revevelopment. Working closely within the University’s ESD policies, the building has been designed to minimise energy consumption and to provide intelligent passive design solutions wherever possible.

The building orientation is set out to reduce the heat loadings from the east and west, whilst maximising the north facing facades that allow for greater solar control opportunities through the use of horizontal shading devices. The building floor plates are 24m deep, providing excellent natural light charateristics which reduce the need for artificial lighting while providing an high level of Internal Environmental Quality (IEQ).

The Collaboration Drums are a double skin system with a fully customised internal solar control vertical louvre system that automatically responds to solar orientation throughout the day. This unique approach will create low energy spaces that will be naturally lit and comfortable to use at all times of the year.

The building is surmounted with a large and generous shade canopy roof that provides effective solar control and weather protection over the central public domain spaces. The building is designed to achieve 5 star greenstar and 5 star NABERS ratings, consistent with best practice in commercial building design. Provision for photovoltaic panels is located at roof level to generate energy for battery storage.

OBJECTIVE 03

Better for Community

Inclusive, connected and diverse

The design of the built environment must seek to address growing economic and social disparity and inequity, by creating inclusive, welcoming and equitable environments. Incorporating diverse uses, housing types and economic frameworks will support engaging places and resilient communities.

Response:

Located in the heart of the Macquarie University Campus, the project is open to the wider public and all external and foyer areas can be accessed during the day.

There is a wide variety of external spaces that facilitate informal interaction or quiet reflection.

Universities by their very nature are welcoming and inclusive environments, promoting social transparency and interaction for both staff and students.

Macquarie University prides itself upon it’s broad range of policies and initiative, encompassing diability access, genfer equality, sexual diversity, cultural diversity and age diversity. There are also social and professional programmes associated with Aboriginal and Torres Straight Islanders.

In design terms, the provision of the Collaboration Drums exemplifies this apporach the the potential for cross fertilisation of ideas and identities within the working spacesof the building.

OBJECTIVE 04

Better for People

Safe, comfortable and liveable

The built environment must be designed for people with a focus on safety, comfort and the basic requirement of using public space. The many aspects of human comfort which affect the usability of a place must be addressed to support good places for people.

Response:

The proposed project has been designed around full accessibility throughout the facility with fully compliant DDA access routes to, from and around the building. The outdoor landscape areas incorporate complaint accessible ramps, and lifts to ensure all levels and spaces within the project can be accessed by all.

Human comfort is a key consideration for the workplace design, incorporating Property Council of Australia A-Grade interior spaces, with high levels of Indoor Environmental Quality to a level of 5 Green Stars based upon the Green Building Council certification.

All spaces have direct access to natural light and views, creating a working environment of the highest quality. The Collaboration Drums incorporate a sophisticated double skin facade system to ensure that the internal areas are not subject to uncomfortable levels of solar gain or glare.

The public domain and central courtyard spaces are designed to meet CEPTD standards with regard to surveillance and pedestrian safety.

6.0 - NSW GA - “BETTER PLACED”

OBJECTIVE 05

Better Working

Functional, efficient and fit for purpose

Having a considered, tailored response to the program or requirements of a building or place, allows for efficiency and usability with the potential to adapt to change. Buildings and spaces which work well for their proposed use will remain valuable and well-utilised.

Response:

The building has been designed around a highly flexible structural grid of 8.4m x 8.4m with interior fitout setout dimensions of 1.2m x 1.2m. This arrangement allows for efficient and flexible basement parking planning with no structural transfers required. The office floor plates are generally open plan in nature and can accommodate a wide range of uses, including cellular office spaces, laboratories, manufacturing areas, academic spaces and libraries.

The design philosophy has been based around the principles of Low Energy, Long Life and Loose Fit to ensure that the building can adapt to inevitable change over its lifetime.

Building servicing has been designed to achieve a wide performance range up to a density of 1 person per 10sqm (1:10), with bathroom areas and lift performance also benchmarked against the same maximum density.

With a design life of over 50 years, the building is well suited to a variety of functions suitable to an evolving and dynamic university.

OBJECTIVE 06

Better Value

Creating and adding value

Good design generates ongoing value for people and communities and minimises costs over time. Creating shared value of place in the built environment raises standards and quality of life for users, as well as adding return on investment for industry.

Response:

The proposed development is a very efficient building with every component making a contribution to its performance in the most cost effective manner.

The public areas are highly valued as a spatial resource, creating additional external recreation and landscaped areasto improve the quality of life for users and visitors.

The cost of development is balanced by the potential for income, making it a valuable asset for the University, increasing its value both as an institution and a business.

OBJECTIVE 07

Better Look and Feel

Engaging, inviting and attractive

The built environment should be welcoming and aesthetically pleasing, encouraging communities to use and enjoy local places. The feel of a place, and how we use and relate to our environments is dependent upon the aesthetic quality of our places, spaces and buildings. The visual environment should contribute to its surroundings and promote positive engagement.

Response:

The architectural design of the building has been undertaken in a holistic manner with all parts and components working in concert to achieve an aesthetically pleasing whole. Materials are of the highest quality to ensure that they last for the duration of its design life. The scale and proportions of the elevational compositions are well considered such that it makes a harmonious contribution to the building environment of the University campus.

The Collaboration Drums beneath the striking roof element directly addresses the open Common Space to create a strong sense of place, defining the southern commercial precinct. The angled through site link invites pedestrians deep into the heart of building, allowing a clearly articulated sense of arrival. The removal of vehicles along the northern edges allow this liberated space to become a native park, providing visual and physical comfort.

The building responds to the existing sloped landform with a series of stepped terraces that cascade down the hill ,ensuring that the building is appropriately scaled to its surroundings.

This building will make a positive contribution to the rich architectural history of Macquarie University.