

Prepared for:
Macquarie University
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Response to Submissions

Macquarie University Central Courtyard Precinct

architectus™

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Introduction

Architectural Statement

This report has been prepared by Architectus in response to submissions on SSD17_8755 for the Central Courtyard Precinct and subsequent meetings held with GA NSW on 23rd August, 2018.

This document provides clarification and responses to the specific items raised.



Design Changes

The following design modification have been made following exhibition to respond to submissions and enhance the overall project.

Response:

1 Central Courtyard (1CC)

- Relocation of Student Bar to Ground Level Northern Terrace.
- Function Room included on Basement Level.
- Building separation adjusted to remove loading dock from 1CC compartment.
- Redesign of back of house areas including location of Fire Pump Room under Graduation Stairs.
- Removal of Learning & teaching space on ground floor northern façade line. Replaced by U-Bar.
- Primary circulation stairs width increased to 5.7m wide.
- Skylight design changed from Glazed Roof light to North facing sawtooth roof.
- Plant Room articulated around Sawtooth roof.
- L1 & L2 Floor to Floor height changed from 5m to 4.6m
- Reduction in overall effective height by 578mm (RL 83.072)
- Refinement of façade including removal of steel frame and material change of vertical shading to aluminium.
- Podium material changed from Limestone panels to Dry Pressed Brick.
- GFA reduced from by 447m² (Total GFA =14952m² in revised design).

Residential 1 and Residential 2 (R1R2)

- Removal of a level from building R2 reducing overall building height by 3100mm
- Deletion of balconies to all residential floors.
- Refinement of façade including removal of a portion of perforated metal screens and rationalization of ceramic façade elements.
- Replacement of aluminium composite soffits with fibre cement facade sheeting with an applied acrylic textured finish to achieve a monolithic appearance.
- Operable glazing changed to fixed louvres in bedroom windows to meet natural ventilation requirements.
- Redesign of lift and stair cores to increase natural light and amenity to corridors and provide large common area to replace small shared study room.
- Introduction of extra bedroom to five and six bedroom apartments taking the bed count to 342 from the proposed 340 in the SSDA submission.
- Redesign of ground floor common areas including an introduction of an outdoor terrace extension of kitchen/dining and lounge spaces and introduction of laundry facilities on ground floor.
- Redesign of back of house plant and waste areas in basement and ramp access to loading dock/carpark and main waste storage.
- The reintegration of loading dock within R1+R2 scope.

1.0 General

1.1 Consideraton to Adaptive Reuse

GANSW Comment:

Although the EIS describes the Central Courtyard as 'one of Australia's most iconic modern urban landscapes' (EIS p21), no consideration was given to adaptive reuse of either the building or the courtyard. The Architectural Design Statement also acknowledges the significance of original buildings as legacy buildings (Appendix A, p12) and references a legacy report prepared by Tropman and Tropman (which has not been included in the EIS).

Response:

The legacy report was not included in the EIS, as the demolition of C9A and C10A has been previously approved by Ryde Council and the demolition works were completed in January 2018.

The C-10A Union Building (Stages 1 & 2 – by Ancher Mortlock Murray & Woolley - 1969 & Phillip Cox, Storey & Partners - 1972) had undergone subsequent multiple additions and alterations that did not always continue the design intent or detailing, such that the legacy value of the building has been highly compromised. Much of the original fabric had been removed, in particular the facades and internal fabric. The original façade elements remaining comprised a small area of the total original façade. The external staircases were major disruptive elements - the west stair added by Cox in Stage 2 and the east stair possibly added in 1993.



Building C9A, designed by Dick-Smith & Associates and built in c. 1970 was considered of 'Low' Legacy Value and was not a primary element of the Central Courtyard. Archival Recording of both C9a and C10a was conducted by Macquarie University prior to demolition.



C10a – Stair towers interruptive to the Central Courtyard



C10a – Terrace condition with multiple additions

1.2 Existing Building

GANSW Comment:

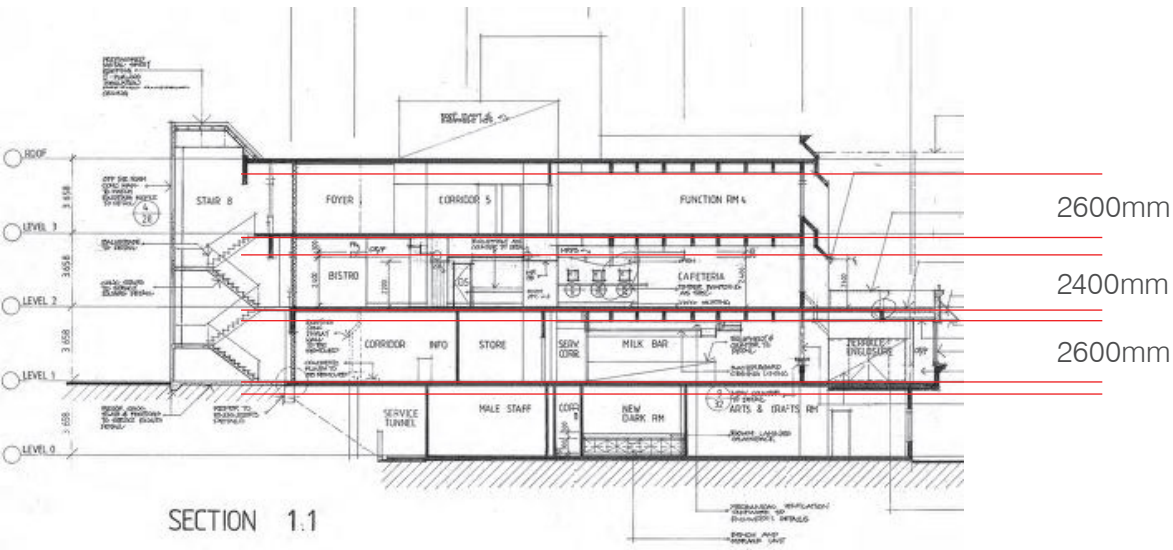
Options for the retention of the existing building (eg combined with infill development), should have been considered and included in the EIS.

Response:

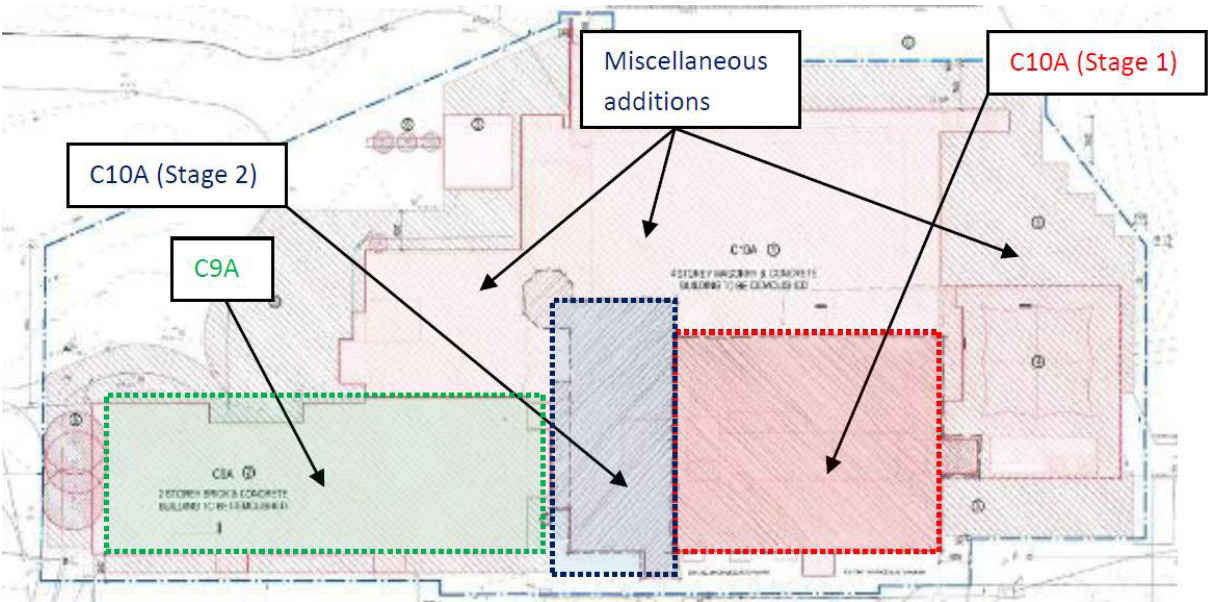
Buildings C9a and C10a had multiple additions and limited floor to floor heights not suitable to contemporary teaching and learning practices.

The proposed floor to floor heights in the 1CC building is 4.6m and 4.7m. This strategy for generous internal clearances establishes inherent flexibility in the building fabric to accommodate a diverse range of contemporary teaching modalities and technologies with large format digital projection.

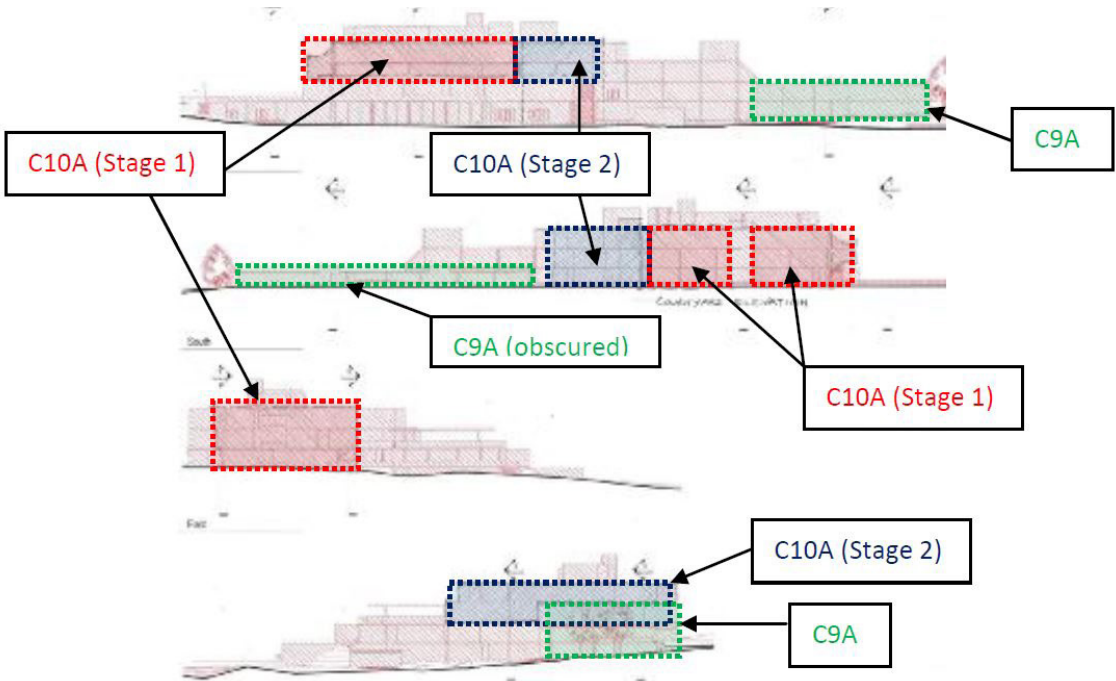
Additionally this strategy contributes towards future-proofing the 1CC building for the inevitable evolution of pedagogical and technological aspects that cannot be precisely anticipated.



Section through C10a – Floor ceiling clearances measure from 2400 to 2600mm



Site Plan of C9a + C10a illustrating multiple additions.



Site Plan of C9a + C10a illustrating multiple additions.

1.3 Competitive Design Process

GANSW Comment:

There is insufficient information about the Competitive Design Process leading to this proposal eg jury membership, assessment criteria and review processes.

Response:

In 2014 a brief was developed for the Central Courtyard Precinct, which was titled the “Campus Heart” and was issued to 28 architectural practices both local and international. 26 submissions were received, and of those, 11 architectural practices were shortlisted. The shortlist was developed in consultation with the MQ Design Review Panel.

The MQ Executive Evaluation Panel selected two consortiums to proceed with preparation of a ‘vision’ In March 2015.

Consortiums lead by Woods Bagot and Architectus prepared their visions with from April to July 2015, with the proposal lead by Architectus awarded the project.

The evaluation panel membership comprised Deidre Anderson (Director, Campus Experience), Joanne Sparks (MU), Prof John Simons (MU), Prof Richie Howitt (MU), Paul Shreier (COO MU), Mark Broomfield (MU Property) and Andrew Cattenach (MU Property).

The design review panel comprised Professor of Urban Planning University of Western Sydney, Chris Alcock from Space Planning and John Richardson from COX, who also assisted in the development of the “Campus Heart”.

The assessment criteria was developed by the University in coordination with the design review panel.

2.0

Landscape and Public Domain

2.1 Tree Removal

GANSW Comment:

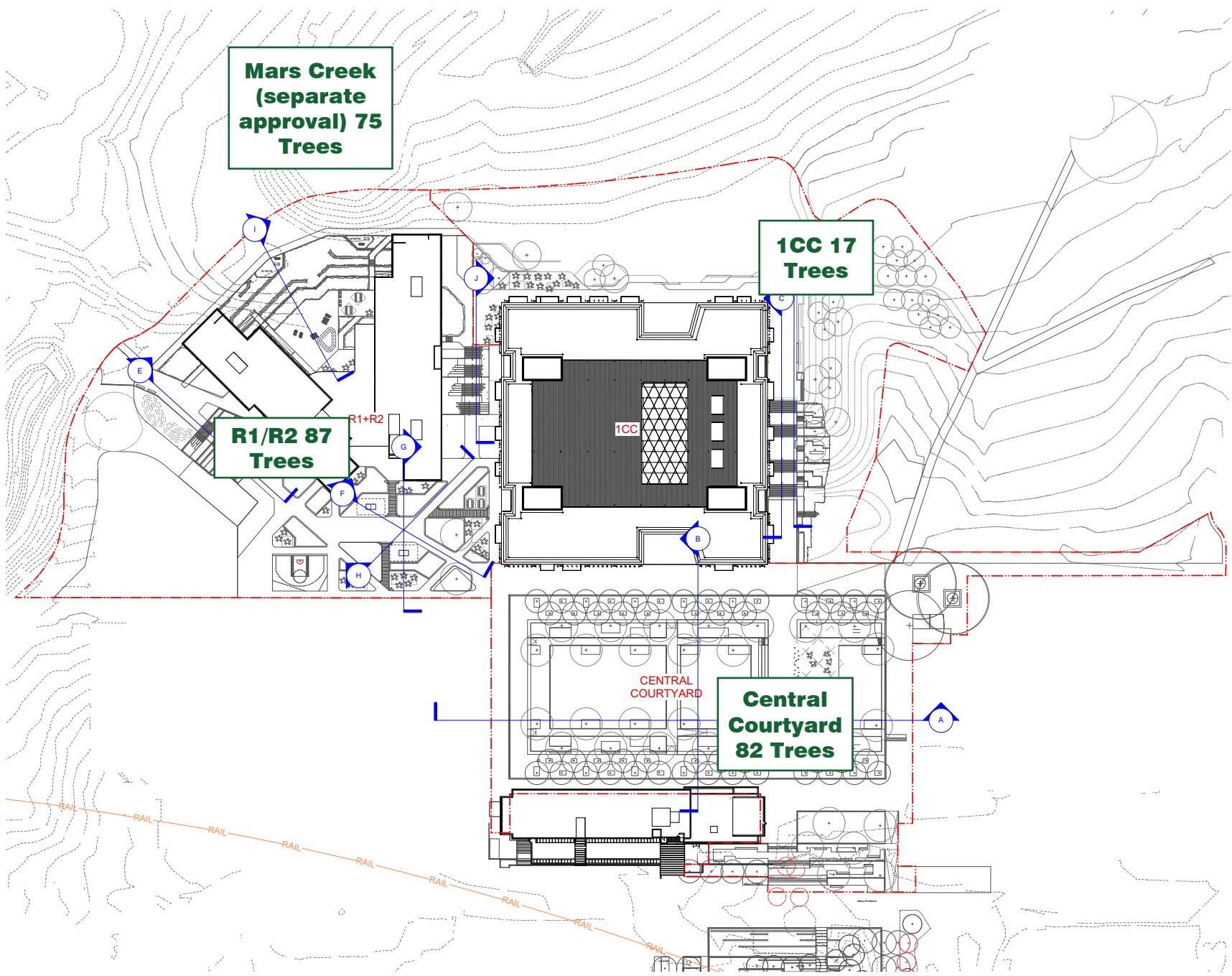
It is noted in the EIS (part 6.8.1 Tree Removal) that all the trees in the courtyard were approved for removal (through Exempt Works provisions in the Ryde DCP) and that only 58 out of 227 trees in the total application area have been retained. The Arborist report (Appendix S, p9) recommends tree replacement to the ratio of 2:1, but there is no indication in the EIS as to where the 338 trees will be provided.

Response:

The following quantity of trees are included in the design for the project:

Building/Stage	Number of Trees
Central Courtyard	82
1CC	17
R1/R2	87
Mars Creek	75
Total	261

In addition, Macquarie University planted 120 trees in January to the north west of the campus once the trees in the Central Courtyard were removed, totalling 381 trees being planted to replace the 169 trees removed.



Above: Quantity of trees included in the design for the project:

West 5 Car Park Native Landscaping



Above: A record from MU of the trees planted in January 2018

Right: Schedules from the tender documents showing the number and type of tree to be provided in each phase. Plans have not been provided (as there are 23 drawings in total).

Plant List - Student Hub							
ID	Qty	Common Name	Botanical Name	Scheduled Size	Spacing (mm)	Mature Height	Mature Spread
Trees							
AC	4	Sydney Red Gum	<i>Angophora costata</i>	600L	AS SHOWN	15 - 20m	6 - 10m
BI	1	Coastal Banksia	<i>Banksia integrifolia</i>	600L	AS SHOWN	5 - 10m	3.5 - 6m
CE	4	Yellow Bloodwood	<i>Corymbia eximia</i>	600L	AS SHOWN	15 - 20m	3.5 - 6m
CG	2	Red Bloodwood	<i>Corymbia gummifera</i>	400L	AS SHOWN	over 30m	10 - 15m
EF	6	Red flowering gum	<i>Eucalyptus ficifolia</i>	600L	AS SHOWN	5 - 10m	3.5 - 6m

Plant List -Mars Creek							
ID	Qty	Common Name	Botanical Name	Scheduled Size	Spacing (mm)	Mature Height	Mature Spread
Trees							
AC	9	Sydney Red Gum	<i>Angophora costata</i>	400L	AS SHOWN	15 - 20m	6 - 10m
AH	6	Dwarf Apple	<i>Angophora hispida</i>	400L	AS SHOWN	5 - 7m	1.2 - 2.0m
CG	4	Red Bloodwood	<i>Corymbia gummifera</i>	400L	AS SHOWN	over 30m	10 - 15m
EG	1	White Stringybark	<i>Eucalyptus globoides</i>	400L	AS SHOWN	25 - 30m	3.5 - 6m
EP	6	Grey Ironbark	<i>Eucalyptus paniculata</i>	400L	AS SHOWN	25 - 30m	3.5 - 6m
ERA	5	Narrow-leaved Scribbly Gum	<i>Eucalyptus racemosa</i>	400L	AS SHOWN	10 - 15m	6 - 10m
MD	5	White Feather Honey Myrtle	<i>Melaleuca decora</i>	400L	AS SHOWN	10 - 15m	6 - 10m
ML	4	Flax-leaved Paperbark	<i>Melaleuca linearifolia</i>	400L	AS SHOWN	5 - 10m	6 - 10m
SG	8	Turpentine	<i>Syncarpia glomulifera</i>	400L	AS SHOWN	over 30m	6 - 10m
Xa	27	Broadleaf Grass-tree	<i>Xanthorrhoea arborea</i>	140mm	AS SHOWN	1.5 - 3m	0.9 - 1.2m

Plant List - Central Courtyard							
ID	Qty	Common Name	Botanical Name	Scheduled Size	Spacing (mm)	Mature Height	Mature Spread
Trees							
FA	32	Crows Ash	<i>Flindersia australis</i>	600L	AS SHOWN	10 - 15m	6 - 10m
FP	50	Urbanite Ash	<i>Fraxinus pennsylvanica 'Urbanite'</i>	600L	AS SHOWN	10 - 15m	6 - 10m
JM	3	Jacaranda	<i>Jacaranda mimosifolia</i>	600L	AS SHOWN	10 - 15m	10 - 15m
JM(R)	1	Jacaranda	<i>Jacaranda mimosifolia</i>	N/A	AS SHOWN	10 - 15m	10 - 15m
WF	2	Weeping Lilly Pilly	<i>Waterhousia floribunda 'Green Avenue'</i>	600L	AS SHOWN	5 - 10m	3.5 - 6m

Plant List - Residential Courtyard							
ID	Qty	Common Name	Botanical Name	Scheduled Size	Spacing (mm)	Mature Height	Mature Spread
Trees							
AR	2	Queensland Kauri Pine, Smooth-barked Ka	<i>Agathis robusta</i>	600L	AS SHOWN	over 30m	6 - 10m
AC	7	Sydney Red Gum	<i>Angophora costata</i>	600L	AS SHOWN	15 - 20m	6 - 10m
BC	7	Lemon Scented Myrtle	<i>Backhousia citriodora</i>	600L	AS SHOWN	10 - 15m	6 - 10m
BI	7	Coastal Banksia	<i>Banksia integrifolia</i>	600L	AS SHOWN	5 - 10m	3.5 - 6m
BA	6	Illawarra Flame Tree	<i>Brachychiton acerifolius</i>	600L	AS SHOWN	25 - 30m	3.5 - 6m
CE	3	Yellow Bloodwood	<i>Corymbia eximia</i>	600L	AS SHOWN	15 - 20m	3.5 - 6m
CG	6	Red Bloodwood	<i>Corymbia gummifera</i>	400L	AS SHOWN	over 30m	10 - 15m
ER	4	Blueberry Ash	<i>Elaeocarpus reticulatus</i>	600L	AS SHOWN	5 - 10m	3.5 - 6m
EF	10	Red flowering gum	<i>Eucalyptus ficifolia</i>	600L	AS SHOWN	5 - 10m	3.5 - 6m
GR	2	Silky Oak	<i>Grevillea robusta</i>	600L	AS SHOWN	10 - 15m	2.0 - 3.5m
HF	2	Native frangipani	<i>Hymenosporum flavum</i>	600L	AS SHOWN	20 - 25m	1.2 - 2.0m
JM	4	Jacaranda	<i>Jacaranda mimosifolia</i>	600L	AS SHOWN	10 - 15m	10 - 15m
MA	12	White Cedar	<i>Melia azedarach var. australasica</i>	600lt	AS SHOWN	5 - 10m	6 - 10m
QP	2	Pin Oak	<i>Quercus palustris</i>	600L	AS SHOWN	20 - 25m	15 - 20m
SI	11	Firewheel Tree	<i>Stenocarpus sinuatus</i>	600L	AS SHOWN	10 - 15m	10 - 15m
Untitled ID	2	Luscious	<i>Tristanopsis laurina 'Luscious'</i>	600L	AS SHOWN	10 - 15m	6 - 10m

2.2 Student Courtyard

GANSW Comment:

The student forecourt south of R1 and R2 will have little amenity because it is partially overshadowed by buildings to the north.

Response:

A floor level of accommodation has been removed from R2 in the revised design, reducing its overall height by 3100mm, with a minor reduction to overshadowing. However, the primary function of the student forecourt is as a transitory experience along a pedestrian path connecting the Central Courtyard to Gymnasium Road. This forms a western entry into the campus. The project provides multiple opportunities for access of sunlight.

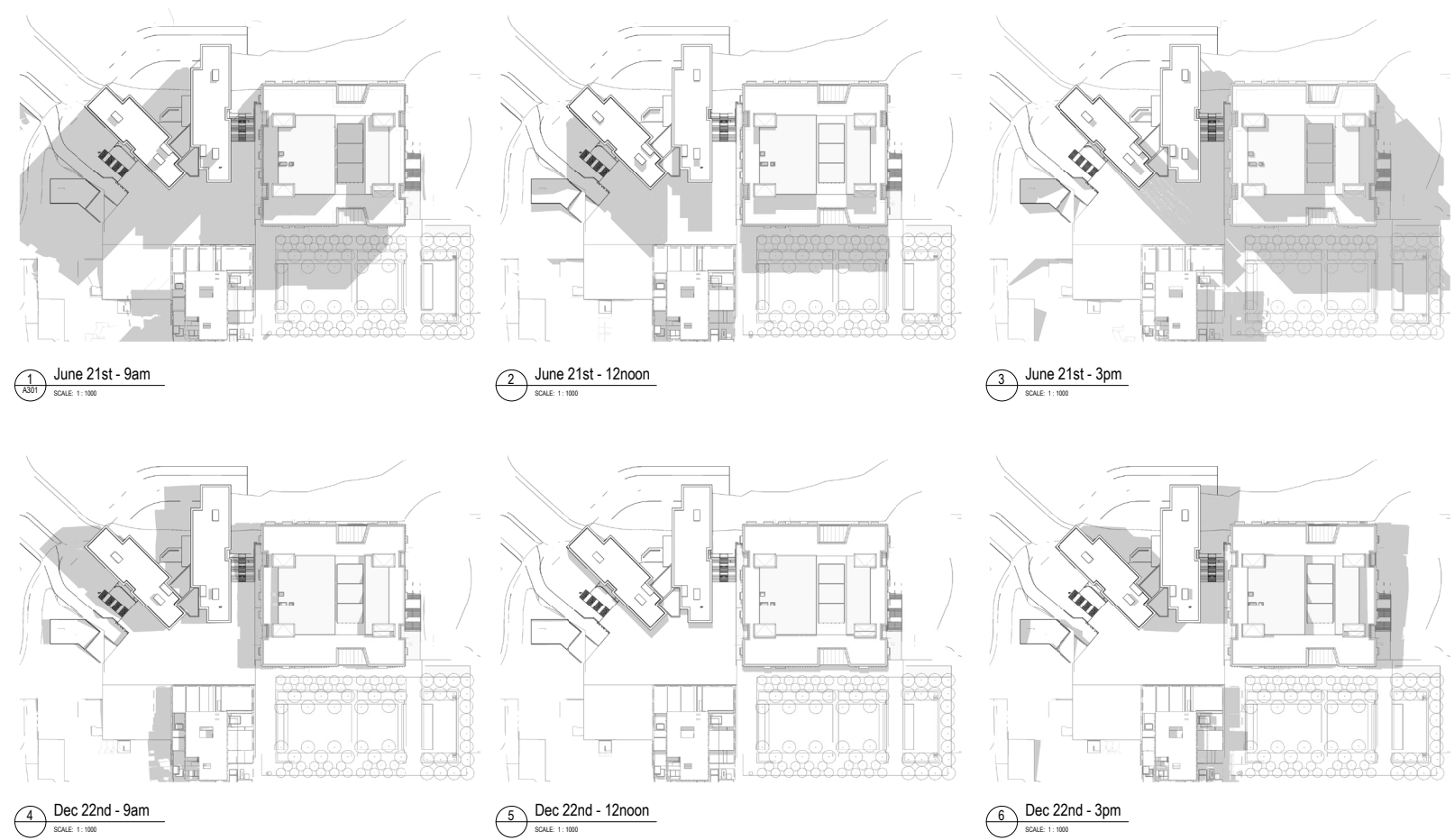


Above: SSDA submission

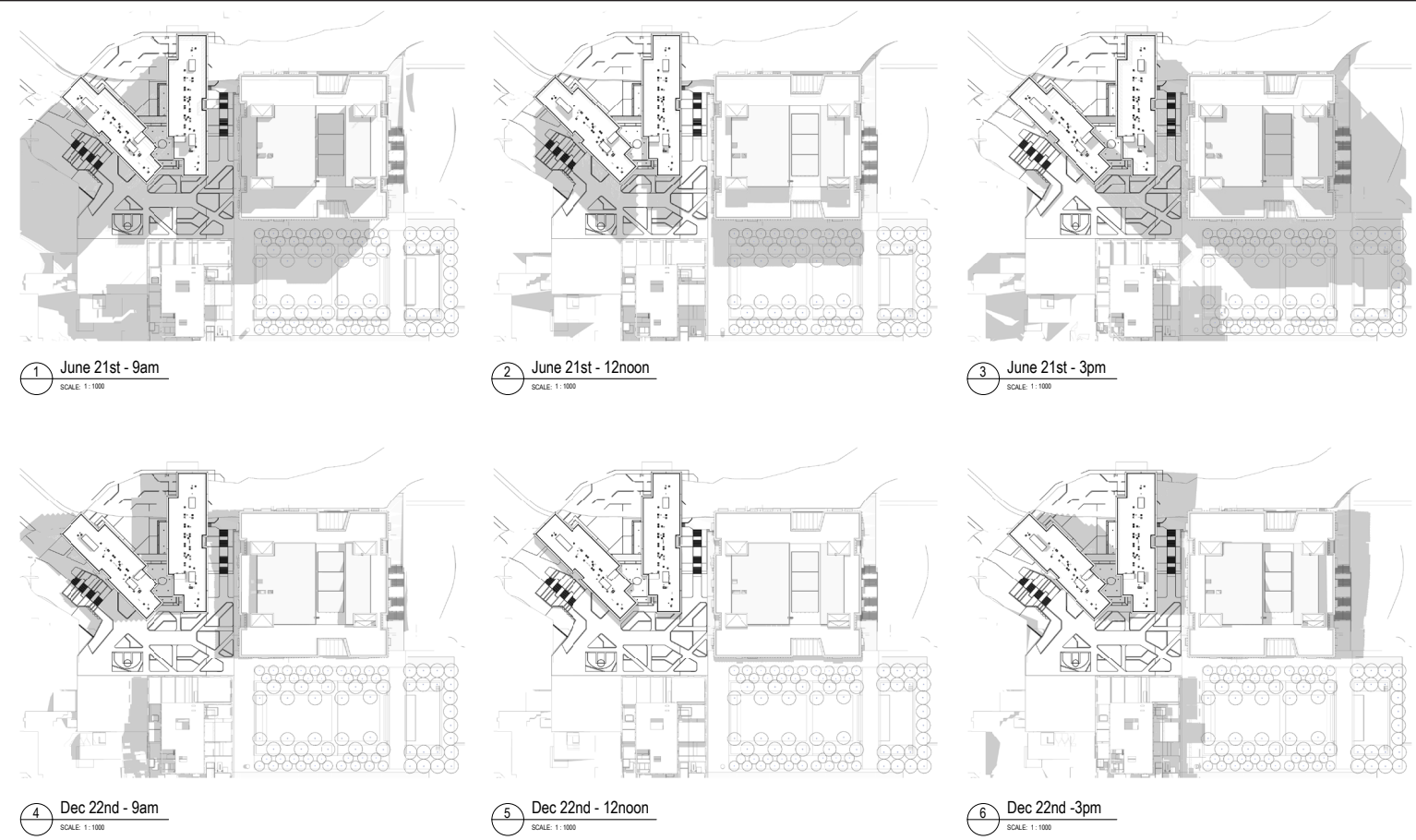


Above: Revised Design showing 3.1m reduction in height

Right: Shadow diagrams for SSDA submission



Right: Shadow diagrams for revised design



2.3 Soil Depth

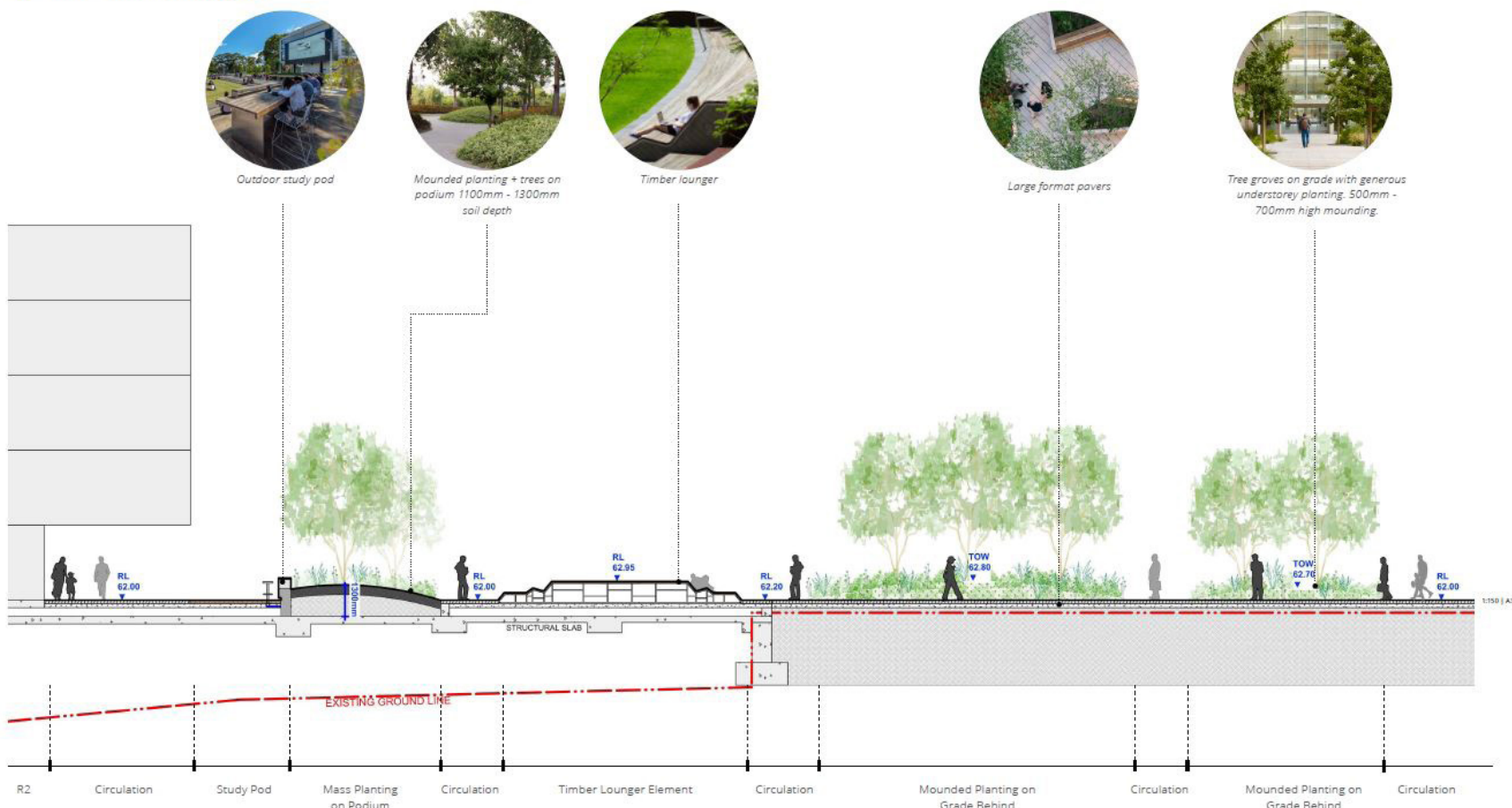
GANSW Comment:

Planting beds in the student courtyard are proposed to provide 1,000mm of soil depth, but this has not been shown in architectural or landscape drawings. The deep soil is essential to support good tree cover that could provide shade and mitigate possible wind turbulence.

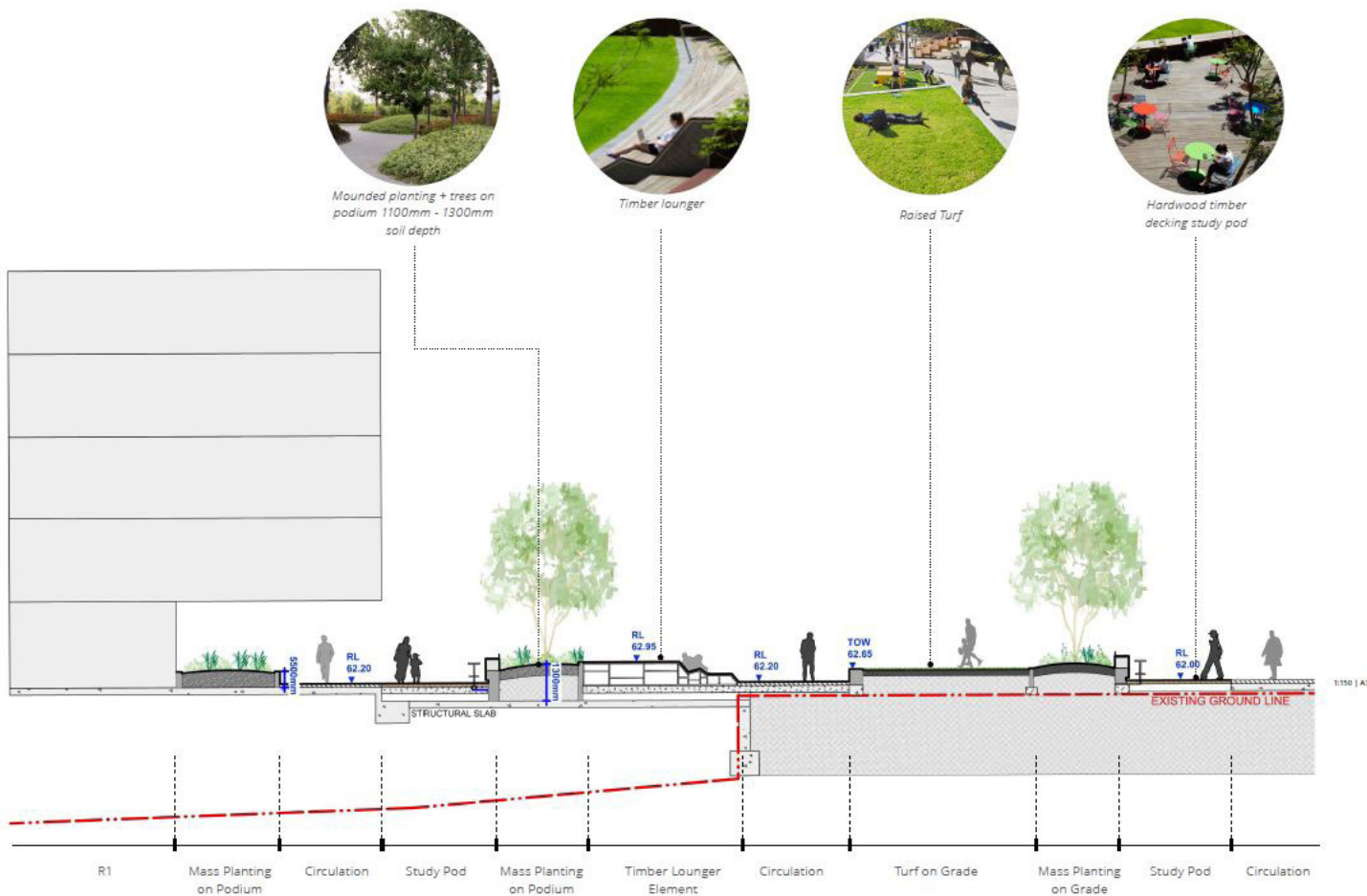
Response:

Aspect Studios has documented soil depths in planter beds of 1100mm to 1300mm. Refer to subsequent diagrams.

Section F: Student Courtyard



Section G: Student Courtyard



2.4 Wind Conditions

GANSW Comment:

While wind conditions are expected to 'pass the distress criterion' it is noted that conditions at the base of R1 and R2, and the NE and SW corners of the 1CC building are less suitable for the outdoor seating proposed in those areas (Wind Assessment, Appendix D, p9).

Response:

The volume of R2 has been reduced by 3.1m lessening the negative impact of wind down draft. There are a variety of external places to occupy within the precinct depending on the wind direction on any given day / season. Screening and wind protection will be provided by the trees planted in this area.



3.0 Bulk and Scale

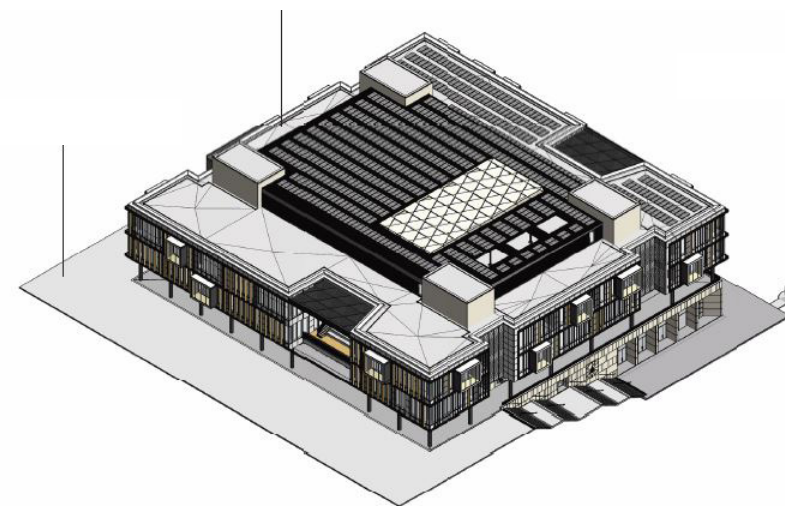
3.1 Roof Plant

GANSW Comment:

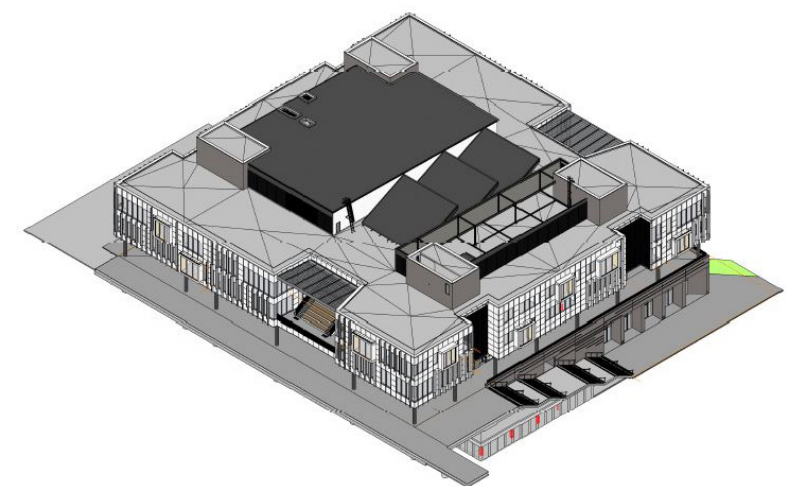
The bulk of the new ICC building, with a footprint exceeding 70m in both directions, is larger than a typical CBD block. The architectural strategy to articulate the plan around the atrium has not been entirely successful due to the impact of rooftop plant which dominates the upper levels of the building. Consideration could be given to applying the same strategies to articulating the roofline of this very large building.

Response:

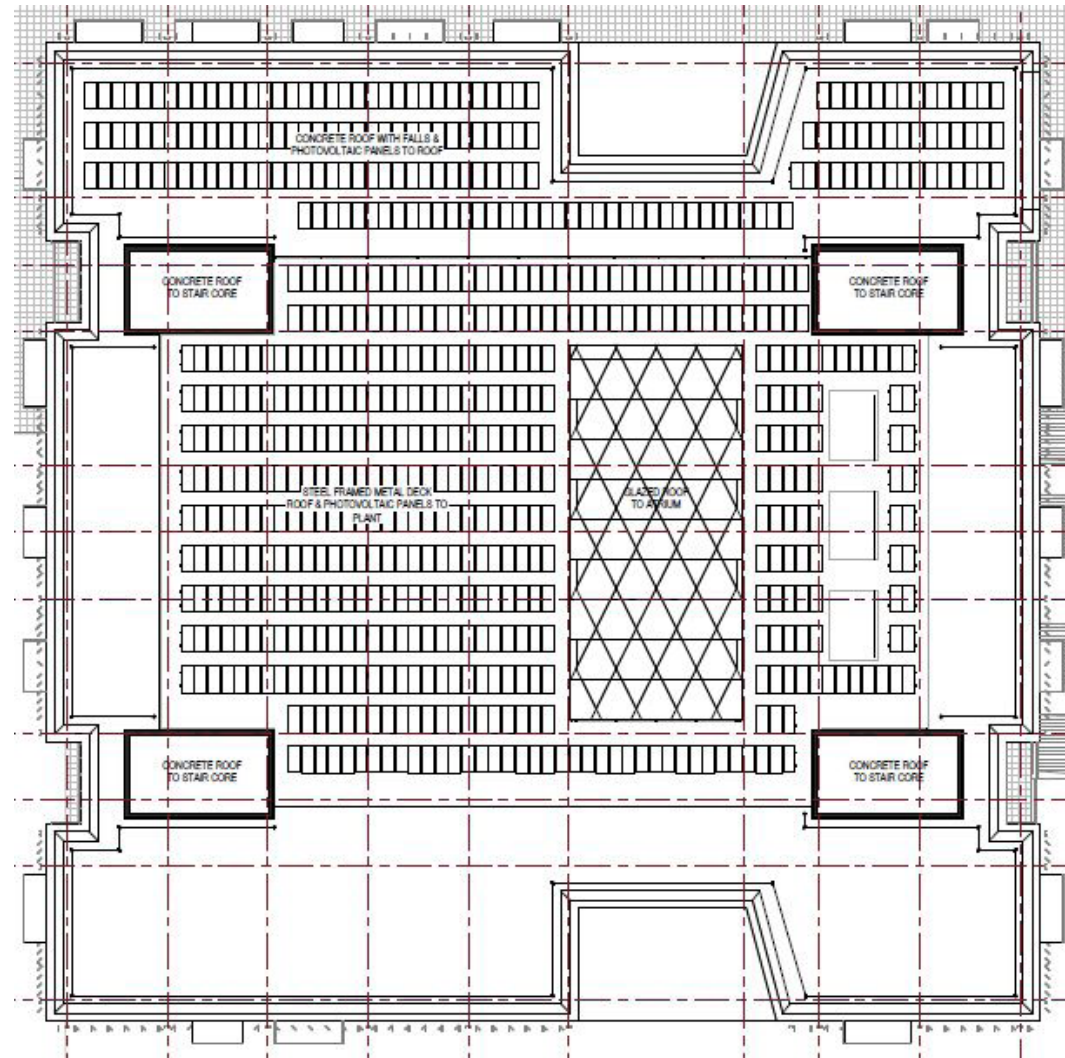
The roof line of 1CC has been adjusted to give greater clarity to the skylight as a separate element to the building's plant spaces. The roof plant is positioned as in-set from the 1CC perimeter envelope which reduces its apparent scale and makes less visible from surface level, as such it does not dominate the upper levels of the 1CC Building.



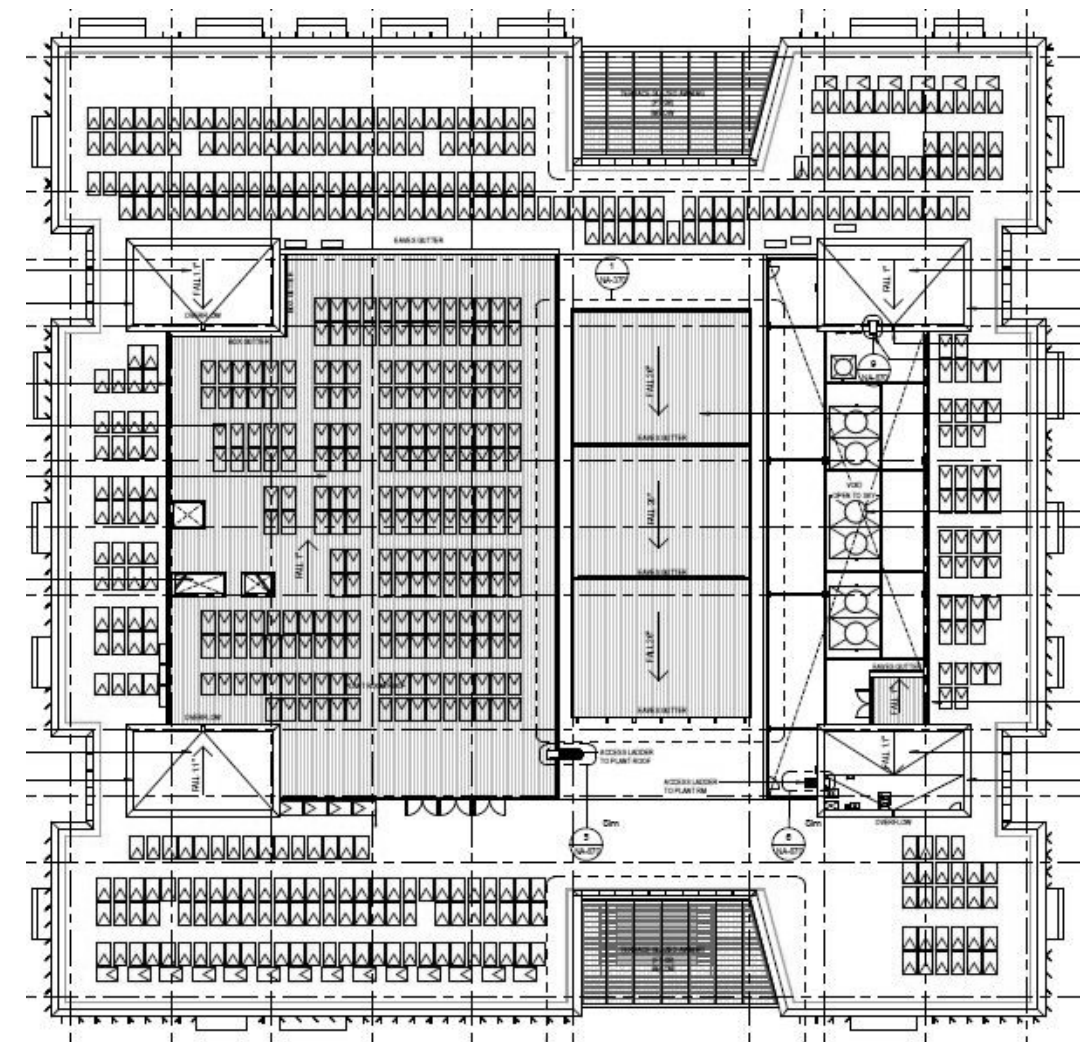
Above: Initial roof design



Above: Revised roof design



Above: SSDA Submitted roof plan



Above: Revised roof plan with separation from plant and linear clarity to the skylight

4.0

Building Design

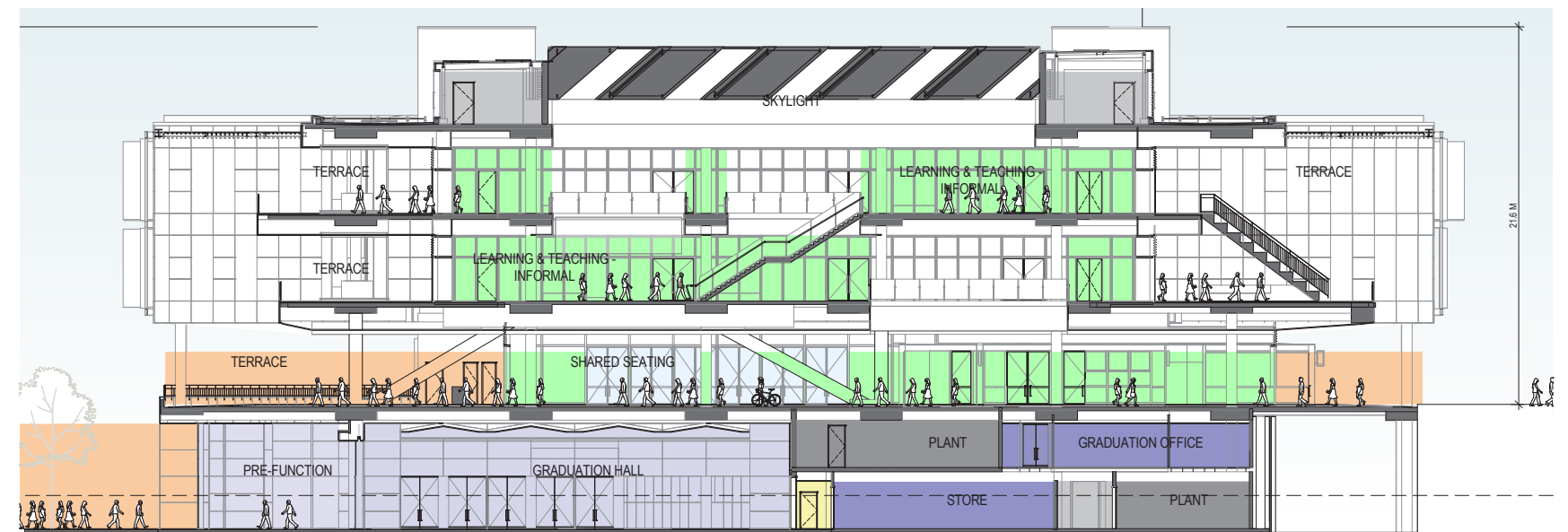
4.1 Skylight

GANSW Comment:

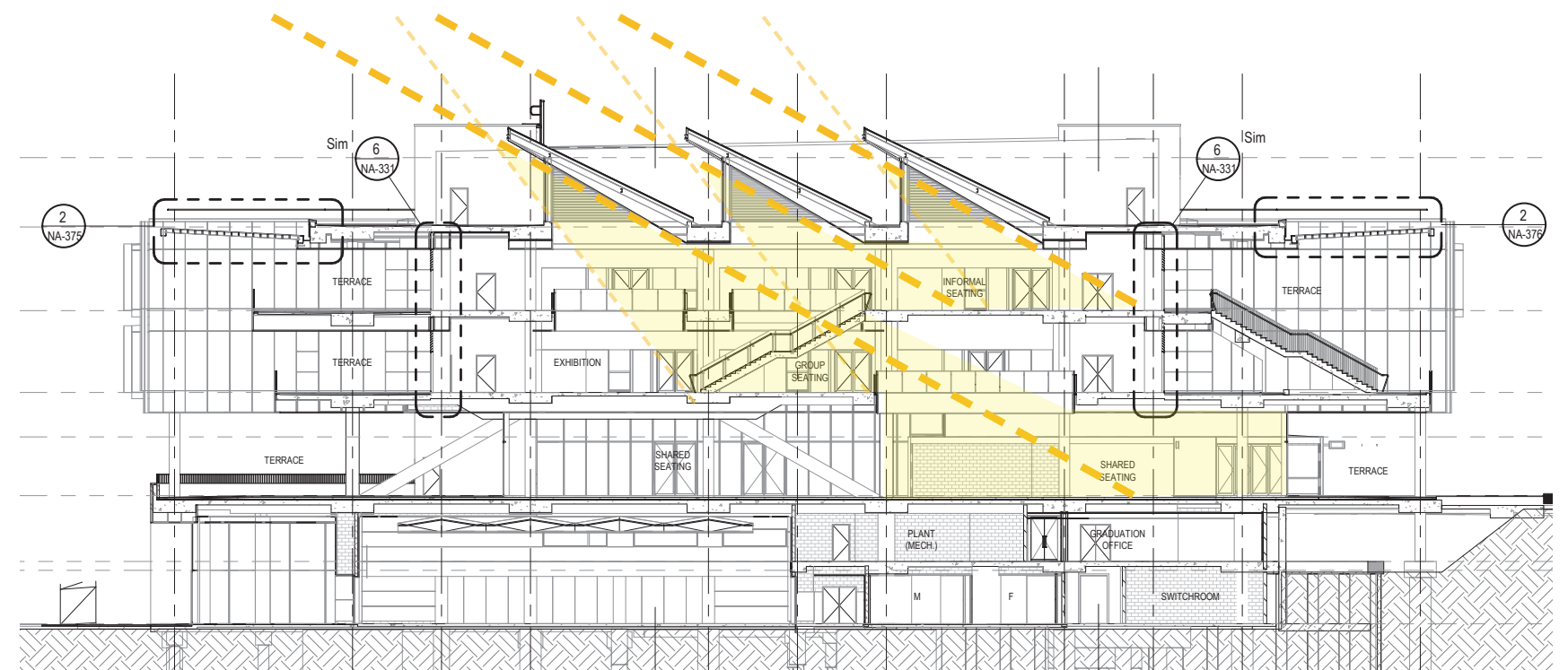
The proposed 1CC building brings additional natural light through an internal atrium but as the floor openings are not aligned the spatial impact of the atrium is compromised - as is the capacity to bring natural light into the building.

Response:

Subsequent to the SSDA submission design changes have been made. A large skylight has been designed with a northern orientation and angled to permit greater natural light penetration to the teaching levels. Interactions between the L01-L02 Learning & Teaching floors are facilitated via connecting stair voids. The spatial connection between Ground Level (food and beverage) and the Learning and Teaching levels is staggered to provide necessary acoustic separation.



Above: SSDA submission



Above: Revised Design



4.2 Ground Floor

GANSW Comment:

The ground level of the 1CC building is intended to open to the panoramic views north of the Academic Core. This view is obscured by the placement of stairs, lifts, amenities and a teaching area along most of the northern frontage. These could be reconfigured to capture a greater proportion of the view from within the building.

Response:

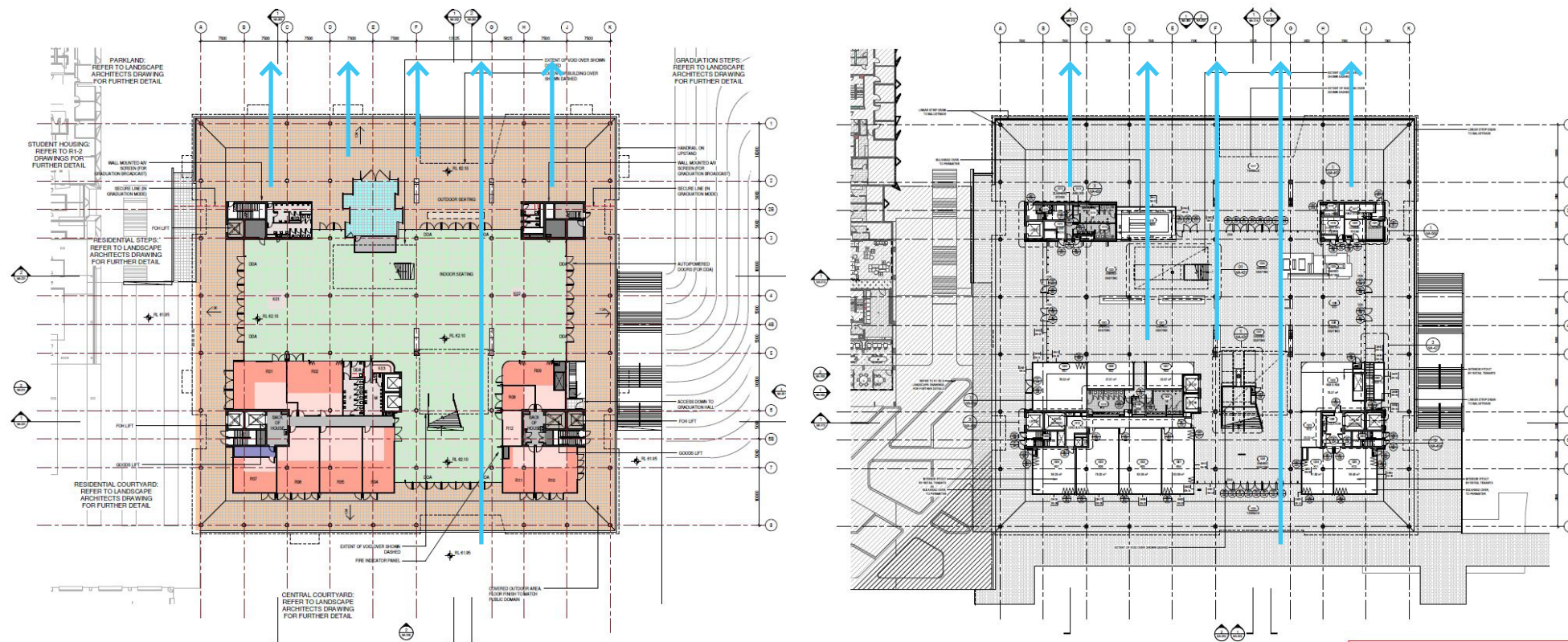
Teaching space has been removed from the Ground Level and increased transparency to northern parkland has been achieved. The U-Bar can be looked across. There are uninterrupted views from the terrace to the landscape.

The architectural design for the 1CC building has been the result of deep engagement and consultation with the University's stakeholders, inclusive of the academic staff, students and capital works / operational staff.

Fundamental to the resolution of the architectural design solution has been the location of the main entry addressing the Central Courtyard which is positioned to be in alignment with the existing entry and circulation path through the Lincoln Building. It is on this alignment that the building's principle pedestrian circulation is aligned, and over which is positioned the large skylight – drawing light into this circulation intensive zone of the 1CC interior.

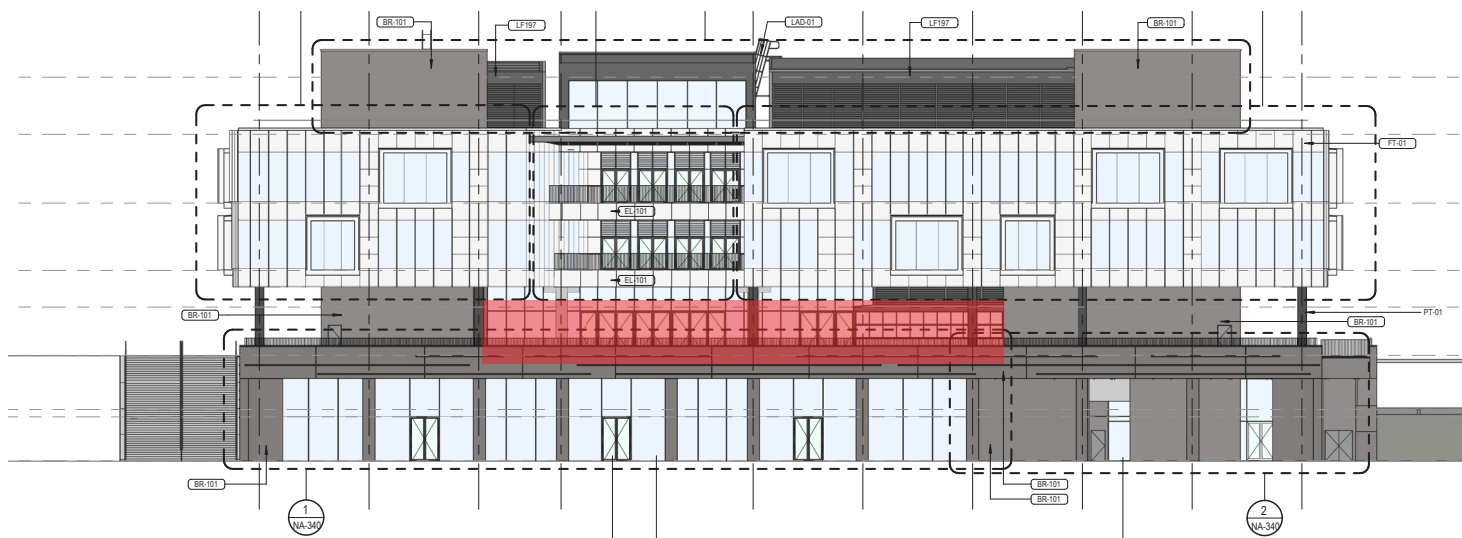
Four vertical cores are positioned within the 1CC floor plate to provide the necessary egress and services reticulation to the multiple functions occurring over five internal floor levels.

We have studied the potential to reconfigure the ground level arrangement of the stairs, lifts, amenities and teaching areas to open up the view to the north from within the building however given the multiple competing functional and technical aspects it is assessed not be a viable option. The vertical stacking of services and egress routes associated these cores cannot be acceptably redesigned to open up one level of elevation of the five levels without causing significant impact upon those other levels.



Above: SSDA submission

Above: Revised Design



Above: Diagram illustrating that 60% of the northern elevation at Courtyard Level is open to views.



5.0 Sustainability

5.1 ESD Strategy

GANSW Comment:

The ESD strategy has not satisfied item 6 of the SEARS. It refers to other investigations that have been undertaken but provides no details of the conclusions and recommendations of those investigations. Nor does it provide any detail in relation to the overall sustainability strategy for the development and how it will be delivered.

Response:

ARUP has confirmed that each of the Part 6 elements has been dealt with.

1 Central Courtyard (1CC)

- Passive comfort strategies to improve the building experience for the students and reduce operation cost for Macquarie University with:
- Natural cross ventilation in the informal spaces in combination with spill air from the formal teaching spaces
- Hot air relief path across the building, through the floor voids, to the exhaust point louvers at the top of the skylight
- High performing building envelope and shadings to ensure energy consumption is minimised
- Daylight has been optimised through the façade and the reoriented skylight design
- Onsite renewable energy generation will be utilised to minimise operational greenhouse gas emissions. It is proposed that an array be placed on the roof level plant room. It is anticipated a 300kW array is possible, offering approximately 10-15% reduction in peak energy of the building and 15-25% of the total annual energy use of the whole building
- Smart comfort management and digital integration will enhance user experience by showing relevant information

Residential 1 and Residential 2 (R1R2)

- All bedrooms to student accommodation rooms are naturally ventilated via louvred windows. The building fabric including Insulation, double glazed units, external wall and façade shading elements have been designed with the aid of JV3 modelling to provide optimal thermal comfort without the need for mechanical heating or cooling. Lounges to five and six bedroom apartment have electric radiators to limit minimum temperature range due to their sizes.
- Building designed to address the brief requirement of achieving a Green Star Design & As Built v1.1 equivalence of a minimum of 5 Stars.

5.2 PV Panels

GANSW Comment:

PV Panels to buildings R1 and R2 are not optimally positioned - facing East West for R1 and NE for R2. This has not been explained in the application.

Response:

The PV panels are flat panels and as such their orientation on plan does not affect their generation potential. Flat panels have been chosen in order to meet architectural requirements.

6.0 Materiality and Detailing

6.1 Materiality

GANSW Comment:

The campus is characterised by the textures of face brick and off form concrete (a legacy of the 'Brutalist style architecture'). The proposed buildings are not a comfortable fit, using contemporary finishes that are lightweight, metallic and reflective. We believe that more consideration of the architectural legacy should be applied to the design of replacement buildings, particularly in relation to articulation and materiality.

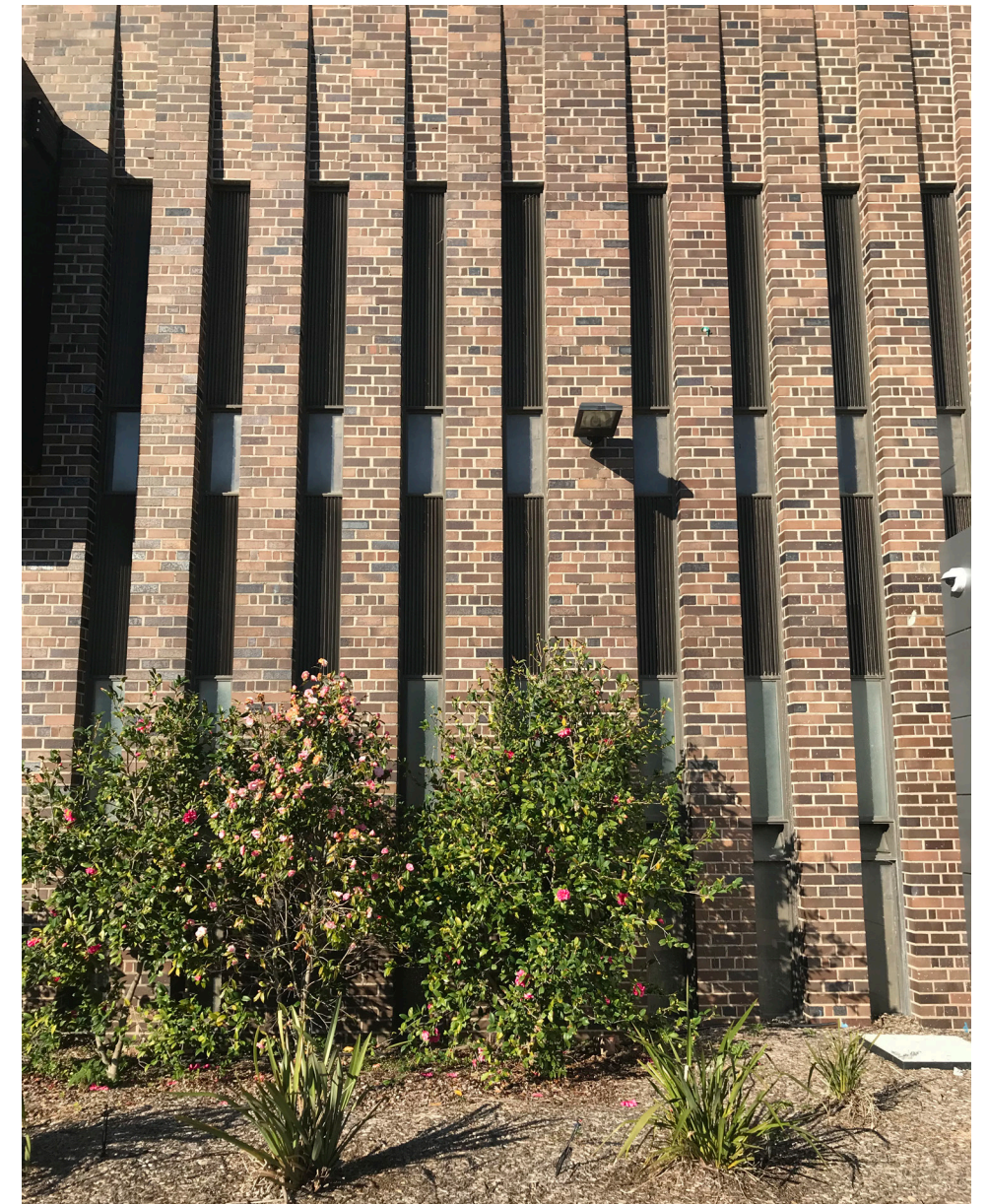
Response:

The original external materials for the central precinct buildings were inclusive of boarded 'off-form' concrete and worked concrete finishes, including sand-blasting, acid-etching and bush hammering. Face brick was also used predominantly for the Academic buildings. The original concept was to establish buildings in harmony that read as one organic whole and that blended with the dull grey and muted brown landscape by the use of "neutral" building colours.

Since the SSDA, the external finishes of the 1CC building have been altered to replace the previously proposed limestone panels with dry-pressed bricks. This adjustment generates a positive relationship with the other Academic buildings on the Macquarie University campus that are similarly clad in brick.

The 1CC Building has had its materiality revised such that its lower level is proposed to be clad in dry-pressed bricks that establish a respectful relationship to the legacy of the campus's brick buildings - inclusive of the adjacent E7a and E7b buildings. The upper levels of 1CC are detailed with window boxes that generate a positive dialogue with the scale of the adjacent Peter Hall-designed C7a (old library) building and the nearby E8a Building. The silvery colour of the upper level cladding to the proposed 1CC Building is harmonious with the exposed grey concrete of the Brutalist palette in this precinct.

R1R2 is predominantly clad in a non-reflective ceramic panel that is interpretative of planar masonry construction of the precinct. Integrated / pigmented pre-cast concrete forms an additional exterior component of the R1R2 exterior.

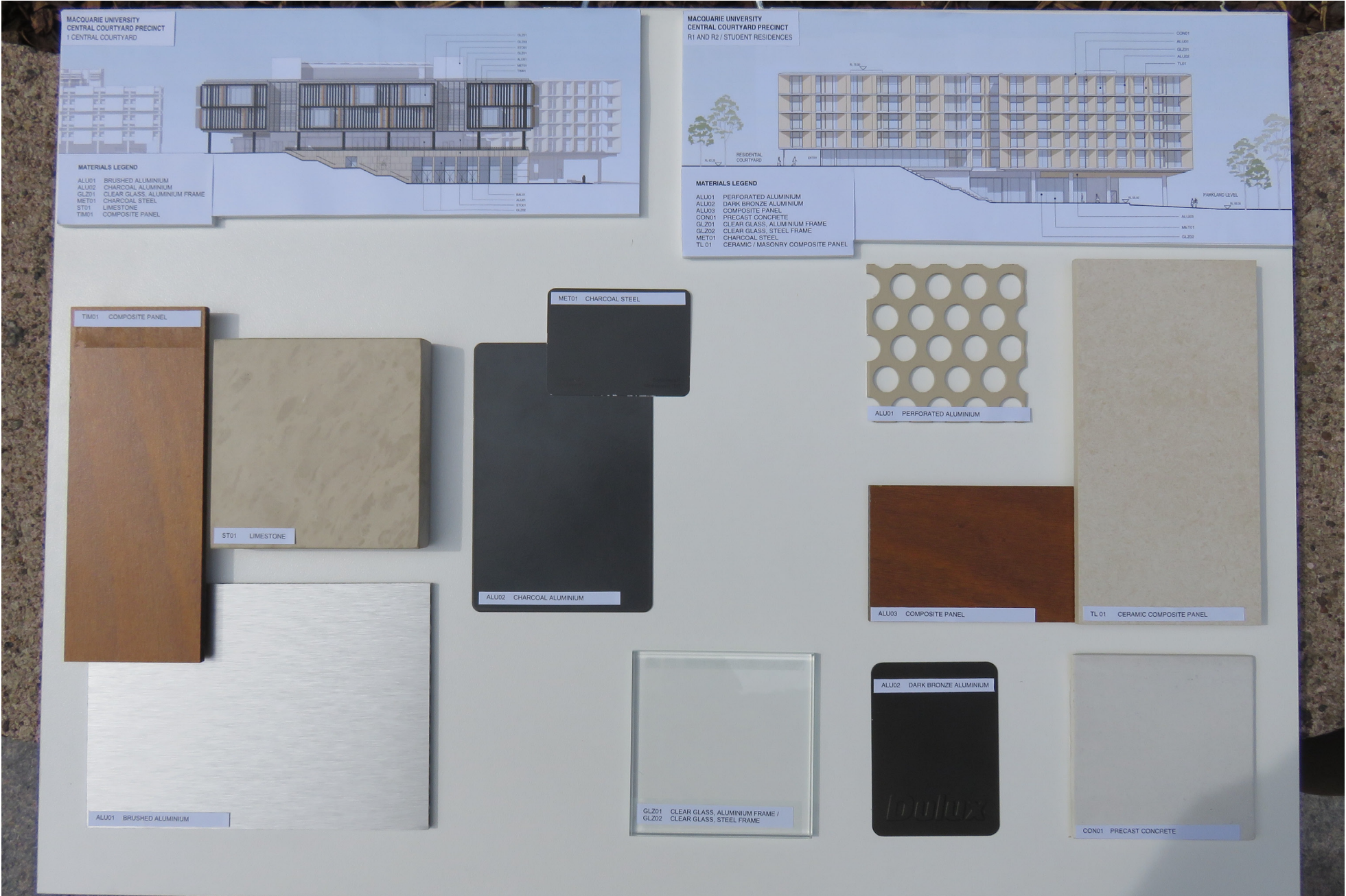


Above: Existing material palette on Campus (E8A and E8B building shown).



Above: SSDA submission

Above: Revised Design



Above: SSDA Submission



Above: Revised Design

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