WATERLOO METRO QUARTER
BUILDING 3&4

SSD-10437 - RESPONSES TO DPIE

PREPARED FOR WATERLOO DEVELOPER PTY LTD
DOCUMENT NO. WMQ-BLD34-BSA-AR-RPT-DA211

Revision A

Date of Issue 04.06.2021

mirvac JOHN HOLLAND

BATESSMART™

ITEM 10

10. Makerspace

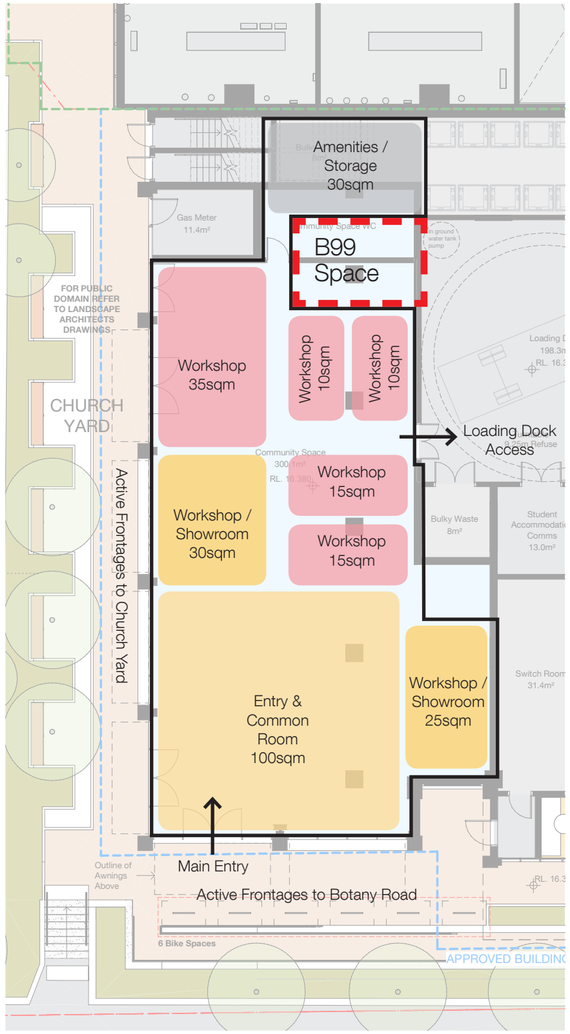
The layout of the Makerspace is compromised by the addition of the B99 service vehicle space. City staff recommend that any additional space required for servicing to be reallocated from the gym area.

RESPONSE

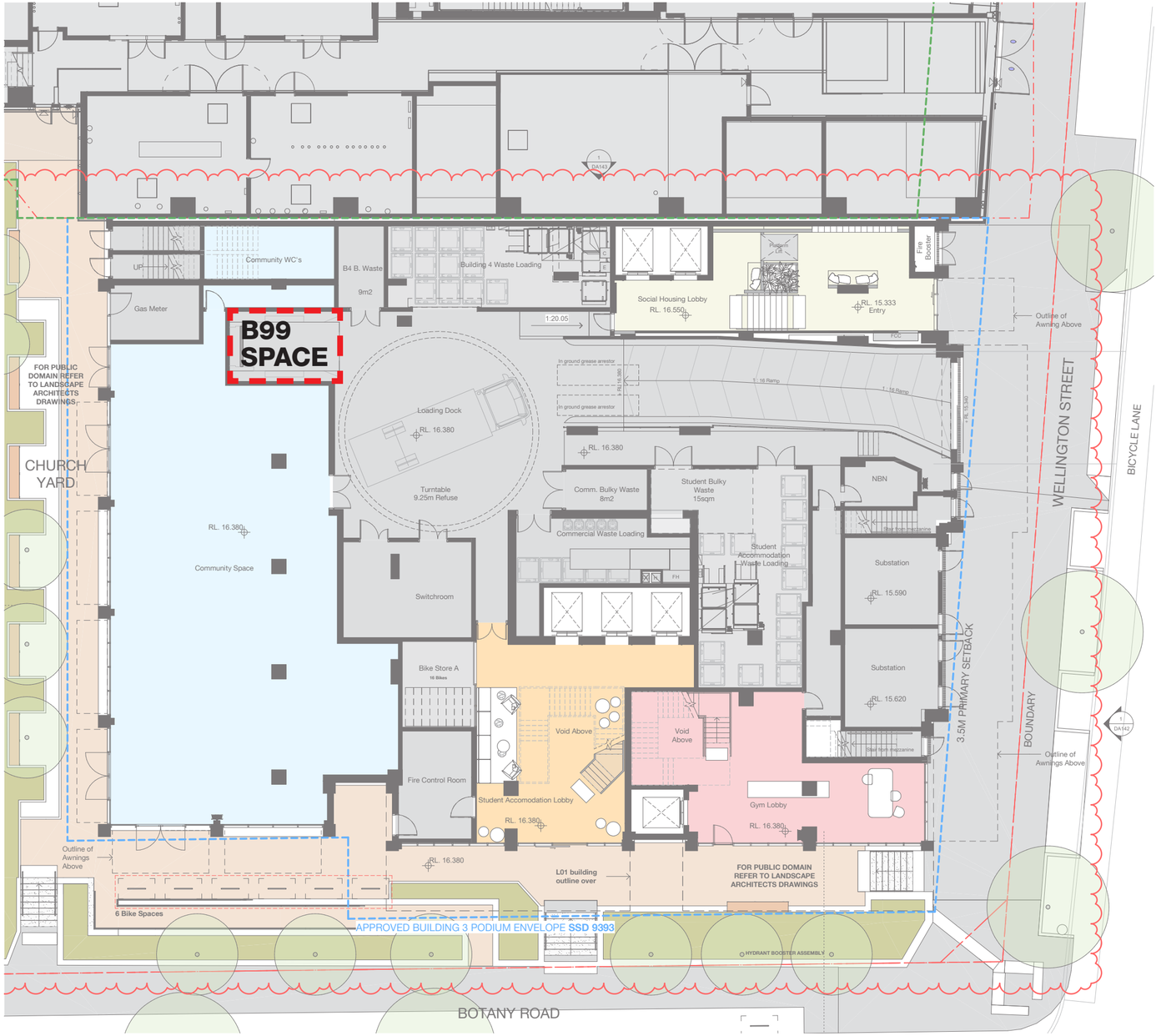
Space on the ground floor is constrained due to the servicing and back house requirements for four building occupants (Student Accommodation, Social Housing, Makerspace, Gym). The B99 space has been co-located with the loading dock to consolidate similar uses and to limit the quantity of vehicular entries on the facade.

Active frontages have been maximised where possible. The gym area on ground floor is relatively modest in space serving as the gym lobby, reception and vertical circulation space. Re-allocating area from the gym for the B99 space would reduce the active street frontages.

The Makerspace plan diagram (right) demonstrates a potential layout that prioritises the active functions along the frontages to Botany Road and Church Yard. We anticipate the Makerspace area behind the B99 parking space will be used for ancillary functions such as toilets and storage.



Indicative Potential Layout for a Makerspace
(as presented at DRP Presentation 12 - 28.01.2021)



Proposed Ground Floor Plan

ITEM 15

15. Blank Side Walls

The additional glazing is acceptable, however, there is no variation in the colour of the grid and infill panels of the north or east walls. This monotony could be better treated with some variety in colour. A condition to this effect is recommended.

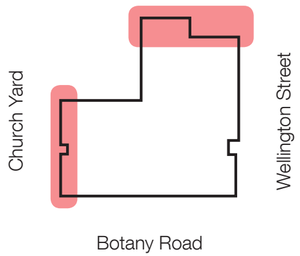
(City of Sydney)

RESPONSE

The design of the building ends have been developed in response to feedback from the DRP to ensure the facade design to these elevations are highly considered.

We believe the proposed design has a considered balance between built form articulation, fenestration and architectural expression through the expressed grid frame.

We have avoided pattern making through a variety of panel colours, instead favouring a more simple, elegant approach in keeping with the overall building architecture.



Key Plan

Northern Building End

/ The built from is articulated into 2 volumes with the corridor expressed as a glass slot

/ The light-coloured grid frame creates a legible 2 storey scale. The expressed grid frame gives the elevation depth, and creates shadows on the solid aluminium cladding

/ Windows to corner studios further reduces the extent of solid cladding

/ Signage is proposed to top of building

Eastern Building End

/ The built from is articulated into 2 volumes with the corridor expressed as a glass slot

/ The two volumes are stepped in plan and height to emphasise this articulation

/ The light-coloured grid frame creates a legible 2-3 storey scale. The expressed grid frame gives the elevation depth, and creates shadows on the solid aluminium cladding

/ Window to the NE twin room breaks up the solid cladding

/ Signage is proposed to top of building

ITEM 16

16. Parapet

The height of the parapet on Building 3 identified in the image below should be extended from RL 87.35 to RL 88.9 to conceal views of the solar panels from the surrounding area whilst allowing for unobstructed solar access. All other parapets should be raised to a minimum 1.5 metres above the corresponding finished roof level, subject to mitigating any overshadowing impacts on Alexandria Park.

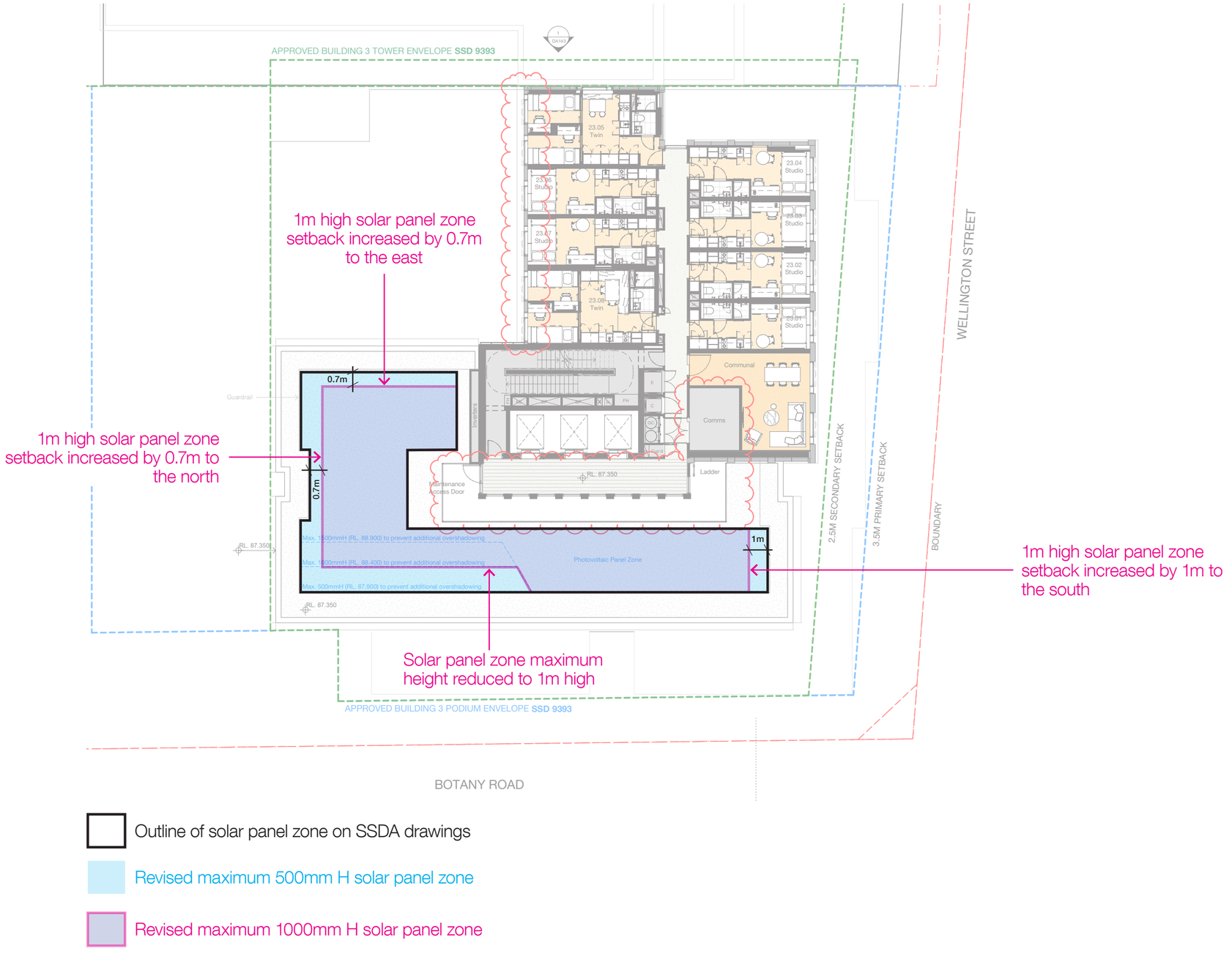
(City of Sydney)

RESPONSE

The height of the current Building 3 parapet is designed to minimise overshadowing of Alexandria Park. Any additional height along the building edge above that shown in the SSDA drawings will increase overshadowing to Alexandria Park.

To mitigate visibility from the surrounding area, the solar panel zone is proposed to be adjusted by reducing the overall maximum height from 1.5m to 1m, and increasing the setback to the north, south and east. The diagram on the right illustrates the revised extents.

Given the revised setback and height of the panel zone, the proposed panels are not expected to be highly visible from the surrounding streets. Refer to the images on the following slides for view impact studies from the surrounding area.



ITEM 16

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(City of Sydney)

VIEW IMPACT STUDIES

View from Botany Road
looking South

SSDA

Solar Panel Zone

PROPOSED

Solar Panel Zone

ITEM 16

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The height of the parapet on Building 3 identified in the image below should be extended from RL 87.35 to RL 88.9 to conceal views of the solar panels from the surrounding area whilst allowing for unobstructed solar access. All other parapets should be raised to a minimum 1.5 metres above the corresponding finished roof level, subject to mitigating any overshadowing impacts on Alexandria Park.

(City of Sydney)

VIEW IMPACT STUDIES

View from Botany Road
looking North

SSDA

Solar Panel Zone

PROPOSED

Solar Panel Zone

ITEM 16

16. Parapet

The height of the parapet on Building 3 identified in the image below should be extended from RL 87.35 to RL 88.9 to conceal views of the solar panels from the surrounding area whilst allowing for unobstructed solar access. All other parapets should be raised to a minimum 1.5 metres above the corresponding finished roof level, subject to mitigating any overshadowing impacts on Alexandria Park.

(City of Sydney)

VIEW IMPACT STUDIES

View from Wellington Street looking West

SSDA

Solar Panel Zone

PROPOSED

Solar Panel Zone

ITEM 17

17. Parapet

The height of the parapet on Building 4 should be similarly increased by a minimum of 1 metre to obscure any services, exhausts, plant and the like, subject to mitigating any overshadowing impacts. This would result in an exceedance to the stage 1 building envelope but comply with the maximum RL96.9 permitted for the site.

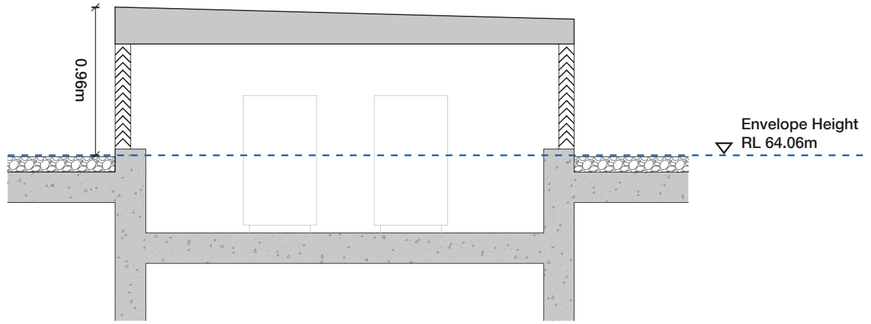
(City of Sydney)

RESPONSE

The Building 4 roof is proposed to have a gravel finish to maintain reasonable visual amenity. A revised setback parapet detail around the building edge to allow for a sufficient gravel depth has been presented to the DRP. Increasing the parapet to 1m high would impact the proposed building form and architectural design whilst increasing overshadowing.

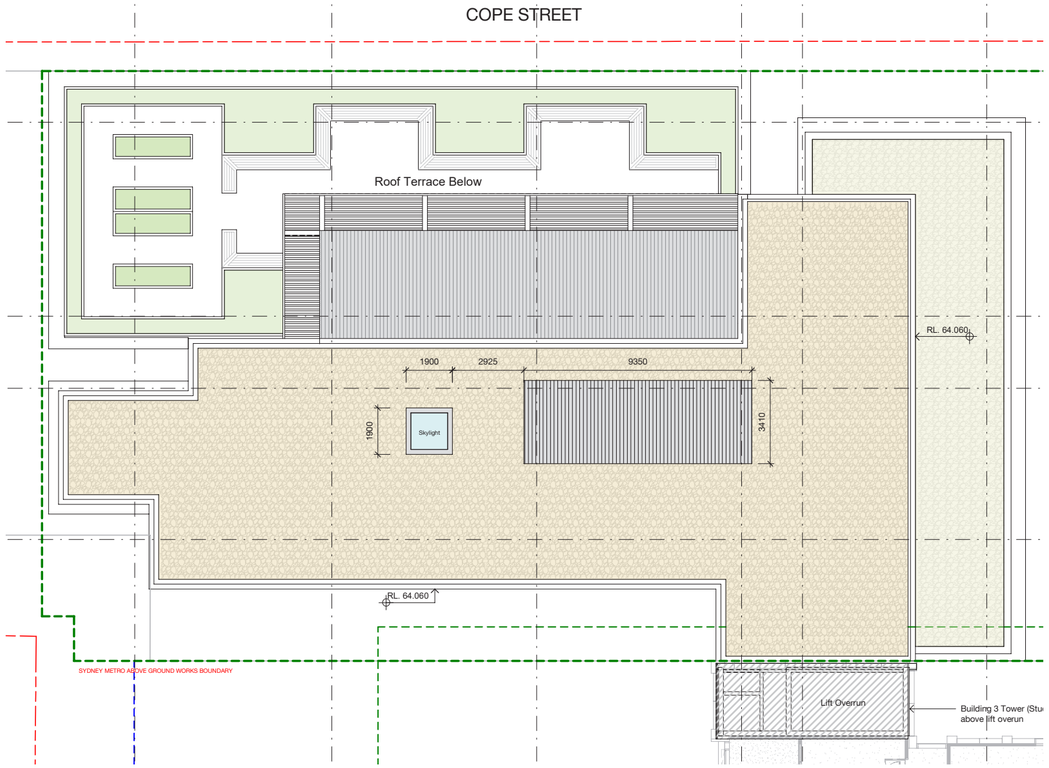
A louvred enclosure over the fire stair houses the stair pressurisation plant equipmentand all other plant equipment is housed in the Level 09 plant room. This plant space has been partially sunken below the roof slab to minimise it's visual impact.

The proposal and images on this slide were presented at DRP Presentation 13 (19th March 2021) and were accepted by the panel.



Indicative section through louvred enclosure plant space

Proposed Roof Plan (3D)



Proposed Roof Plan

ITEM 18

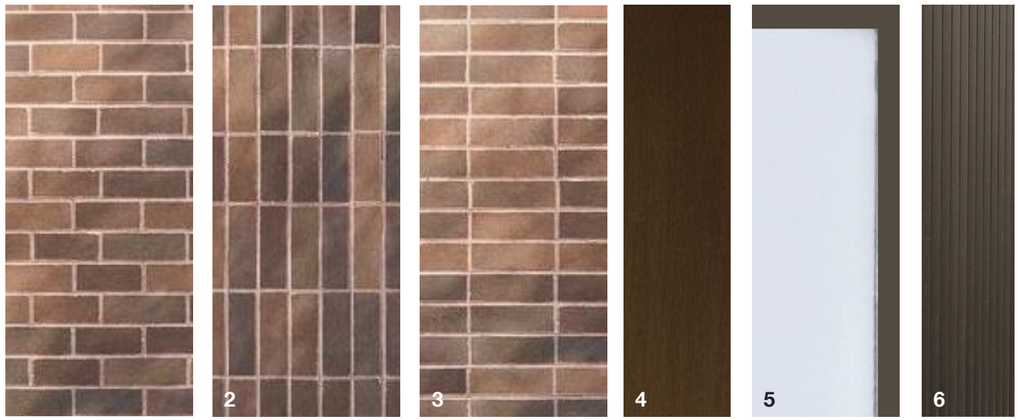
18. Materials

Any condition of consent regarding materials selection must require specifics including colour, material and where relevant manufacturer. Words such as “or similar” should not be permitted on the drawings. No substitutes should be permitted without the approval of an independent Design Review Panel.

(City of Sydney)

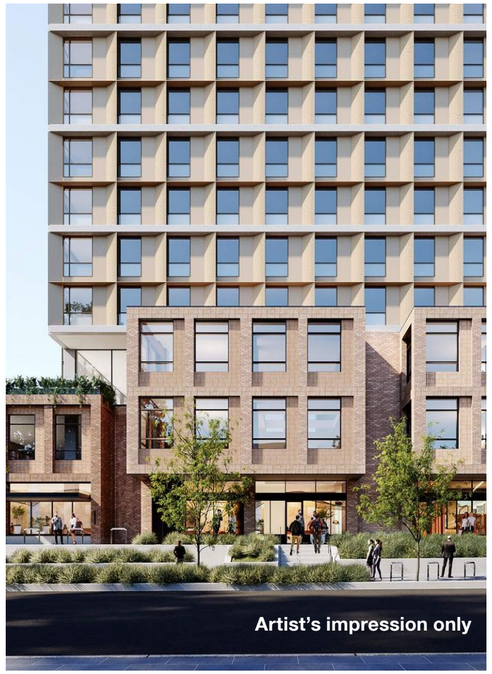
BUILDING 3 MATERIALS BOARD

PODIUM



RESPONSE

The proposed materials and finishes have been presented at DRP Presentation 12, with the increased level of detail being supported by the panel. The materiality for the Building 3 podium is shown here.



The bricks for the podium are intended to relate to the materiality of the local context, without trying to mimic it. Dry pressed bricks are proposed for their textural quality and the range of tones that are produced from a single brick type.

Materiality of buildings within the immediate vicinity of the southern precinct:

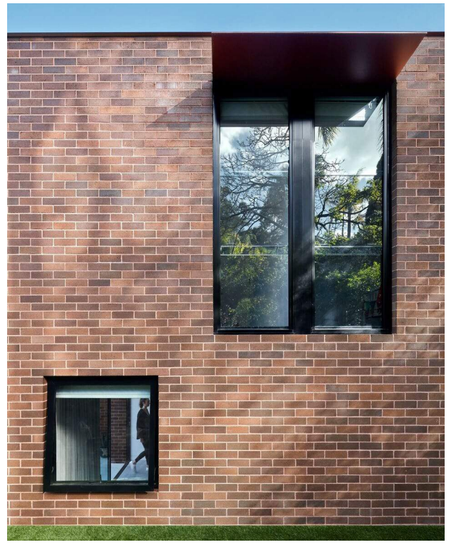
291 George Street

116 Wellington St

130 Botany Lane

Building 3 Podium Finishes

1/	Brickwork - General podium	Dry Pressed Bricks Colour - Brown/Red
2/	Brick - Soldier Course	As above
3/	Brick - Stacked Bond Infill	As above
4/	Clear vision glass	Double glazed unit with clear performance vision glass with neutral body tint
	Window frames	Aluminium window system Powdercoat finish “metallic” finish Colour - “Dark Bronze”
5/	Metal Detailing	Solid Aluminium Powdercoat “metallic” finish Colour - “Dark Bronze”
6/	Louvres and metalwork to back of house areas	Solid Aluminium Powdercoat “metallic” finish Colour - “Dark Bronze”



Example: House Lincoln, Those Architects

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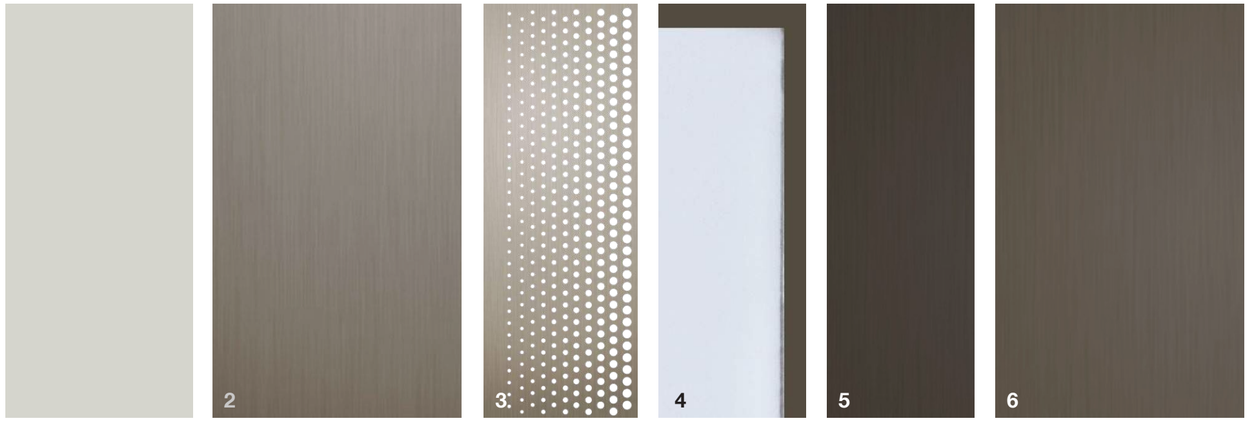
(City of Sydney)

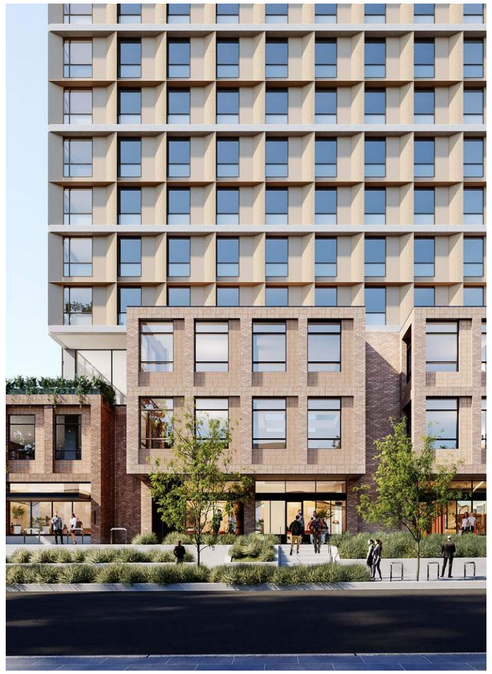
BUILDING 3 MATERIALS BOARD

TOWER



RESPONSE

The proposed materials and finishes have been presented at DRP Presentation 12, with the increased level of detail being supported by the panel. The materiality for the Building 3 tower is shown here.



Building 3 Tower Finishes

1/	Horizontal Sunshades to western volume	Solid Aluminium Powdercoat “matt” finish Colour - “Warm Grey”
2/	Cladding to East & West Studios	Solid Aluminium Powdercoat “metallic” finish Colour - “Light Bronze”
3/	Perforated Aluminium Sunshades to East & West Studios	Solid Aluminium Powdercoat “metallic” finish Colour - “Light Bronze”
4/	Clear vision glass	Flush glazed DGU with clear performance vision glass with neutral body tint
	Glass spandrels	Flush glazed DGU with colorback
	Window frames	Aluminium curtain wall system Powdercoat “metallic” finish Colour - “Dark Bronze”
5/	Aluminium Spandrel Cladding Panel to North & South Studios	Solid Aluminium Powdercoat “metallic” finish Colour - “Dark Bronze”
6/	Cladding / Sunshades to North & South Studios	Solid Aluminium Powdercoat “metallic” finish Colour - “Medium Bronze”

ITEM 18

18. Materials

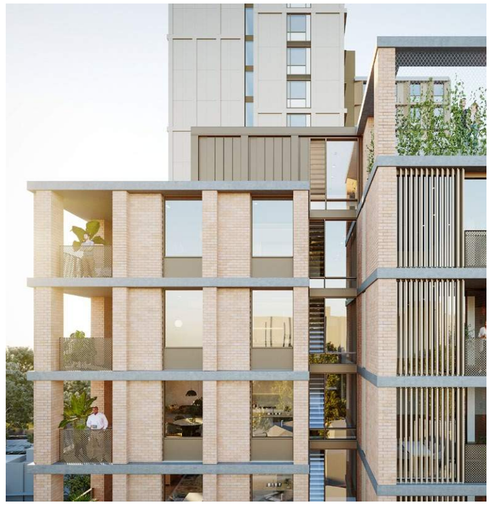
Any condition of consent regarding materials selection must require specifics including colour, material and where relevant manufacturer. Words such as “or similar” should not be permitted on the drawings. No substitutes should be permitted without the approval of an independent Design Review Panel.

(City of Sydney)

RESPONSE

The proposed materials and finishes have been presented at DRP Presentation 12, with the increased level of detail being supported by the panel. The materiality for Building 4 is shown here.

BUILDING 4 MATERIALS BOARD



Building 4 Finishes

1/	Exposed slab edges	Off form concrete
2/	Brickwork - General	Dry Pressed Bricks Colour - Light Cream/Beige
3/	Vertical shading battens	Solid Aluminium Powdercoat finish “metallic” finish Colour - “Natural Bronze”
4/	Balcony balustrades	40-50% Perforated Solid Aluminium Powdercoat “metallic” finish Colour - “Dark Bronze”
5/	Clear vision glass	Double glazed unit with clear performance vision glass with neutral body tint
	Window frames	Solid Aluminium Powdercoat “metallic” finish Colour - “Dark Bronze”
6/	Acoustic Ventilator Panel	Perforated Solid Aluminium Powdercoat “metallic” finish Colour - “Natural Bronze”
7/	Spandrels to Windows	Solid Aluminium Powdercoat “metallic” finish Colour - “Dark Bronze”
8/	Profiled cladding to Level 9	Solid Aluminium Powdercoat “metallic” finish Colour - “Dark Bronze”
9/	Mesh screen to roof terrace	“Marine grade” stainless steel woven wire mesh
10/	Vertical sun blades to Apartment type 2D	Solid Aluminium Powdercoat finish “metallic” finish Colour - “Natural Bronze”
11/	Brickwork - Level 01	Dry Pressed Bricks Colour - Dark Grey

ITEM 19

19. Materials

The glazing selection does not appear to be clear and untinted. High performance and heavily tinted glazing is not good urban design and should not be supported

(City of Sydney)

RESPONSE

In co-ordination with the facade consultant and ESD consultant, we are currently exploring a range of glass products to meet the desired building aesthetic and the required environmental performance.

Our preference is for high VLT, low reflectivity and a neutral body tint, however these preferences will need to be balanced with the required environmental performance and cost.

Whilst the final glass selection has yet to be determined, the photos and descriptions on this page demonstrate the design intent.

Building 3

The glass samples above, that are currently being considered for Building 3, represent a range of tints, VLT's and reflectivity criteria. The glass samples with X's were rejected due to being 'too dark' and/or 'too blue'.

Target specification based on glass samples:

/ Clear performance vision glass with neutral body tint (not too blue or too green)

/ Target range 52-66% VLT (higher VLT preferred)

/ Target range 9-17% Reflectivity

Building 4

The glass samples above, that are currently being considered for Building 4, represent a range of tints, VLT's and reflectivity criteria. The glass sample with an X was rejected due to being 'too dark' and 'too blue'.

Target specification based on glass samples:

/ Clear performance vision glass with neutral body tint

/ Target range 65-72% VLT (higher VLT preferred)

/ Target range 13-18% Reflectivity

ITEM 20

20. Materials

Awning windows provide substandard amenity for occupants by minimising airflow. It is recommended that sashes or casement windows be provided instead.

(City of Sydney)

RESPONSE

Awning windows have been typically proposed as they enable occupants to open their windows and experience natural ventilation, whilst maintaining weather protection.

A casement or sash window window does not provide the same level of weather protection.

Sashes (double hung) windows are proposed to the windows on the western elevation of Building 4, where the windows are situated behind vertical louvres, and the operation of an awning window is not possible.

Vertical aluminium sunblades provide shading & privacy to north facing balcony

Perforated aluminium panel to acoustic ventilator

Awning window

Concrete slab edge provides horizontal sun shading to windows

Brick pier provides vertical sun shading to windows

Insulated spandrel reduces heat gain & heat loss and provides additional privacy

External Elevation

ITEM 23

23. Solar Access and External Sun Shading (Building 3)

Views from the sun diagrams should be provided at the summer solstice from 8am to 5pm to demonstrate the efficacy or otherwise of the design to mitigate the heat gain from the summer sun.

(City of Sydney)

RESPONSE

The design of the Building 3 tower facade has been developed through the DRP process to create a highly articulated facade that responds to different the solar conditions on each elevation.

Individually operable shading devices were considered to the western elevation, but were deemed not practically viable for student accommodation for ongoing maintenance and management reasons. Fixed shading was considered to be more appropriate and cost effective solution to shading the building.

Design Responses to External Shading and Thermal Comfort

/ The western elevation has a high degree of solidity - the extent of glass to the west elevation is approximately 32%- (i.e the elevation is 2/3 solid)

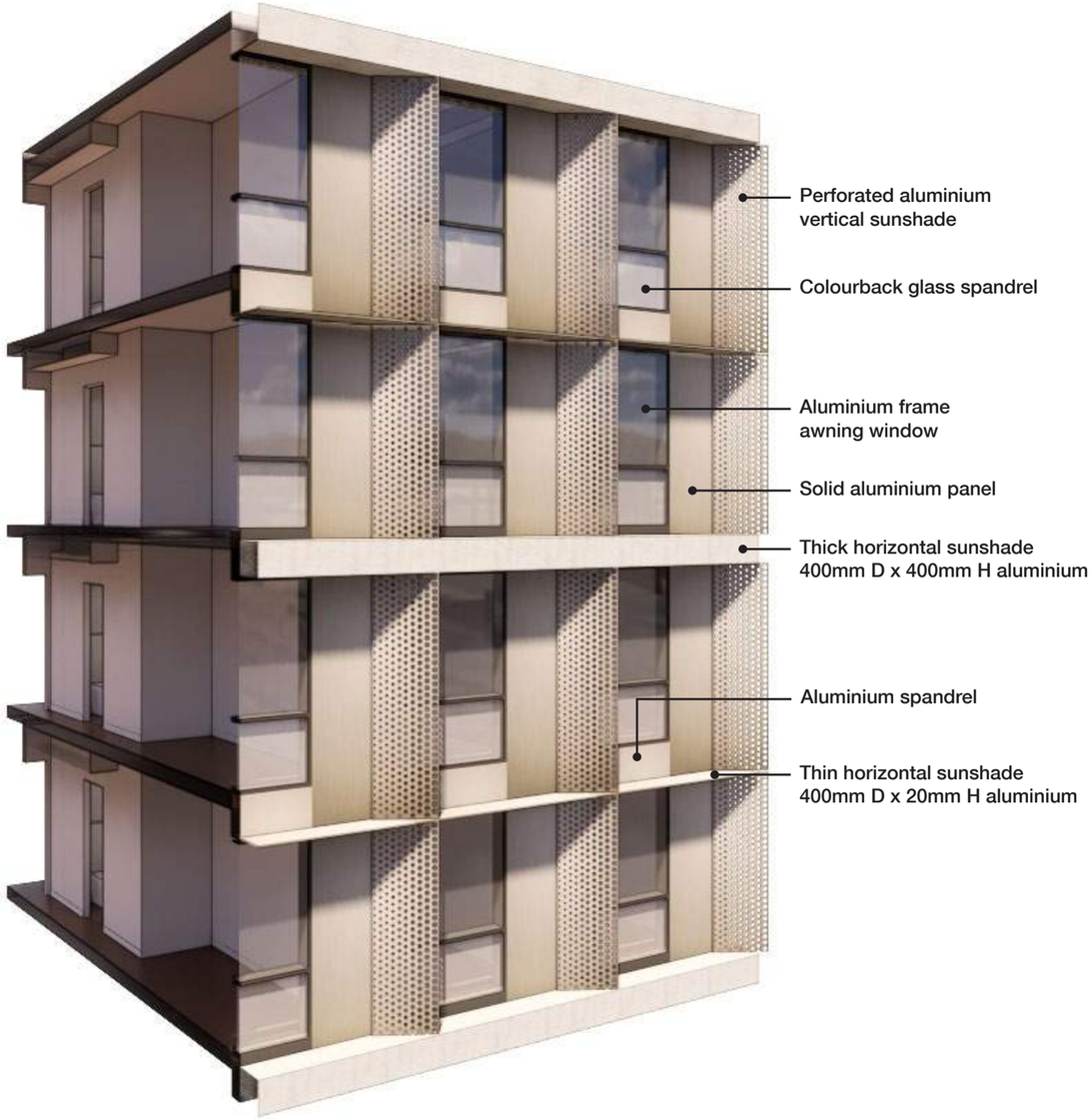
/ An insulated colourback glass spandrel at lower level further reduces the area of vision glass

/ The west facade has a considered response to shading with horizontal sunshades for the early afternoon sun and vertical shading for the middle/ late afternoon sun. As shown in the plan below, the vertical shading panel extends in front of the window to further assist in shading

/ All studios will be fitted with an internal pull-down roller blind for students

/ Performance double glazing to reduce heat transmission

Plan detail of west facing facade



3D facade section of the west facing facade

ITEM 23

23. Solar Access and External Sun Shading (Building 3)

Views from the sun diagrams should be provided at the summer solstice from 8am to 5pm to demonstrate the efficacy or otherwise of the design to mitigate the heat gain from the summer sun.

(City of Sydney)

RESPONSE

The diagrams below were presented at DRP Presentation 12 on 28th January 2021. The diagrams demonstrate the degree of facade shading to the windows on the west elevation of Building 3.

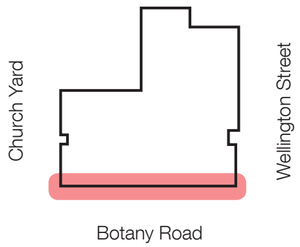
The ‘Summernox’ (the average of summer solstice and equinox) was considered to be an appropriate method of demonstrating the average efficacy over the full period of summer.

SHADING ANALYSIS

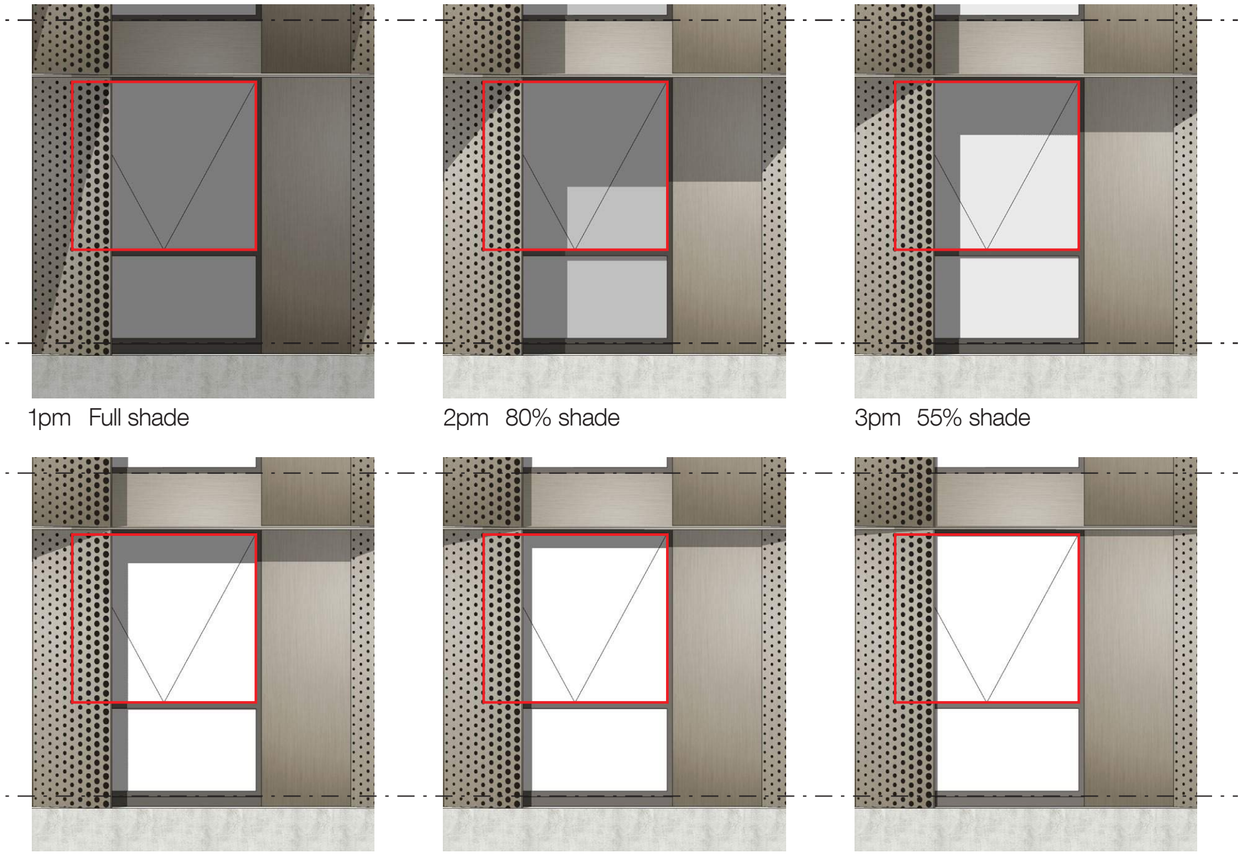
February 4th ‘Summernox’
(average of Summer Solstice and Equinox)

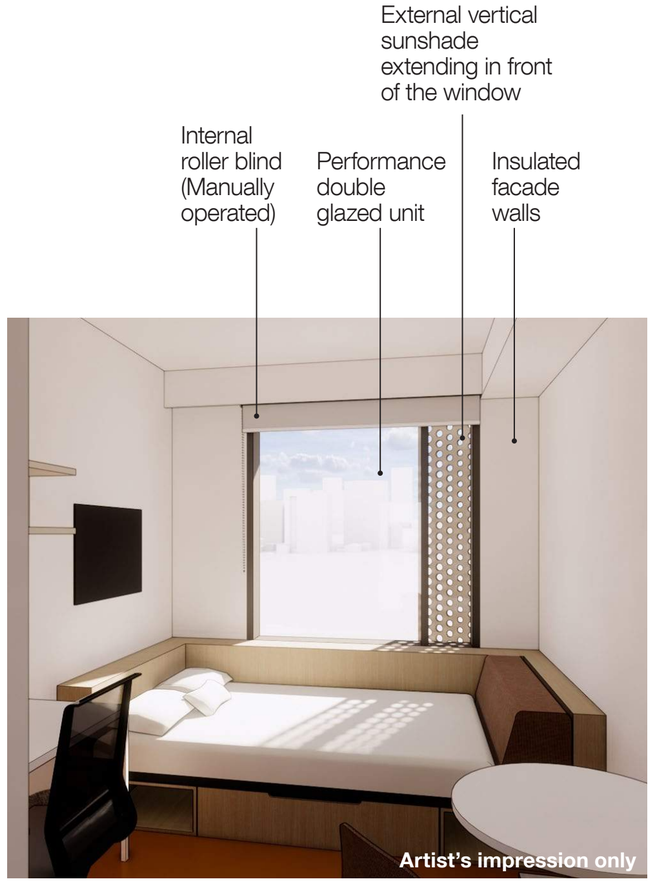
Extent of vision glass
(32% of studio facade)

Line of floor levels



Key Plan





Internal view of a typical studio