

4.0 Proposed Facade Concept Strategy

4.1 Existing Campus - Materiality

The campus today has evolved over time based on research and expansion needs but without a clear masterplan or design principles.

As a result the overall aesthetic of the campus is a mismatch of different styles, proportions and materials.

The lack of coherent design principles creates a strong opportunity to establish a common design language for the future developments of the campus.



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The facade design development is based on environmental analysis of the two zones, in conjunction with the requirements of the uses within the building.

Initial environmental studies of the building orientation and the sun irradiance on the facades and the roof highlighted the need to ensure the facades receive adequate shading as well as well considered glazing to opaque ratio to ensure solar gain is minimised for spaces within.

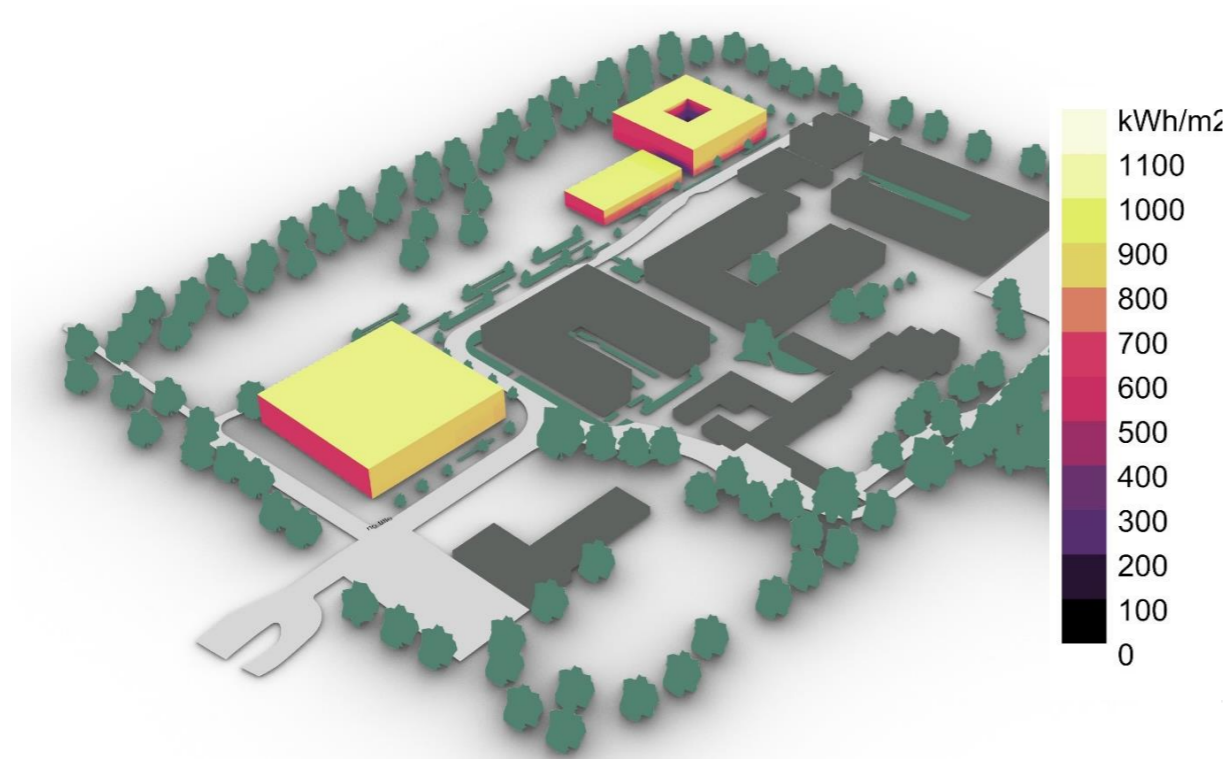


Figure 8: South-east view with colour mapping based on the incident solar radiation. The existing buildings are shown in grey.

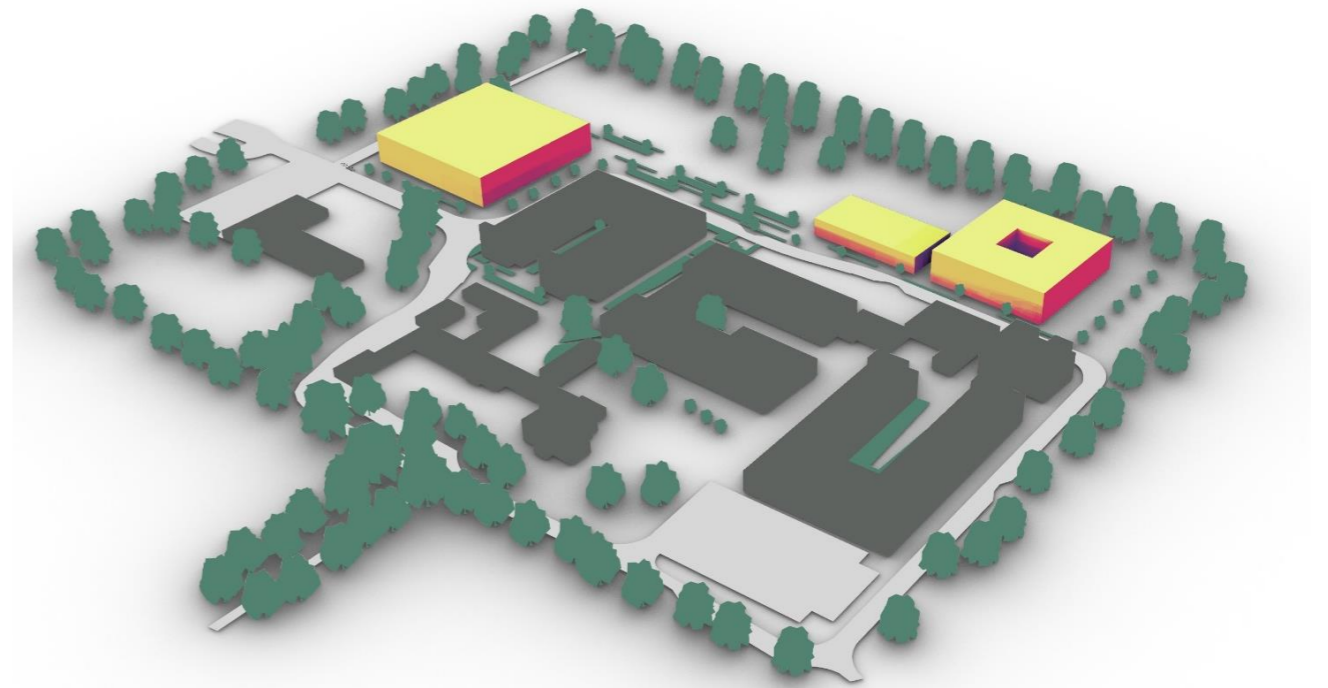


Figure 9: South-west view with colour mapping based on the incident solar radiation. The existing buildings are shown in grey.

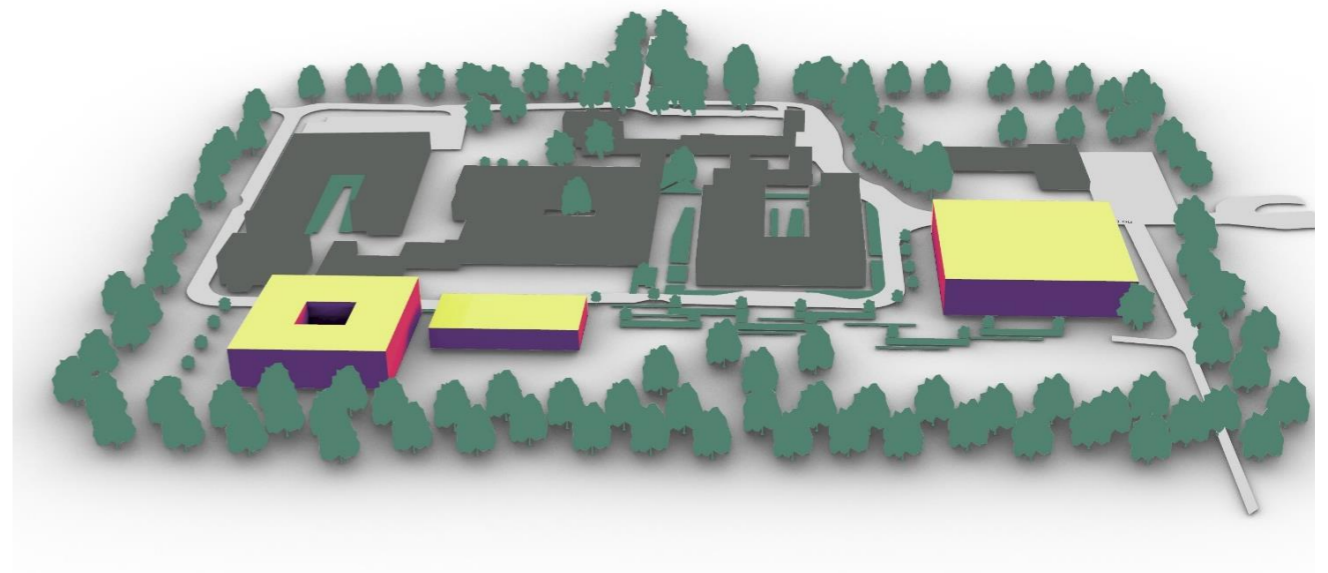


Figure 10: North view with colour mapping based on the incident solar radiation. The existing buildings are shown in grey.

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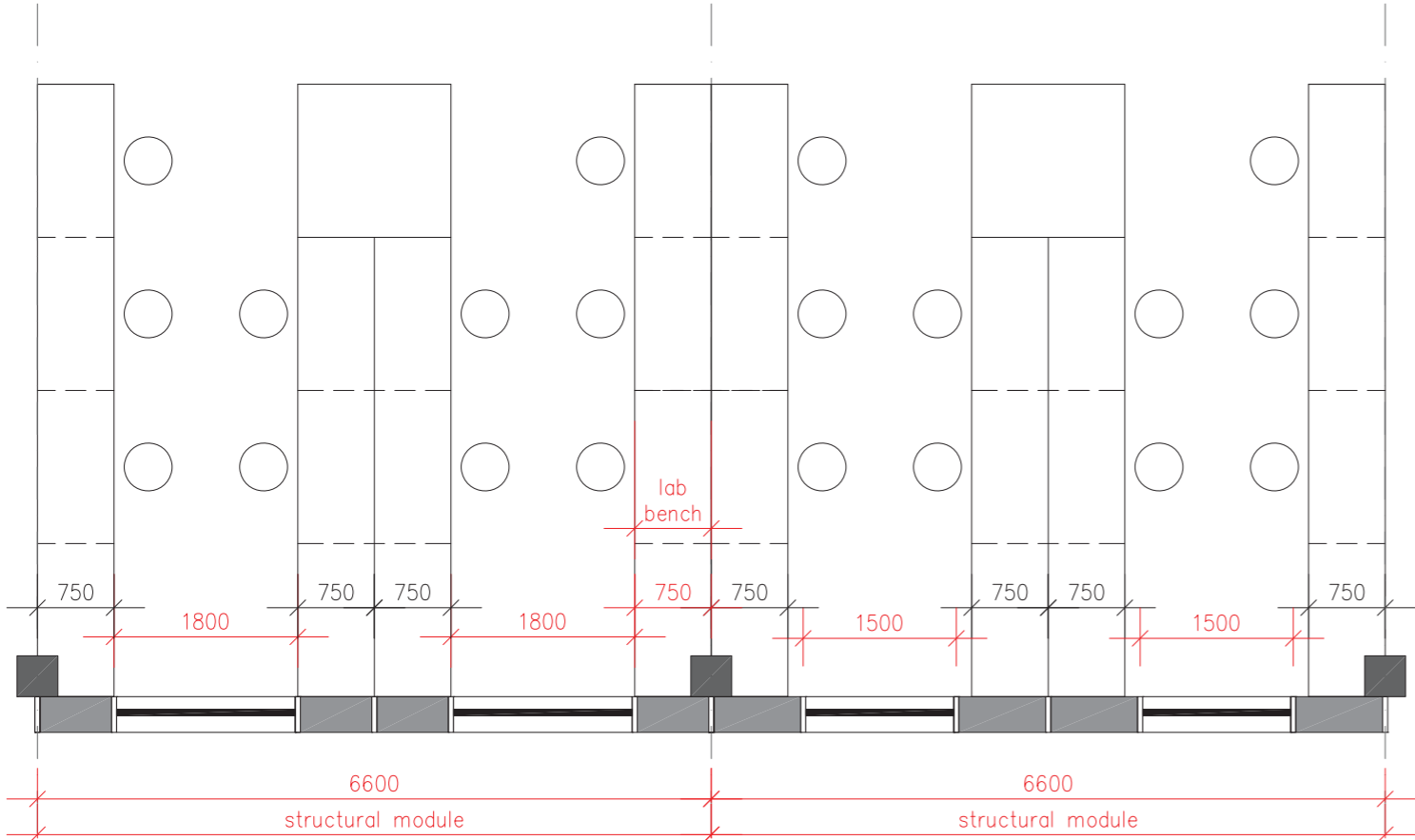
4.3 Typology

The overall facade design approach starts from the very basic functional needs of these buildings: the laboratory space.

This typical layout of the lab benches is the basis for positioning of the window openings in the facade to ensure maximum flexibility is provided for the spaces within the building.

This results in a module based on the typical structural bay (6600mm), which would allow for highly flexible laboratory planning.

Typical Bay
Lab Benches - Window Position



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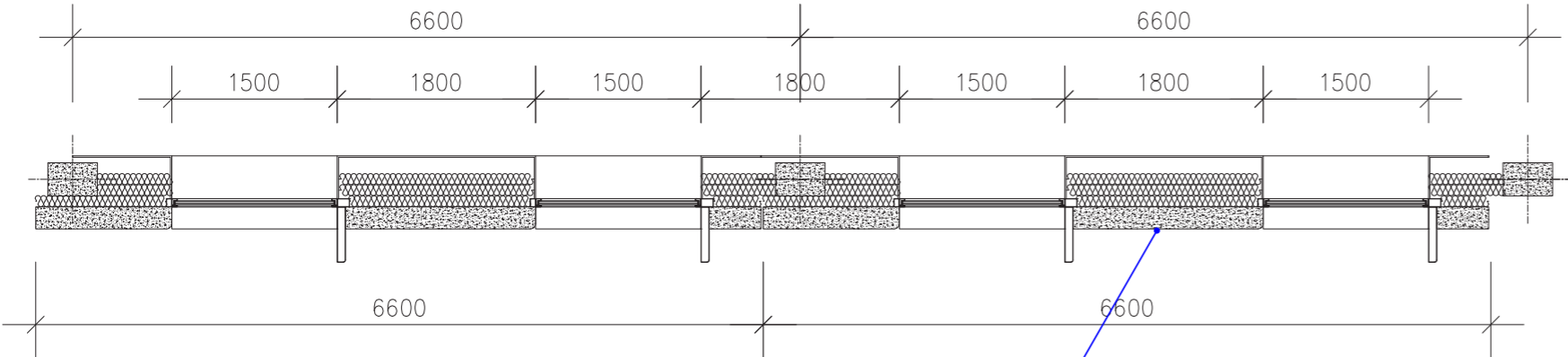
Further analysis and building modelling highlighted the need to develop two different facade modules for the overall envelope design.

On the East and West elevations vertical fins will provide shading, reducing glaring and heat gain, whilst South elevations would benefit from more horizontal shading.



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Plans and Section of a typical structural bay showing proposed materials.



Opaque Panel:
brick slips mounted onto pre-cast concrete panels



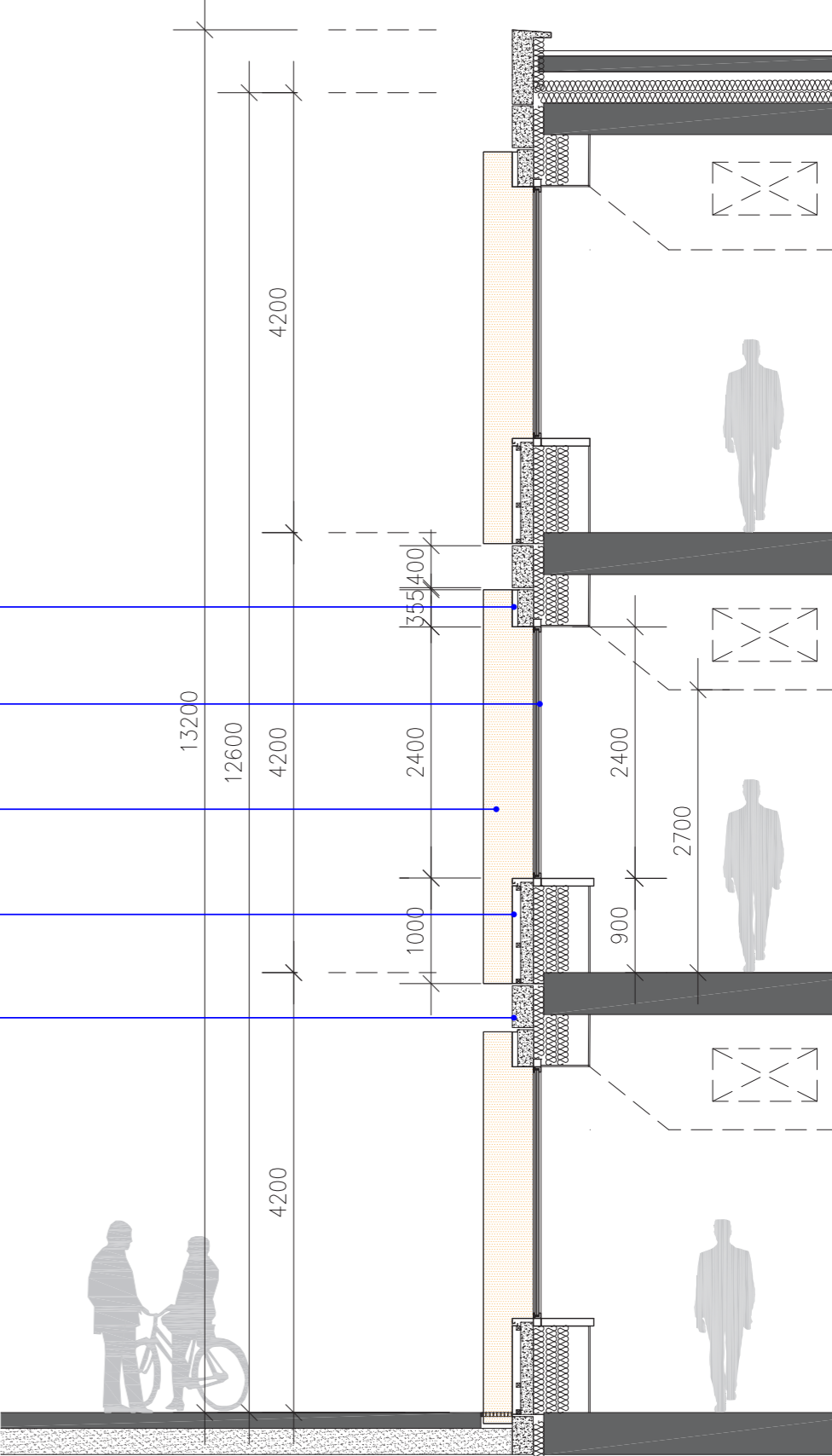
Top Spandrel:
dark grey PPC aluminum + insulation

Vision panel:
clear glass

Shading Fins:
Perforated anodised/PPC aluminium

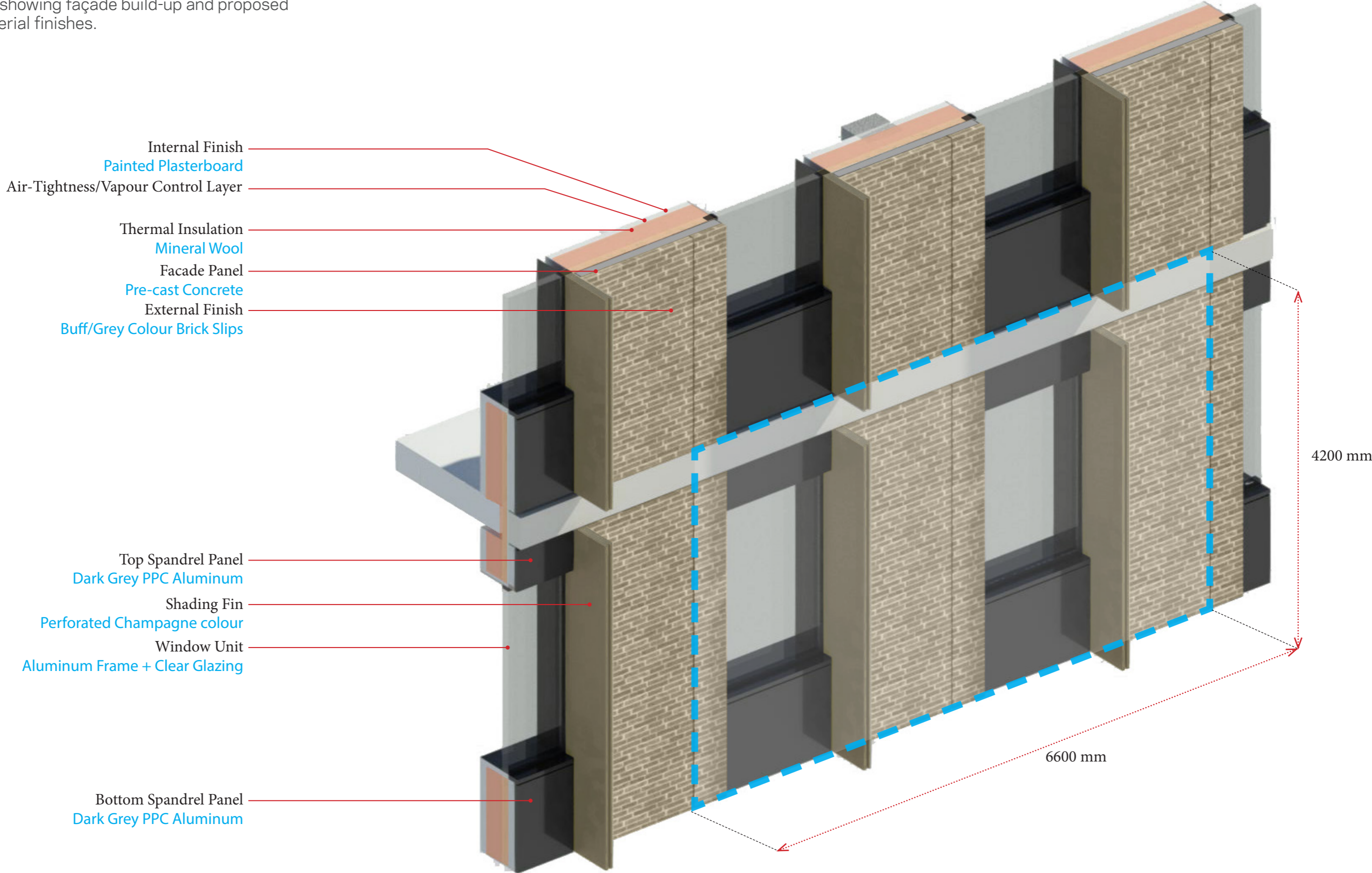
Bottom Spandrel:
dark grey PPC aluminum + insulation

Slab edge panel:
acid etched Pre-cast concrete (re-constituted stone)



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Axonometric view of a typical structural bay showing façade build-up and proposed material finishes.

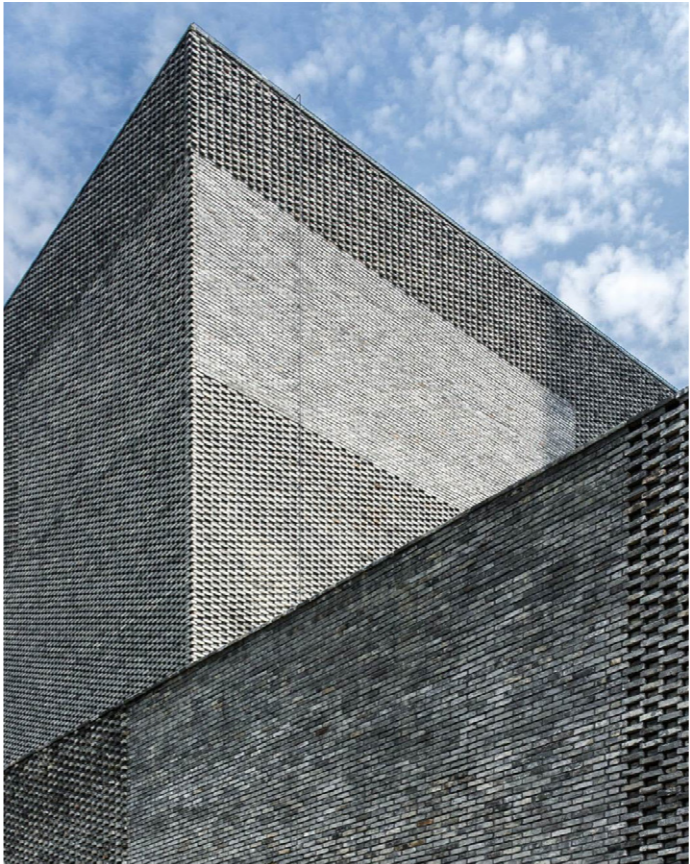
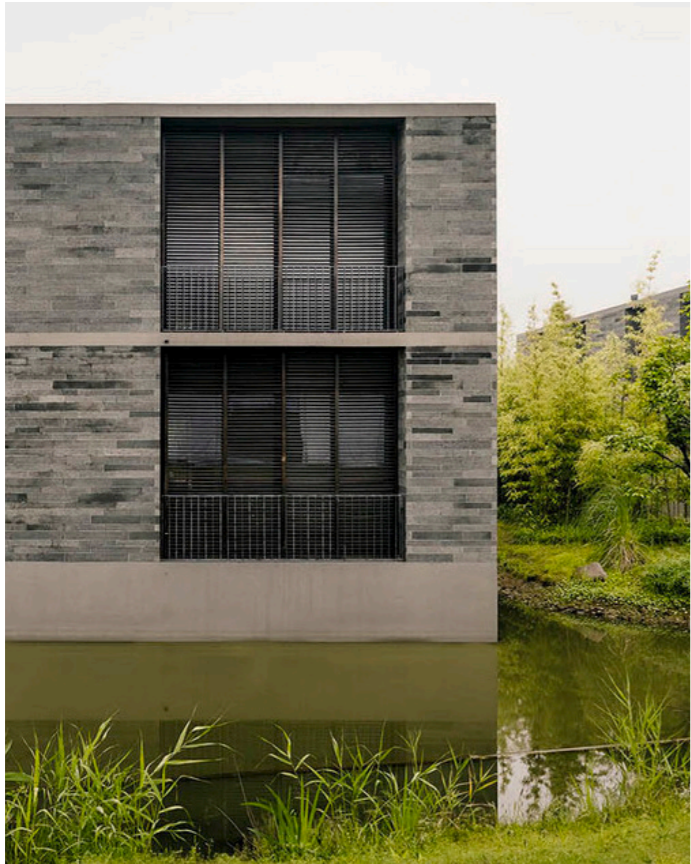
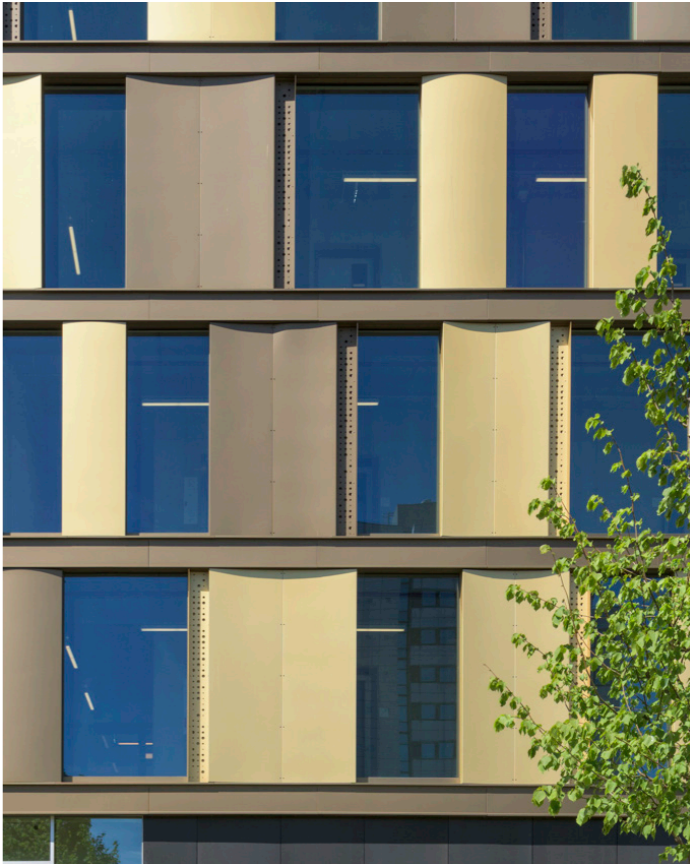
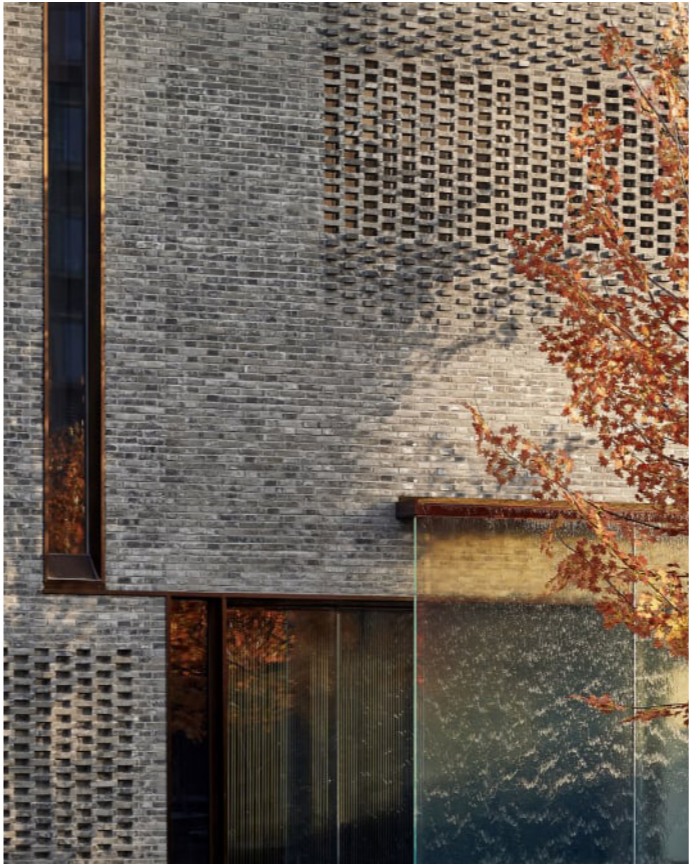
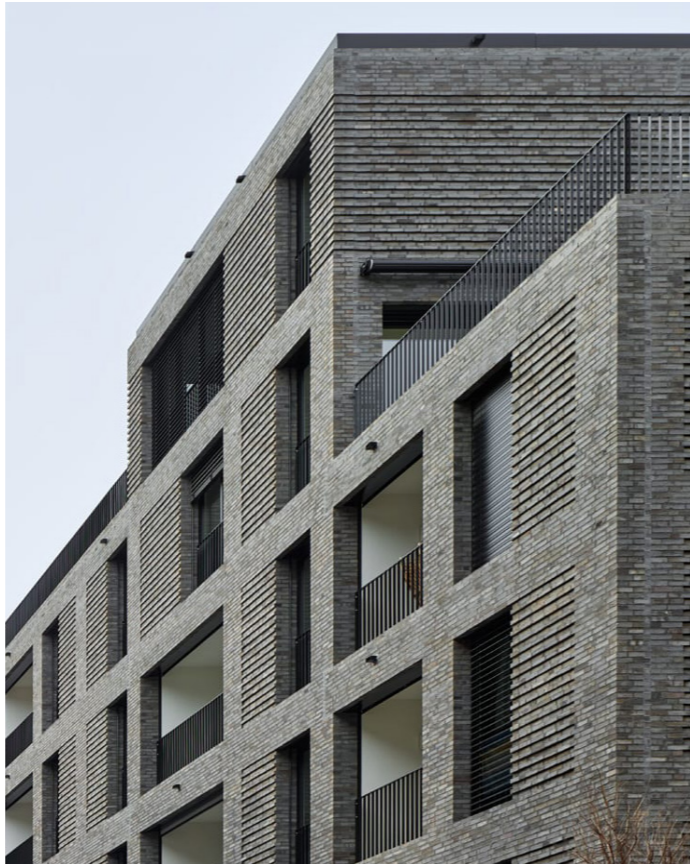


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4.4 Materiality

Materiality - Precedent Images

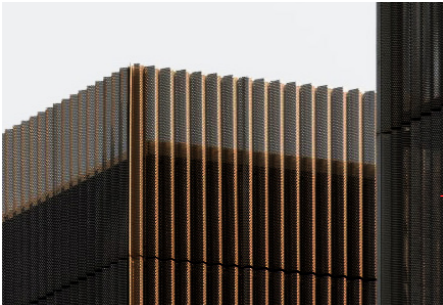
The facade materiality proposals draw inspiration from other buildings with a mixture of stone/brick and metal cladding that would complement the existing building stock on the campus.



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4.4 Proposed Facade Material Palette

Refer to accompanying elevation drawings for detailed material specification.



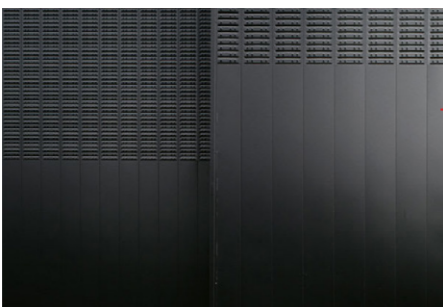
Plant Screen Panels:
perforated undulated PPC metal - dark grey colour



Bricks:
grey/buff blend



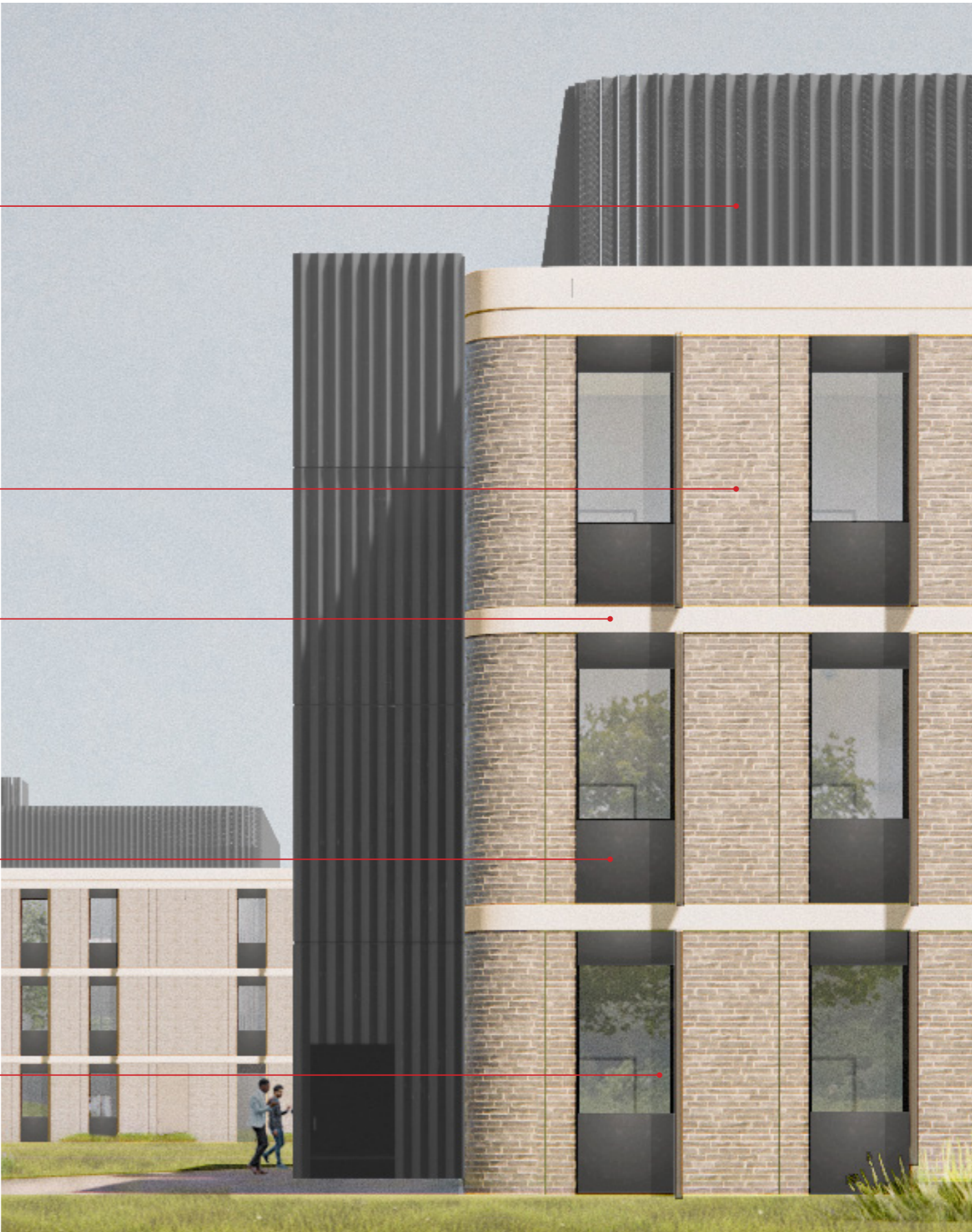
Slab Edge:
pre-cast white concrete - acid etched



Spandrels Panels:
PPC aluminum - dark grey colour



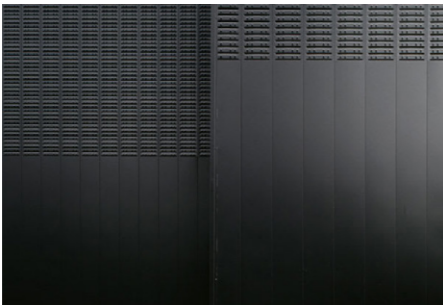
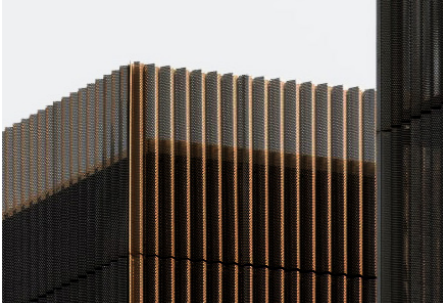
Shading Elements:
Perforated PPC 'champagne' colour



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4.4 Proposed Facades - Commercial Building

Refer to accompanying elevation drawings for detailed material specification.



1 PROPOSED NORTH ELEVATION - COMMERCIAL BUILDING 1:100

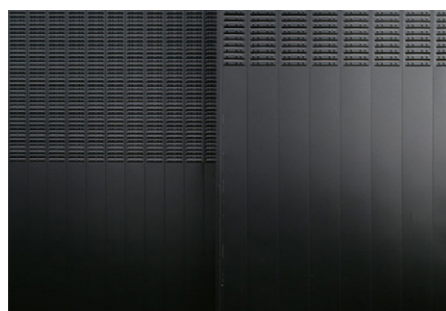
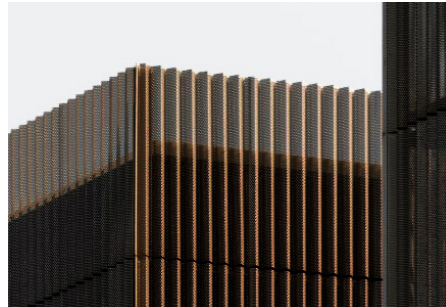


2 PROPOSED SOUTH ELEVATION - COMMERCIAL BUILDING 1:100

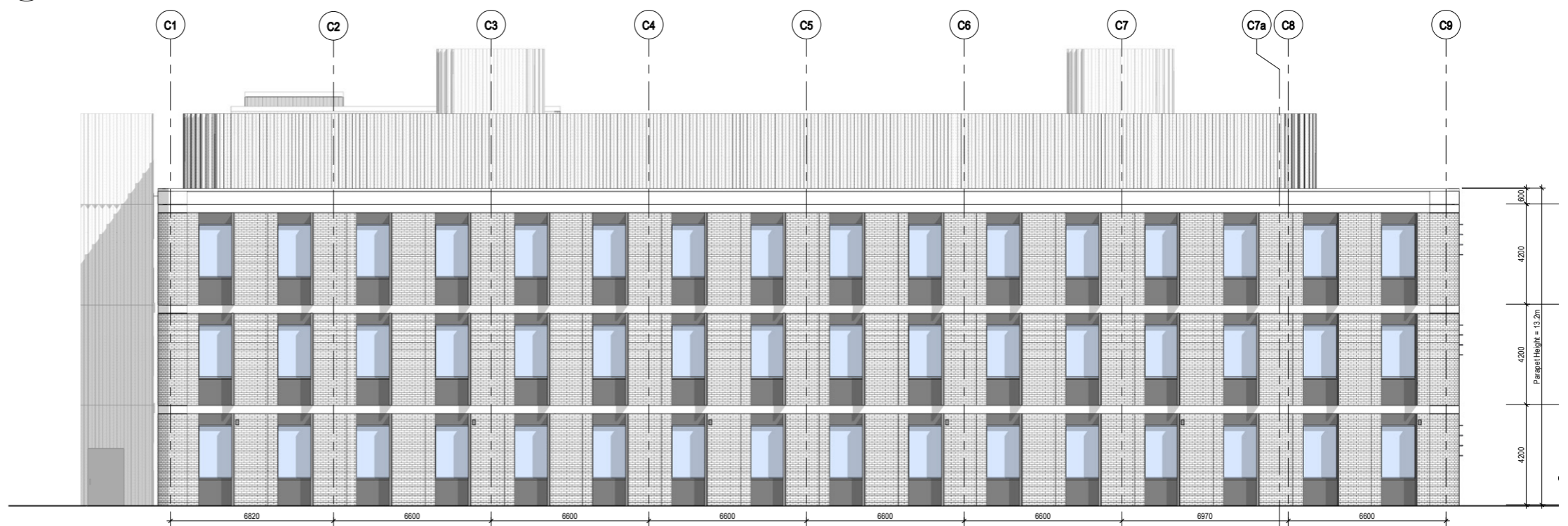
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1 PROPOSED EAST ELEVATION - COMMERCIAL BUILDING
1:100



2 PROPOSED WEST ELEVATION - COMMERCIAL BUILDING
1:100



SCALE: 1:100