7.3 Tower Facade Principles

The design of the tower facade includes five key design features, which are summarised here:

Geometry

The geometry of the cladding is expressive, richly three-dimensional, and robust - functioning both aesthetically and technically. Strong vertical lines spaced on a 3m grid extend up the full height of the tower, interrupting the horizontal shading shelf where it is not needed above the opaque portion of the facade and drawing the eye upwards. Vertical elements on either side of the glazing blend into the horizontal shading element softening and providing rich detail to the facade.

Colour / materiality

The materiality of the cladding reinforces the sense of solidity. off-white GRC with a light terracotta coloured aggregate provides the tower with a warm, contextually sensitive appearance.

Breathing spine expression

The expression of the Breathing Spines highlight their importance in both the functionality of the space and in the separation between the four quadrants.

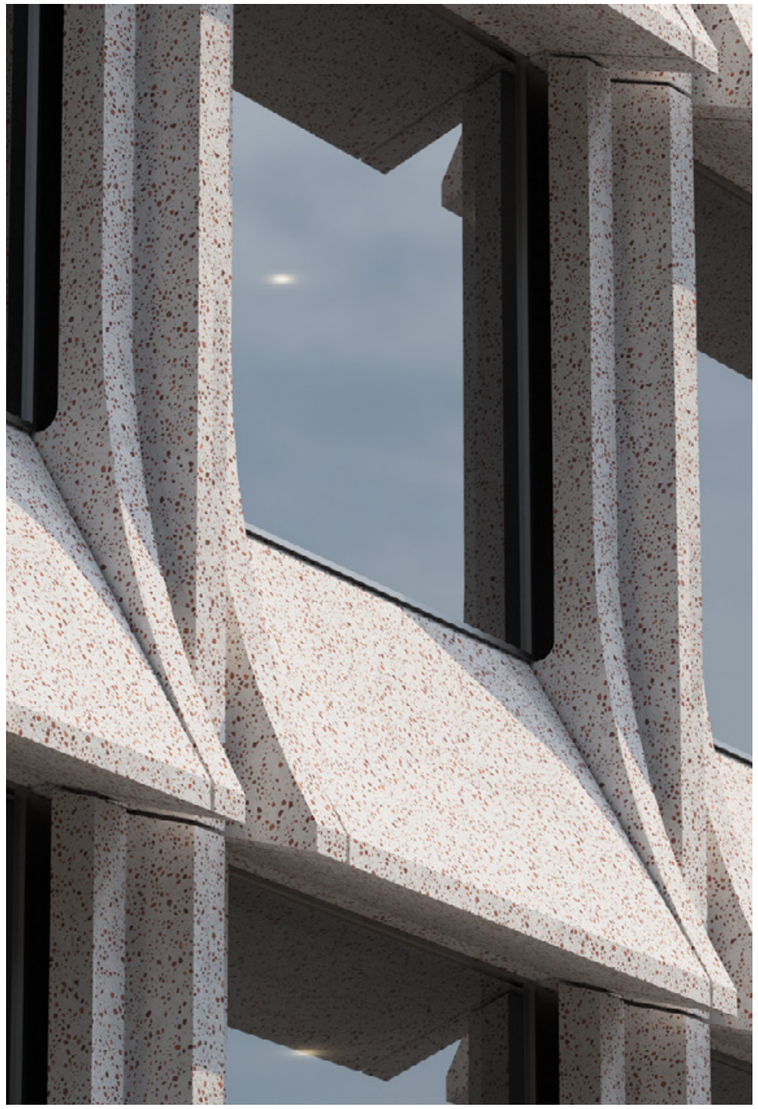
Option for natural ventilation

An optional inclusion for the facade is an integrated panel for natural ventilation in the opaque portion of the facade affords building users access to exterior air. Air is introduced into a shadow gap between the GRC cladding and the openable panel. So while the facade appears solid and substantial, it is purposefully permeable.

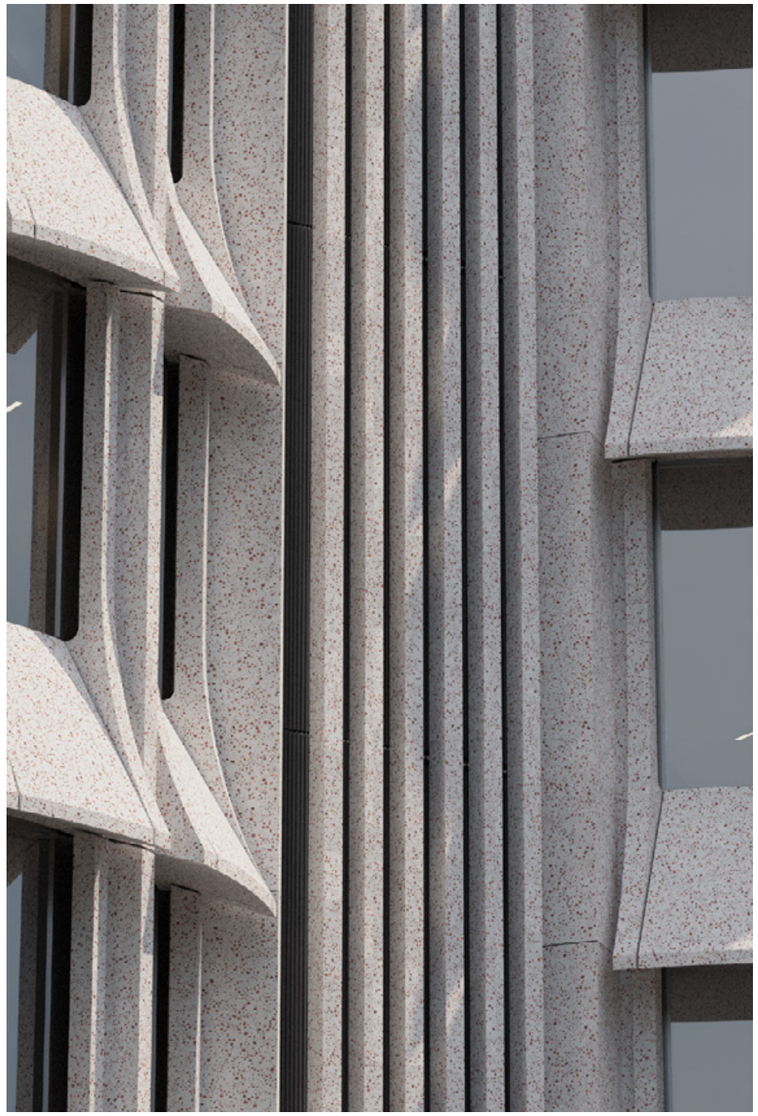
Double-height amenity spaces

The facade treatment of the double height amenity spaces provides a relief from the typical tower facade, helping to break down the scale of each of the four towers. The vertical facade elements here provide architectural expression and contrast with the opaque panels of the typical tower facade.

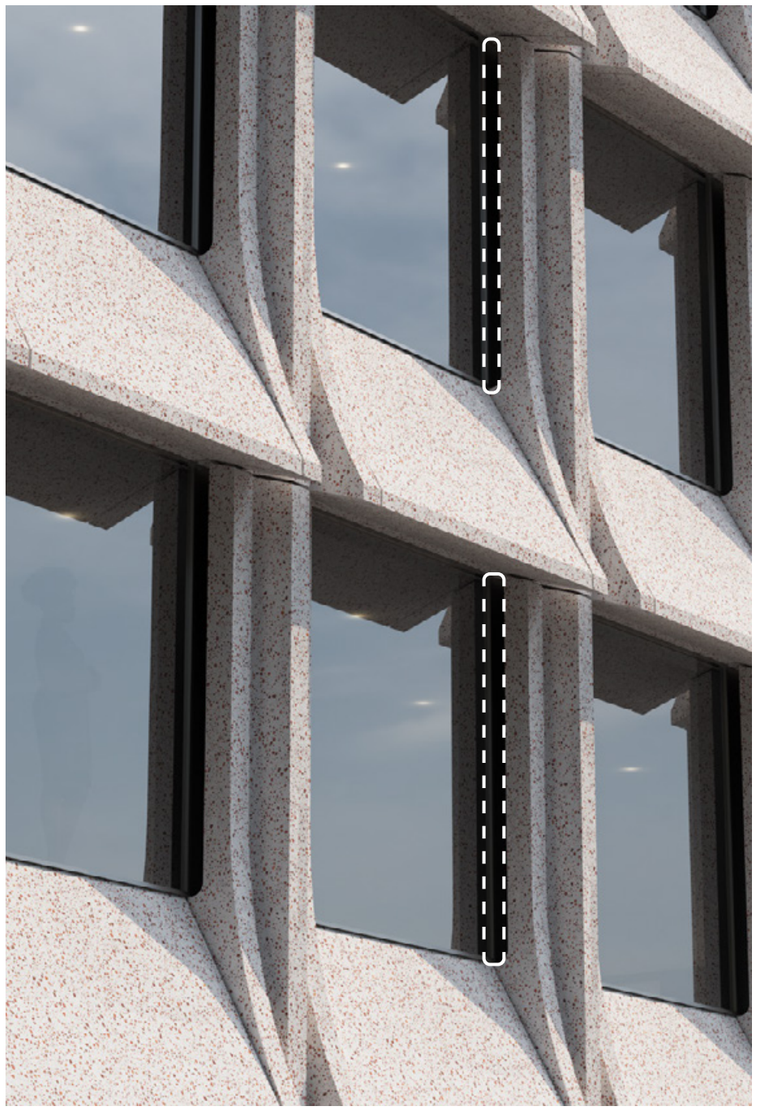
Geometry



Colour / materiality



Breathing spine expression



Option for natural ventilation

Double-height amenity spaces

7.4 Tower Facade Types

The proposed tower facade is a unitised curtain wall system with glass reinforced concrete (GRC) cladding. It has been designed to be simple yet richly detailed and can be broadly categorized into four distinct types as outlined in the adjacent diagram.

The typical facade of the tower forms the majority of the facade. Additionally, the facade features four amenity terraces, prominent breathing spines, and the tower crown. Consistent materiality, colour tone, and geometry throughout the four facade types, reinforces the strength and consistency of the whole design.

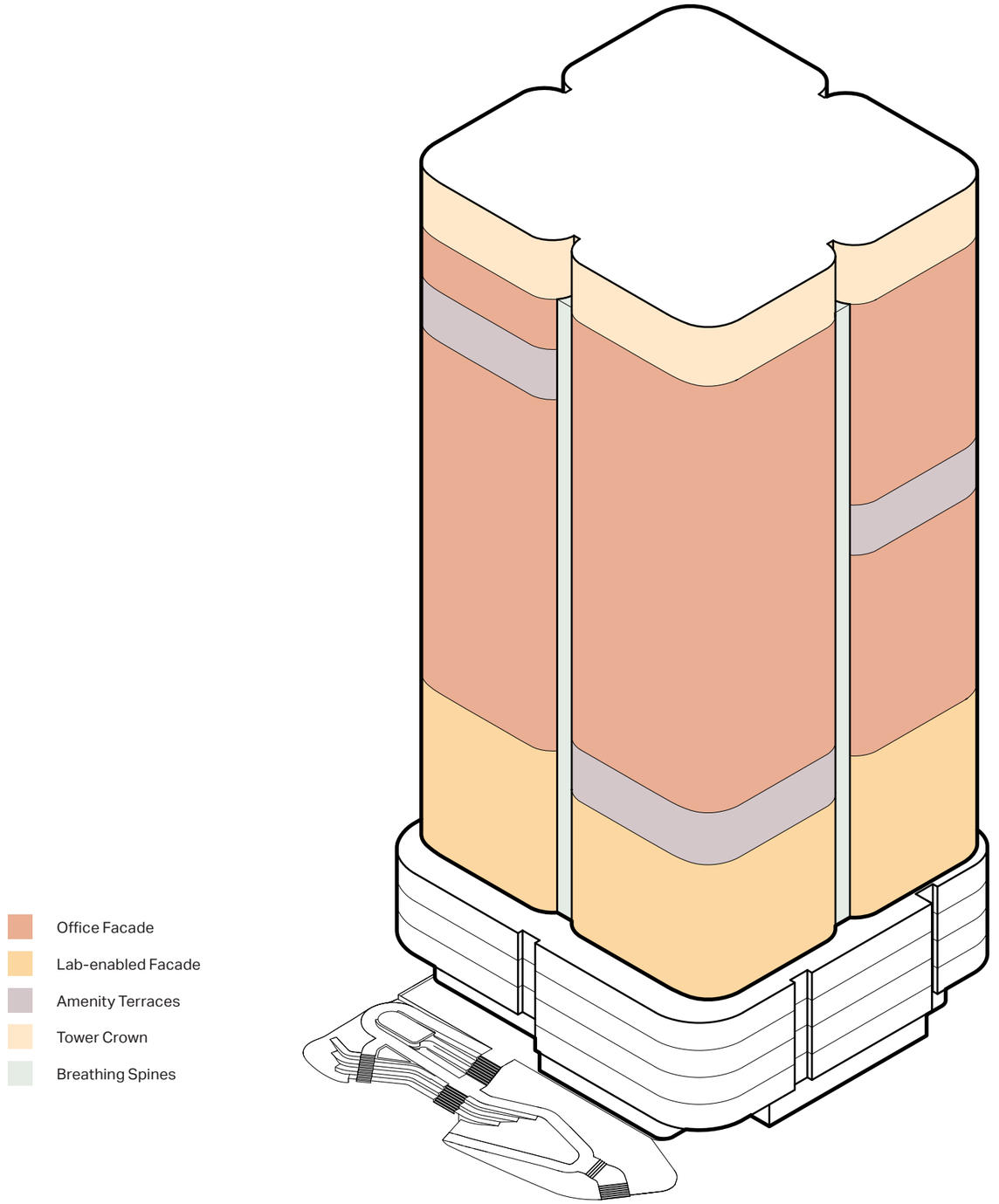


Diagram - Facade types overview

Typical tower facade

Tower crown

Double-height amenity terrace

Breathing Spine

7.5 Typical Tower Facade

The size of the facade curtain wall module is designed to be 3m wide. Specific sizing will be revisited in future stages once the weight of the bay is better understood and there are more in-depth conversations with contractors. The module can be described in two parts - an opaque panel that is 725mm wide, and a glazed panel that is 2275mmn wide with a 400mm tall upstand. The stack joint is located in the transom defining the top of the upstand so the stack joint is located roughly 400mm above FFL. The wide glazing provides sweeping views of London while the upstand helps the u-value of the facade and optimizes the distribution of natural light that is brought into the floorplate. As an optional inclusion, an openable panel within the opaque portion of the facade can provide an accessible means for exterior air, allowing users a degree of control over their workspace environment. The depth of the facade and the horizontal shelf work to passively shade the glazing, reducing heat gain and improving energy efficiency. The GRC cladding creates a sense of solidity, giving the impression that the facade is carved from stone.

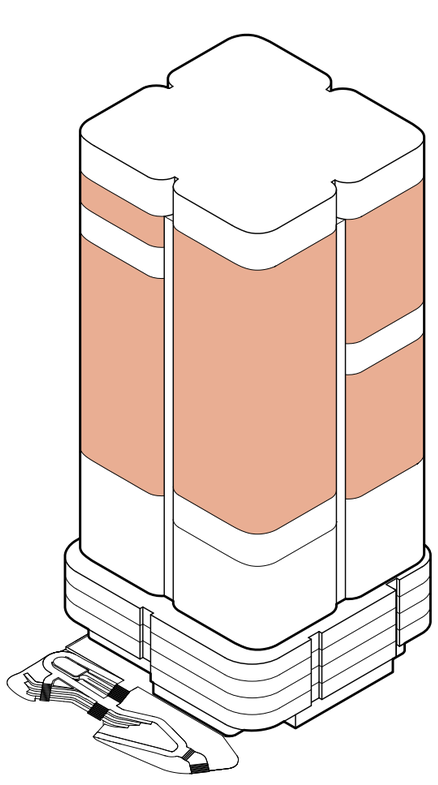
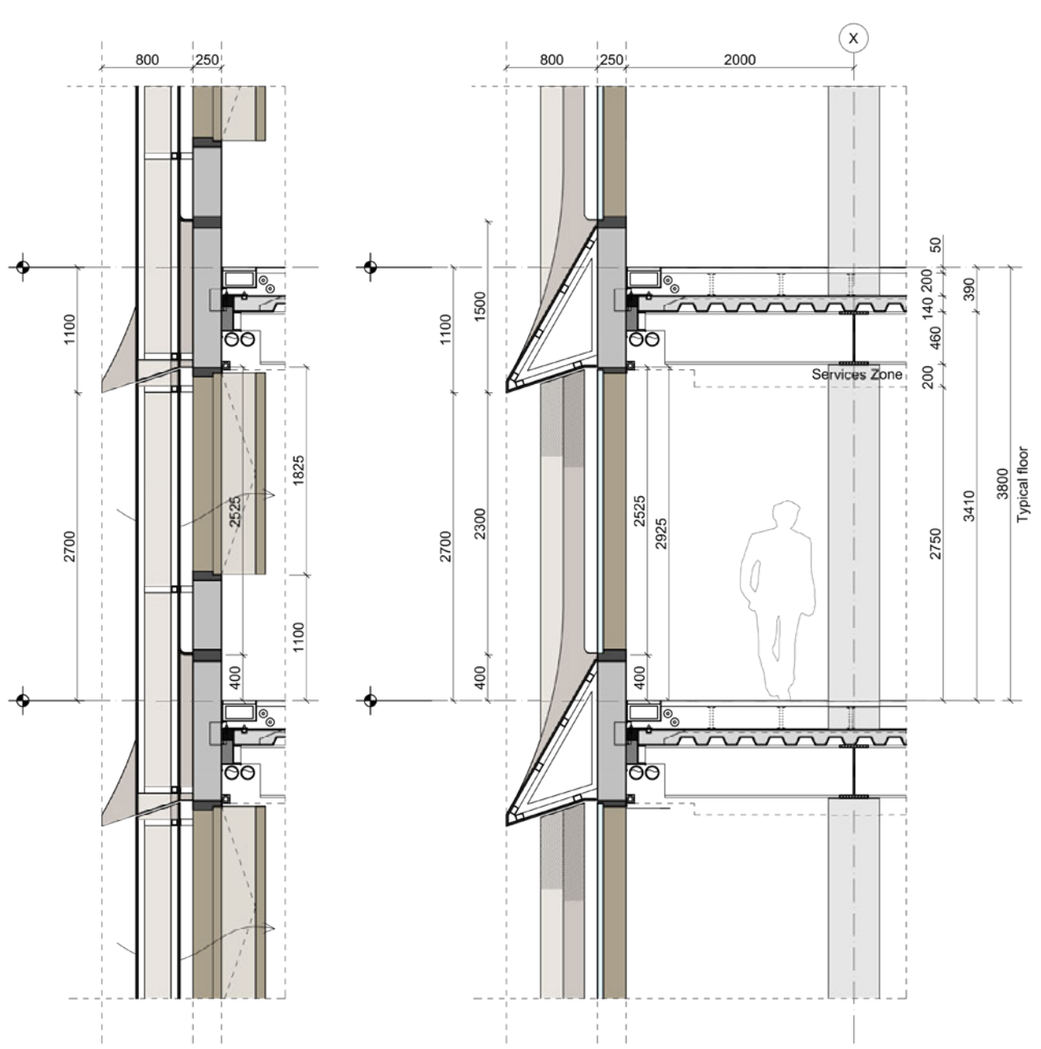
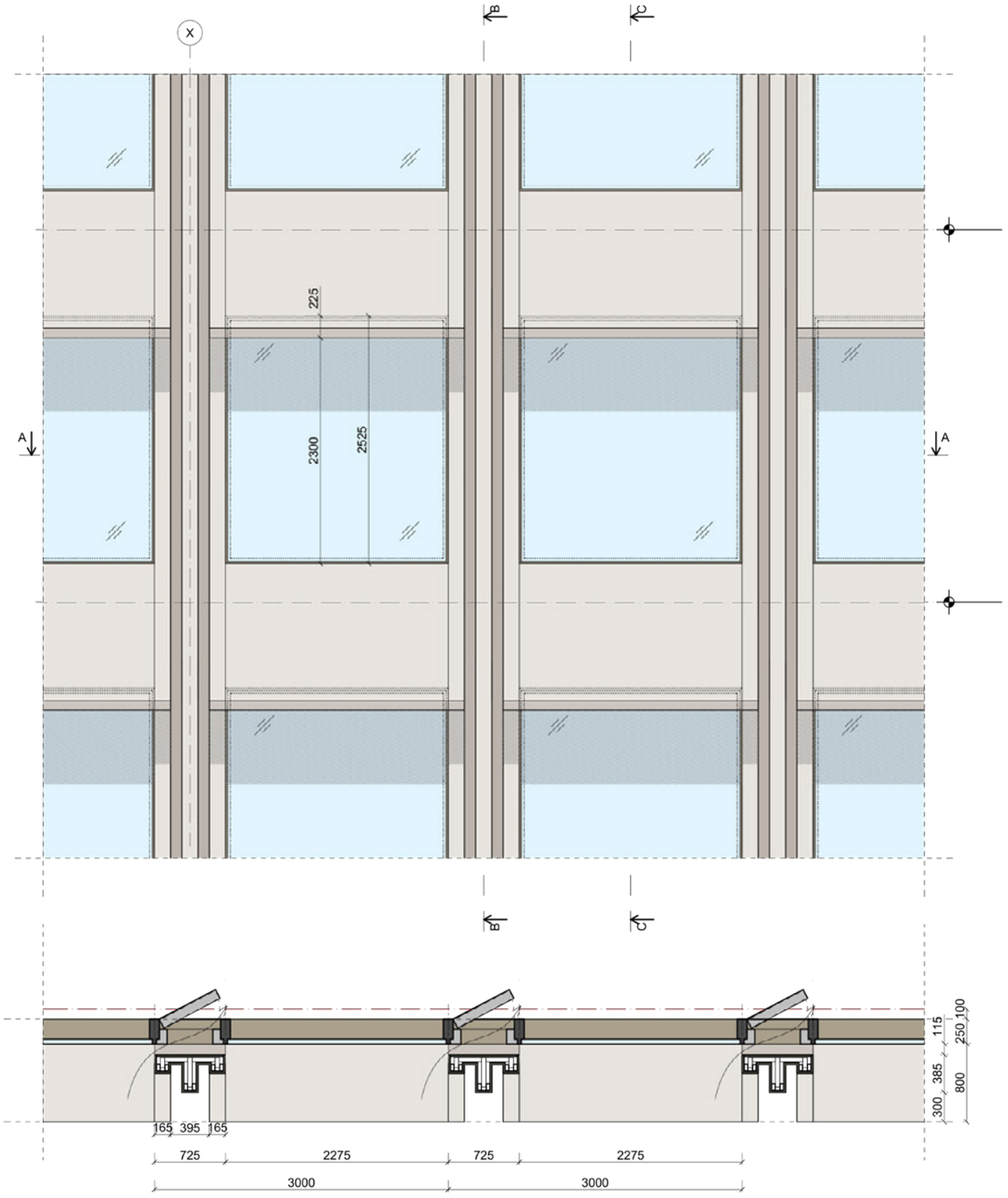


Diagram - Cutaway axonometric of typical tower facade





Drawings - Plan, section, and elevation of typical tower facade

Typical Facade Lab-Enabled Levels

About a third of the levels, L03-L11, are lab-enabled floors with higher floor to floor heights, 4080mm instead of 3800mm. This section covers L06-L11, the lab-enabled floors in the tower. The additional 280mm of the floor to floor height compared to the office floors is absorbed in the facade in the height of the glazing. Compared to the typical levels, the glazing is 280mm higher on the lab-enabled levels. The horizontal shading element is the same as the typical floor, repeating the same standardized elements where possible. Otherwise, the facade of the lab-enabled levels is the same as the office levels. This consistency helps to visually stabilize the tower and relate it to other towers in the immediate context like Centre Point.

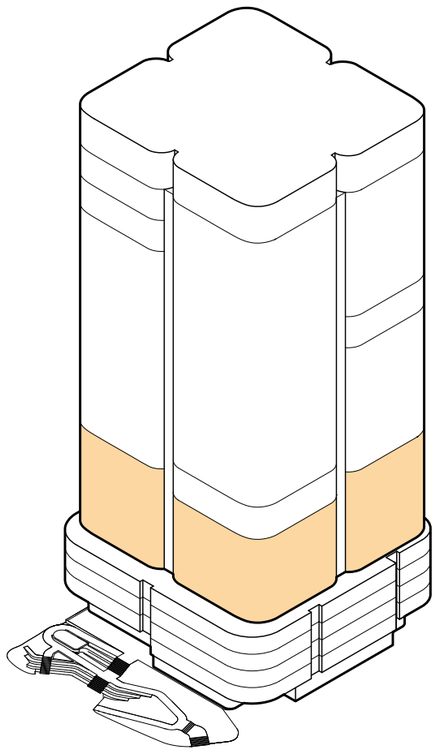
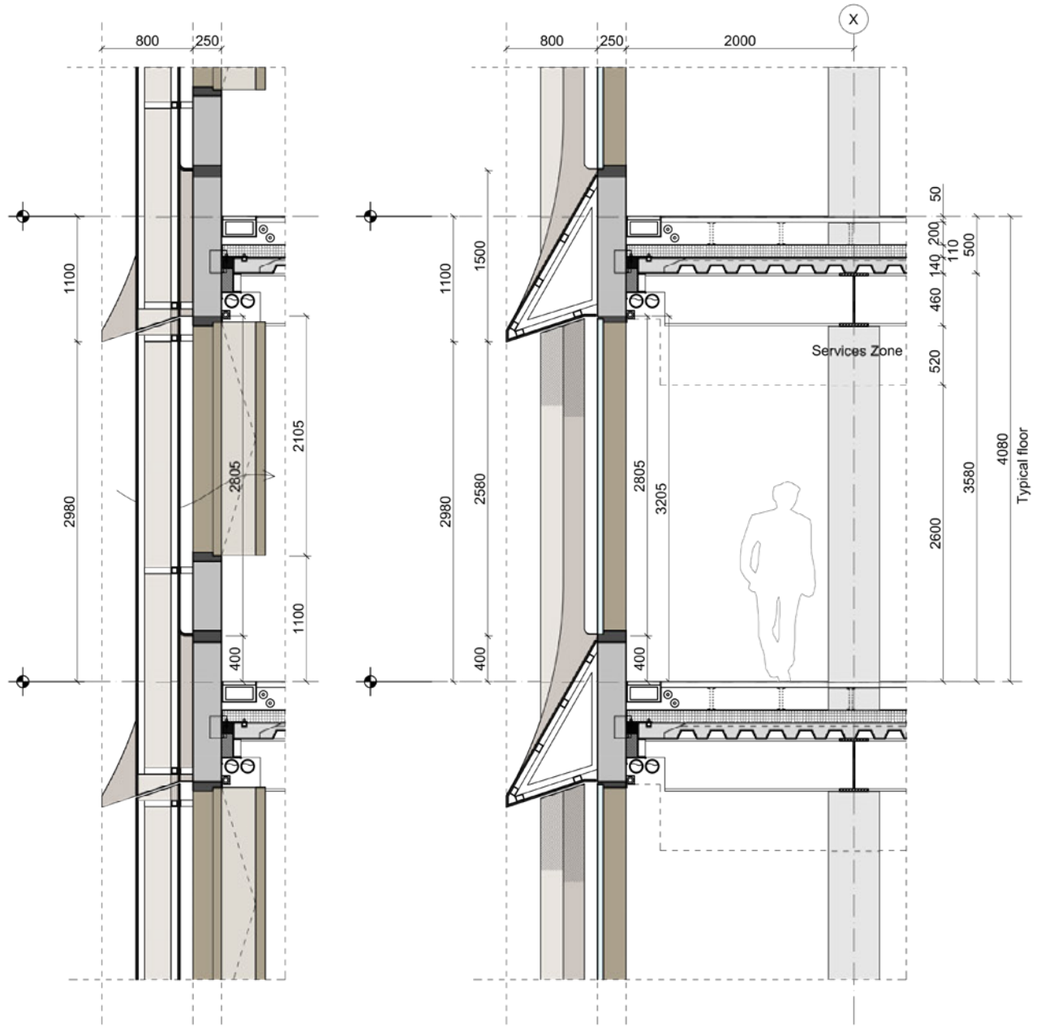
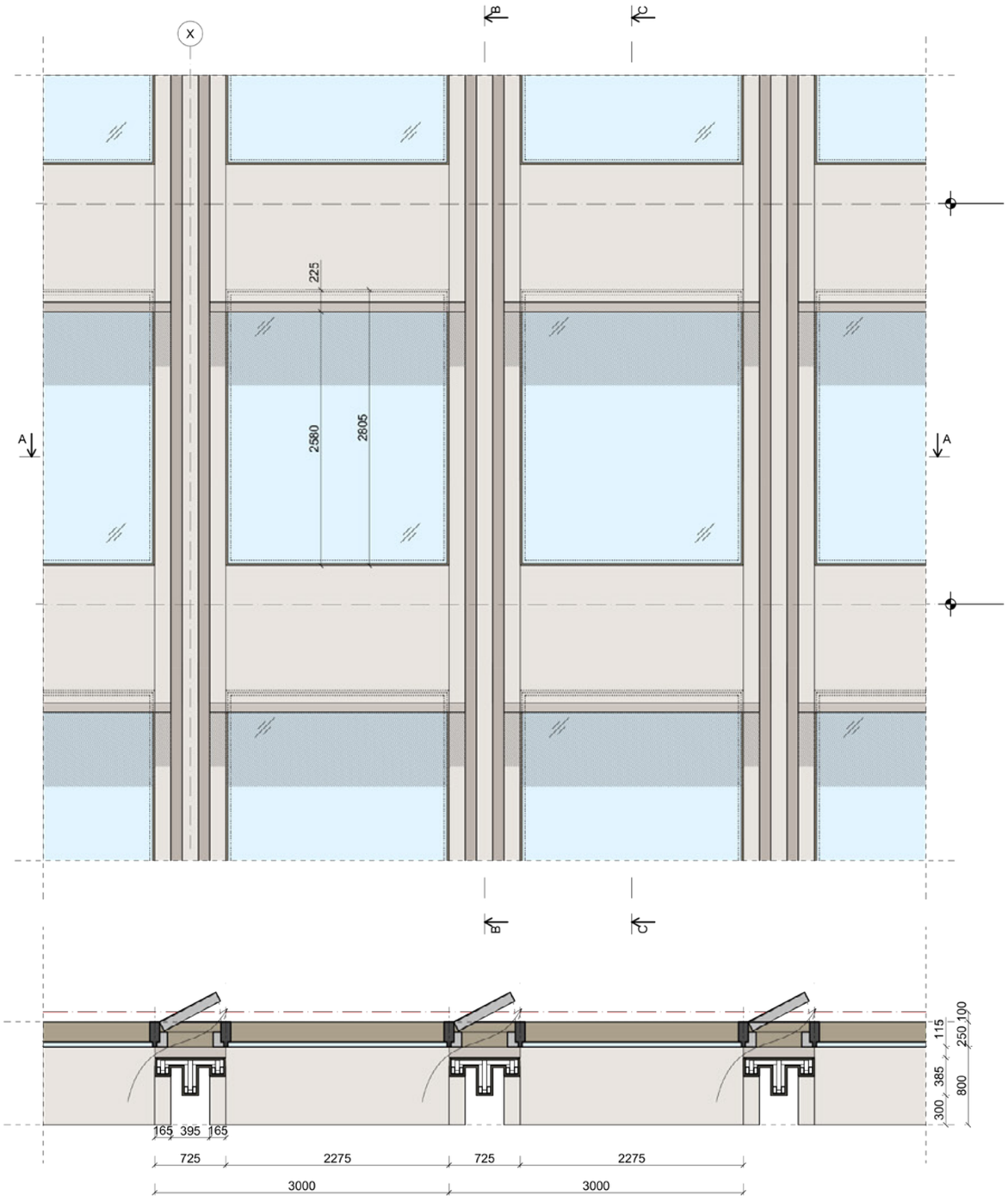


Diagram - Cutaway axonometric of lab-enabled tower facade

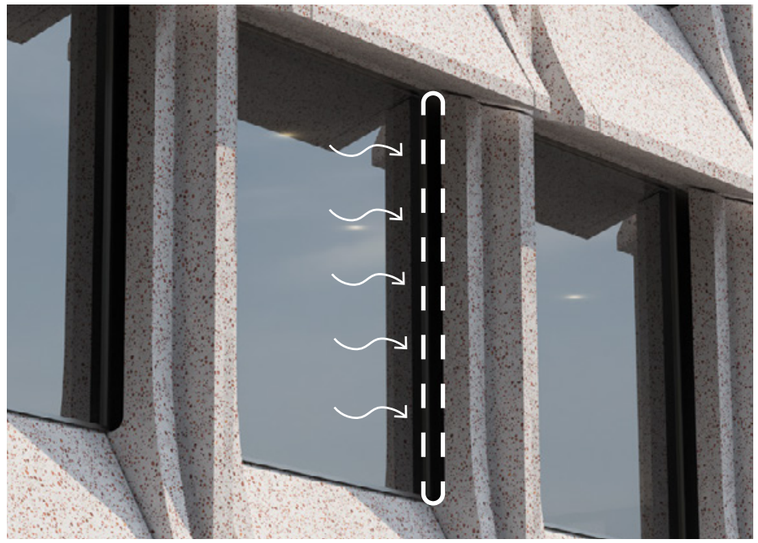




Drawings - Plan, section, and elevation of lab-enabled tower facade

High Performance Facades

The facade is crafted with a dual purpose — not merely for aesthetic appeal but also for improved environmental performance. Functioning as a mediator between the interior and exterior, the facade was designed to reduce solar gain and to provide an option for natural ventilation.



Illustrative View - Natural ventilation option through shadow gap in facade to openable panel behind the facade cladding

Option for natural ventilation

The base inclusion is to have a facade without openable panels. As an optional inclusion, an openable panel can provide users access to exterior air, enhancing the interior environment for occupiers. The proposed panel has a 1100mm upstand, and hinges from the side. Another option for the size of the openable panel is that it could be full height and hinging from the bottom but this option limits the flexibility of space planning by not allowing furniture up against the facade. The panel can be opened to 90 degrees for maintenance purposes to access the cavity behind the GRC facade cladding in the rare need for access. The 1100mm upstand above the finished floor level acts as fall restraint. The facade's expression, characterised by a shadow gap between the GRC cladding and the curtain wall behind the vertical GRC cladding elements, subtly integrates pathways for exterior air while maintaining the solidity and robust reading of the GRC cladding.

Illustrative View -Interior of typical tower facade and openable panel

Passive Solar Shading

The facade cladding depth has been designed at 800mm to serve as an effective tool for passive solar shading.

The horizontal shading GRC element located at the spandrel angles downwards to better shade the glazing below. Vertical GRC elements on either side of the glazing also shade the sun at wide angles. A 400mm upstand helps to distribute glazed area up and away from the floor, optimizing the placement of the glazed area to bring in natural light while reducing solar heat gain.

In the typical tower facade bay, the glazing accounts for 50% of the bay area, but one perceives the glazing as only 44% of the bay area when viewed in elevation due to the sloping horizontal element. Thereby achieving a balance between transparency and solidity.

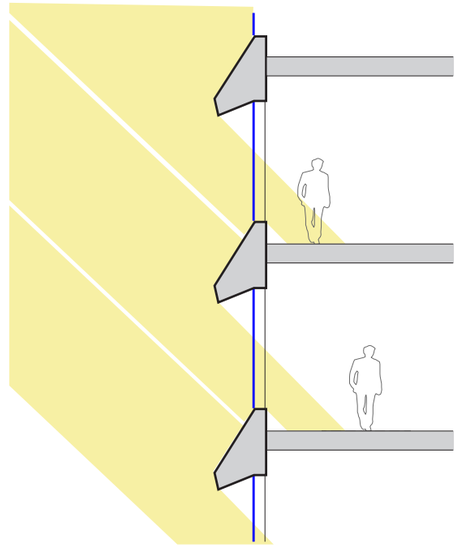


Diagram - Facade shading principle

Illustrative View -Interior of typical tower facade

Illustrative View - Exterior view of horizontal and vertical facade cladding shading elements

Corner Facade Modules and Curvature

In the tower corners, there is a balance struck between buildability and the massing concept. To simplify the complexity of the facade modules, the curtain wall and glazing of the tower corners are faceted. Meanwhile, it is crucial for the concept of the tower for the corners to read smoothly as curved portions of the mass. To create this visual effect, the facade cladding is curved, drawing the eye to the smooth curvature of the horizontal shading elements that turn the corner. Furthermore, the vertical cladding elements create physical separation between each two adjacent pieces of glazing, which obscures the fact that glazing changes plane around the corners. By doing so, the facade communicates the concept of the tower mass while reducing complexity.

A key consideration has been the appearance of the soffit of the horizontal shading element and how that meets the faceted glazing. As most people will be viewing the tower from the street or lower adjacent buildings, this view looking up the tower is crucial. On the corners, if the soffit were to extend back to the faceted glazing and terminate in a straight line when viewed in plan, the observers' eye would be drawn to the fact that the outer extent of the cladding is curved while the glazing is faceted. To avoid this dichotomy, the cladding on the soffit near the glazing also follows the curvature of the outer edge. The space between the cladding and the face of glass is to be detailed in later stages but initial studies have shown that it could be a shadow gap or a metal cap, both solutions highlight the curved cladding when viewed from below. This applies to both the outer corners and also the interior corners where the tower facade returns to meet the inset breathing spine. As with the curvature of the vertical shading elements, all curves are defined as arcs.

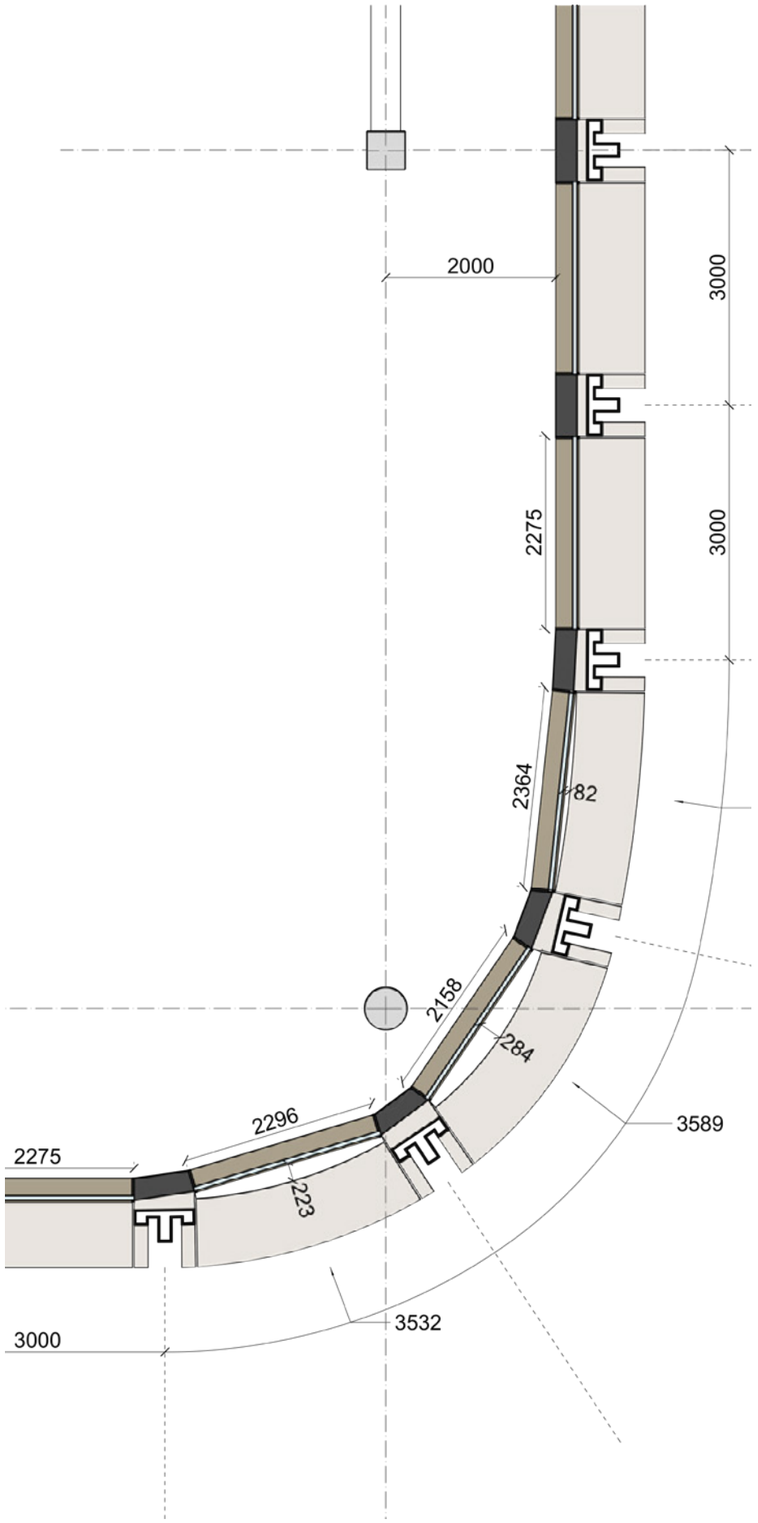
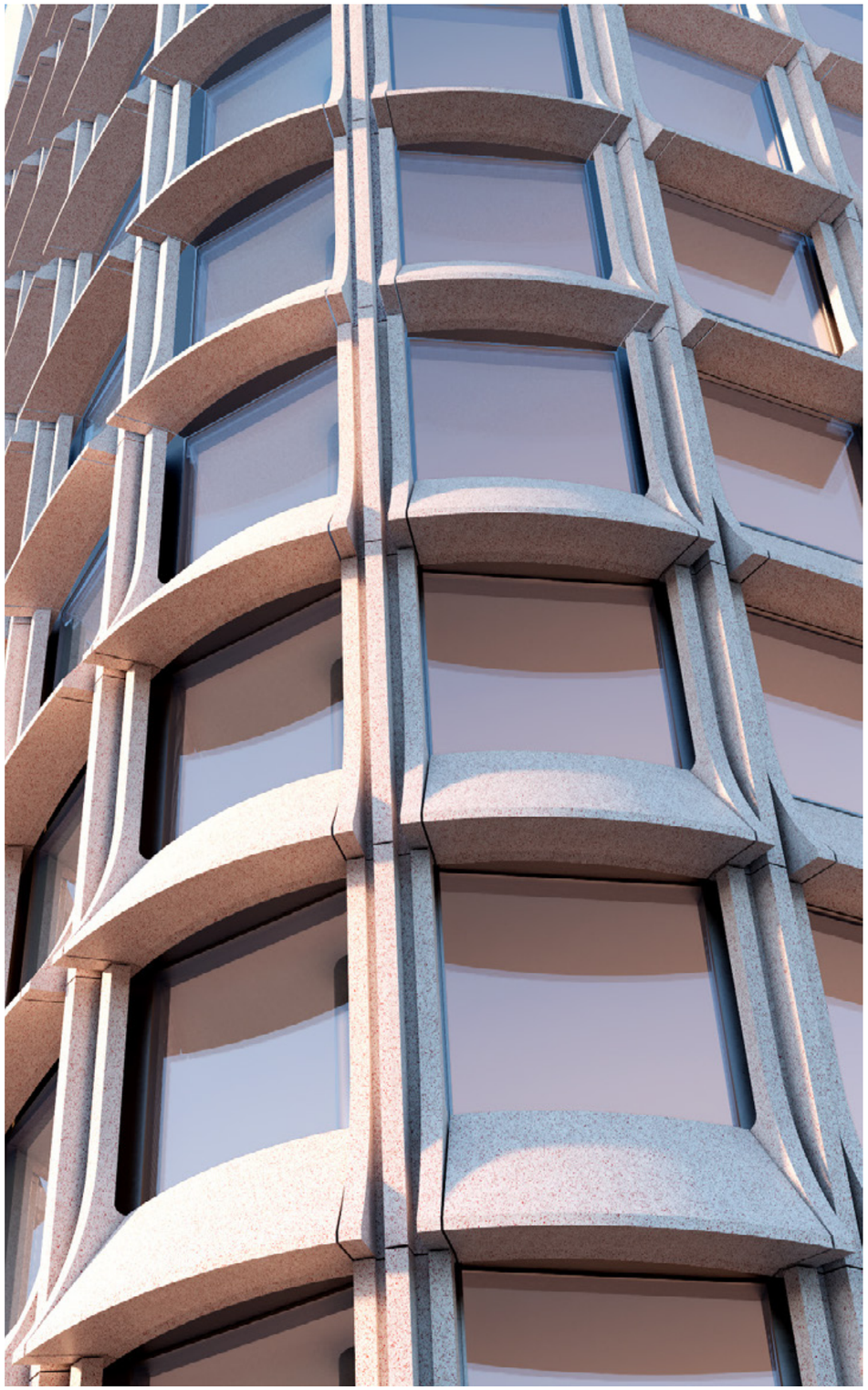


Diagram - Plan diagram for logic of curtain wall geometry at tower corners



Illustrative View - Tower facade corner as seen from below

Facade Panellisation and Joints

Although there is much facade development to come in future stages, careful consideration has been given to facade panellisation and particularly how the curtain wall panellisation will affect joint locations on the GRC cladding. Although these joint strategies have been discussed with contractors and facade consultants as feasible, the joint locations visualized in this report and presented here are indicative and may change in future development pending new information.

As an initial thought exercise, one might consider aligning the joints in the cladding to the stack joint and split mullion that define the edges of the curtain wall panel. Doing so with the vertical joints is inconsequential, as this introduces a vertical joint between the horizontal shading element and the vertical shading cladding elements. Doing so with the horizontal joint however becomes problematic. The stack joint is located roughly 400mm above FFL, this would place a horizontal joint in the middle of the curving portion of the vertical shading elements. A rather awkward location that does not correspond with a logical geometric location on the cladding. This is visualized in the adjacent 'not preferred' diagram.

To avoid this clumsy subdivision of the vertical cladding elements, the horizontal joint is shifted downwards and aligns to the soffit of the horizontal shading element. Thereby creating a cantilever of the facade cladding below the facade curtain wall framing. This is shown in the adjacent 'A' diagram. The logistics of these panels with the cladding cantilever will need to be carefully considered both in transportation and installation. This panellisation logic results in a considered solution where the detailing of the cladding supports the geometry and the reading of solidity of the facade that is crucial for the tower concept.

Depending on construction program, transportation, installation, and logistics, the curtain wall panel could either be 3m wide as is shown in 'A' or the 3m module could be subdivided into two modules as is shown in 'B'.

Diagram - Not preferred facade subdivision

Diagram - Facade subdivision A

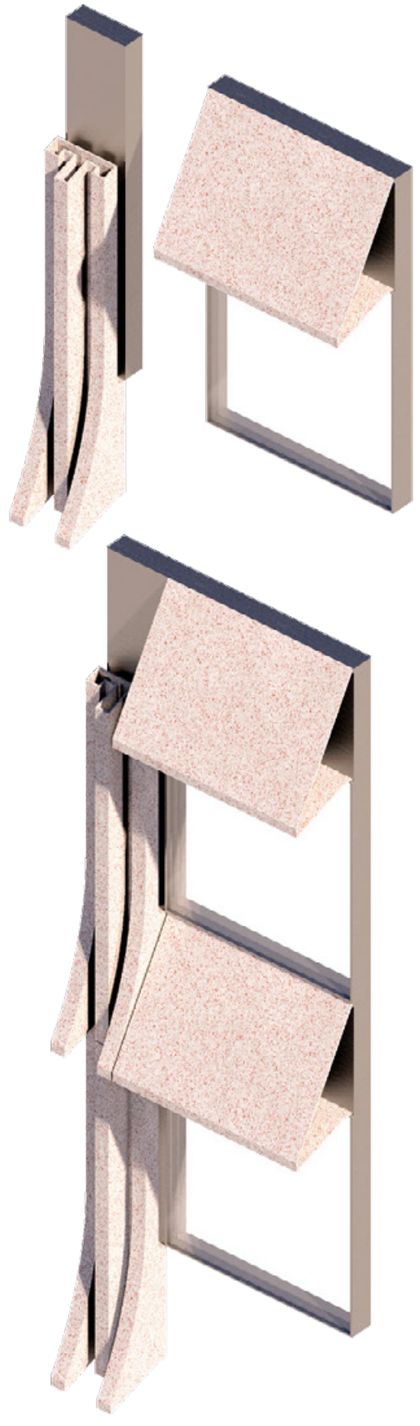


Diagram - Facade subdivision B

Double-Height Amenity Spaces - Aligned Glazed Facade

The facade treatment of the four amenity double height spaces at the perimeter of the tower footprint is consistent. The amenity facade extends the typical facade pattern to span the double-height amenity space. The vertical GRC elements at the perimeter form a colonnade. From long distances, the colonnade elements provide a uniform expression, aligning the double-height amenity facade with the typical office facades. However, the setback of the glass and the resulting shadow introduce visual differentiation. This continuity ties the various facade types together and helps the proportions of the tower appear more slender.

The amenity terrace facade treatment differs at the setback glazed facade. As mentioned previously, the amenity double height spaces on L11-12 and L20-21 have an aligned glazed facade whereas the other two amenity double height spaces have a stepped glazed facade that is not aligned on the east/west elevation. The spandrel of the double-height glazed façade is clad in GRC, maintaining consistency with the rest of the tower by eliminating the use of glazed shadow boxes.

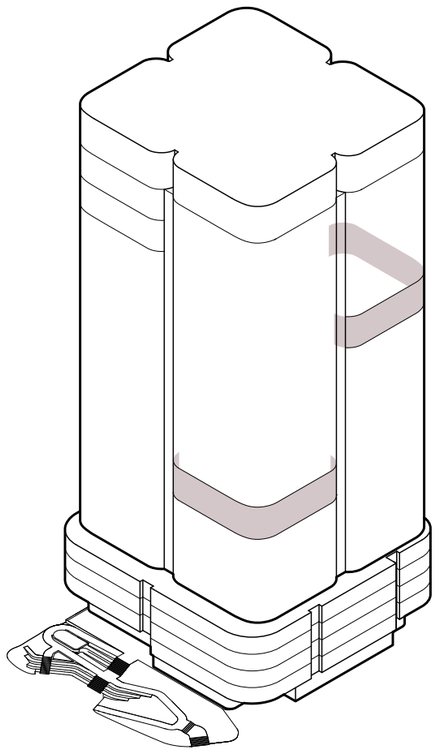
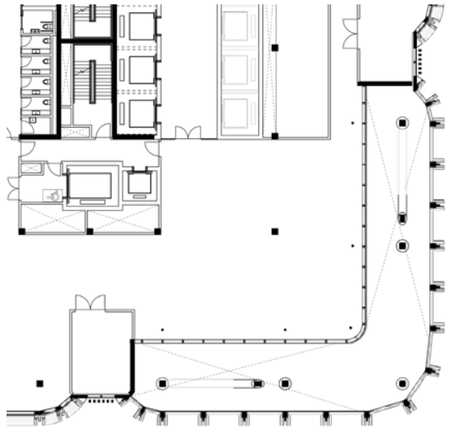
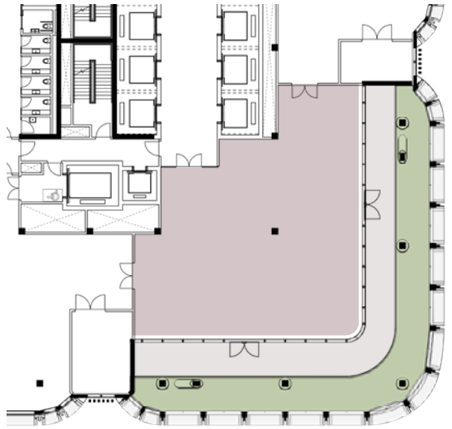


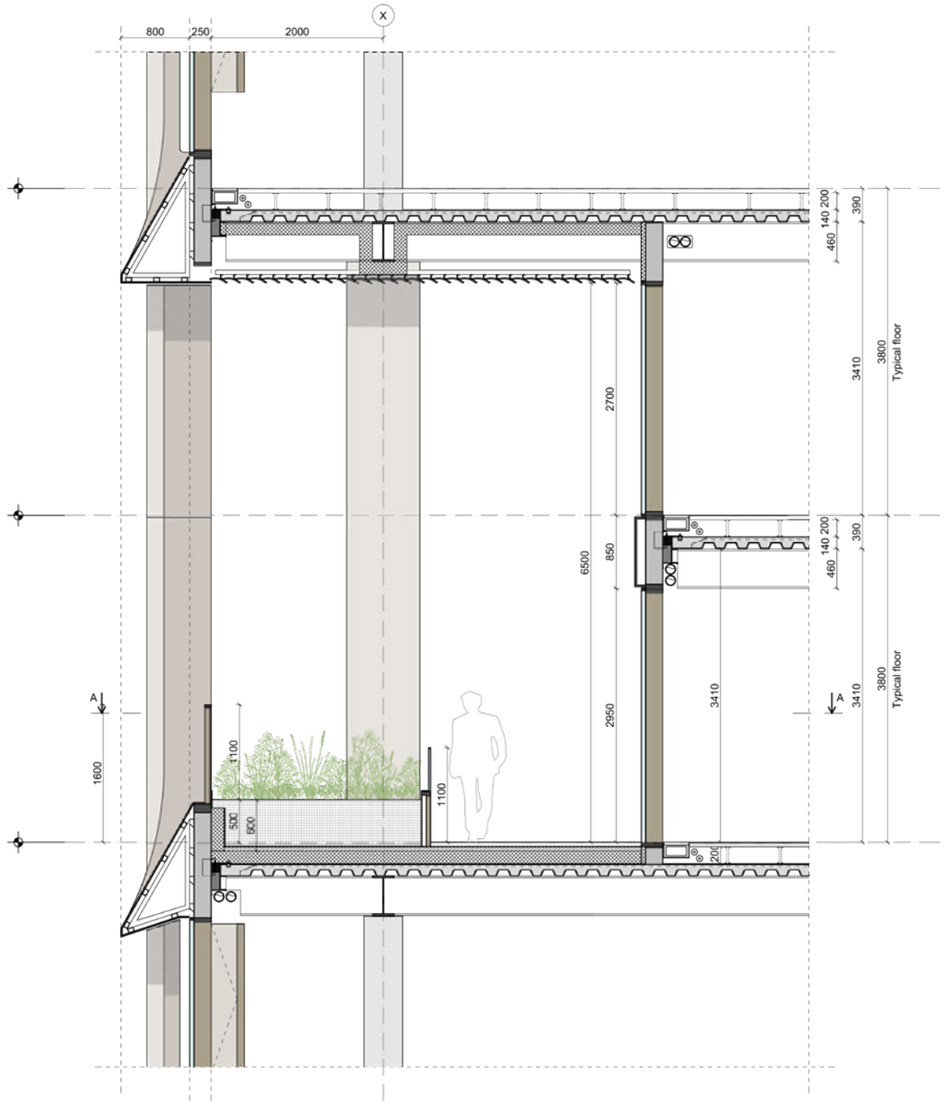
Diagram - Cutaway axonometric of amenity terrace

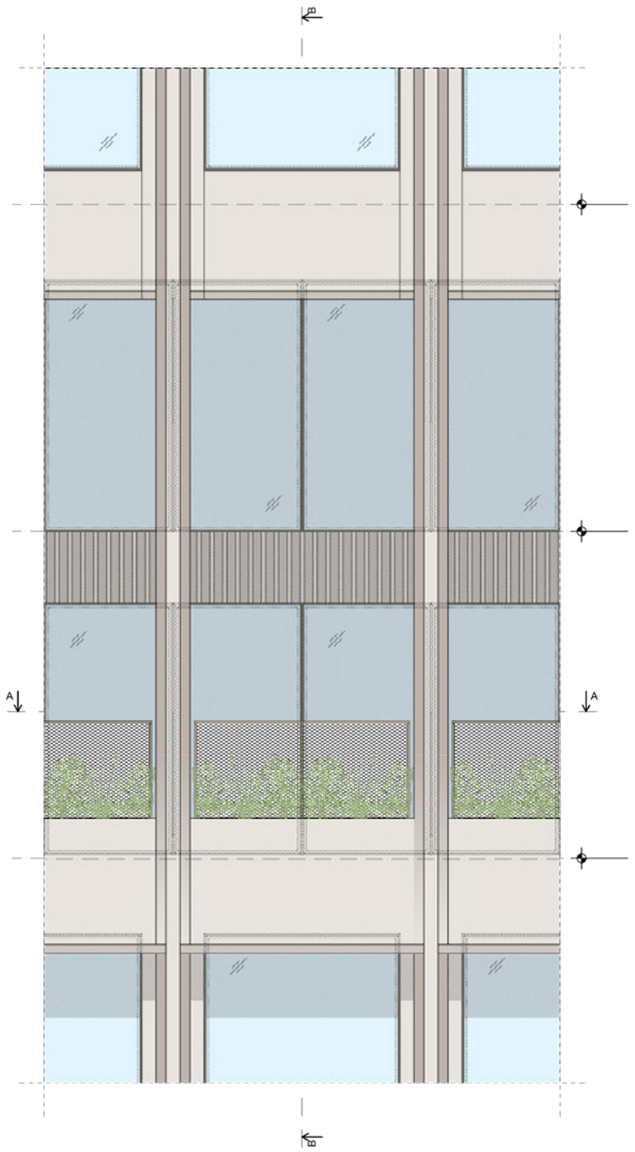


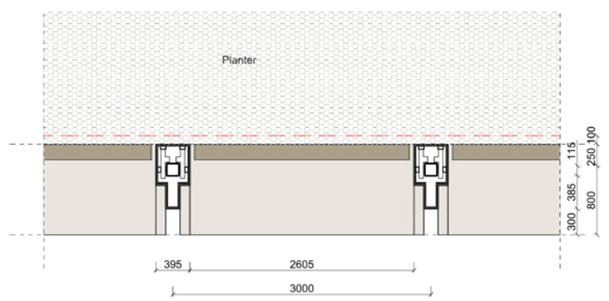
Drawing - Amenity space Level 21



Drawing - Amenity space Level 20



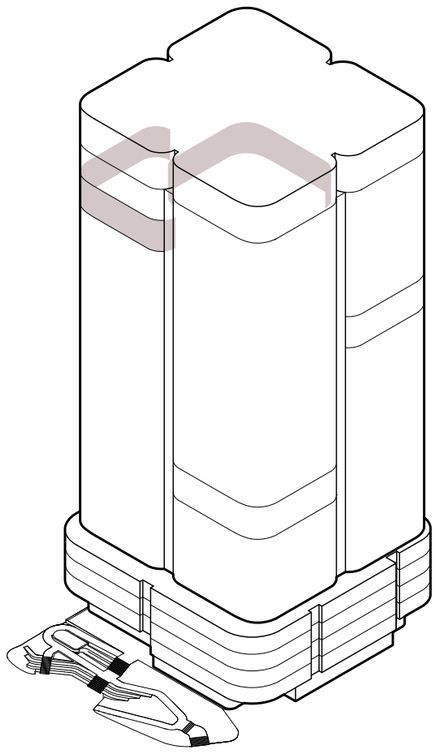




Drawings - Plan, section, and elevation of amenity terrace

Double-Height Amenity Spaces - Stepped Glazed Facade

The double-height amenity spaces on L23-24 and L26-27 feature a shallower aligned facade along the north elevation, while the east and west elevations are designed with stepped double-height spaces. On these stepped elevations, the occupiable terraces on L23 and L26 extend deeper than the levels above, prioritizing outdoor usability on floors with direct access to the exterior spaces with the best solar conditions.



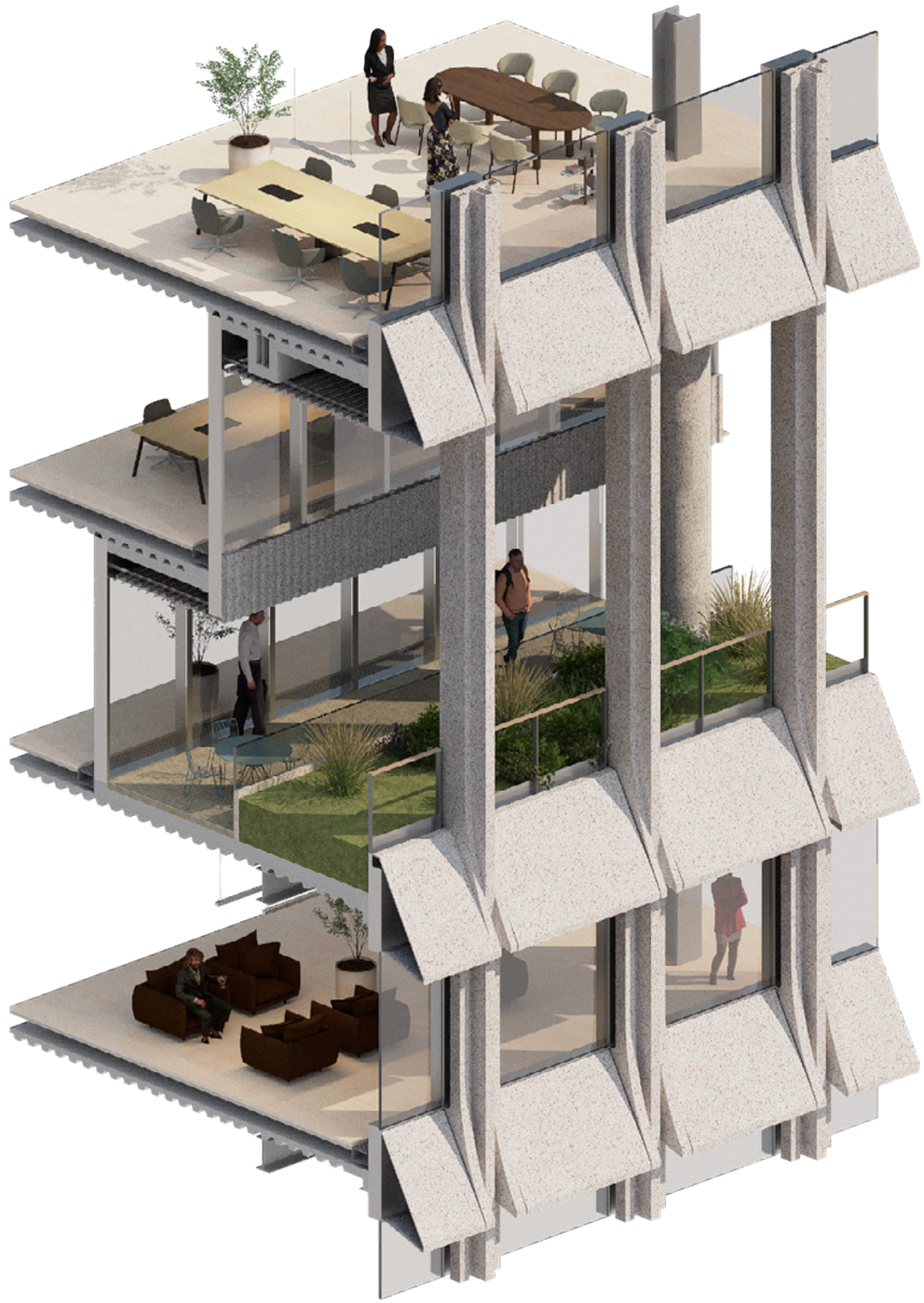
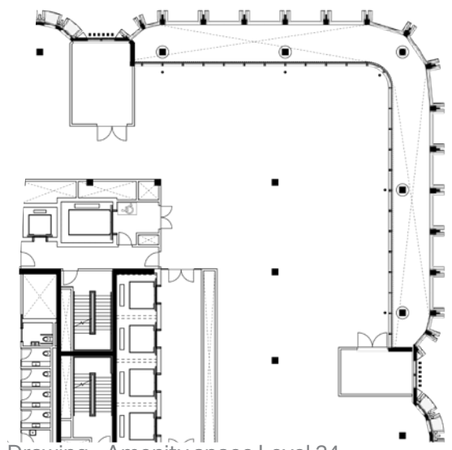
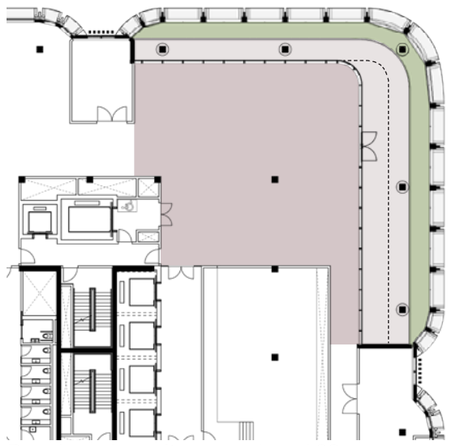


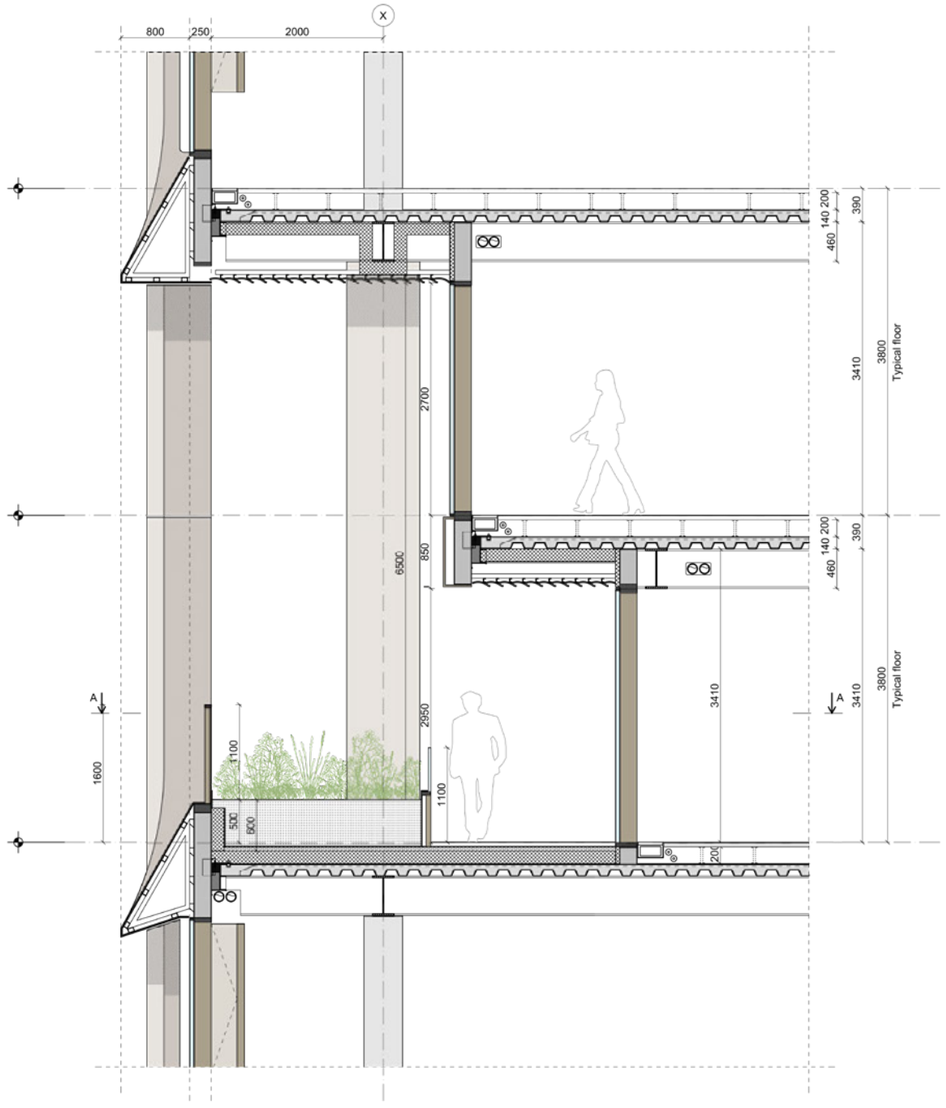
Diagram - Cutaway axonometric of amenity terrace

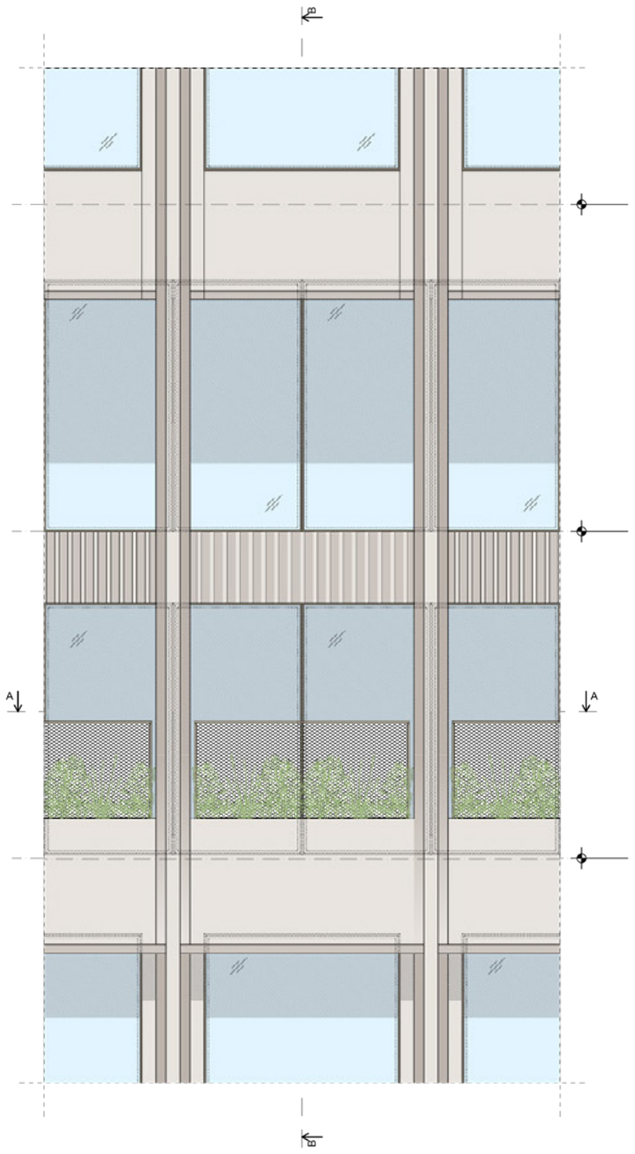


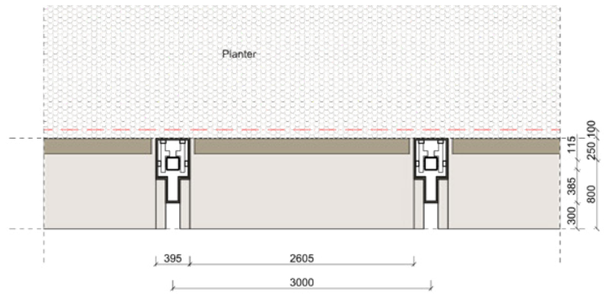
Drawing - Amenity space Level 24



Drawing - Amenity space Level 23







Drawings - Plan, section, and elevation of amenity terrace

Treatment of the amenity terraces

The treatment of the amenity terraces' soffits and balustrades has been initially explored and will be further refined in future development stages.

The soffit is designed as a series of modules or tiles where one scalloped shape can be overlapped and compressed to accommodate both the curvature of the filleted corners, where the inner radius and outer radius differ, and to accommodate differences in the depth of the soffit along either elevation. The colour of the soffit material provides warmth and compliments the planting along the edge.

The terrace design includes two types of balustrades. An inner glass balustrade separates the terrace seating areas from the raised planters, providing both a visual connection and a sense of enclosure. Along the outer edge of the planters, a discreet wire balustrade acts as a fall restraint for maintenance staff, subtly blending into the background when viewed from a distance. This minimalistic wire balustrade allows the planting to remain fully visible, ensuring the greenery stands out as the defining feature of each terrace.

Pending further wind analysis in later stages, there is also potentially the need for a wind mitigation screen near the filleted corner of the L11 and L12 terrace, indicated in plan with a dashed line. This screen will be designed in later stages if deemed necessary.

Illustrative View - Proposed double height amenity space facade design

Illustrative View - Proposed double height terrace on L20, L21