

75 LONGLAND STREET NEWSTEAD

ARCHITECTURE
AND DESIGN
FORM

description

The newly erected building at 75 Longland Street emerges as an emblem of advanced architectural prowess where modernity, aesthetic elegance, and ecological mindfulness intricately intertwine. Its design is an epitome of sustainable construction innovation, as it prominently features a comprehensive Cross Laminated Timber (CLT) structure. This notable shift towards renewable timber not only contributes to significant carbon sequestration, underscoring the building's eco-friendly stance, but also reinforces the structure with excellent strength-to-weight ratio, making it remarkably durable and safe. Additionally, the aesthetic allure of the building is matched with functional brilliance in the form of environmentally adaptive facades. These are far from just superficial design elements; they actively work to minimize the building's energy consumption. Clad with photo-voltaic panels, these facades harness the sun's energy to meet the building's power needs, further bolstering the green energy quotient. The dynamic glass facades are equipped with responsive shading features that automatically adjust to the sun's movement and intensity, which helps in achieving significant energy savings by reducing reliance on artificial heating and cooling systems. This impressive structure does not merely confine its green ethos to construction material or energy conservation; it visually embraces nature through the incorporation of a green roof and vertical gardens. These verdant features not only infuse a touch of refreshing greenery into the urban landscape, but they also naturally regulate the building's temperature and mitigate the urban heat island effect. Inside the building, an environment-friendly lifestyle is promoted through high-quality indoor air control systems and a natural lighting design that capitalizes on daylight to reduce the need for artificial lighting. The inclusion of low-flow water fixtures and a greywater recycling system testifies to the thoughtful efforts put into reducing water usage. Overall, the building at 75 Longland Street embodies the remarkable possibilities of weaving environmental design into urban infrastructure. Its environmentally considerate CLT structure, energy-efficient facades, and integration of green spaces establish it as a shining exemplar of eco-conscious design that is set to redefine the contours of urban architecture in the future. Building on its harmonious amalgamation of sustainability, aesthetic appeal, and advanced engineering, the building at 75 Longland Street further impresses with its intricate planning and detail-oriented execution that puts it a notch above conventional designs. The biophilic design principles adopted in the construction underscore the importance of connectivity with the natural environment, creating an indoor ambience that seamlessly blends the outside world's tranquility and vigor. This feature, undoubtedly, is a testament to the conscious efforts taken to provide an environment that enhances the well-being of the occupants. The architectural design's sophistication does not overshadow its commitment to conservation. In essence, the building at 75 Longland Street paints a vivid picture of the future of sustainable architecture. It embodies a responsible and forward-thinking approach to building design that balances aesthetics, functionality, and environmental conservation. With its thoughtful utilization of renewable materials, energy-efficient systems, and incorporation of green spaces, it stands as an architectural tour de force, leading the way for future



parti diagram 001



neighbourhood plan / site plan. 001



Gross Floor Area	
Ground Floor	2308 m ²
Level 1 + 2	4856 m ²
Level 3 - 6	5526 m ²
Level 7	1807 m ²
Level 8 - 9	3422 m ²
Total	17919 m ²

Gross Building Area	
Ground Floor	2308 m ²
Level 1 + 2	3681 m ²
Level 4 - 9	11068 m ²
Total	17507 m ²

Net Lettable Area	
Ground Floor	1804 m ²
Level 3 - 6	5706 m ²
Level 7 - 9	4062 m ²
Total	11018 m ²

calculations



01
Potential For Flooding

The potential for flooding is shown by the Brisbane River Planning Zone which highlights the type of flooding that would occur in different parts of Brisbane. For the case of 75 Longland Street there is quite a bit of danger for flooding as there is high likelihood of FPM4 and FPM 4 Flooding on the site. These flooding types are quite shallow and not too dangerous but could still cause water damage to the site. Furthermore, within a 500m radius of the site FPM2 and FPM 1 flooding is prevalent which illustrates that this part of Newstead should be highly cautious about flooding design strategies. (DA about mechanical carpark)



02
Overland Flooding

This concern is shared with 75 Longland Street which has a large amount of local overland flow flooding covering the site. This is an important factor as design consideration as the site's higher likelihood for overland flow means there is a higher likelihood of water damage. To mitigate the risk of overland flow flooding, a range of measures can be implemented: including the construction of stormwater drainage infrastructure, the implementation of flood warning systems, and the development of floodplain management plans.



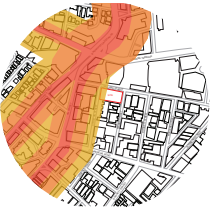
03
Local Amenities

On 75 Longland Street in Newstead there is many local amenities within walking distance. There is three super markets including ALDI, Standard Market and Woolworths, three cafes including CAFE 63, Industry Beans and NO. 68 Bar & Cafe and two gyms: Athletic zone and 145 fitness. These local amenities are particularly useful to create a good building with a good placement of building makes it much easier for an employee to work in the building. Specifically, good food options and gyms nearby allow for employees to have a good work/life balance and encouraging people to work at building.



04
Vehicles & Parking

The site 75 Longland Street is located in the centre of Newstead with there being 108 carparks in the building, highlighting nearby public carparks is a useful tool when people such as visitors want to go to the building. The diagram illustrates that most of the public carparks are within a 5 minute walk of the site with there being 7 viable options for public parking. The vast amount of options makes the site location a good position to work in as there will always be the option to drive the site.



05
Noise Reduction

Low noise levels are important for the comfort, health, productivity, and value of a building. By reducing noise levels, a building can promote a better environment for its occupants, and increase its desirability and marketability. The noise levels in 75 Longland Street are not ideal with busy roads: Ann Street and Wickham Terrace providing MPA.4, Category 2 and Category 1 noise. Ann Street provides some Category 1 noise that goes on the left hand side of the site which isn't ideal. Yet, this noise category only is prevalent in the western facade of the building, thus it shouldn't affect the building too much.

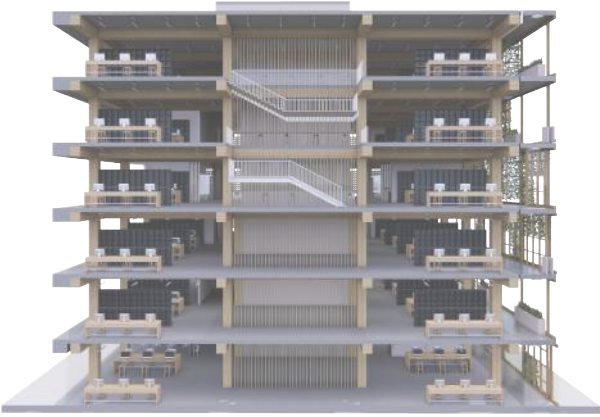
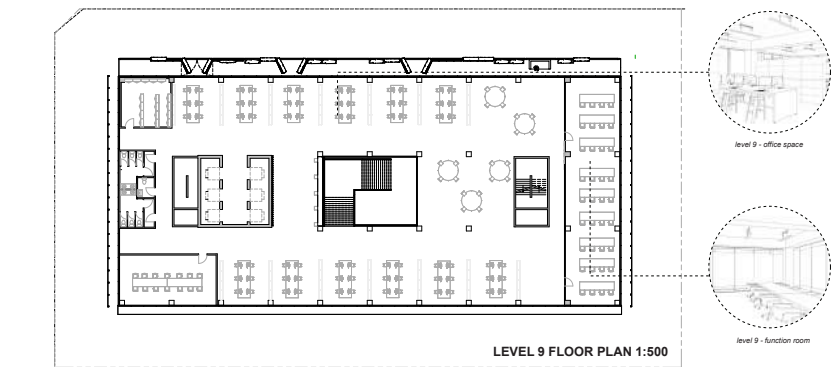
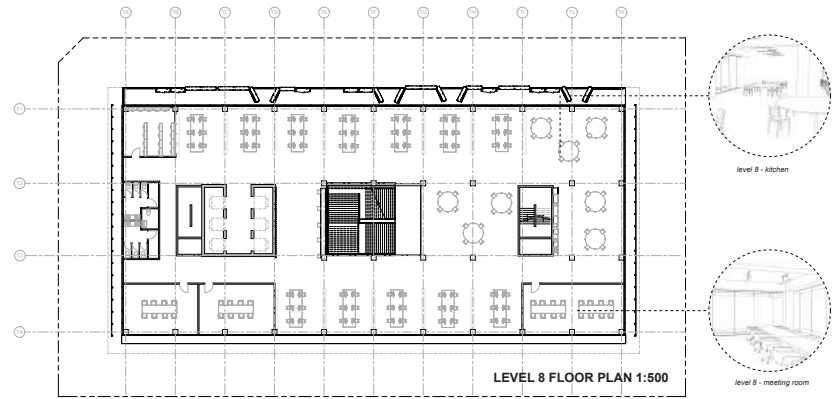
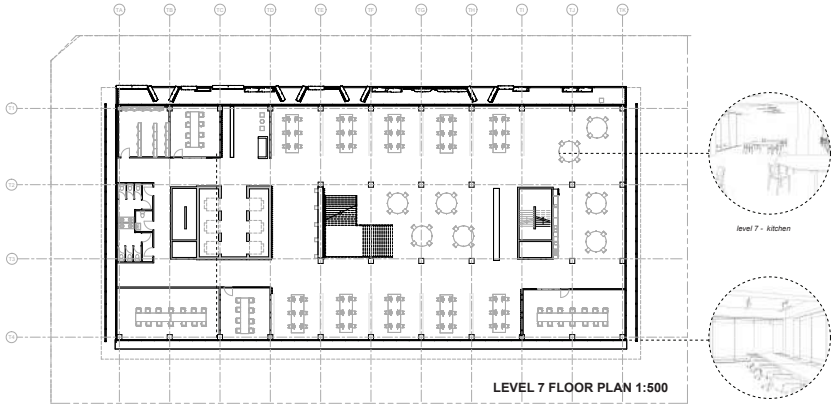


06
Public Transport

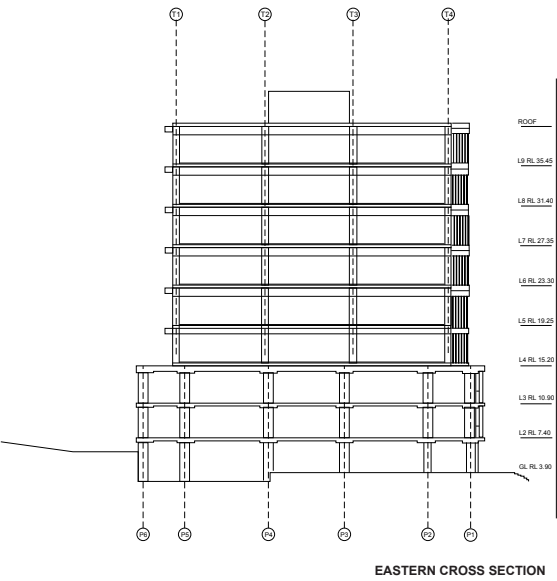
The potential for flooding is shown by Having good transportation routes for public transport and cycling routes is essential for a good building site guides the success and sustainability of a building. The site's location is filled with many accessible transportation routes with there being three bus routes, a train station and a city cat all within a 12 minute walking range. Furthermore, there are two bike routes: a local cycle and a secondary cycle route. The secondary bike route is planned to entail to have a dedicated cycling lane which grants easier access to the building.

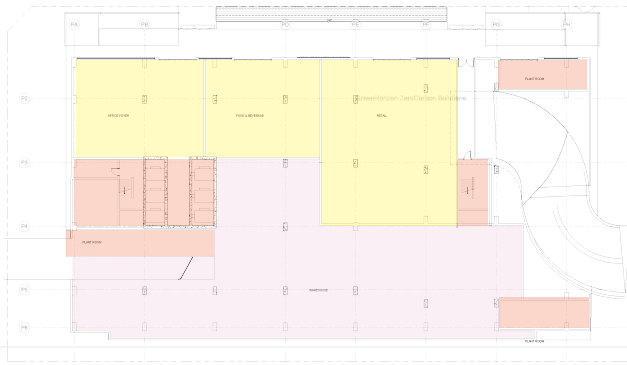
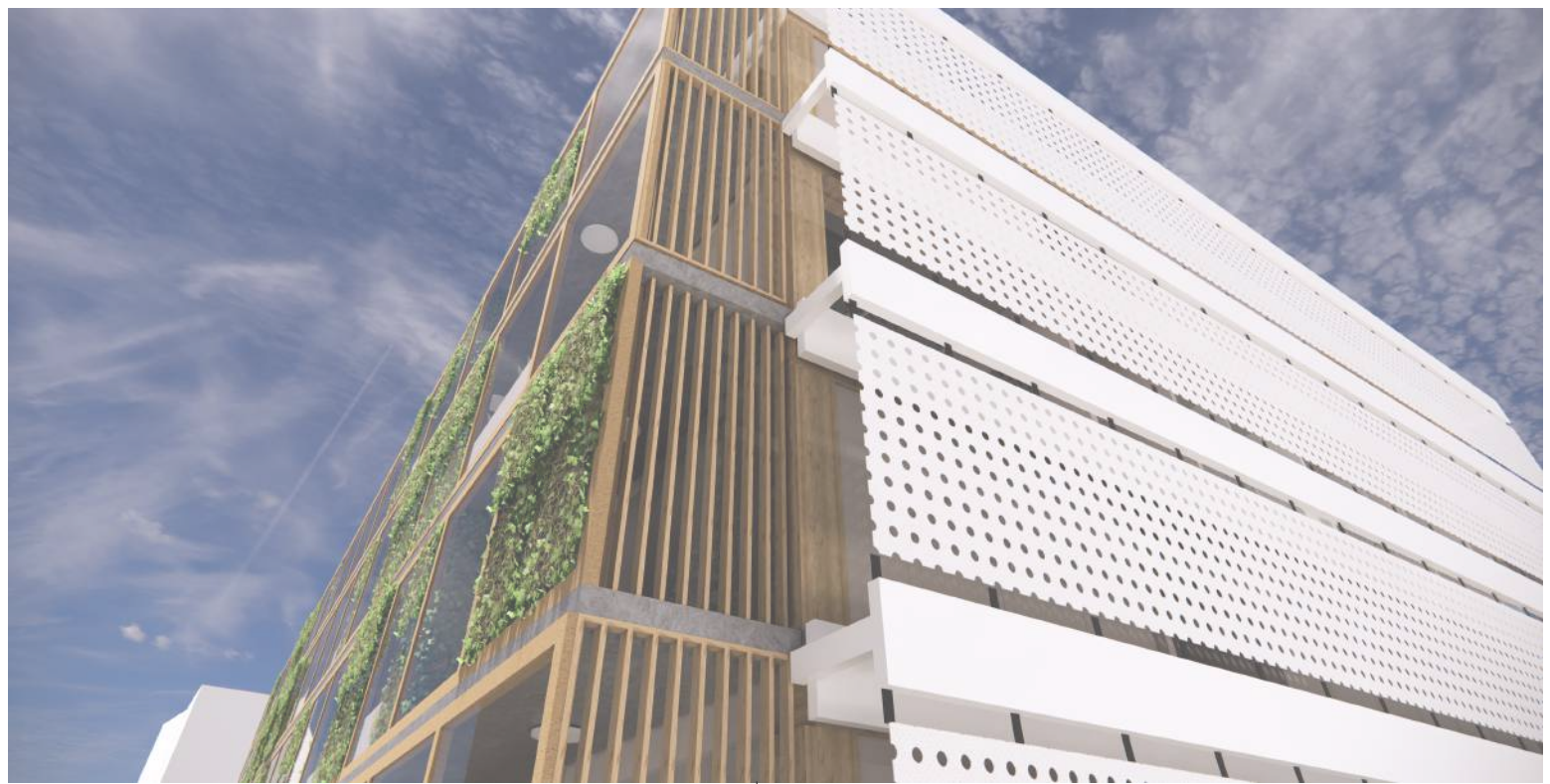


75 LONGLAND STREET NEWSTEAD

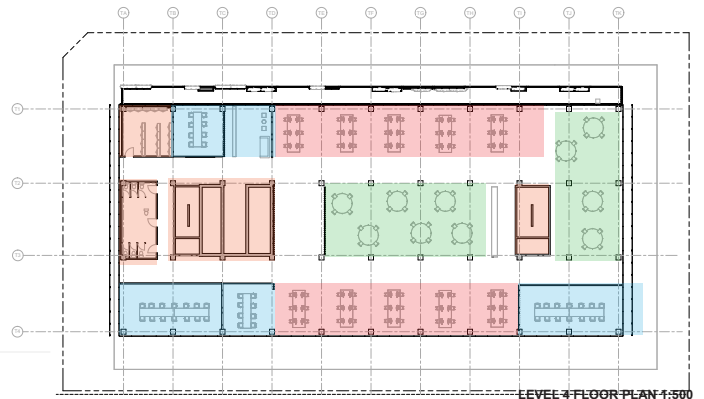


EASTERN CROSS SECTION VISUALISATION

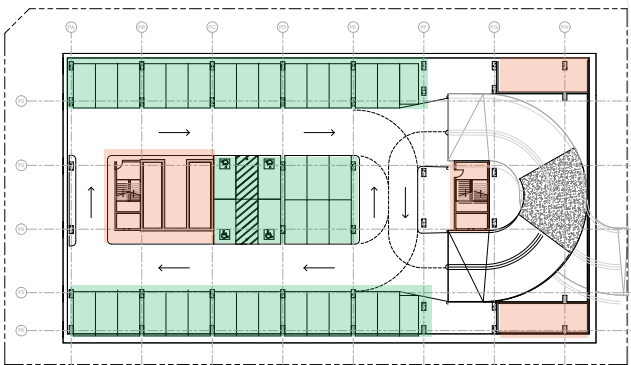




GROUND LEVEL FLOOR PLAN 1:500



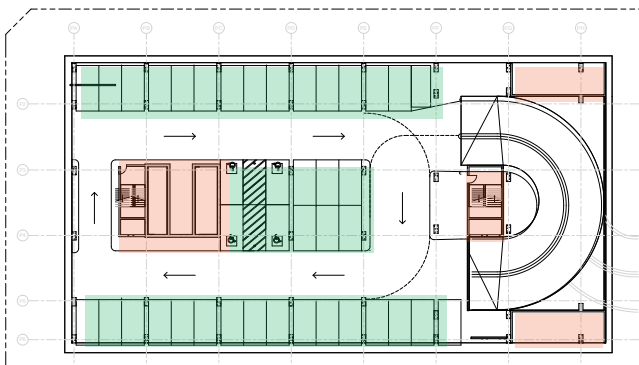
LEVEL 4 FLOOR PLAN 1:500



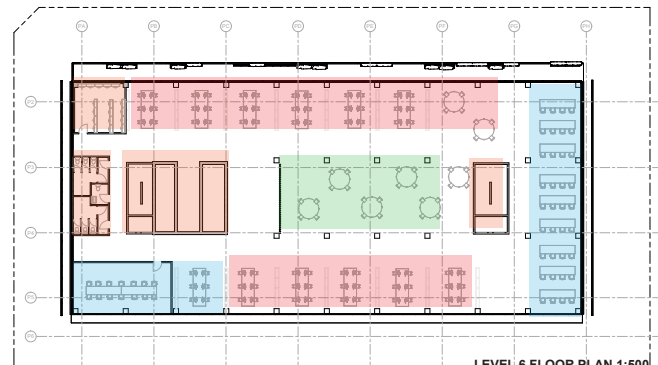
LEVEL 2 FLOOR PLAN 1:500



LEVEL 5 FLOOR PLAN 1:500



LEVEL 3 FLOOR PLAN 1:500



LEVEL 6 FLOOR PLAN 1:500

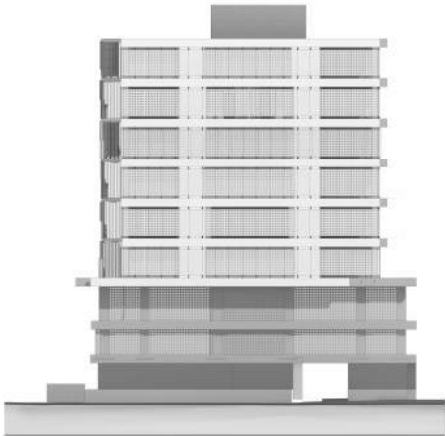
■ PUBLIC AREA
 ■ WAREHOUSE
 ■ CORE/UTILITY
 ■ CARPARKS
 ■ OFFICE AREA
 ■ INFORMAL MEETING AREA
 ■ FORMAL MEETING AREA



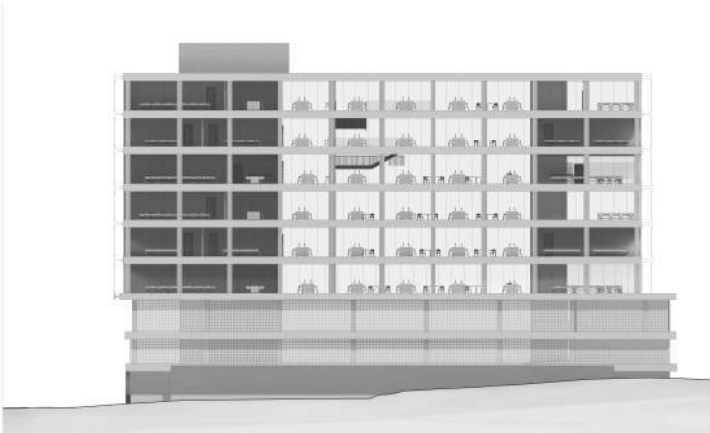
75 LONGLAND STREET NEWSTEAD



DEC 22 NORTH ELEVATION 1:500



DEC 22 WEST ELEVATION 1:500



DEC 22 SOUTH ELEVATION 1:500

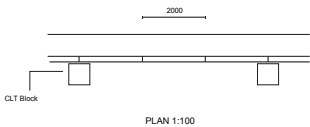


DEC 22 EAST ELEVATION 1:500

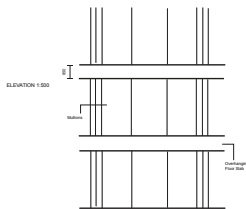
SOUTHERN FACADE

The South Facade is treated to a similar approach to the North with utilising horizontal elements to block the high angled sun. This achieved with concrete blocks being extruded out to create the horizontal shading element. The purpose of this minimalist facade design is to minimise its environmental impact as the south facade doesn't need a complicated facade design to adhere to the performance parameters.

During the Summer on the south side is within the 90-100% direct sun avoided which is also enhanced by the Low E Glazing allowing for a comfortable environment in the summer months. During Winter and Autumn, the direct sun avoided stays within the 90-100% direct sun avoided but the uncomplicated facade design providing natural light all through out the year.

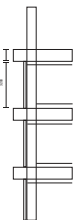


PLAN 1:100



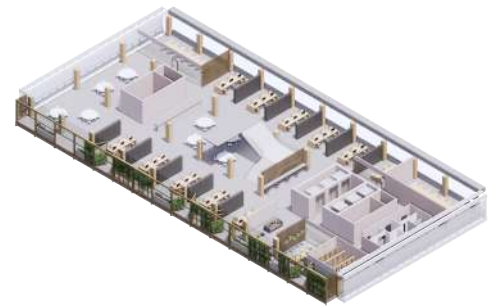
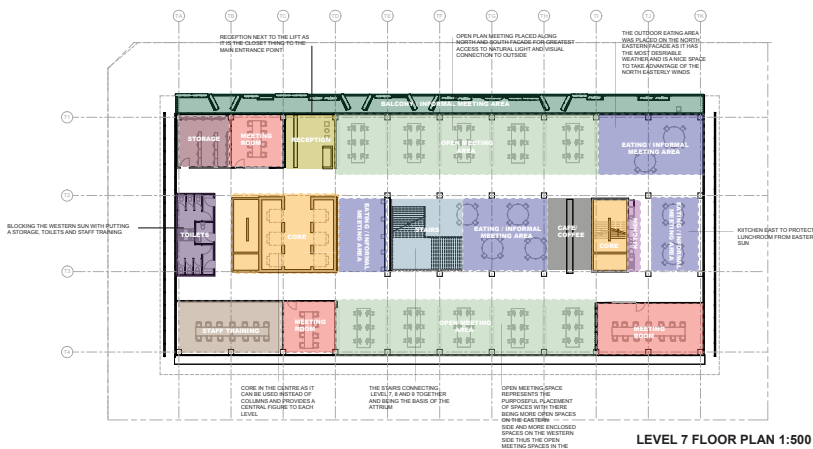
ELEVATION 1:500

SECTION 1:100

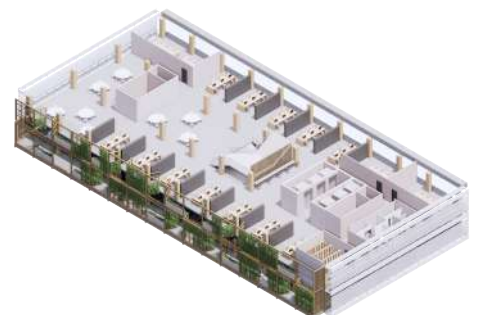
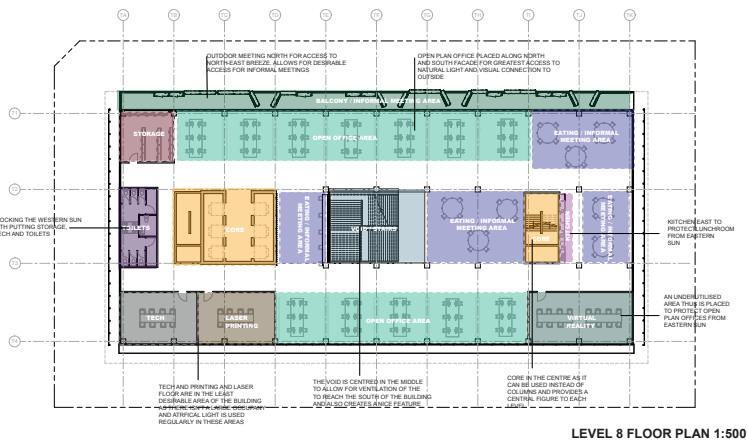


OFFICE PLAN 75 LONGLAND STREET

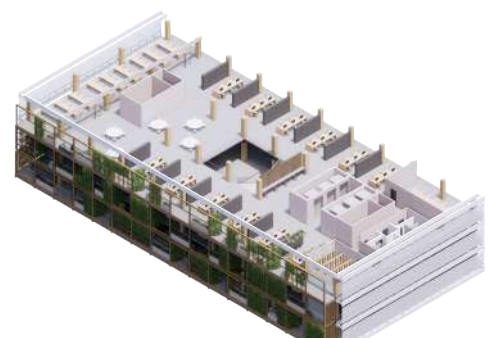
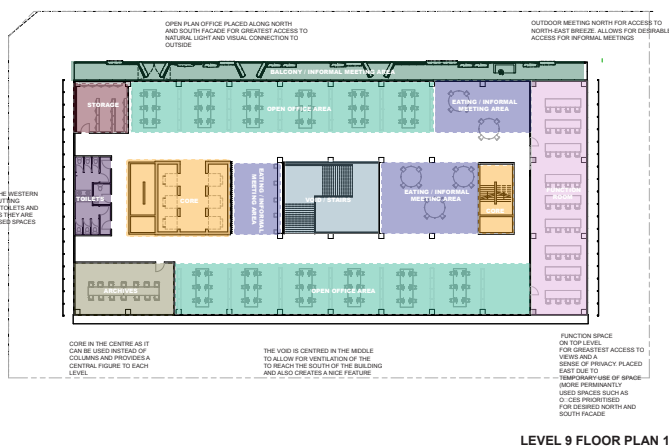
FLYTHROUGH: LEVEL 7



LEVEL 7 FLOOR PLAN ISO



LEVEL 8 FLOOR PLAN ISO



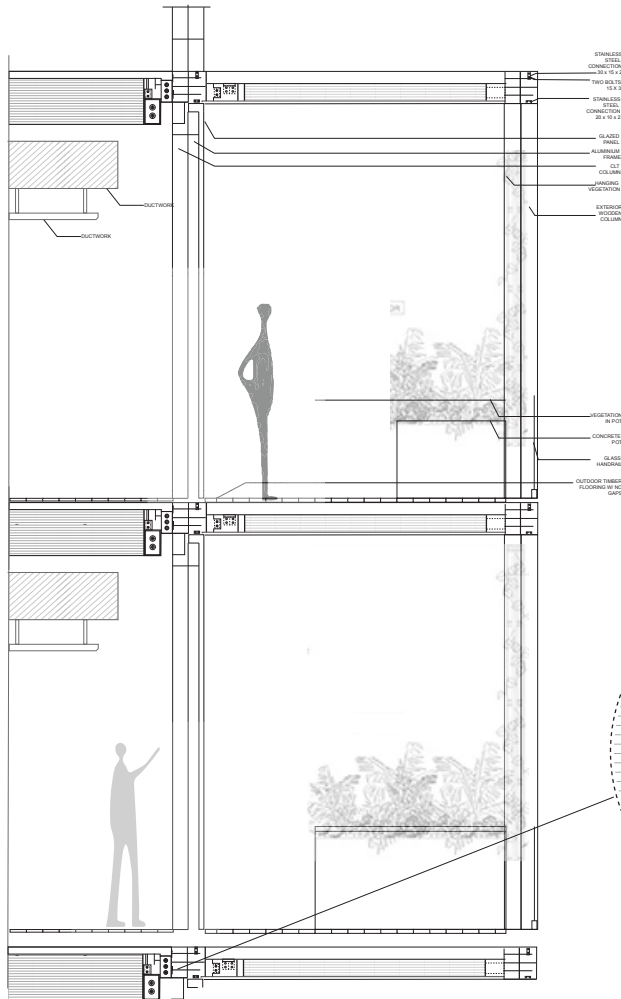
LEVEL 9 FLOOR PLAN ISO

NORTHERN FACADE

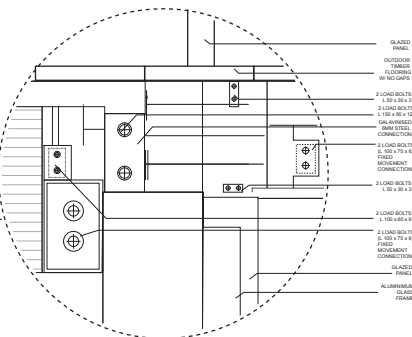
The northern facade of 75 Longland Street is adorned with an innovative, wooden facade, featuring vertical hanging plants that provide a natural green curtain for the building. This living facade not only offers a visually appealing aesthetic but also delivers practical benefits, such as mitigating the intensity of the northern sunlight. The arrangement of the plants is specifically designed to create shade, reducing glare and solar heat gain within the building, while preserving natural light.

Situated directly behind this lush greenery is a cool, shaded balcony that offers occupants a serene outdoor space. The wooden structure is tastefully designed and harmoniously blends with the hanging vegetation, amplifying the feeling of a natural sanctuary in the urban setting. The cooling effect from the plants makes the balcony an ideal location for relaxation and outdoor activities, even during the hottest parts of the day.

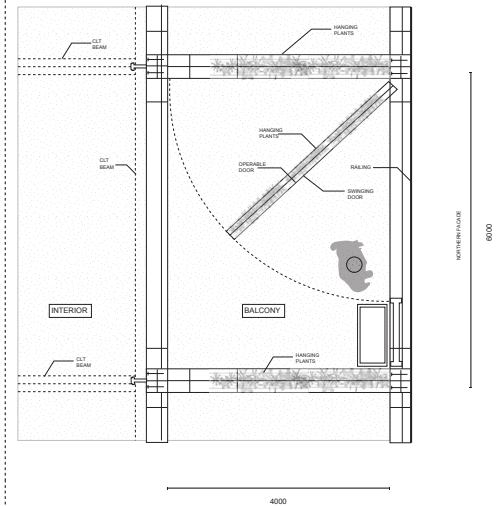
Additionally, the green facade significantly contributes to the building's energy efficiency by providing natural insulation. The plants act as a buffer against heat transfer, reducing the need for mechanical cooling inside the building. This eco-friendly feature of 75 Longland Street does more than just add beauty; it also supports a sustainable and energy-efficient approach to building design. In all, this wooden facade with vertically hanging plants combines aesthetic appeal, functionality, and sustainability, enhancing the living experience at 75 Longland Street.



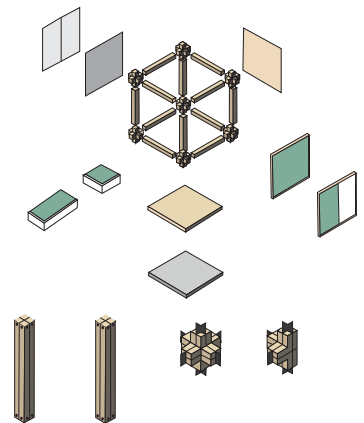
DETAILED SECTION 1:50



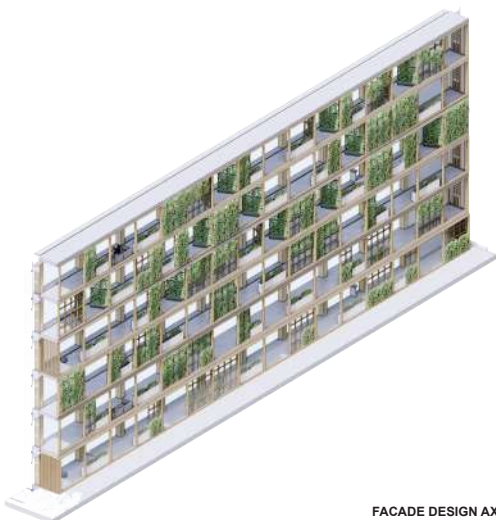
DETAILED SECTION 1:10



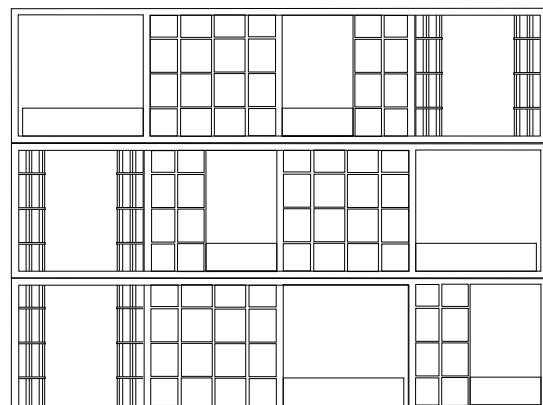
DETAILED PLAN 1:50



CONSTRUCTION OF FACADE



FACADE DESIGN AXO



ELEVATION 1:1000

EASTERN & WESTERN FACADE

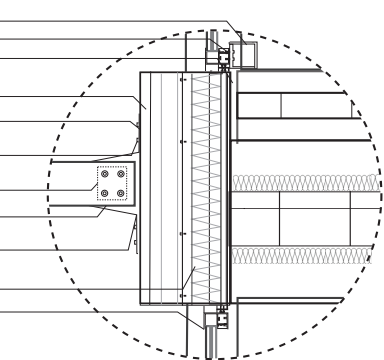
A novel architectural feature is proposed for 75 Longland Street: perforated screens to be installed on both the eastern and western facades. These screens are purposefully designed to address a common problem in building management: managing sunlight and temperature control. In their function, they cleverly minimize the impact of harsh sunlight from the east in the mornings and from the west in the afternoons, reducing the solar heat gain inside the building. Simultaneously, their perforated design allows for the free movement of air, facilitating natural ventilation and cooling.

This not only enhances the comfort of the building's occupants but also substantially decreases the reliance on mechanical cooling facilities, thereby contributing to energy efficiency. The screen's design elegantly aligns with environmental sustainability goals, without sacrificing aesthetics or utility. Despite their functionality, they also contribute an architectural appeal to the exterior facade, combining form and function in an exemplary manner. These screens are a testament to innovative, eco-friendly design solutions, proving that architecture can be beautiful, functional, and environmentally conscious. Their addition to 75 Longland Street will ensure the building stays cool and comfortable, while reducing energy consumption and supporting the environment. Indeed, these perforated screens represent a forward-thinking approach to sustainable building design.

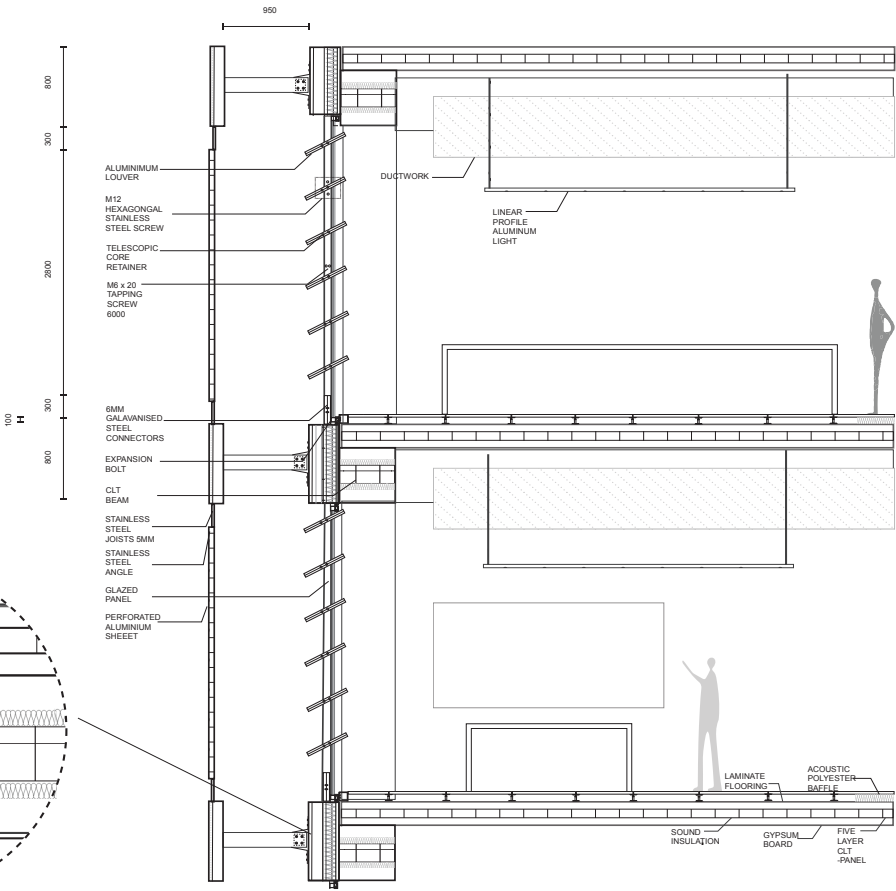


FACADE DESIGN AXO

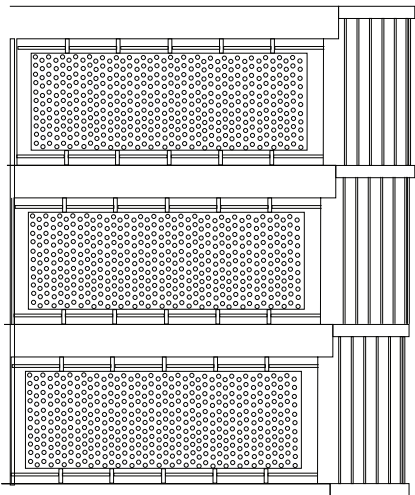
- PARTICLEBOARD HOB
- STEEL ANGLE @ 80 x 50 x 6
- AIR / DRAINAGE GAP @ 75
- UC @ 254 x 254 x 89
- BASE PLATE
- 2 LOAD BOLTS (L 150 x 50 x 12)
- 4 LOAD BOLTS (L 100 x 75 x 6) FIXED MOVEMENT CONNECTION
- UB @ 406 x 178 x 60
- FLANGE ANGLE BOLTED CONNECTION
- ENGINE METAL GLASS
- ALUMINUM GLASS FACADE



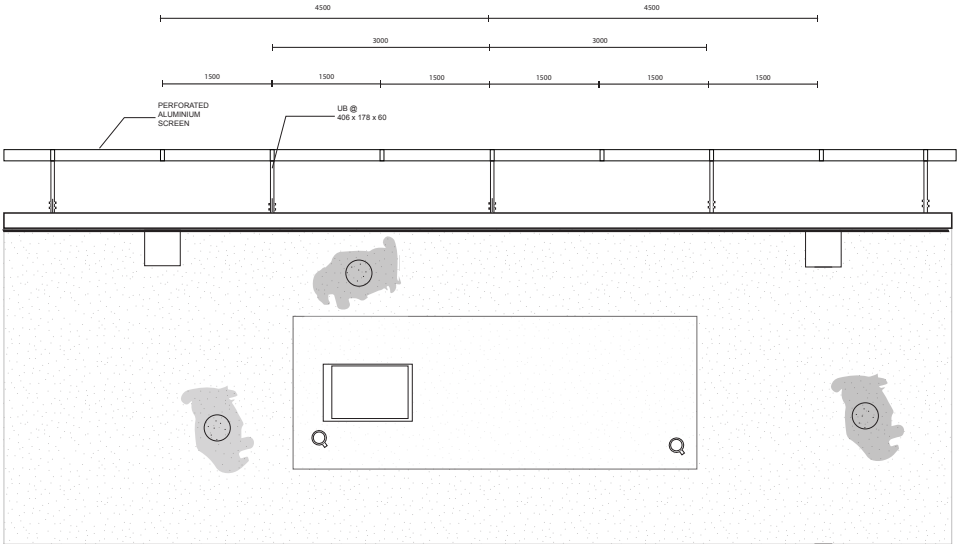
DETAILED SECTION 1:10



DETAILED SECTION 1:50



ELEVATION 1:1000



1:50 DETAILED PLAN