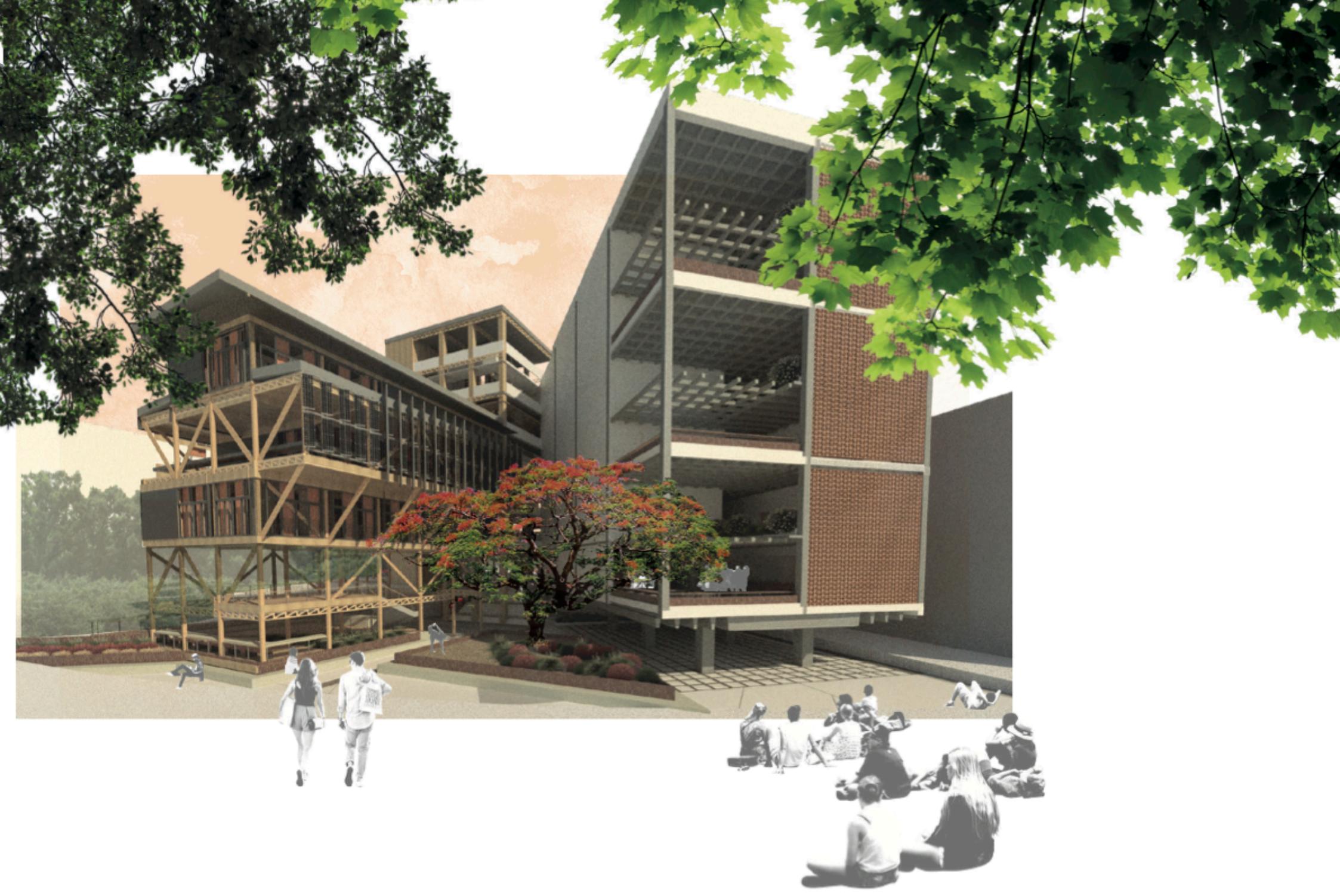




ELOISE WHITTAKER s4540626

LANDSCAPE LINK
STAFF HOUSE ROAD
THE UNIVERSITY OF QUEENSLAND
ST LUCIA
DRAWN BY: ELOISE WHITTAKER
DATE: 26/10/21



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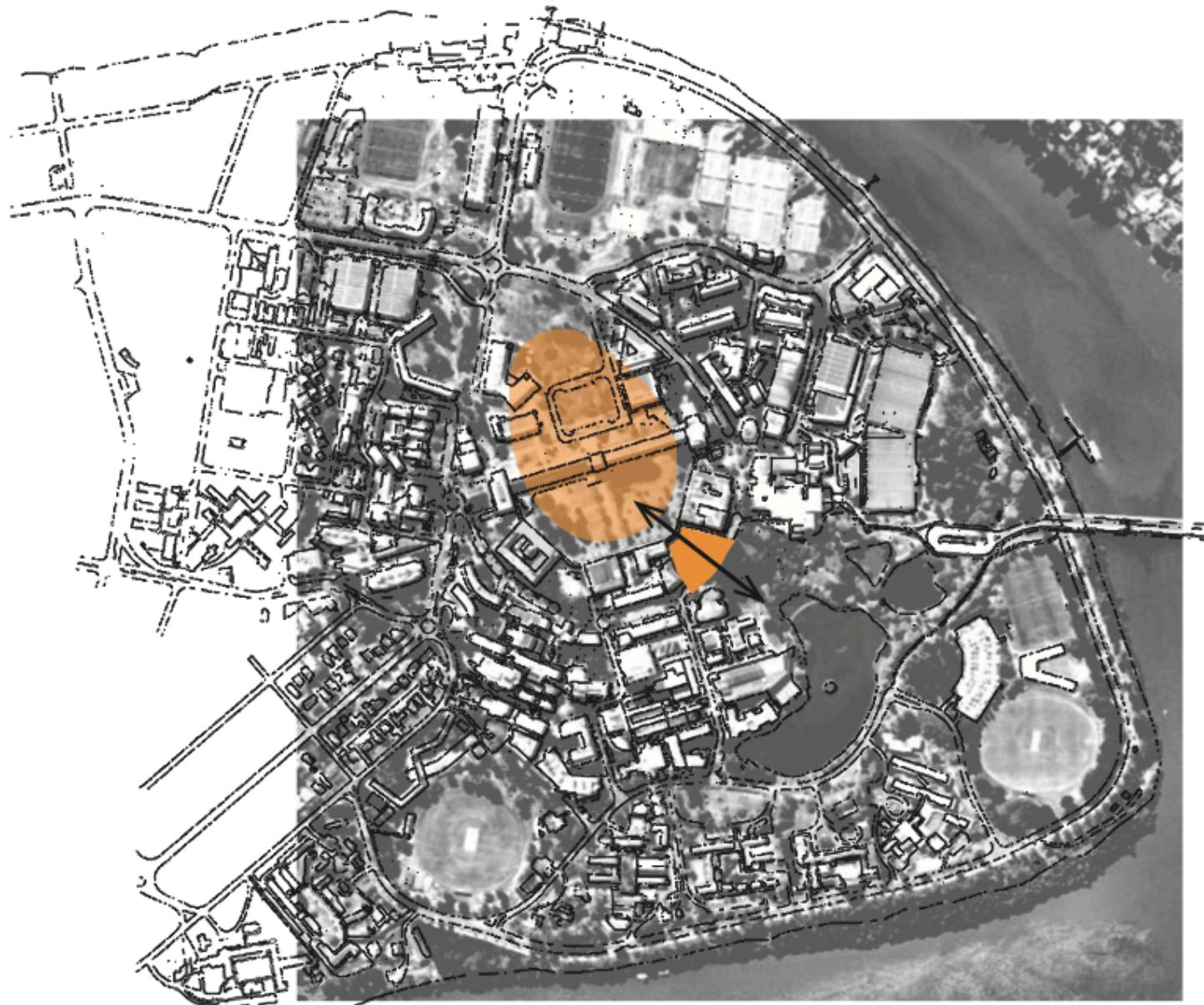
LANDSCAPE LINK

A general purpose building is proposed for the University of Queensland, located in the academic core of the campus: linking Staff House road with the Great Court.

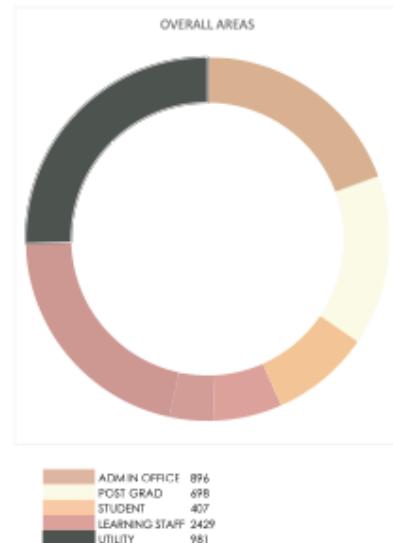
Key themes I identified in the brief were:

"INNOVATION EXCELLENCE
RESEARCH-LED SCHOLARSHIP
& COLLEGIALITY"

I was inspired by the unique diversity of generations who would all share this one building. We have unassuming first years, newly enlightened post graduates and both fresh and mature teams of staff. All four occupants are at a different stage of time in their lives. How can we use this to our advantage? I want to create a sense of profound sentimentality for the university, encouraging interaction between all the generations to create more incidental novel moments between staff and students.



PROGRAM



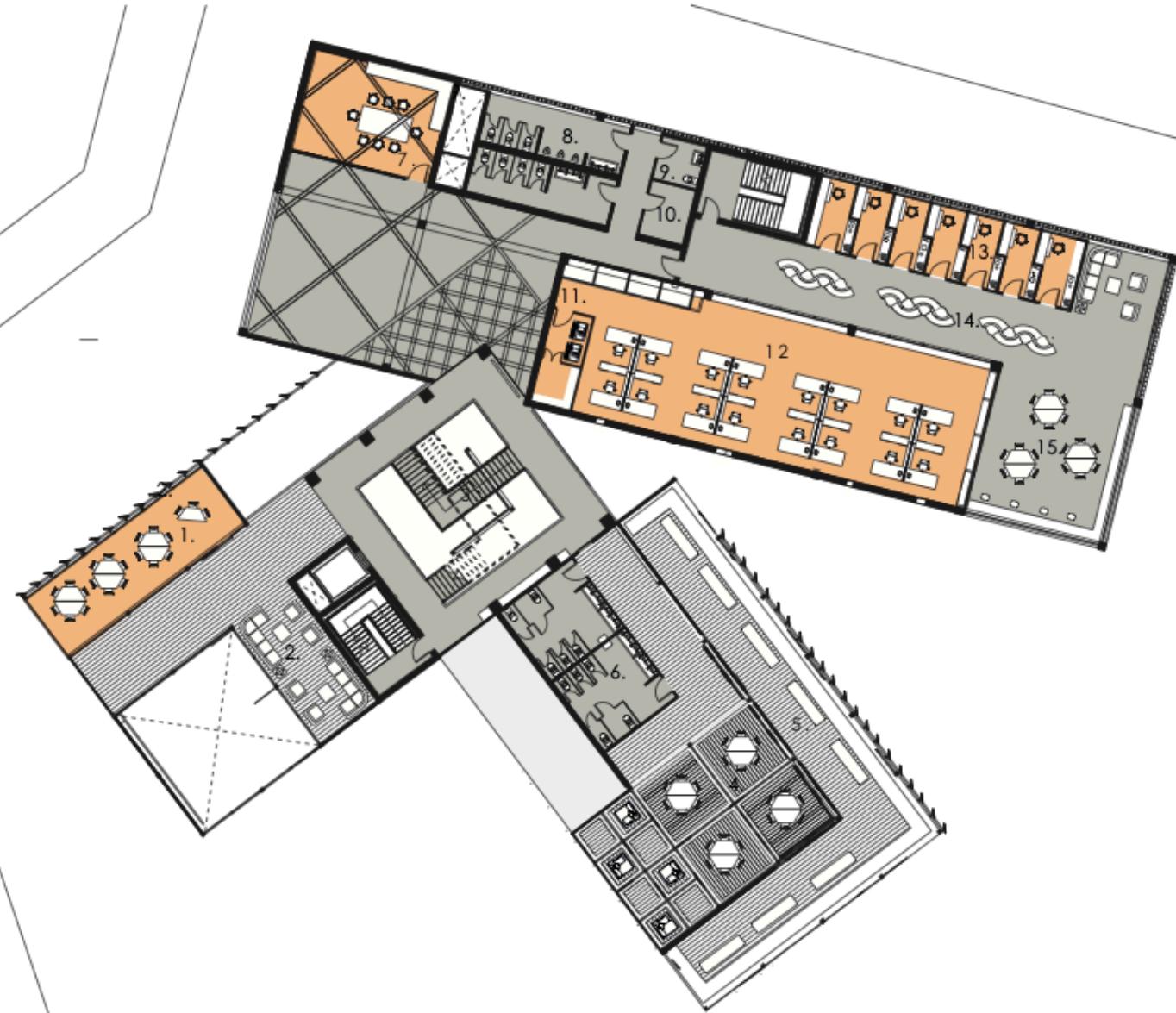
site plan



GROUND PLAN 1

SCALE: 1:250

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KEY:

1. SEMINAR 2
2. WAITING DECK
3. INTERACTIVE WOOD
- MIRROR FEATURE
- WALL
4. FLEXIBLE STUDY SPOTS
5. OUTDOOR STUDY SPOTS
6. POST GRAD AMMENITIES
7. COMMONS
8. STAFF AMMENITIES
9. DDA
10. STORE
11. PRINTERs/ STORE
12. RESEARCHERS
13. LEARNING STAFF OFFICES
14. OUTDOOR BREAKOUT
15. MEETING BREAKOUT



LEVEL 2 PLAN

SCALE: 1:250





KEY:

1. SEMINAR 3
2. WAITING DECK
3. SEMINAR 4
4. INTERACTIVE WOOD
MIRROR FEATURE
WALL
5. FLEXIBLE OFFICES
6. POST GRAD AMMENITIES
7. MEETING ROOM
8. STAFF AMMENITIES
9. DDA
10. STORE
11. PRINTERS/ STORE
12. TUTORS
13. LEARNING STAFF OFFICES
14. OUTDOOR BREAKOUT



KEY:

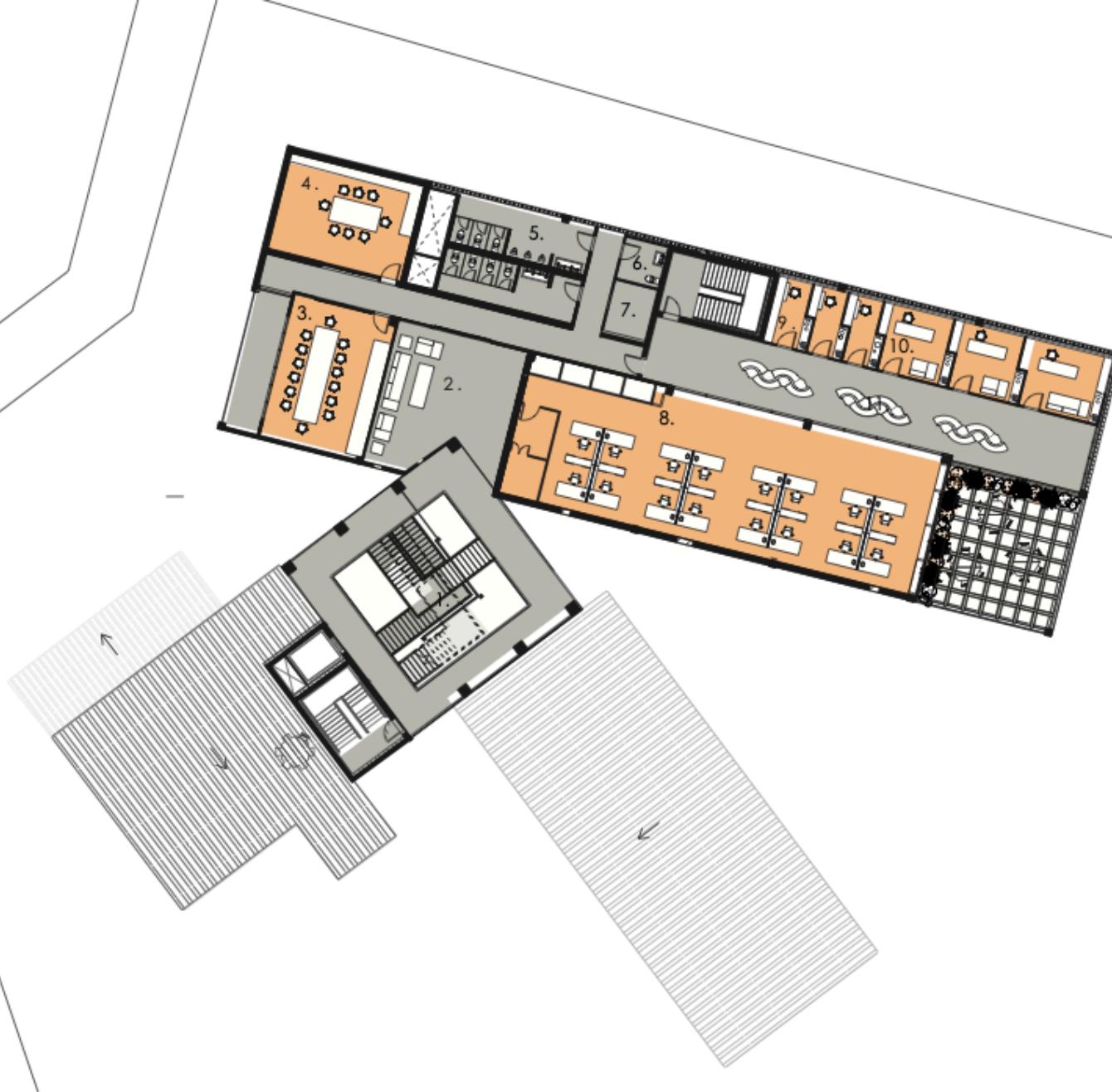
- 1. SEMINAR 5
- 2. WAITING DECK
- 3. SEMINAR 6
- 4. INTERACTIVE WOOD
- MIRROR FEATURE
WALL
- 5. ADMINISTRATION RECEPTION
- 6. BOARD ROOM
- 7. MEETING ROOM
- 8. STAFF AMMENITIES
- 9. DDA
- 10. STORE
- 11. HUMAN RESOURCES
- 12. GENERAL OFFICES
- 13. DIRECTORS OFFICES
- 14. OUTDOOR BREAKOUT
- 15. OUTDOOR MEETING

LEVEL 4. PLAN

SCALE: 1:250



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KEY:

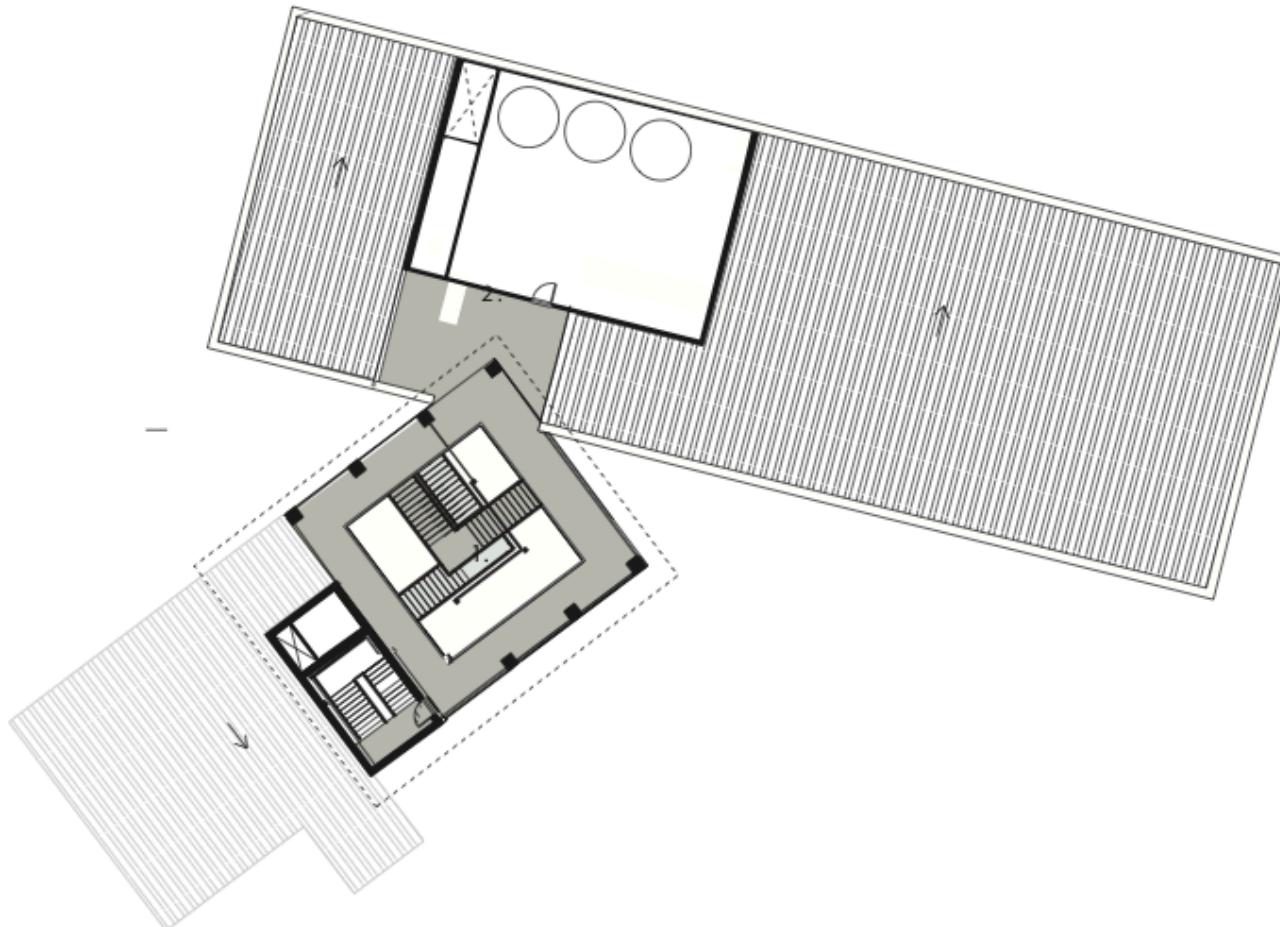
1. INTERACTIVE WOOD MIRROR FEATURE WALL
2. WAITING ROOM
3. BOARD ROOM
4. MEETING ROOM
5. STAFF AMMENITIES
6. DDA
7. STORE
8. ADMINISTRATION OFFICES
9. GENERAL OFFICES
10. DIRECTORS OFFICES
11. OUTDOOR BREAKOUT



LEVEL 5 PLAN

SCALE: 1:250

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ROOF PLAN

SCALE: 1:250



KEY:

1. INTERACTIVE WOOD
MIRROR FEATURE
WALL
2. UTILITY

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SECTION A POST GRAD SPACES + ATRIUM



SCALE: 250

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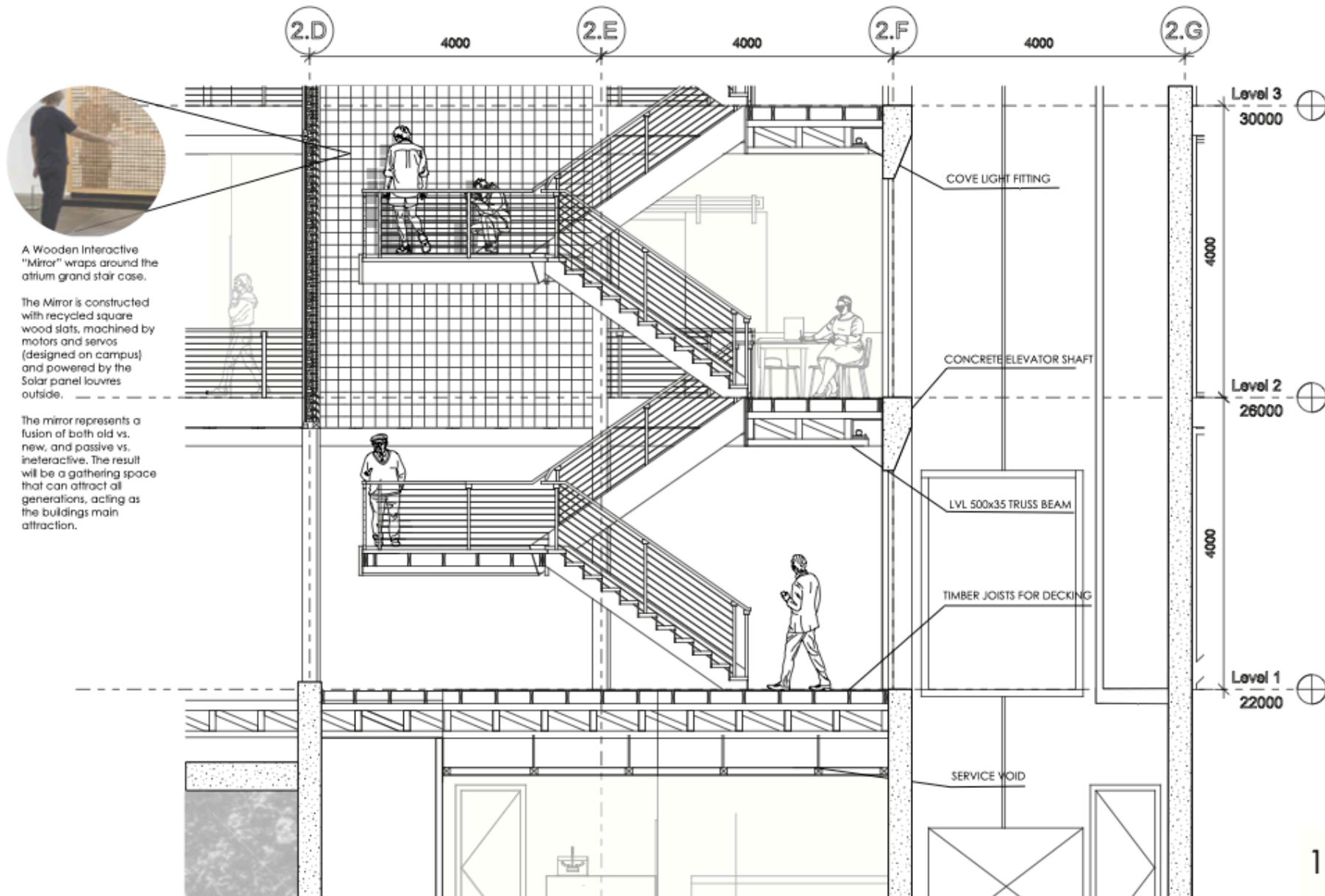
SECTION B OFFICE BLOCK AND SEMINARS

SCALE: 250



B

DETAILED SECTION THROUGH ATRIUM





PERSPECTIVE

SCALE: NTS



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CONCEPT

I want to create an educational architecture that reflects the capacity of the different generations to educate each other. The grid that the offices inhabit exaggerate the tectonics of traditional materials and structure to remind the value of the past.

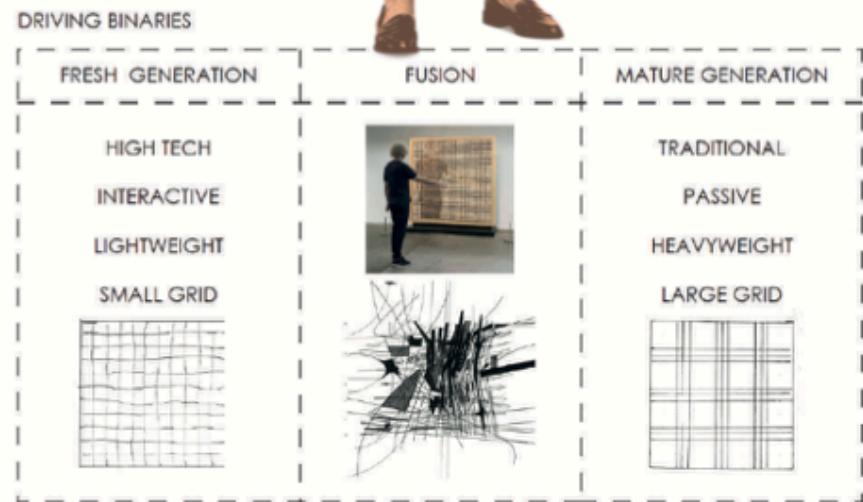
The student learning spaces inhabit a grid that exaggerate tectonics of new innovative forms of structure that will communicate the opportunities of the future. The fusion of each grid will act as a time synthesiser of old and new working together, and where both cohorts will mingle.

A fusion of two colliding grids was used as the driving massing strategy for the institute. The grid allowed for the distinct expression of the buildings three binaries within the design i.e. Traditional vs. Technological, Passive vs. Interactive and Heavy vs. Lightweight. Both buildings have been designed with their own strengths and pleasant moments for equity towards the buildings users, neither one better than the other. This was important, as the aim of the design is to show the value and opportunities of both generational methods.

However the most exciting part of the building is where both grids fuse with one another and all these binaries become one.

Where the grids intersect, Traditional and Technological methods are combined, Passive and interactive technology work together and heavy and lightweight materials intertwine.

Common areas for all users are positioned within this space where the capacity of the different generations to educate each other is harnessed and encouraged.

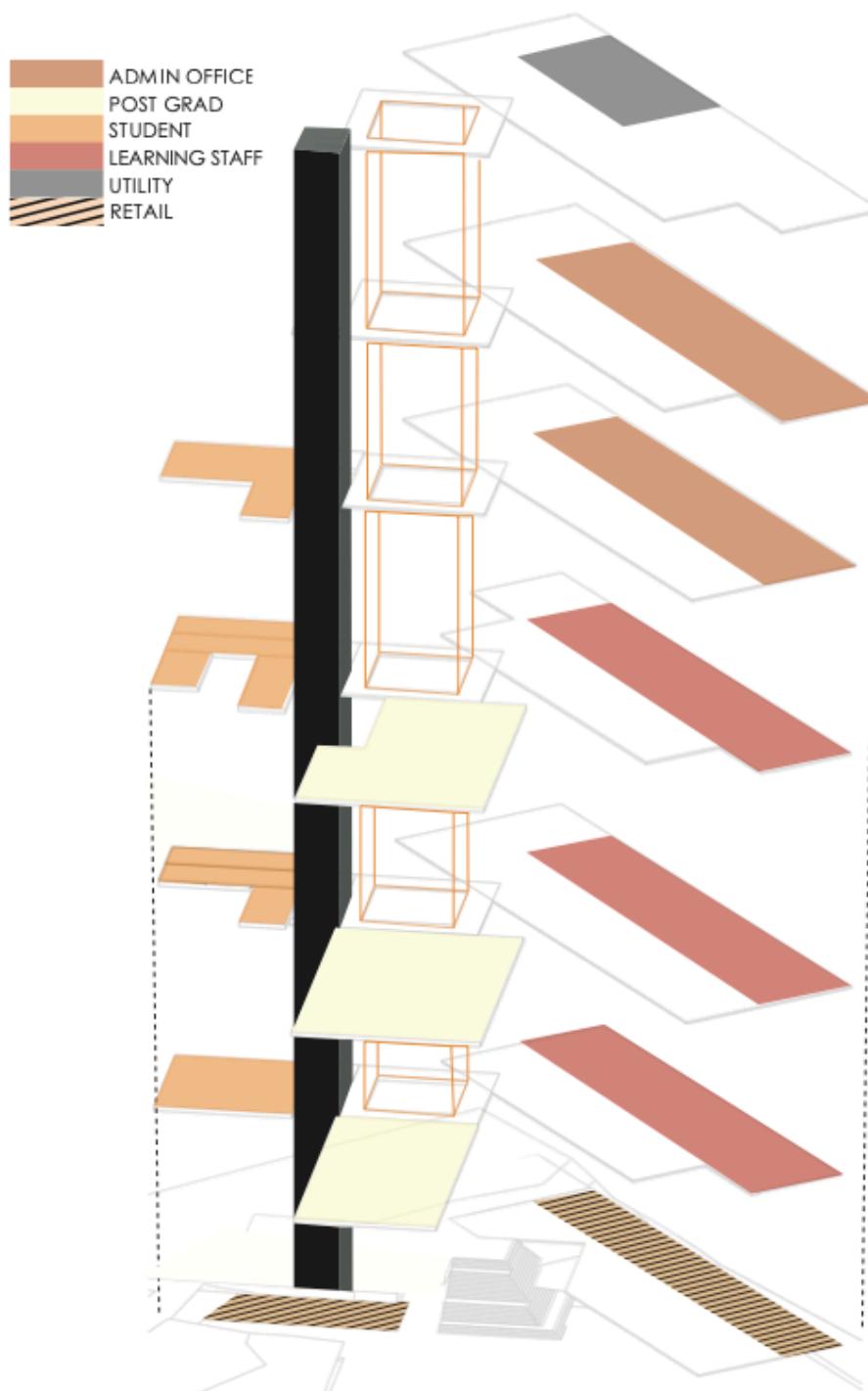


ZONING

The vertical zoning placement is curated based on the users journey. Staff and students are in and out of the building throughout the day so are closer to the ground plane, whilst office administration arrive in the morning and leave in the evening (apart from lunch time) so are placed at the top of the building where is quieter and more peaceful to work. This also allows for the executives and directors to enjoy the best views of the lake.

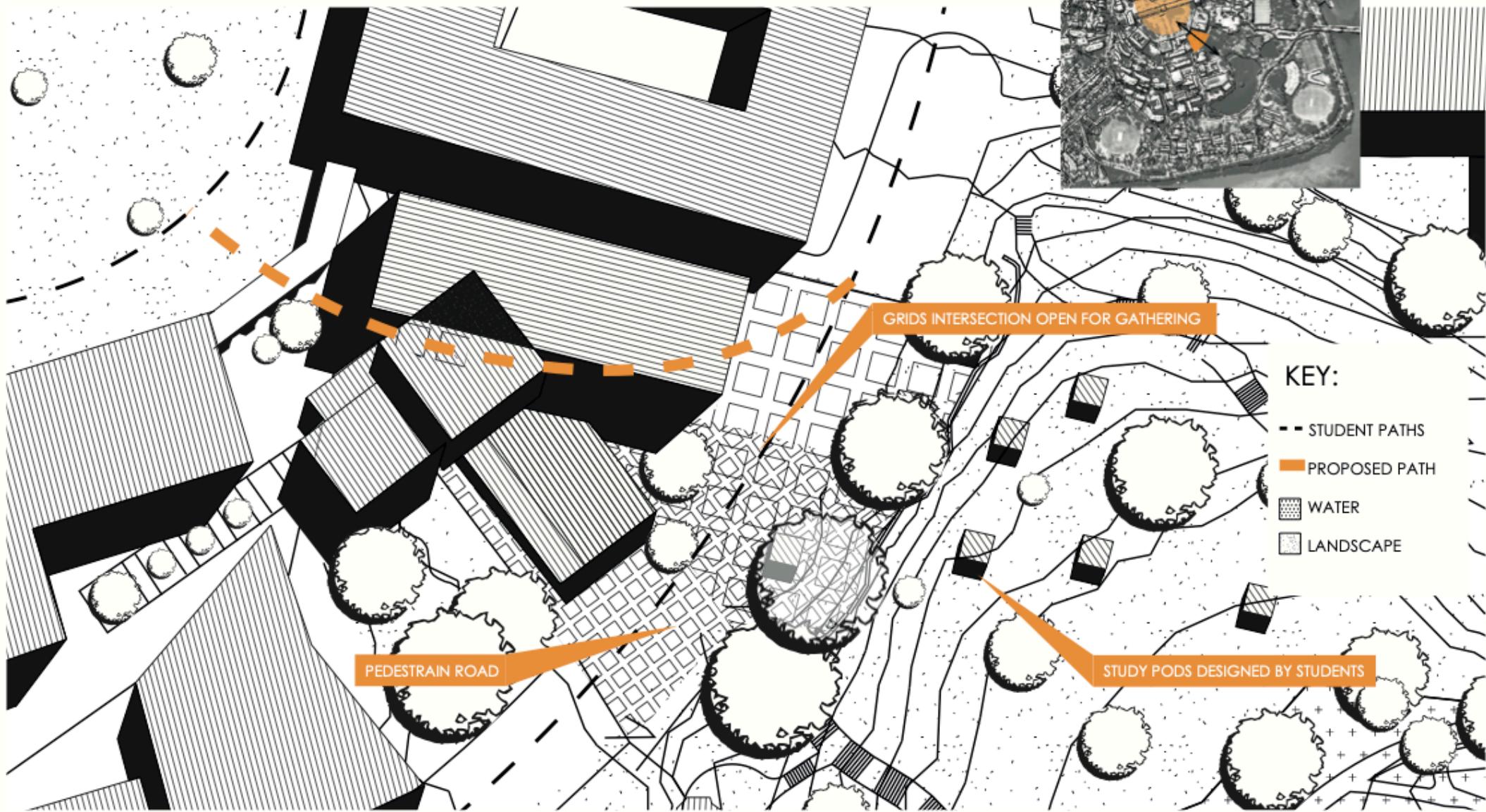
By lifting the offices off the ground plane, a multipurpose plaza is created. The Retail and eating areas are concentrated on the ground floor level to activate the plaza arcades. A Queenslander style pub branches off the main 'fusion of the grids' in the atrium, where staff and students can mingle, experience novel moments and people watch, looking down at the plaza from its veranda.

By lifting up the student and post graduate spaces above the great court ground plane, uninterrupted views of the staff house road tree canopy are achieved, dramatically improving the current view of air conditioning.

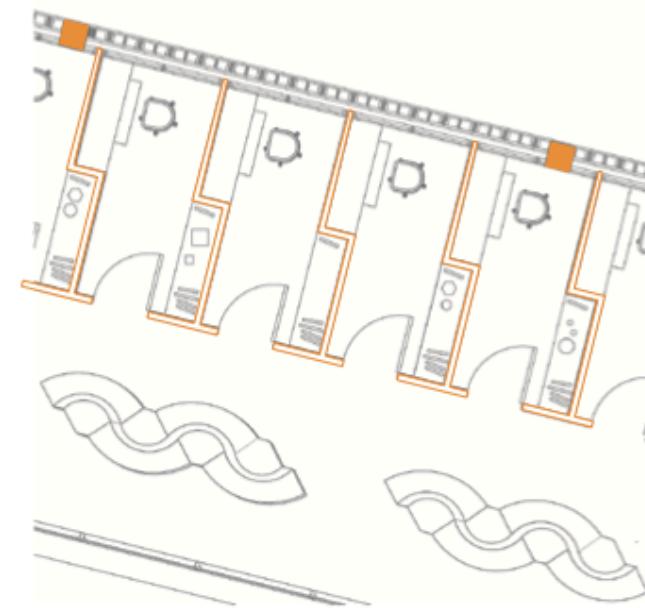
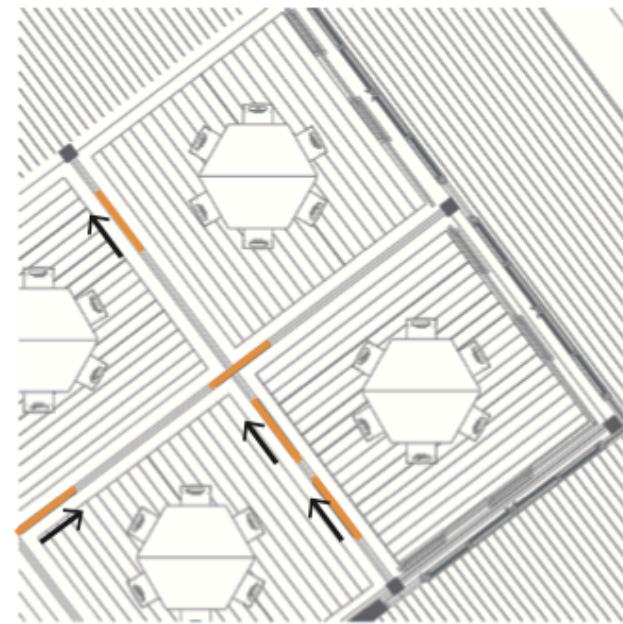


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RESPONSE TO MASTERPLANN



RESILIENCE



SUSTAINABILITY

ENERGY



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STRUCTURAL STRATEGY

FOR THE YOUNGER GENERATIONS:

TECTONICS OF SOUTH GRID

The student spaces are made up of a 4x4 grid of lightweight LVL Trusses and CLT walls. this smaller grid allows for a more human scale interactive design. The spatial qualities are therefore driven by interactive design, with sliding walls for flexible study spaces, and louvred windows for controlled breezes.

Rooms and voids behave like jenga, designed to act as a growth from the office building that can continue to evolve through time

GENERATION INTERCHANGE:

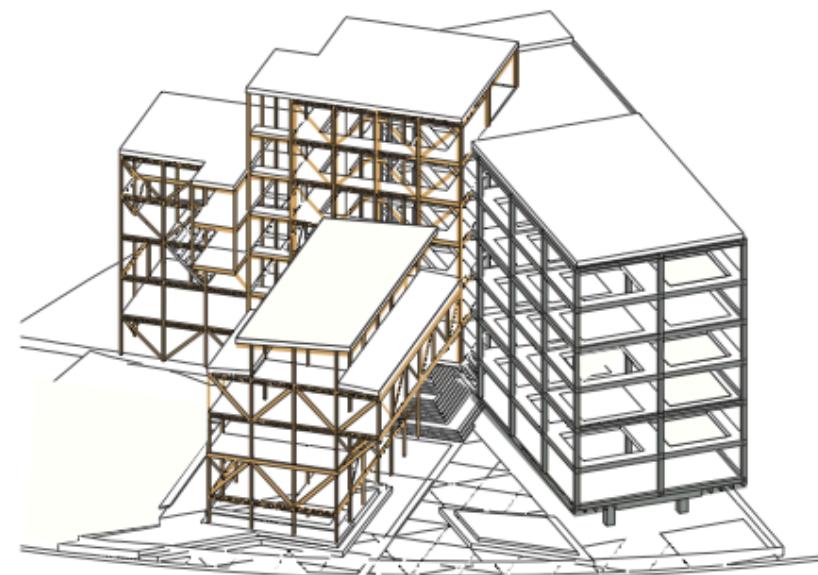
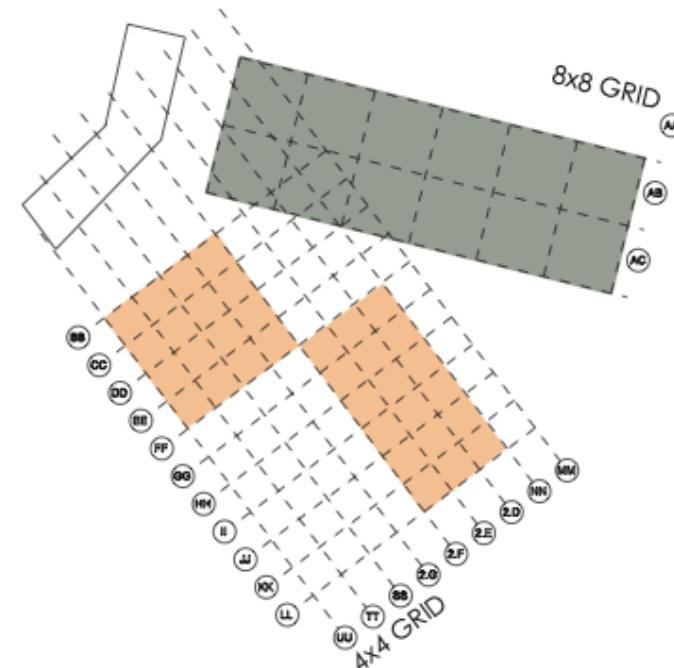
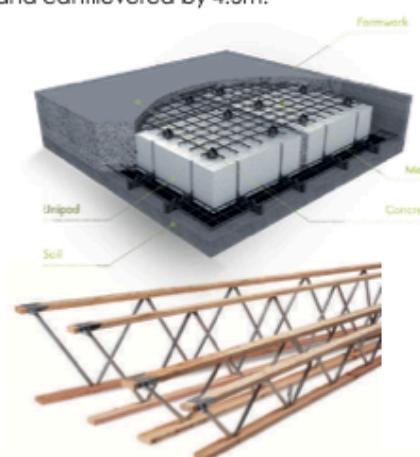
TECTONICS OF ATRIUM

600mm CLT COLUMNS are used jointly with concrete flooring as it accepts varied heavy loads.

FOR THE MATURE GENERATIONS TECTONICS OF NORTH GRID

The offices are made up of an 8x8 grid of heavy concrete columns and beams. The spatial qualities are driven by passive design, with fixed fitouts thoughtfully designed for each group of staff. this fitout is more permanent but separated from supporting construction to allow for cost effective renovations if team ideologies change in time.

The floors are supported by 200mm waffle slabs to express the grid. The building is held up by a 600mm concrete waffle slab cast in situ and cantilevered by 4.5m.



MATERIALITY

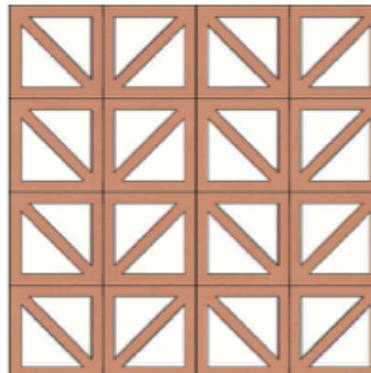
HEAVY VS LIGHTWEIGHT

The offices are made up of heavy materials. The office walls are clad in traditional recycled brick upcycled from local demolitions and cast in situ to express the value of maturity. The student areas, where facades are exposed to harsh sunlight are shaded by semi transparent solar panels, also used in Battery Park City, New York City, that rotate like sunflowers. Sliding screen are made up of terracotta coloured fibre glass, a lightweight material that can easily be moved.

INTERACTIVE VS PASSIVE

The spatial qualities of the office spaces are driven by passive design, with deep verandahs cutting through the building, enveloped by breezeblocks, and fixed fitouts thoughtfully designed for each group of staff. The spatial qualities of the student spaces are driven by interactive design, with sliding walls for flexible study spaces, and louvred/sliding windows for controlled breezes and sliding curtain panels for controlled light.

Where the grids intersect Traditional and Technological methods are combined, Passive and interactive technology work together and heavy and lightweight materials intertwine. A colossal interactive mirror, made of motors servos and recycled wooden slats, ascends up through the atrium to attract users into the centre. This technology is both high tech and traditional, passive and interactive. The architecture of this space articulates this fusion by layering the wooden and concrete planes on the floors and ceilings.



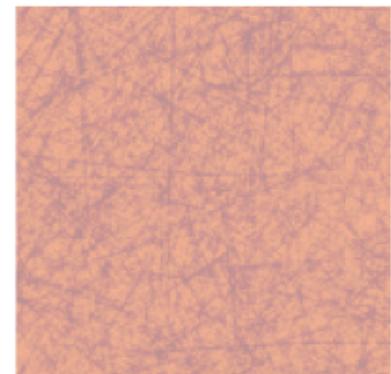
TERRACOTTA BREEZE BLOCKS



TREATED CLT & LVL



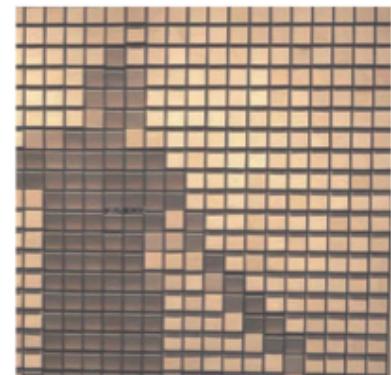
CONCRETE IN SITU



FIBREGLASS IN ALUMINIUM FRAME



RECYCLED TERRACOTTA BRICK



WOODEN MIRROR FROM RECYCLED OFFCUTS

FACADE TREATMENT

All the structural details are displayed in the facade in an almost decorative and elemental way. This is a building where all the spaces are separated for cross ventilation, but the construction is also pulled apart, defined and it is in itself a lesson in the elements of construction, you can see what's in compression, you can read what's in tension, you can see which bits span and you can also read what keeps the weather out.

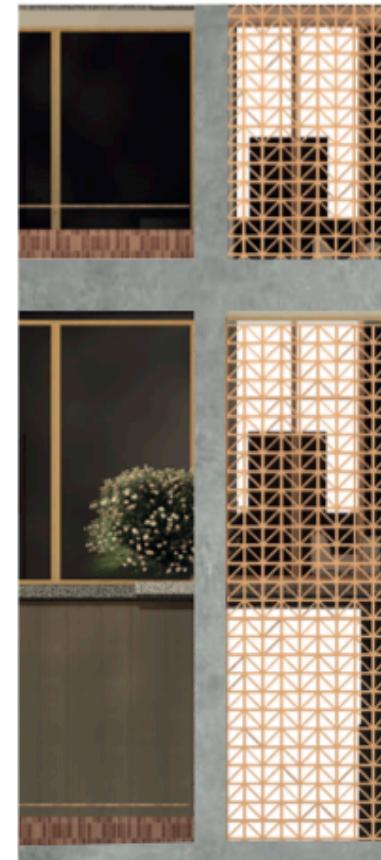
1. NORTH EAST POST GRADUATE SPACES ELEVATION

- Sliding doors allow for breeze
- solar panel allow for shading
- fibreglass door dapple light



2. EAST OFFICES ELEVATION

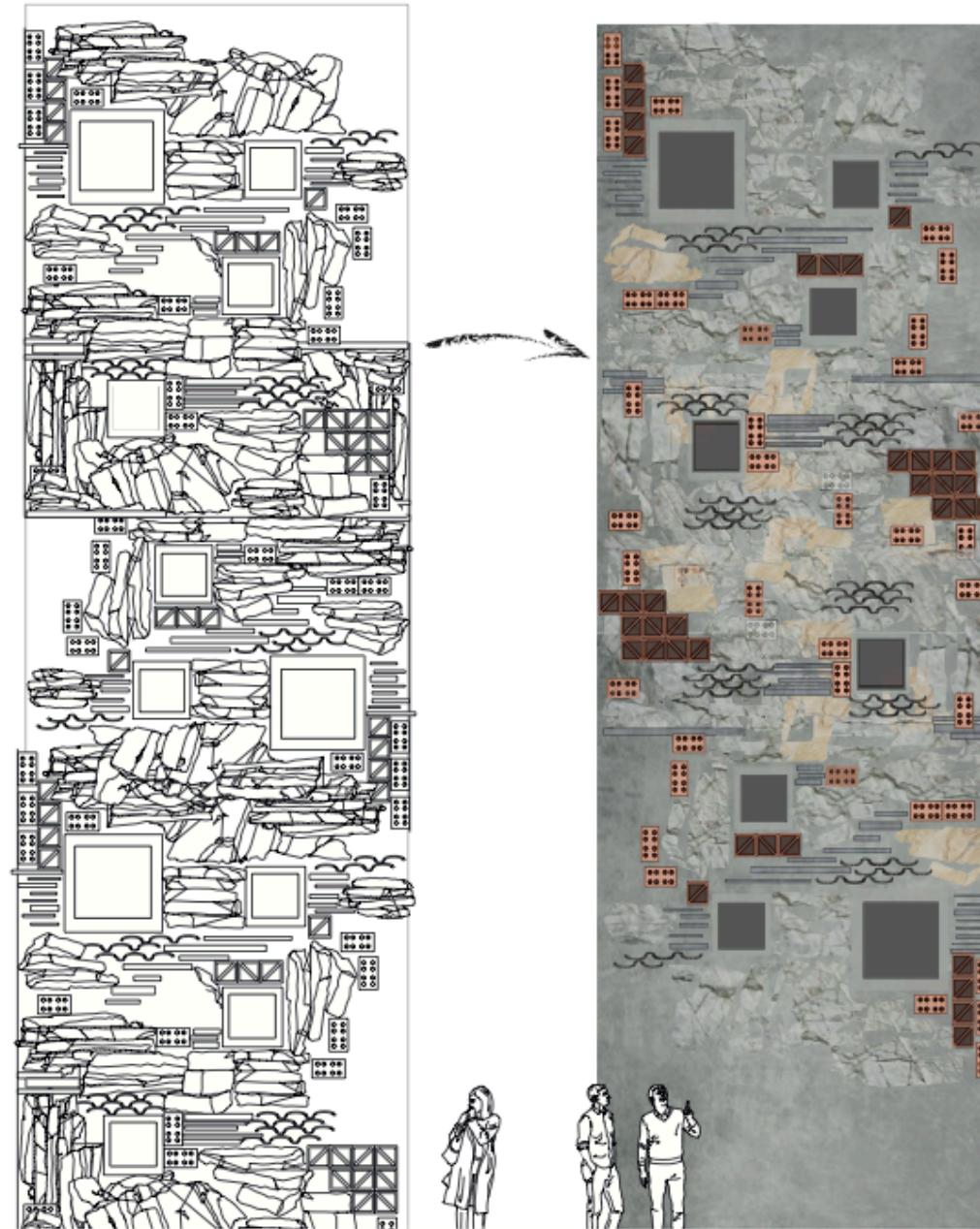
- Breeze blocks allow for air circulation
- These blocks coupled with deep verandahs provide shade from the harsh morning sun
- orange flowered Native plant: Kangaroo Paws provide noise cancellation



3. WEST FAÇADE OFFICES

- Thick masonry wall provides protection from harsh westerly storms and provides a front for the great court (traditional materials)
- Selective windows shade from western sun but with deep verandahs for winter sun to penetrate.





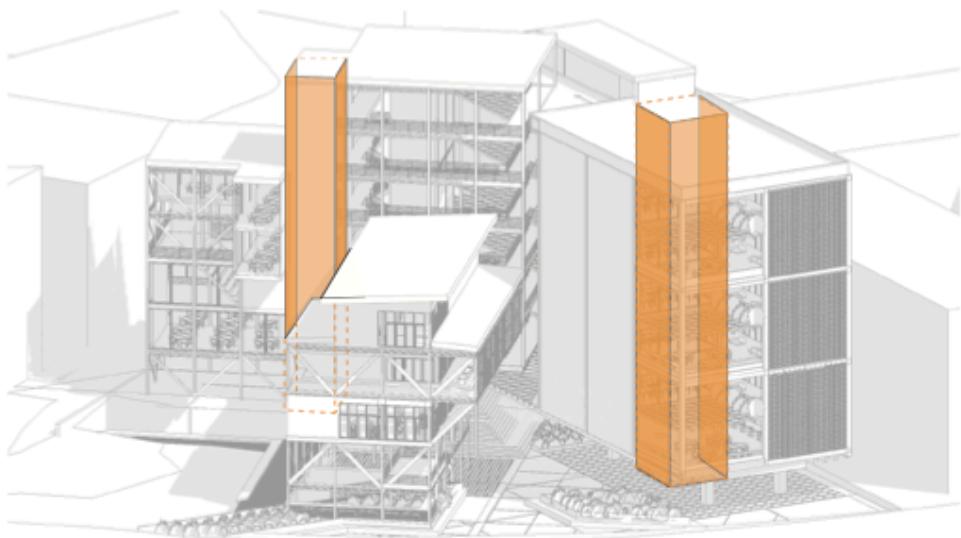
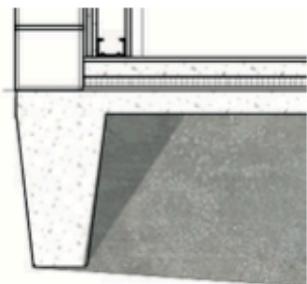
EGRESS AND FIRE SAFETY

Where central stairs impede disabled access, a ramp and/or elevator is provided for equitability. tactile paving is also integrated into the planning. All corridors meet the NCC standards of 1800mm widths.

Although the central core has an intertwining outdoor staircase, separate fire exits need to be provided as the atrium is not fire graded. Therefore two firestairwells were calculated to have sufficient escape route distances of less than 20m from any point in the building. They are both constructed from 60min rated concrete blocks with a screed finish to in keep with the overall design.

An orange coloured sprinkler system spans within the service cavity of every level with the hydrant at the base of the fire stairwell. A fire extinguisher will be installed in every room.

The top two levels of offices are compartmentalised with sliding glass doors so that smoke can escape the atrium through the roof level.



HVAC AND MEP SERVICES

The office spaces have been designed for a mixed use ventilation system, where each office can be opened to for air circulation on both sides, or the user can choose to adjust their personal air conditioning vent. A hot air duct runs down within the cabinetry to heat the office from the ground up, while a cold vent is positioned at ceiling height to circulate air flow. Due to the compact office size, cooling of each room is efficient. No great expanses of area are air conditioned for sustainability. Instead, within the flexible post graduate offices that are private in an open context, commercial 3m ceiling fans with an elevation of 3m from the floor level are chosen due to the large expanse and permeable nature of the room.

Mechanical Services

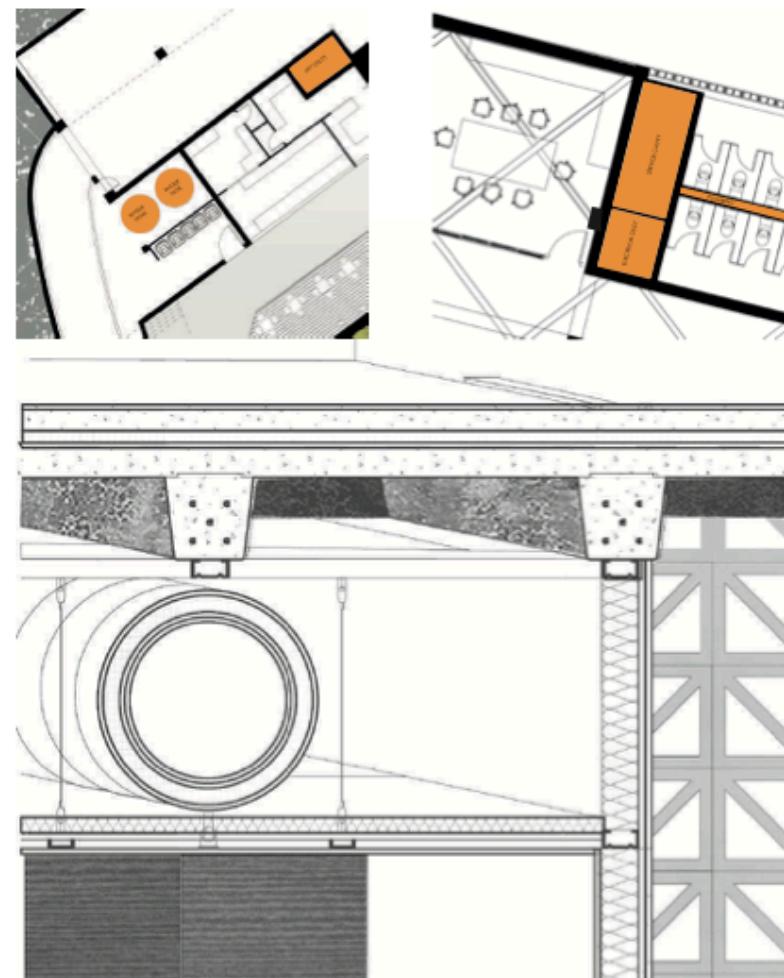
A service cavity is provided above and below the lift. The Utility areas are positioned both on the roof and in the basement, accessable by a truck off staff house road. Space for wastage is also designed here

Electrical Services

An electrical service closet is accesible from the board rooms and runs parallel to the air conditioning cavity.

Plumbing Services

All wet areas are positioned above eachother and concentrated in plan: i.e toilets, fire hydrants and kitchens. a water tank is provided adjacent to the basement, for grey water collection to be pumped to the toilets above. All gutters are directed to here.



ACOUSTICS AND LIGHTING

Atrium acoustics

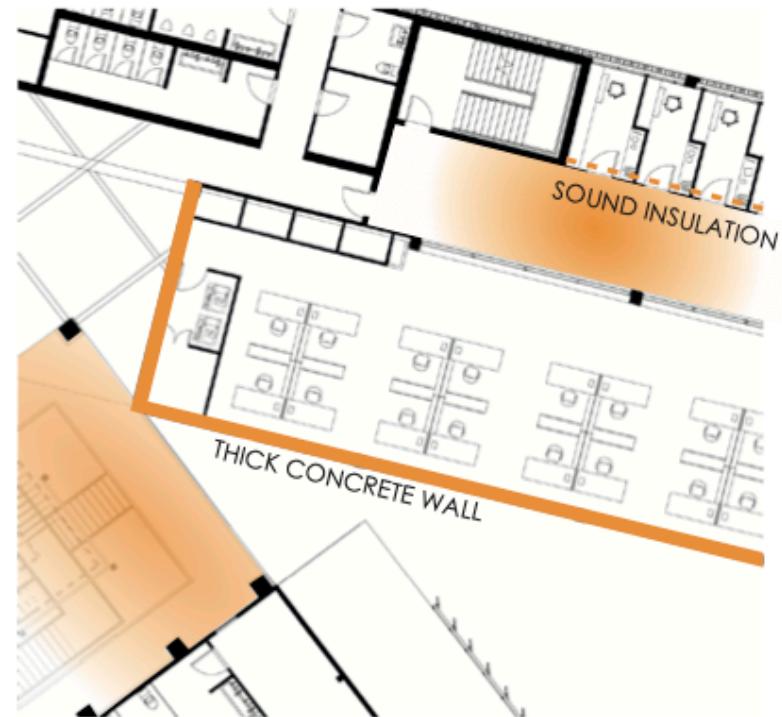
The atrium is predicted to be rather loud due to the moving interactive wall and circulation of users. Hence the thick masonry wall wraps around the offices to protect the spaces from noise pollution. Furthermore the administration offices on the top two levels and compartmentalised to provide a calm peaceful environment away from the busy ground level plaza.

Inner Office acoustics

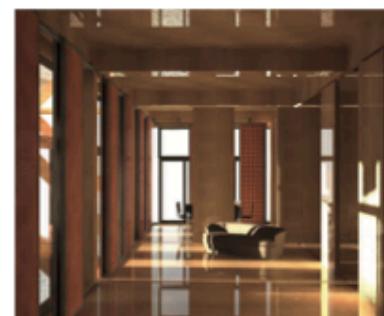
As the floor finishes of the office corridor is polished concrete, extra sound insulation is installed in the office fitouts, not only for heat insulation but also to mitigate echoes from noisy footsteps and clacking heels. Where the level cuts away to look down to the plaza, shrubbery is planted to disrupt acoustics travelling upward.

Passive strategies are used throughout both buildings to let in winter sun and block out the summer scorching hot sun. The student spaces also have an interactive shading system to allow for the users to play around with the coloured dappled light through a tinted fibreglass panel. It was crucial that a innately coloured translucent material was used rather than tinted glass so that the orange would not only light up at night like a lantern, but also would be visible during the day when the sliding door are in use.

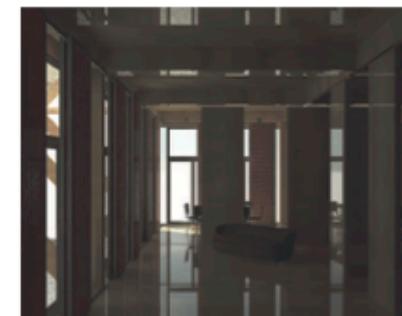
All areas are naturally lit by the atrium core, which allows for light to enter from both the West and the East



WINTER SOLSTICE 9am



SUMMER SOLSTICE 9am







E1 OFFICE + PUB DETAIL E1

SCALE: NTS

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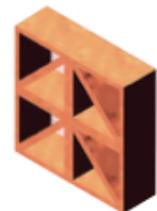
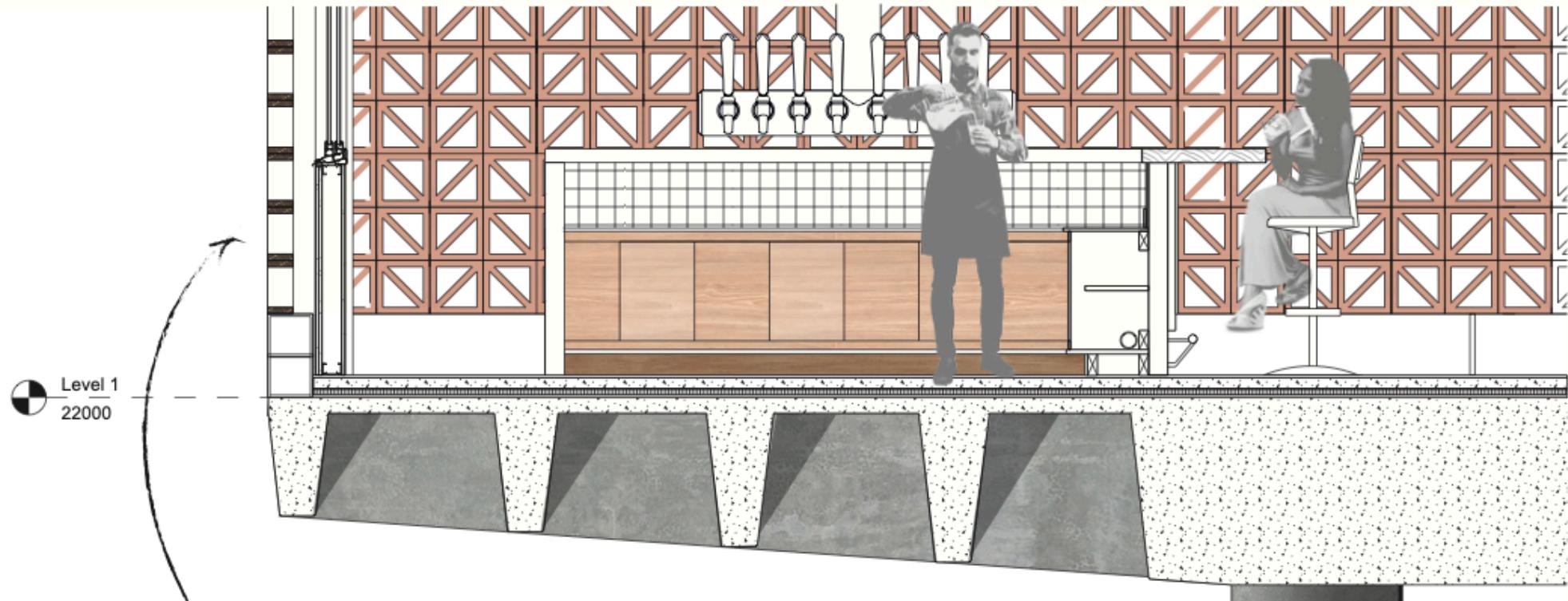
E1.1
OFFICE PLAN



E1.1
OFFICE DETAIL PLAN

SCALE: 1:50

ELOISE WHITTAKER



E1.2 SECTION DETAIL

SCALE: 1:20

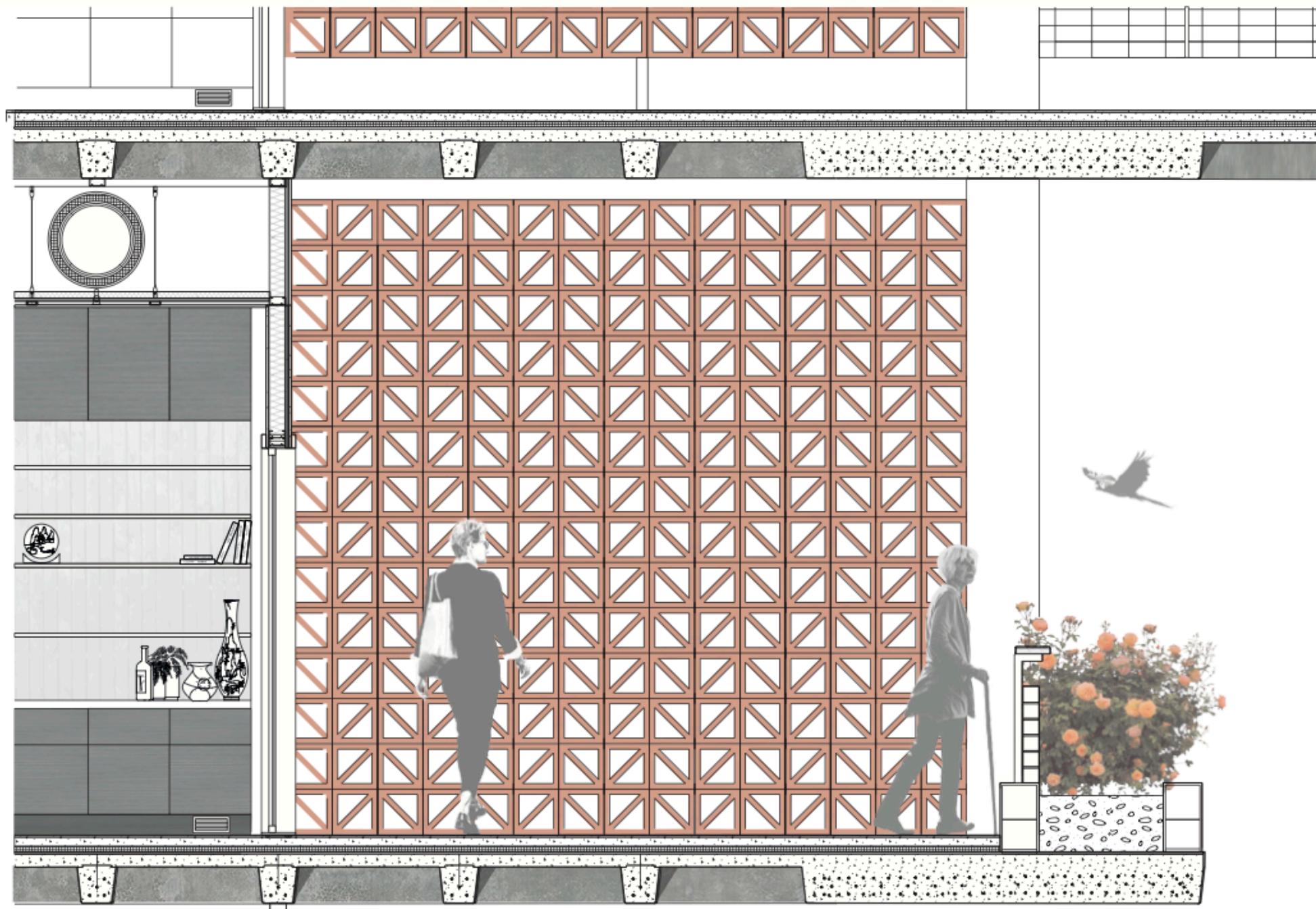
ELOISE WHITAKER



Level 3
30000



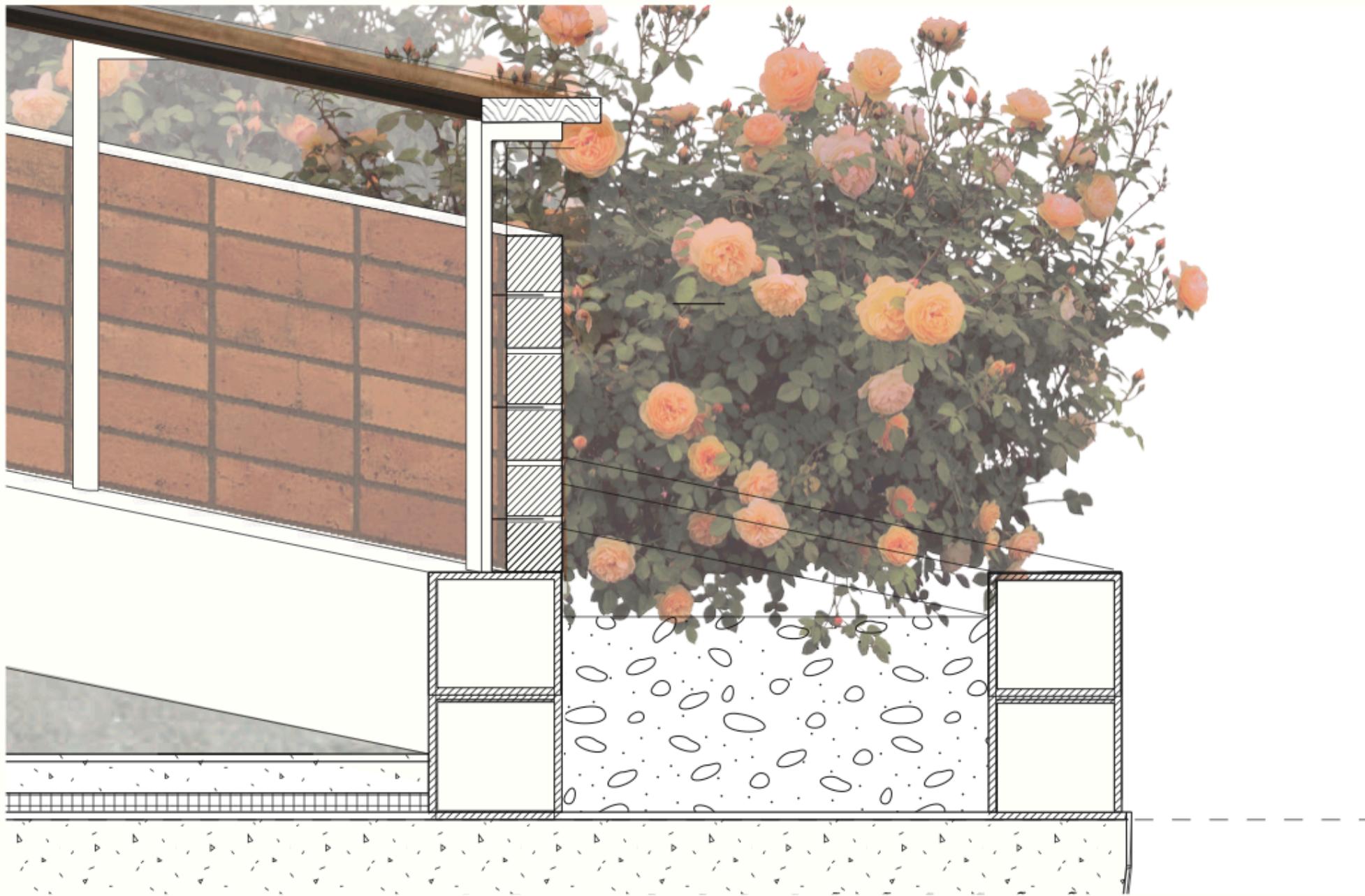
Level 2
26000



E1.3 SECTION DETAIL

SCALE: 1:20

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E1.4 SECTION DETAIL

SCALE: 1:5

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E2
POST GRAD SPACES DETAIL

SCALE: NTS

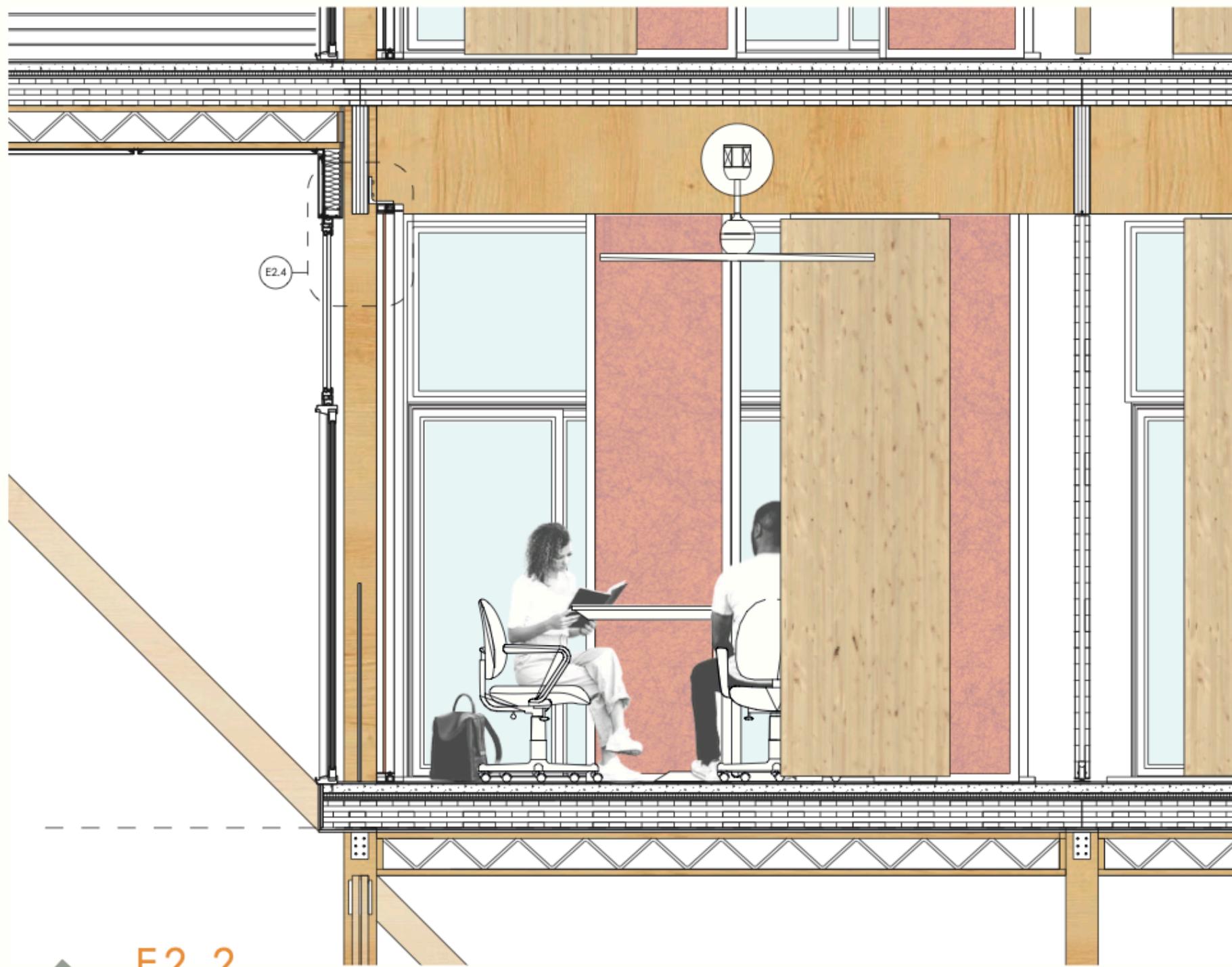
ELOISE WHITTAKER



E2.1 POST GRADUATE SPACES PLAN

SCALE: 1:50

ELOISE WHITTAKER



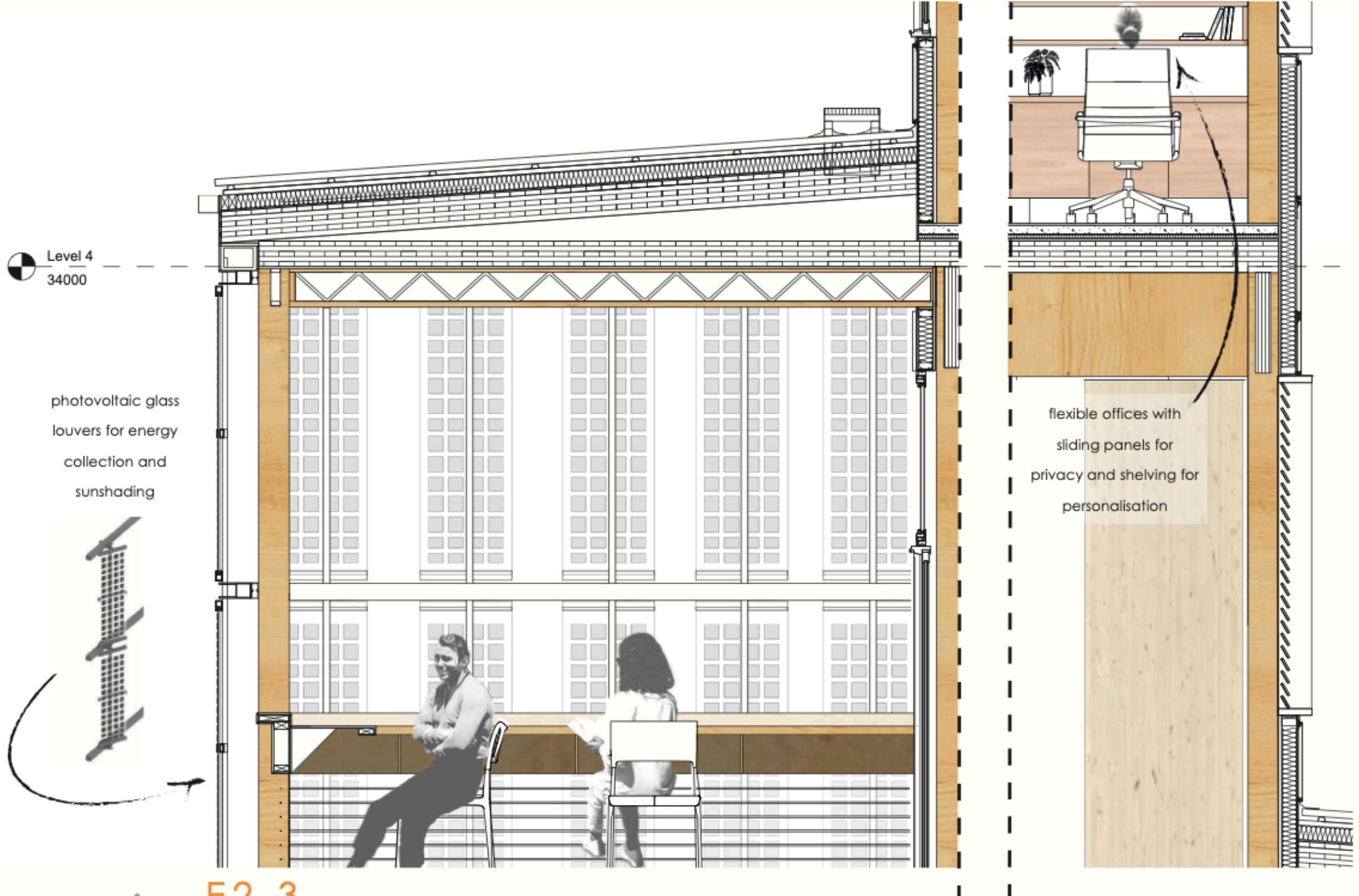
E2.2 SECTION DETAIL

SCALE: 1:20

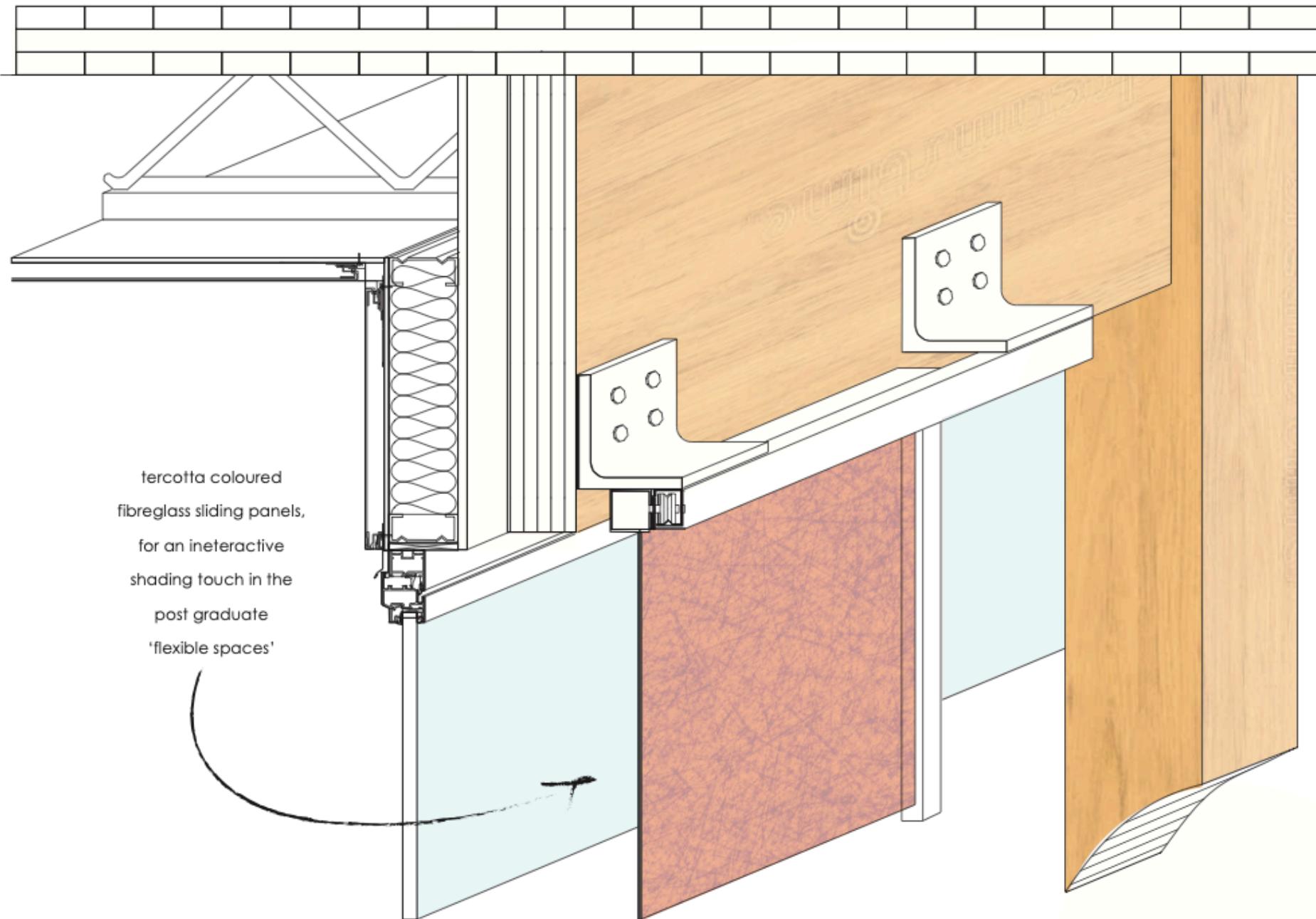
Level 3
30000

Level 2
26000

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Level 3
30000



E2.5 SECTION DETAIL

SCALE: 1:5

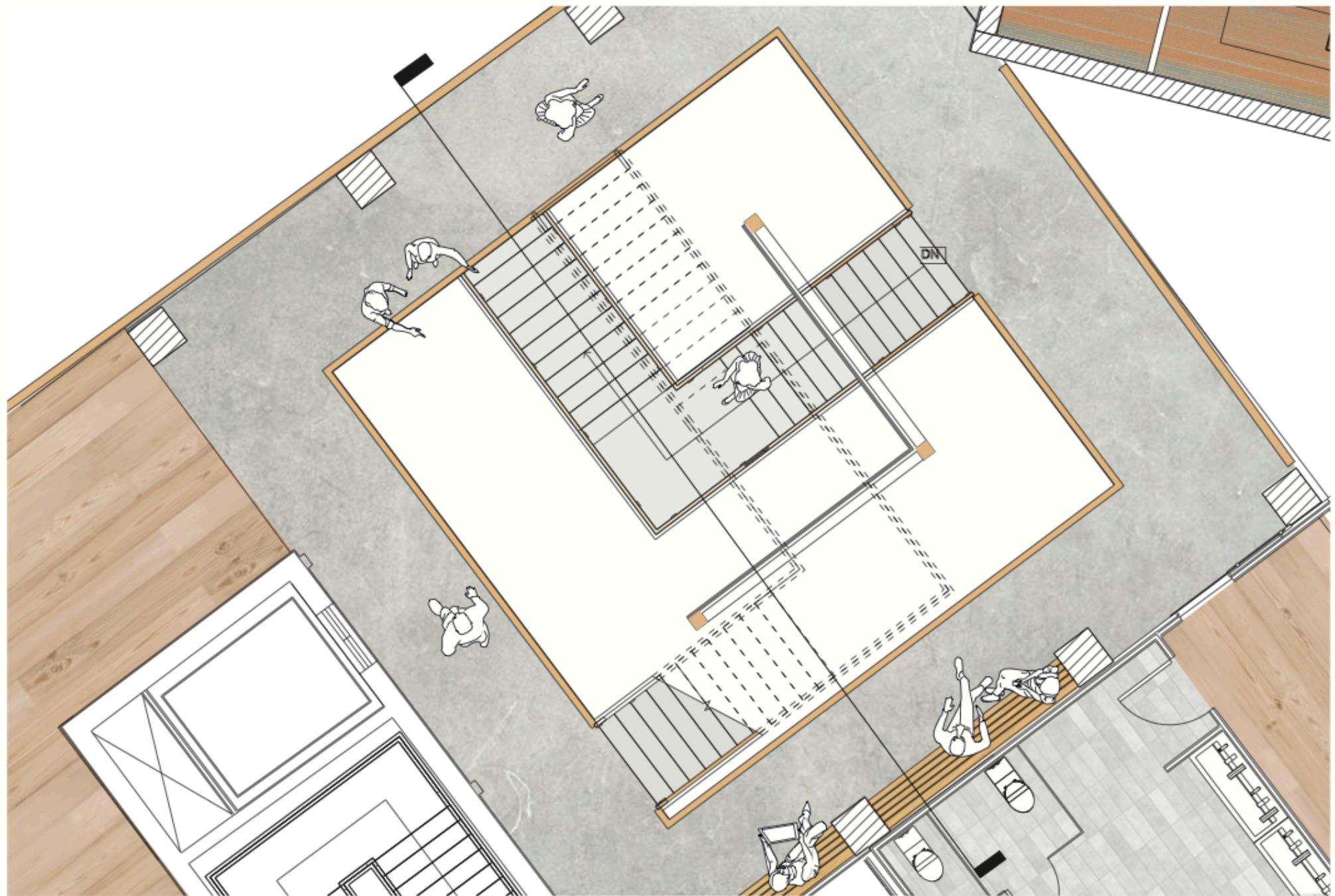
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E3 atrium stairwell detail

SCALE: NTS

ELOISE WHITTAKER



E3.1 atrium stairwell plan

SCALE: 1:50

ELOISE WHITTAKER

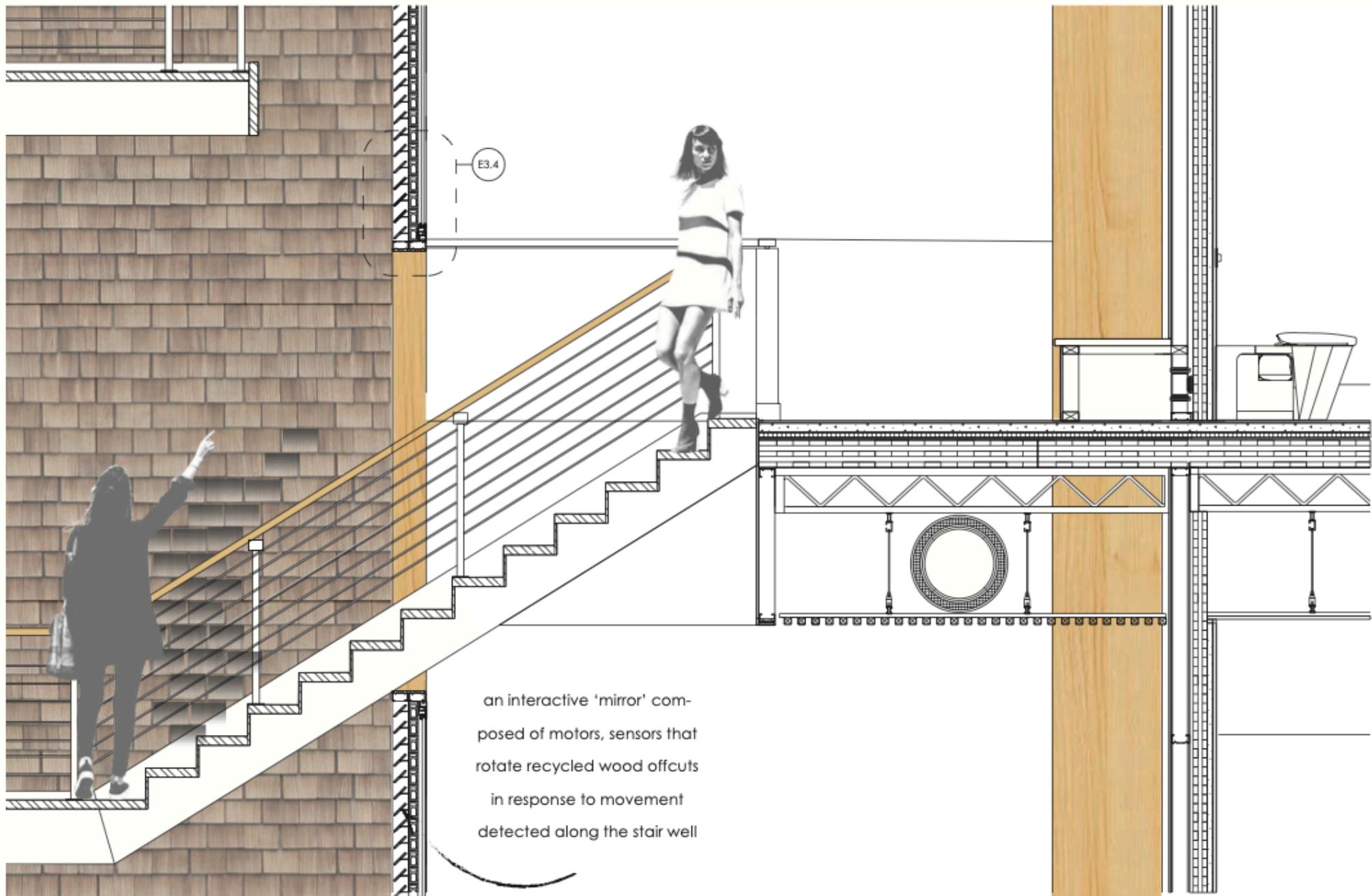


E3.2
atrium stairwell detail



SCALE: 1:20

ELOISE WHITTAKER

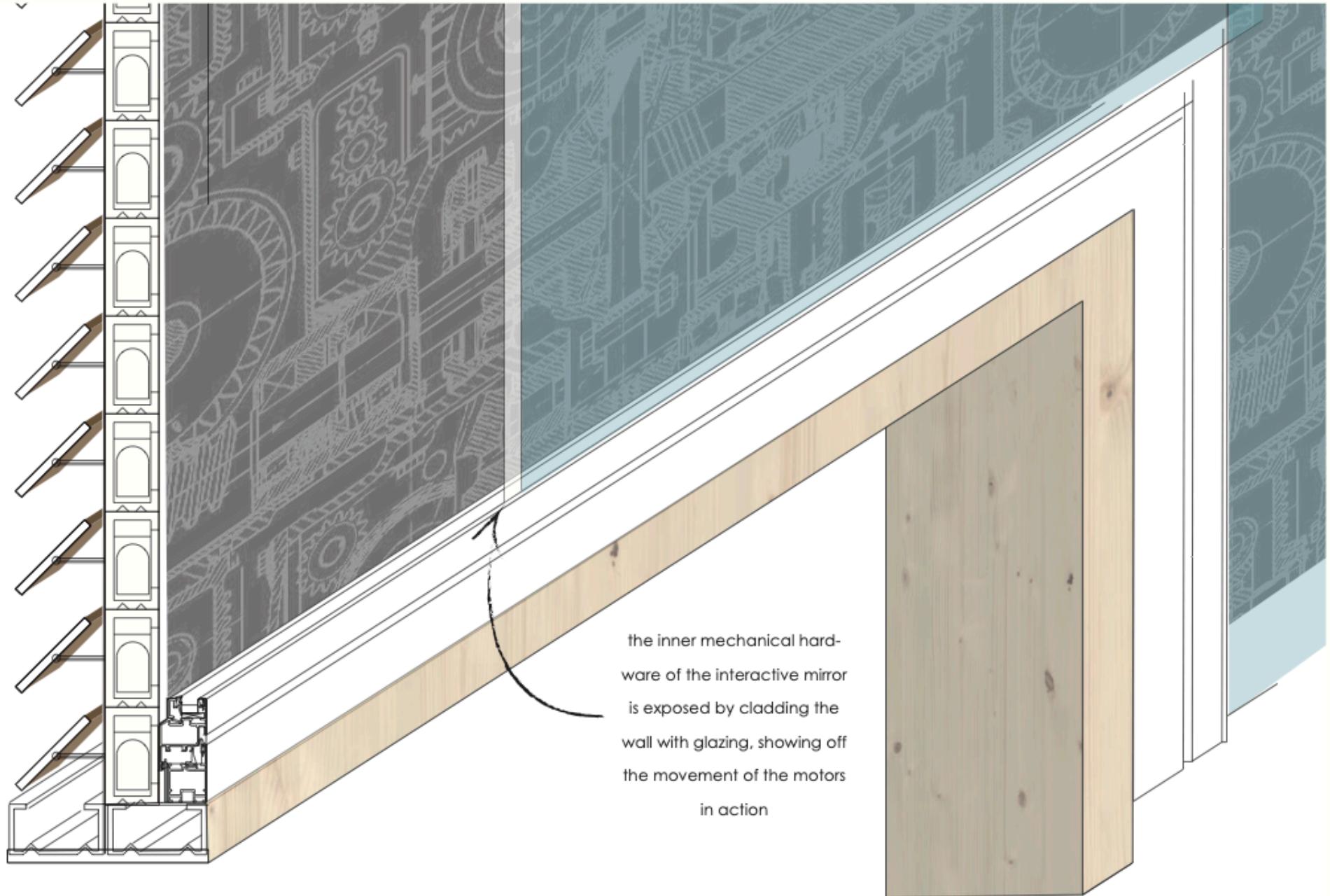


E3.3
ATRIUM STAIRWELL DETAIL



SCALE: 1:20

ELOISE WHITTAKER



E3.4 ATRIUM STAIRWELL DETAIL

SCALE: 1:5

ELOISE WHITTAKER