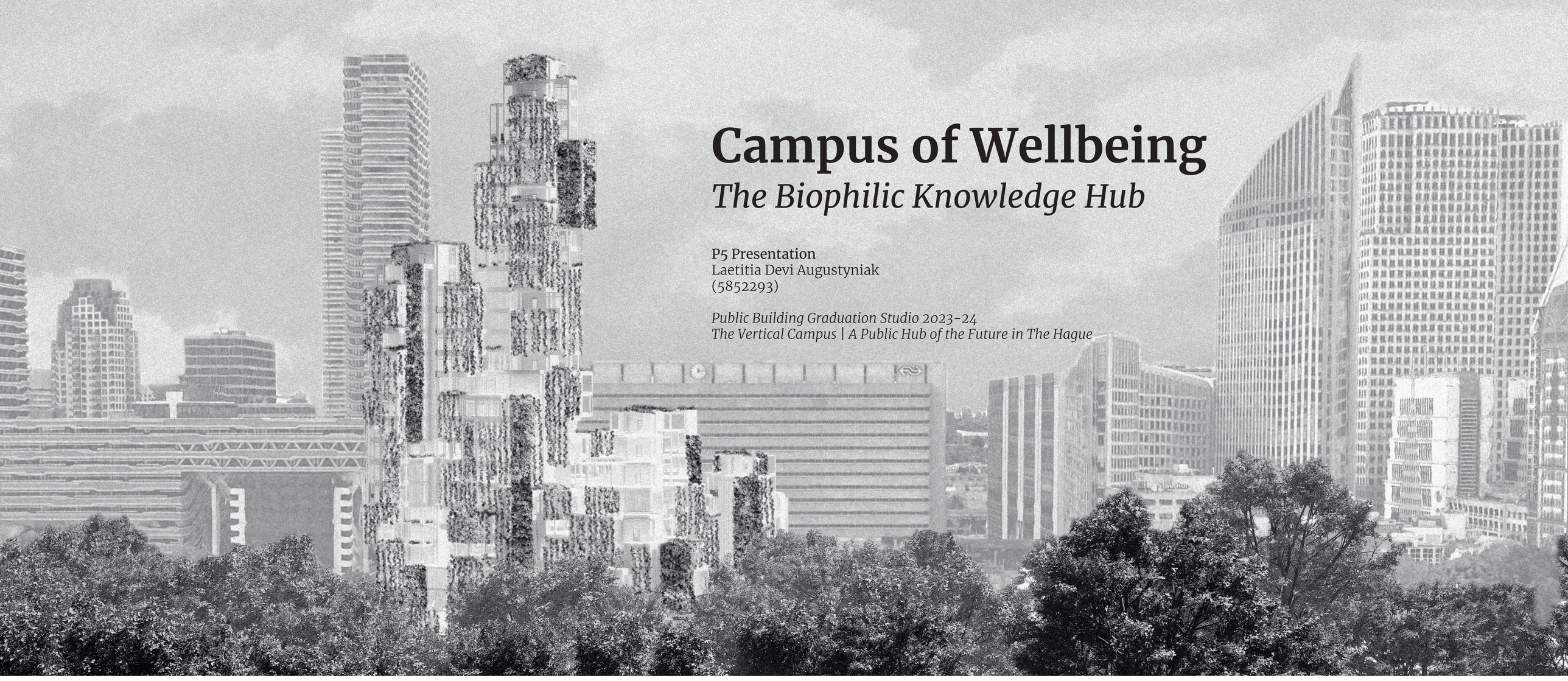


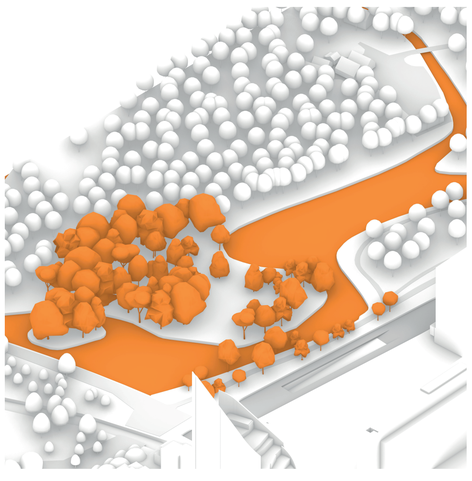
Campus of Wellbeing

The Biophilic Knowledge Hub

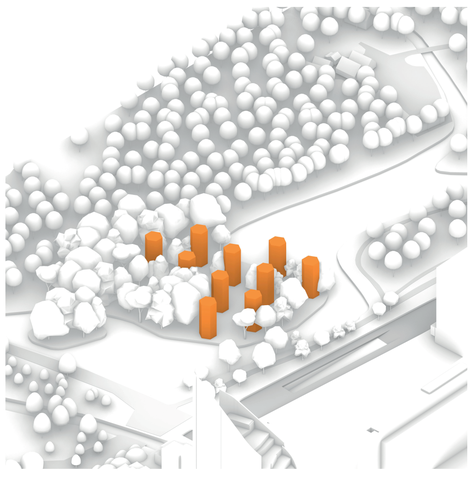
P5 Presentation
Laetitia Devi Augustyniak
(5852293)

Public Building Graduation Studio 2023-24
The Vertical Campus | A Public Hub of the Future in The Hague

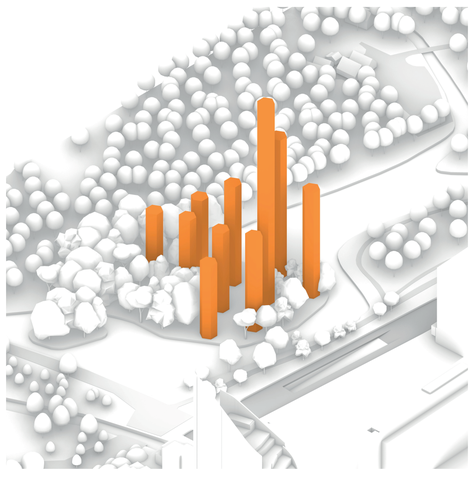
Massing Development



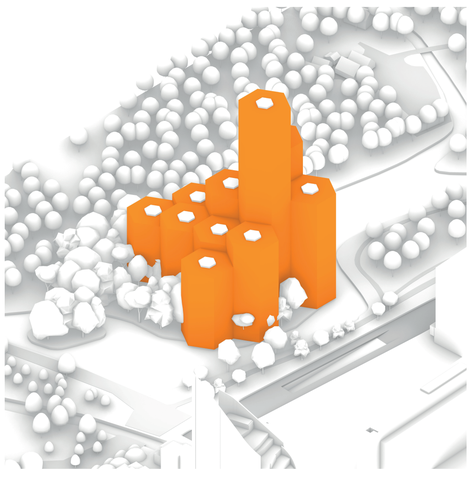
1. Existing situation / Environmental constraints



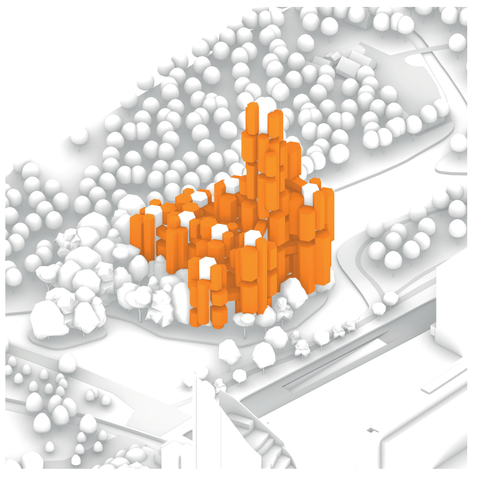
2. Placing Cores



3. Height according urban strategy and sunlight



4. Adding Building Program

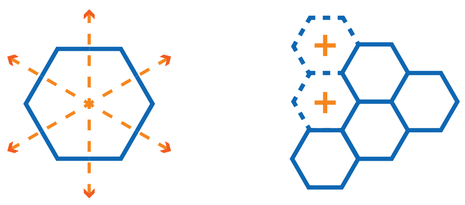


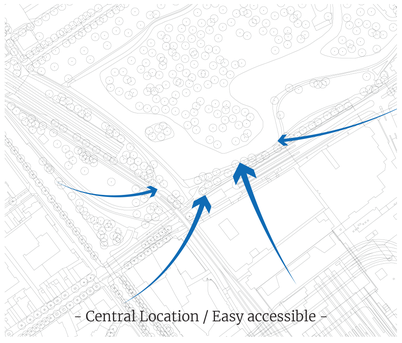
5. Creating Permeability



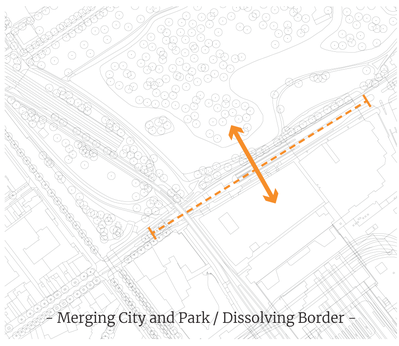
Hexagon as a Base Module

1. Flexibility
2. Space Efficiency





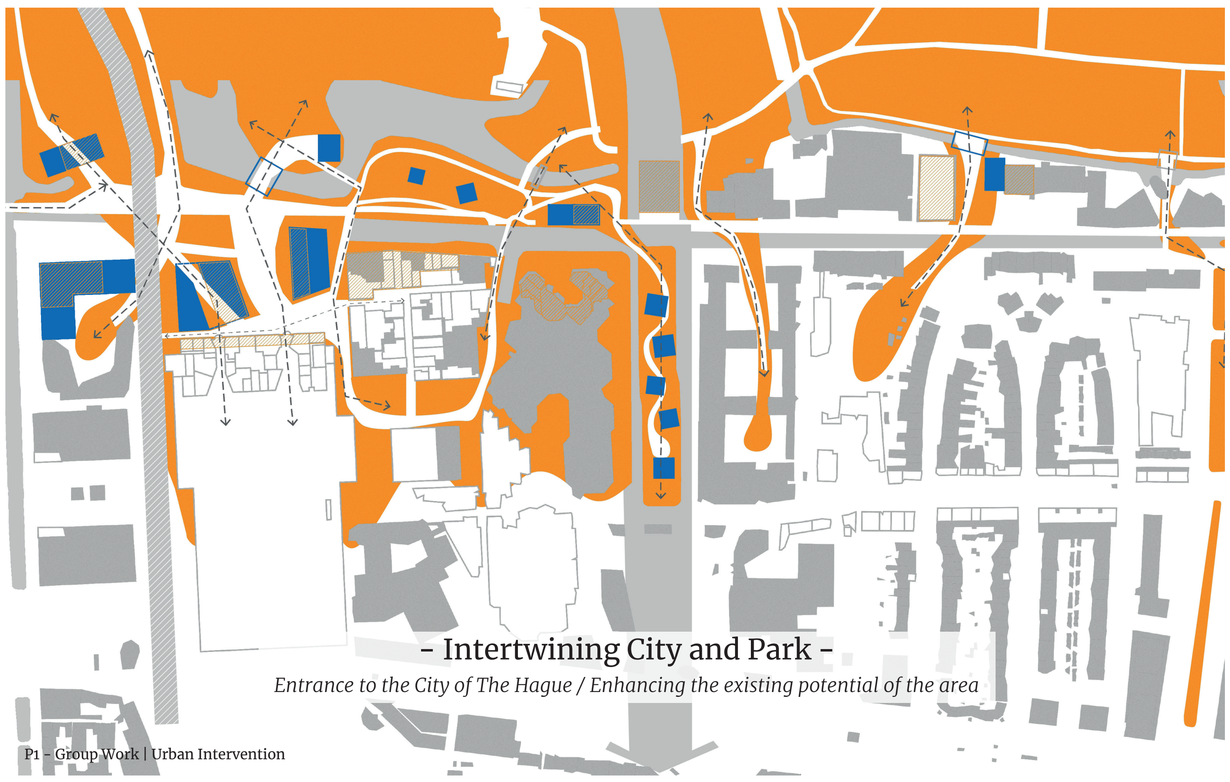
- Central Location / Easy accessible -



- Merging City and Park / Dissolving Border -



Site Plan

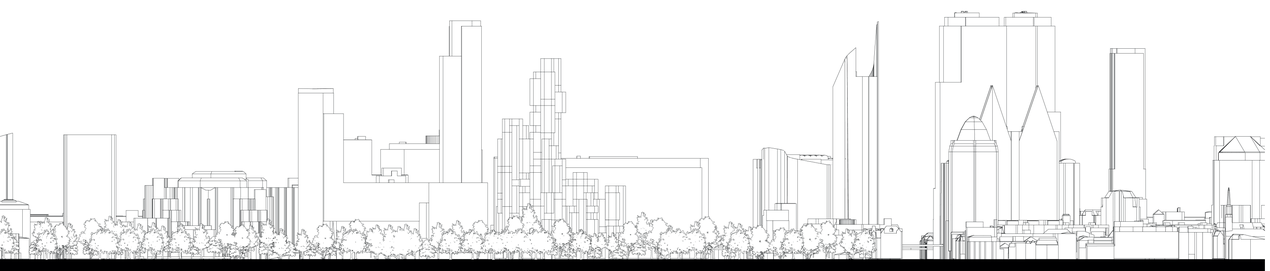


- Intertwining City and Park -

Entrance to the City of The Hague / Enhancing the existing potential of the area

P1 - Group Work | Urban Intervention



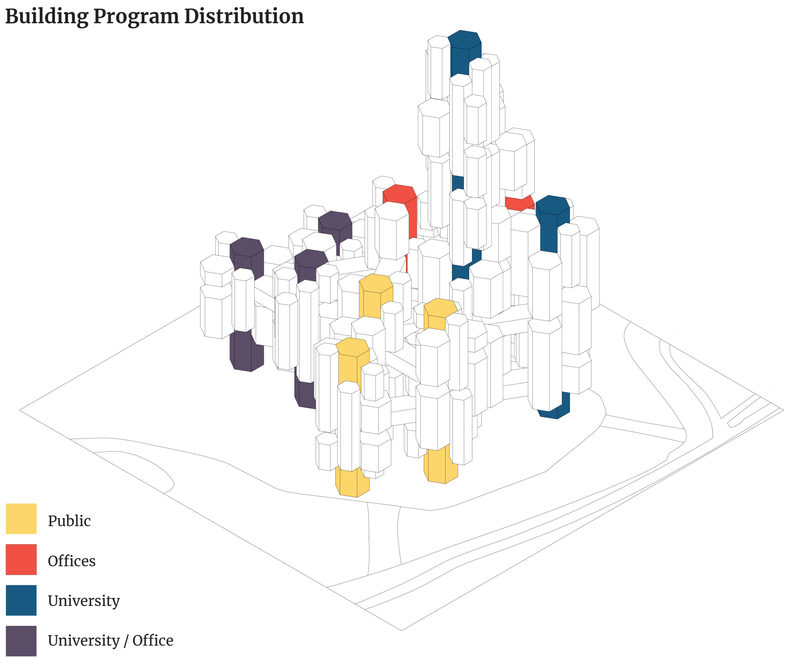


Urban Section | View to the Central Station

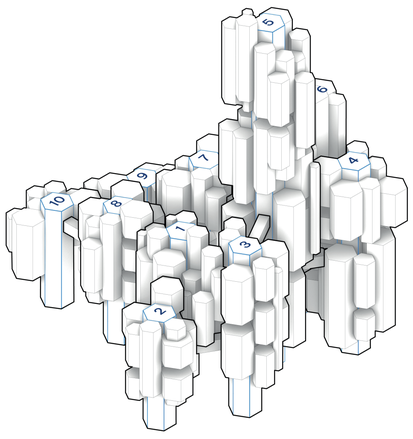


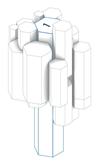
Urban Section | View to ‘Koekamp’

Building Program Distribution



Public
Offices
University
University / Office





1. Public
– Entrance, Cantine, Lounge, Café)



2. Public
– Infopoint, Meeting Spaces



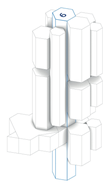
3. Public / University
– Exhibition, Virtual Reality



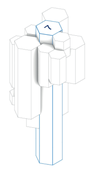
4. University
– Learning Spaces, Class-rooms, Research, Coworking, Lecture hall



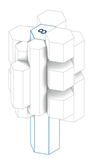
5. Research
– Research spaces, CoWorking, Workshops



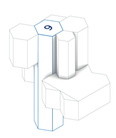
6. Office
– Traditional offices, CoWorking, Lecture hall



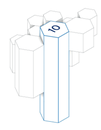
7. Office
– Traditional offices, CoWorking



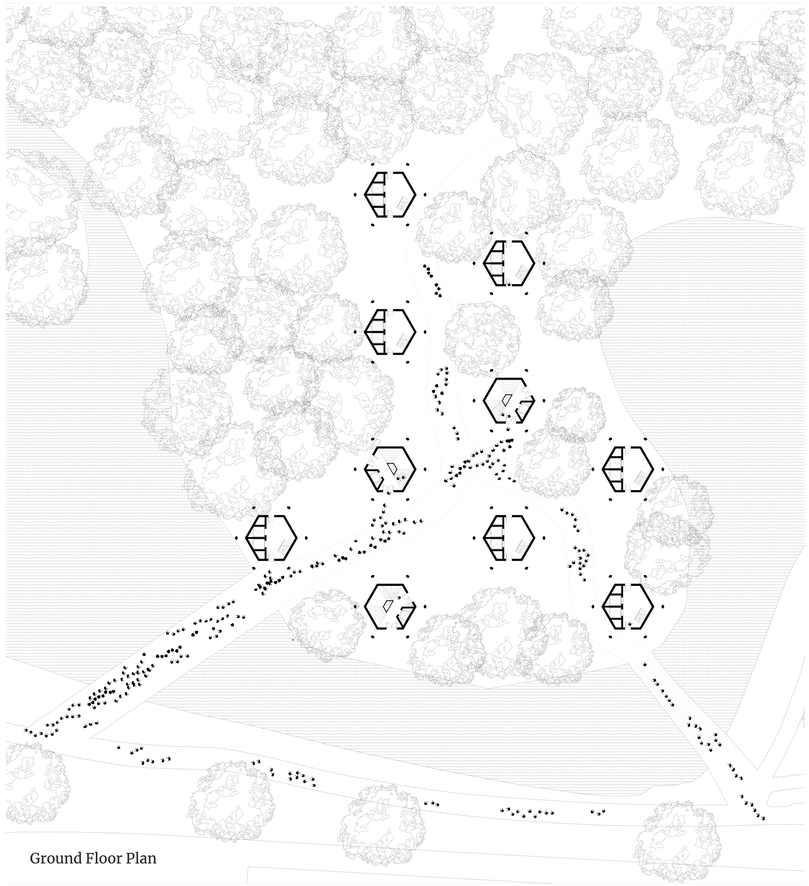
8. Media / Library



9. Activities
– Sports, Arts



10. Wellbeing
– Consultation, Yoga, Mental Health

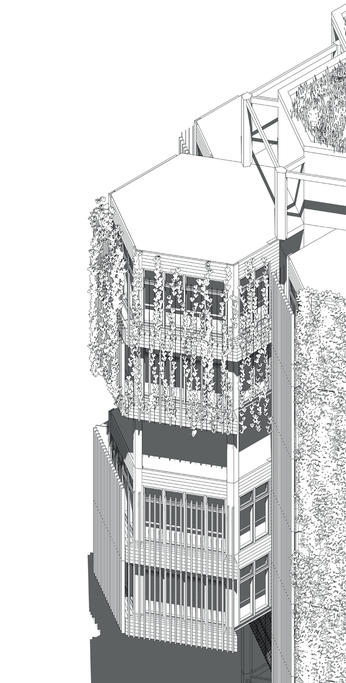


Ground Floor Plan

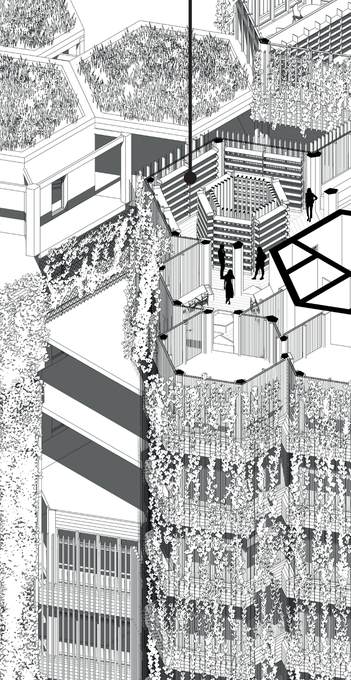


Model 1-1000 [Photo]

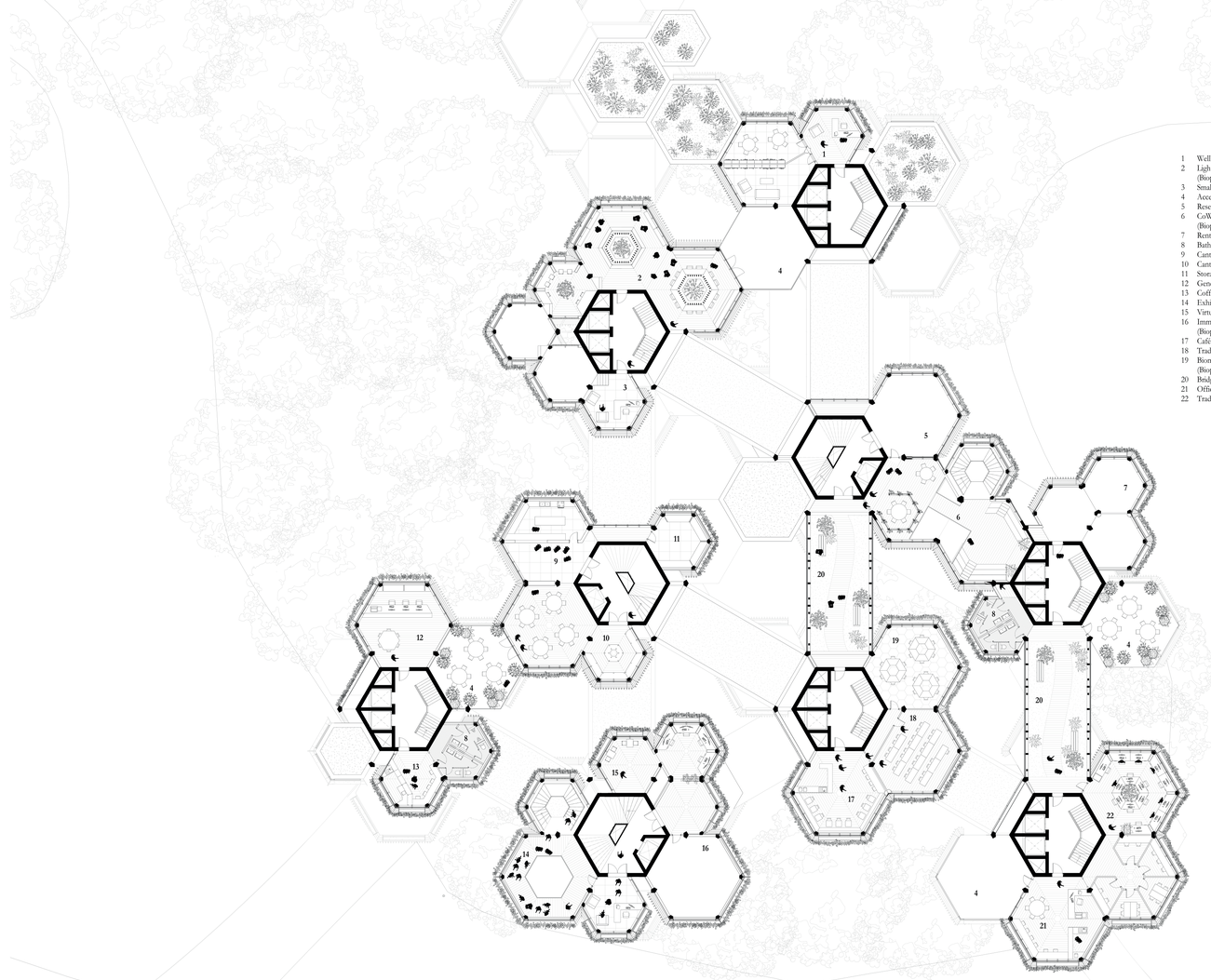
General Circulation



– Vertical | Cores –



– Horizontal | Bridges –



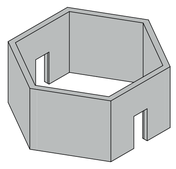
1 Wellbeing Consulation
2 Light Library (Biophilic Space Catalogue)
3 Small Infopoint/Entrance
4 Accessible Outdoor Rooftops
5 Research Space
6 CoWorking Landscape (Biophilic Space Catalogue)
7 Rentable Office Space - Small
8 Bathrooms
9 Cantine
10 Cantine-Fresh Herbs
11 Storage
12 General Infopoint
13 Coffee-Bar
14 Exhibition Space
15 Virtual Reality (VR) Lab
16 Immersive Virtual Nature (Biophilic Space Catalogue)
17 Café
18 Traditional Classroom
19 Biomimicry Classroom (Biophilic Space Catalogue)
20 Bridges - Cluster Connectors
21 Office Lounge
22 Traditional Office Space

Typical Floor Plan / 9th Level

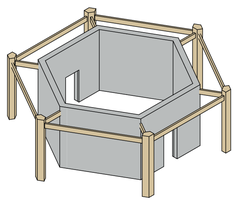
Axonometric View on the 9th Level



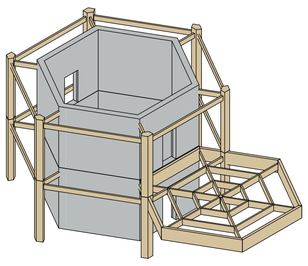
Construction Order:



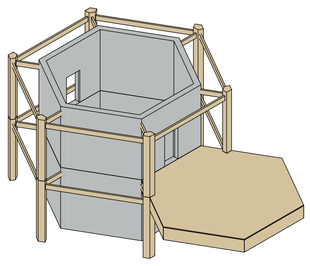
1. Prefabricated, bioreceptive concrete elements



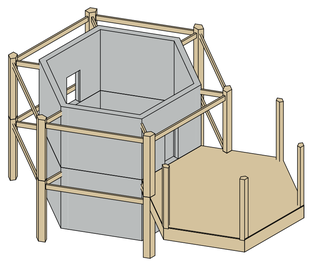
2. Primary columns (Glue Laminated Timber 350)



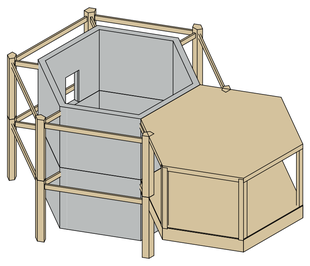
3. Cantilevering Floor slabs to carry the weight of the different Fragments



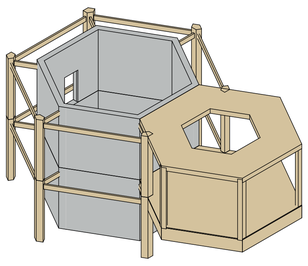
4. Closing Bottom and Top, depending on its location (interior or exterior)



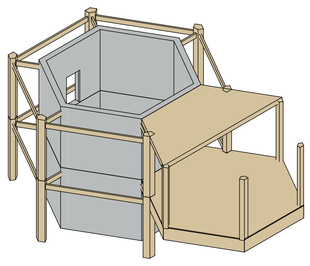
5. GLT columns for fragments are added (300)



6.1 Different options on how to design the non-cantilevering floors



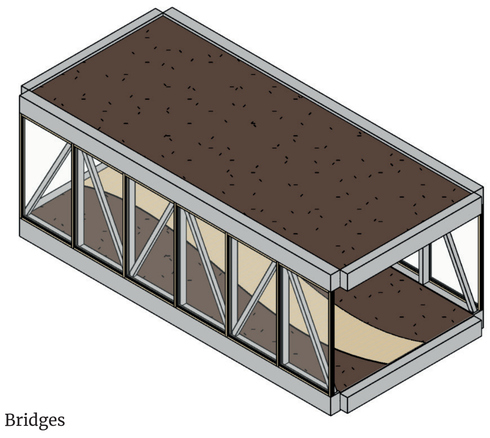
6.2 - same as step 6.1



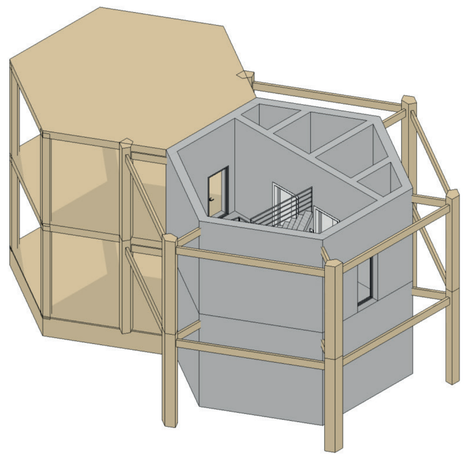
6.3 - same as step 6.1

Overall Structure

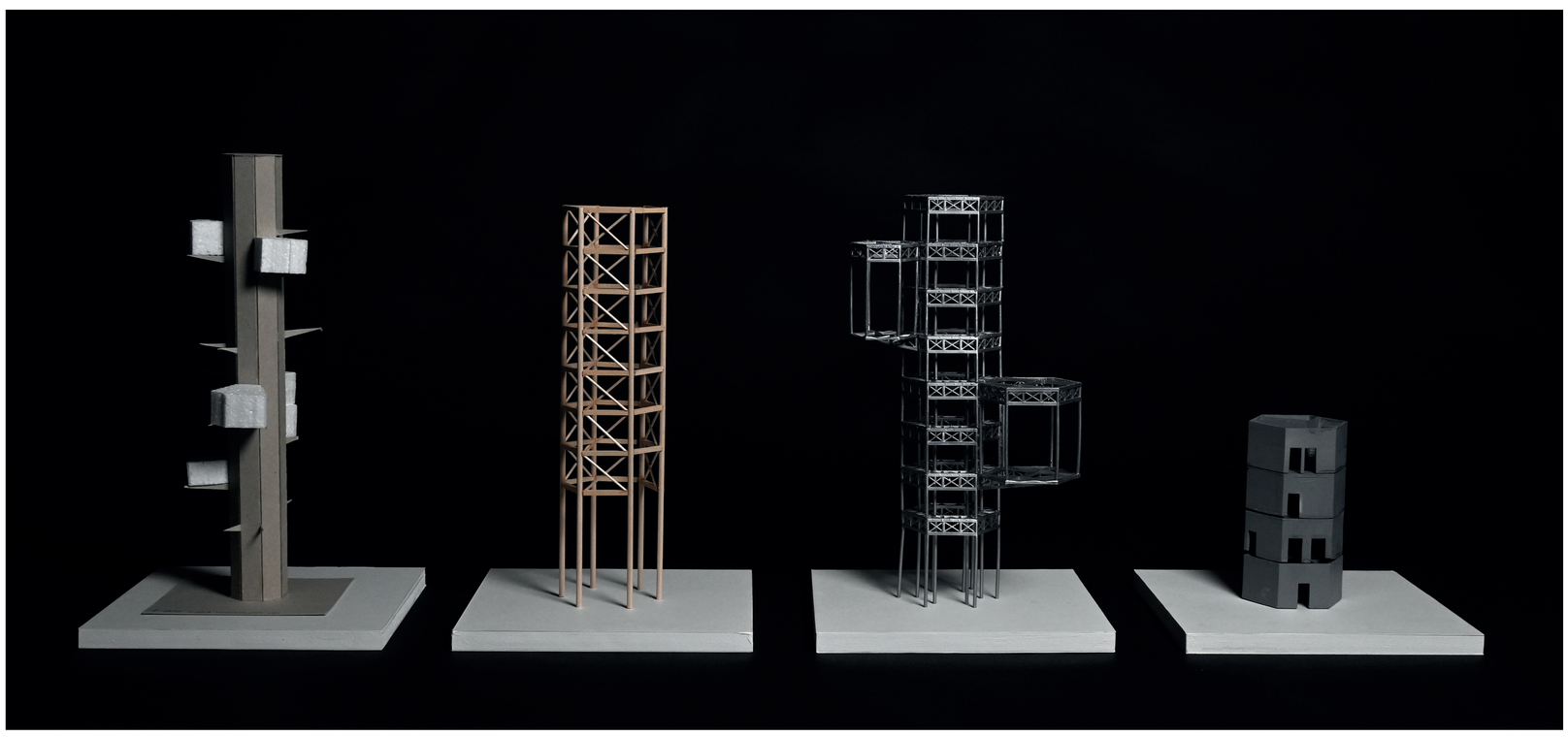
Structural Elements



Bridges

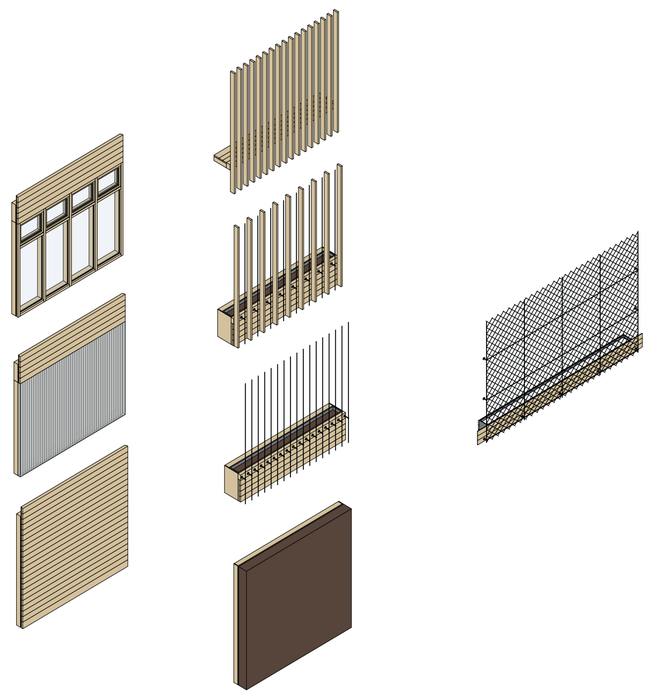


Clusters (combination of core and fragments)



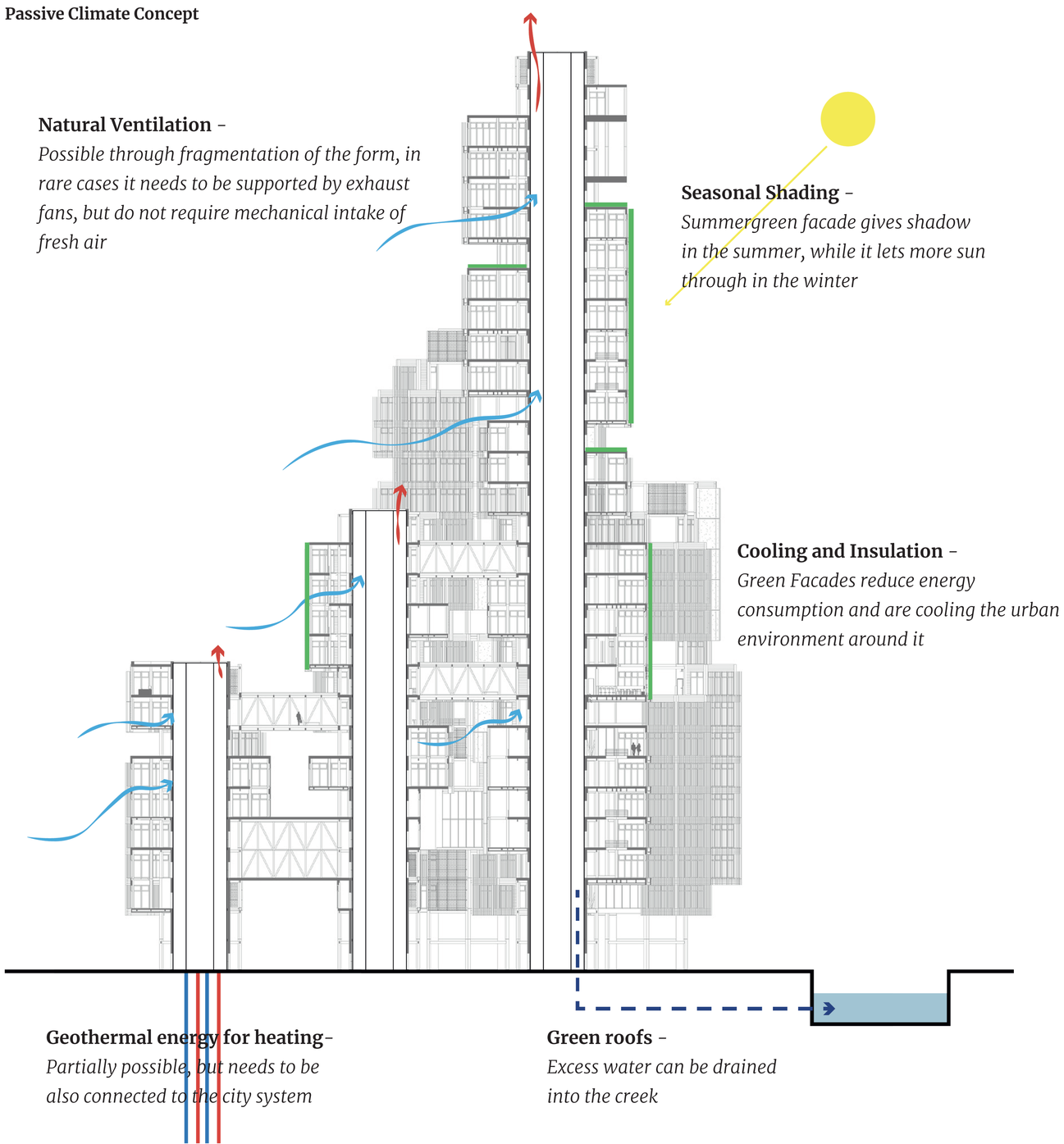
Structural Studies / Development

Facade Elements



Passive Climate Concept

Natural Ventilation -
Possible through fragmentation of the form, in rare cases it needs to be supported by exhaust fans, but do not require mechanical intake of fresh air



Seasonal Shading -
Summergreen facade gives shadow in the summer, while it lets more sun through in the winter

Cooling and Insulation -
Green Facades reduce energy consumption and are cooling the urban environment around it

Geothermal energy for heating-
Partially possible, but needs to be also connected to the city system

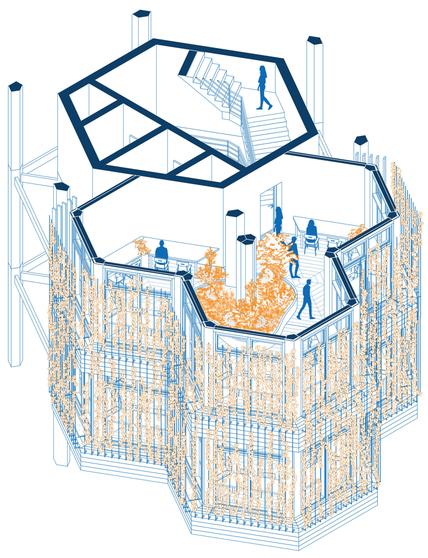
Green roofs -
Excess water can be drained into the creek



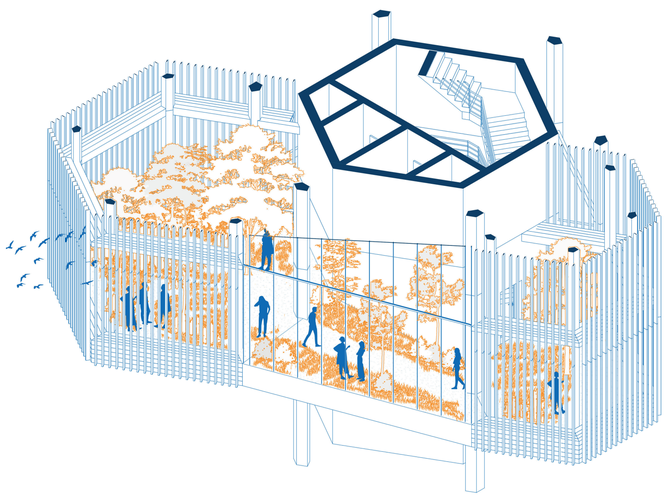
South / East Elevation

– Biophilic Space Catalogue –

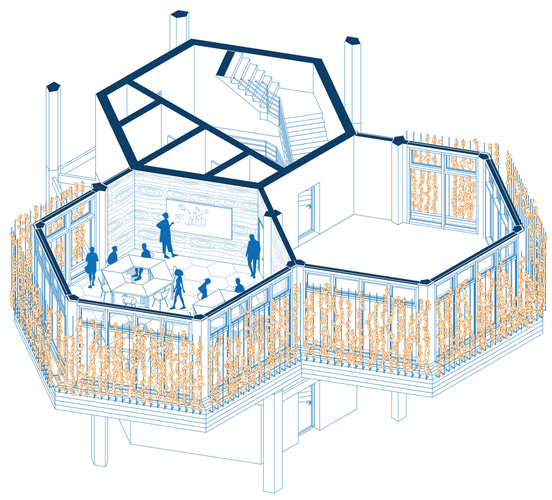
1. Learning Garden



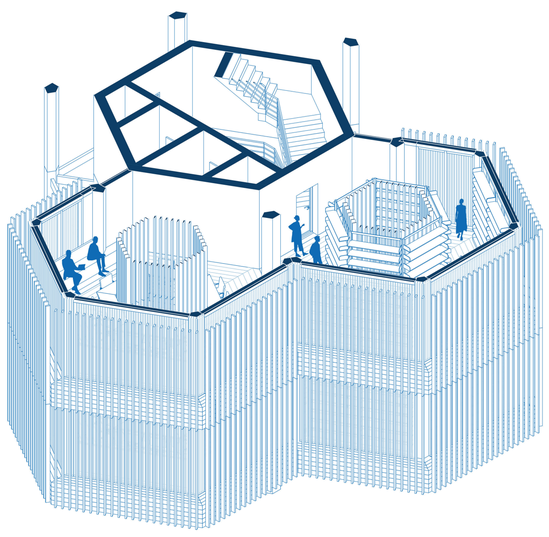
2. Study Forest



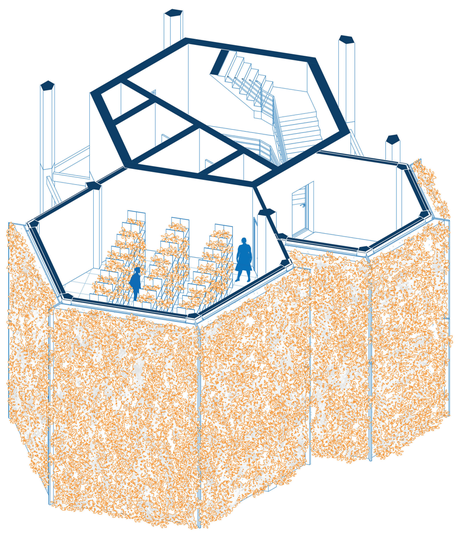
3. Biomimicry Classroom



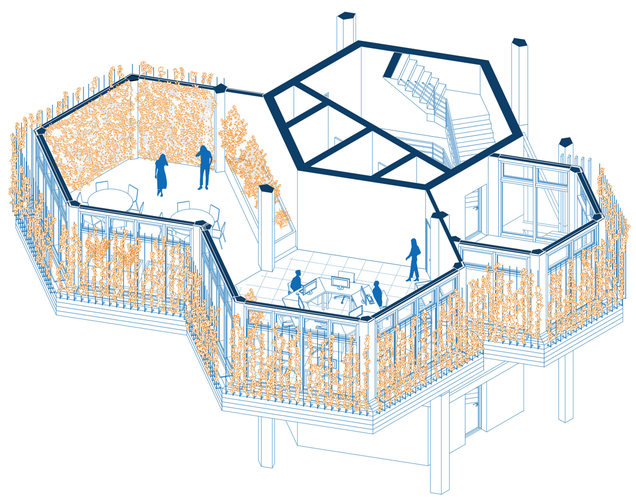
4. Light Library



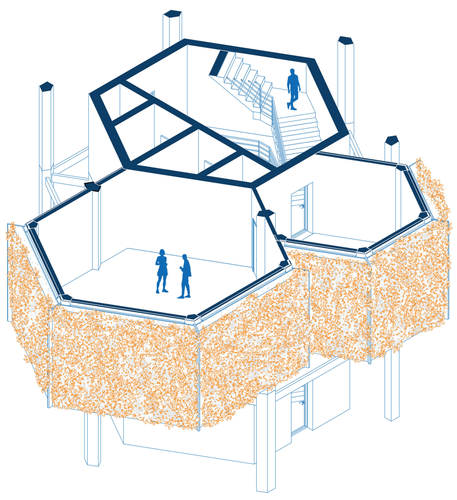
5. Vertical Farming -



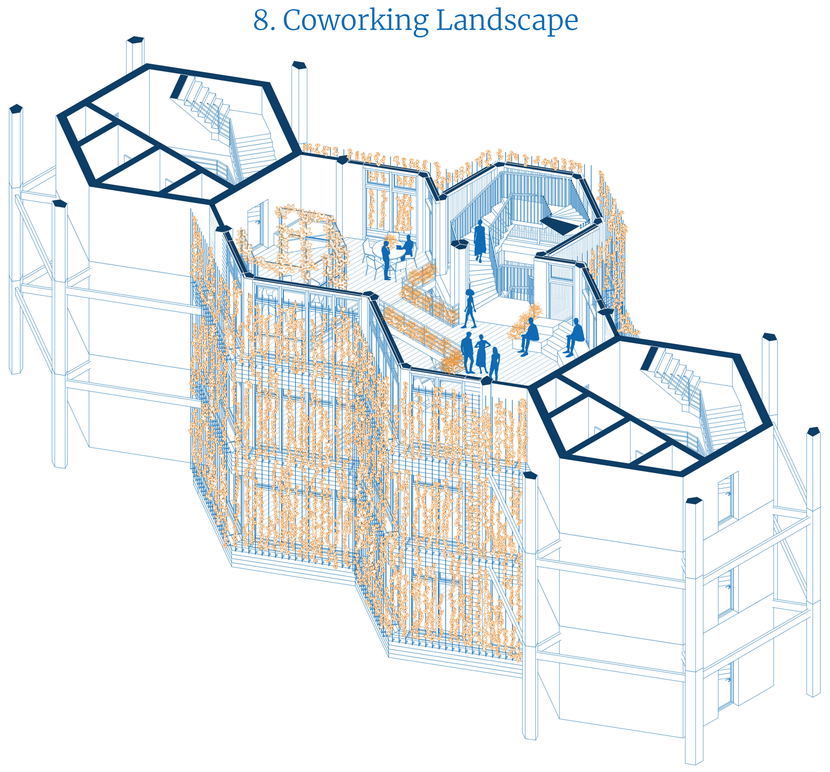
6. Biophilic Test Laboratory



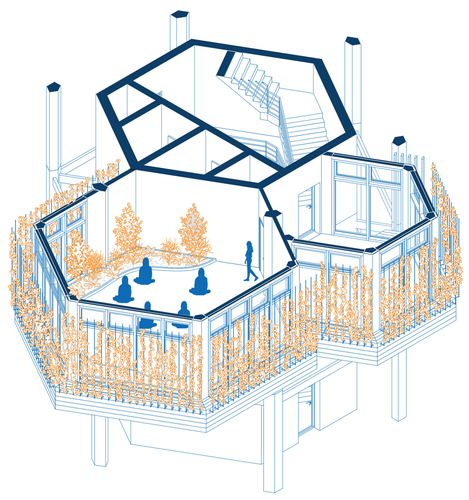
7. Immersive Nature (Virtual Reality)



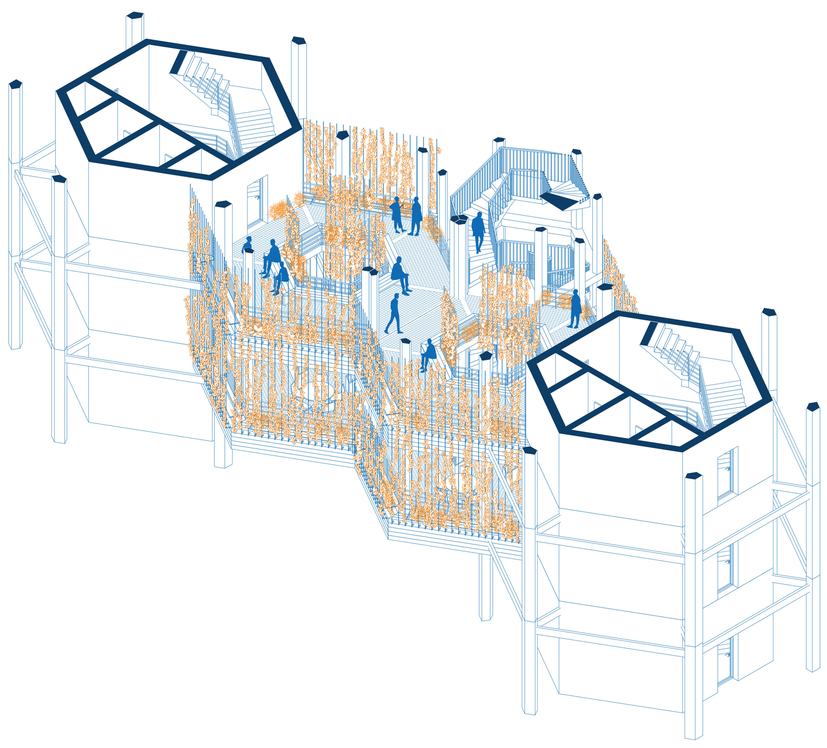
8. Coworking Landscape



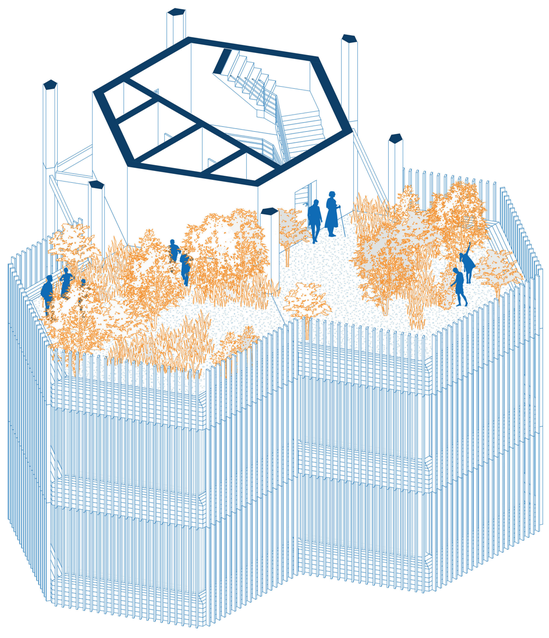
9. Mindfulness Garden -



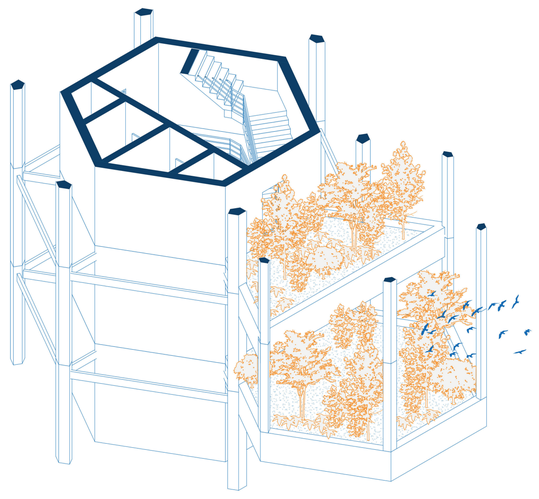
10. Vertical Park



11. Forest Playground

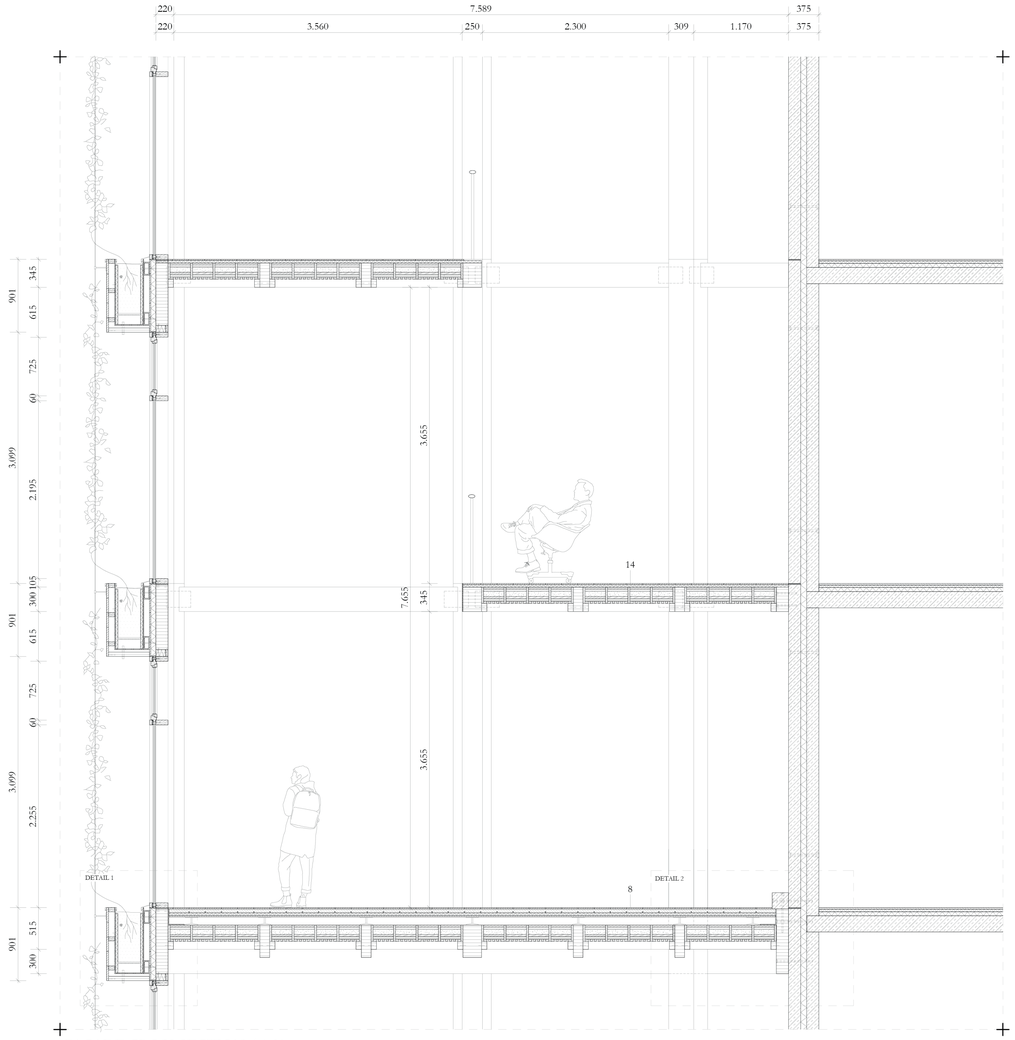


12. Wild Space





ELEVATION / 1:20



FACADE CROSS SECTION / 1:20

LEGEND

1 Summergreen Ivy vegetation
- species south side (sun): Ampelopsis aconitifolia
- species north side (shadow): Clematis lanuginosa

2 Green Facade:
- substrate
- 5 mm fleece
- 100 mm gravel
- 10 mm sheet steel trough (planter box)

3 Ø 20/5 mm steel pipe

4 Ø 25 mm irrigation hose

5 Steel rope clamps / 4 mm steel rope

6 60/230 mm Timber facade with triple glazing

7 800/150 mm Glued-laminated timber (GLT) beam

8 Loadbearing floor:
- 15 mm parquet
- 50 mm heating screed
- 30 mm impact soundproofing
- 18 mm formwork element
- 102 mm installation space

9 Lignatur - Geometry surface elements (LFE):
- 65 mm thermal insulation filling
- room acoustics (sound absorption)

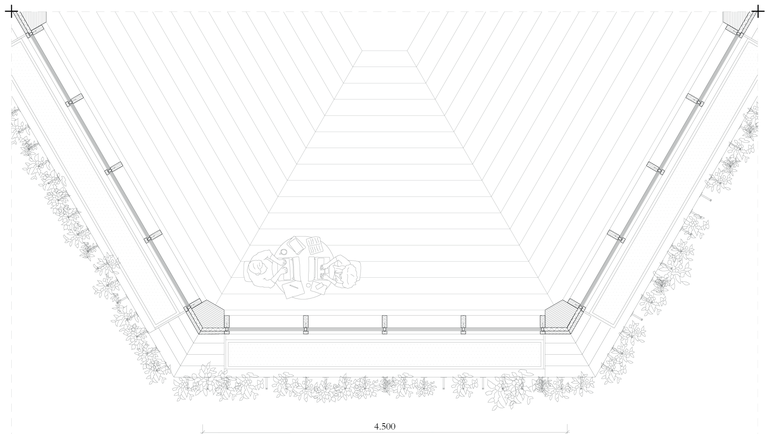
10 375 mm Core wall (sandwich construction):
- 150 mm prefabricated reinforced concrete elements (2x)
- 75 mm thermal insulation (hempwool)
- bolt connection

11 300 mm Core floor:
- 20 mm screed
- Polyethylene (PE) foils
- 30 mm impact soundproofing
- 50 mm thermal insulation
- 200 mm reinforced concrete

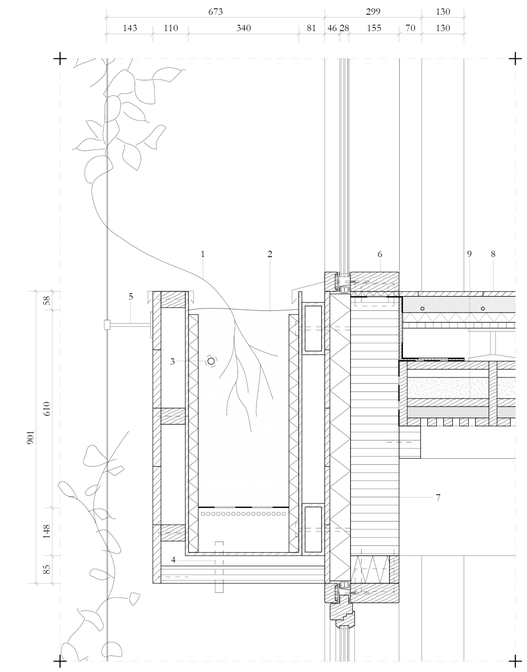
12 200/200 mm reinforced concrete element (needed for cantilevering)

13 350/350 mm Glued-laminated timber (GLT) column (supports the cantelevering beams)

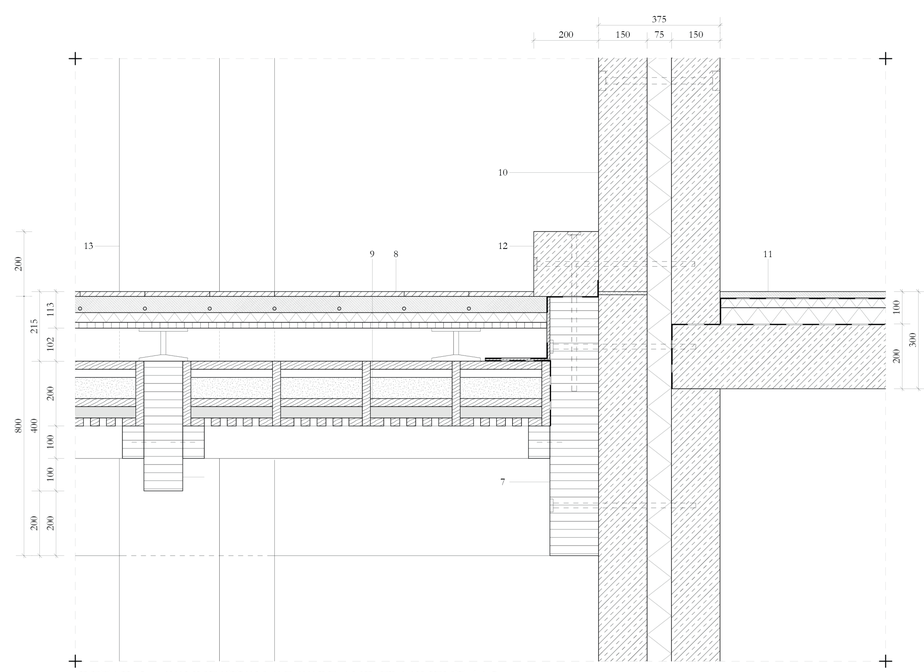
14 In-between flexible floors



FACADE HORIZONTAL SECTION / 1:20



DETAIL 1 - GREEN FACADE / 1:5



DETAIL 2 - CONNECTION OF CORE AND FRAGMENT / 1:5



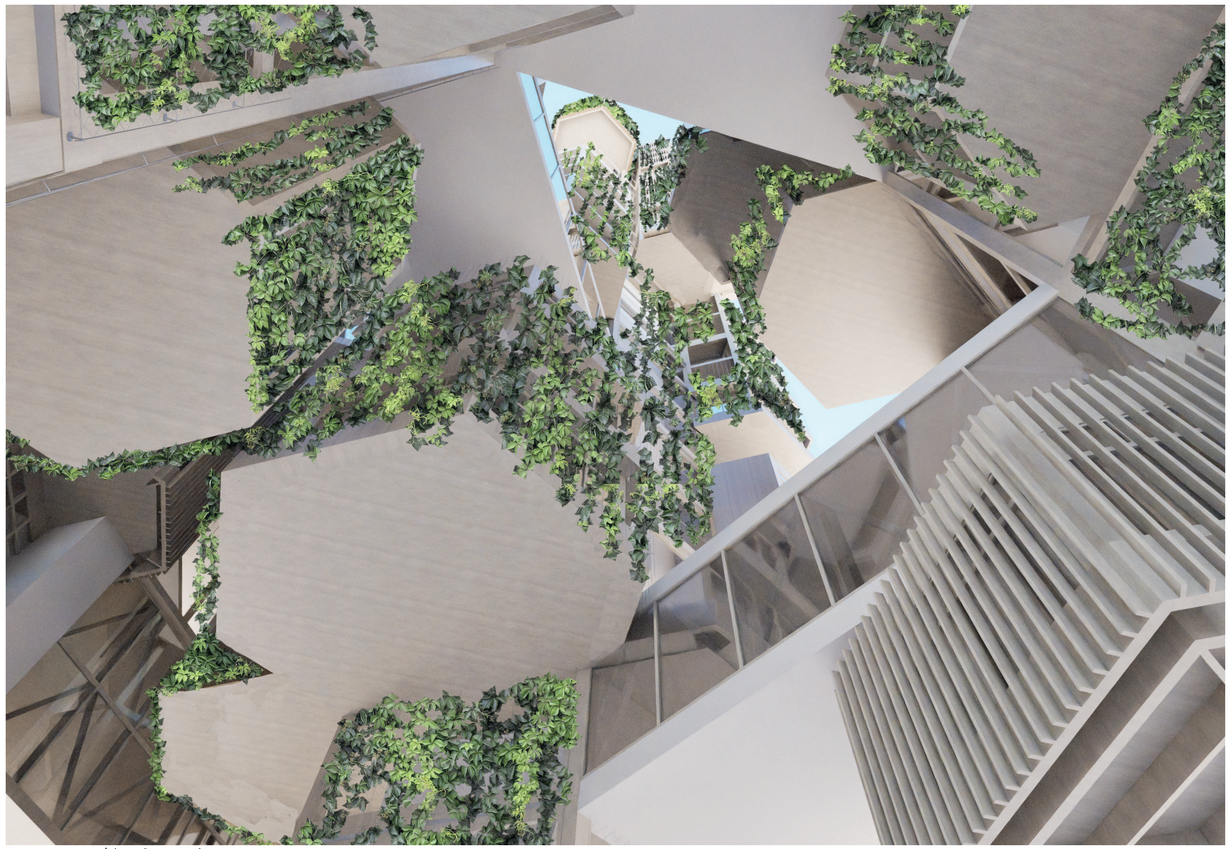
Interior View | Light Library



Interior View | Bridge



Interior View | Café and Meeting Space



Exterior View | 'Looking Up'