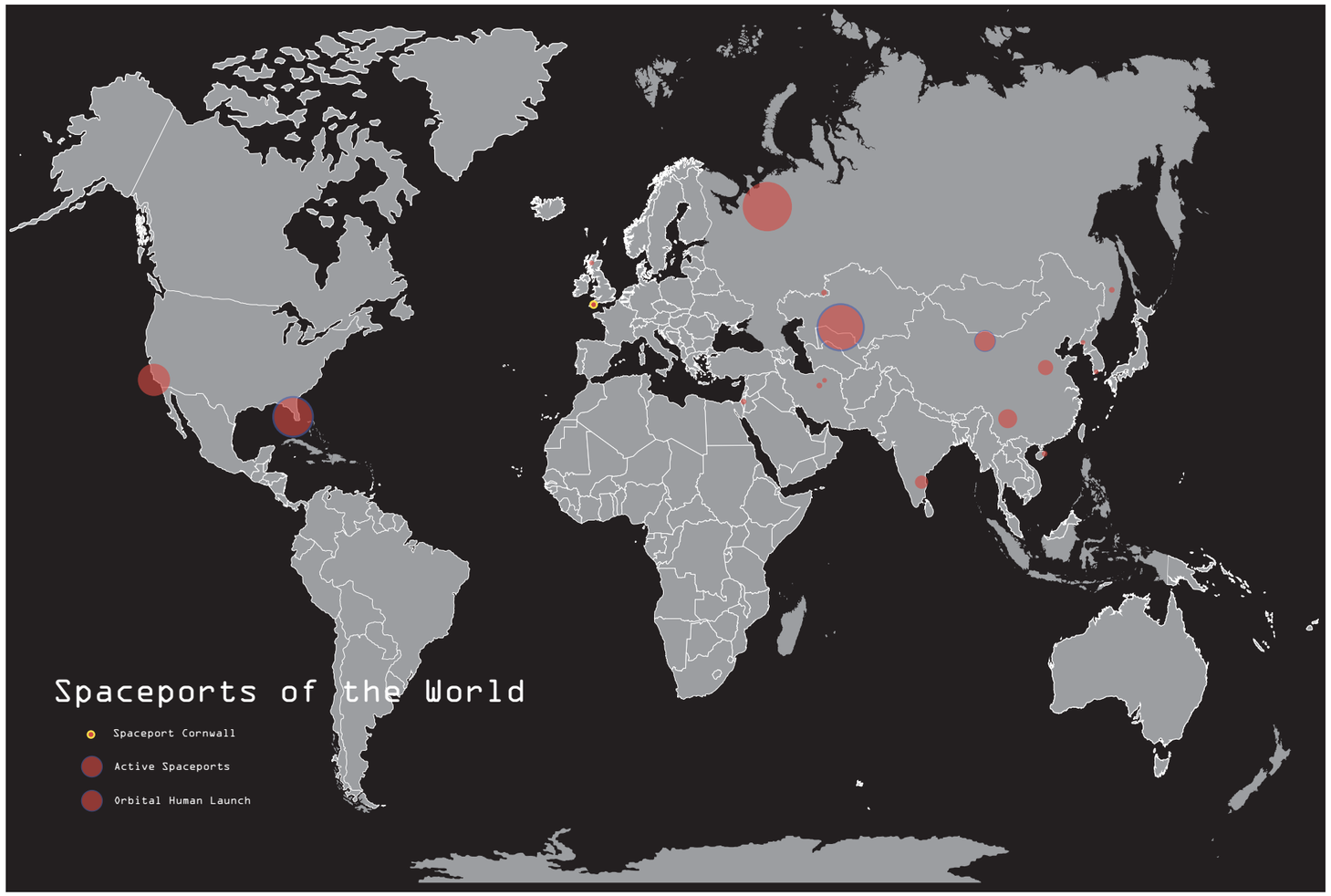
Liftoff

ARC330 Falmouth University

Maya Angelus



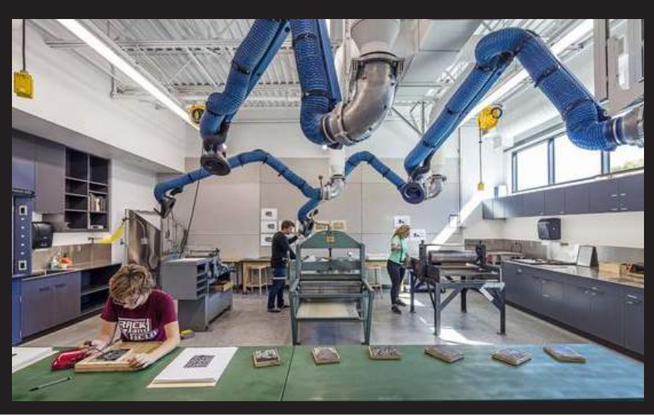
Conceptual Approach



The project considers the Orbital, Global and Local disposition to integrate the building's program organically into the present context. While focusing on space development, the project accounts for the local impact of the development. The new campus aims to enhance biodiversity on-site and design with an environmentally conscious approach. Taking into account embodied carbon and circular economy in construction materials and methods. Its goal is to animate local career routes with community outreach. The proposed department building for Astronautical engineering, material research, and testing facility attracts attention to space research, encouraging sponsors and young people's career interest in the field. Liftoff, the proposed building facilitates high-quality technological facilities while encouraging community engagement. Liftoff offers undergraduate, postgraduate, and PhD research residencies with a flexible and versatile academic environment. This comprehensive Masterplan could elevate the position of Newquay in international space research and technology for further development.


CFM 5C

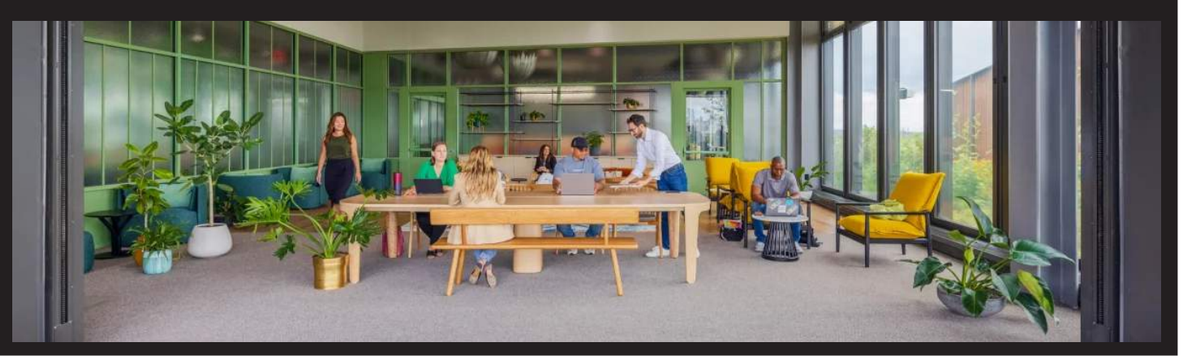




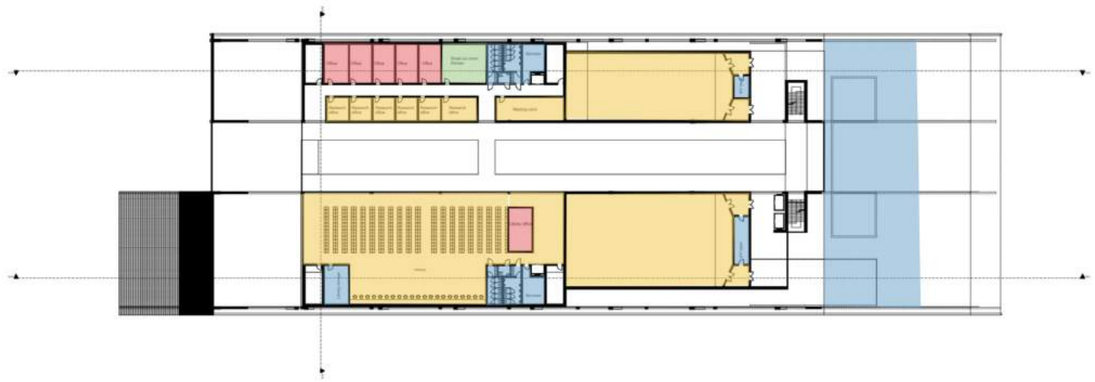














Social space

Teaching facility

Laboratory

Technical facility

Staff

Services

Laboratories



Material testing facilities



White board partitions walls





Multiple test environment facility
Clean rooms, TVAC and EMC testing

Extensive service requirements, EGSE



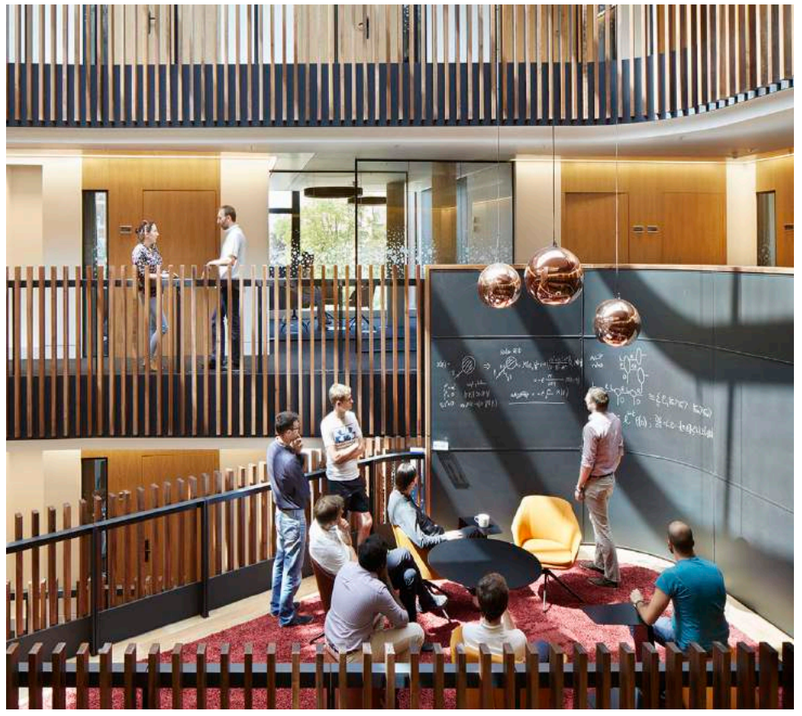






Study paces and research offices





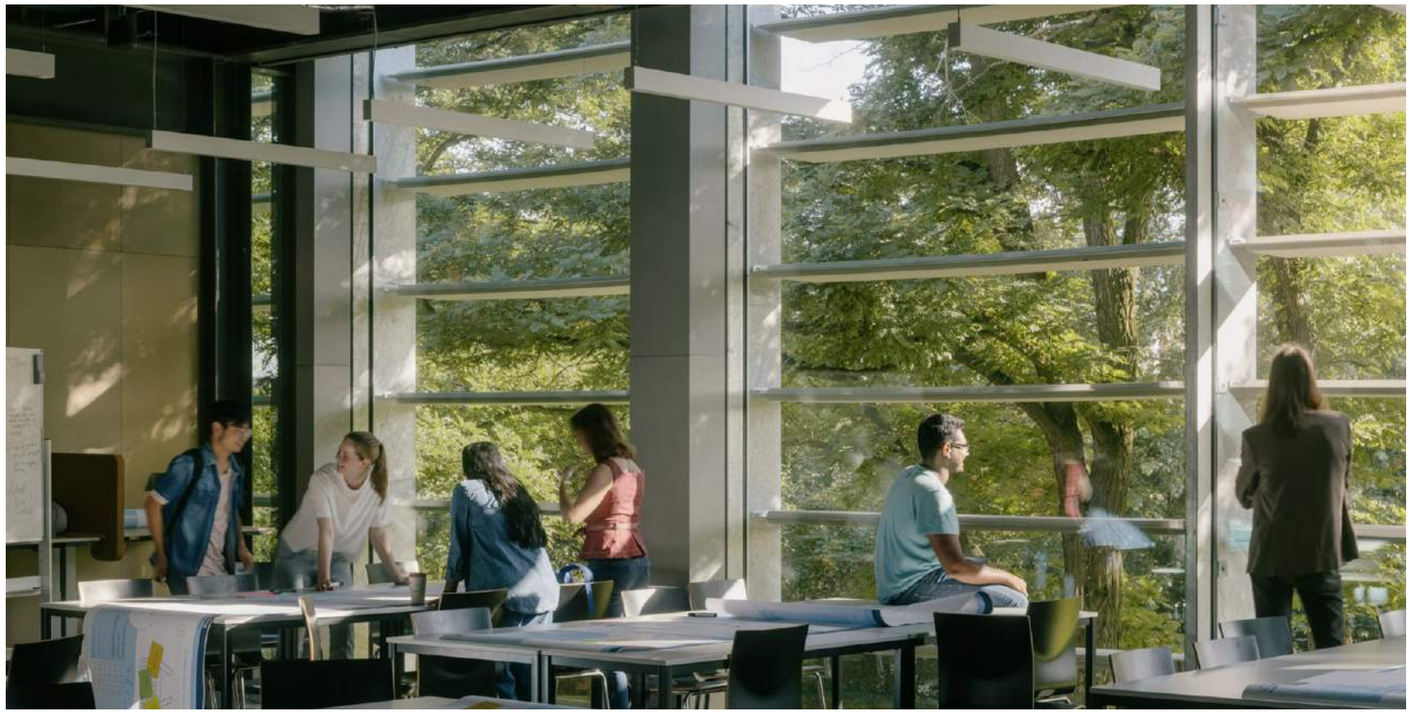
Individual and group study spaces scattered around the building

Long term research offices for PHD students and professors



Academic flexible spaces

Open studio space





Flexible seminar rooms

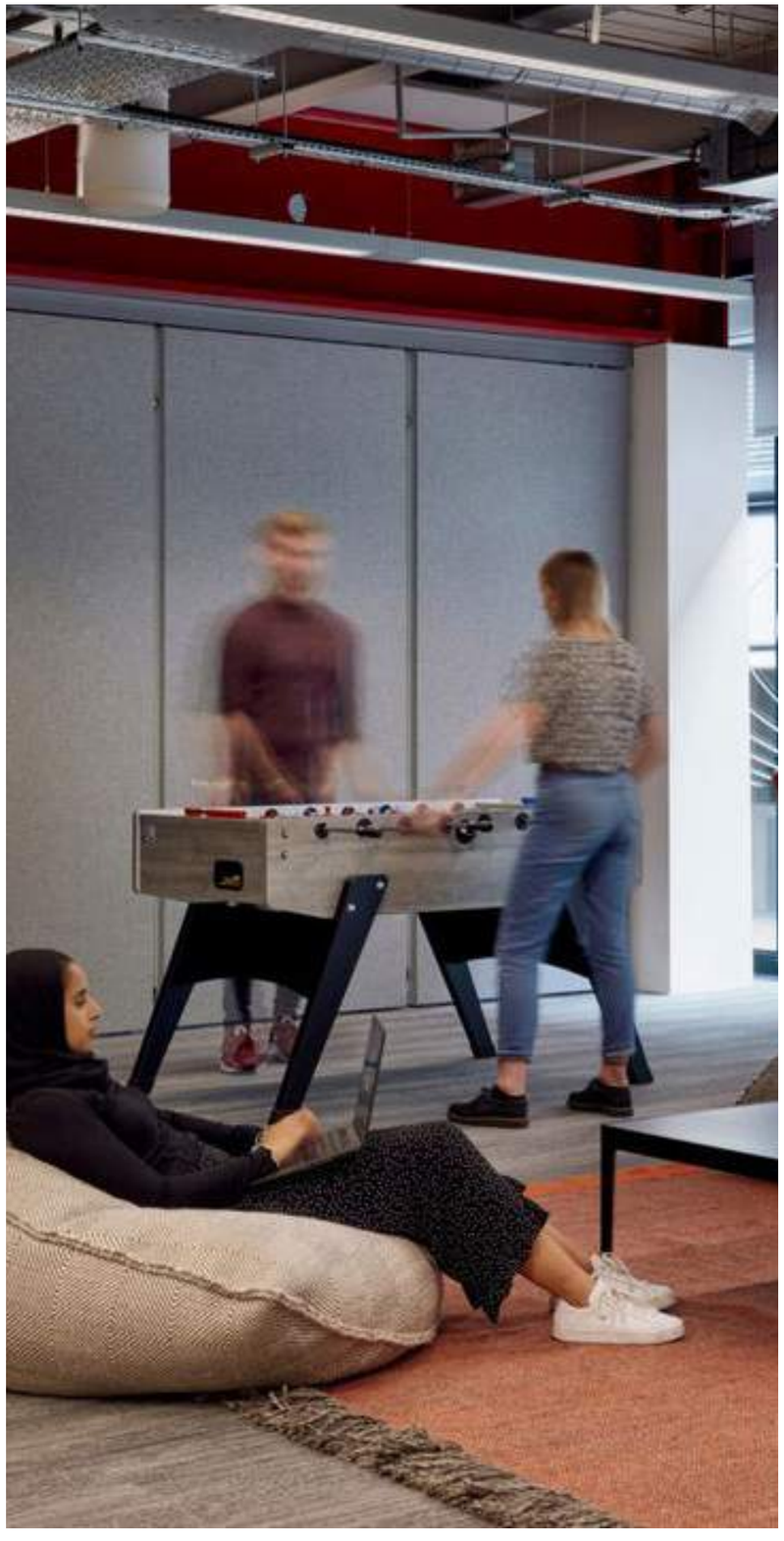
Social spaces



Social multifunctional study staircase



Fun hub with pool tables and breakout areas



Viewing Platform





The “Control room”
Viewing platform for launches
Event space and cafe/bar



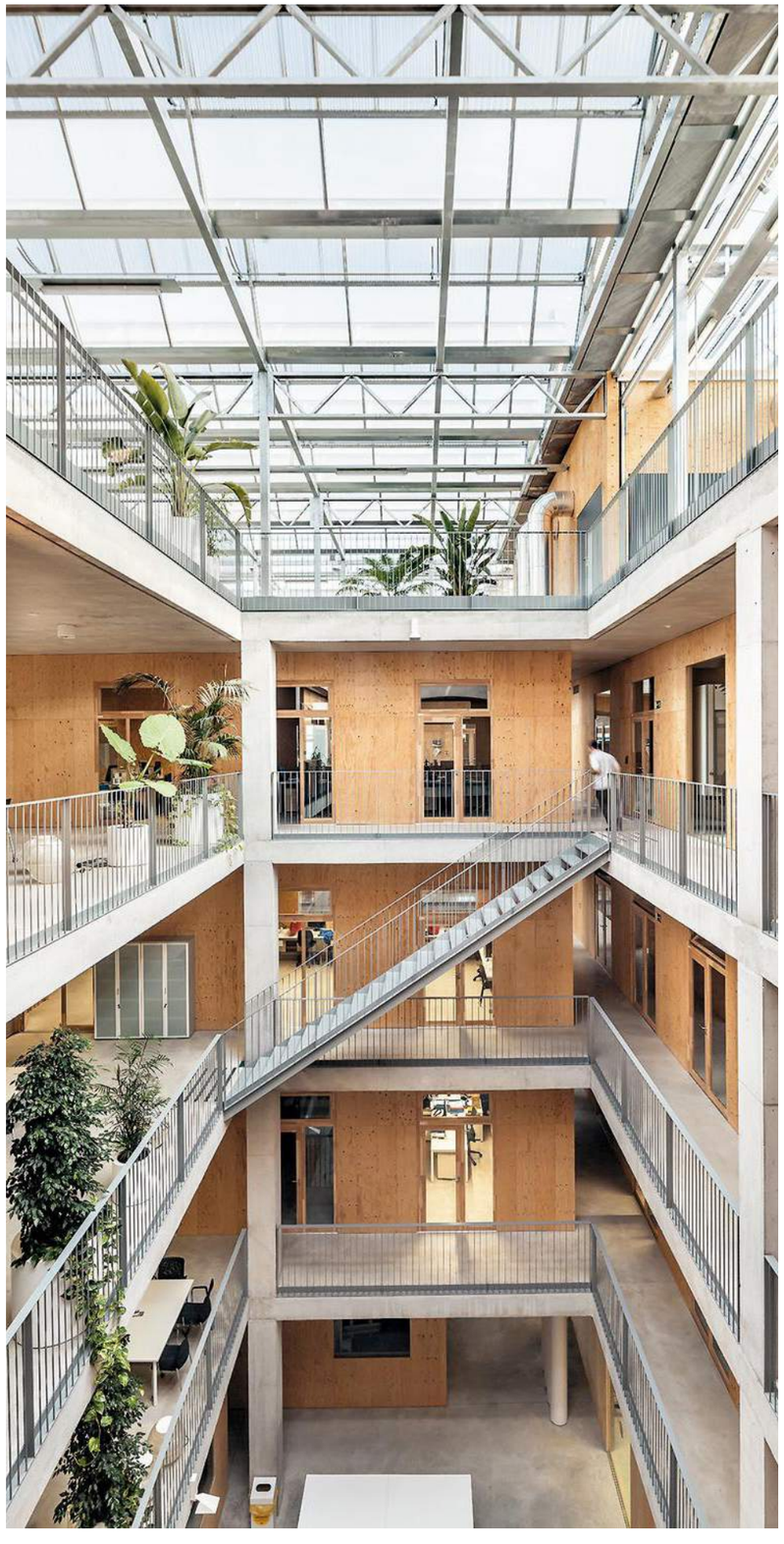
Main circulation

Window connection to the technical secured spaces



Bright and airy main circulation with vegetation







Masterplan - Movement strategy

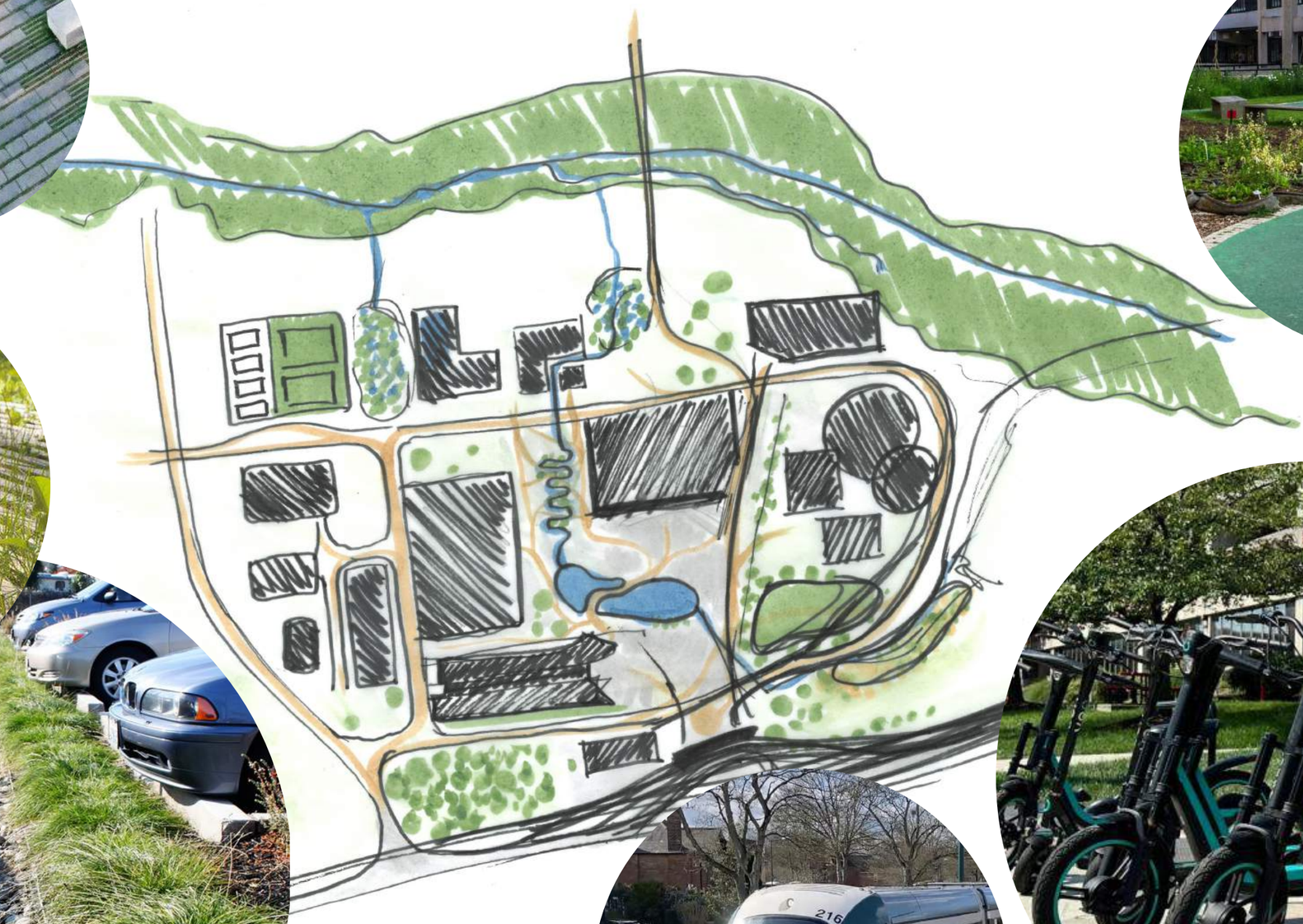


Permeable pavement





Green carpark



Local tram



Running and cycling tracks



Bike share on campus



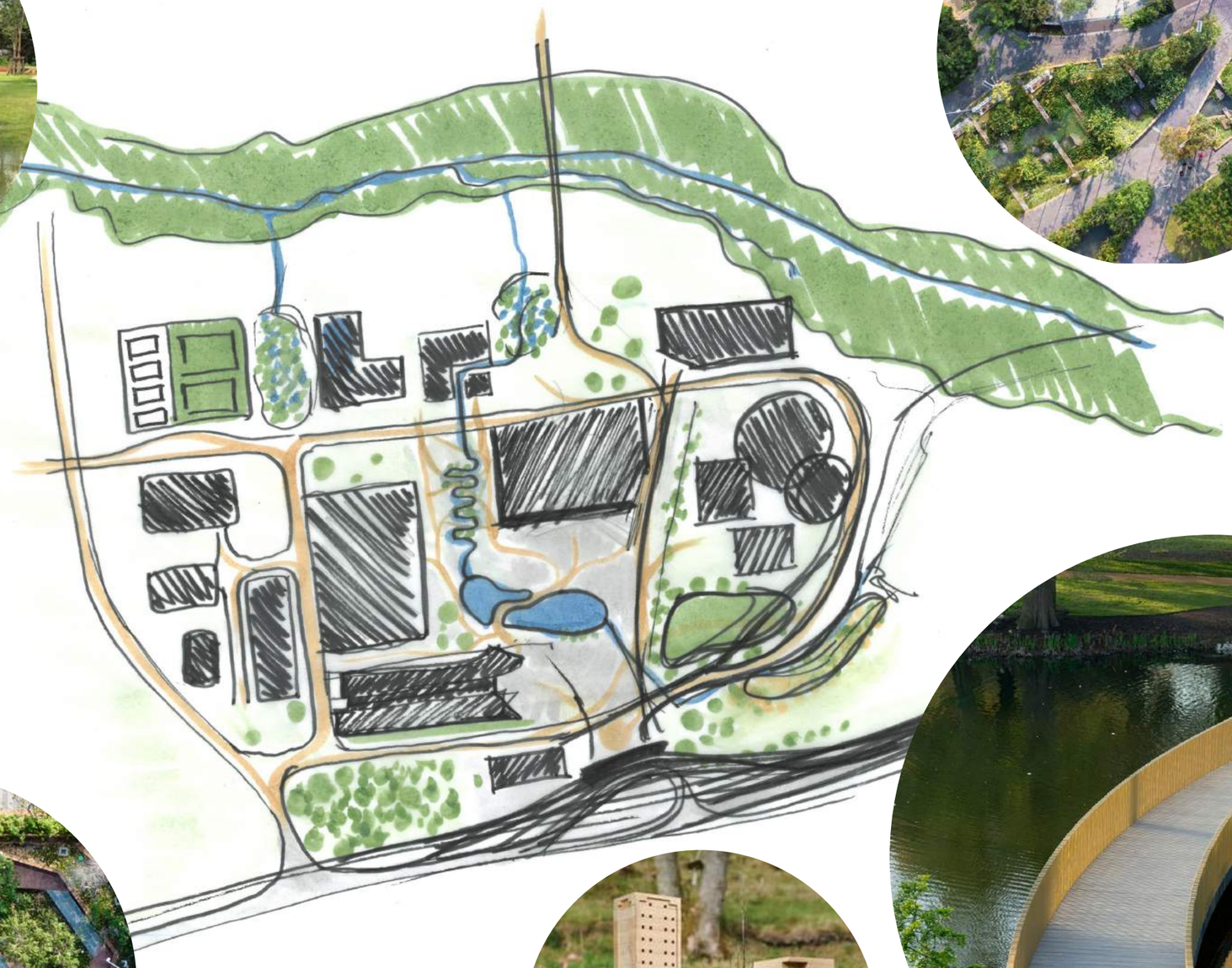
Masterplan - Water management



Retention pond



Retarder stream





Constructed wetland

Seamless bridge





Outdoor study spaces

Bee meadow





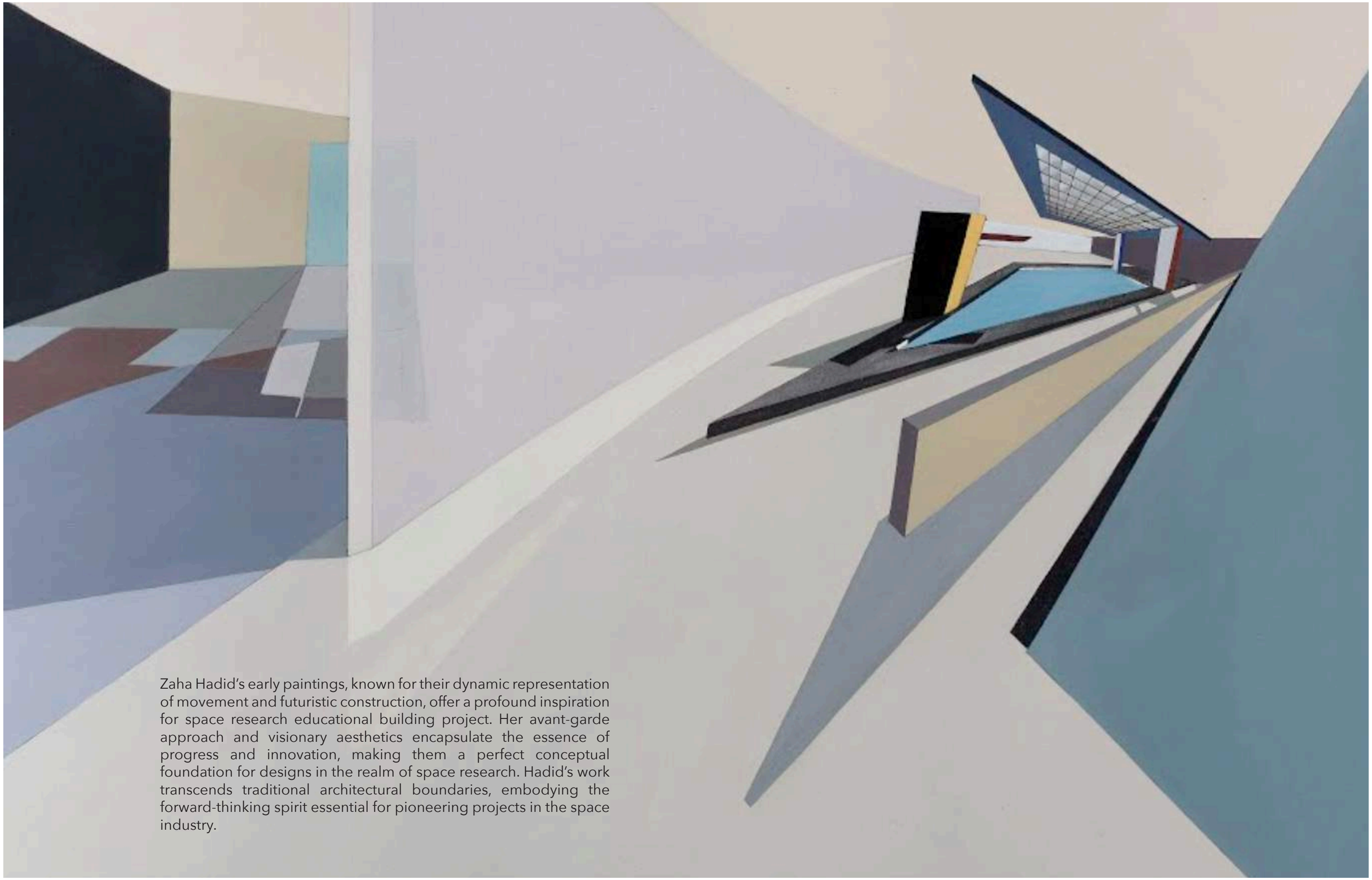
Data Centre

Data centre's waste heat can provide sustainable energy source
to

Swimming pool

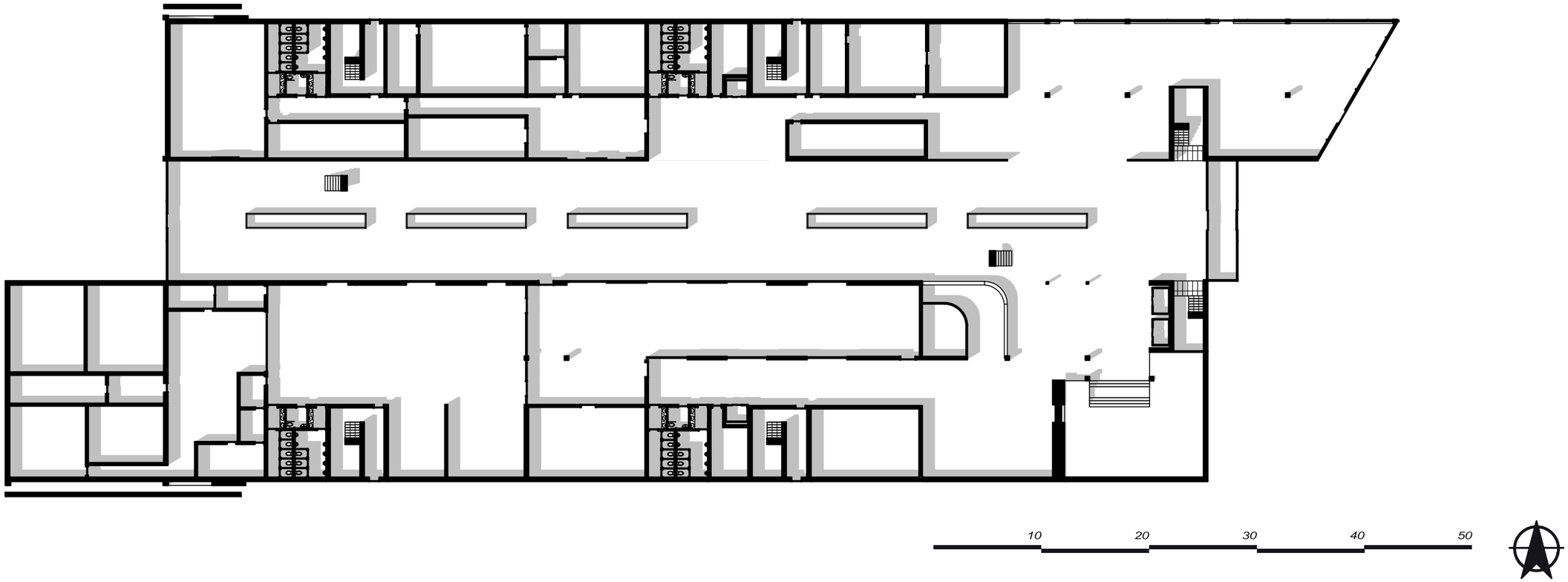
Water is an ideal heat storage medium due to the water's high thermal capacity



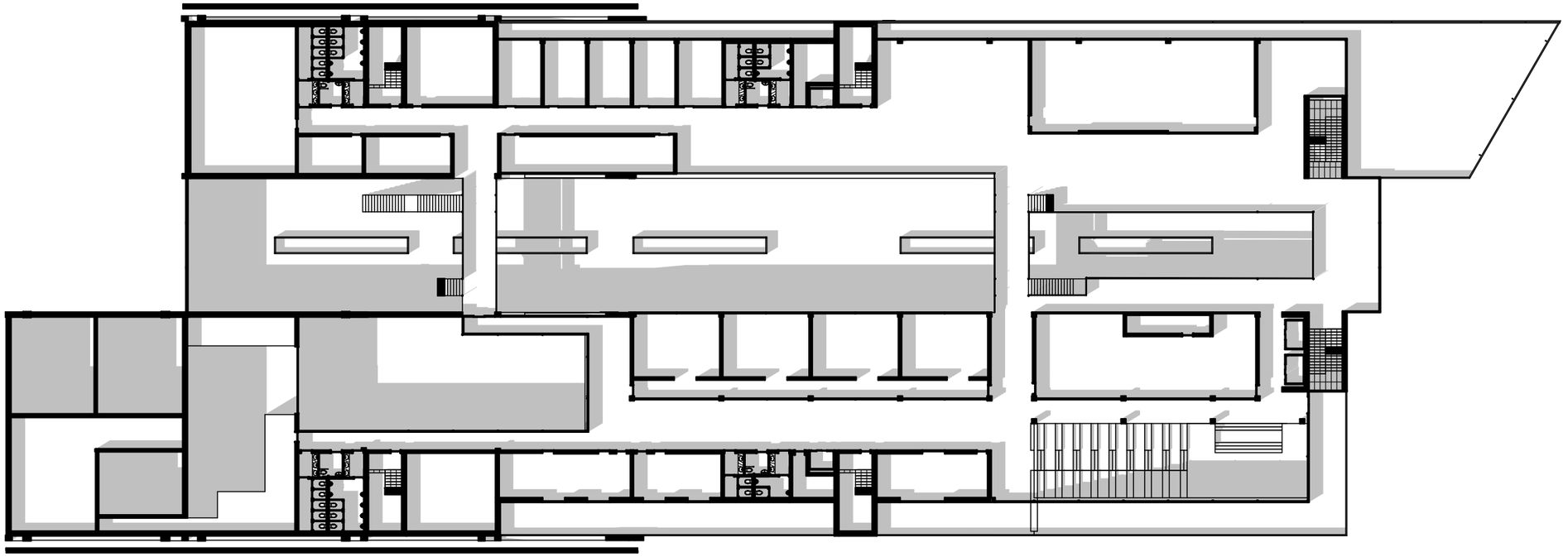


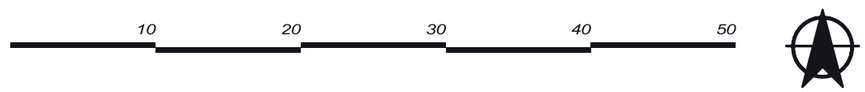
Zaha Hadid's early paintings, known for their dynamic representation of movement and futuristic construction, offer a profound inspiration for space research educational building project. Her avant-garde approach and visionary aesthetics encapsulate the essence of progress and innovation, making them a perfect conceptual foundation for designs in the realm of space research. Hadid's work transcends traditional architectural boundaries, embodying the forward-thinking spirit essential for pioneering projects in the space industry.

Ground Floor Plan

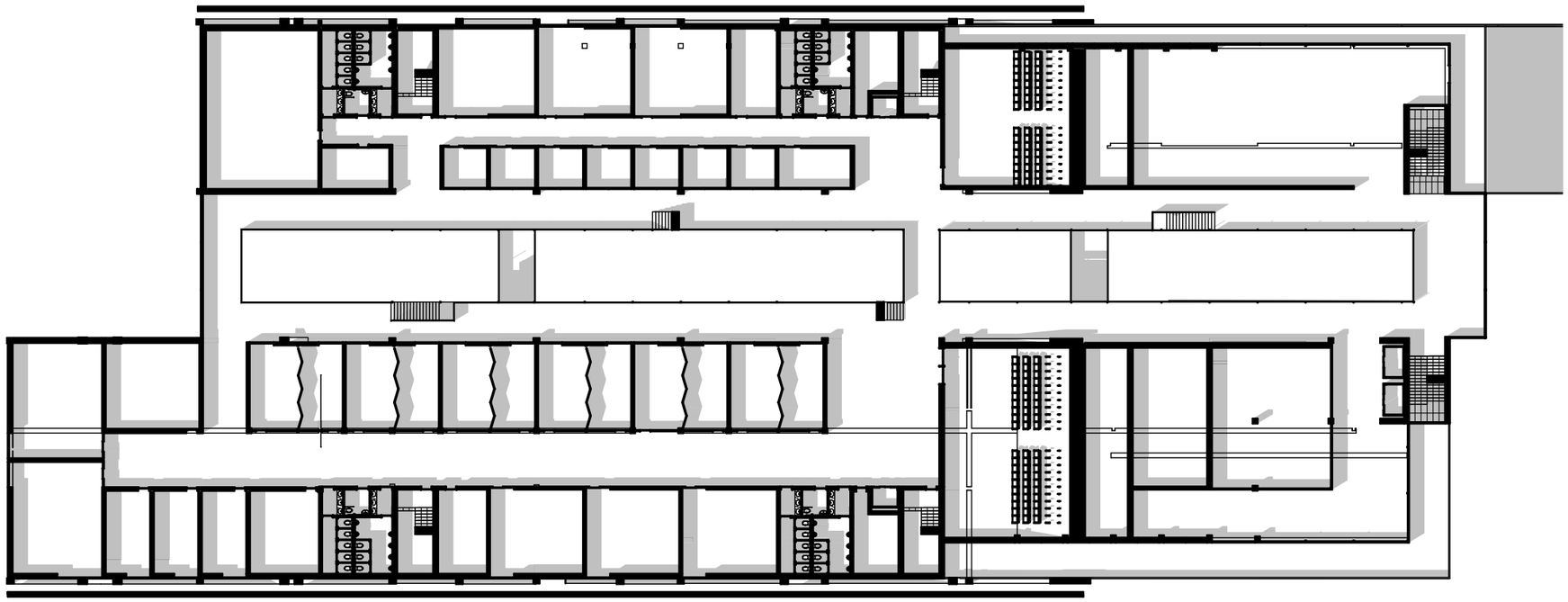


Firs Floor Plan



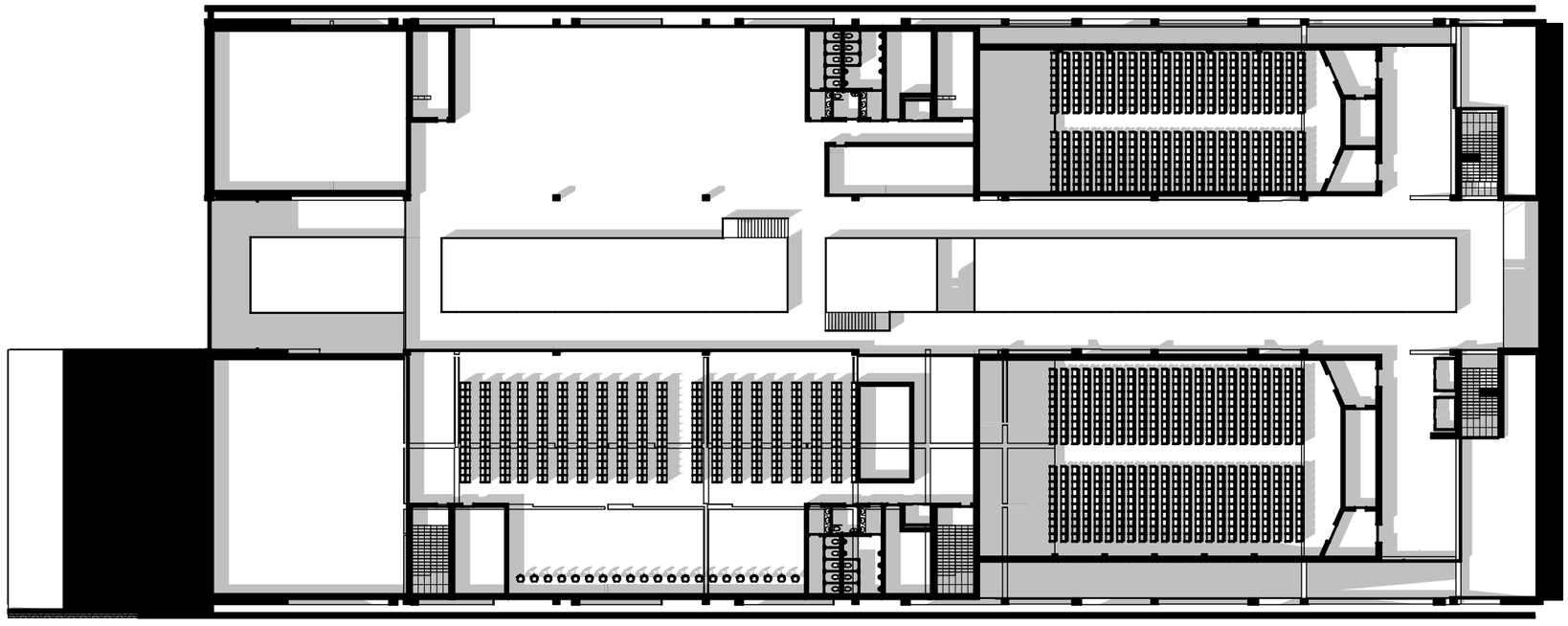


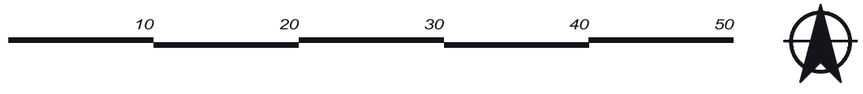
Second Floor Plan



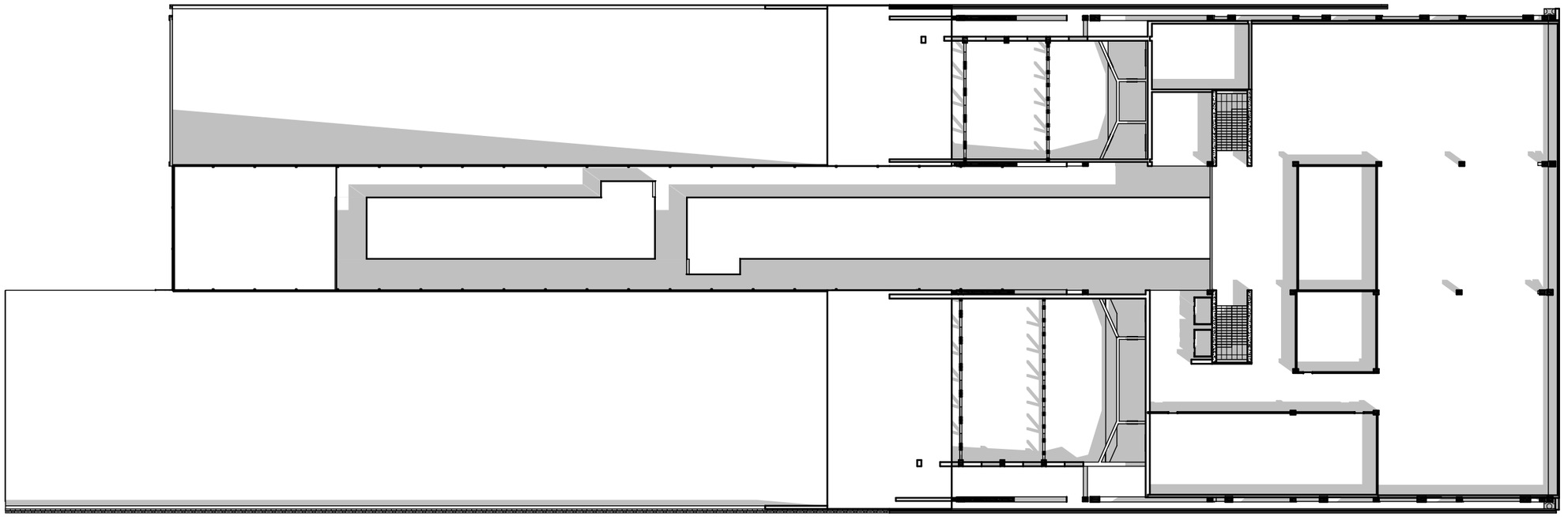
10 20 30 40 50

Third Floor Plan



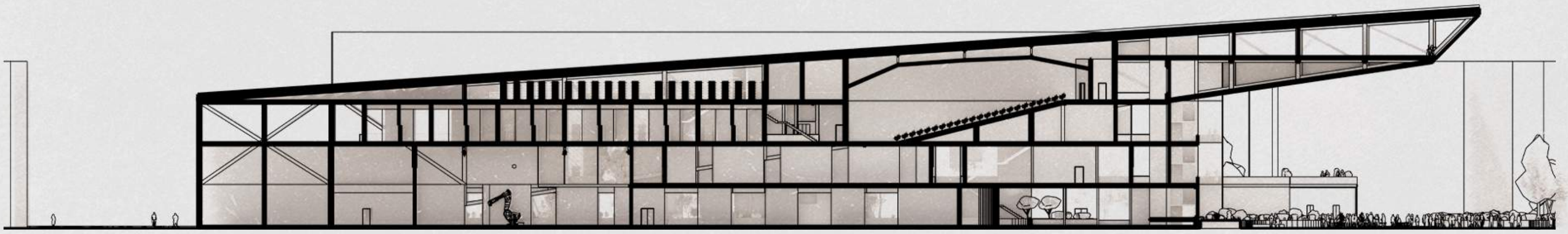


Forth Floor Plan - Viewing platform



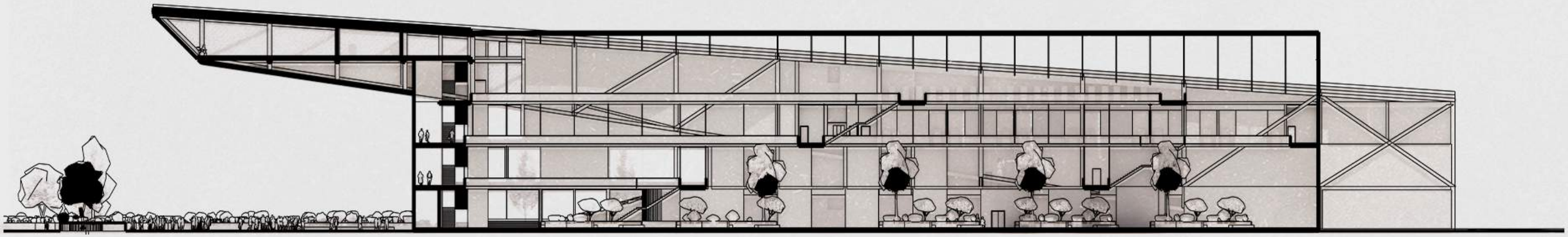
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Section AA



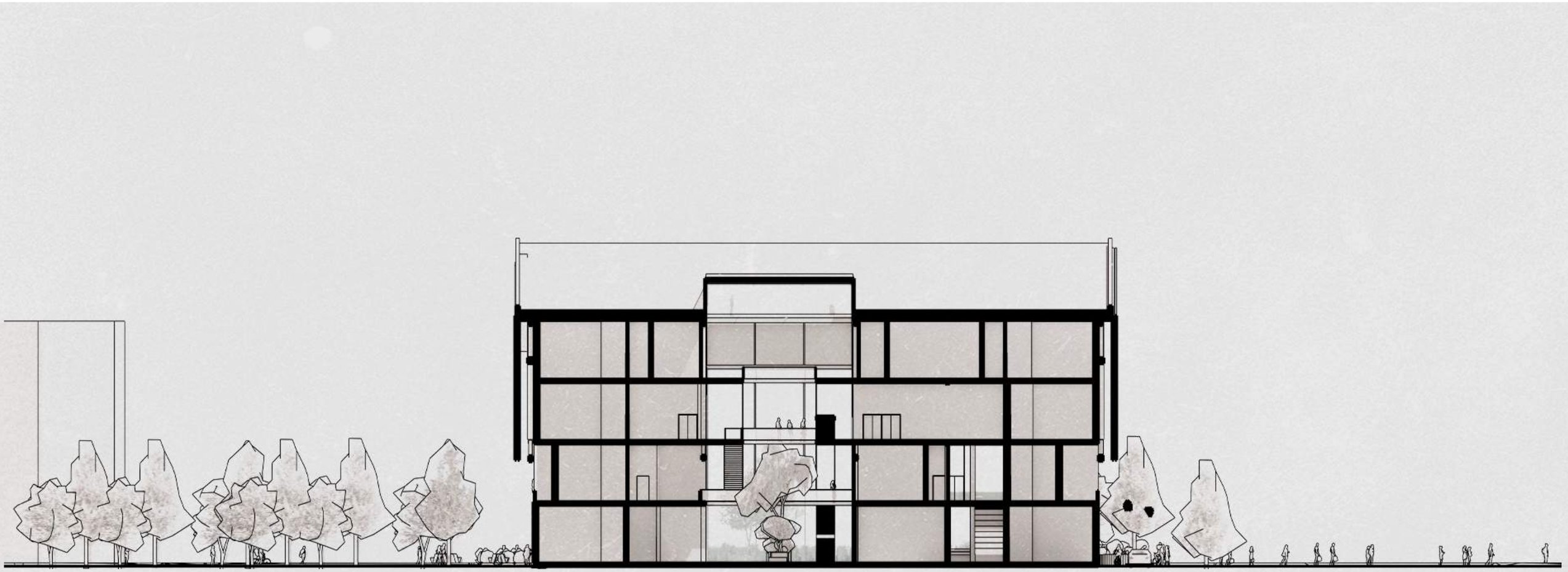
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Section BB



10 20 30 40 50

Section CC



10 20 30 40 50

Section DD



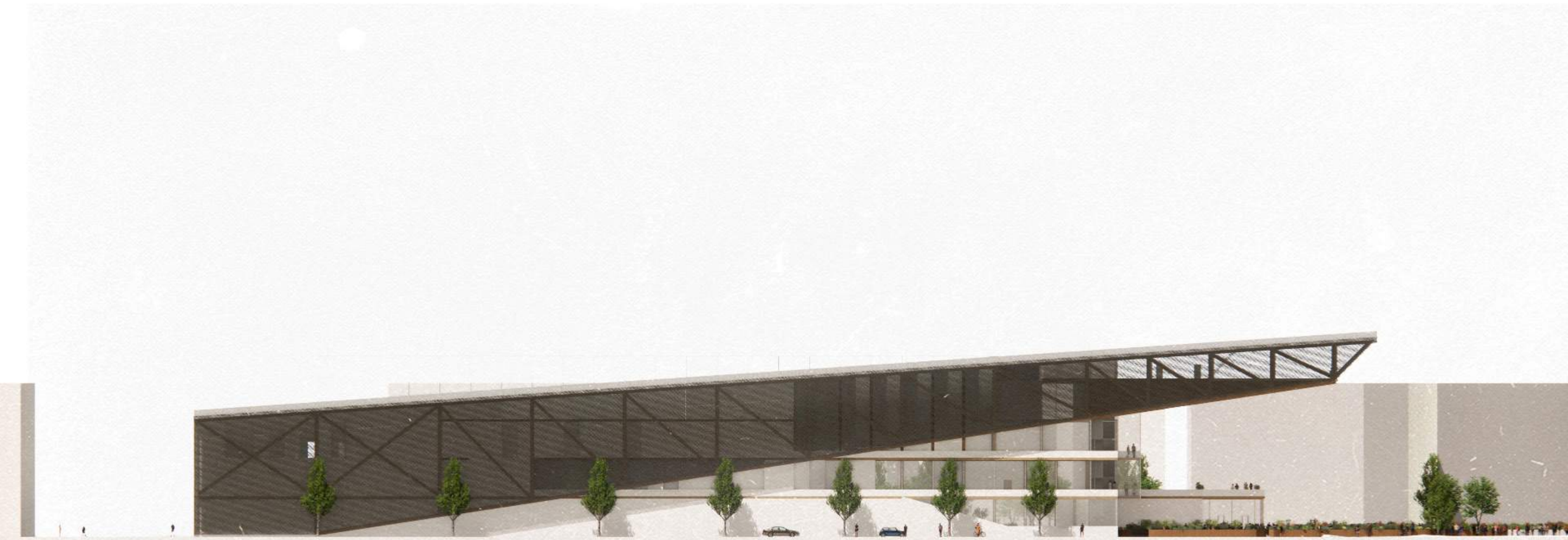
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Section DD



10 20 30 40 50

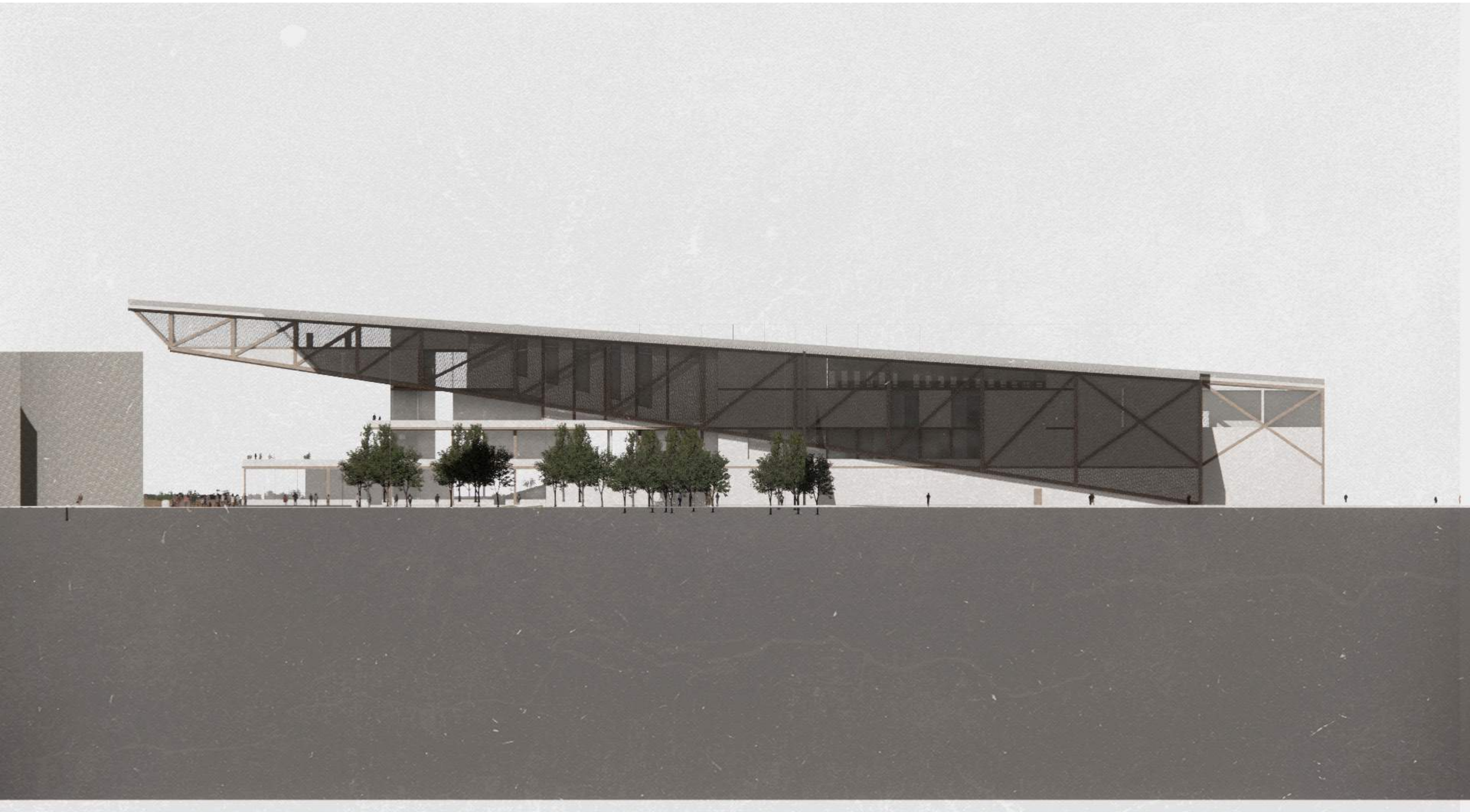
South Elevation



East Elevation



North Elevation



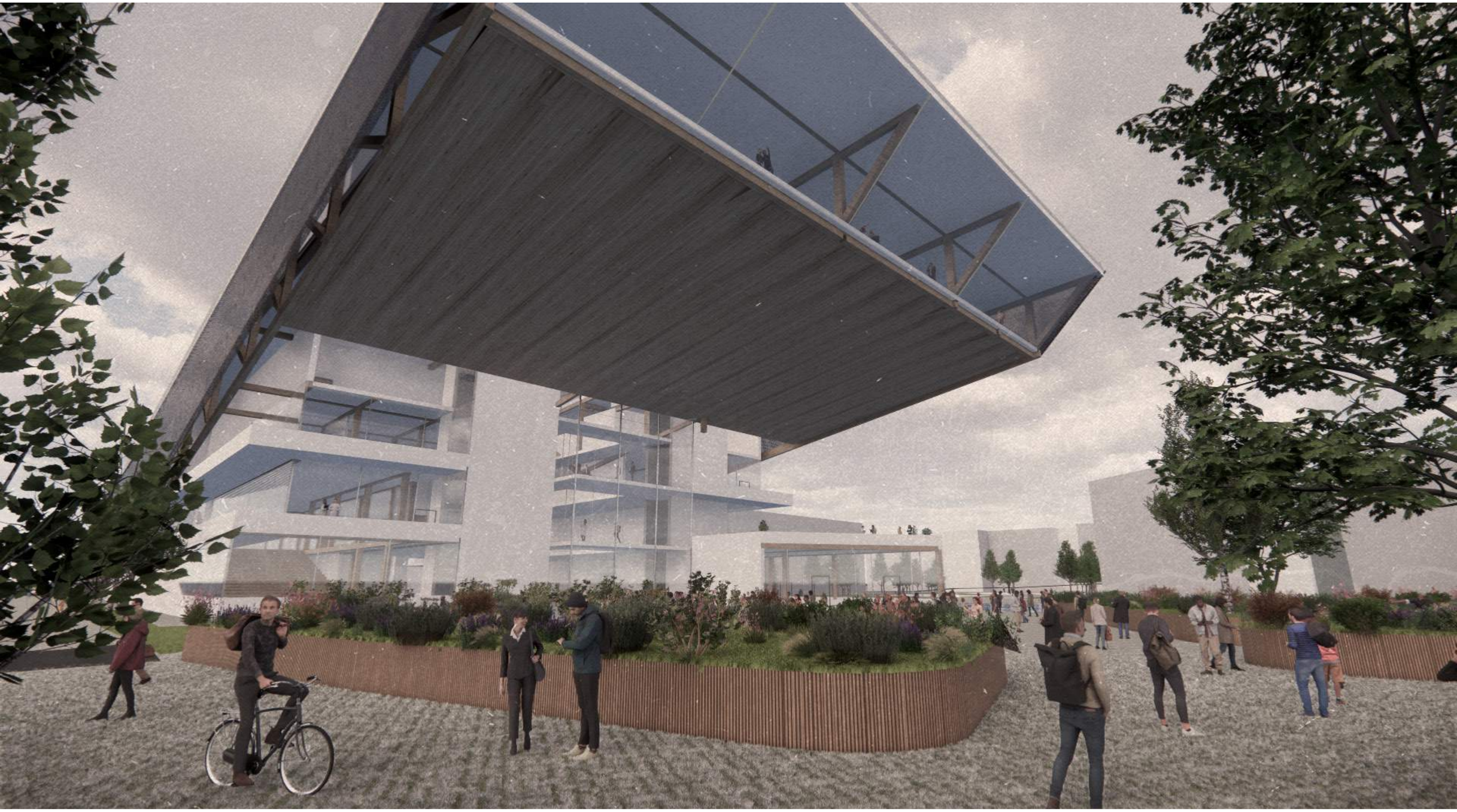
West Elevation



External Views



External Views



External Views



Interior Views



Interior Views



Interior Views



Interior Views



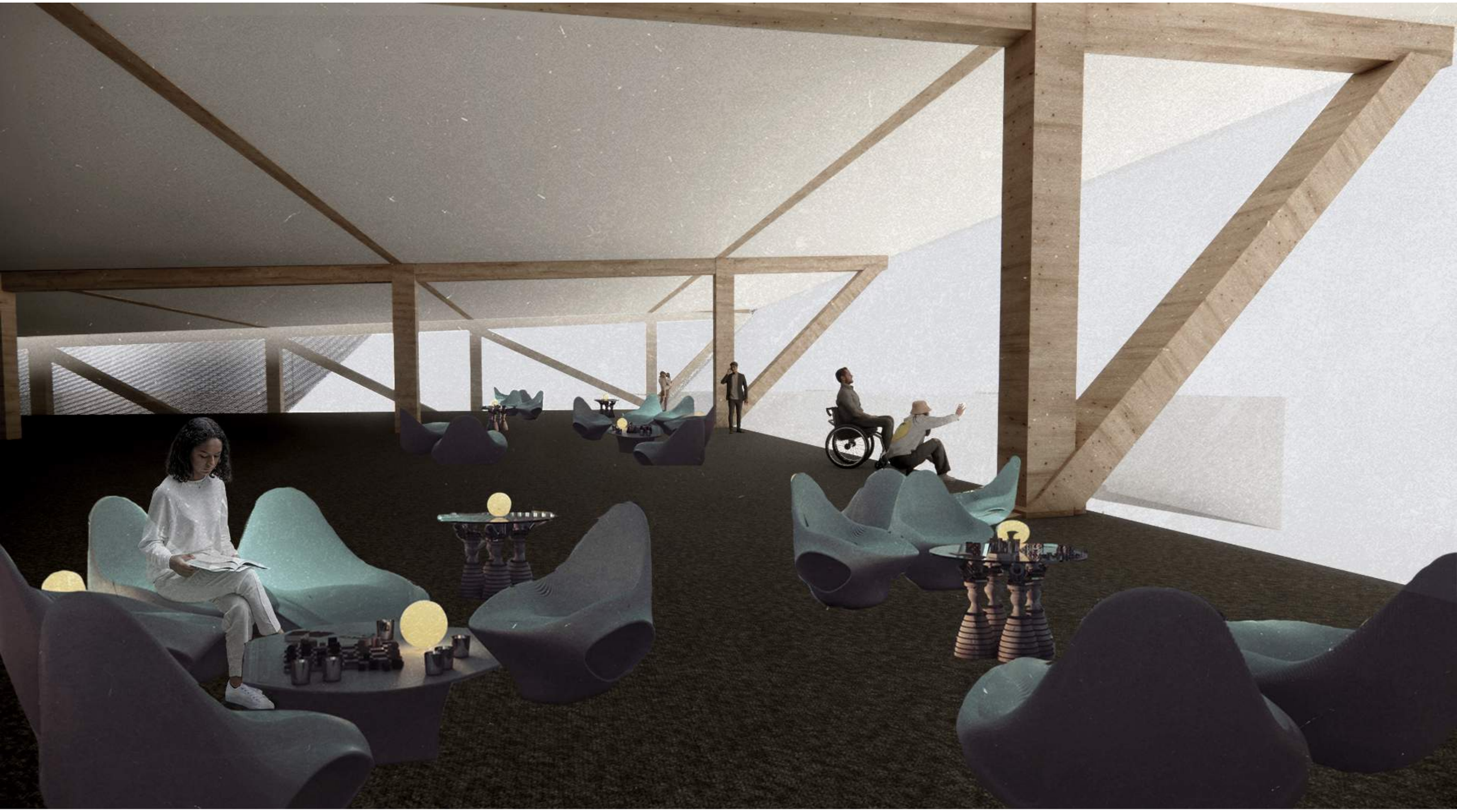
Interior Views

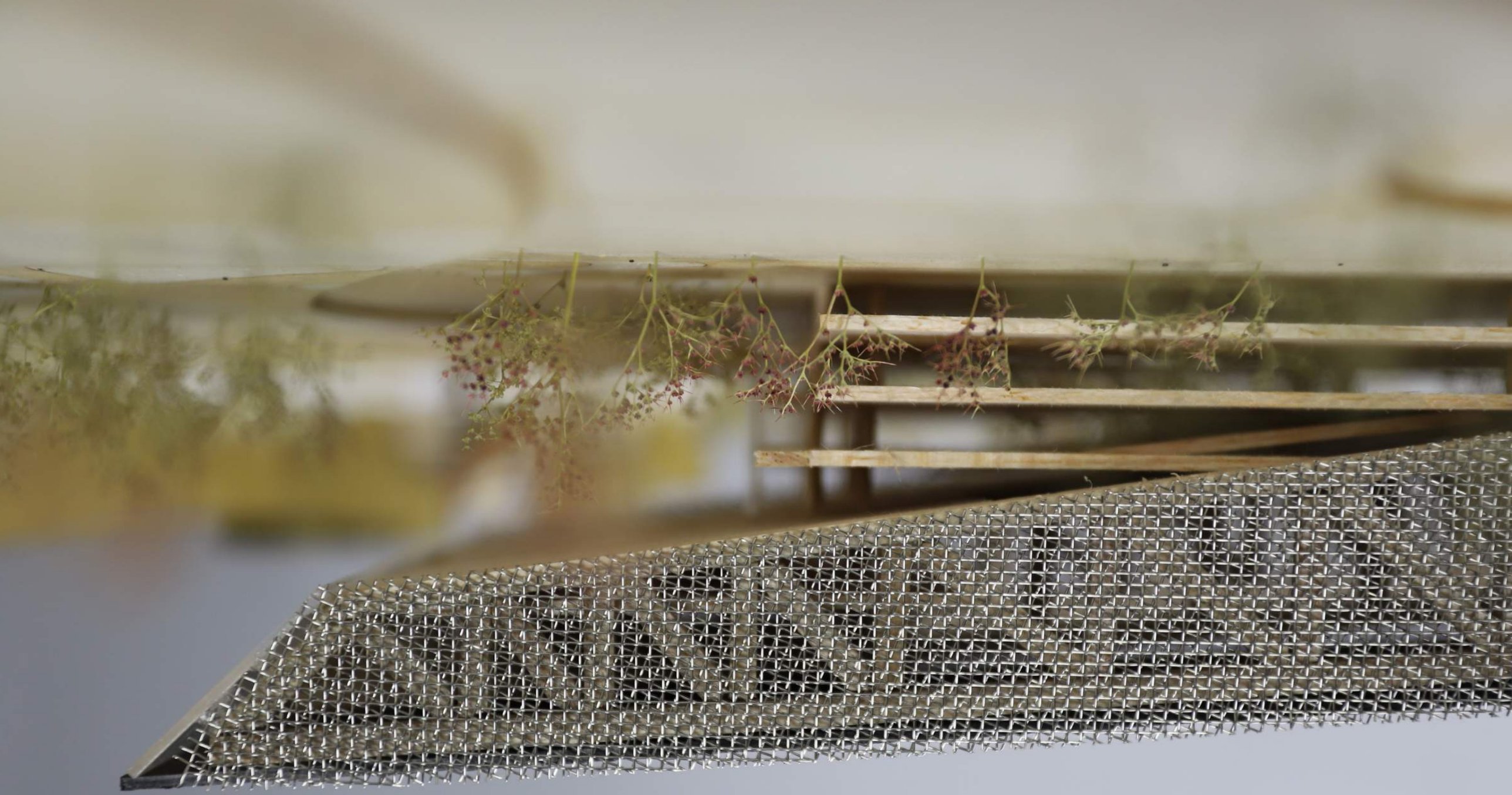


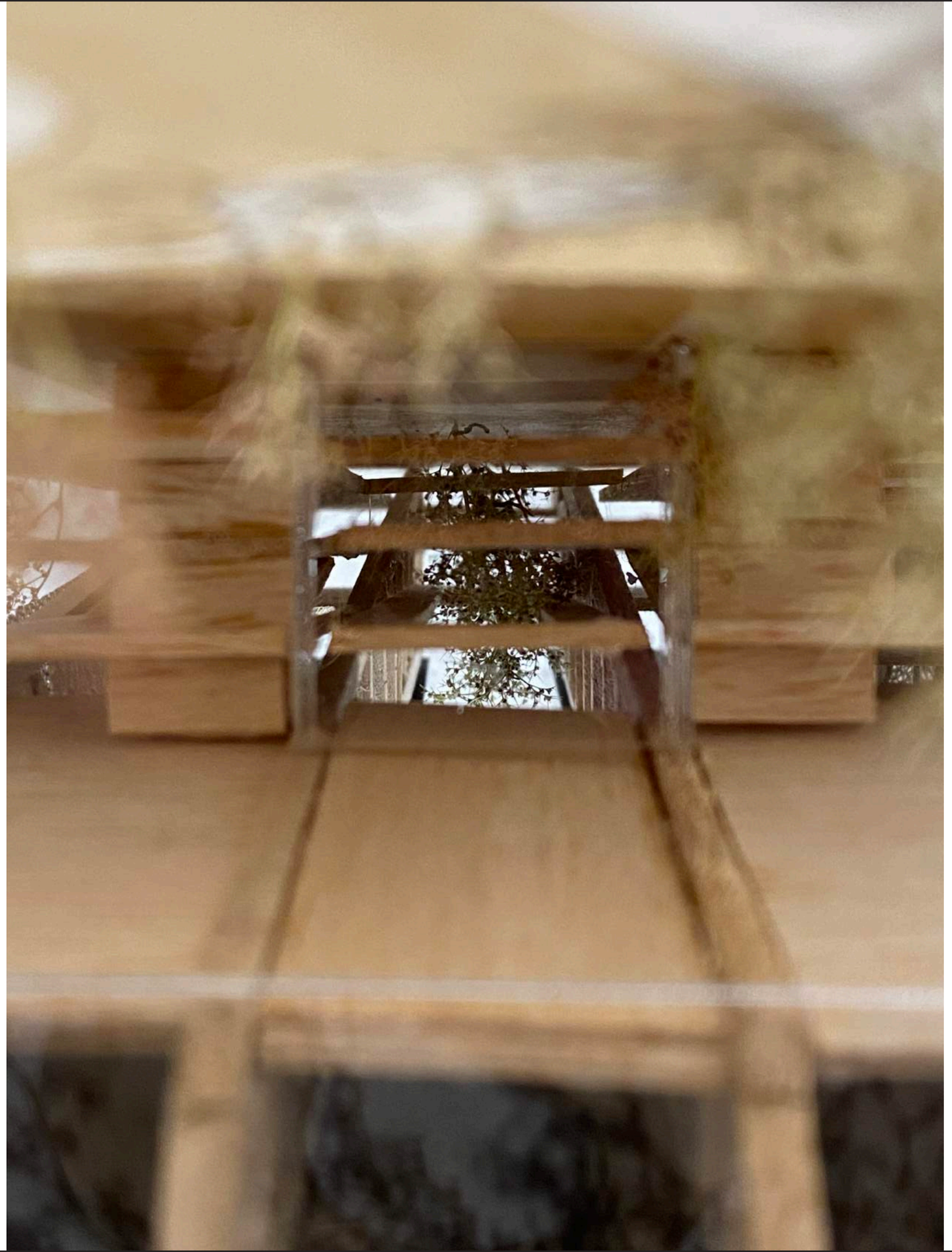
Interior Views

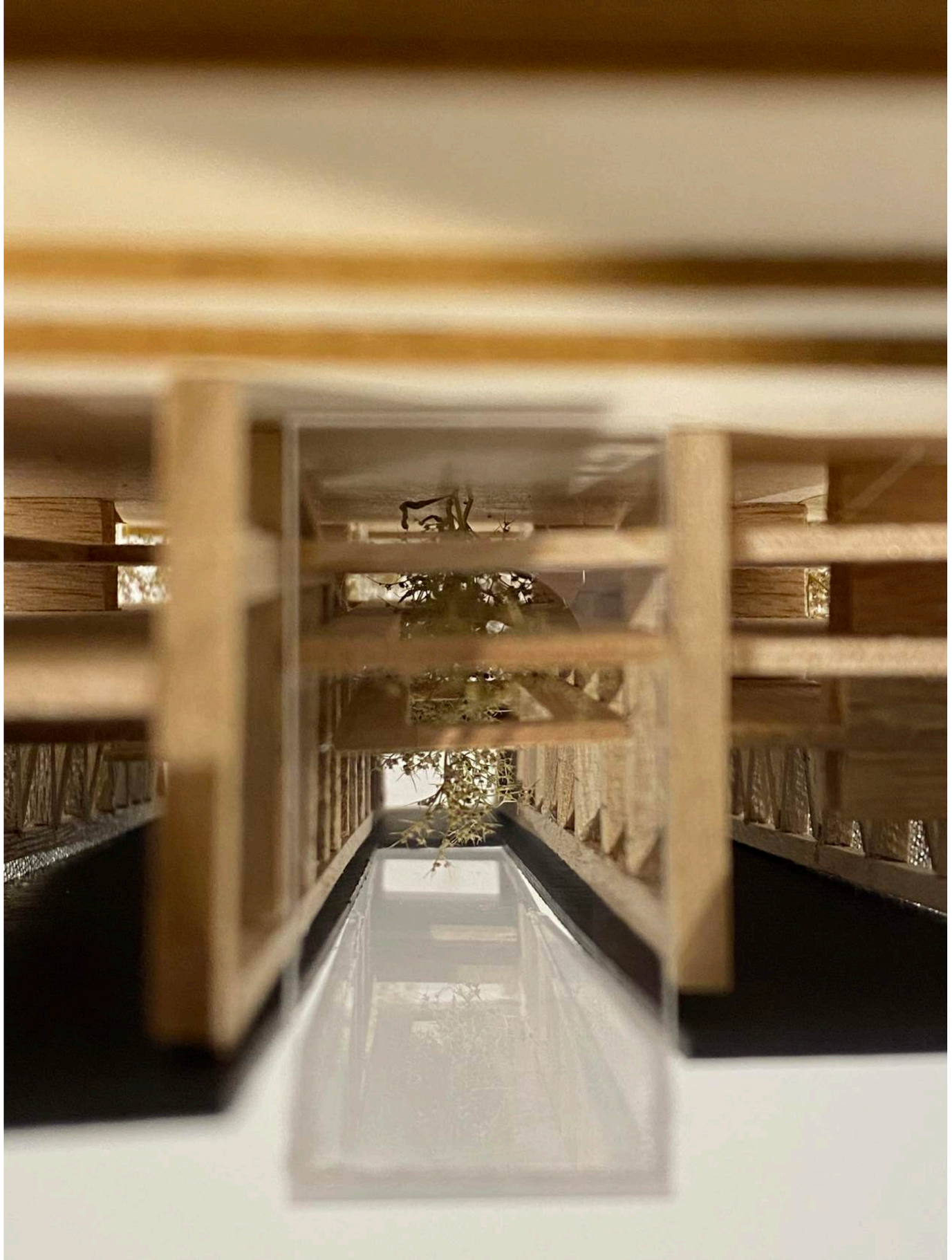


Interior Views

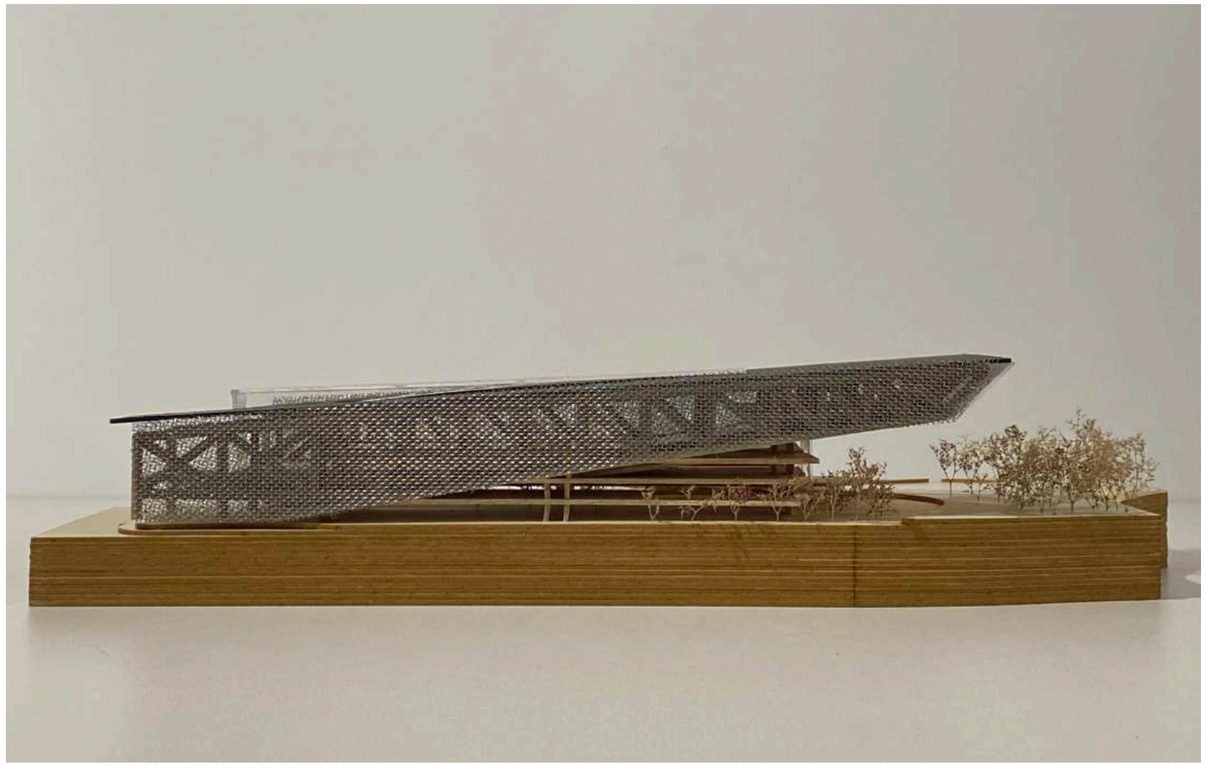


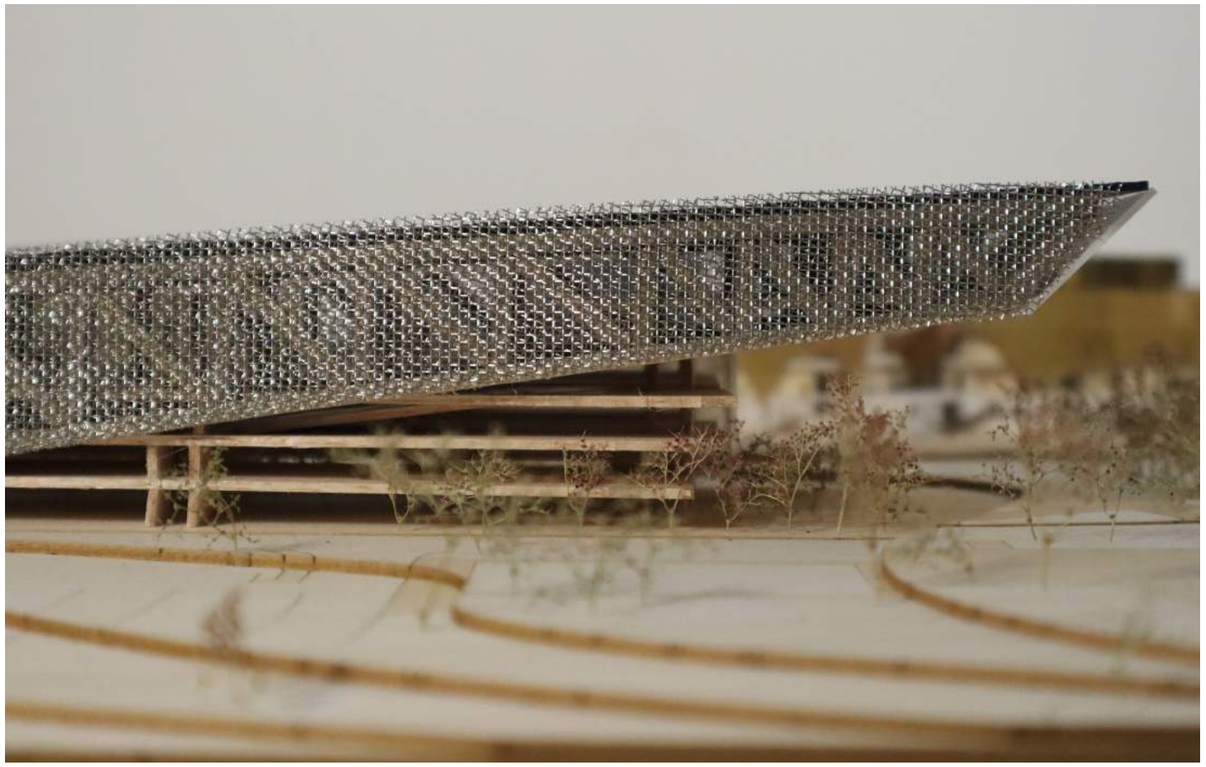


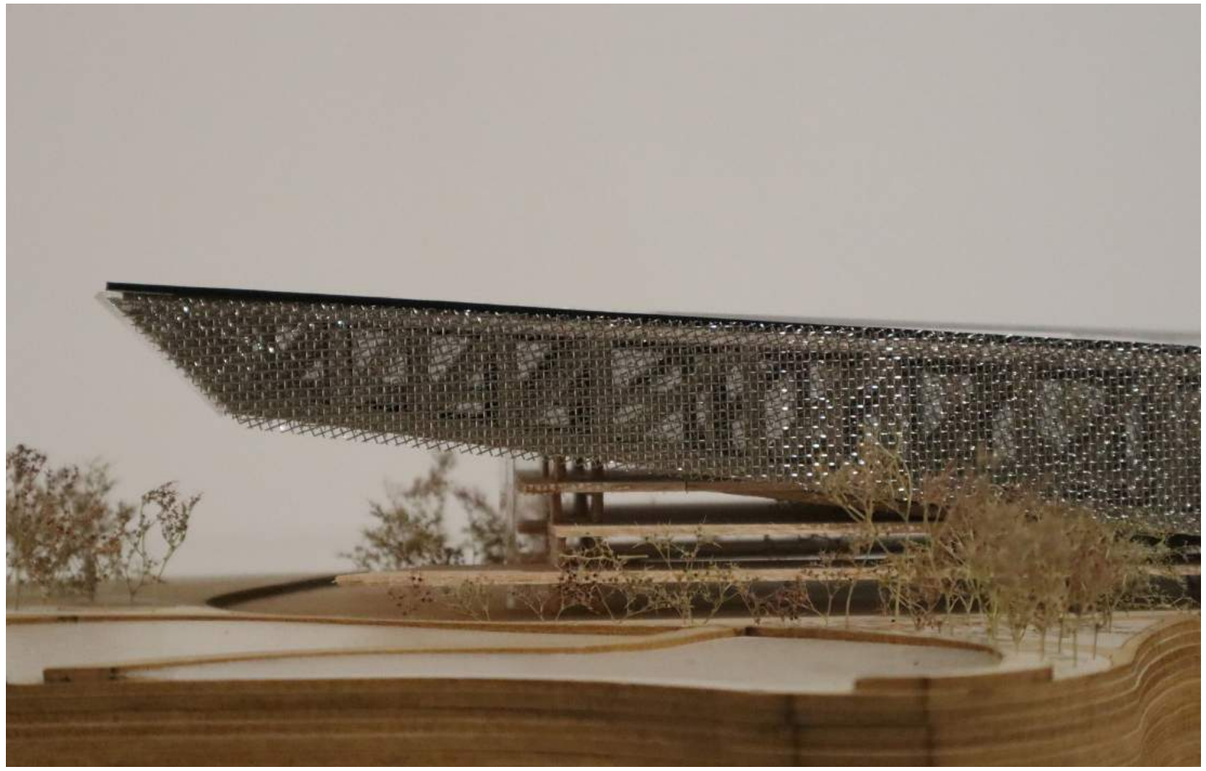


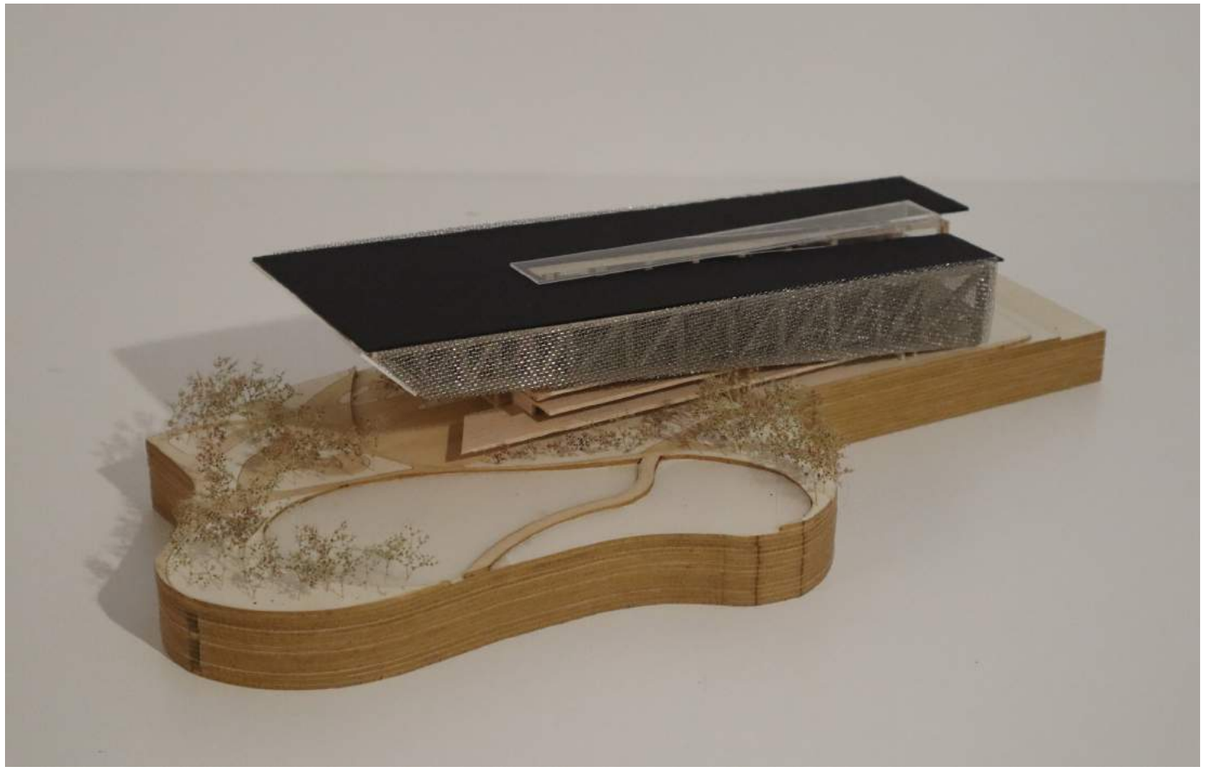


1:500 model

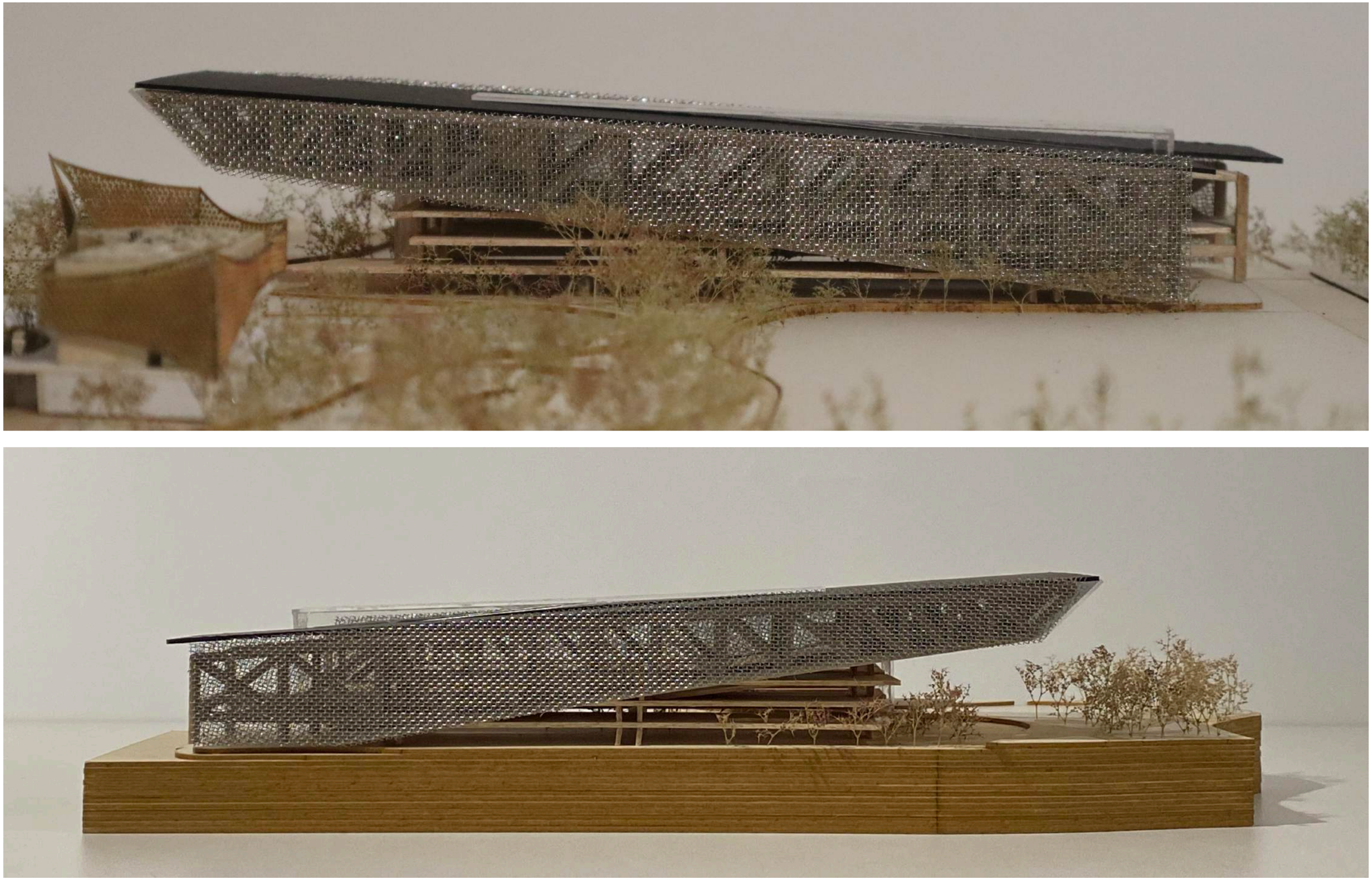


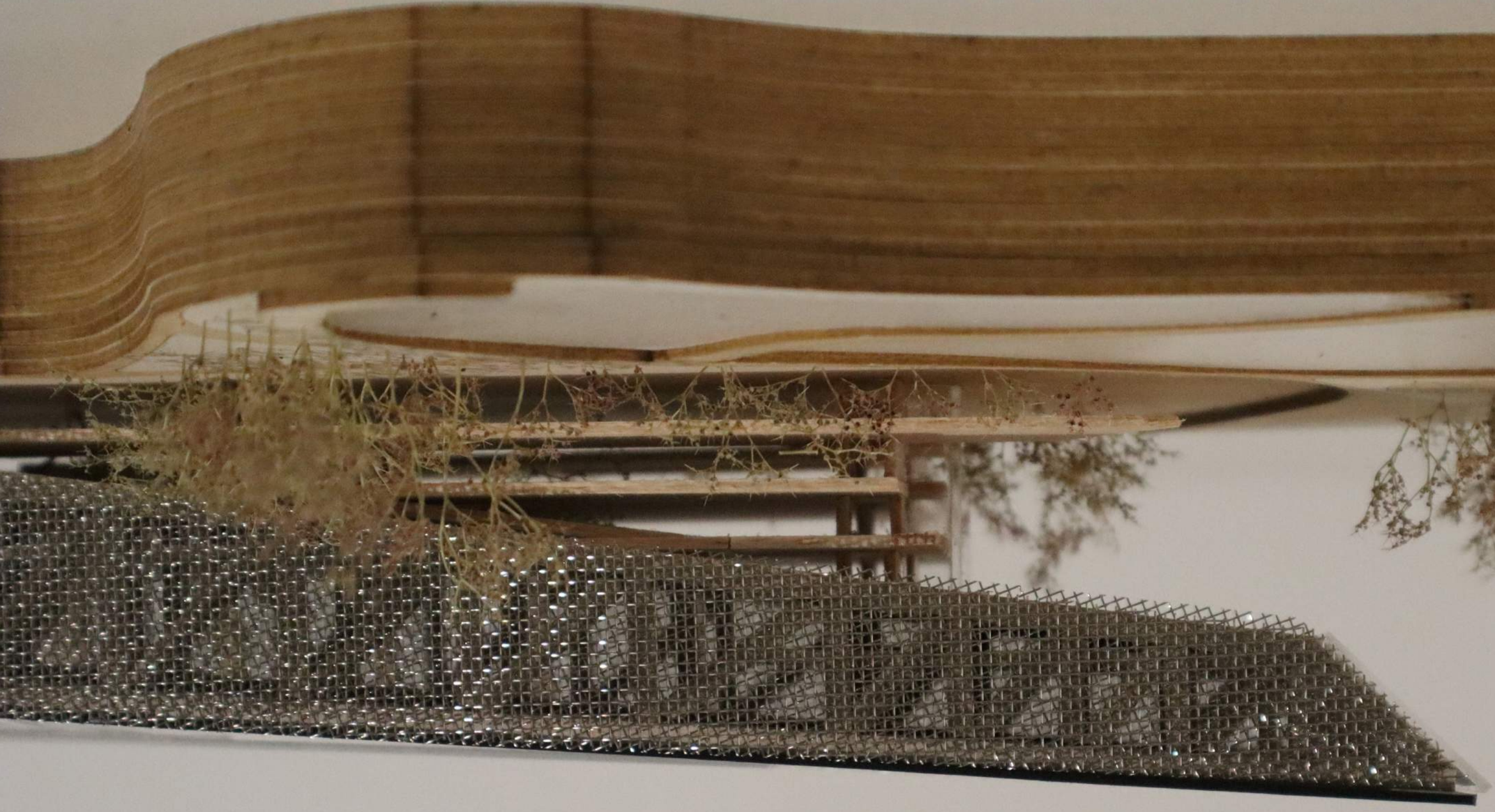






1:500 model



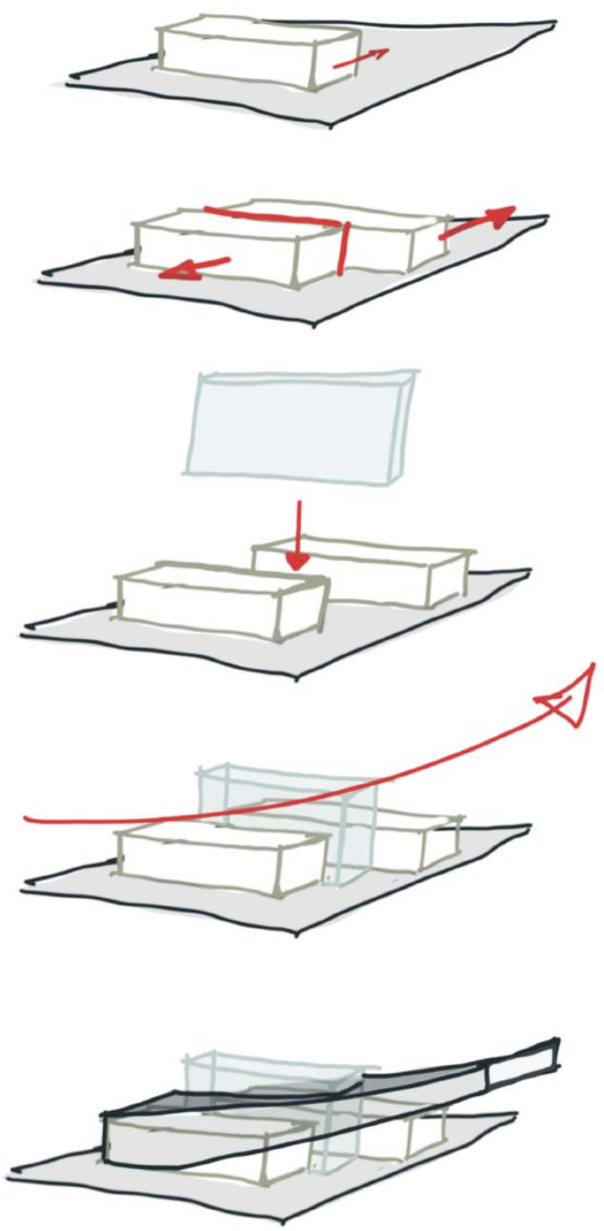








Design Progress



Masterplan Screenprints





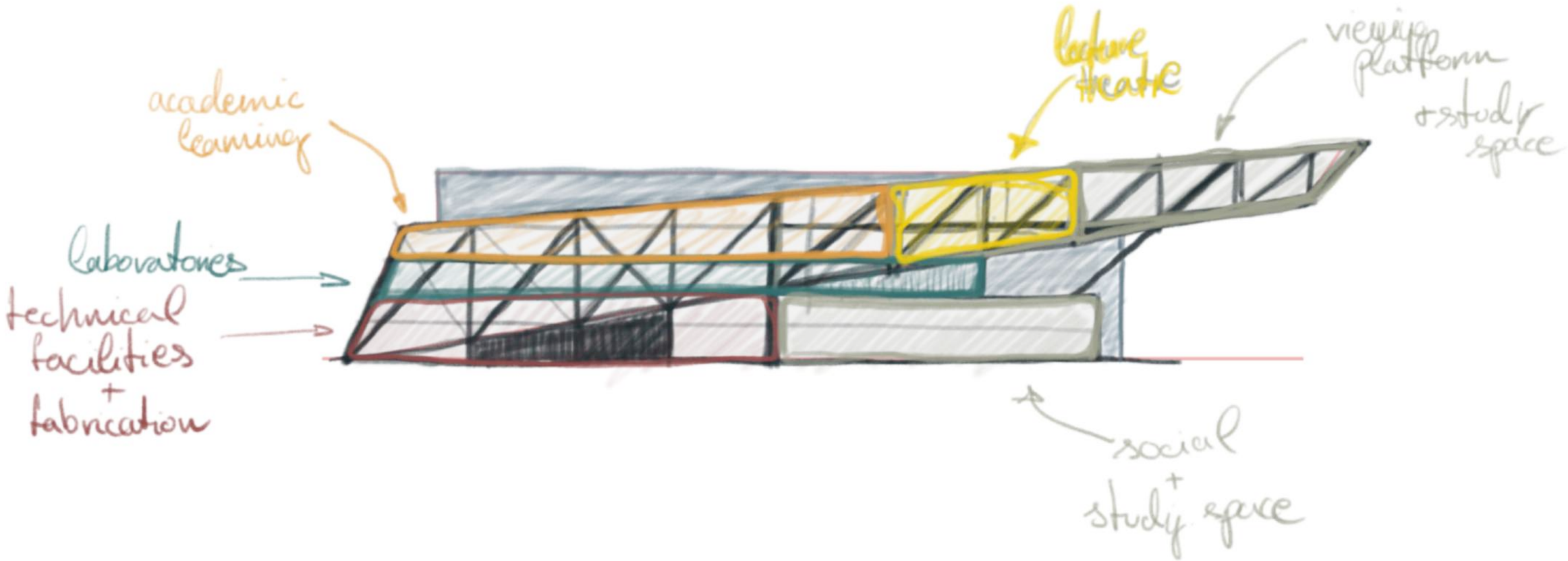








Initial structural strategy



Tensegrity structure experimental module

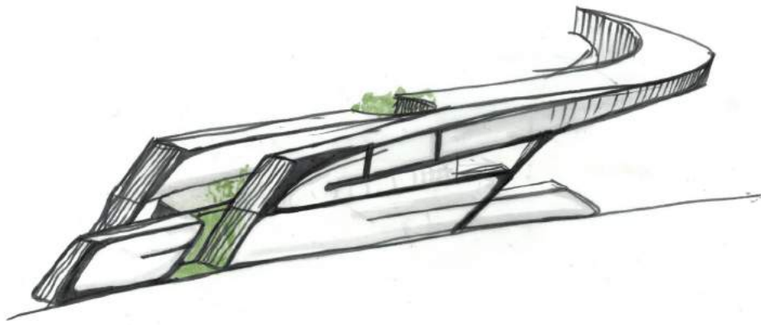


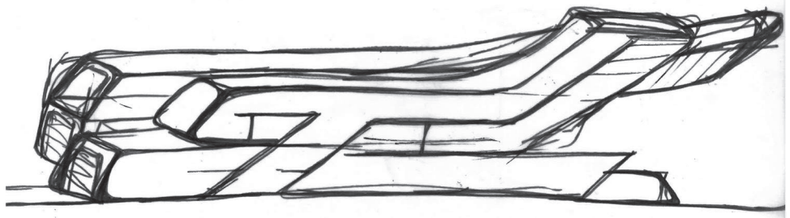


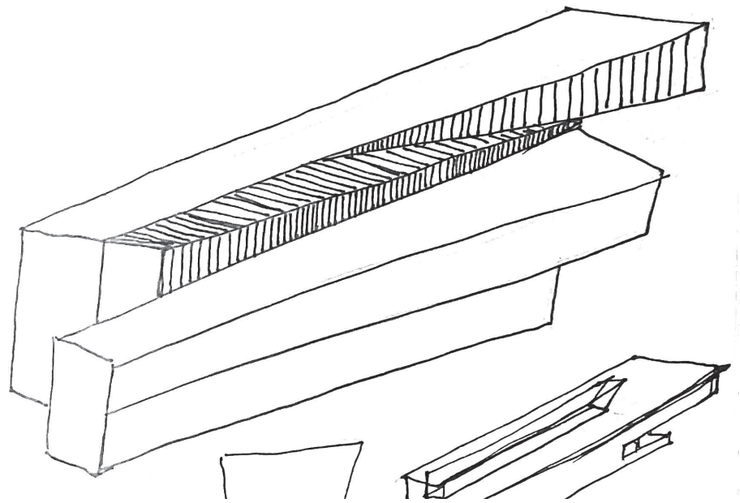


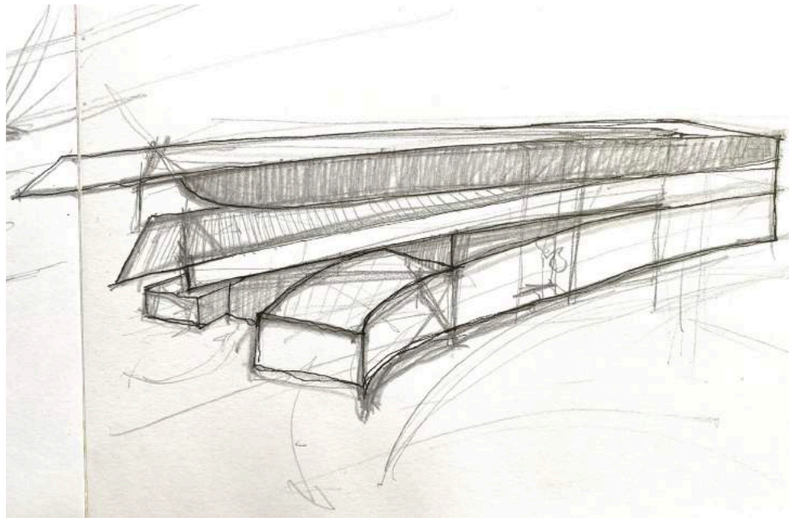


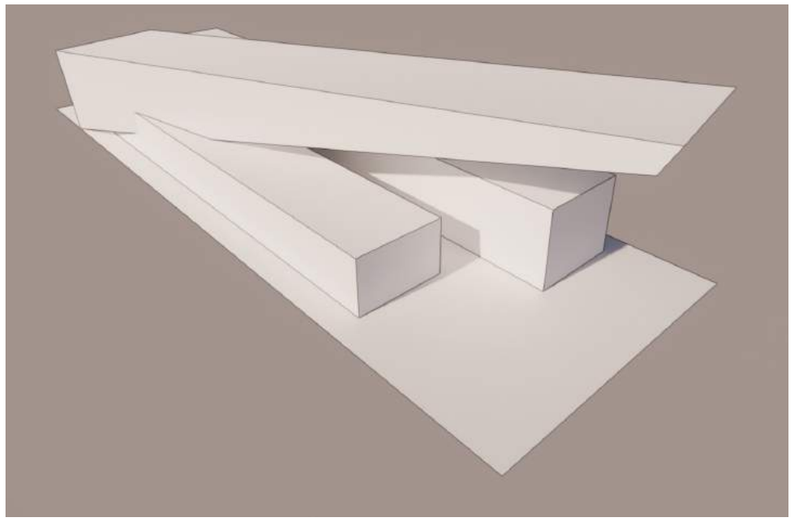
Design Iteration

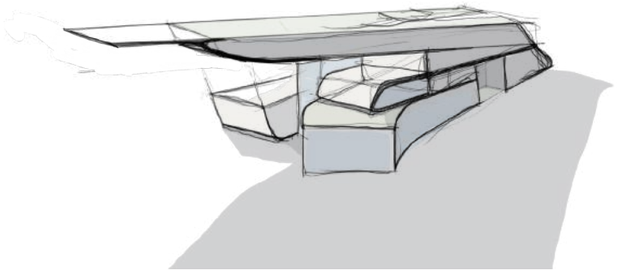


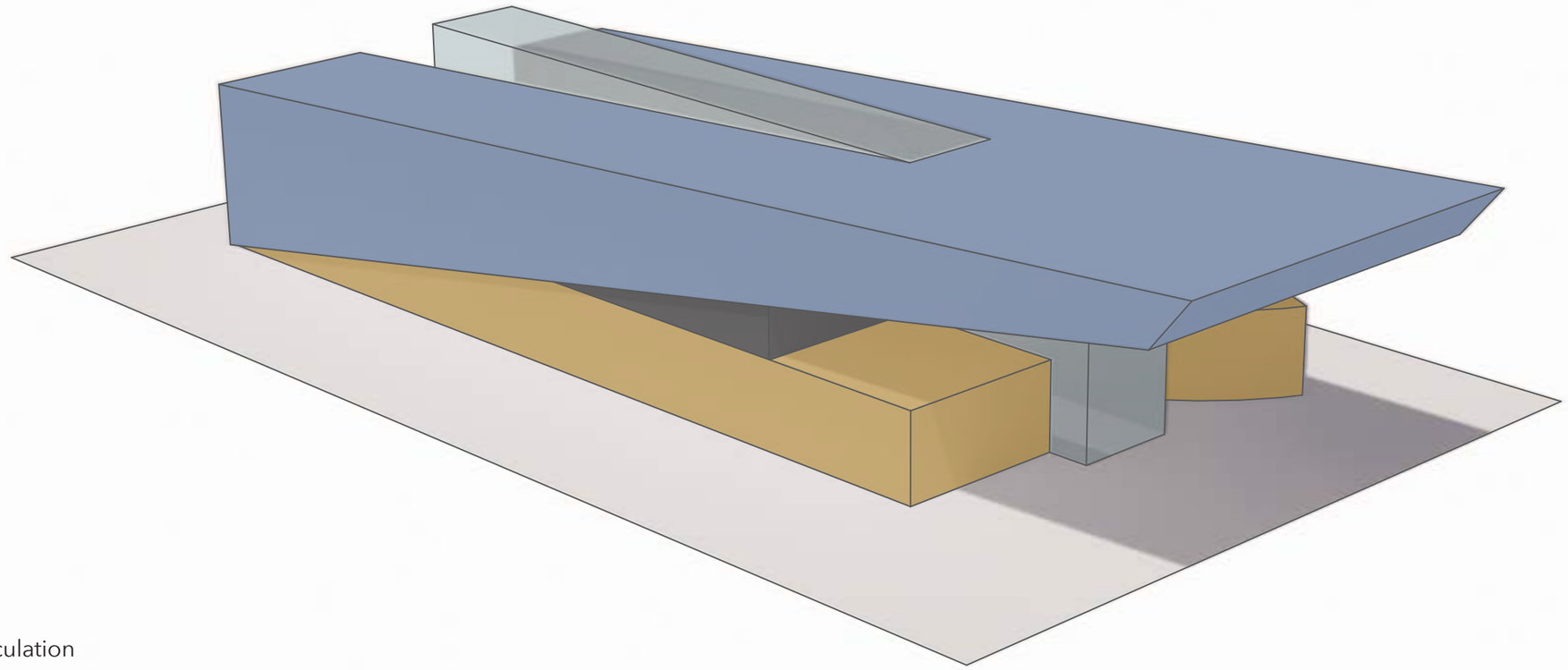












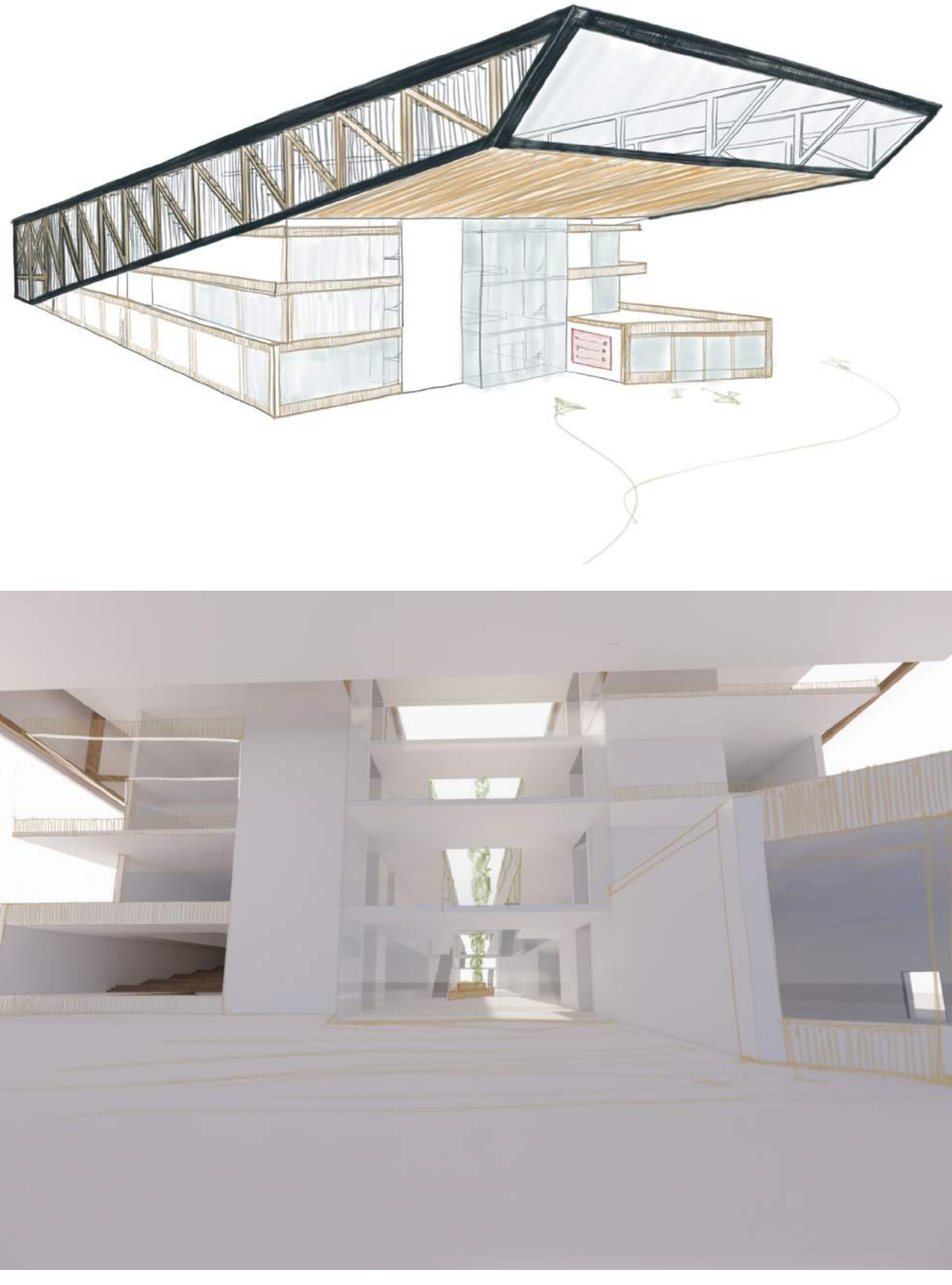
Circulation

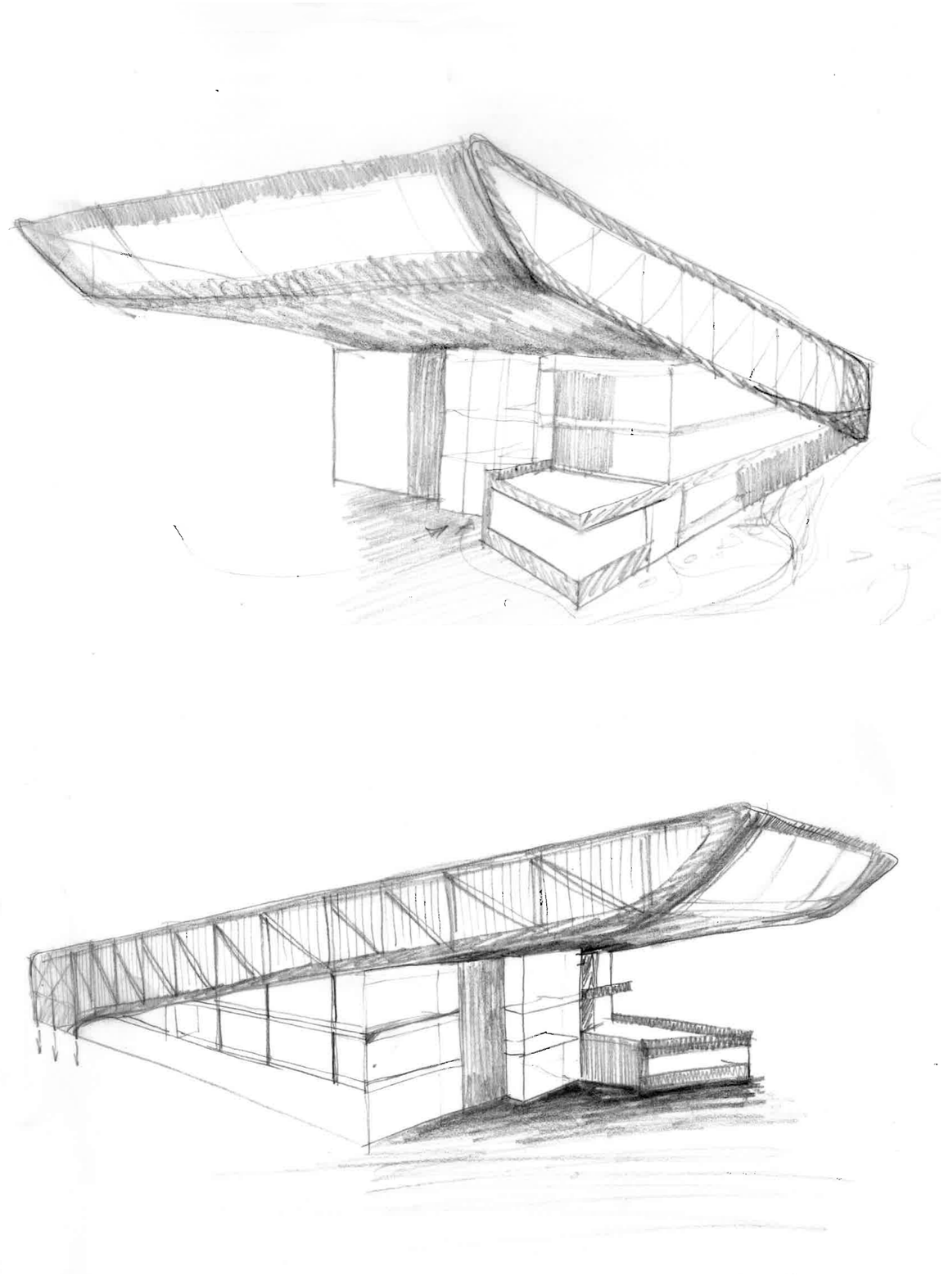
Academic learning

Laboratories

Fabrication and testing

Facade Development





Maya Angelus

2024.