

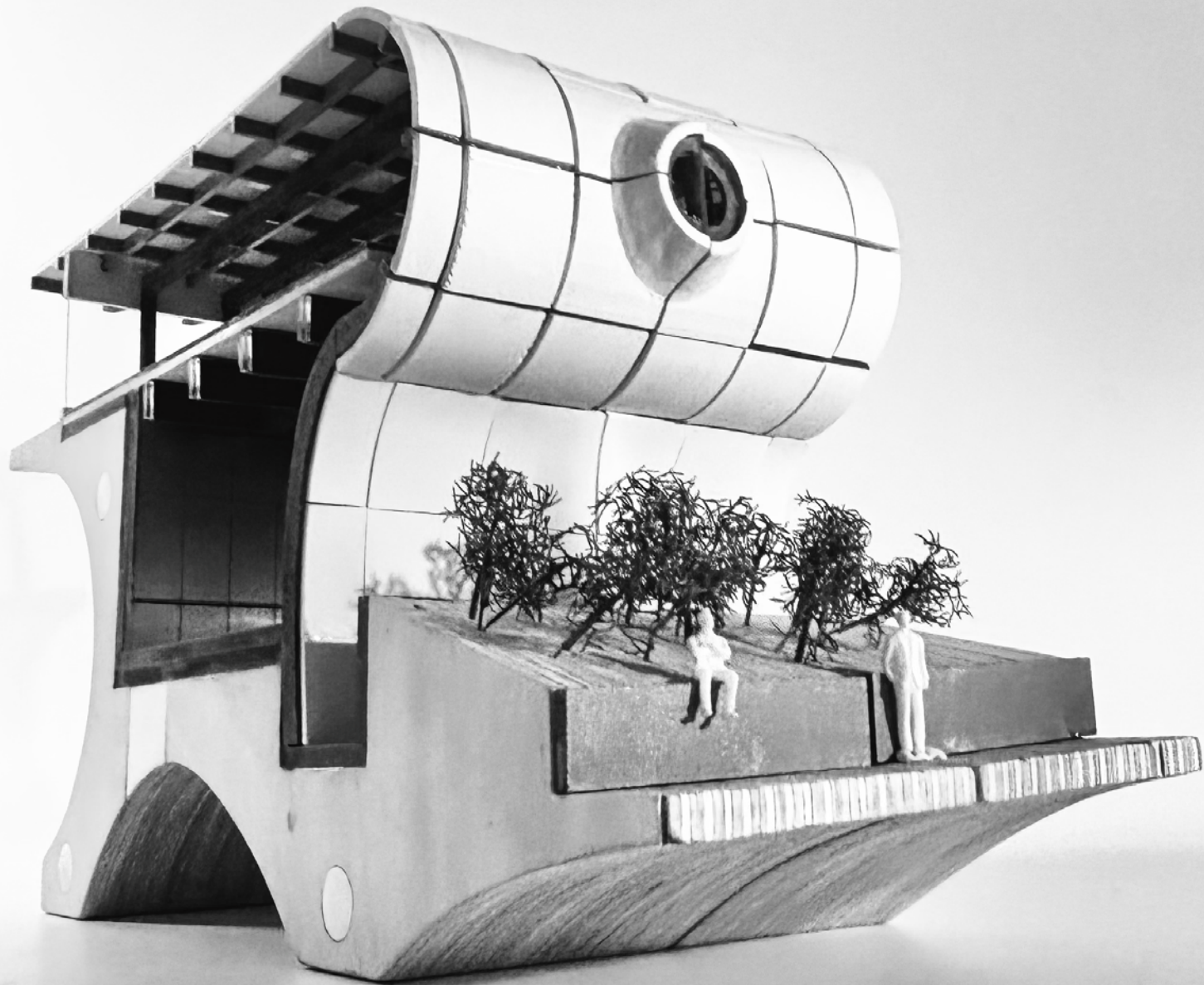
MANCHESTER  
SCHOOL OF ARCHITECTURE  
DA LAN

# DA LAN

MANCHESTER SCHOOL OF ARCHITECTURE  
UNDERGRADUATE PORTFOLIO  
FEATURING PROJECTS SINCE 2022



# SYMBIOTIC FUTURE

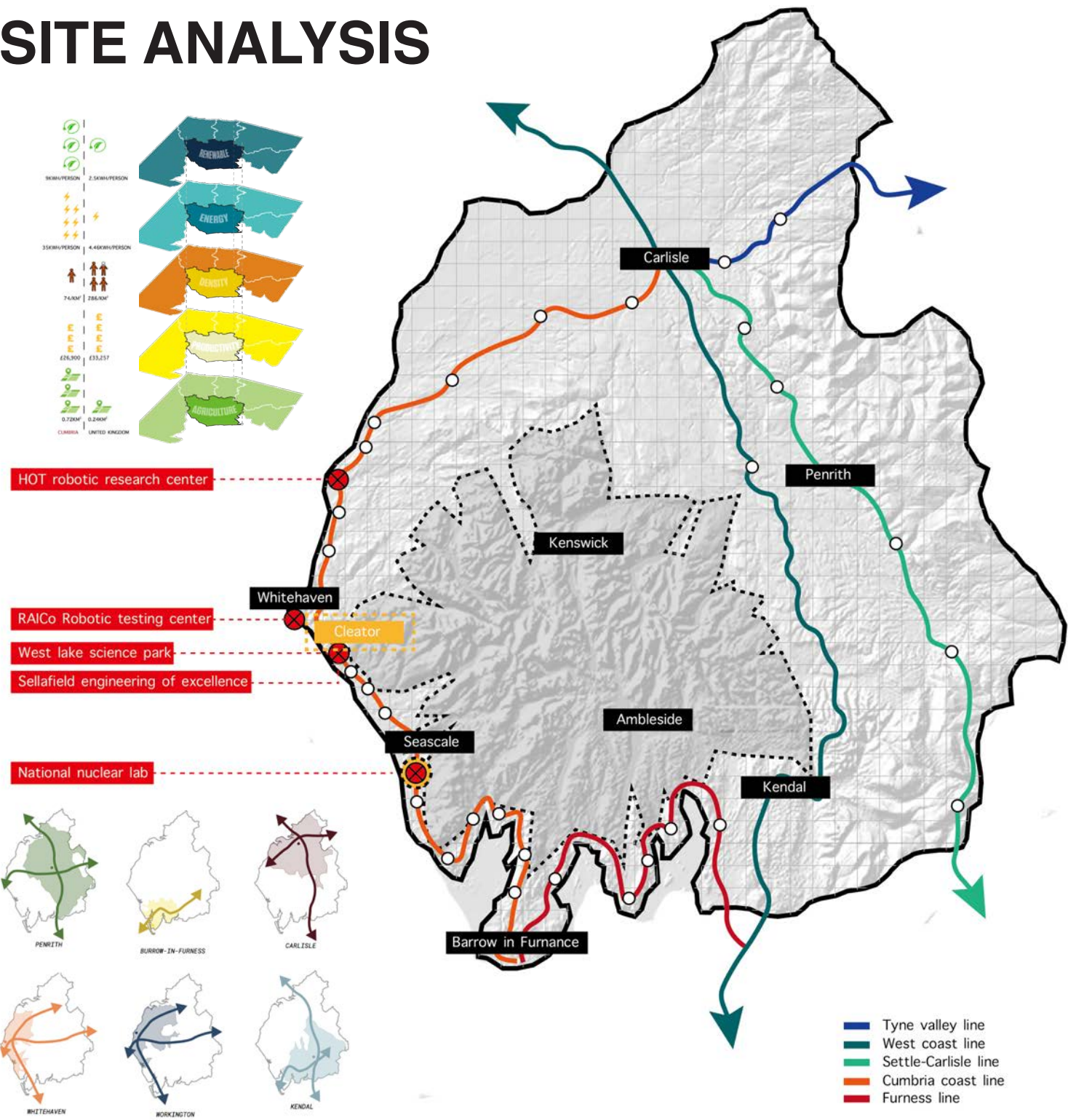


## A PROJECT OF AI ARCHITECTURE

Symbiotic future is a speculative architecture project that explores the convergence of artificial intelligence, robotics and human centric design with a dynamic, self-evolving built environment. Set in a near future context, the proposal re-imagines architecture not as static form, but as a sentient system---an adaptive, cognitive and intelligent organism capable of learning, transforming and cohabiting with its human dwellers.



# SITE ANALYSIS



HOT robotic research center

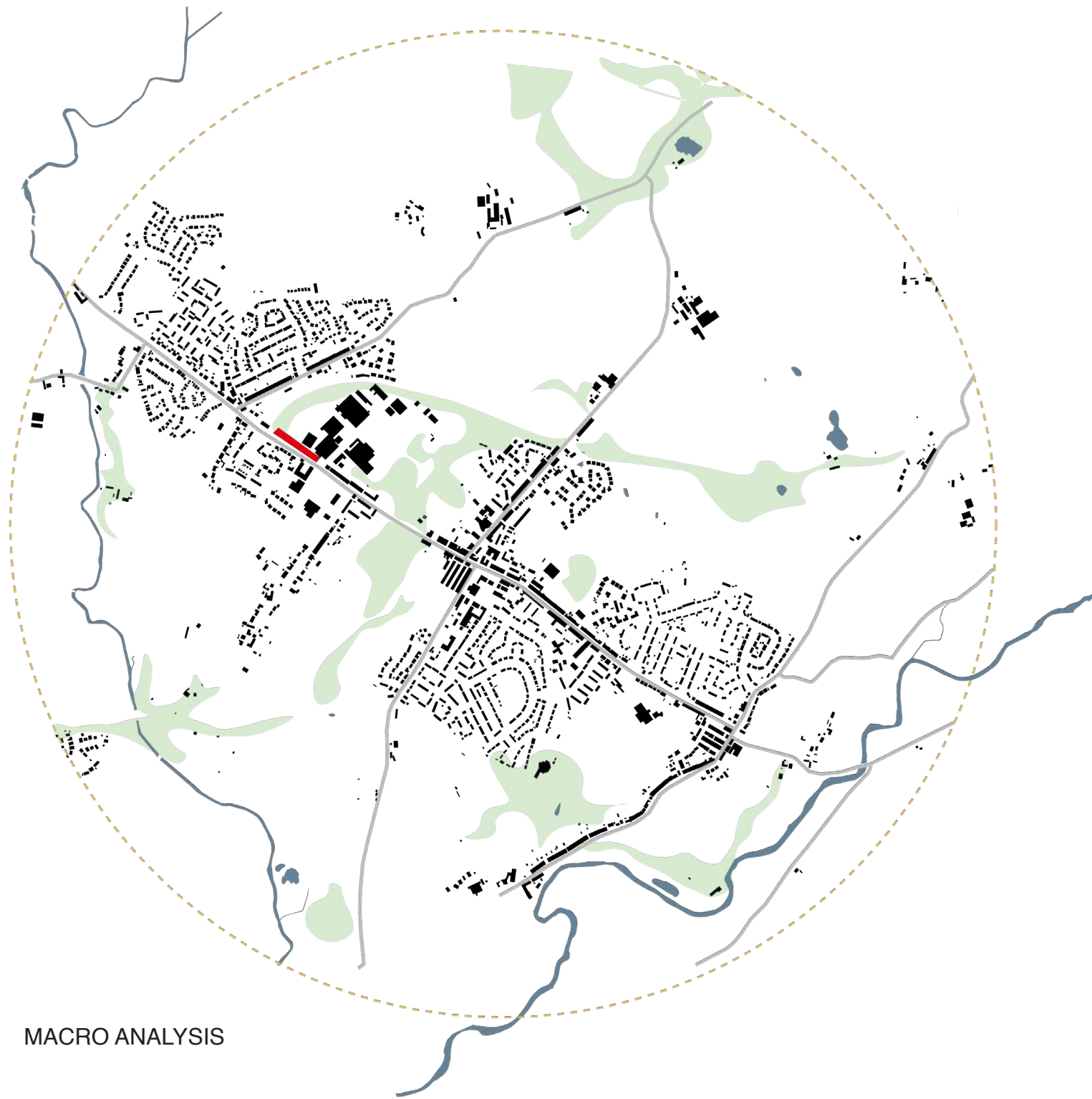
RAICo Robotic testing center

West lake science park

Sellafield engineering of excellence

National nuclear lab

Tyne valley line  
West coast line  
Settle-Carlisle line  
Cumbria coast line  
Furness line

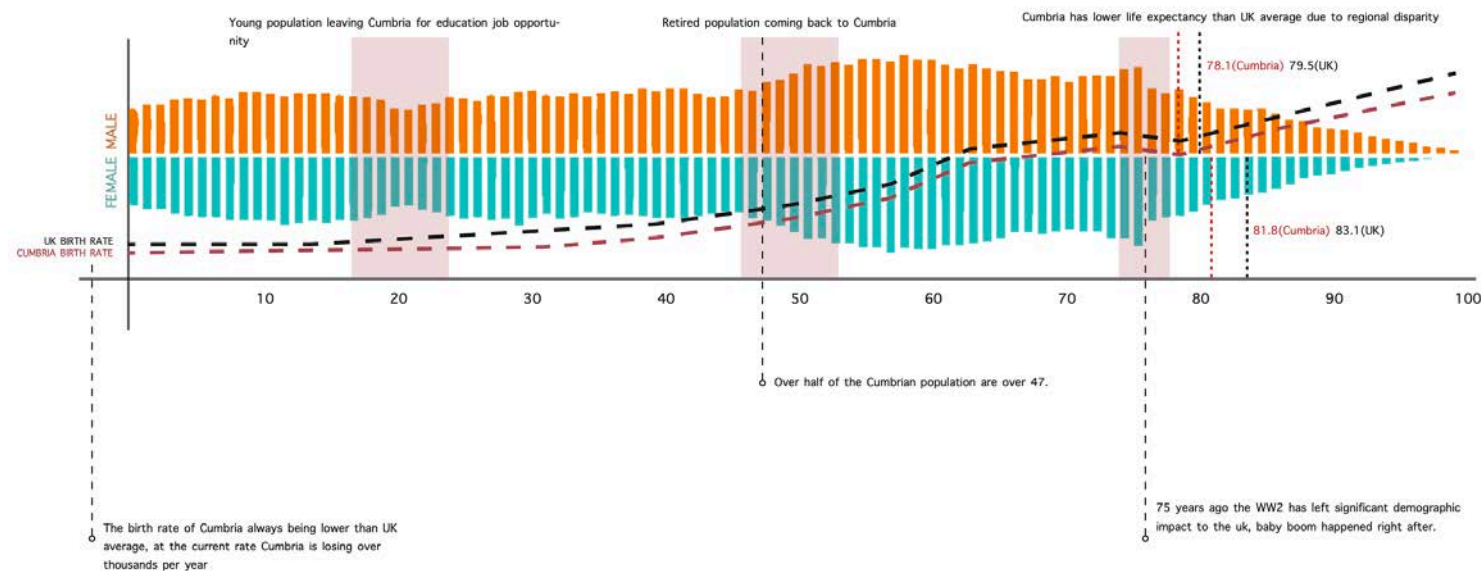


## MACRO ANALYSIS

In my third year my school project I have created a high tech AI training center that is going to transport the resource rich Cumbria into a prosperous region.

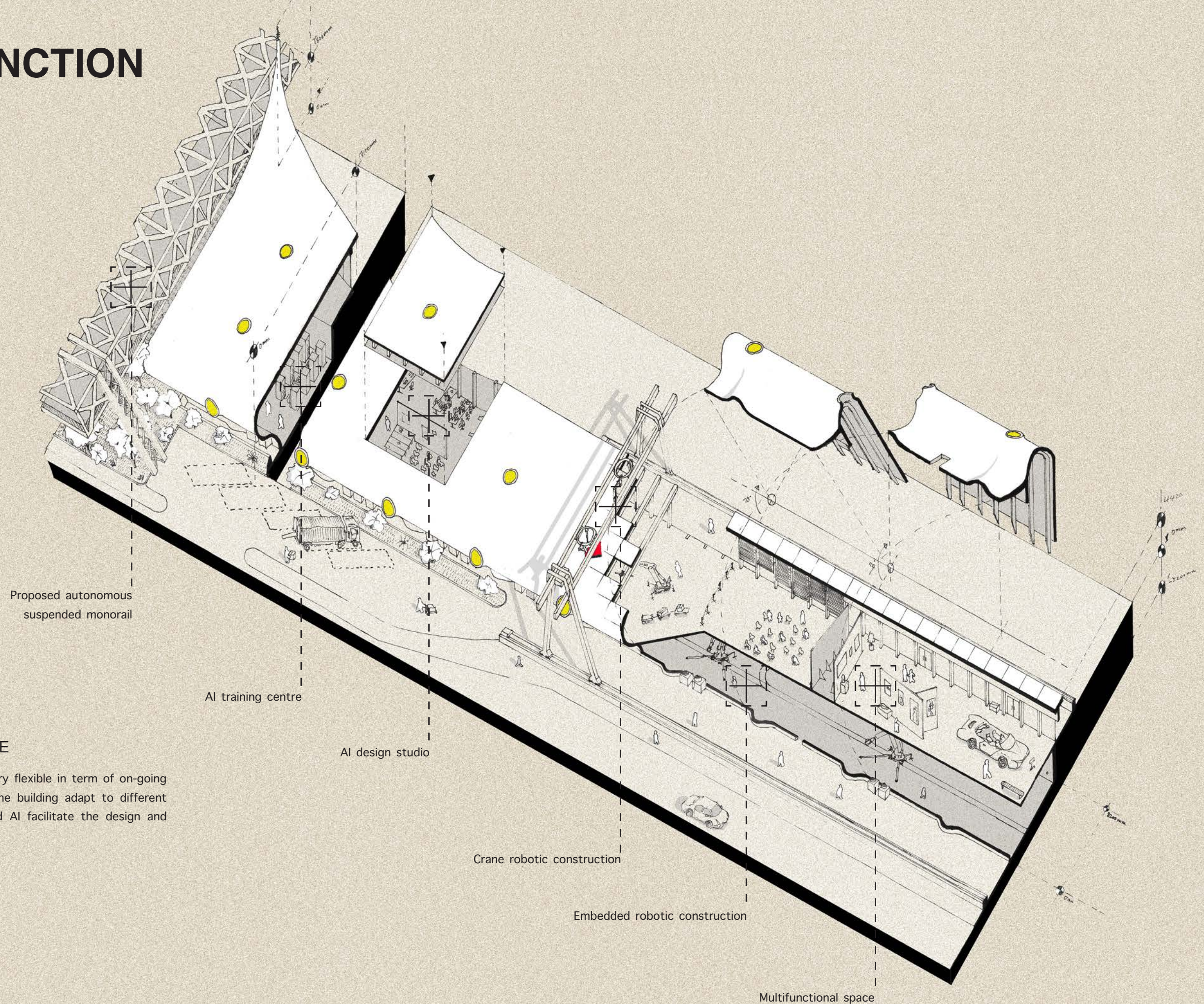
Cumbria is a resource rich, vast but it lacks labour forces, it has existing Sellafield high tech industry which can be turned into more diversified high tech industry.

The idea behind my project was to create a zone that fosters the growth of AI and robotics, increasing the productivity of the region by implementing future robotics labour.





# MULTIFUNCTION



## DISSECTING THE SPACE

As sentient architecture are very flexible in term of on-going programs inside the building, the building adapt to different human needs, the robotics and AI facilitate the design and construction of the spaces.



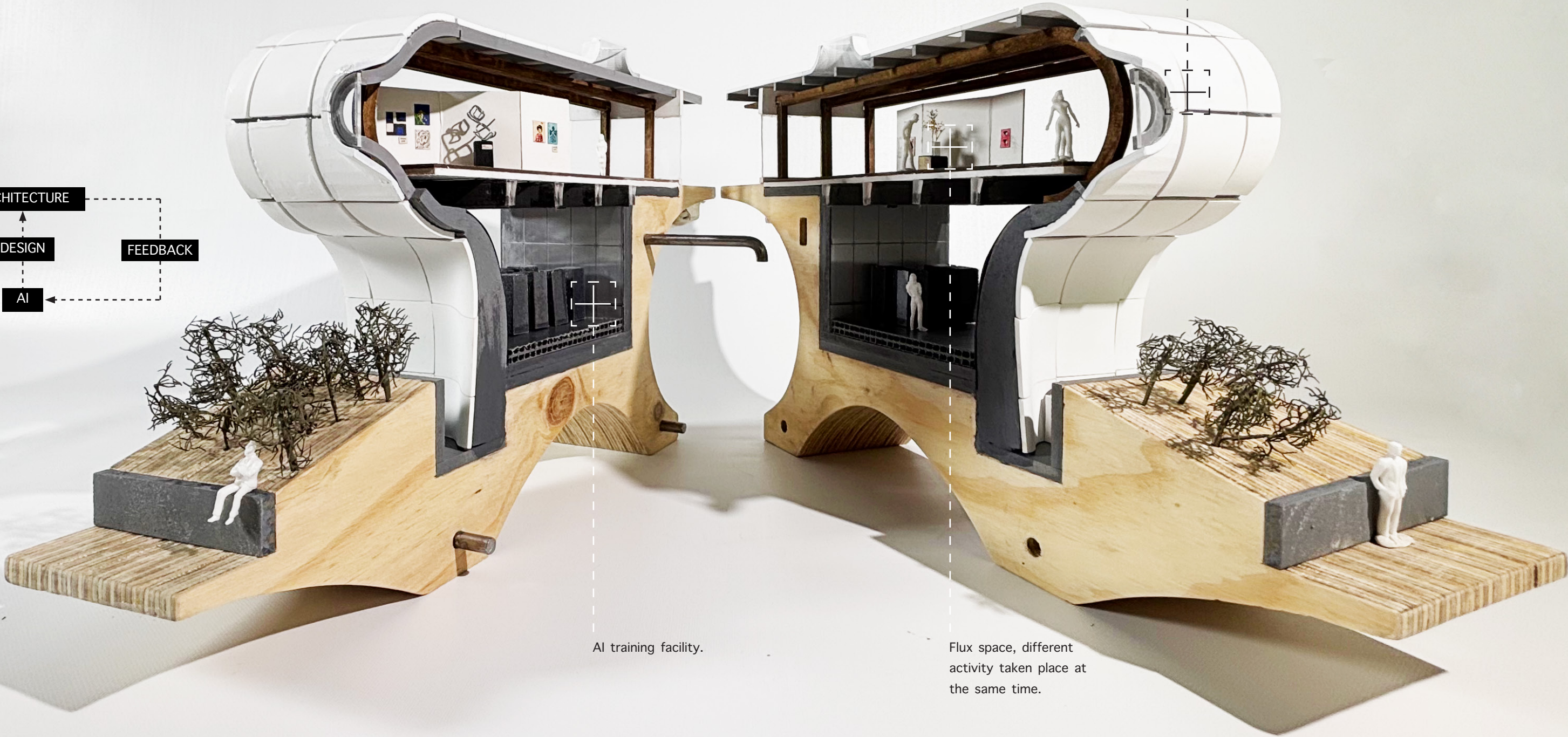
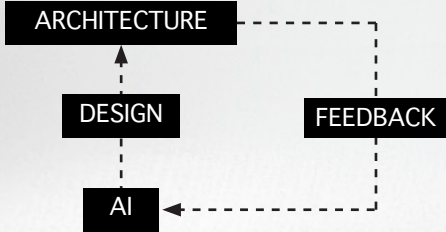


# TRIAL AND ERROR

## REINFORCE LEARNING

The learning space of AI is parallel to the human inhabitant, as AI facilitate more changes of the function of the space, AI becomes better in architecture design and construction, as a result the work made by AI gets better,

Ceramic cladding proposal, creating this clean and futuristic finish.



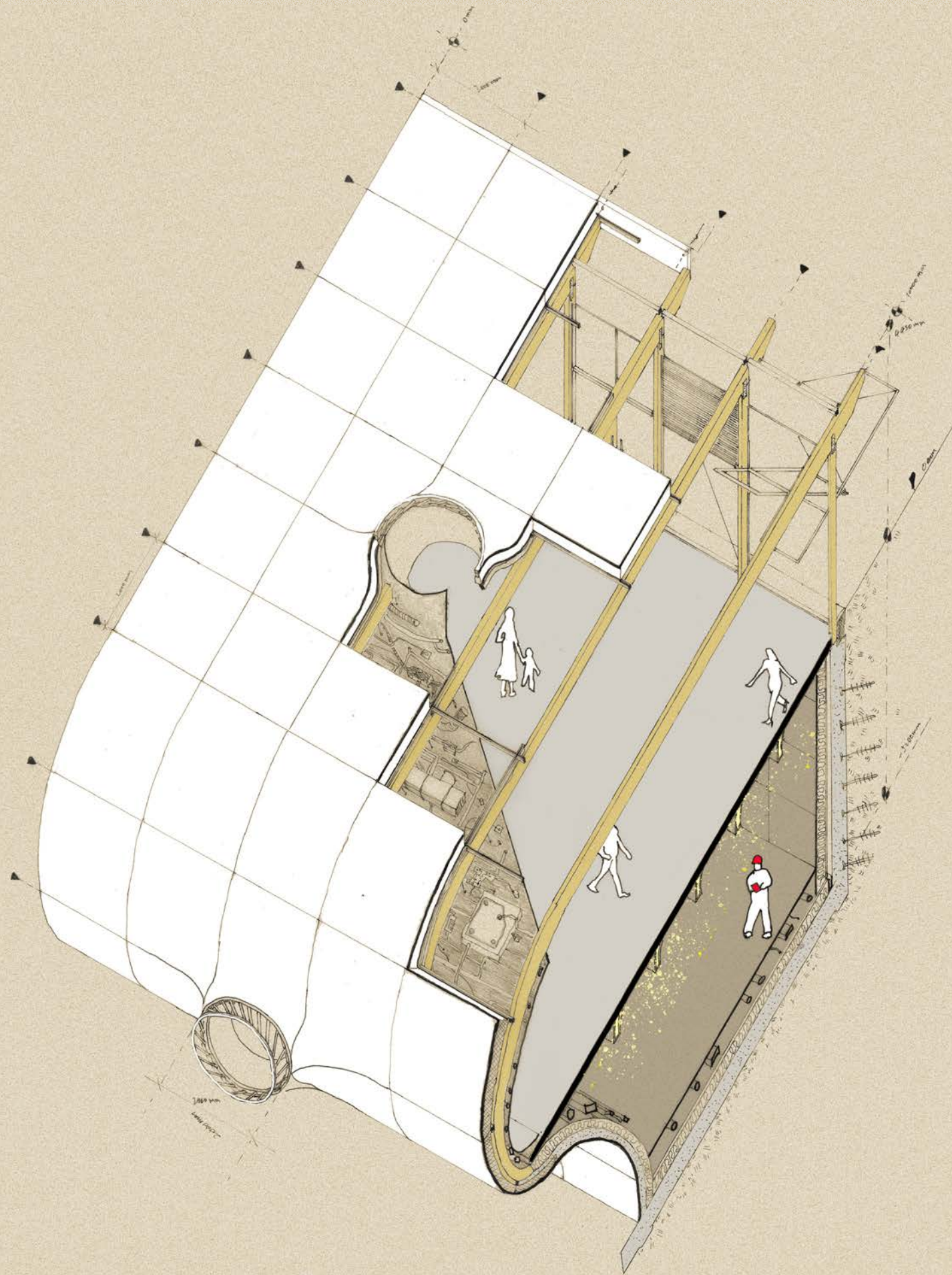
AI training facility.

Flux space, different activity taken place at the same time.

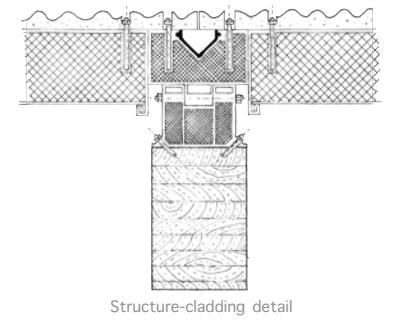
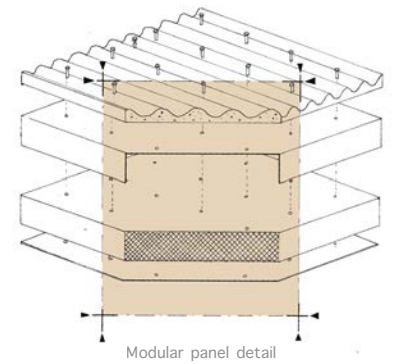
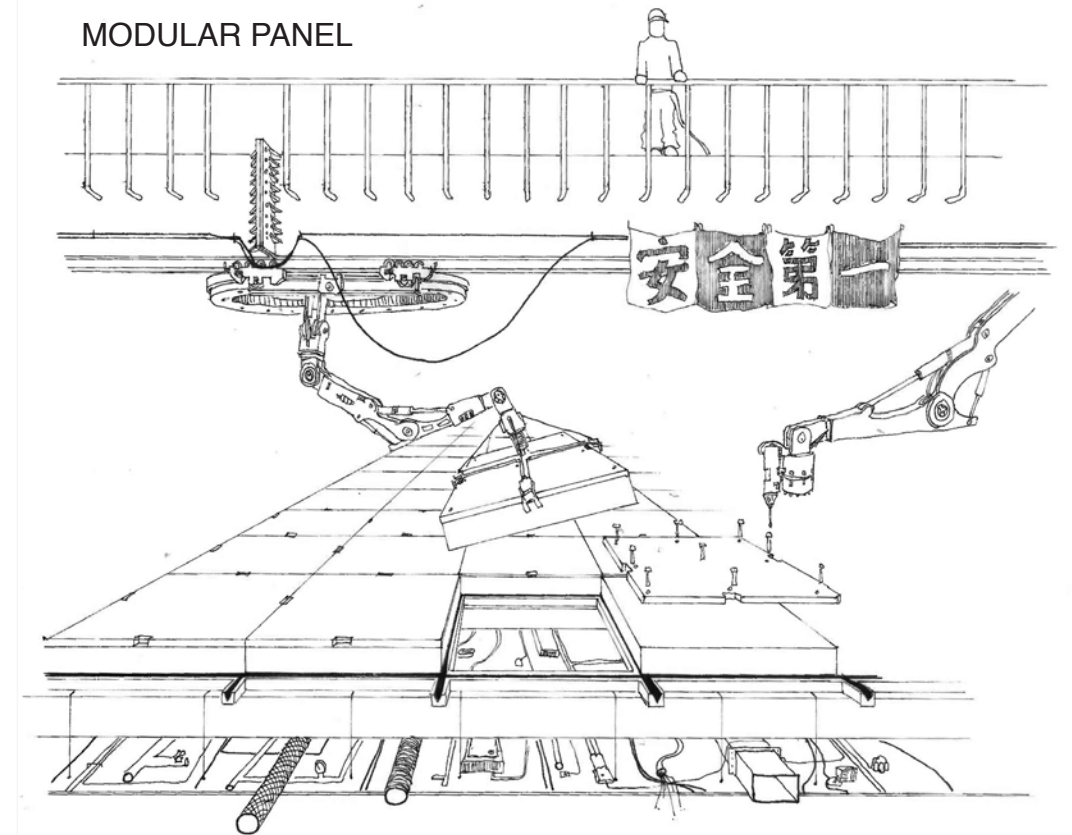




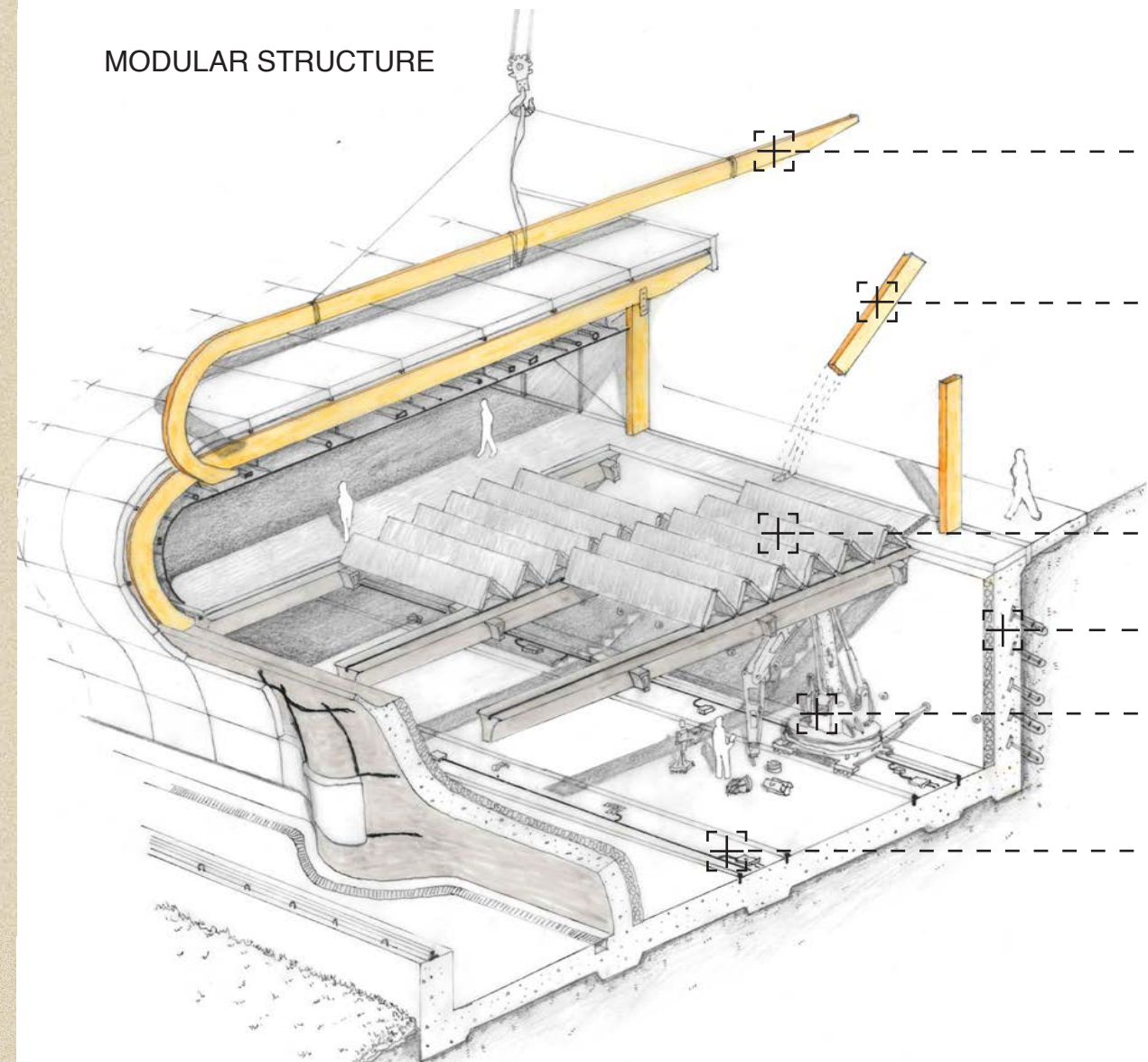
# CONSTRUCTION



MODULAR PANEL



MODULAR STRUCTURE



With the help of robotic crane construction Glulam beam can be easily installed onto the concrete foundation.

Timber columns can be installed with the embedded robotic arm.

The floor slab are designed to be fordable to leave spaces for operation of Embedded robotic arms.

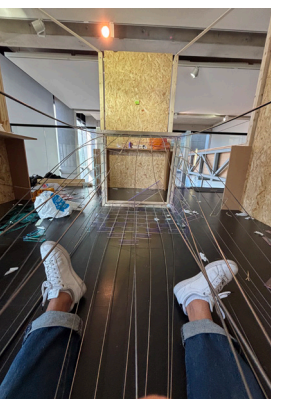
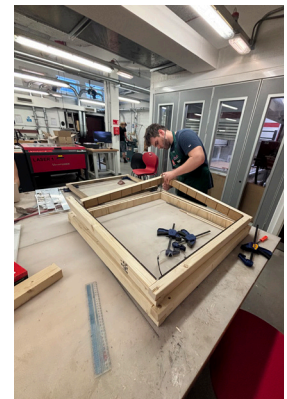
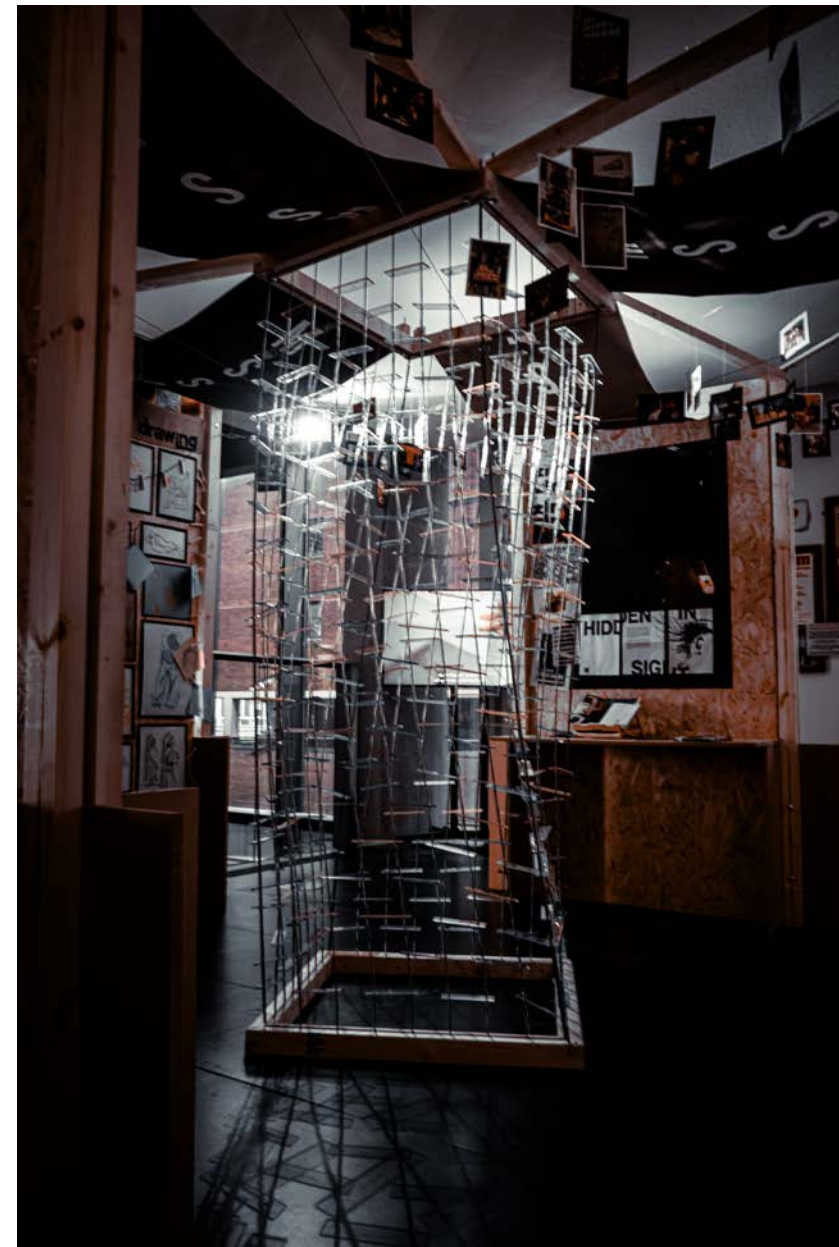
Soil nail anchored into the soil to strengthen the earth.

Embodied robotic arm is the key mechanism that allows the change of internal spaces, it enables heavy changes in short amount of time.

Robotic railing system that permit robotic arm moving along the basement.



# DEGREE SHOW INSTALLATION



## FINISHED PROJECT

As a graduate, I wanted to create something ceremonial to all graduates this year, As a student I have proposed an pavilion in our MSA degree show, I gathered a team of 8 people, gained the support from school, designed and constructed this pavilion, timber and steel structure with 324 graduate's name engraved on the acrylic plates, will be given out to all the graduates during the graduation ceremony.



# VENICE BIENNALE 2025

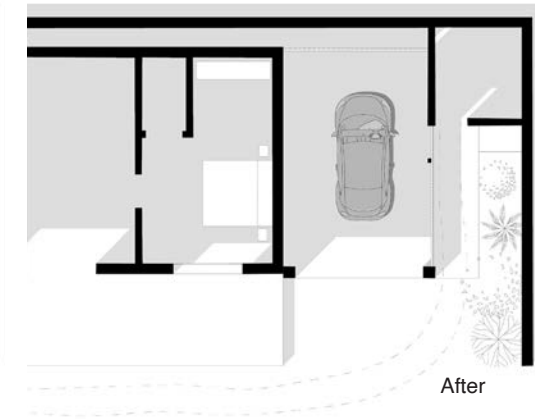
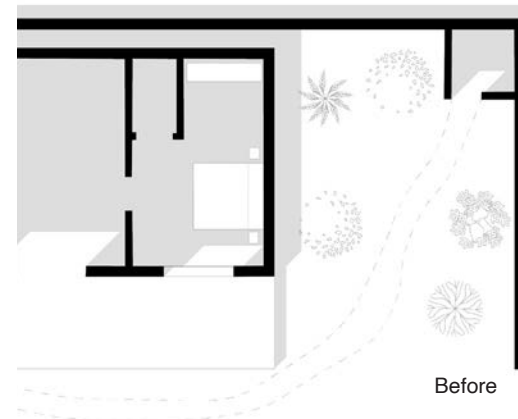
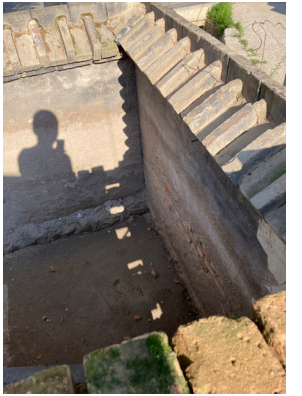


## FINISHED PROJECT

2024 a collaborative team between British, Japanese and Italian architecture school had embarked a project to design and manufacture the ECC exhibition space pavillion, i had involved and led one of the sub-groups and proposed many leads.



# REAL LIFE PROJECT



## FINISHED PROJECT

In 2023 I have been commissioned a project of building a car garage space and expanding existing toilet. The site is located at a rural village in Ningxia China, where my grandfather lives, during the project I had an opportunity to lead, design and participate in the building phase, we had a plan of upgrading the living space for my grandparents, it was planned to have 3 phases of development, including retrofitting kitchen, building a garage and expanding the toilet.

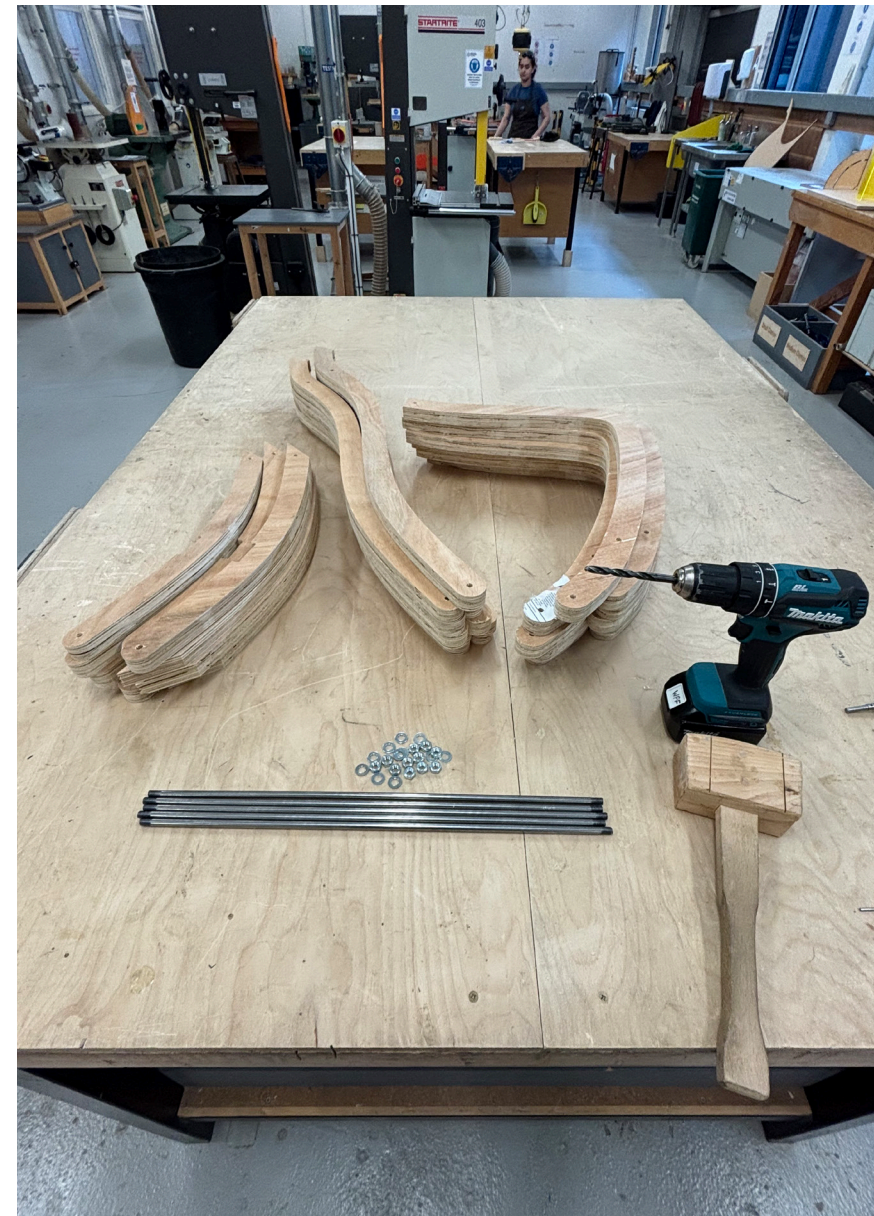


## DESIGN COMPETITION

The design propose a god kennel that brings natural environments to urban context through the media of smell from wood, texture from fabric and privacy offered by the form of the fabric.



# FURNITURE DESIGN

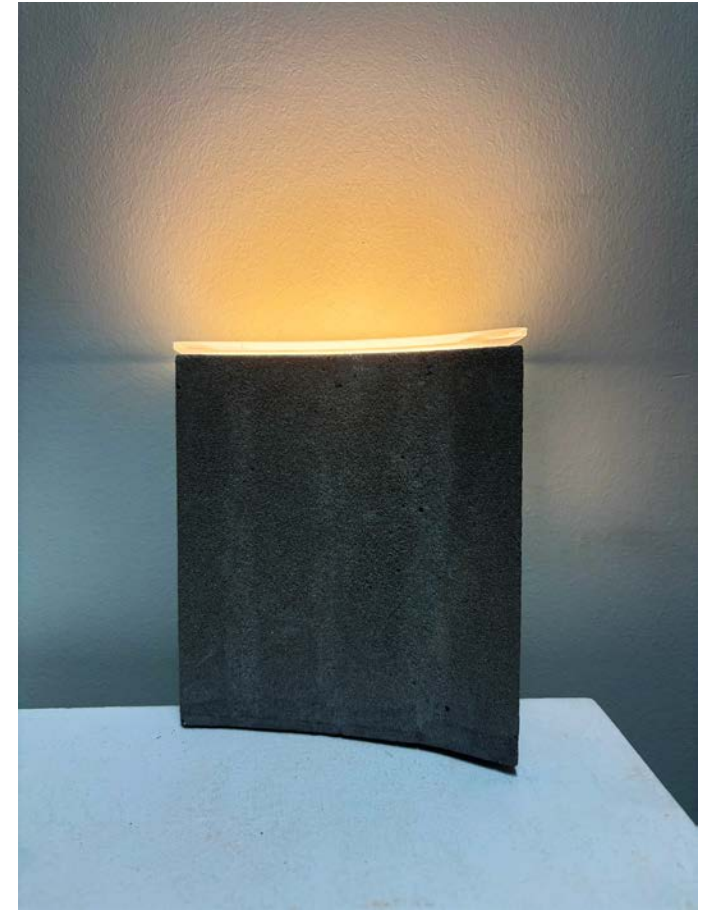
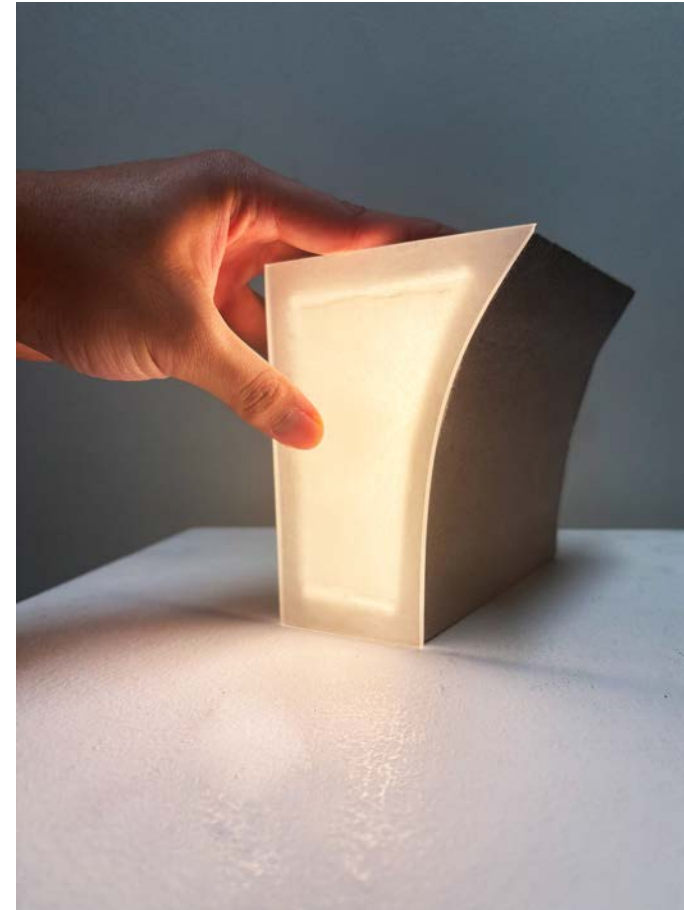


## DIVERSIFIED SKILL-SET

Driven by a passion for full-scale furniture design and a belief in technology's potential to make customization cheaper and more accessible, I embarked on designing and fabricating a chair. The initial concept drew inspiration from ergonomics of human then adjusted to my body, then I took the organic forms from nature. A lots of prototypes has been made from digital model to 1:5 model then 1:1 detail model, this allowed me to validate the design. To optimize material efficiency, I designed the chair to fit all components onto a single 1220x2440mm plywood sheet, leveraging CNC machining for precision cutting.



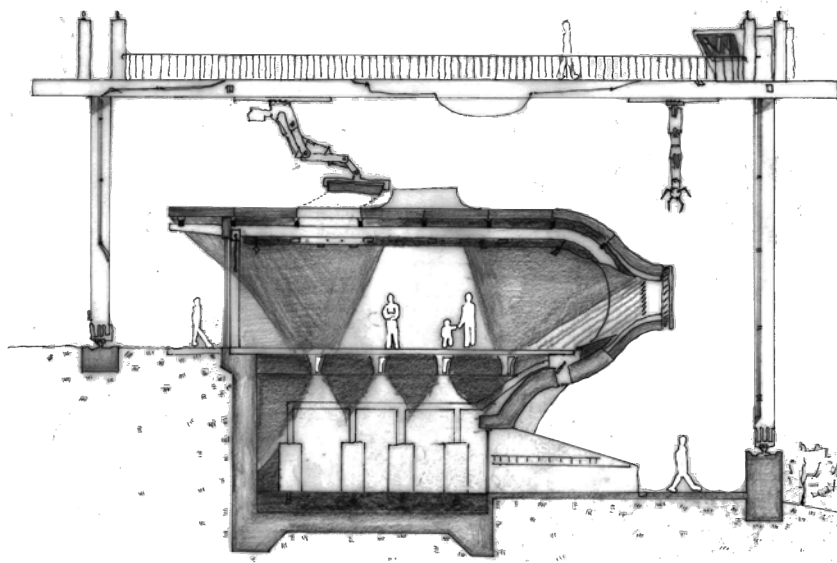
# PRODUCT DESIGN



## INTEREST IN DETAIL

I believe the importance of use of interior design to amplify the architecture design of the building, this light design is a 1:3 model of the lighting strategy used in my “Symbiotic future” project, by mimic the form and texture of concrete beam, this light design can be attached to concrete flawlessly.





# THE END

Check more of my work at:

[Landasarchitecture.com](http://Landasarchitecture.com)