

# EDINBURGH SCHOOL OF ARCHITECTURE AND LANDSCAPE ARCHITECTURE

Dr Miguel Paredes Maldonado



THE UNIVERSITY of EDINBURGH  
Edinburgh College of Art

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# ESALA



**Edinburgh School of Architecture and Landscape Architecture  
Edinburgh College of Art  
University of Edinburgh**

# ESALA



**ESALA is one of five subject areas in the Edinburgh College of Art.**

**ESALA students interact with and benefit from the vibrant community of disciplines across ECA.**

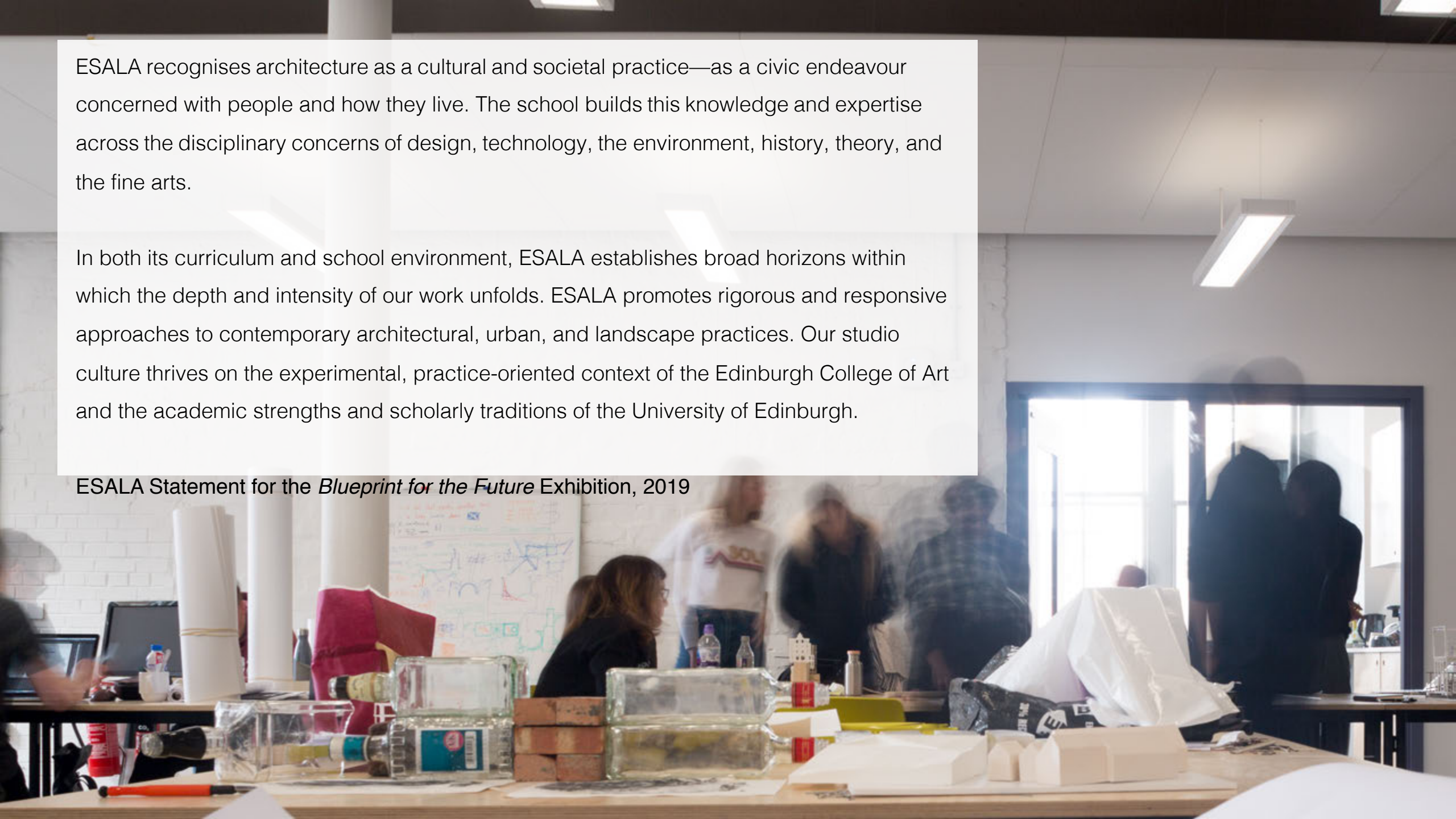
**These include: Fine Art, Design, History of Art, Music**

**Likewise, ESALA is part of the University of Edinburgh, a world-leading research University.**

ESALA recognises architecture as a cultural and societal practice—as a civic endeavour concerned with people and how they live. The school builds this knowledge and expertise across the disciplinary concerns of design, technology, the environment, history, theory, and the fine arts.

In both its curriculum and school environment, ESALA establishes broad horizons within which the depth and intensity of our work unfolds. ESALA promotes rigorous and responsive approaches to contemporary architectural, urban, and landscape practices. Our studio culture thrives on the experimental, practice-oriented context of the Edinburgh College of Art and the academic strengths and scholarly traditions of the University of Edinburgh.

ESALA Statement for the *Blueprint for the Future* Exhibition, 2019



Minto House



7-8 Chambers Street & Adam House



ECA Main Building, Lauriston Campus



Studio, Minto House





Studio, Adam House



Studio, 7-8 Chambers Street









10



EDINBURGH SCHOOL  
OF ARCHITECTURE  
AND LANDSCAPE  
ARCHITECTURE  
(ESALA)

Undergraduate

Postgraduate



SCHOOL OF ART

Undergraduate

Postgraduate



SCHOOL OF DESIGN

Undergraduate

Postgraduate



HISTORY OF ART

Undergraduate

Postgraduate

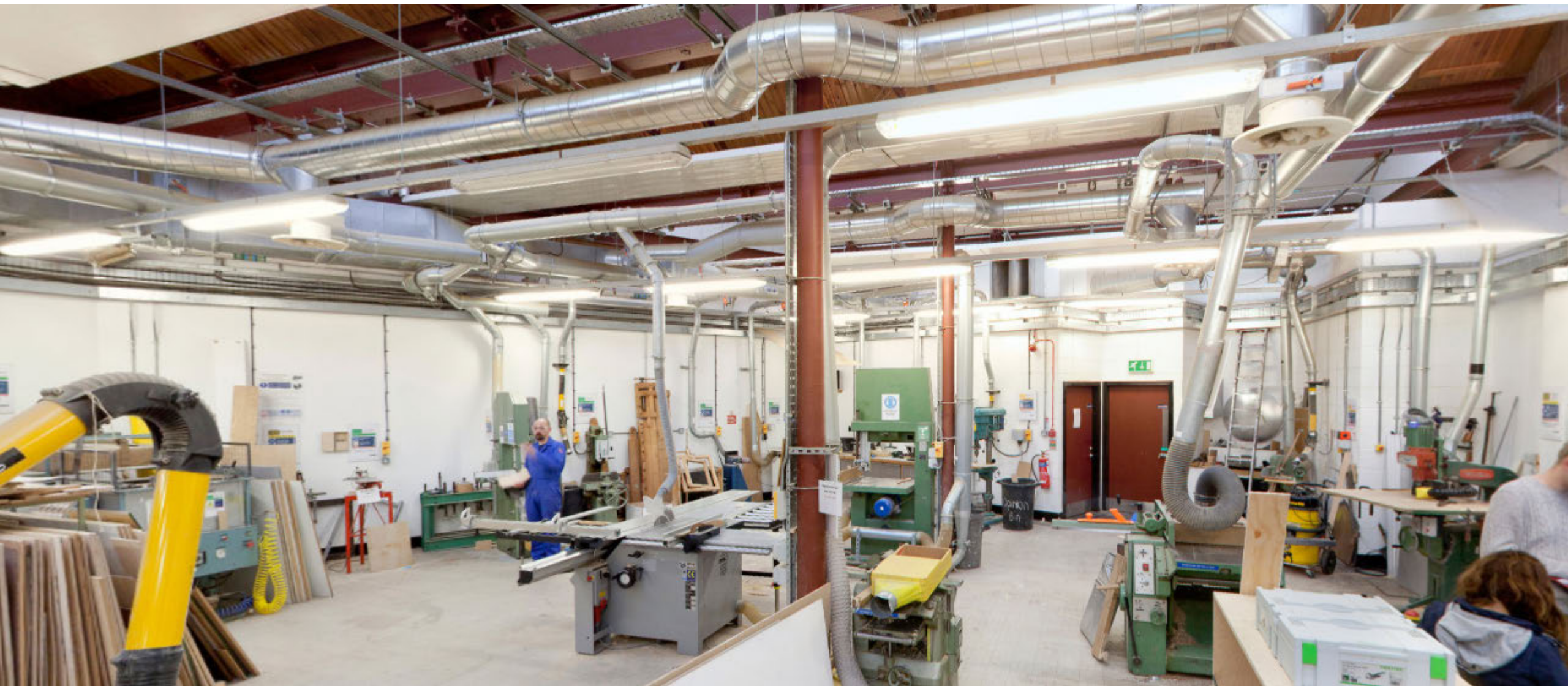


REID SCHOOL OF  
MUSIC

Undergraduate

Postgraduate







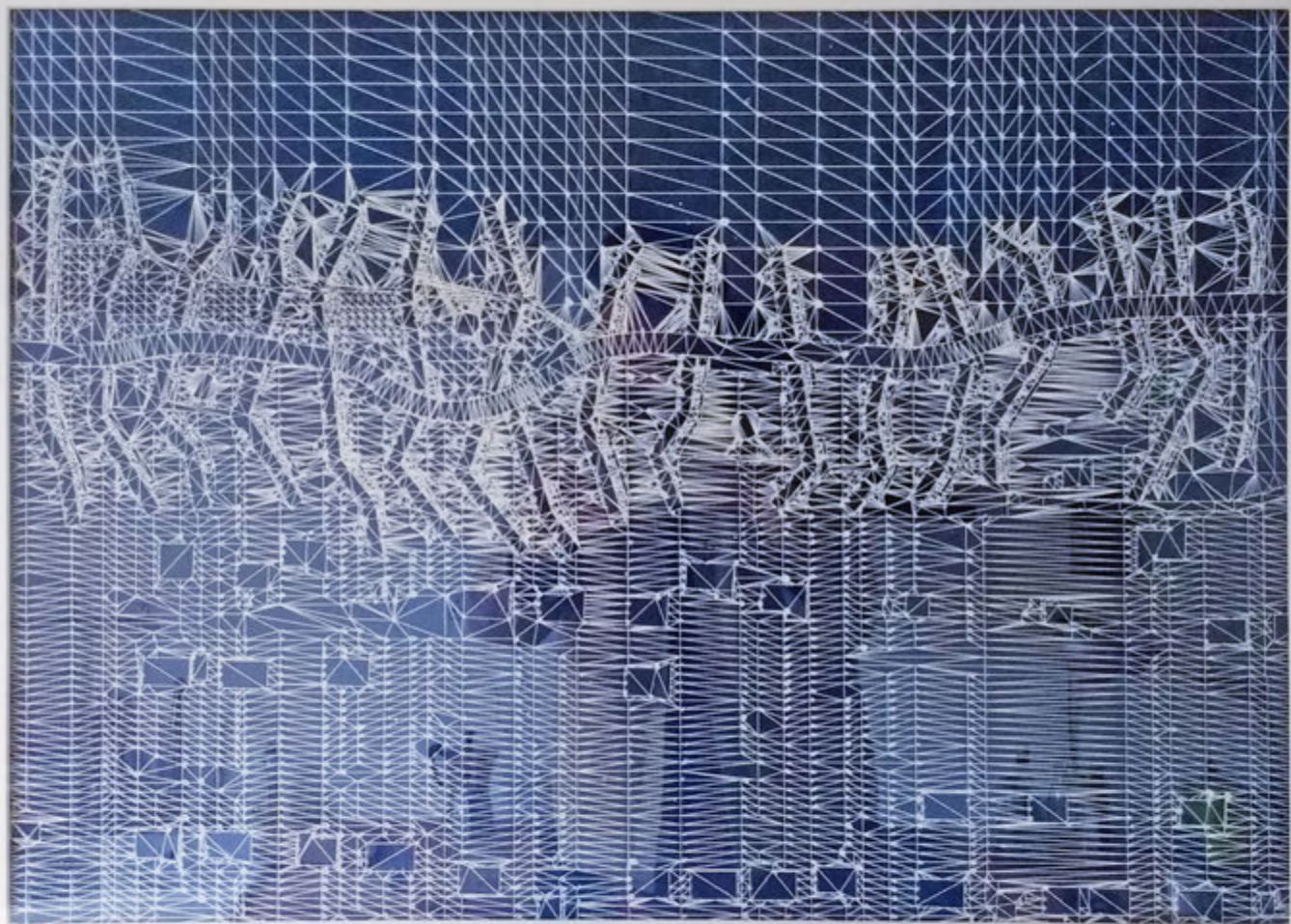










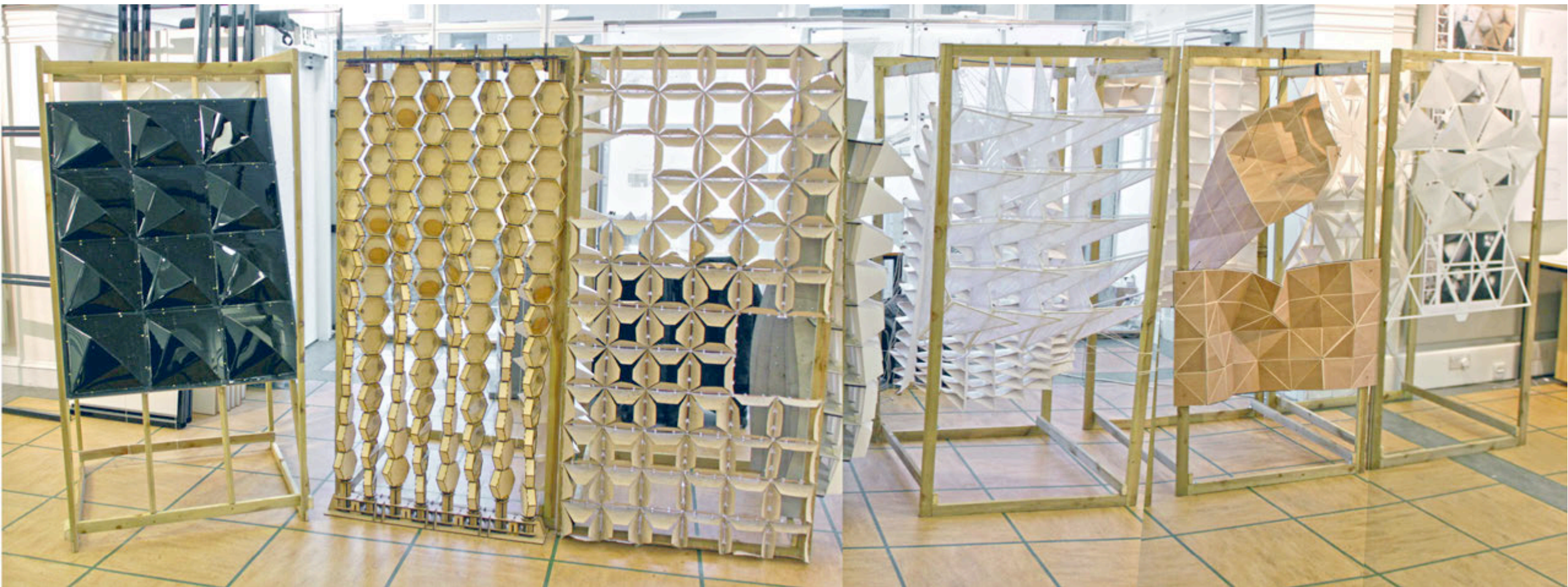




The ANexact urban plan\_Detail of Cross-Media information, Pathways of university staff and students through downtown Cagliari districts

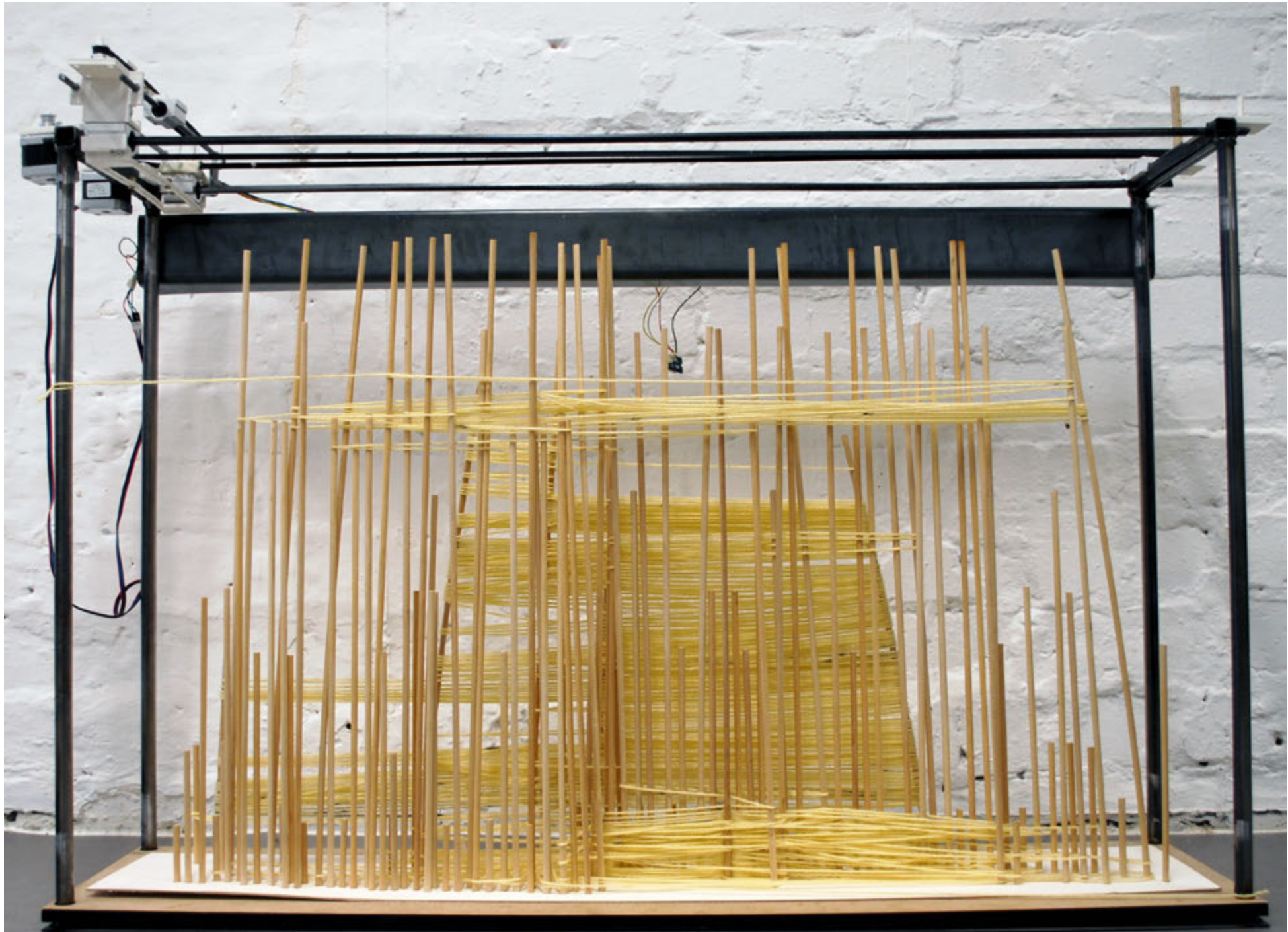














# ESALA

**BA/MA ARCHITECTURE**

**BA/MA LANDSCAPE ARCHITECTURE**

**MA ARCHITECTURAL HISTORY AND HERITAGE**



THE UNIVERSITY *of* EDINBURGH  
*Edinburgh College of Art*

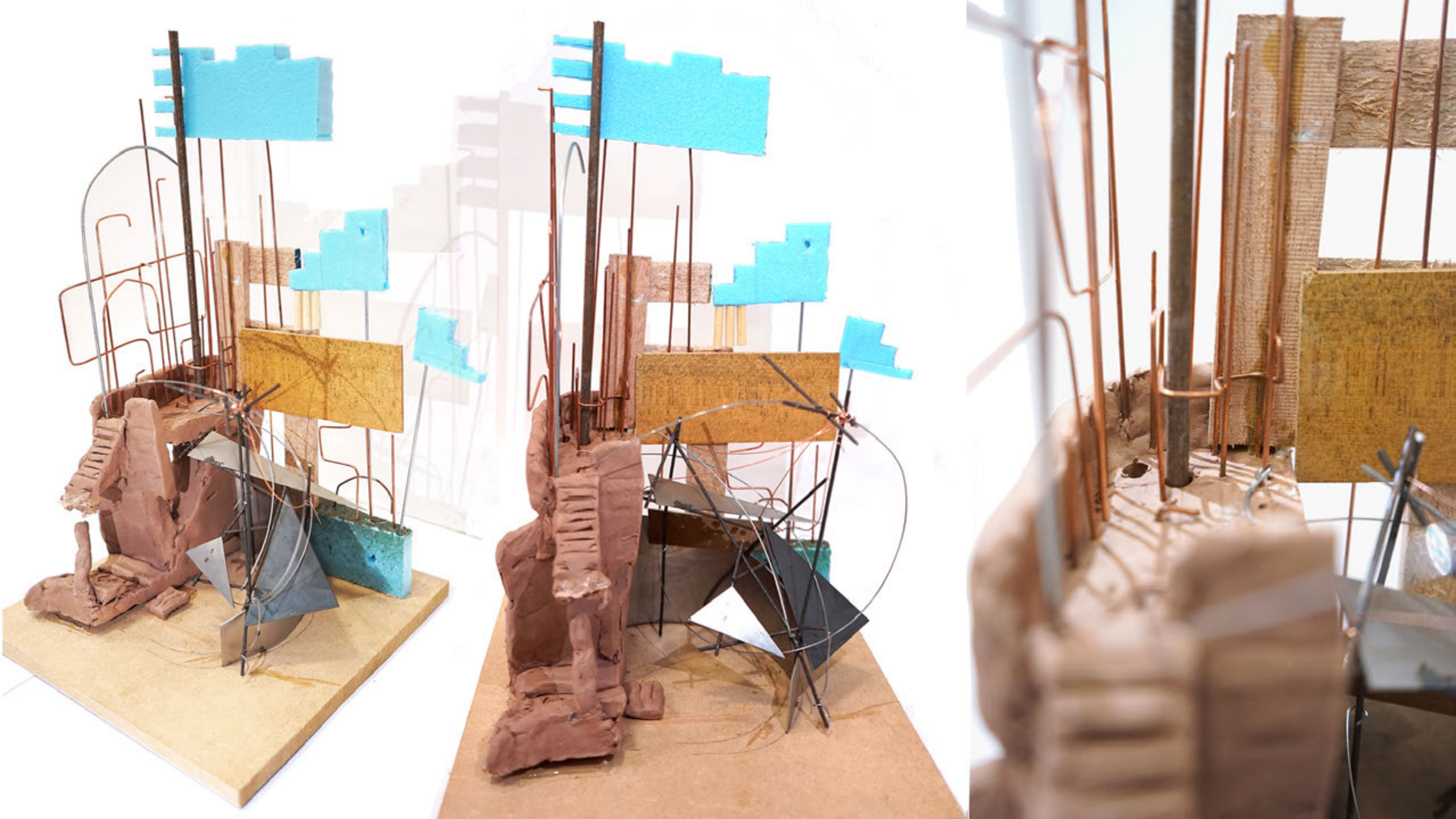
[www.ed.ac.uk](http://www.ed.ac.uk)

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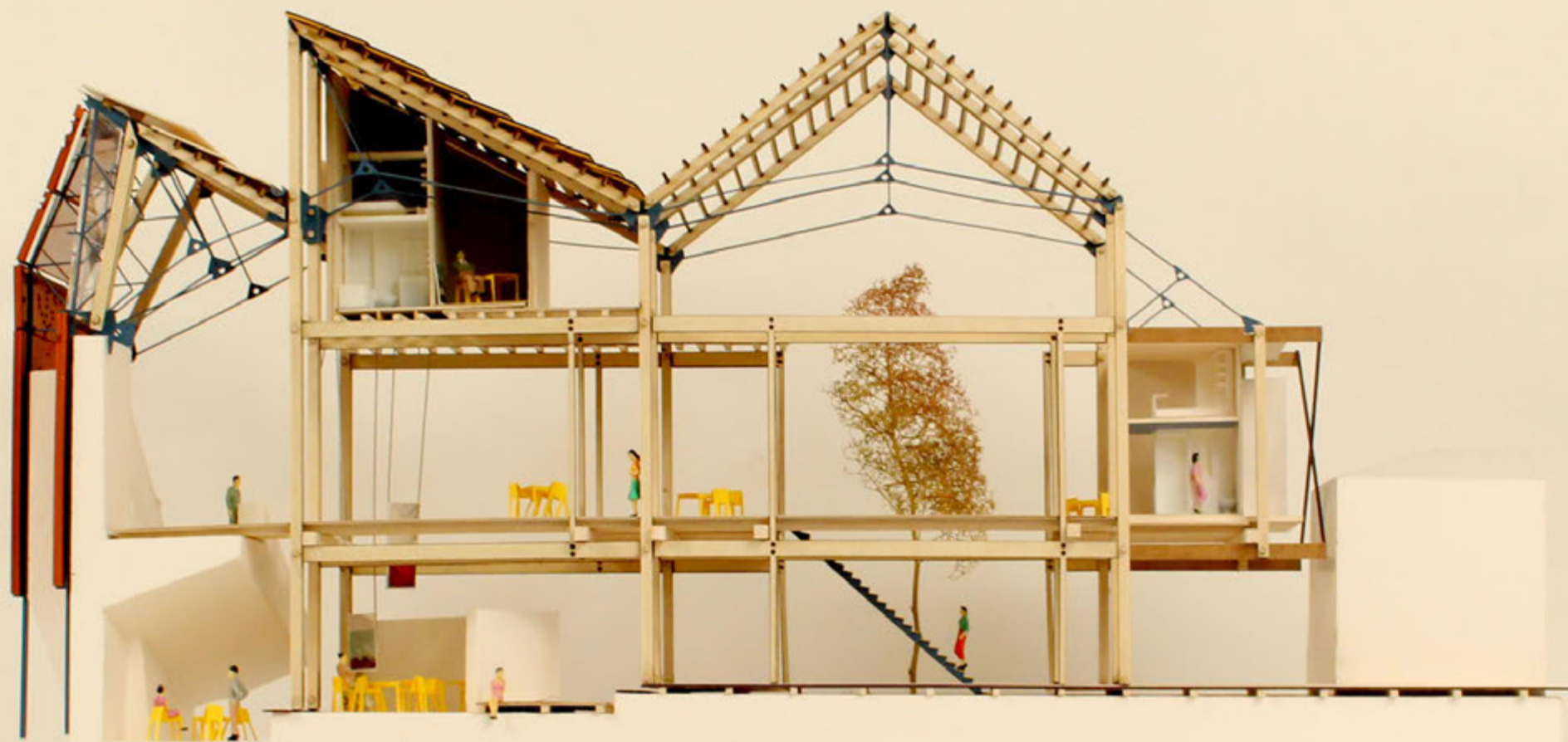
# ARCHITECTURE



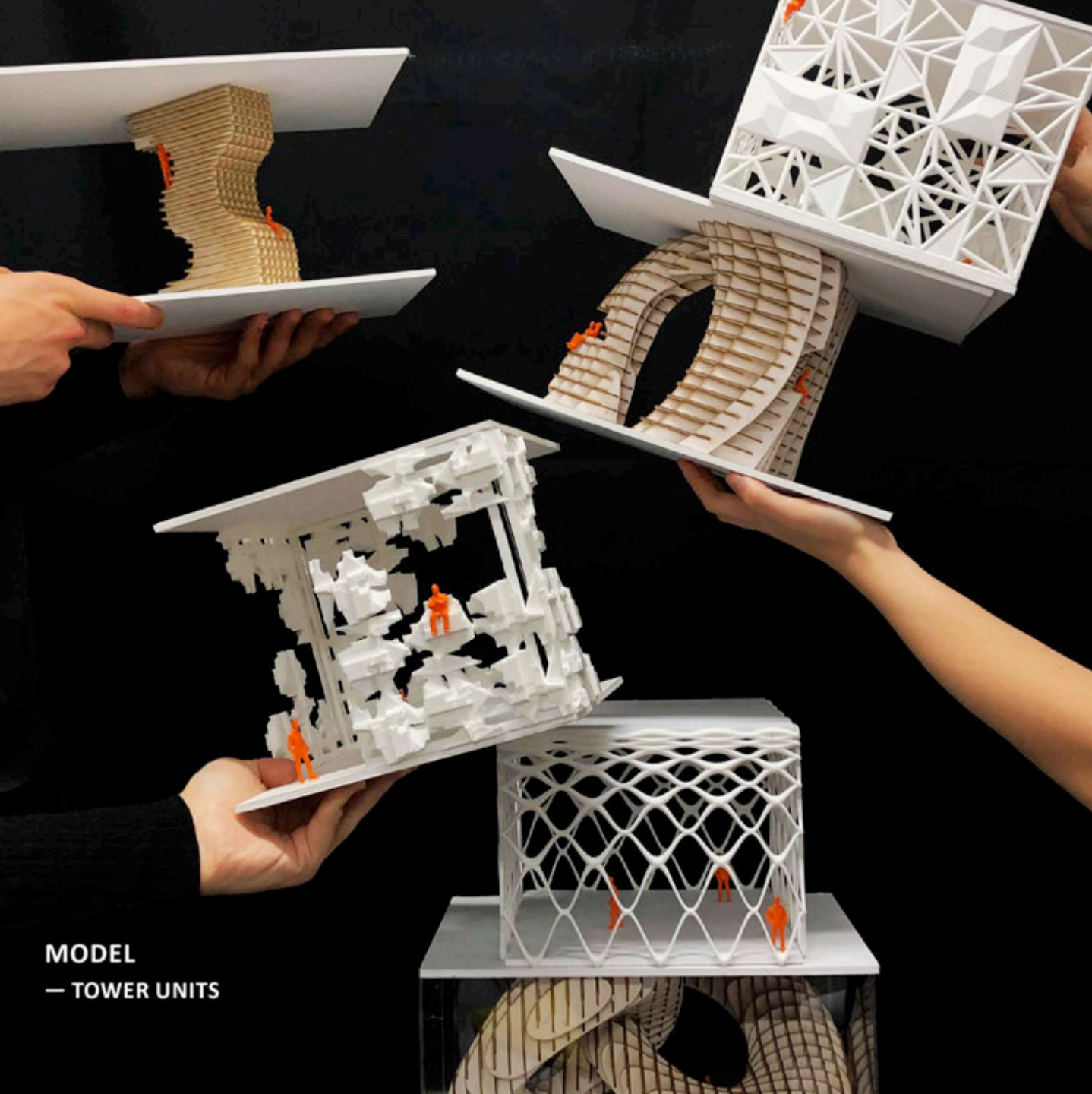








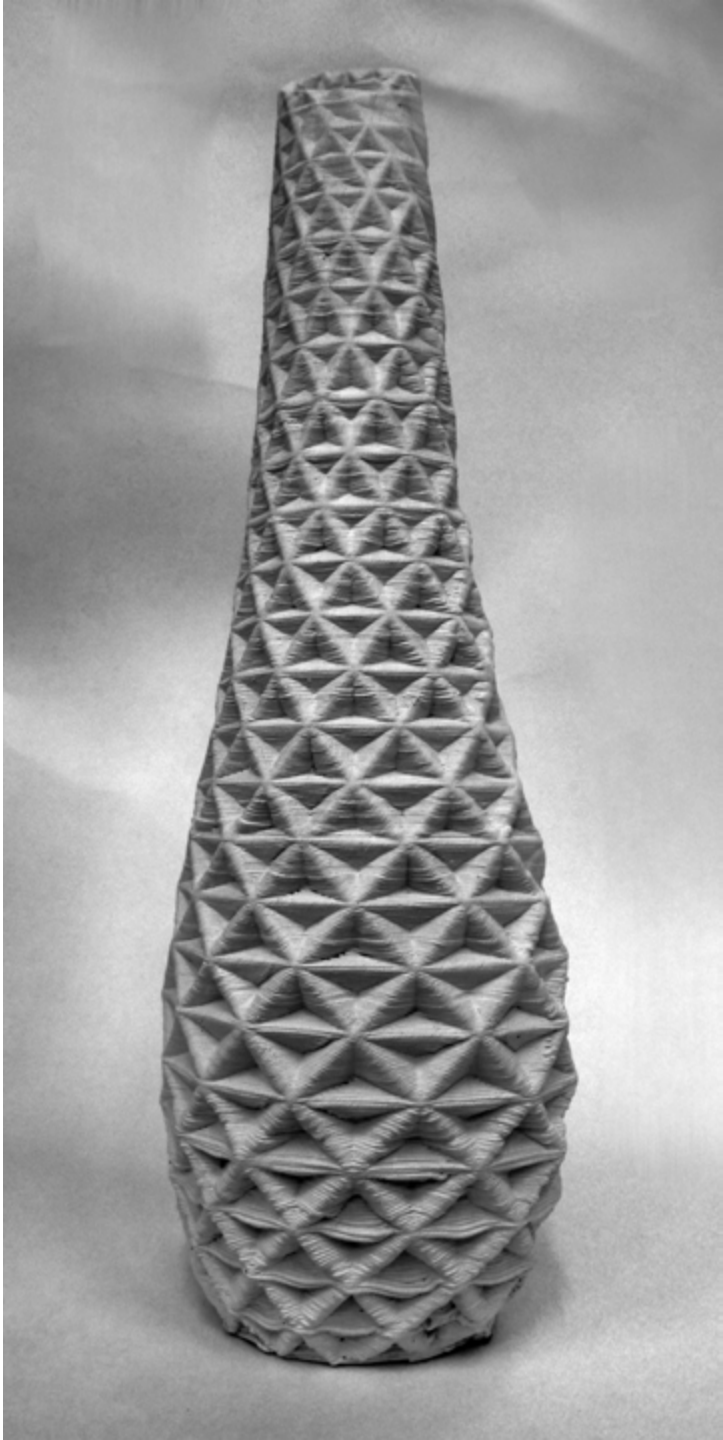




MODEL  
— TOWER UNITS



MODEL  
— DIGITAL  
CRAFT





Architectural drawing  
Architectural drawing  
Architectural drawing  
Architectural drawing  
Architectural drawing  
Architectural drawing



Architectural drawing  
Architectural drawing  
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Architectural drawing  
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Architectural drawing

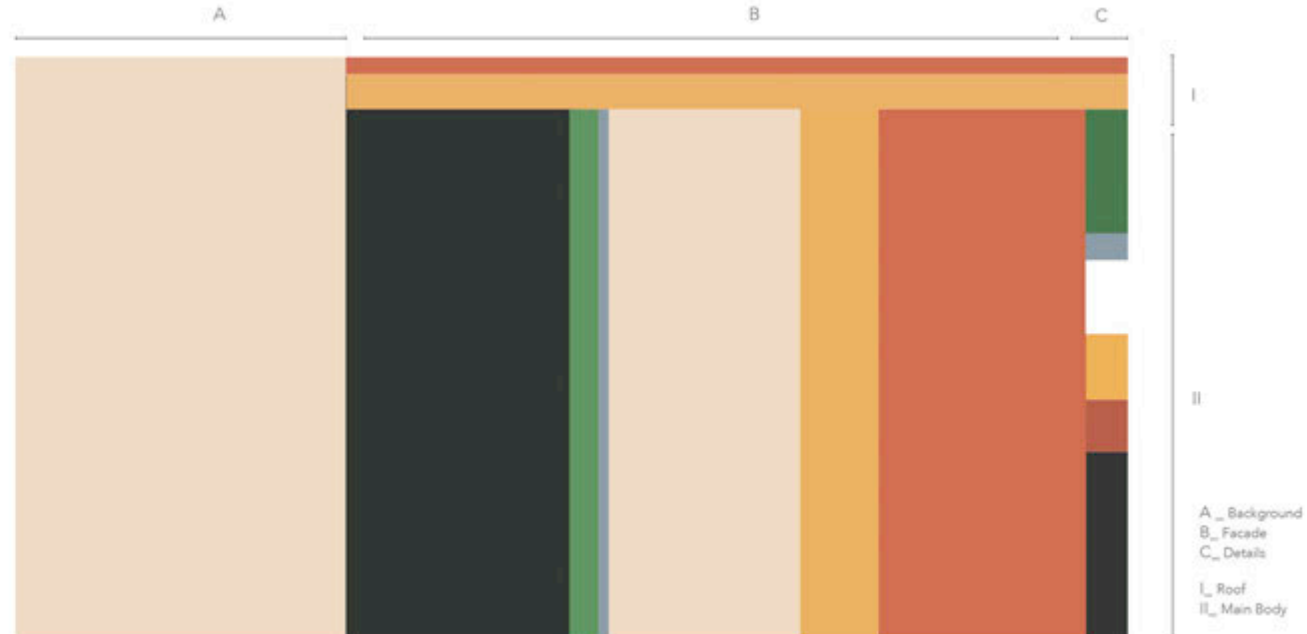




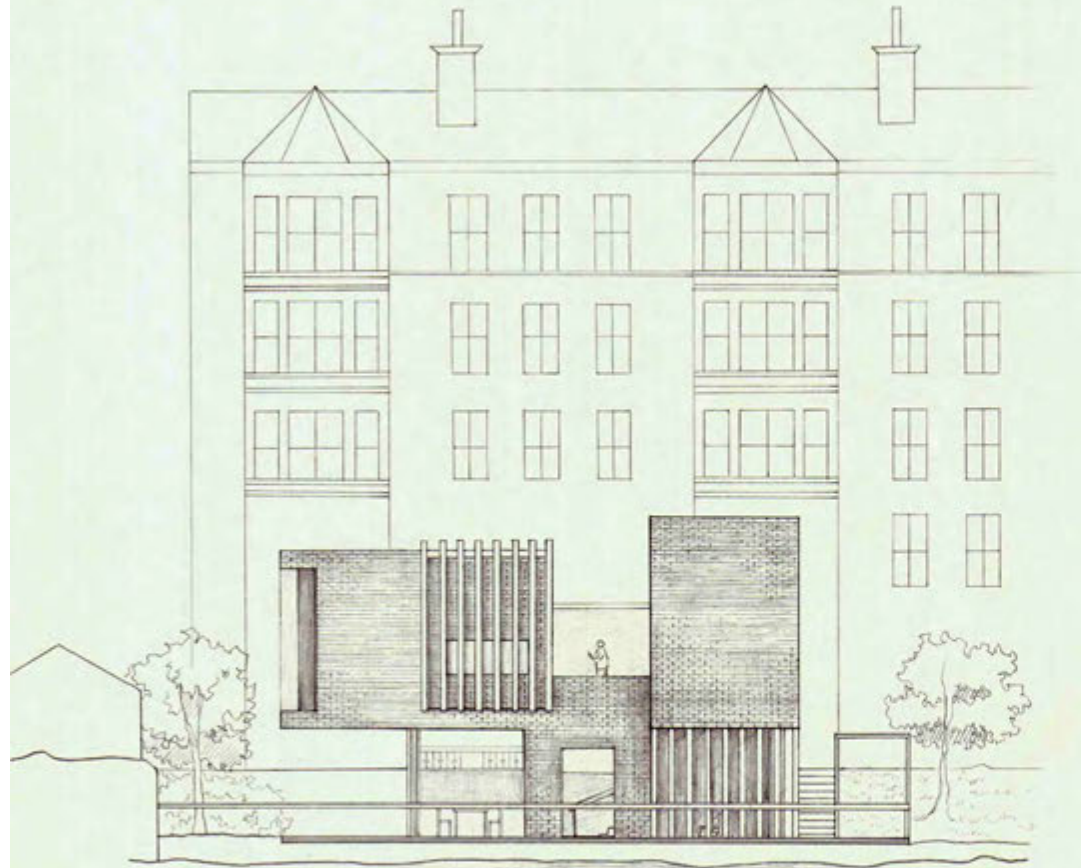
WOMAN IN THE HAT (1962)

The work was not technically a painting, but rather a print from a lino cut. This method of producing works began more common with Picasso towards the end of his career.

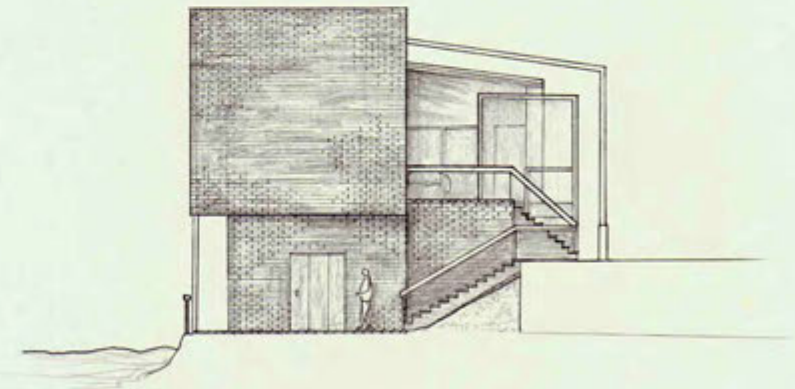
It has an interesting effect colour-wise since it produced very distinct areas of graphic block colour. In comparison to his other paintings, the colours are sharper and more defined - as well as the number of colours appearing to be more limited. Despite the limited palette, there is still a lot of consideration into how the chosen colours interact with each other: although the individual samples are contrasting hues, as a whole the painting achieves harmony.



Year 1: AD Assembly  
Student: Rebecca Sun



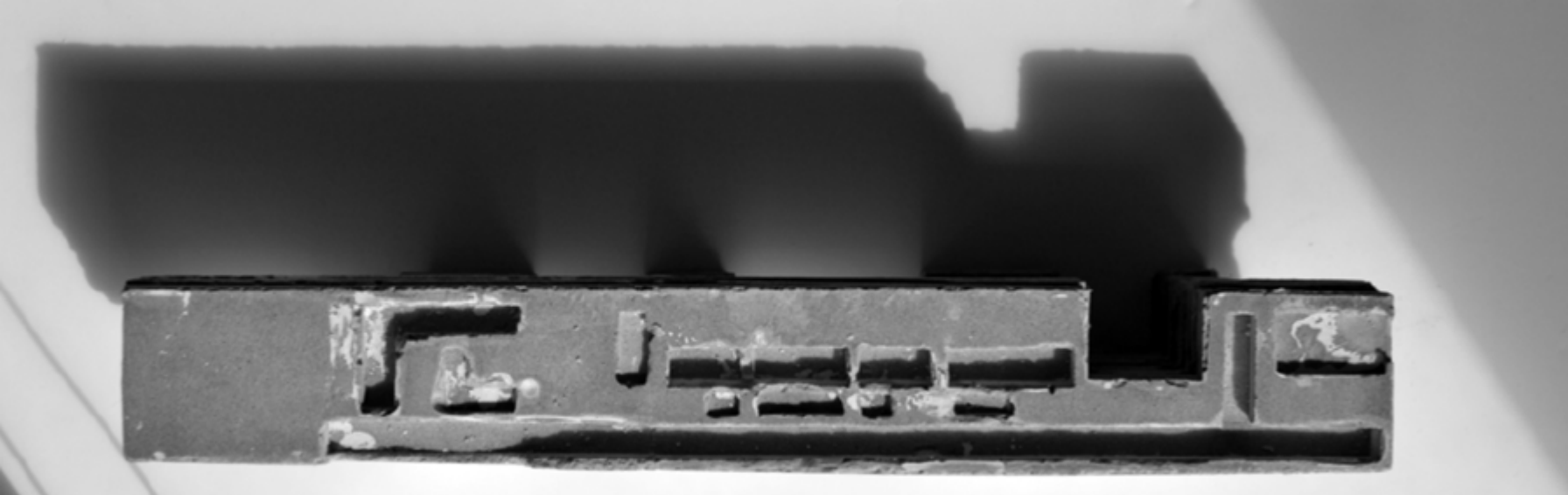
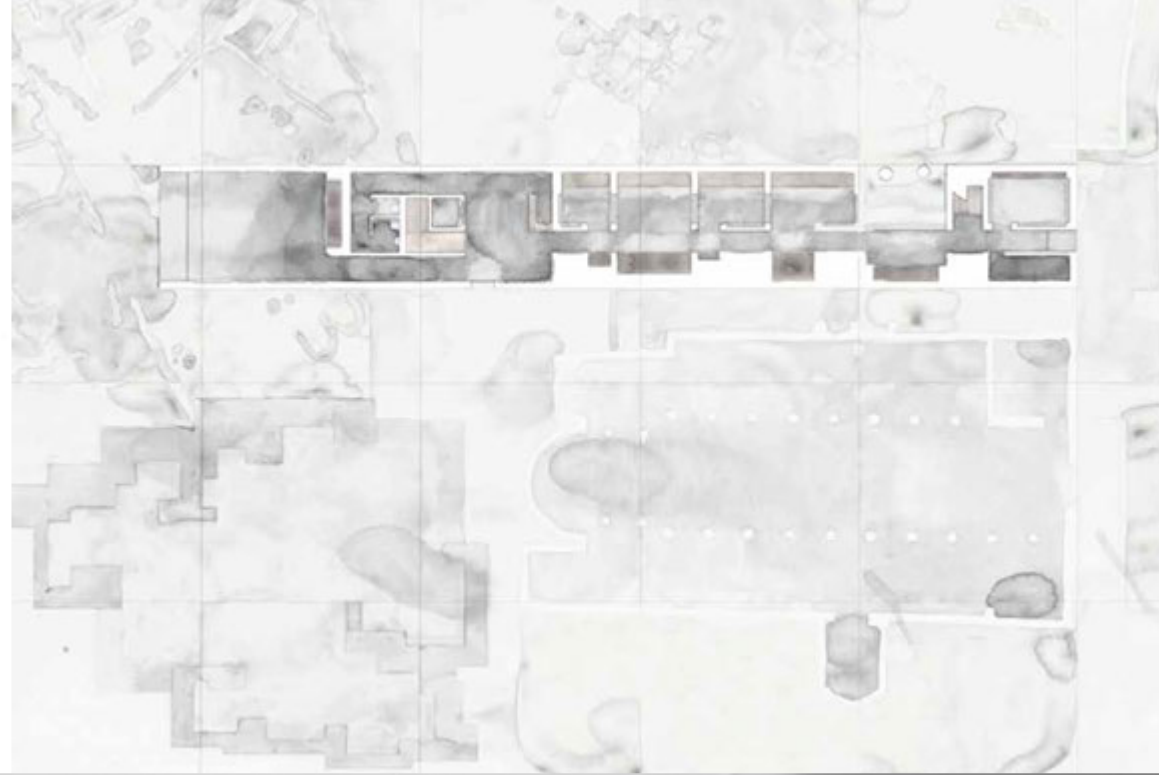
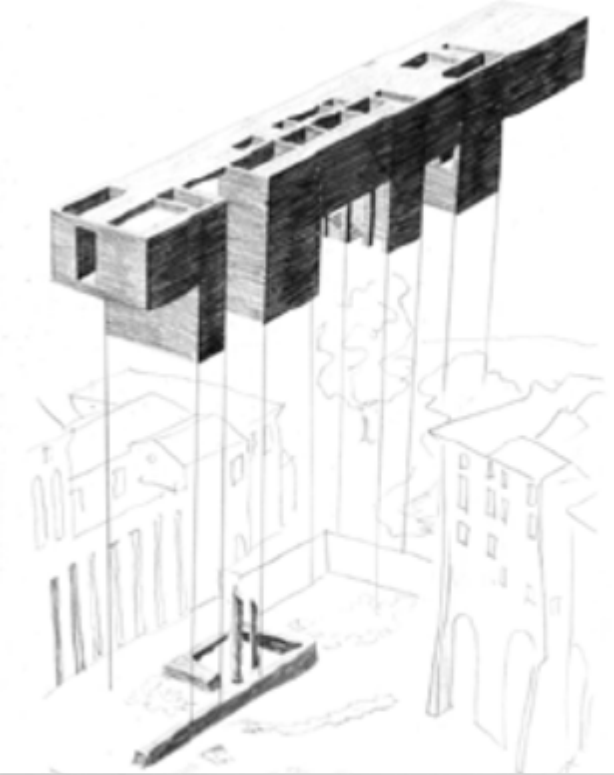
North-West Elevation  
1:100



South-west Elevation  
1:100

Rebecca Sun  
Project 2

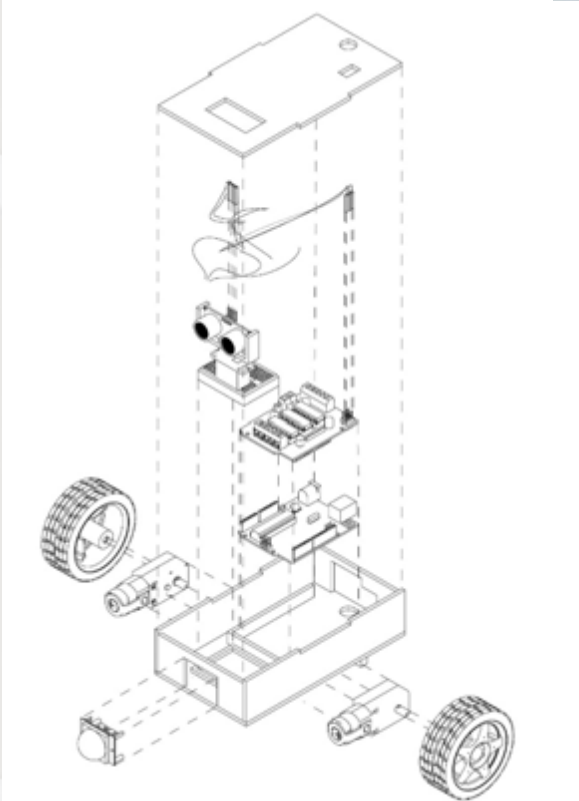
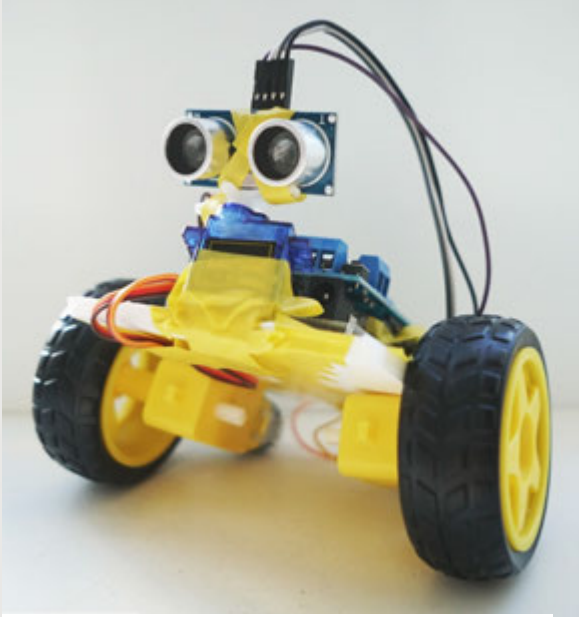
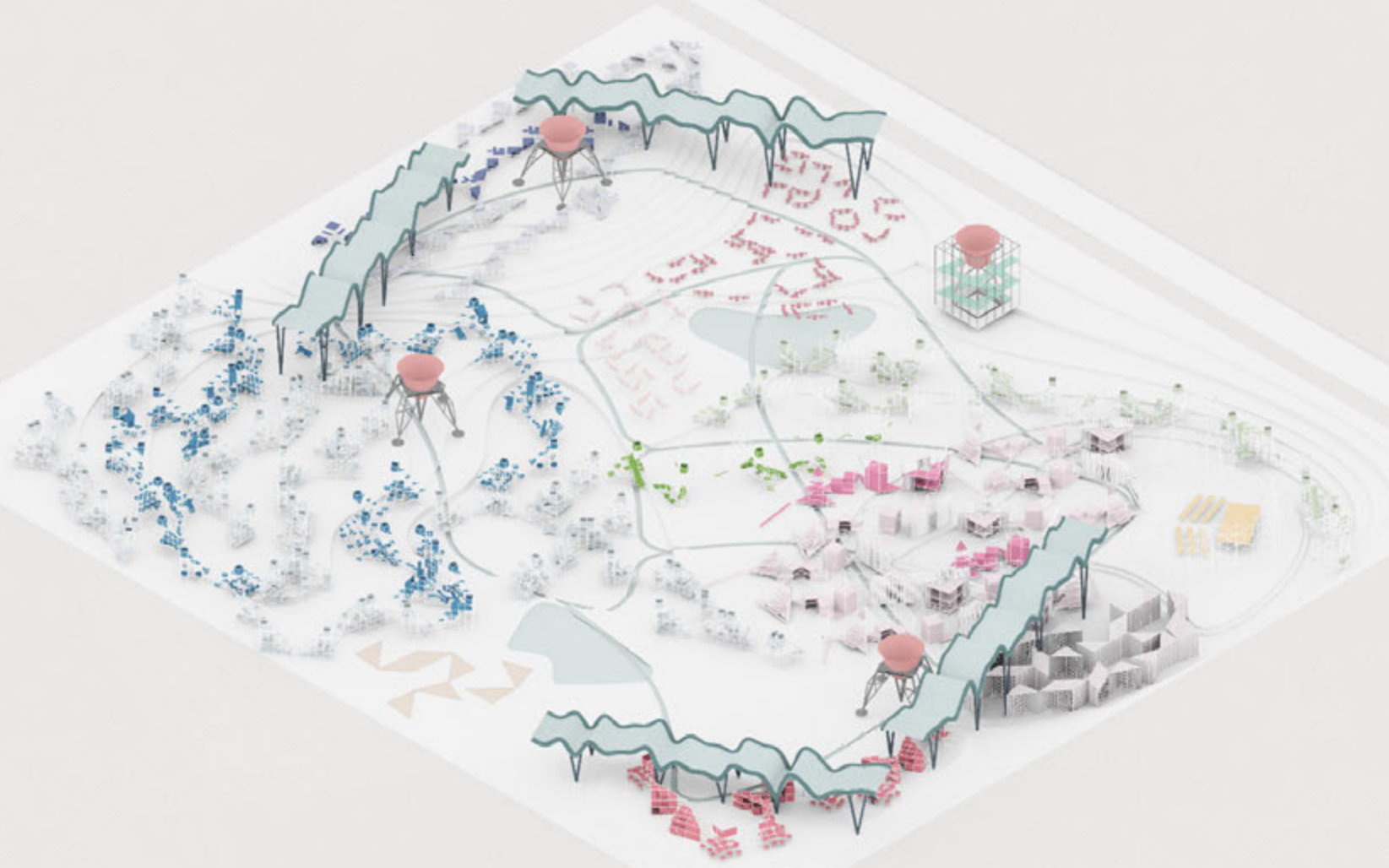




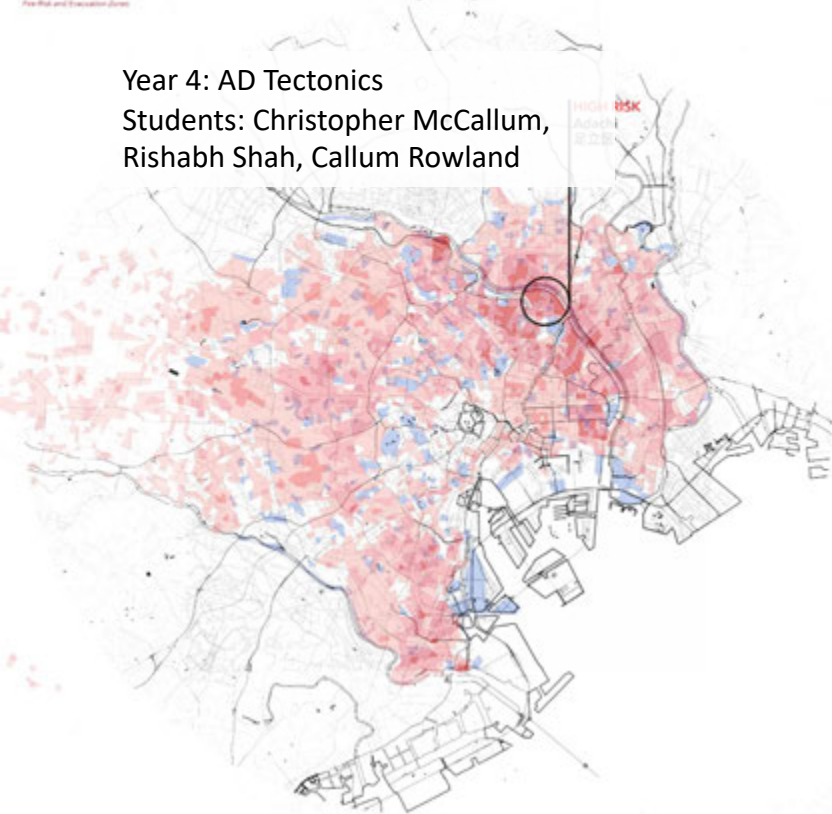
Year 2: AD Any Place  
Student: Alex Abadjieva

Year 3: AD Explorations

Students: Hebe Chan, Chloe Su, Kerry Zhou  
Re-imagining non-human territory



Year 4: AD Tectonics  
Students: Christopher McCallum,  
Rishabh Shah, Callum Rowland



### Tokyo Risk Analysis

#### Risk and Evacuation

Due to Tokyo's naturally elevated risk of earthquake and resultant configuration, extensive municipal analysis has been conducted to determine the relative risk of each district within a city. In this way, prevention and response mechanisms can be implemented most effectively. The most apparent concentration of high-risk areas can be found to the NE of the city center (see above), an east and dense area of the city residential primarily by tower structures. This region, Adachi, and even more specifically, the neighbourhood of Kitasenju, was therefore chosen as the focus of further analysis.

#### Fire Mapping Strategies

When connecting the zones of fire risk and evacuation together, the border between these contrasting areas becomes a point of great significance and of potential intervention. The strategies advanced here act as an interface between these dichotomous zones, safeguarding the passage of evacuees while retaining the integrity of Tokyo's dense residential neighbourhoods. For our chosen study, both walls exist between blocks. By understanding the way in which fire can spread throughout the successive Kitasenju region, urban intervention can target areas of risk most effectively, cutting through lines of the spread and reducing the prevalence of configuration. The more granular intervention devised in response to these fire-spread studies aims to create a protected route, leading through this context of risk and to an evacuation complex of increased safety.

### Seismic Strategy



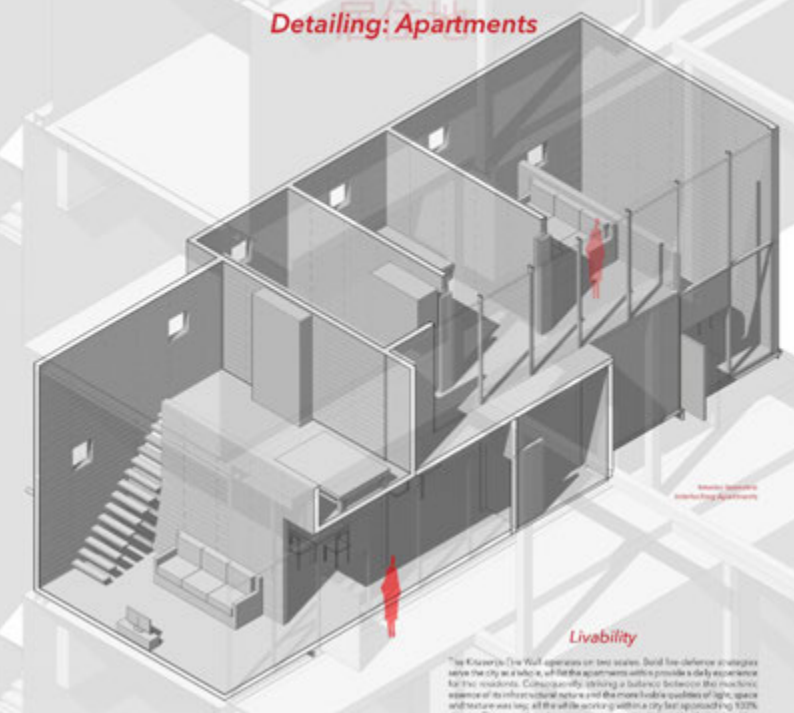
#### Do the 'Snake Dance'

Harajuku Pagoda, located in the Nara prefecture of Japan, is the oldest remaining timber structure in the world. Withstanding a great number of earthquakes during this period, its resilience is attributed to a number of structural and softnesses, developed over time. One such strategy is its independent floors, in which each floor's columns are entirely separate, connected by a series of friction joints that allow slight movement. As a result, each floor can move independently during earthquakes, leading to the 'snake dance' motion where the overall centre of gravity is retained. By tracing load paths down through the Pagoda's structure, we can see how this technique dissipates lateral energy, highlighting the equality in each side of the spine, also maintaining the varying moment generated by each 'step' of the columns.

#### Echoes of the Pagoda

Embracing from the traditional Japanese Pagoda is a contemporary structural language of stepped load paths, imbuing the design with an inherent seismic stability. When applied to the city of Tokyo, this system is developed further, combined with an awareness of the unpredictable and devastating threat of post-earthquake configuration. Deployed at a variety of scales, from niche due intervention to wider urban strategy (see above), the Kitasenju Fire Wall typology is designed to function efficiently during daily residential life as well as in the catastrophic event of earthquake and configuration. In this way, its utility is twofold: safeguarding local communities whilst increasing residential space, contributing to a city of ever-increasing density.

### Detailing: Apartments



#### Refuge

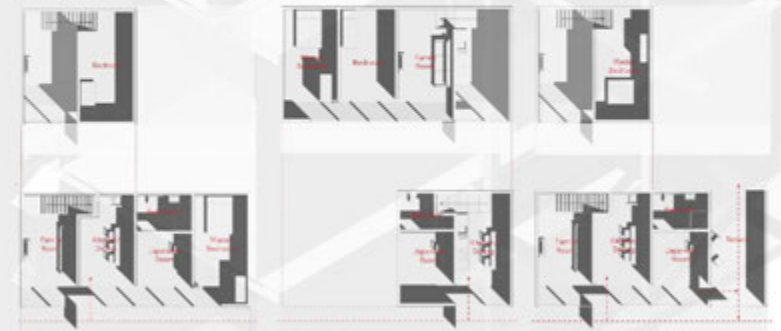
Volting back and forth from the wall, the apartments generate the tuning systems that inform the corridors and balconies beyond. Modulating between each facade of the structure, variable housing arrangements allow for regular through-passages from one side to the other. The overall, variations of the apartments, informed by SHoP Architects' Kitasenju Housing, allows for a greater depth of experience within the apartments, whilst also taking the number of required stairways due to the two-story approach. From floating day-to-day living in Tokyo to the chaos of configuration elsewhere, these apartments provide a moment of calm: refuge within the city. The Kitasenju Fire Wall is a truly inhabitable infrastructure.

#### Livability

In Kitasenju, the wall operates on two scales. Built for defence, it integrates with the city as a whole, whilst the apartments within provide a daily experience for the residents. Contemporarily, striking a balance between the machine's rigidity of architectural systems and the more fluid qualities of life, space and culture was key; all the while acting within a city far exceeding 100% density. There are three housing arrangements, obtained by three sets within the building as a machine. It covers all the landings within the wall, creating a sense of connection, a through passage to the wall, allowing for vertical circulation across the structure. These passageways serve as semi-private terrace spaces, providing a modest external space for the adjacent residents.

Steel sub-frame sits within the main structure, dual external walls responsive concrete panels and internally with Japanese Cedar. Secured through a combination of steel and rubber joints, each apartment unit, in a carefully controlled manner, moves independently in the case of an earthquake. With its weight spanning through the large glass facade, the cladding is designed to move and breathe, which provides form the framework further divide the space. Small structures in the wall facade enable the design of the fire wall beyond, allowing for brief snapshots of the infrastructure passing within it.

#### Plan: Apartment Details



#### Apartment 01a

100sqm  
100sqm

#### Apartment 01b

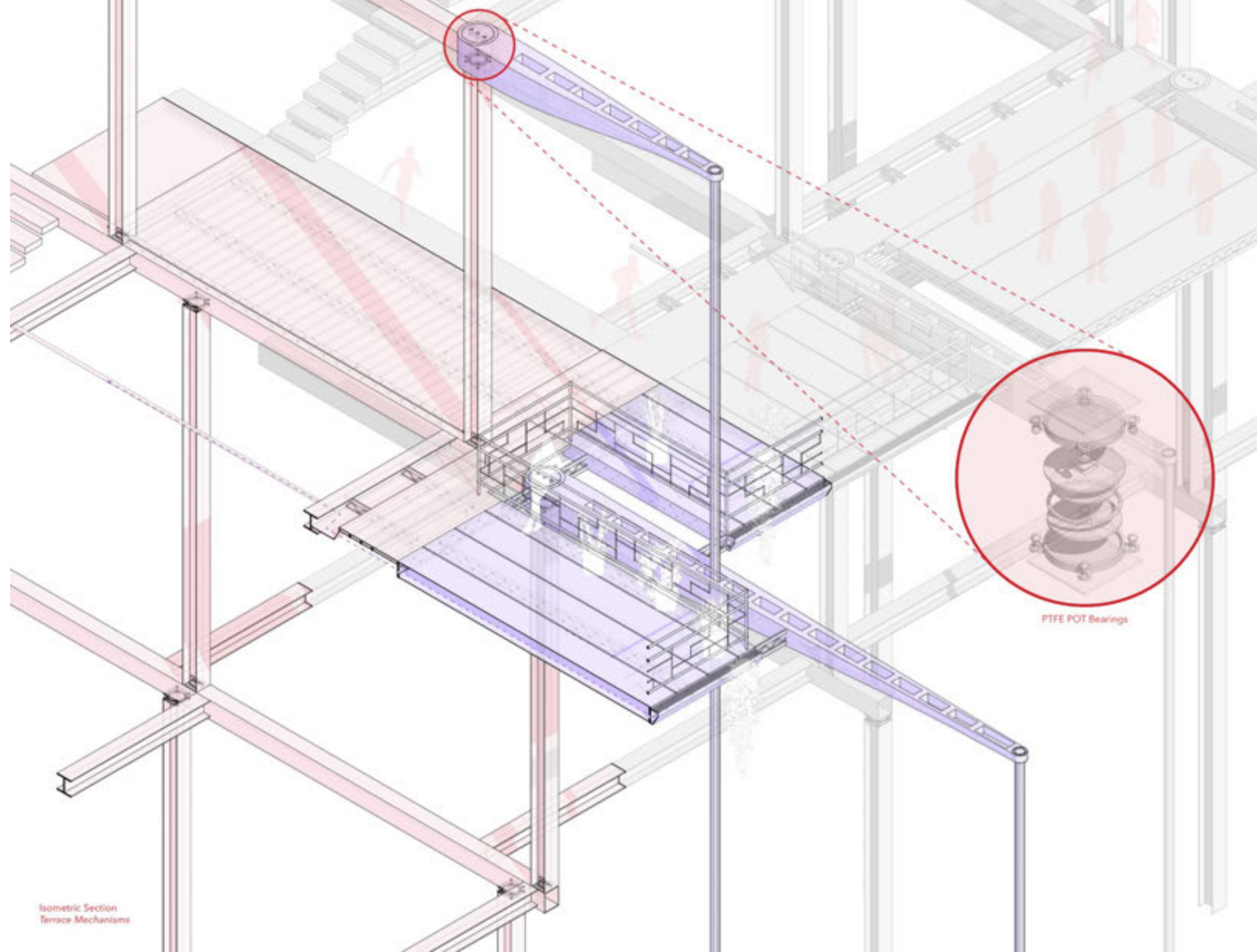
100sqm  
100sqm

#### Apartment 01c

100sqm  
100sqm

Year 4: AD Tectonics  
Students: Christopher McCallum,  
Rishabh Shah, Callum Rowland

## Detailing: Cantilevers

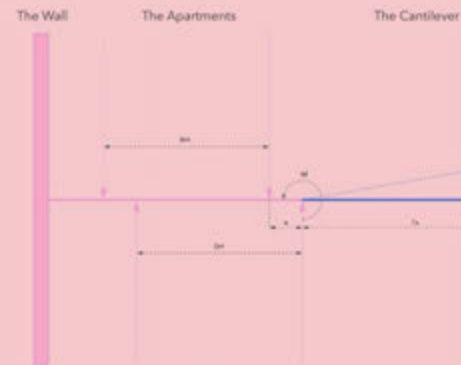


PTFE POT Bearings

## Vertical Evacuation

This section considers adapting the mechanism of the stepped load and its usage in the Kitasenju Fire Wall. As the fundamental purpose of each cantilever is to achieve equilibrium, whilst additionally serving in seismic resistance, these fairly unique elements required novel development in order to ensure that they were not only inherent in their structural role, but also contributing to the wall's overall fire defence strategy. Limiting the large, heavy eaves of the pagoda, it was essential that the cantilevers employed a great mass to offset the turning moments. Consequently, it was logical to inhabit the cantilever, introducing weight through natural occupation and thus satisfying both roles.

Located on the 'safe' side of the wall, the inhabited mechanism acts every day as an exterior terrace space, situated within a dynamic array of vertical cables. A concealed irrigation system collects and distributes rainwater, accommodating vegetation on the terraces and developing peaceful, natural space for the residents despite the traditional restrictions of a tall, densely populated building. Meanwhile, in the event of conflagration, it becomes the site of additional evacuation, efficiently extruded upwards rather than sprawling outwards. This is a particularly relevant solution given the high level of density that now defines Tokyo.



## The Mechanism

The cantilevering beams developed for this project are in many ways a modified version of the 'gerberettes' that can be seen deployed throughout the Centre Pompidou in Paris. The beams also operate in a similar way, mediating between tensile and compressive forces. The introduction of downward tension cables, whilst contributing to the overall weight of each beam and further mimicking the pagoda's eaves, serves an additional seismic purpose, allowing for a small degree of movement through the flexible and elastic nature of the cables. The variable lengths of these extending beams is a direct response to the shifting of each apartment within the structure, and the magnitude of each shift informs the length of each cantilever, employing a ratio derived from the pagoda itself and its relationship between column and eave.

It is vital to remember that only when the load steps in the pagoda is movement allowed. This ensures that each floor can move independently within an overall system of rigidity. This strategy has been continued within the steel structure, fixing all elements within each floor but implementing a movement (PTFE POT) bearing at connections between floors. One of these moments can be found at the top of each column, concealed within the 'gerberette' (see left).

# LANDSCAPE ARCHITECTURE





Landscape and Architecture

Landscape and Engineering

Landscape and Art

Landscape and Ecology

Landscape and Planning

Landscape and Social Studies

Landscape and International Development

Landscape and Hydrology

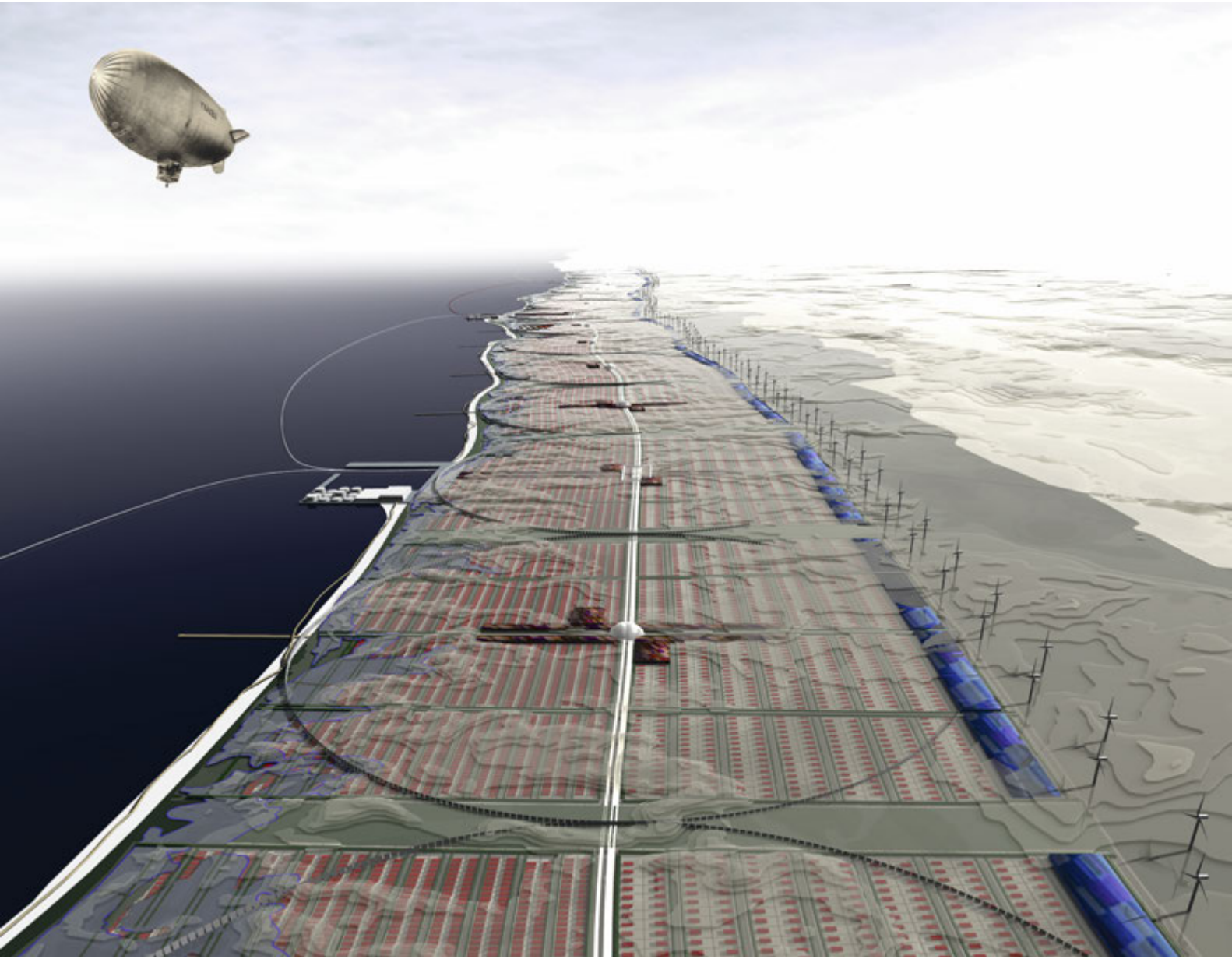
Landscape and Climate

Landscape and People

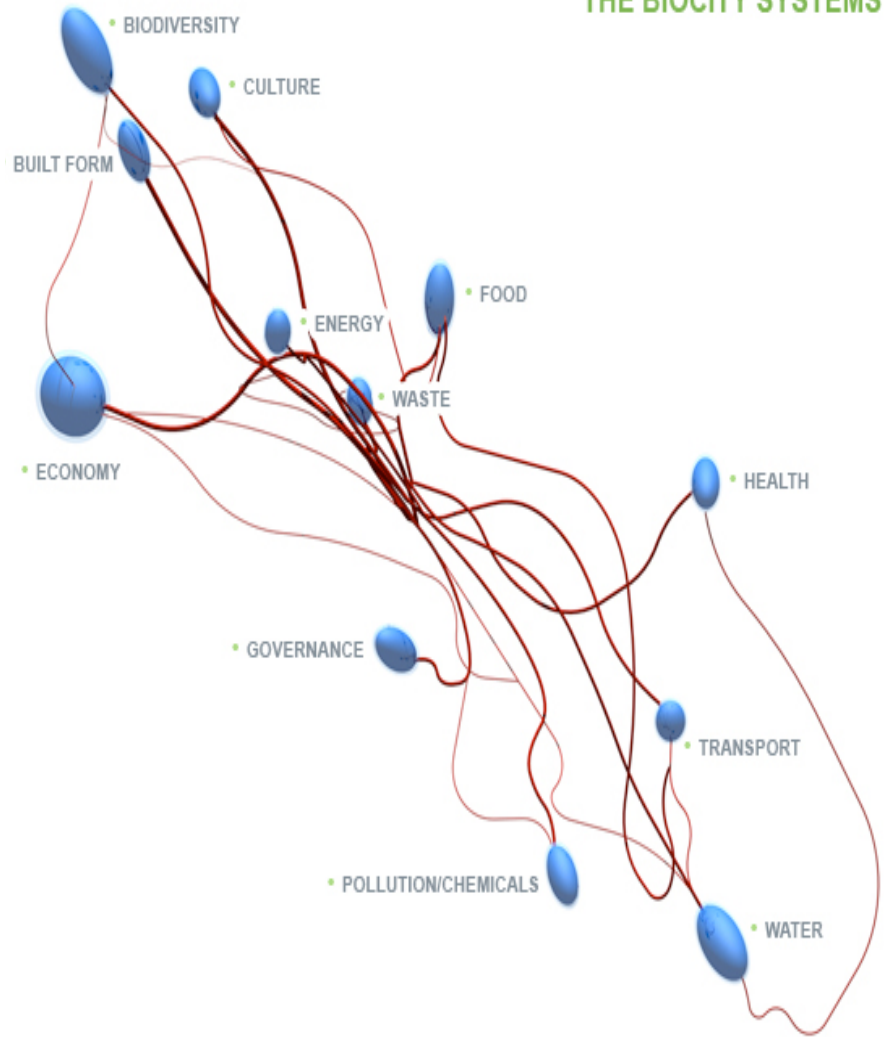
*Landscape as a human right*

How to catalyse interrelationships between

**people and society, society and the environment**



### THE BIO-CITY SYSTEMS





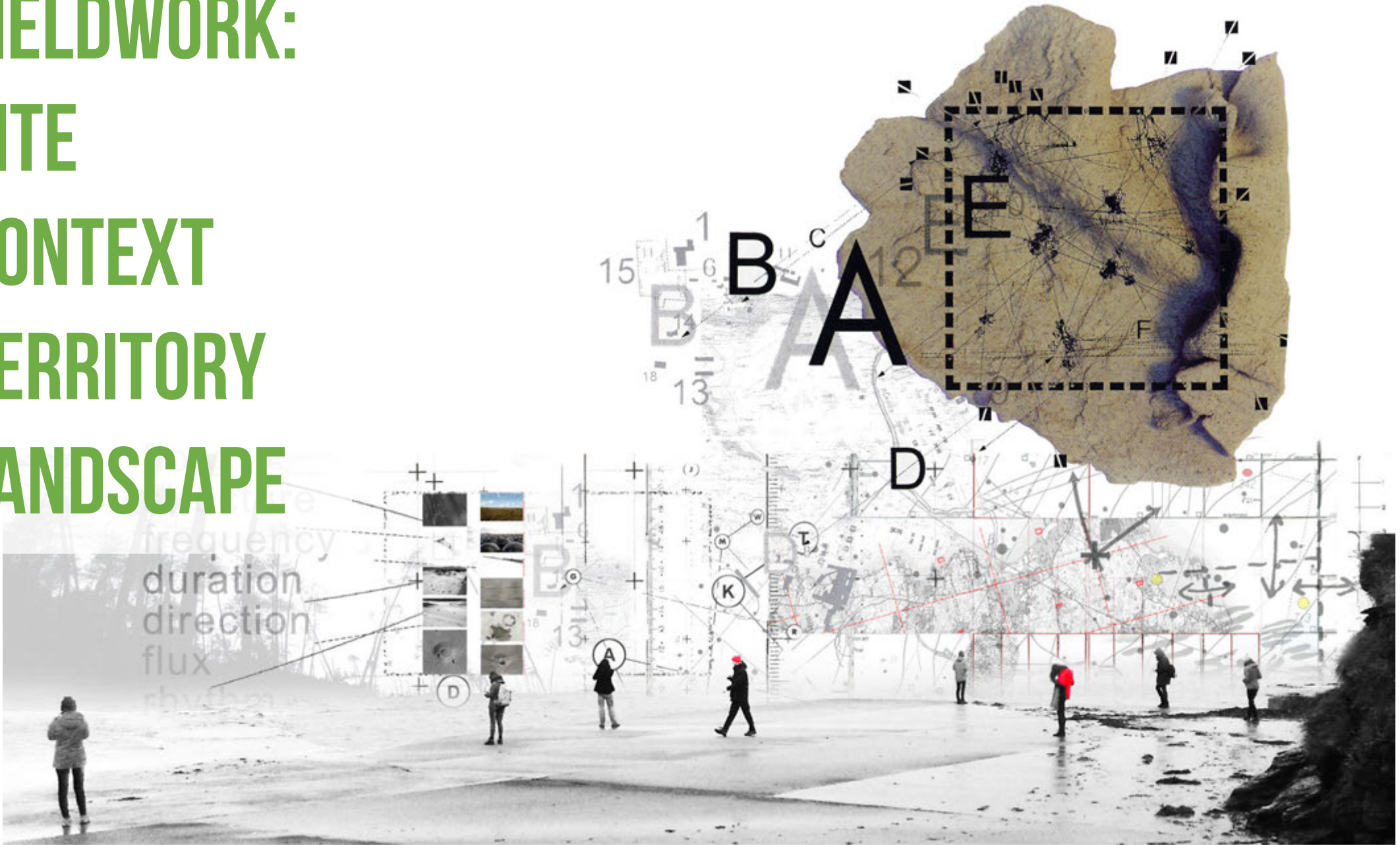


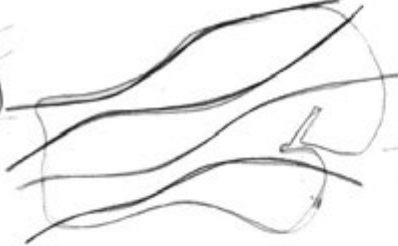
**HUMANITY : ENVIRONMENT**  
**HUMANITY : CULTURE**  
**HUMANITY : EVERYDAY LIFE**  
**HUMANITY : MATERIAL WORLD**

**HUMANITY » THE FUTURE?**



**FIELDWORK:  
SITE  
CONTEXT  
TERRITORY  
LANDSCAPE**



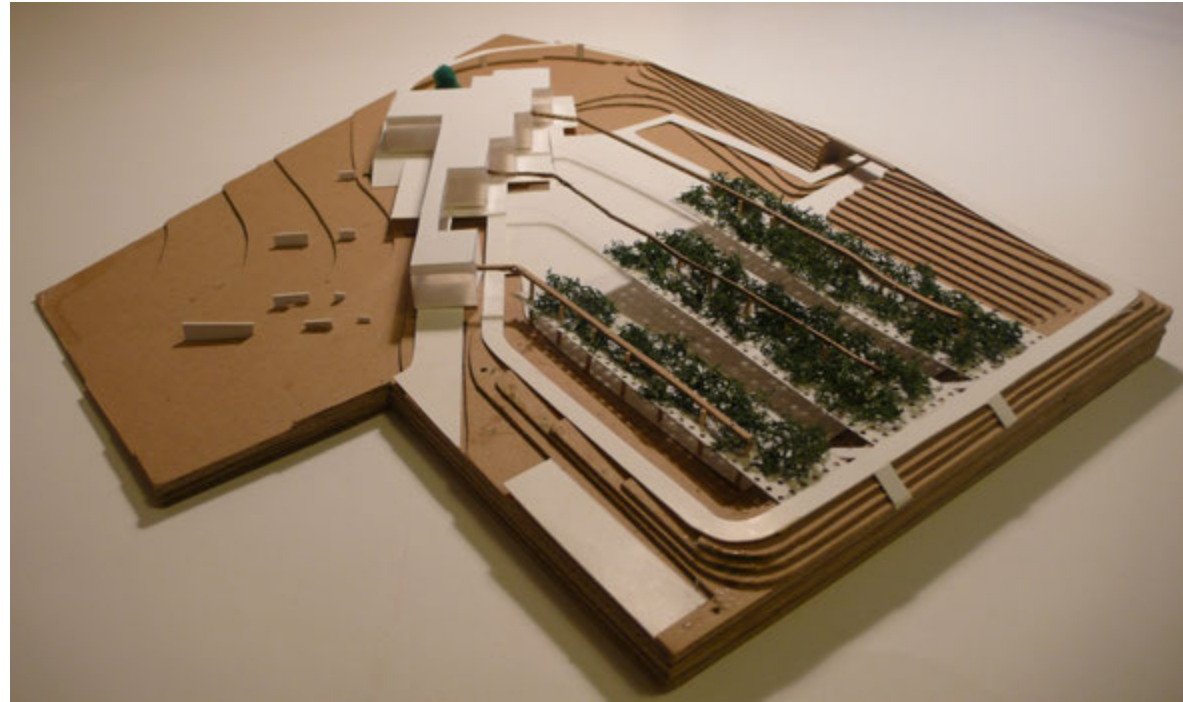
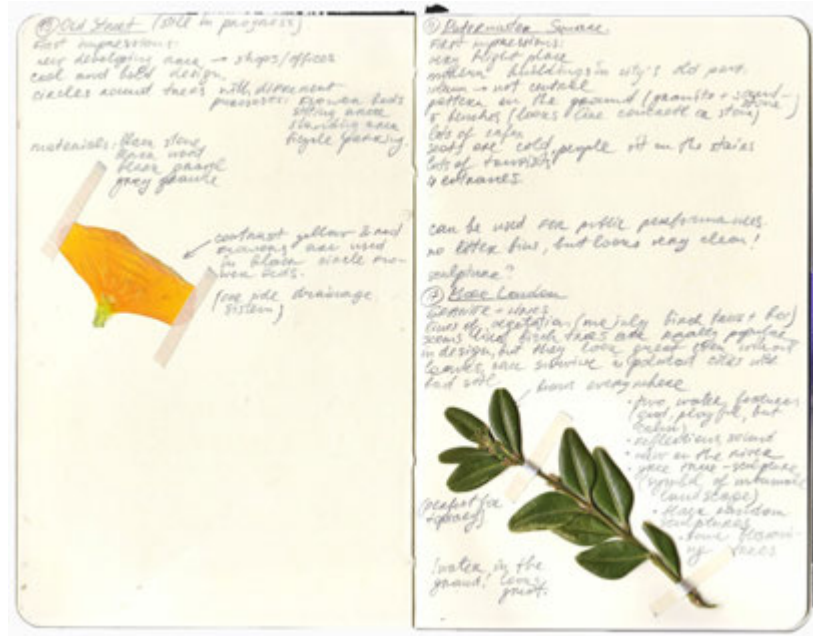


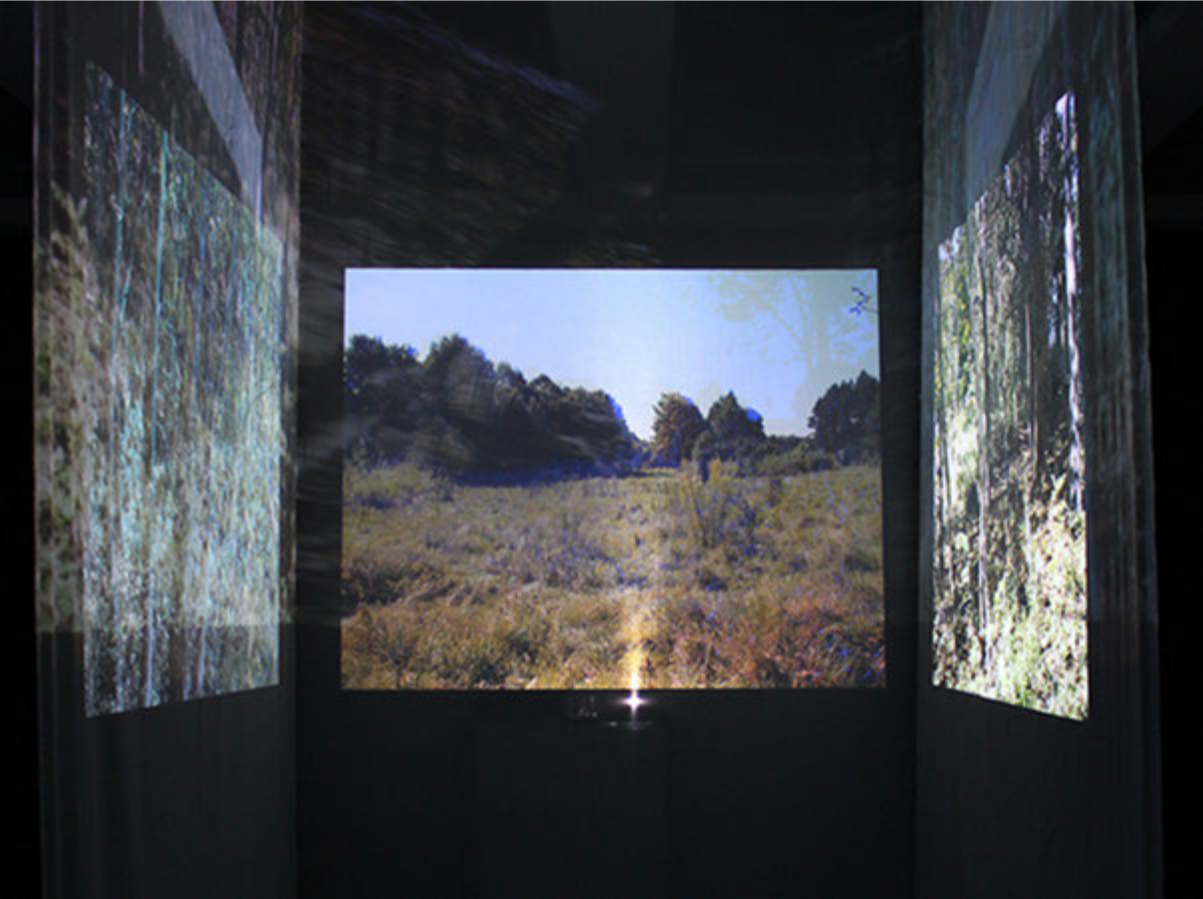
**phase one**  
use of topography to define visual connection and frame views.

**phase two**  
Mounds expand until the island edge to fragment. More dynamism.

**phase three**  
Collective, central soaces are inserted at the intersections to create aggregation spaces.

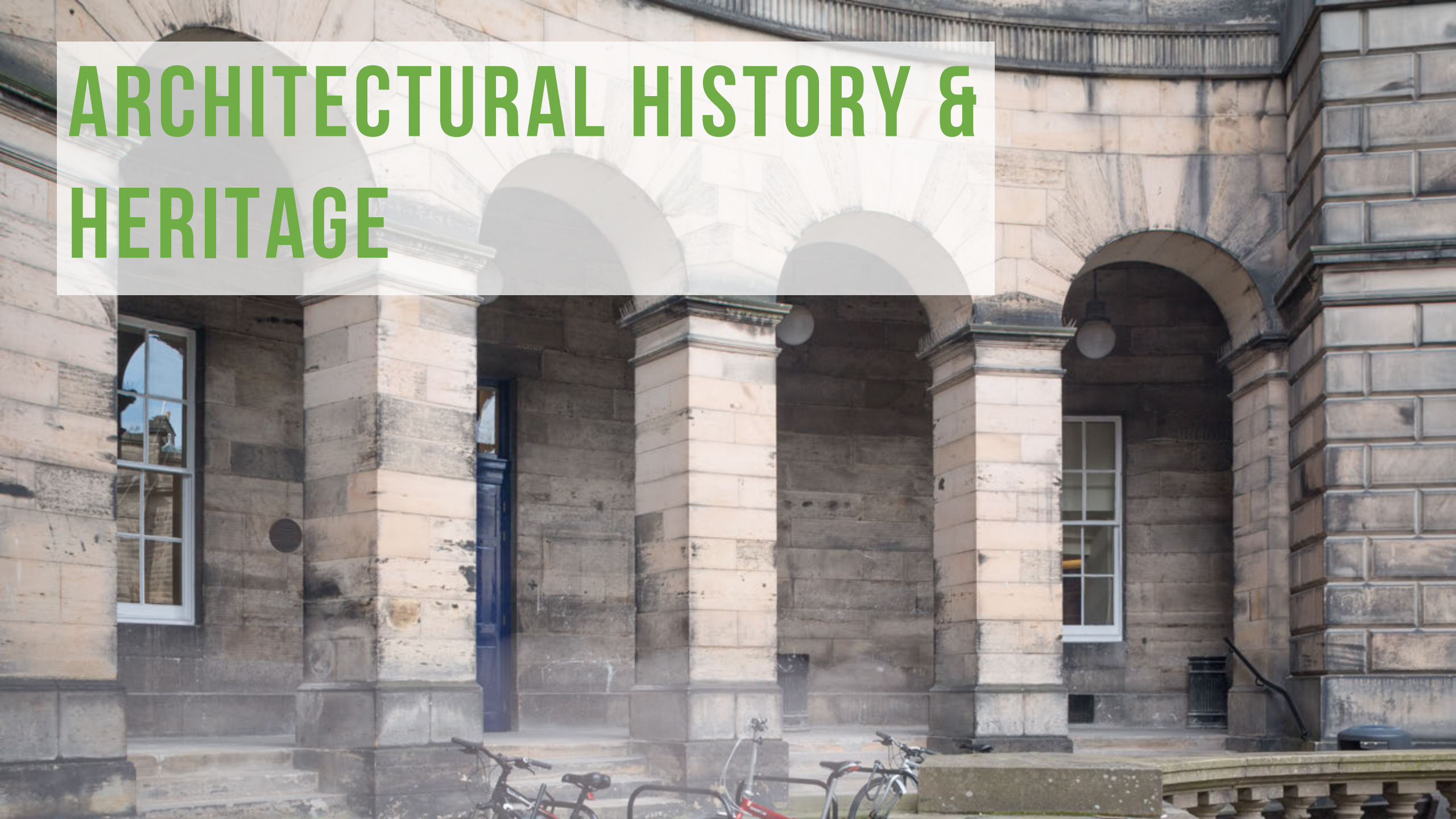
**phase four**  
Mounds are fragmented and define new collective spaces.







# ARCHITECTURAL HISTORY & HERITAGE





# Architectural History and Heritage - MA (Hons)

Salisbury Cathedral  
Image courtesy of Alex Bremner

## Five reasons to choose the programme





# ESALA



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Edinburgh College of Art

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