



Project Statement

“The reconciliation of opposing perspectives”

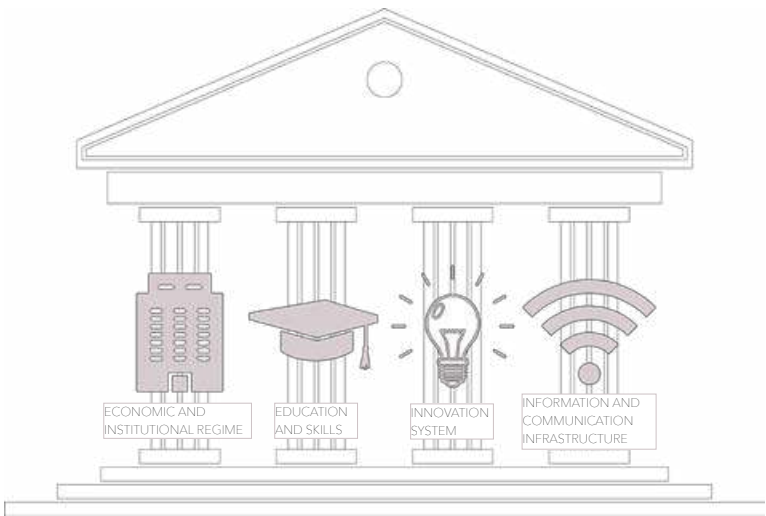
Marrakesh Knowledge Conference Centre with Research Facilities for Solar Energy and Islamic Religious Studies

The current global trend of developing economy through science and technology resulted in the physical occupation of the ‘knowledge economy’ within the urban fabric through forms of tech quarters, industrial parks, etc. In recent years Morocco has taken a great effort to promote scientific and technological development through building technoparks and investing heavily in education. However, the favour towards one subject often lead to the negligence of another. This project takes this opportunity to re-examine Marrakesh’s past and future. Knowing that science and technology are means to develop forward, the project wanted to grasp Marrakesh’s rich culture formed through its religion of the past. Therefore the project proposes an environment where science and religion can potentially co-exist, hosting research facilities for solar energy and Islamic religious studies research. In addition, a conference centre is set up to host domestic and international events in effort to promote education in Marrakesh and wider regions.

The design developed through the exploration of **collisions and co-dependencies** between science and religion, reflected through its **materiality, use of lighting and framing of spaces**. The traditional modes of study extracted from a Madrasa (traditional Moroccan educational institution) helped the project to define functional spaces, as well as taking a particular focus of the **in-betweens / transitions**, formed through transitional spaces within the building, as well as convergence points between buildings.

The project re-interprets **vernacular techniques** for a contemporary design, achieving naturally ventilated building suitable for its context. **Low-carbon and local construction materials** are selected for sustainable design.

The project does not aim to solve the problem between science and religion, but offers a provocation and possible solution of which the two distinctive subjects could co-exist and benefit from each other.



The Knowledge Economy Within the Urban Fabric

The knowledge economy is a system of consumption and production based on intellectual capital. It refers to the ability to capitalize on scientific discoveries and applied research. The knowledge economy represents a large share of the activity in most highly developed economies.

In recent years we have seen global trends of countries relying heavily on the knowledge economy as their main economic growth. As a result urban quarters are developed in the names of science and technology, as means to boost economy and foreign investment as well as a physical symbol of the country's effort in scientific research.

This is not only the case for developed countries. In the past decade the Moroccan government has spent a great effort in promoting science and technology, including building technoparks, and industrial quarters in various regions within the country.

Morocco's higher educational institutions, including both universities and adult vocational training institutions concentrate mainly in developed cities, including Casablanca, Rabat, Tangier, Fez and Marrakesh.



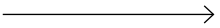
The isolated, gated large scale corporate parks encloses large areas of the city to one exclusive use.



Can smaller-scale, individual buildings be inserted into the existing urban fabric to allow more integration and collaboration with the existing context?



Exclusivity towards the science and technology companies and institutions.



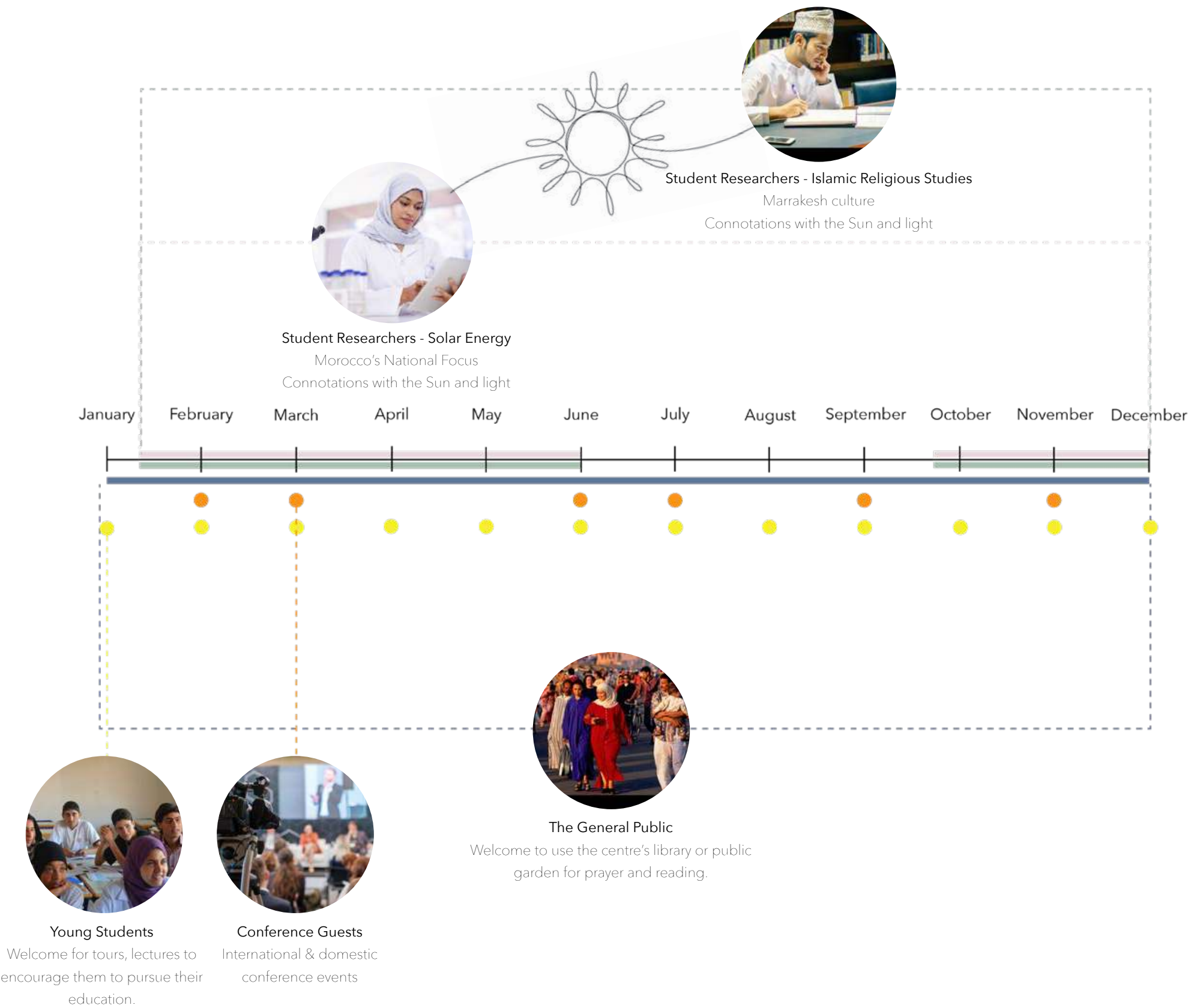
Can facilities be shared across multi-disciplinary and offer a wider range of 'knowledge production'?



Large scale standardised, glazed, open-plan offices.



Can there be a more delicate approach to spaces for different uses and settings? Will this encourage better 'knowledge production'?



Marrakesh Conference Centre with Research Facilities for Solar Energy and Religious Studies

Knowing that science and technology are means to develop forward, the project wanted to grasp Marrakesh's rich culture formed through its religion of the past. Therefore I am proposing an environment where science and religion can potentially co-exist and develop further.

During term time the centre hosts research students in solar energy and Islamic religious studies. I think that this combination can create interesting collisions and both have either symbolic or practical connotations to the sun, which is also an important driving force for design. In addition, the centre hosts seasonal conference events for international and domestic use as a way to showcase the country's development. The centre operates all year round for the general public to use its religious library, and invites young students to take tours and lectures, encouraging them to pursue their education further



Site Location

This project believes that by inserting itself within the heart of Marrakesh, a significant population in the 'knowledge' realm, both internationally and locally, will be introduced to the region, generating growth in education, culture and tourism.

Two educational institutions are directly adjacent with the proposed site, allowing access for local students to attend conferences, lectures and tours to encourage them to pursue their education.

The site is within walking distance to one of the most famous mosques (The Kutubiyya Mosque) in Marrakesh, providing a religious community that could potentially use the site for prayer, reading and further studies.

The road offers great access straight from the airport, allowing international guests to arrive smoothly for conferences.



Street Elevation

The street-facing facade keeps the rhythm of the street created by the colonnade and divides of shops.

From left to right: public courtyards in front of meeting rooms, stair tower, reception building, public cafe.

Co-dependency and contrast expressed through materials and construction

I believe that there's a gentle and delicate relationship between the worlds of science and religion. In a way they are co-dependent and should be able to co-exist but modern practice of segregation doesn't fully support their growth. This is expressed in the architecture itself by choosing timber and rammed earth as the main materials. Construction techniques are experimented with the aim of achieving a co-dependent relationship between the two materials, showing conflict and co-existence throughout the design.

Models: early experiments of construction techniques that allow timber and rammed earth to work in collaboration with each other.

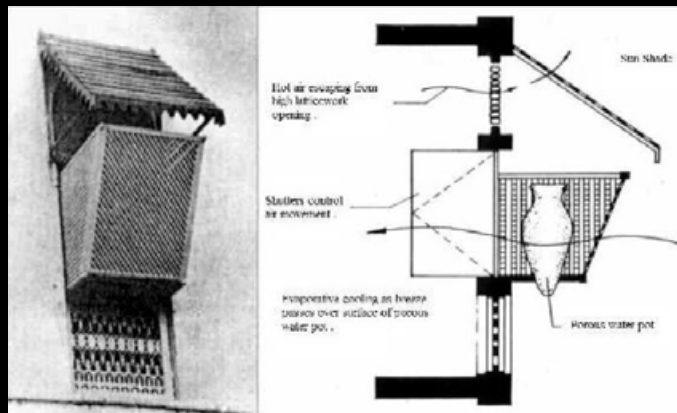
Timber, Clay, Glass, Copper, Polycarbonate



GA PLAN - GROUND FLOOR

- | | | | |
|---|--------------|----|--------------|
| 1 | Reception | 7 | Cafe |
| 2 | Auditorium | 8 | Stair Tower |
| 3 | Seminar Room | 9 | Study Room |
| 4 | Toilets | 10 | Meeting Room |
| 5 | Kitchen | 11 | Office |
| 6 | Cafeteria | | |

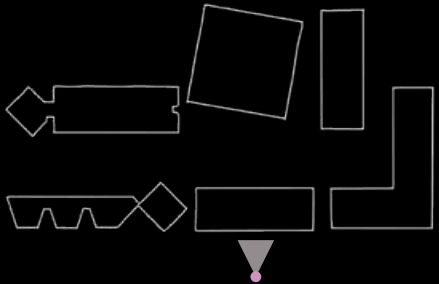




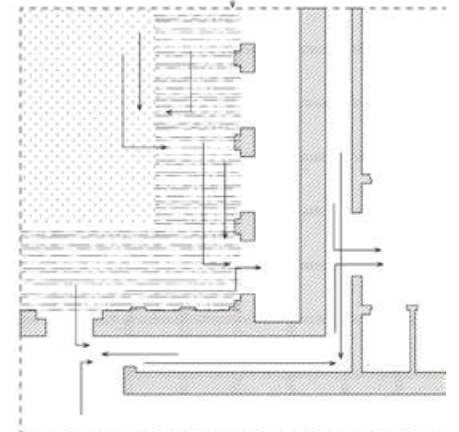
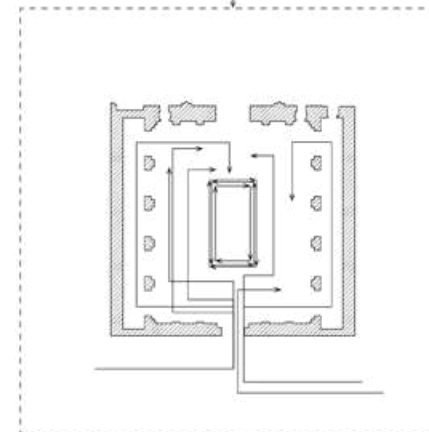
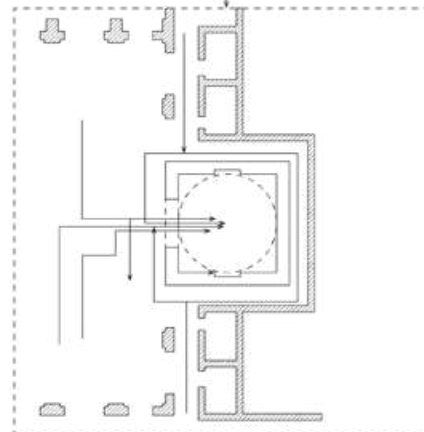
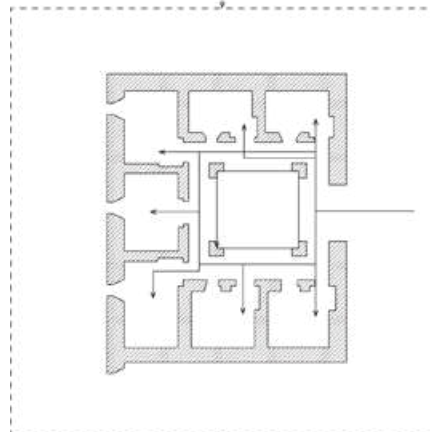
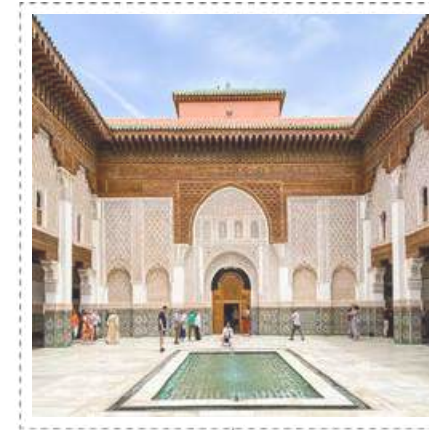
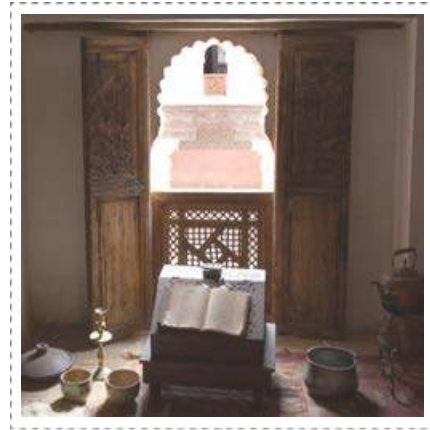
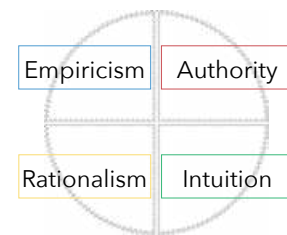
Re-interpreting Traditional Methods

Mashrabiya windows are traditional ventilation devices designed in vernacular architecture of Morocco and the wider region. A water pot is placed near the opening, allowing evaporated water to cool down the surrounding air. The cooled air is then brought in by prevailing wind, through the timber screen to encourage ventilation of the internal environment. A shutter is incorporated to control air movement.

This project adapts this traditional device and re-interprets the mechanism for contemporary design. A timber screen is inserted in a circular opening of the rammed earth wall. Evaporated water from the pond cools surrounding air and travels through the screen to cool down the reception area.



Ways of knowing

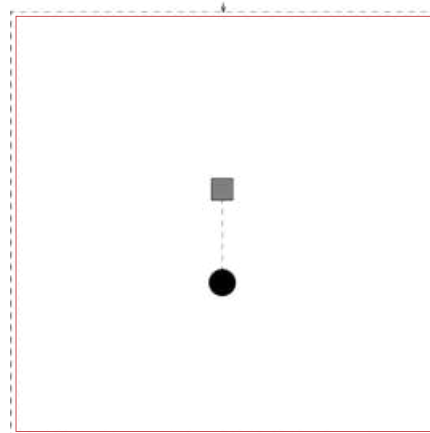


Madrasa, "Place of study"

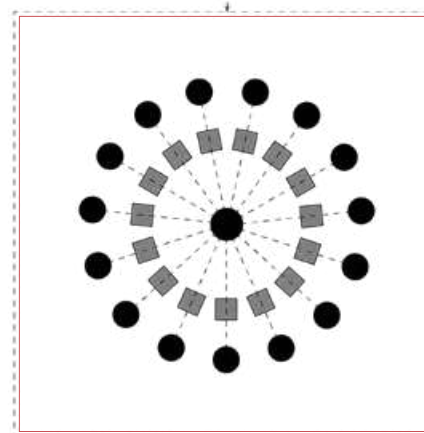
Madrasa as an explicit expression of the transition between forms of capitals which plays an important cultural and institutional role in the Moroccan religious, political, and social imagination.

Right: Study of the spaces within the madrasa where the gain or flow of knowledge occurs both in terms of how our perception of space can feed knowledge and how different ways to obtain knowledge occurs in different settings.

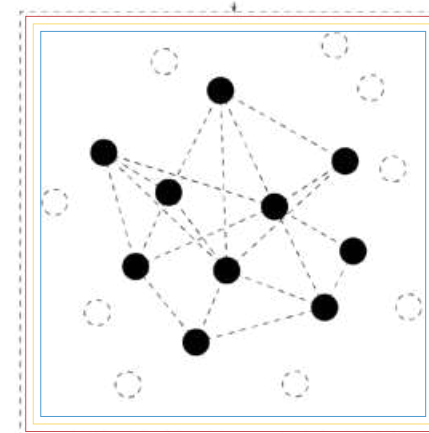
This study helped me to define functional spaces within the project, taking a particular focus on spaces that encourage informal social networking, where the natural accumulation of people occur through architectural interventions such as intersections and pathways.



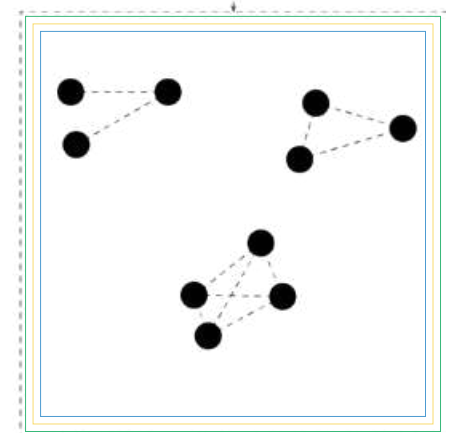
Self-study



Teaching/Group-study



"The Annual Feast"



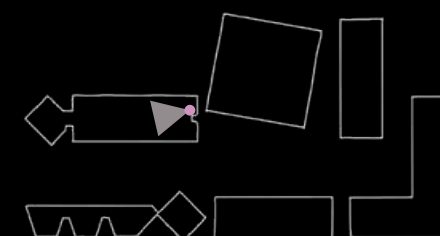
Informal Social Networking



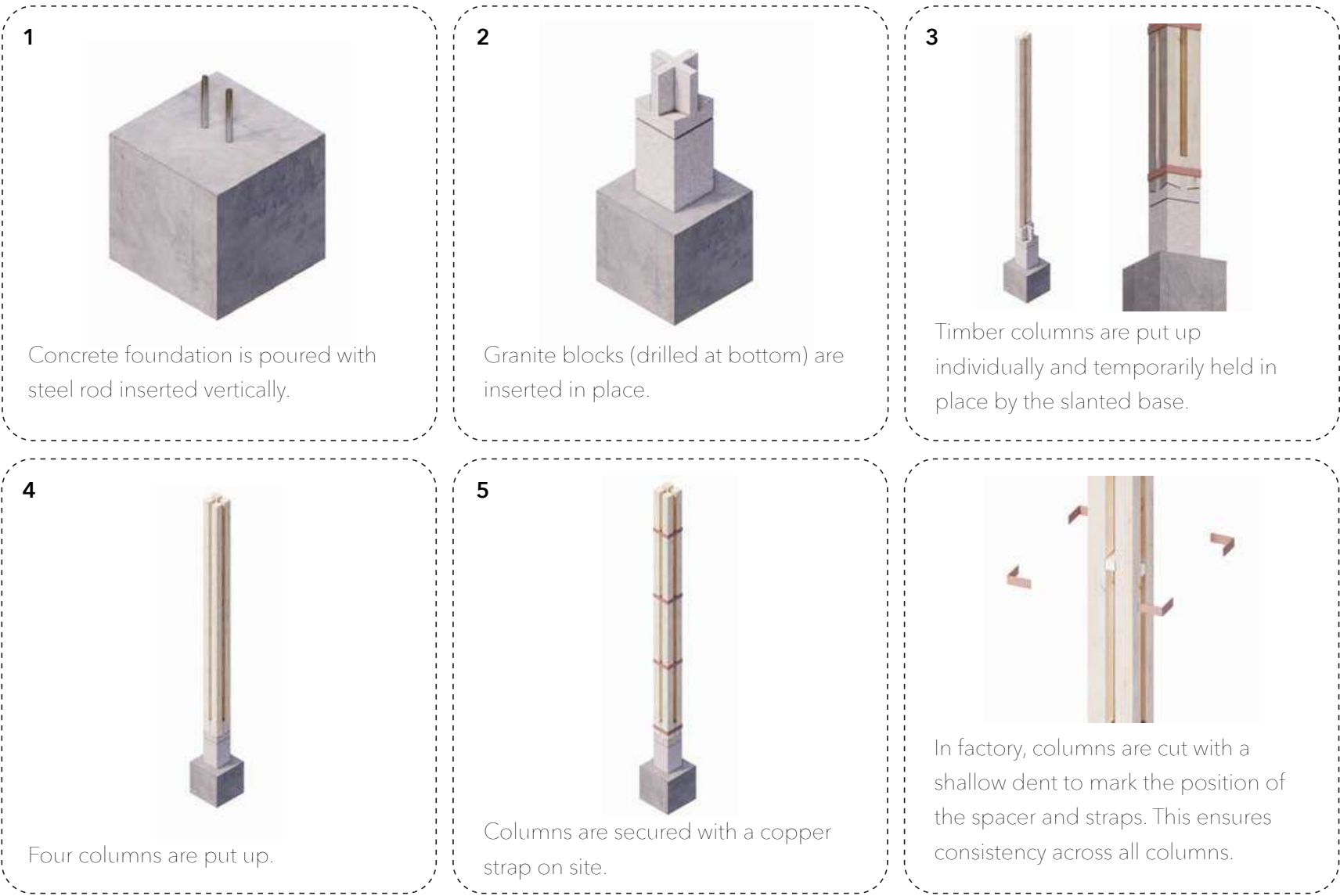
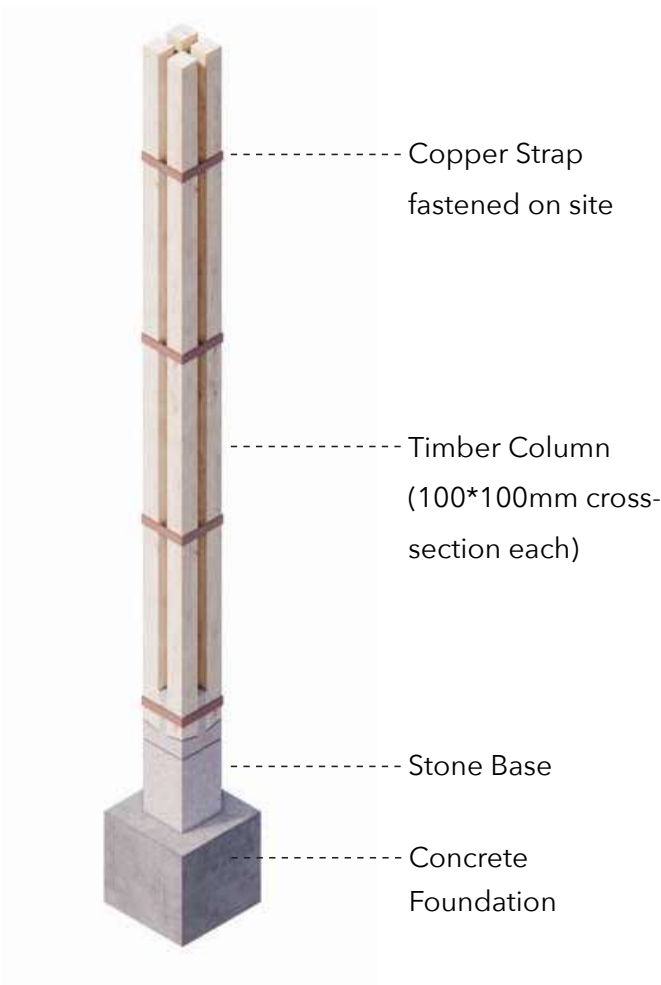
Study Space (GF)

Dominated by the solid mass of rammed earth, the ground floor study space encourages people to concentrate through controlled use of lighting and openings.

The window aligns with the courtyard and meeting rooms on the opposite side (next page) and forms a linear relationship through the view. Rammed earth extends from facade to form part of the furniture and spatial separation.



Construction Sequence



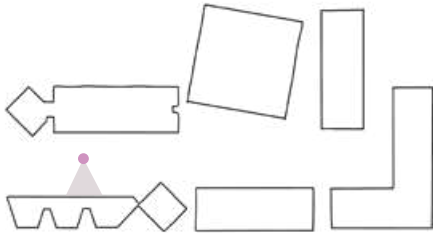
Recurring theme of the timber column

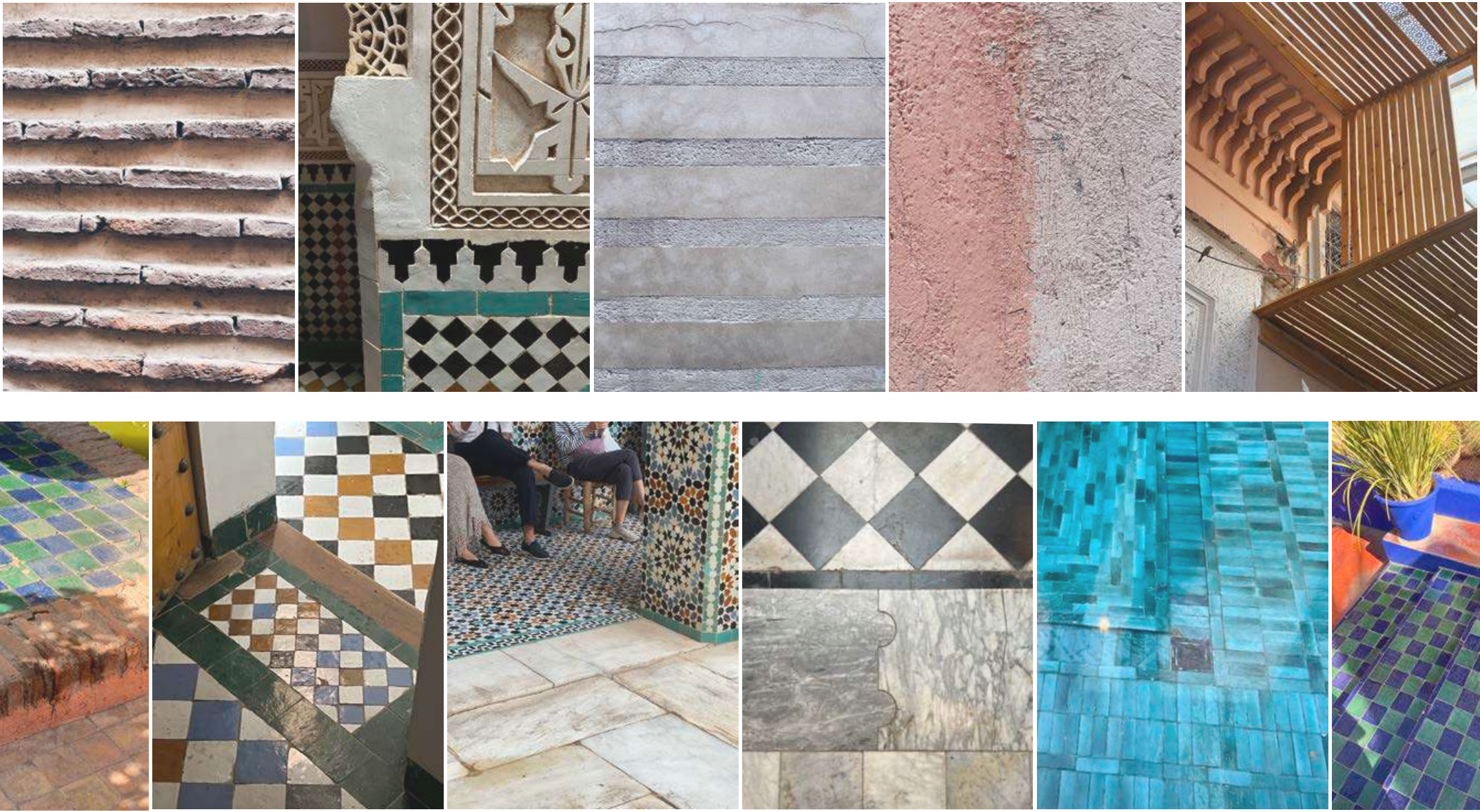
This particular column design is visible throughout all building blocks within the design. Its recurrence triggers a sense of familiarity for people when experiencing different spaces to achieve a consistency throughout the project. In addition, the use of 4 columns of smaller cross section for a standard column saves cost and carbon.



Entrance to meeting rooms

Entrance to meeting rooms through the central courtyard.
Different signifiers hint towards the different settings of meeting rooms on the inside - to the left is a meeting room set at eye-level, to the right a sunken space with views framed lower on the ground.





Thresholds and Identifiers

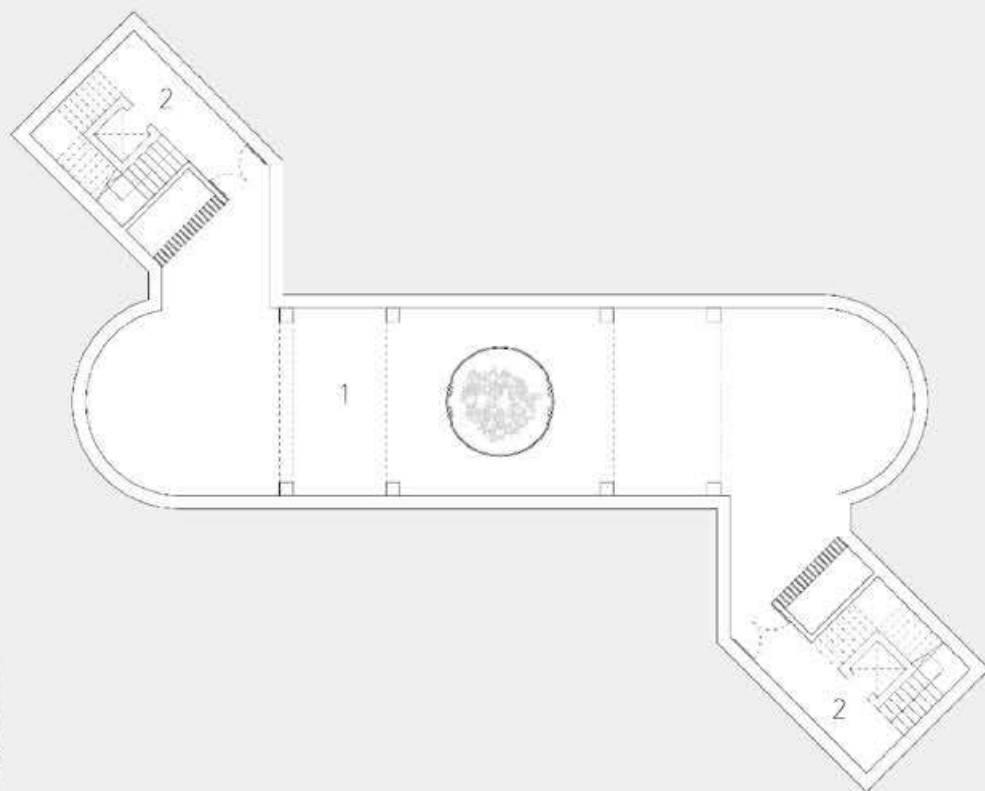
Spatial identifiers such as colour, texture, depth, spacing can be suggestive of spatial change or give hint to how people should occupy the space. Contrast is hinted, not forced.

Image: observations during unit field trip to Marrakesh, Nov 2024

GA PLAN - BASEMENT

1 Library / Study Space

2 Stair Tower





Library

At basement, light guides the orientation and direction.

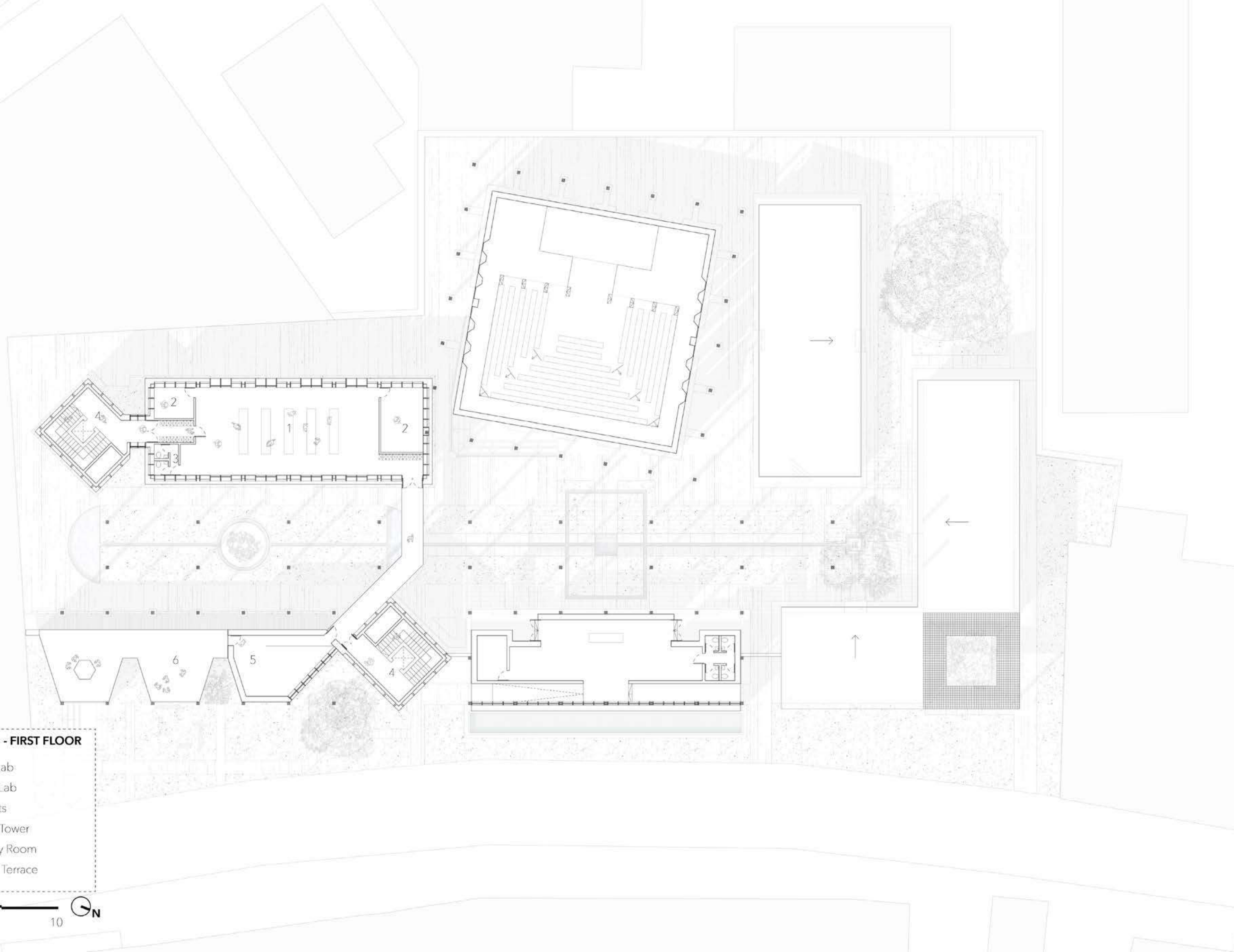
A library for Islamic religious text is stored here, with spaces for reading, praying and contemplation.



GA PLAN - FIRST FLOOR

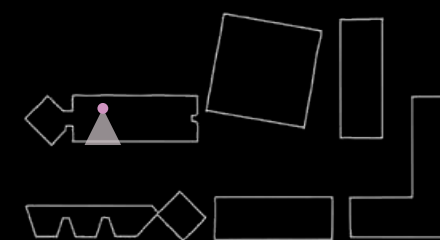
- 1 Dry Lab
- 2 Wet Lab
- 3 Toilets
- 4 Stair Tower
- 5 Study Room
- 6 Roof Terrace

0 10 



Study Space (1F)

A wet & dry lab for solar energy research is located at 1st floor with abundant natural light from the timber facade. The linear relationship between the window, the courtyard columns, and the entrance to meeting rooms frame the view.





Co-dependency and contrast expressed through materials and construction of the facade

The relationship is further expressed through treatments of facades. Rammed earth is brought up to 1st floor throughout the scheme (except for the auditorium) creating a visual consistency and separation throughout the design. Sometimes one material mimics another (left) while other times the fundamental differences between their mass form, and construction are fully expressed (right).

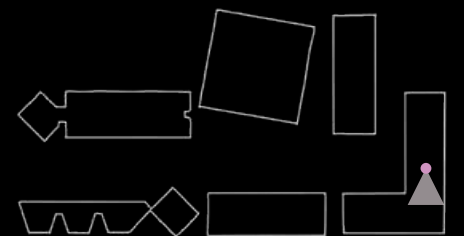


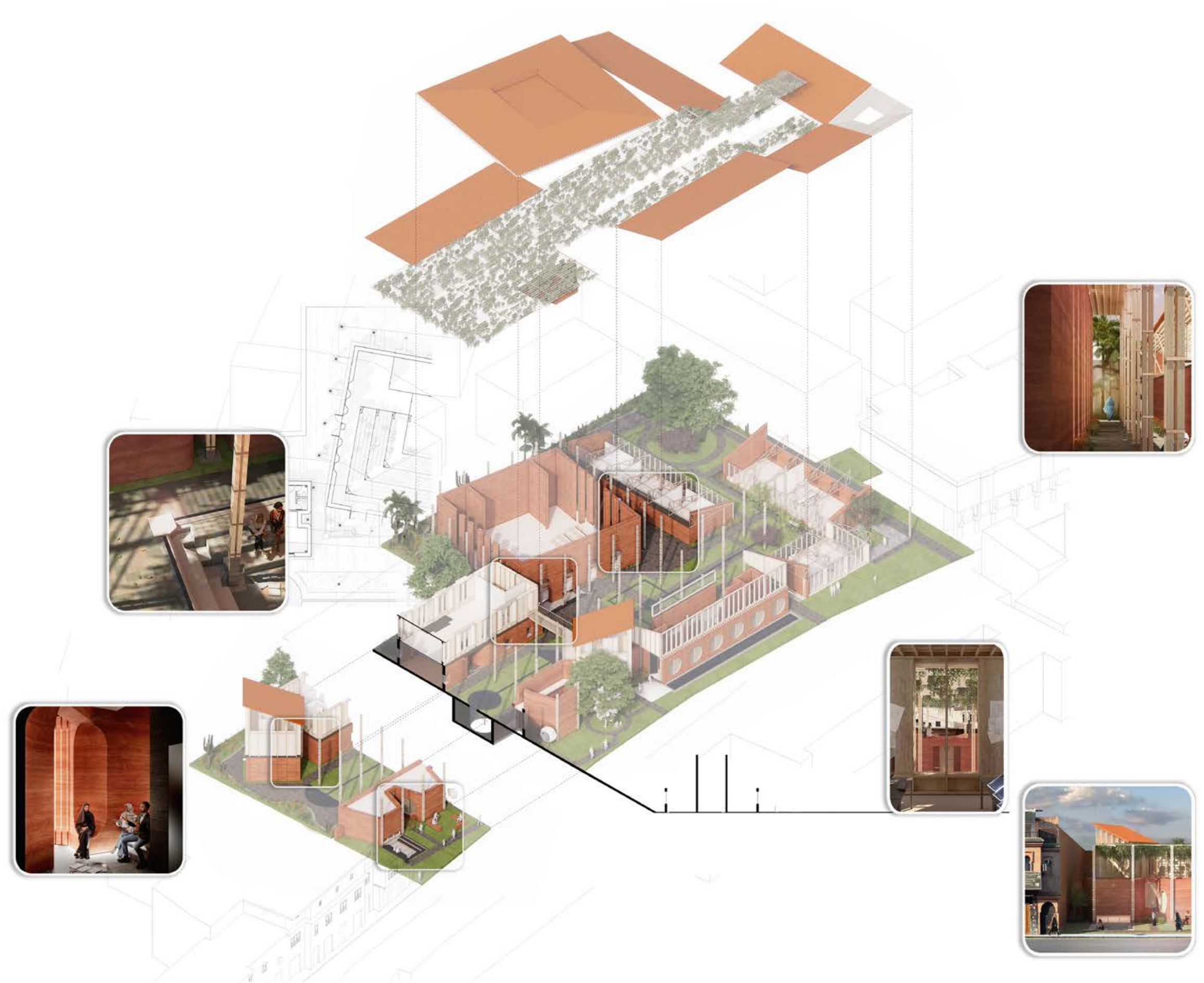


Lunch

Two subjects share a common cafeteria to encourage conversation during lunch times. Smaller gatherings are formed around rammed earth niches and timber window seating.

A timber truss sits on a rammed earth wall and a glazed facade on the other end. Ventilation is encouraged from the mechanical louvers installed under the timber window seating and hot air escapes through the high-level openings created through the angle difference of the truss.





In-Between and Transitional Spaces

The 'touching but not touching' gesture between science and religion can be further exaggerated through connections between buildings, focusing on the in-between, transitional spaces.

Small pocket moments are created to encourage communication between students of different subjects before and after work, and during breaks.



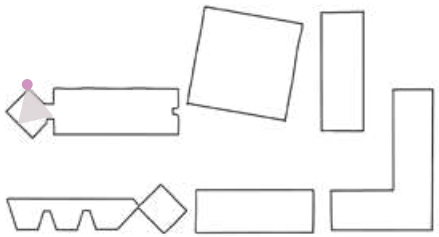
Stair Towers - functional and transitional meeting grounds

At ground floor, the stair tower encourages people to stay and have a chat by introducing geometries that encourage seating.

Light is brought in at lower level to encourage people to settle down.



On the contrary, the same space at first floor encourages people to quickly walk pass by introducing strong sunlight and reflective surfaces into the space, achieving a completely different atmosphere and activity to ground floor.

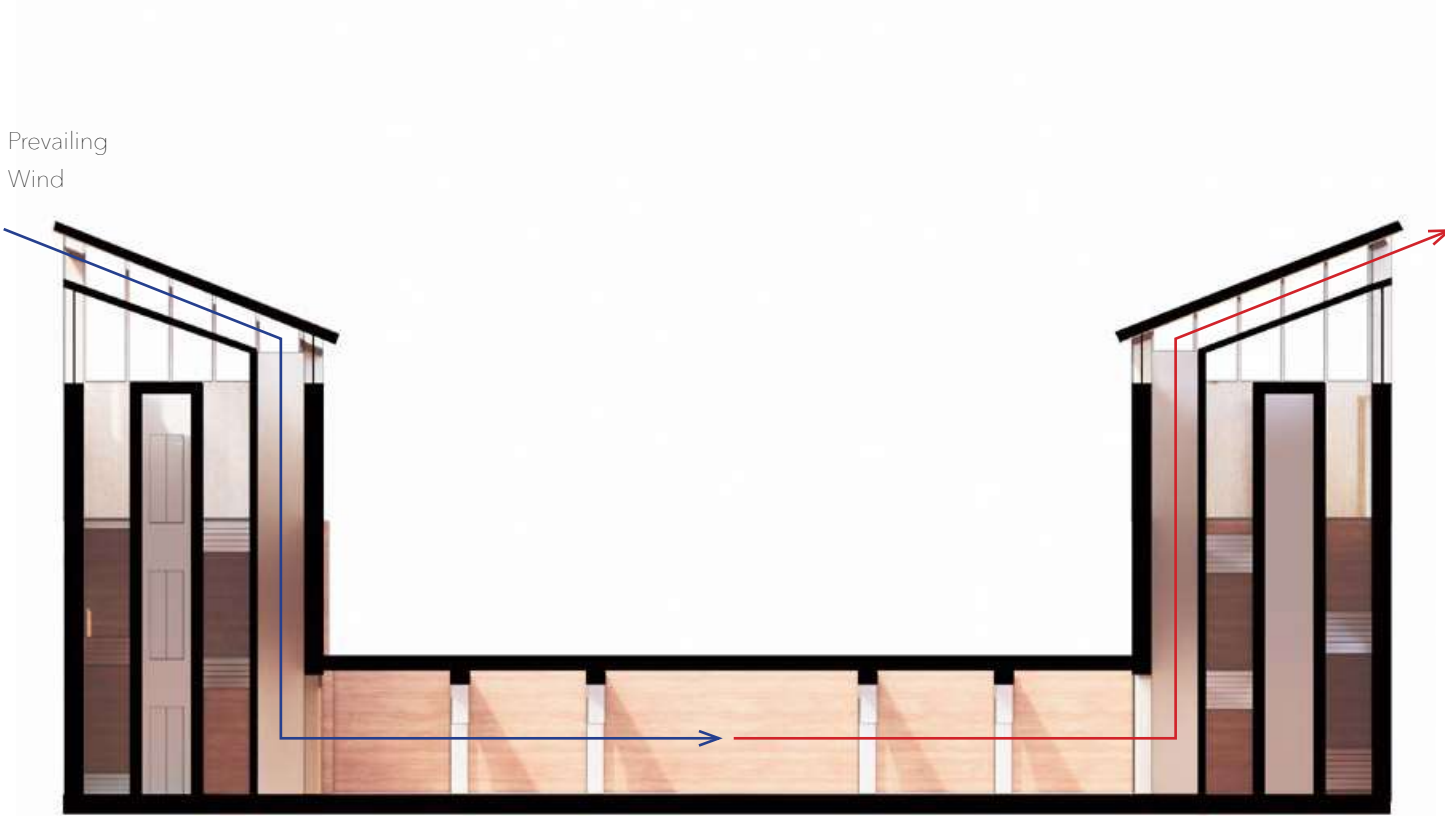
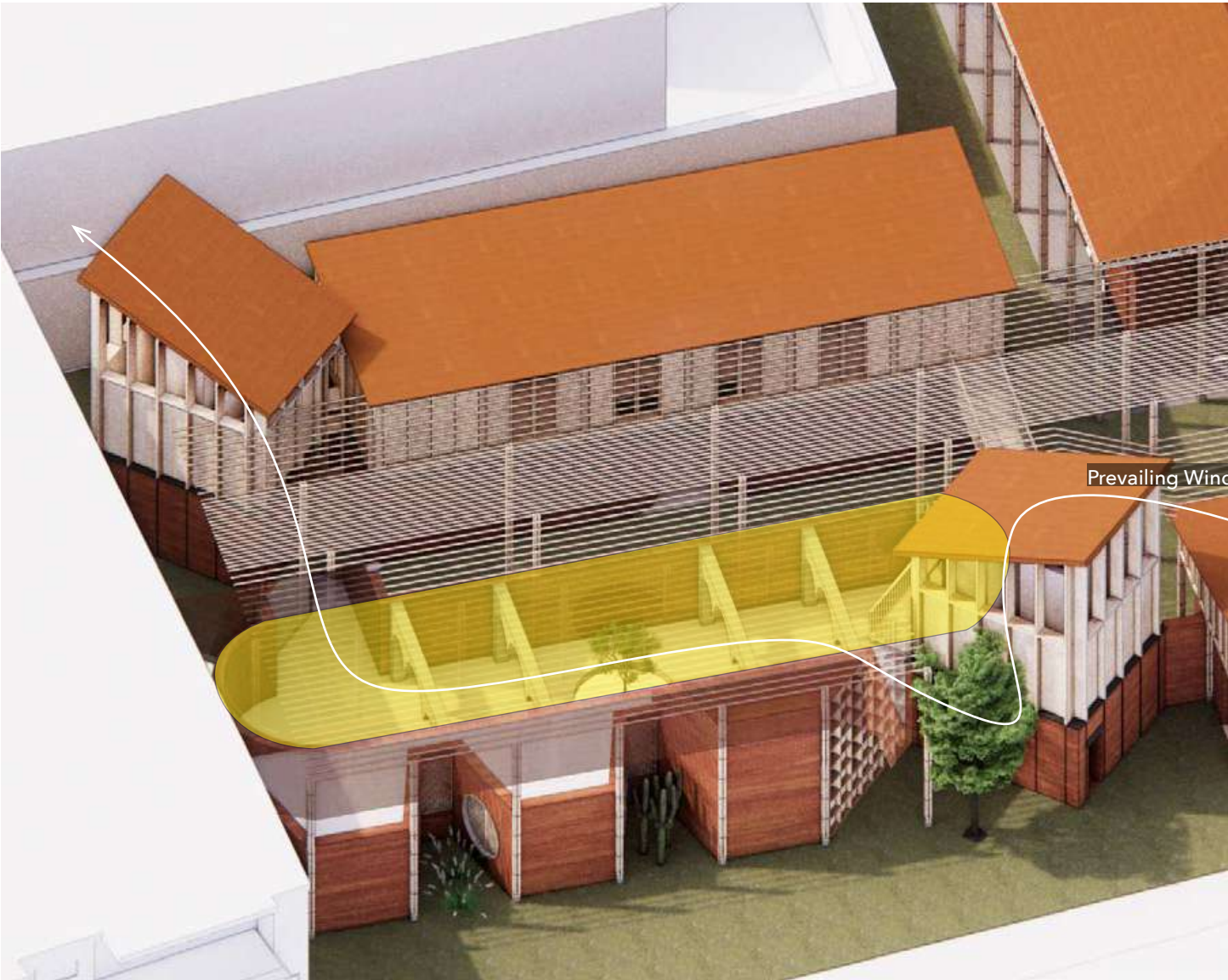




Re-interpreting a Traditional Wind Catcher

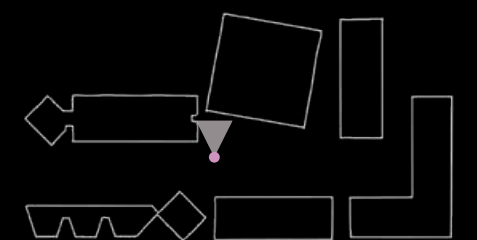
Wind catchers are common forms of vernacular architecture in Morocco and the wider region. It encourages passive ventilation in the arid climate by catching prevailing wind from its high-level openings and allowing cool air to travel down through indoor spaces. The hot air will eventually rise and escape from one of the catchers.

Learning from traditional wind catchers that have stood in the region for thousands of years, this project adapts the use of a traditional wind tower and combines it with the stair core. Orientated towards the direction of prevailing wind, this design encourages passive ventilation in the basement area, serving as a natural cooling device.



In Between Lab & Auditorium

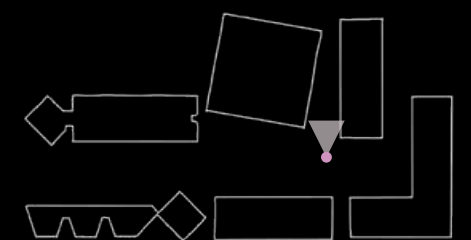
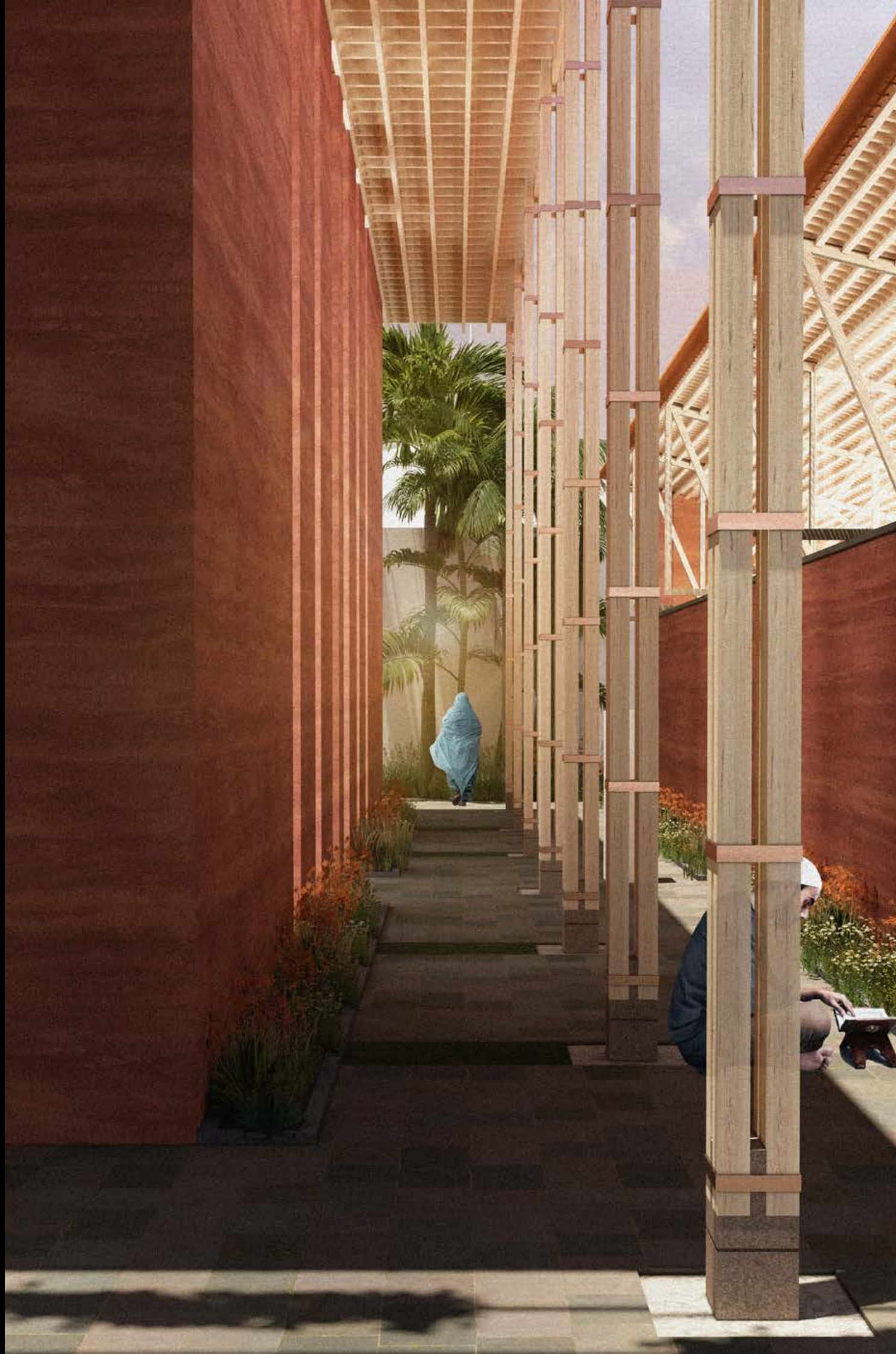
A space is created through the containment of the lab and auditorium building. The interaction between the 2 buildings is further expressed through the sharing of a common column, resulting in a meeting of the roof. The slightly tilted auditorium allows the pathway to grow from narrow to wide, exposing the natural beyond as one walks along. A stepped seating is also created as a result, serving as meeting ground for small conversations between students of different subjects.





In Between the Auditorium and the Ancillary Block

Corridors in between two buildings lead to a curated garden at the end. Columns can act as anchor points of which an individual can lean on or a group of people can gather. Changes in floor texture from pavement to grass subconsciously informs people the divides in space.

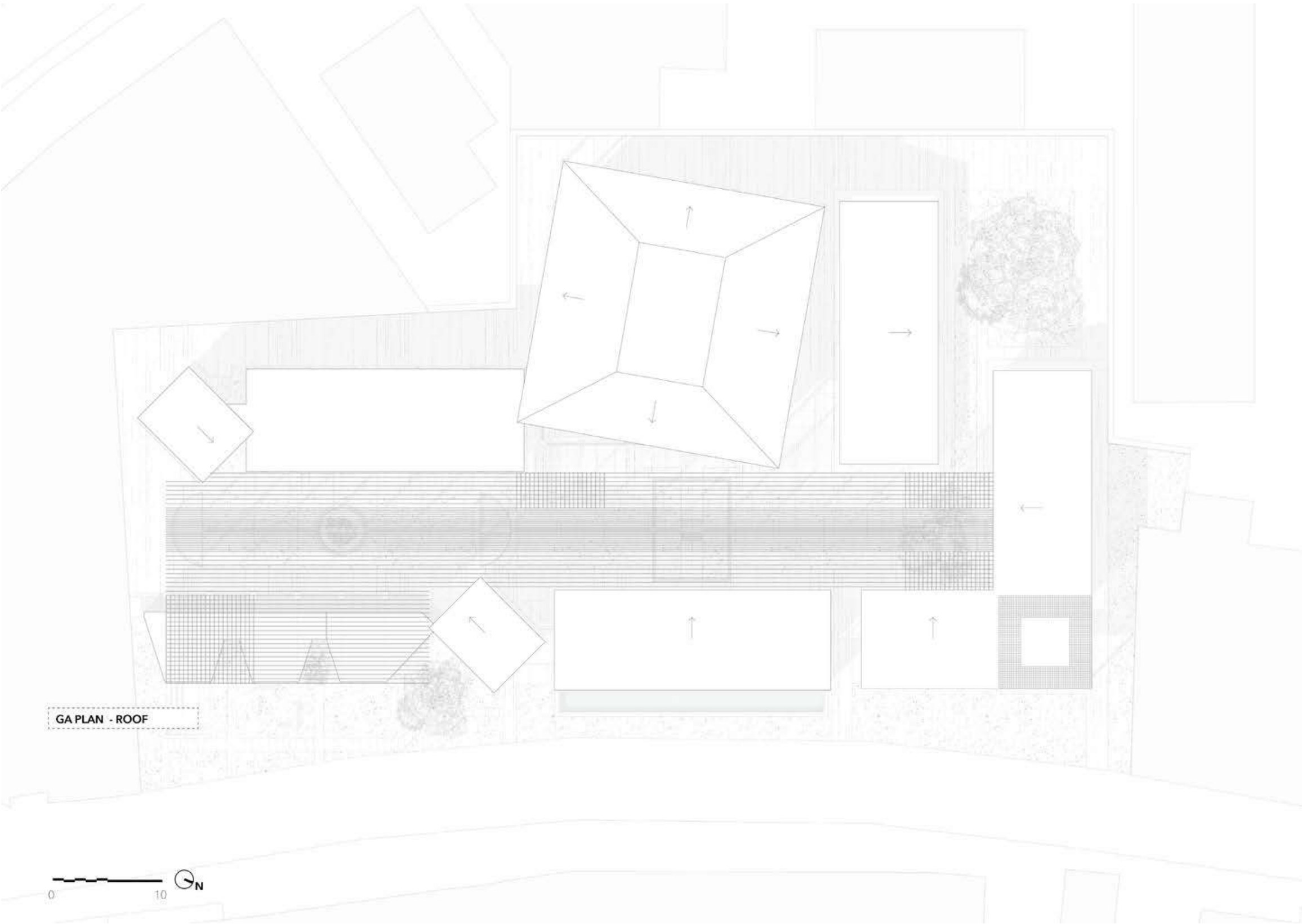




Nature defined through courtyards, containment and framing

Courtyards and gardens are traditional elements of vernacular architecture as they symbolise the connection with nature in Islamic culture as well as an inward-facing / privacy community culture in people's homes.

A careful curation of vegetation, architecture and the viewer's eye is an essential design element that links buildings and completes the framing of views throughout my design.





Central Courtyard

The central courtyard is one of the most prominent design feature of the project that links all components together.

The framing of view further extends onto the vegetation-covered roof canopy with varying densities. As the day goes, different parts of the courtyards will be shaded / less shaded through the variation in density and people can look for their

ideal spots at that specific time of the day. Here water, vegetation, pavement, light, and architecture work in harmony to form the containment of space.

