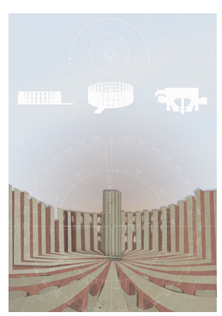


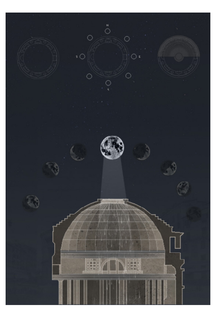


BIOSCAPE

A CENTRE FOR ENVIRONMENTAL RESEARCH AND EDUCATIONAL THEATRE INSPIRING A DEEPER CONNECTION WITH NATURE

Bioscape is a centre where environmental scientists, theatre writers, and performers collaborate to address ecological awareness and inspire action. Drawing from ancient architecture that harmonizes with nature, Bioscape aims to deepen people's connection to the natural world. By merging science and arts, Bioscape engages new audiences, fostering appreciation and understanding of our environment. Through performances and talks, it raises awareness about the urgency of ecological issues and encourages proactive steps. The architecture showcases a commitment to sustainability, using natural materials and elements inspired by the surrounding beauty. It serves as a reminder of the planet's splendour and encourages visitors to preserve it. Bioscape is a hub for sustainable technologies and practices, promoting creativity and innovation to address environmental challenges. It emphasizes interdisciplinary collaboration for positive change.



04

- GREEN ENERGY
- EXTERNAL WALL OF THEATER

03

- GREEN ENERGY
- EXTERNAL WALL OF THEATER
- WRITING WORKSHOP
- SOLSTICE TUNNEL
- RELAXED WORKSHOPS SPACE

02

- GREEN ENERGY
- SECOND FLOOR THEATER
- RESEARCH SPACE
- LAB SPACE
- TOILETS
- MIRROR ELEMENTS
- CHANGING ROOMS FOR THEATER

01

- GREEN ENERGY
- SECOND FLOOR THEATER
- RESEARCH SPACE
- CONFERENCE ROOM
- TOILETS
- LIBRARY
- CHANGING ROOMS FOR THEATER

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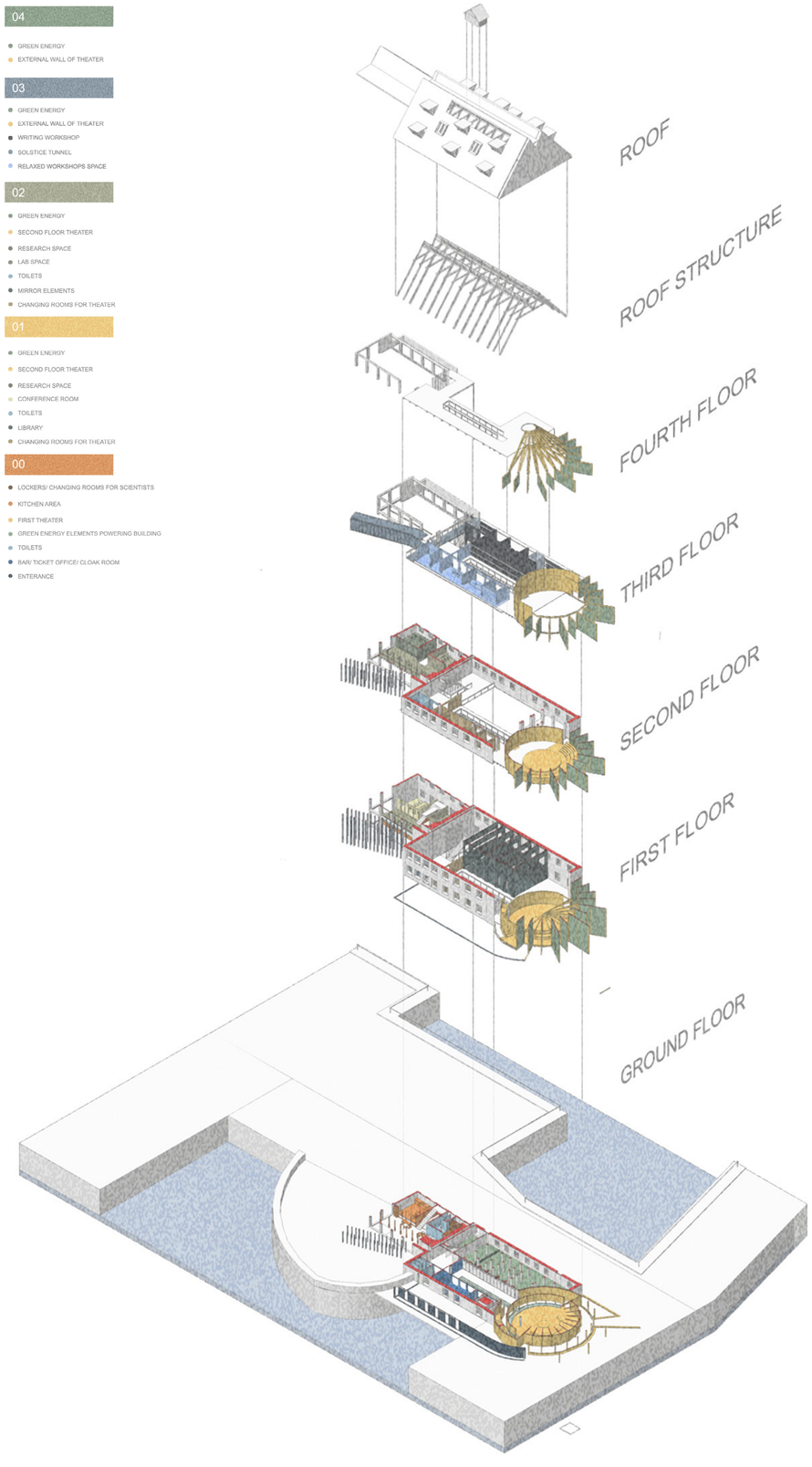
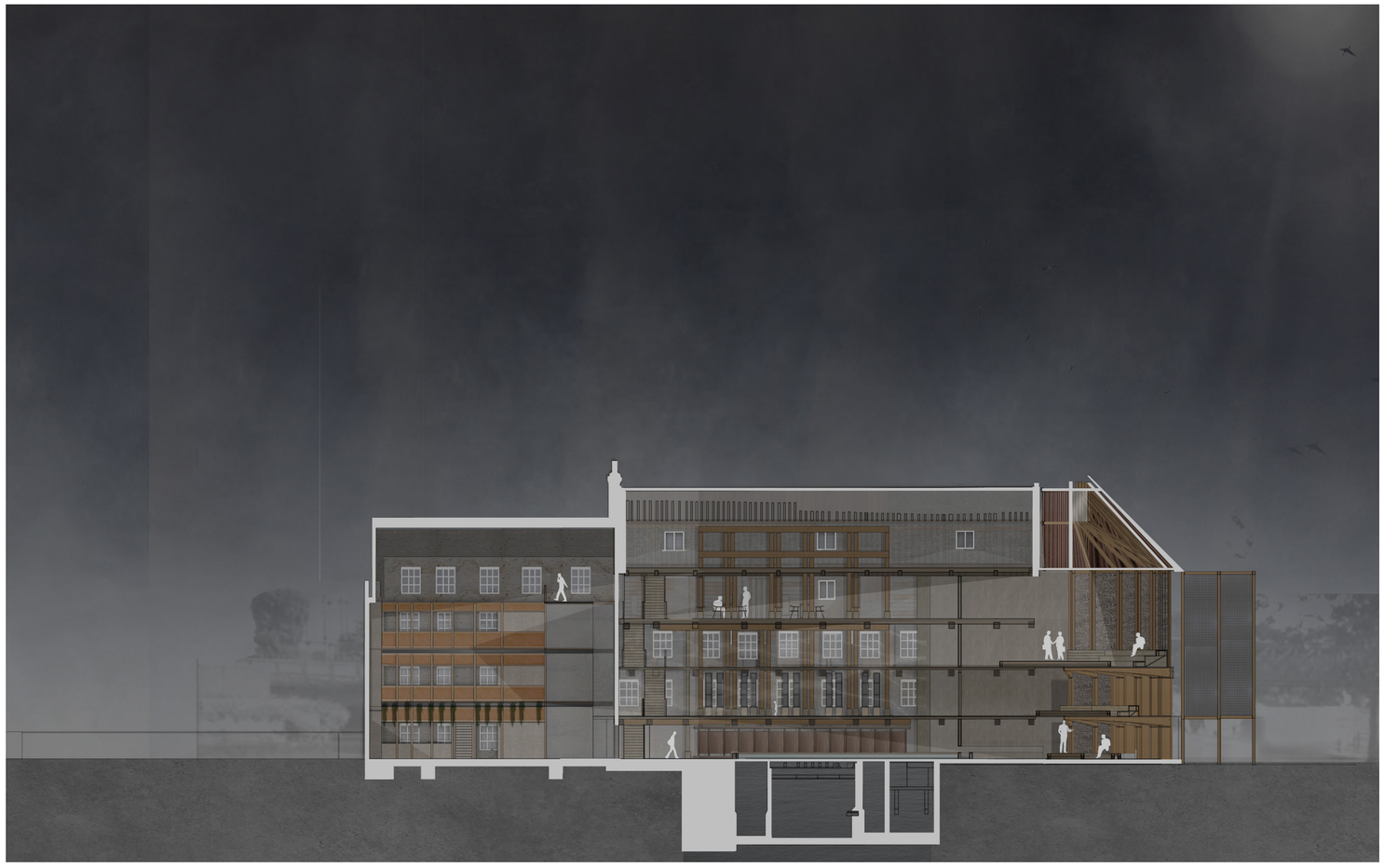
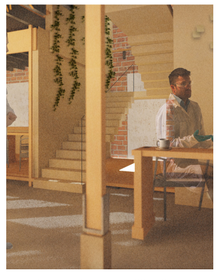
- LOCKERS/ CHANGING ROOMS FOR SCIENTISTS
- KITCHEN AREA
- FIRST THEATER
- GREEN ENERGY ELEMENTS POWERING BUILDING
- TOILETS
- BAR/ TICKET OFFICE/ CLOAK ROOM
- ENTERANCE





BRINGING THE PERFORMING ARTS AND SCIENCE TOGETHER

The site, a grade one listed tidal mill, located in Bromley- by - Bow, London seemed to be surrounded by both the science and artistic fields. The arrangement of activities allows maximum opportunity for both the fields of science and arts to collaborate. The theatre is located on the right side of the building, its use is for both talks and educational performances and is flexible for this two functions depending on the time of day. The research centre on the left is welcome to environmental science students. Here they can carry out further research and practice, whilst being surrounded by the natural beauty of the environment, as well as their university spaces. In the middle of the building is a collaborative writing workshop where these two fields come together and can construct narrative and performance that informs and educates those that come to visit.



QMU ENVIRONMENTAL SCIENCE

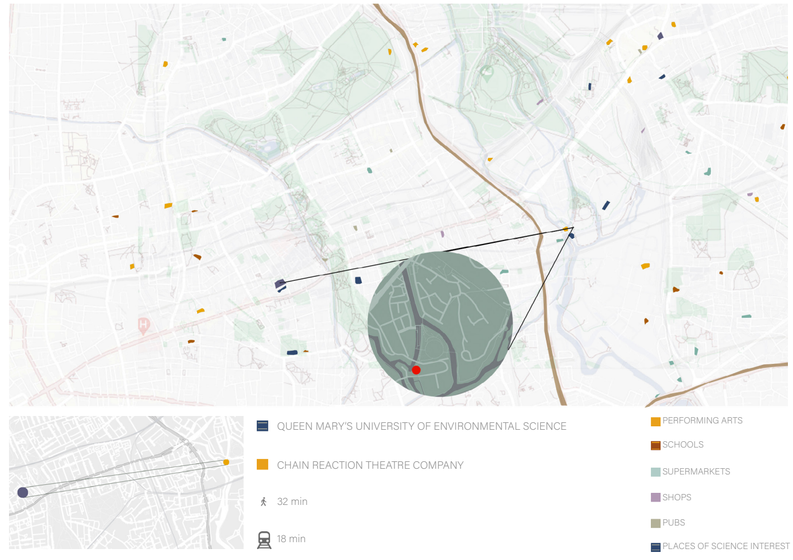
COLLABORATIVE WRITING WORKSPACE

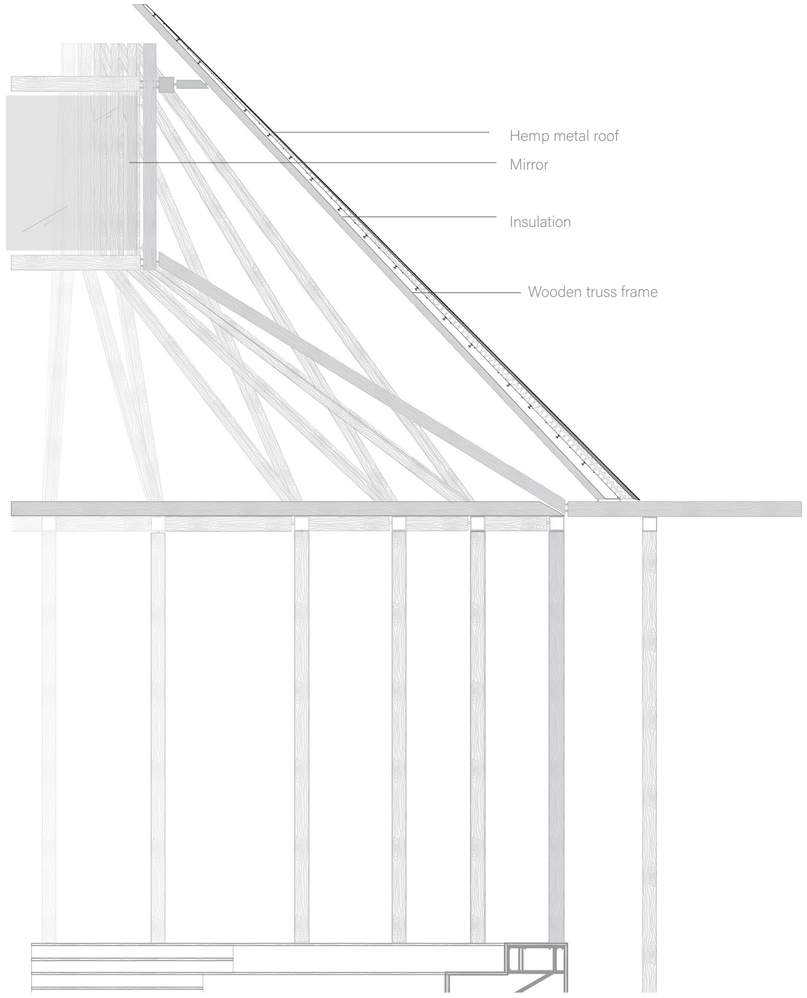
CHAIN REACTION THEATRE COMPANY

CLIENTS

The clients for the site are Queen Mary's university environmental science students and a theatre company called Chain reaction. Queen Mary's university is a half an hour walk from the site. This means that the space has the opportunity to be a new facility that hosts the environmental students and their work.

Chain reaction is a theatre company that has an office in the millers house of the site itself. They have a office loosely based there however no theatre facility. They specialise in educational theatre that informs and involves people from local communities. The hope is that these two fields can work together to address the urgent environmental challenges creating a desire to take more action on saving the planet.

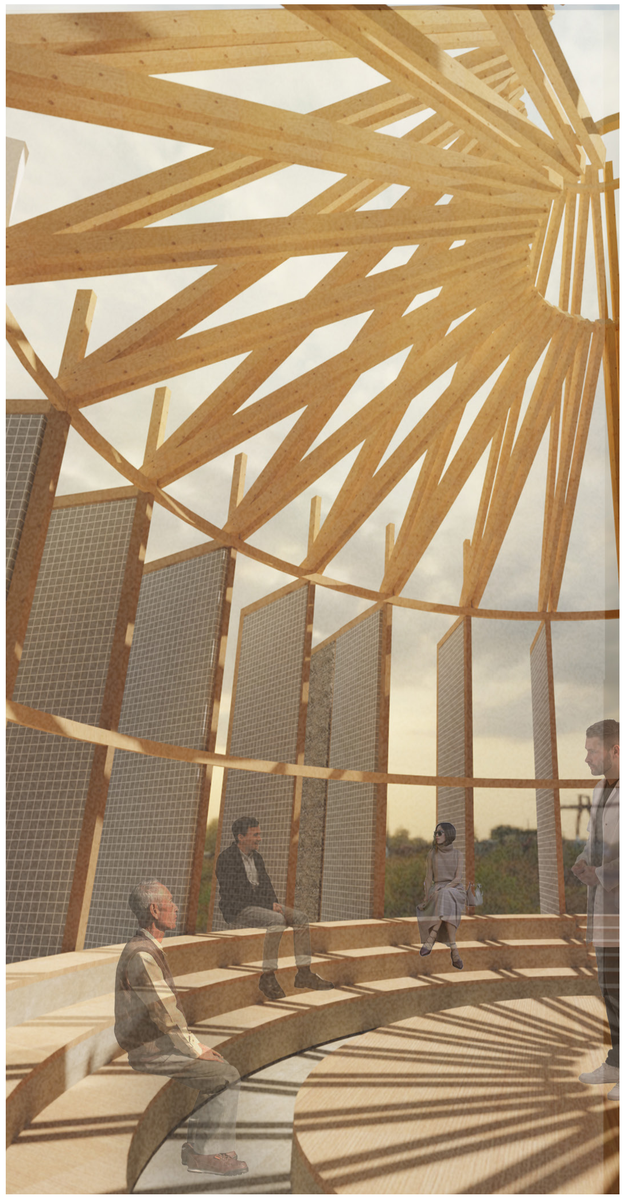


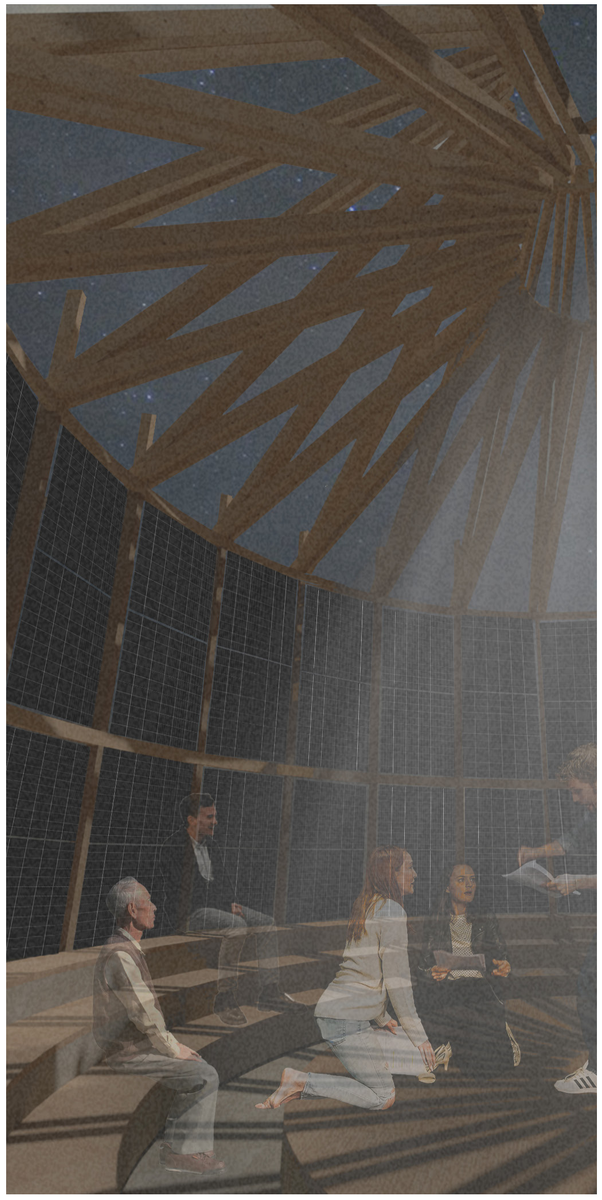


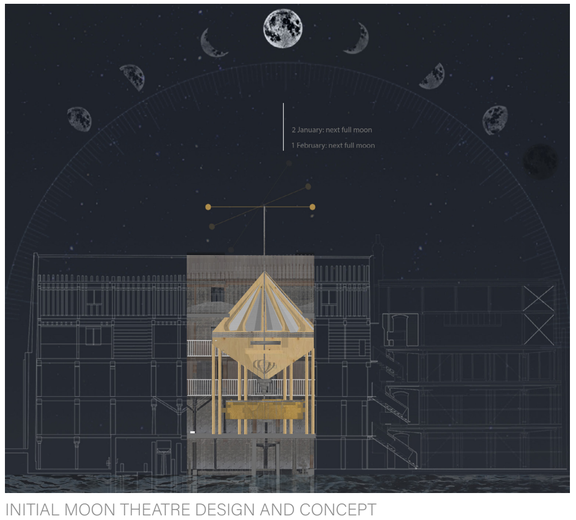
THEATRE FOCUS AREA AT 1:50

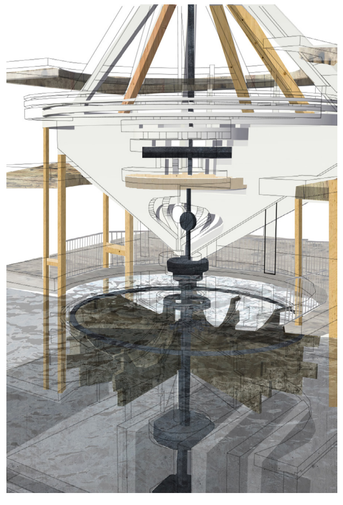
LUNAR STUDIES

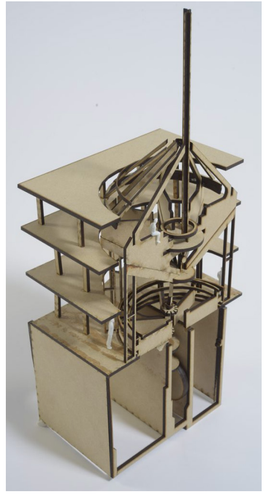
For this space to become a place of positive action for the planet the architecture of the building itself has works with nature. This brings the connection between people and the natural planet closer. Studies of the natural phenomena were done to understand the cycles of the moon. From this the 'Moon Theatre' was designed. The partially outdoor ampthi theatre aims to harness the natural moon light as the lighting for the stage. The theatre has twelve wooden points on the structure to act as a sun dial and at night the moon light would shine through the hole at the top of the roof. Furthermore the fins are made from solar panel glass. As they a heat sensitive they will open during the day and close during the night. This not only blocks out light but helps to keep the space slightly warmer to. These panels also generate energy for the rest of the building.







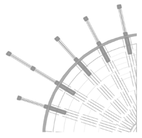




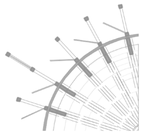
INITIAL MOON THEATRE DESIGN AND CONCEPT

This work shows the initial development of the Moon Theatre. It's intention is to track the moon and at full moon the natural light will shine through the top of the theatre creating a natural spotlight for the performance and equally bring us closer to nature.

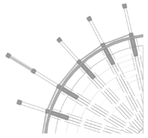
An initial model of the moon theatre was made and a final model was made to show the initial concept and the overall design. These helped to determine the shape and layout of the theatre. Furthermore it became clearer on how to block out and reveal light. On the right hand side there is a series of three plans. The fins have solar glass inside that can close and open due to heat sensitivity. Therefore during the day they have more chance of opening and staying closed at night



FINS OPEN

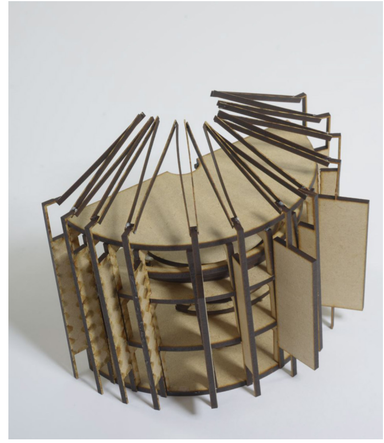


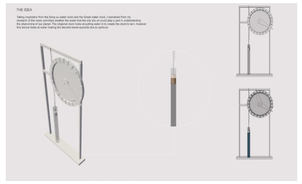
FINS CLOSING



FINS CLOSED

THEATRE MODEL AT 1:100





INITIAL DEVICE DEVELOPMENT

MOON AND TIDE CHART

MOON RISE

MOON SET

LOW TIDE

HIGH TIDE

DEVELOPMENT OF INTERACTIVE WATER CLOCK

Another architectural element was the water feature. The initial design looked at ancient water clocks such a the Su Sung astrology clock. The exploration looked at how a device that interacted with the gravitational pull between moon and tide could evolved into a interactive element. It would become a space where people can physically see the change of this phenomena and as a result perhaps have more appreciation for the planet.

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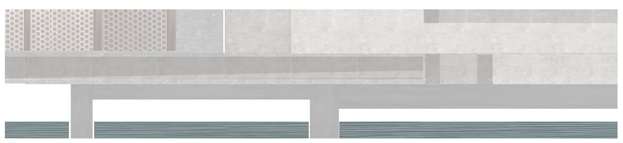
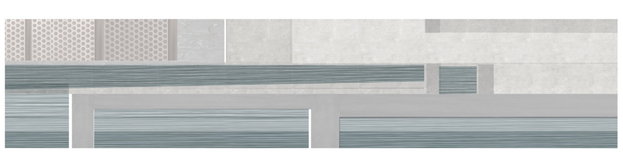


Water feature at low tide

2.

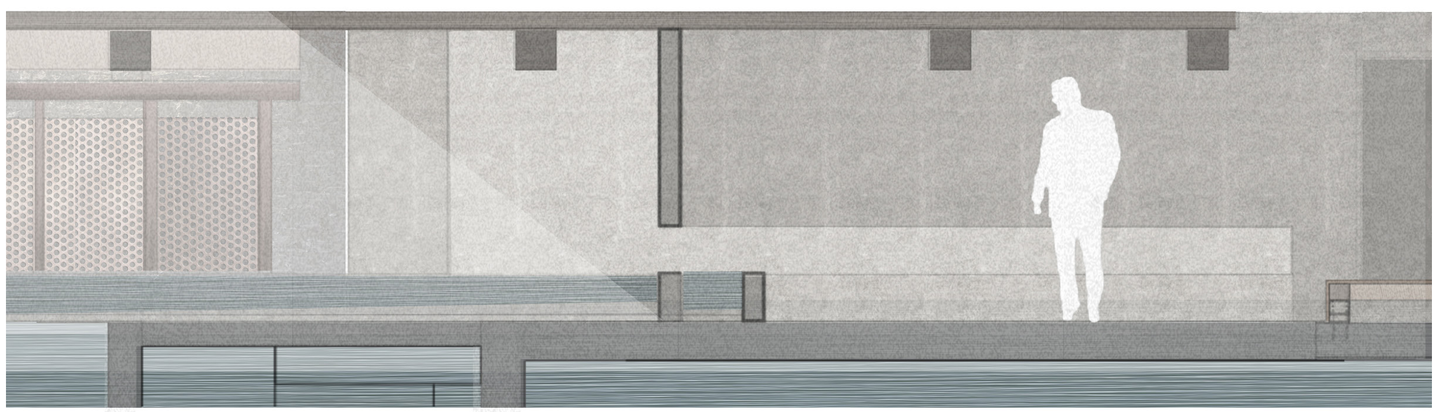
Water feature at mid tide

3.



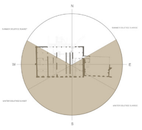
FINAL WATER FEATURE

From the initial research and development of this device the water feature, located on the ground floor of the building was designed. The final design played a interactive element that showed the cyclical journey of water. Due to the moon having a direct effect on the hight of the tide the feature is open to the water below. As people enter the building they can see the exposed water rise and fall, nature surrounds them. People can physically touch the water and interact with it whilst visibly see time go. Further to this, like the pantheon located in Italy there is a void that goes directly through the roof and all four floors above. This not only bring a drastic amount of light into the building but allows the wonder of rainfall to go straight through the building. Visitors become reminded that the natural and beautiful cycle of nature surrounds them and must be taken care of.



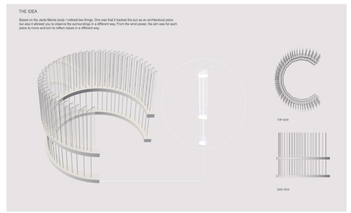
SECTION SHOWING THE RISE OF THE TIDE ON THE GROUND FLOOR

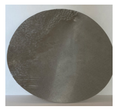
This section shows how it can be possible to interact with the tide underneath the Mill. It is safely contained in the feature and creates a moment of beauty that various visitors can interact with. It promotes positive action and sustainability.



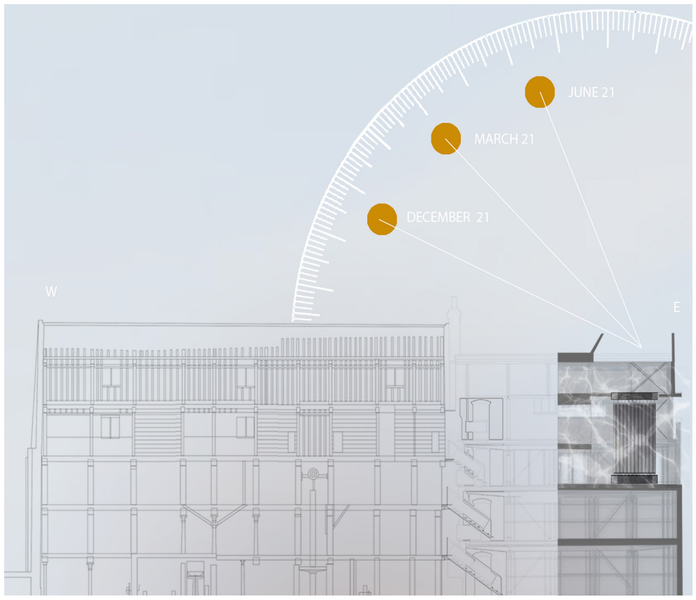
INITIAL SUN PATH RESEARCH

The final architectural element that was explored was the relationship between light and mirror. These diagrams above looked at both the sun and solstice path around the existing site. This shows the sun setting from East to West and the solstice diagram shows the various points the solstice hits. From this research the mirror device was designed.





From the research a device called 'Mirrors of nature' was developed. This looked at the various ways that a reflective surface can pick up light and reflect the space around. This was then translated into a device that would create patterns and a space of beauty that visitors could be consumed by. The beauty would bring awe and wonder and appreciation.



INITIAL MIRROR INTERACTIVE ARCHITECTURAL ELEMENT

This design evolved into a public library that is open to all. The mirrors above interact with the space below that is situated with hammocks. The space is one of pause and relaxation to be amongst the beauty of the phenomena of the sun path. It connects humanity and nature together. A moment to breath, think and reflect whilst using the facilities around. This space brings visitors, researchers and performers together creating a space of both education and inclusive. A space for all and a space for nature too.