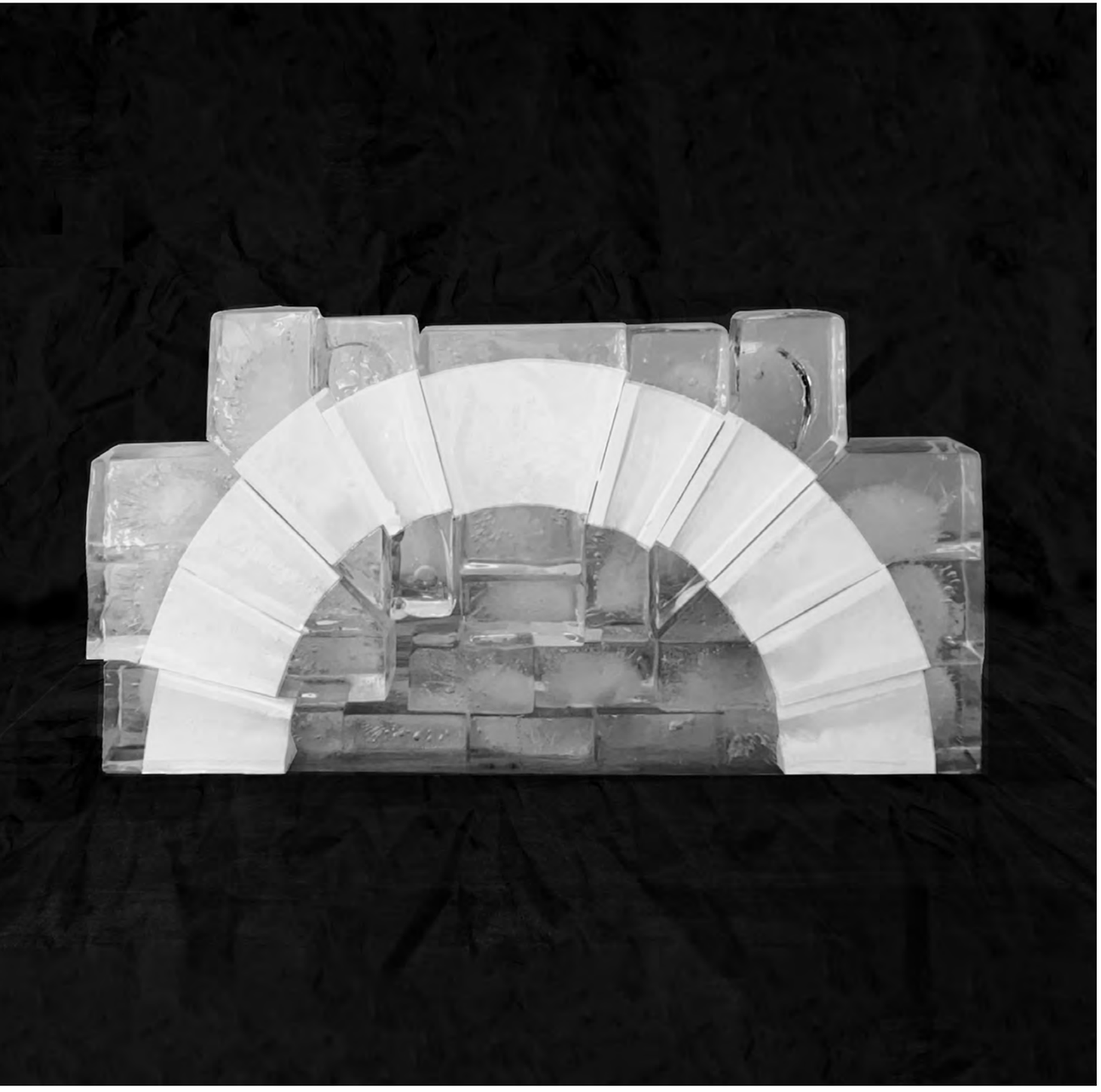
Portfolio of SHOUZHONG LIN

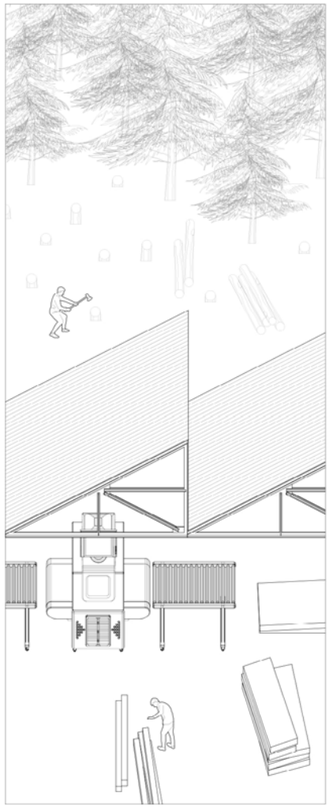
work completed at GSAPP



PROJECT 01
ICING STONE

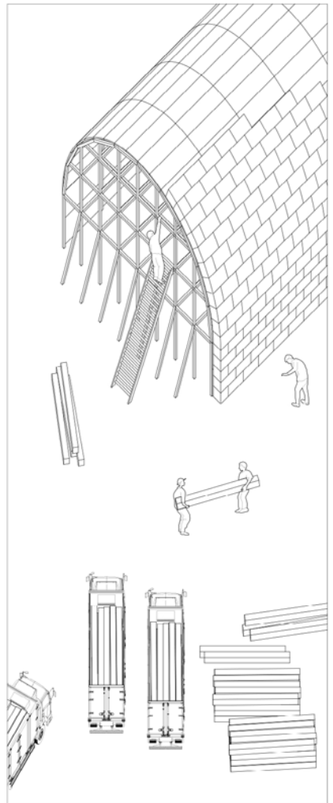
GSAPP Summer Design Studio
Group Work
Advisor: Yousef Anastas + Elias Anastas
2023. 08

We investigated using ice as an eco-friendly, recyclable formwork for large-span stone structures to reduce waste from traditional wooden forms. Ice is easily obtained, environmentally friendly, and melts away post-construction. Our research involved using uniformly shaped ice chunks as formwork, creating a novel masonry method. We developed basic building units by freezing stones in water, combining ice and stone. By mass-producing these units with designed interfaces and geometries, we efficiently constructed arches in a brick-like fashion. This innovative approach aims to revolutionize stone construction with minimal environmental impact, leveraging ice's natural properties for sustainable building practices.

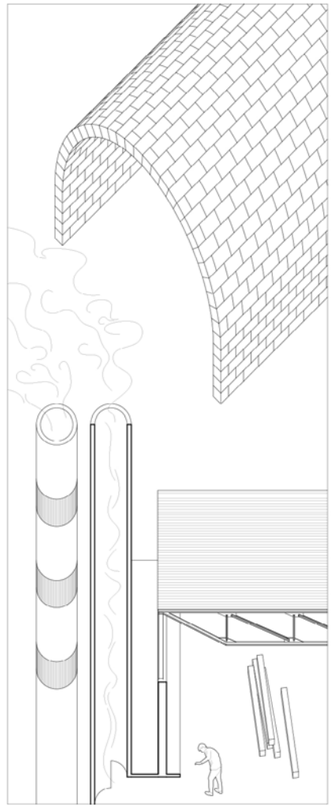


Tradition

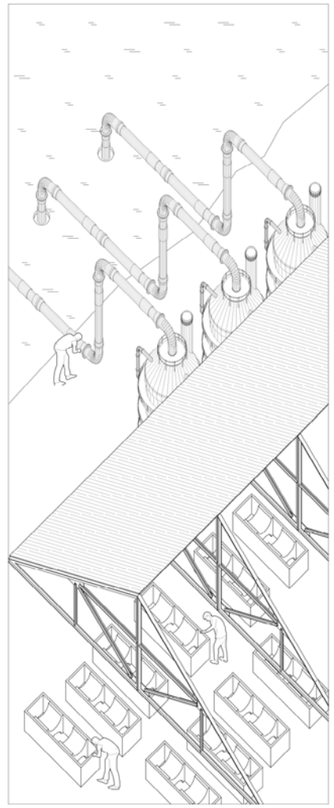
Workers cut down the trees and send the logs to the factory for processing, where they are cut into boards and columns. This causes irreversible damage to the forests.



The processed wooden columns as well as wooden boards were trucked by workers to the construction site and assembled into scaffolding and formwork. Workers follow the formwork to build the stone arch.

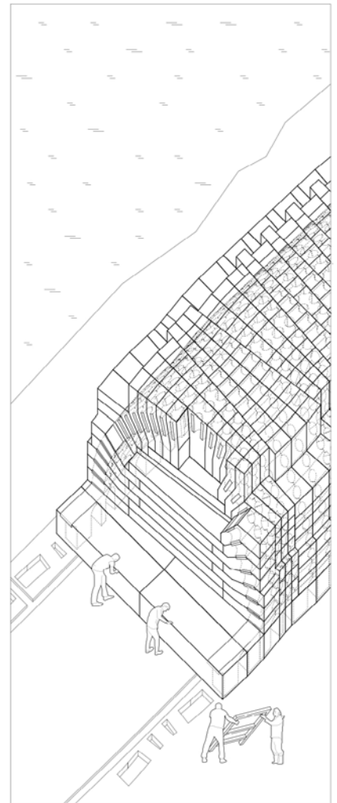


The timber, which had been used for scaffolding and formwork, could not be reused after its mission of building stone arches, so it was transported to a waste treatment plant to be burned.

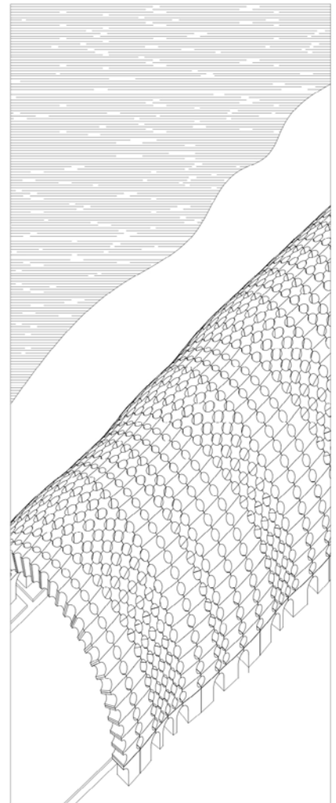


Proposal

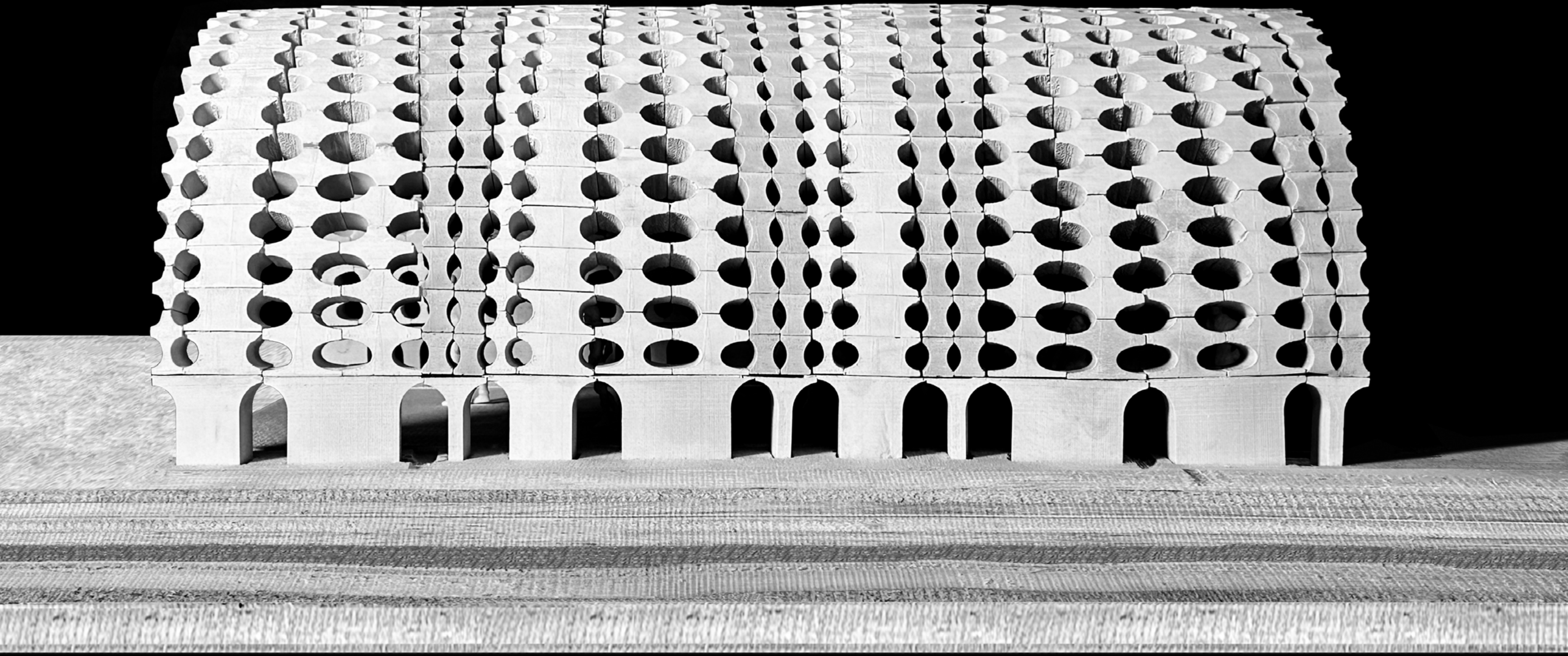
Workers use pumps to pump the lake water into storage tanks and purify it. And then, the water and stones are frozen in a freezer room to make ice bricks made of ice and stones.



In winter, bricks made of a combination of ice and stone are stacked by workers in designed positions following the construction logic of a brick wall. In the end, these bricks form a building in which ice and stone coexist at the same time.



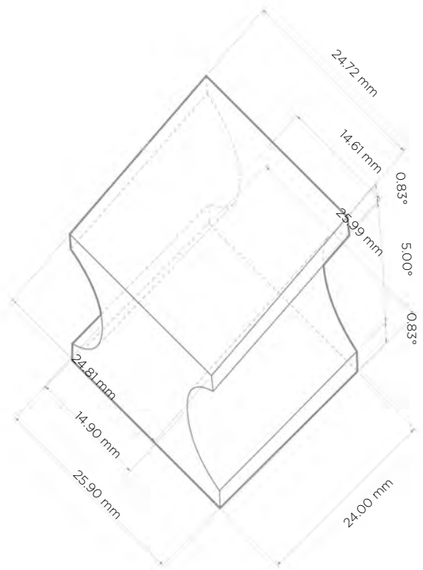
In summer, the ice formwork that originally supported the stone blocks gradually melted due to rising temperature, and eventually a stone arcade remained. On the day the ice ran out, the locals held a ceremony to celebrate the final manifestation of the arcade.

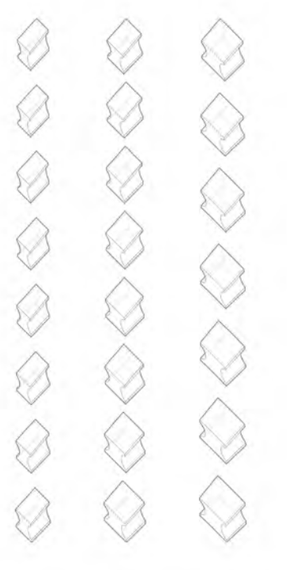


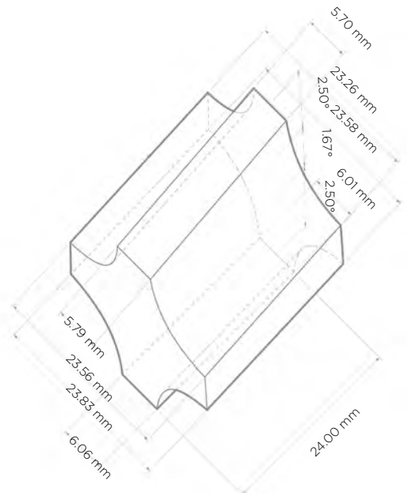
The main design features of the project are the complex multi-story structure and the stairways and ramps that connect the various levels. The project aims to create a three-dimensional park within the campus by linking the functions of th`

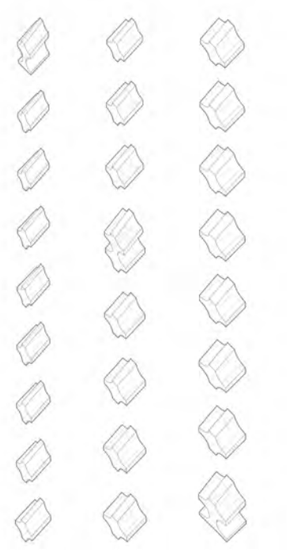
Units

Each arch unit consists of more than twenty stone block units. Each stone is logically identical in shape, and the concave portions of the stones are all designed so that the stones can interlock with the ice, allowing them to be blocked in. At the same time, there are slight variations in the size of each stone block, allowing the entire arch to form a wedge shape that is small at one end and large at the other.



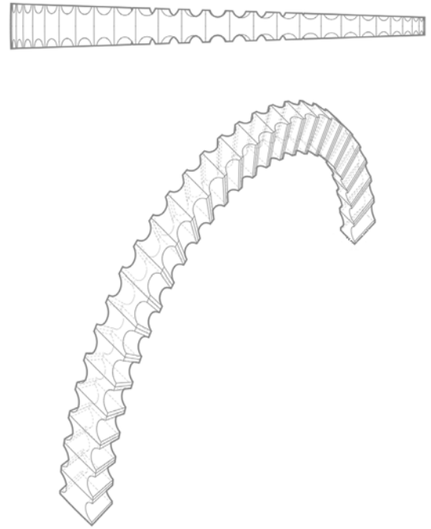


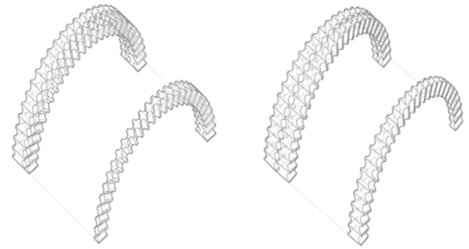




Arch A

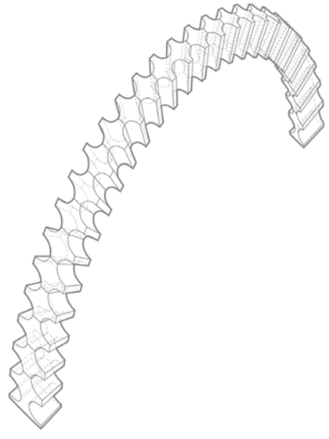
Arch A consists of "H" shaped stone units. Its connection with Arch A leads to a curved arcade, while its connection with Arch B leads to a straight extension of the arcade.

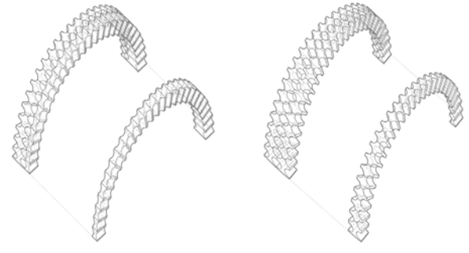


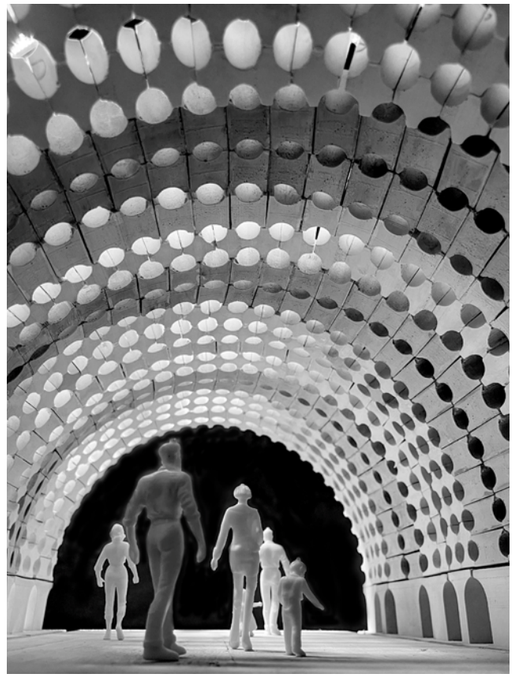


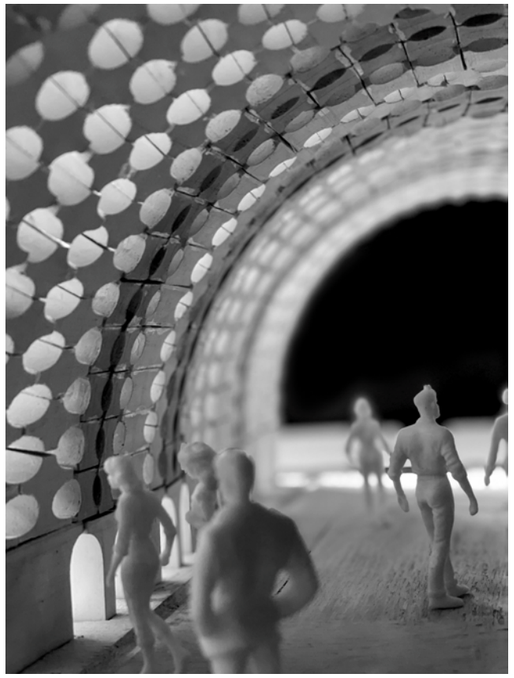
Arch B

Arch B consists of "X" shaped stone units. It is connected to Arch B to guide the arcade in a curved direction and to Arch A to guide the arcade in a straight line. The simultaneous presence of these two different arches allows the contact surfaces of the stone blocks to be interlocked, thus increasing the structural strength of the entire stone arcade.



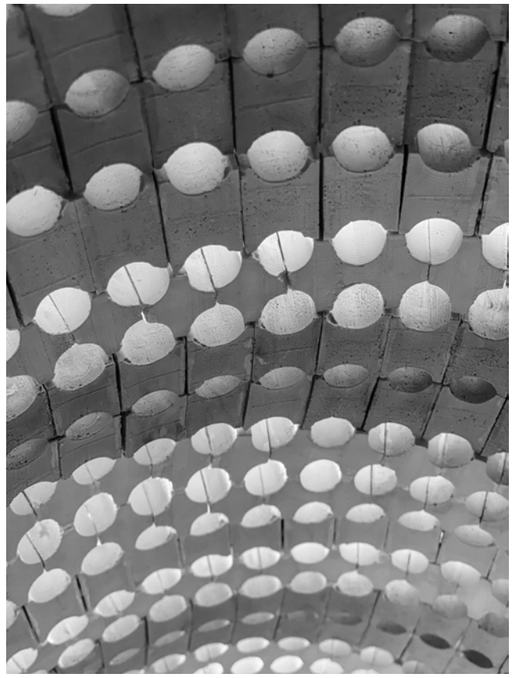


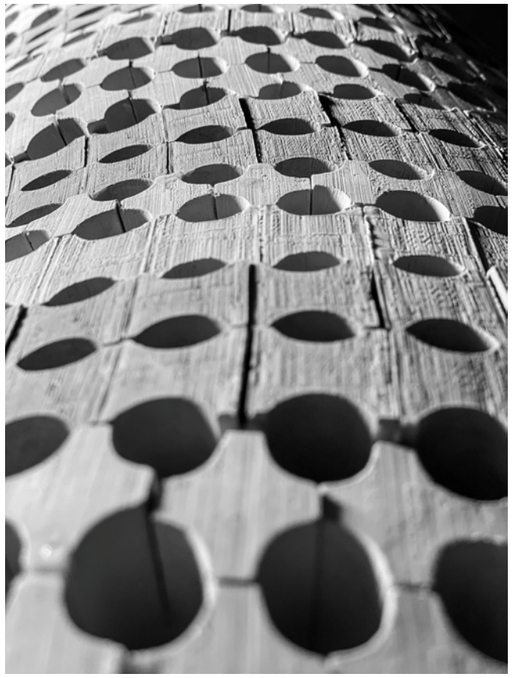




Interior

Inside, people can see the lake and the sky above through the holes on the arcade. The sunlight can also enter the house through these holes, creating countless beautiful spots of light. People can sit down for a rest and chat, and at this time they can see the wider view of the lake through the low arches.





Detail

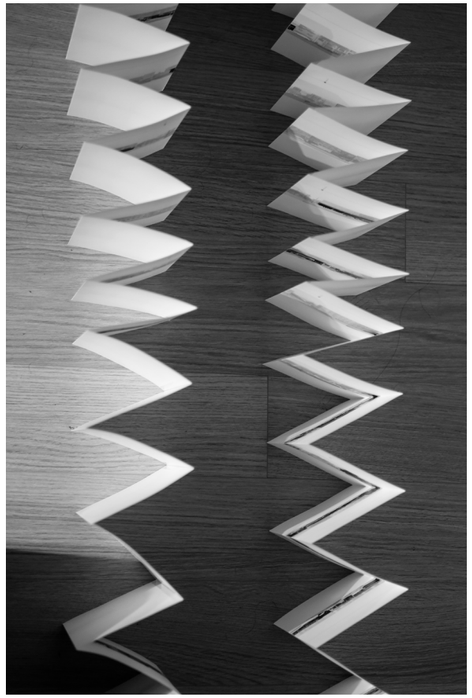
The holes on the arcade are naturally occurring due to the use of the new formwork material -- ice. At the same time, the holes vary in size, and the variation in their dimensions is due to the compliance of the arcade with the lake contour.

PROJECT 02

TRANSCRIBING NYCDMX

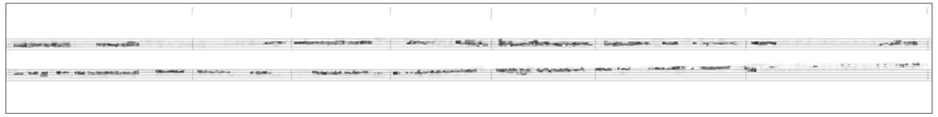
GSAPP Fall Design Studio
Individual Work
Advisor: Rozana Monteil & Thomas de Monchaux
2023. 11

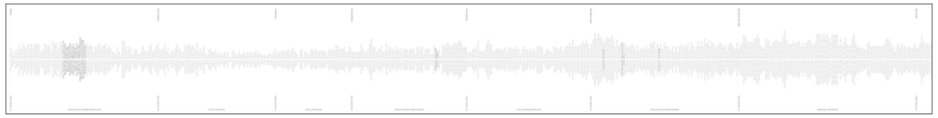
My interest starts with something invisible, something that you can only perceive by your ear, it's the sound of 116 street. because What strikes me first when I head into the little Mexico is the increase in the richness of sound, I got two different sounds from 116th street, one is very quiet, it was recorded in the broad way, near Columbia University, the other is from the Little Mexico, it's very loud, vivid, and it's even louder in that day when I was doing the fielding because its September 15th, they were celebrating their festival. and I also noticed that the main language that I heard from the people on the street changed from English into Spanish, although I cannot understand Spanish, I can still feel that change. So, I went on walking through 116th several times again, during which I did the field recording in every block along 116th street, and I took pictures for every single building I've seen during my walk. And this experience is strangely new to me because this is the first time that I actually pay attention to something that I used to call 'the noise' in the street, and try to find and understand the meaning out of it.

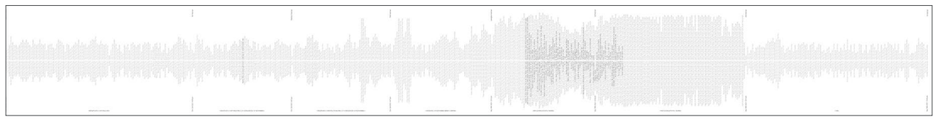


Booklets

The facade of 116th street, in which I highlighted the storefront of each block, making them look like notes in the musical composition, so that you can also see which part is more intense. So the street has its own rhythm, and you can tell from the facade of buildings. and I made these booklets for 116th street.





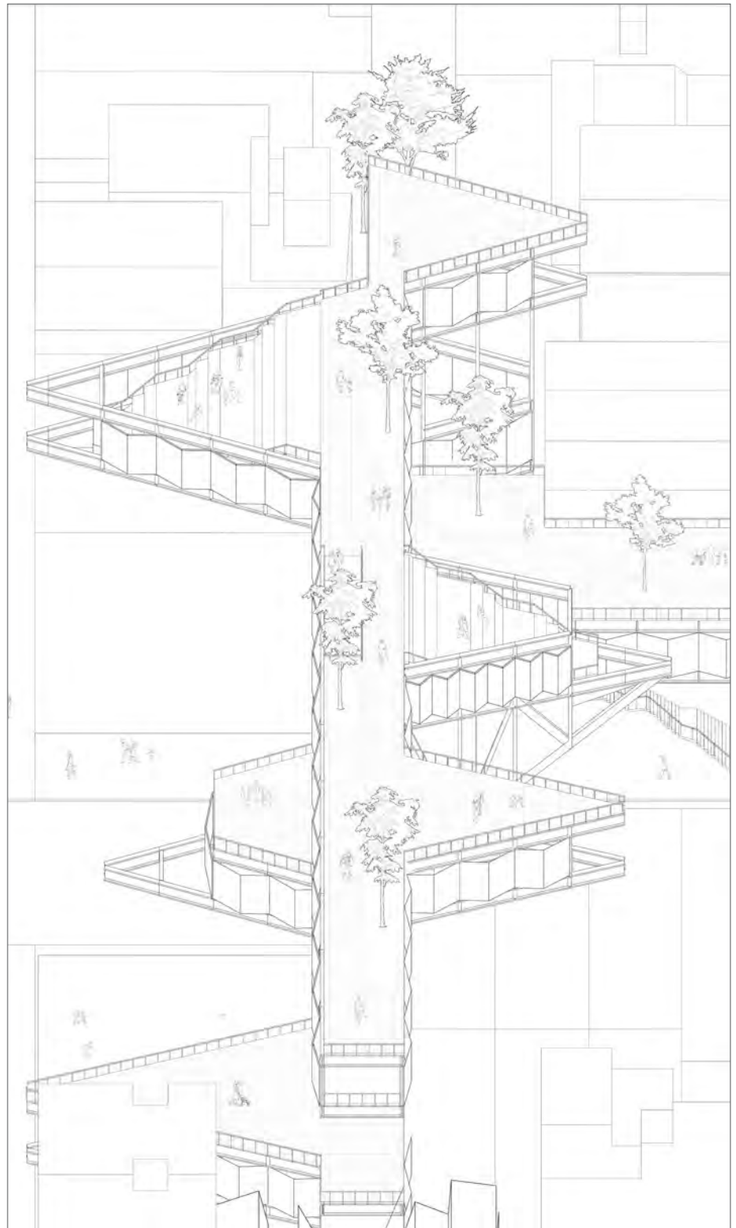


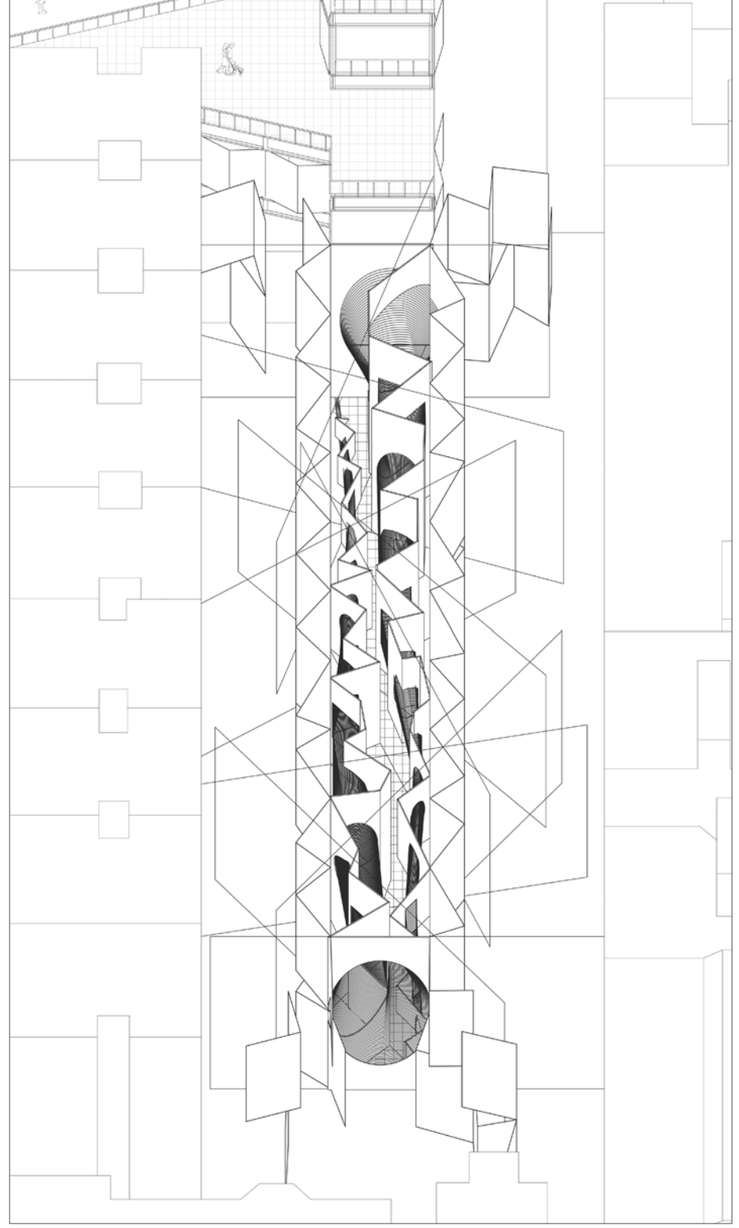
The Sound Map

I transcribed different sounds that I heard from 116th street. What I am trying to do is that I am trying to translate sound into something visible and readable. And if you take a closer look, you can see the transcription of different sounds in that street, the sound of people talking, singing, the sound of cars, birds, all of these contribute to the soundscape of 116th street.

Possible Building

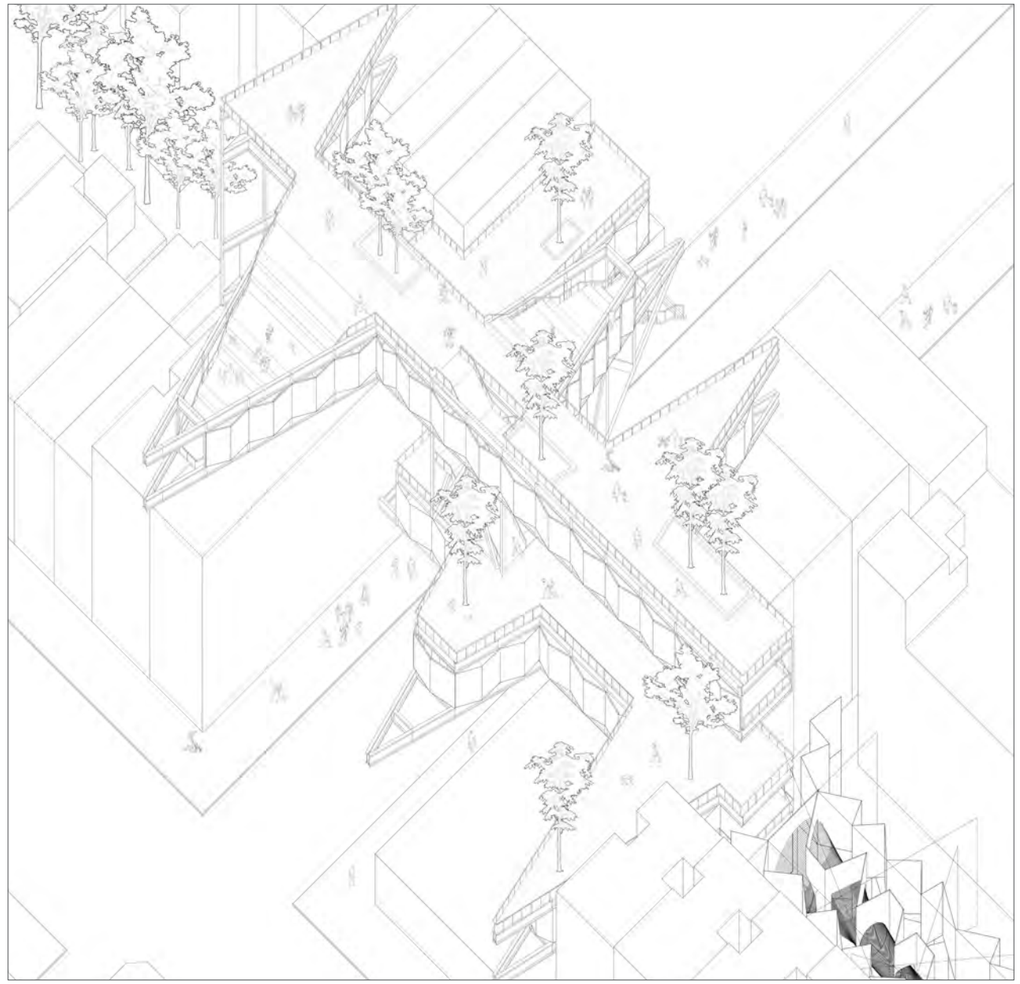
I want it to continue the idea of radical listening and mutual understanding. Because normally, when we walk on a street, our eyes are so focused on certain objects that we are interested in, or sometimes with no focus, so that every other building and people in front of us will naturally become background. In my building, I want the stories that happen in the building to have interactions with people outside it through the power of sound. The perspectives are to show how this special cinema works, it has the openings as lookout points for different use.





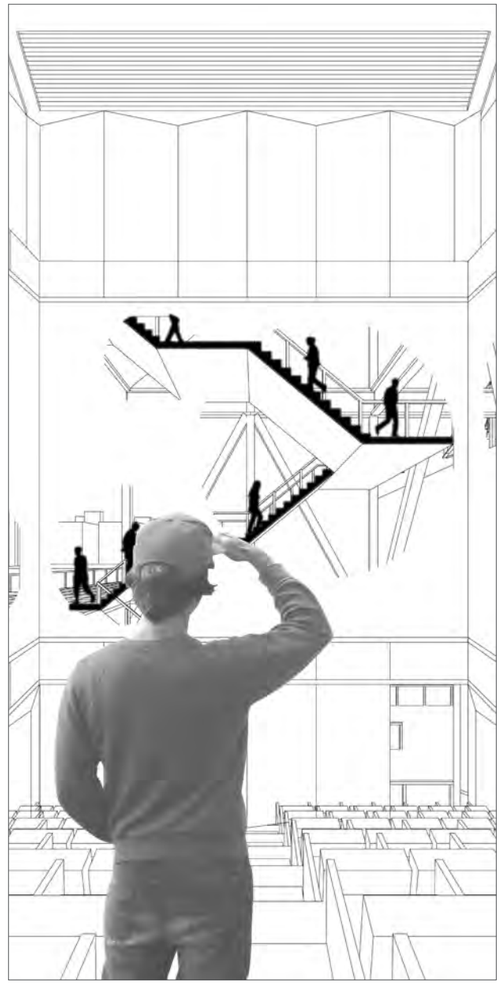
Impossible Building

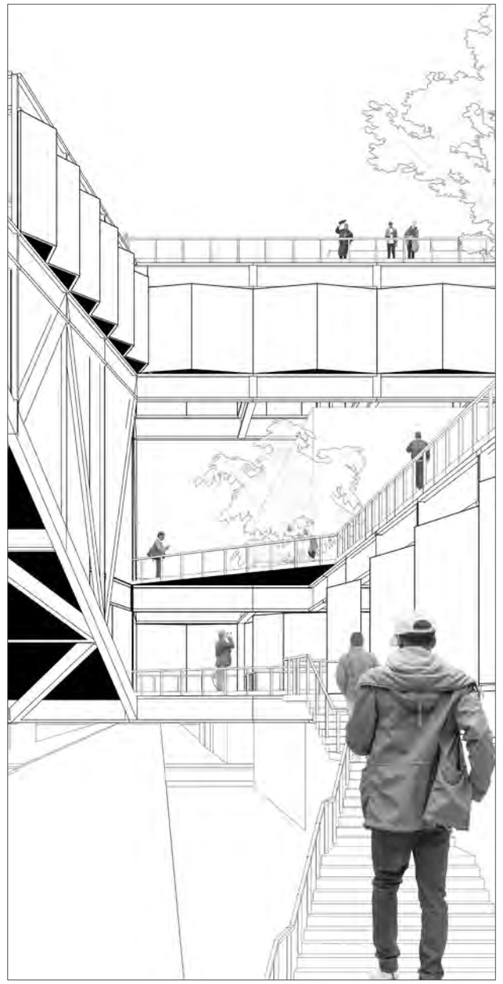
When i was trying to translate my idea of the the and the radical listening and mutual understanding into a magical building that connecting Mexico and New York City, the first thing that come to my mind was the literature one hundred years of solitude written by Colombia writer Garzia Marcuz, because this book was originally written by Spanish but has been translated into so many languages all over the world. And i read this book in Chinese when I was a freshman in university, this is my portal to CDMX.



Possible Building

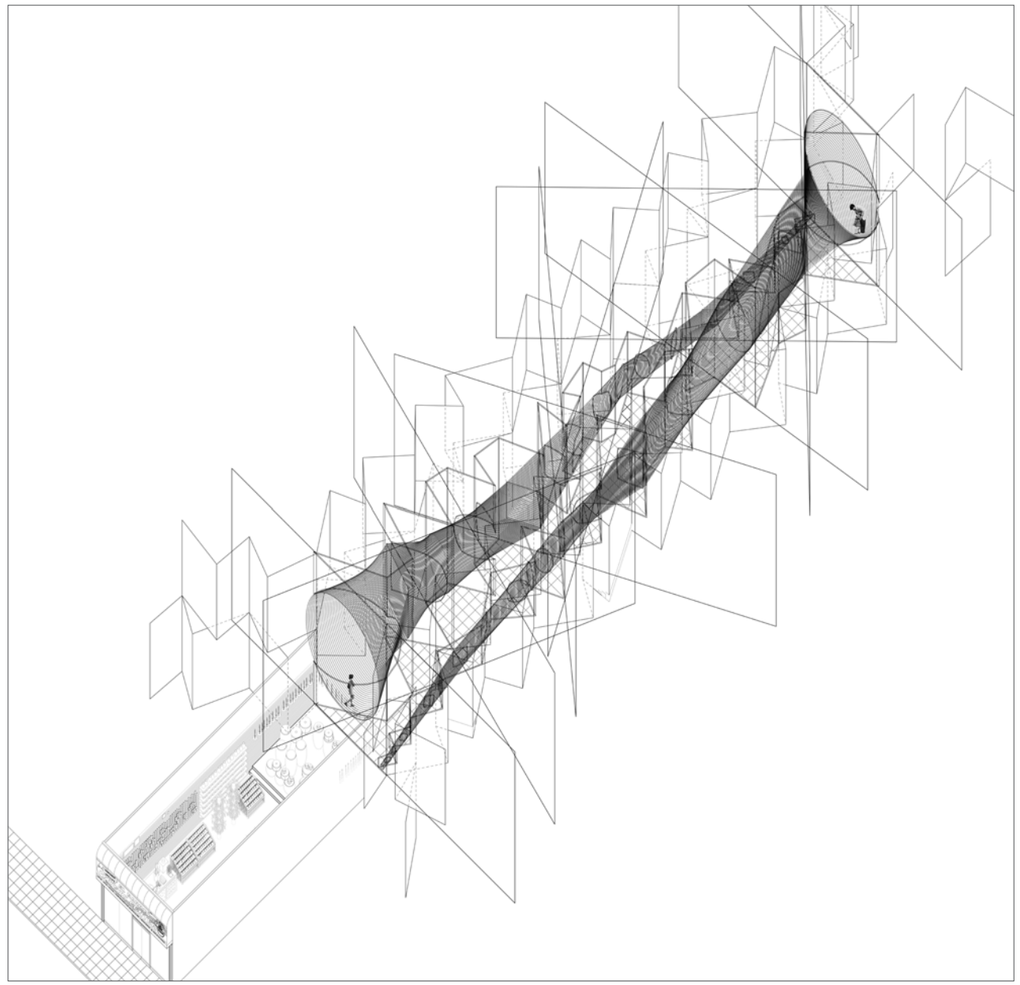
What I found interesting in translation and transcription are that They are different languages but express the same idea. It's about certain cultures traveling through time and space.





Scenerio

I was putting in different covers of the book one hundred years of solitude in the middle of the building, and space is taking shapes of the projectors, it symbolizes the information, the signal of sound to be amplified when they travel from one side to the other.



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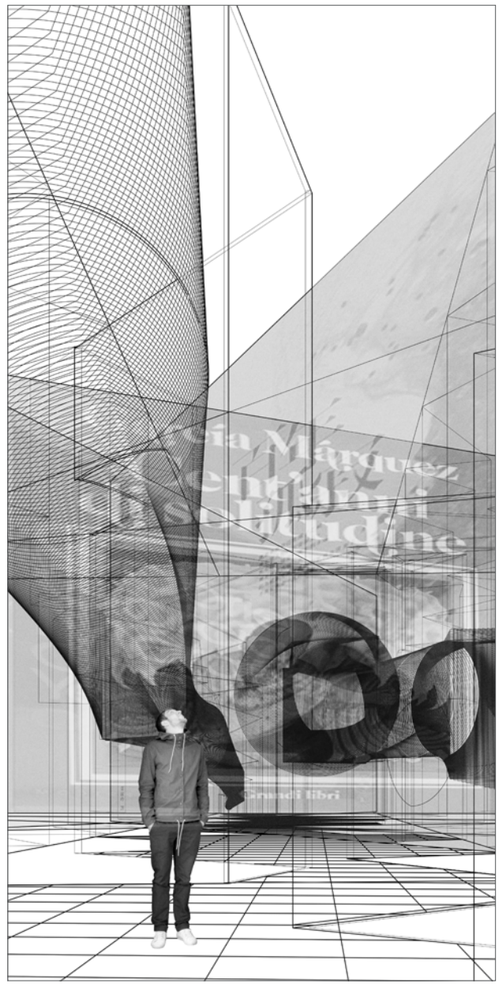

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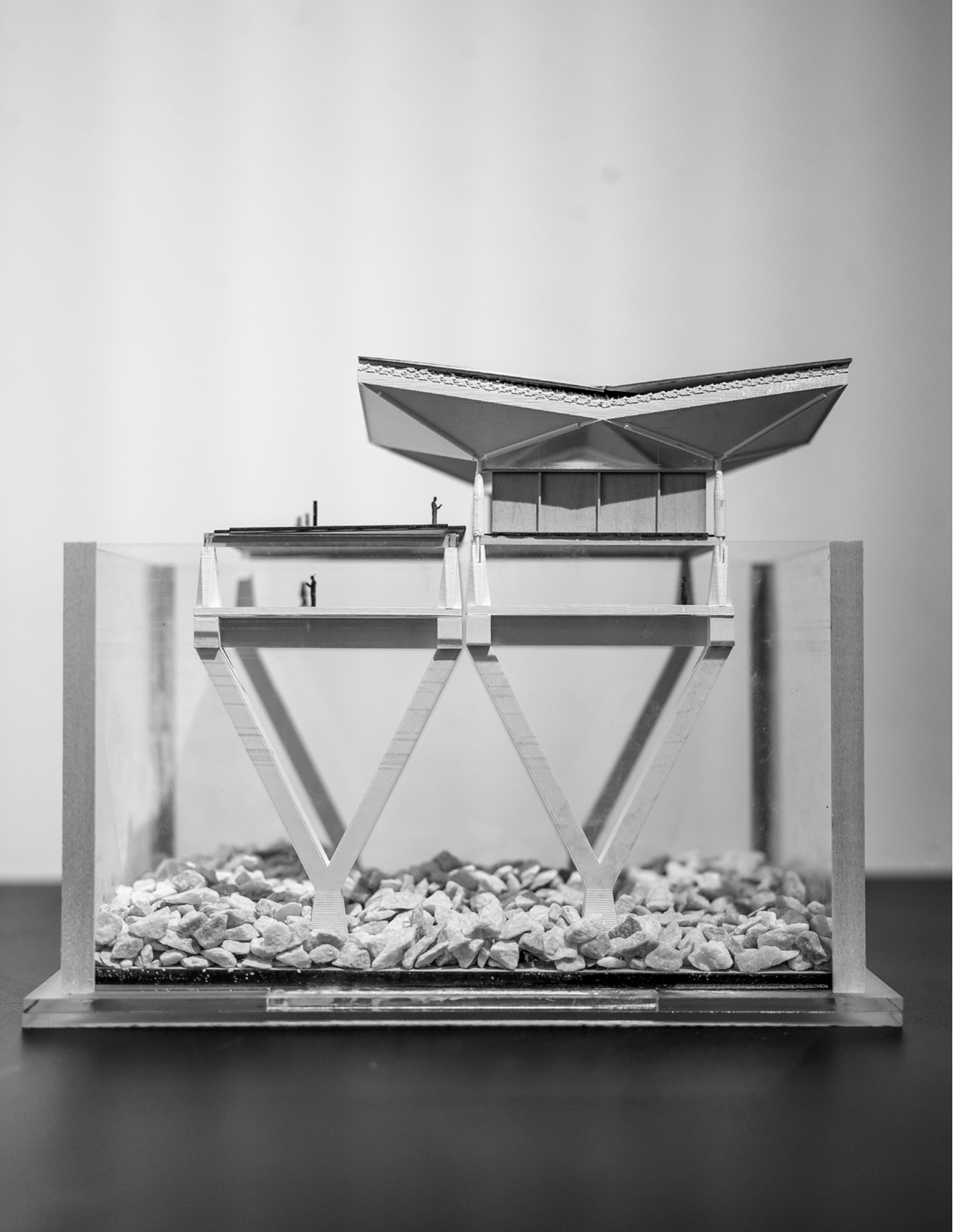


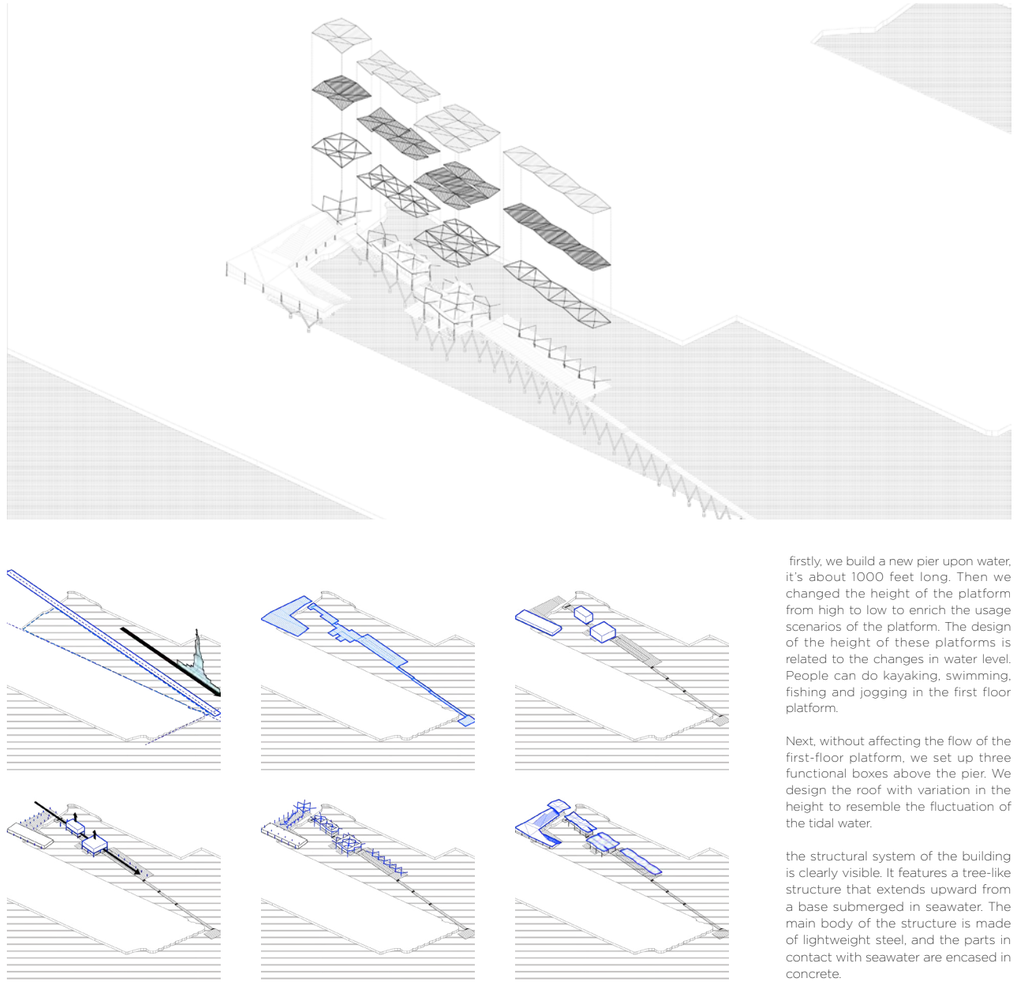
PROJECT 03

AMPLIFICATION

GSAPP Spring Design Studio
Group Work
Advisor: Laurie Hawkinson
2024. 04

Sea level rise is a very serious and increasingly severe issue. According to NASA's observations of sea level heights starting from 1993, the global average sea level has been rising annually, and the rate of rise is accelerating. However, there is a discrepancy in public awareness of this phenomenon. Most people do not feel the severity of sea level rise in their daily lives because the rising process is difficult to discern with the naked eye due to regional sea level fluctuations. Our design concept addresses this gap in perception. By constructing a building on the SBMT site, we aim to bring people to the waterfront to experience different water conditions, thereby raising awareness of sea level rise.

SITE PLAN

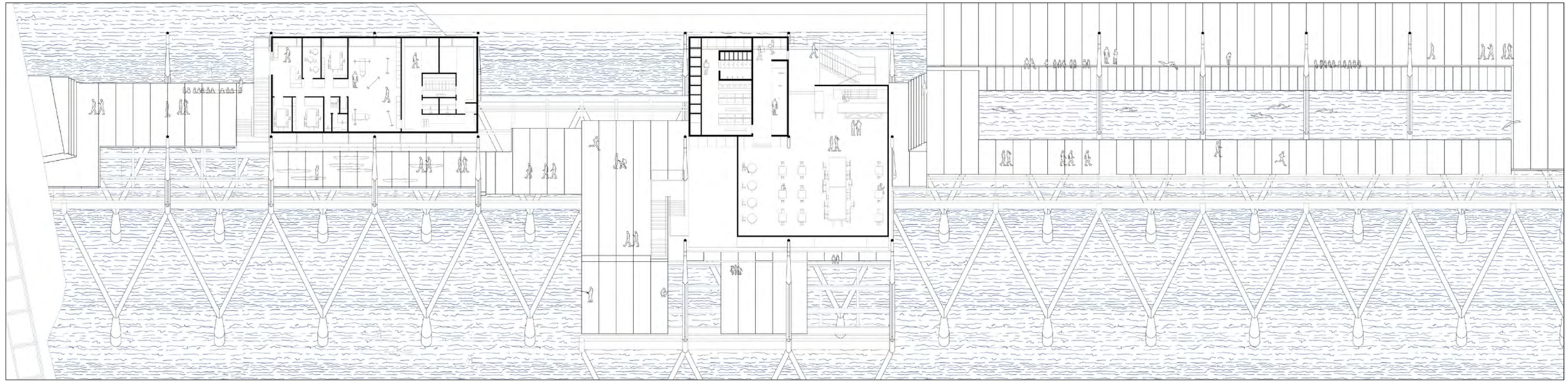


CONCEPT

firstly, we build a new pier upon water, it's about 1000 feet long. Then we changed the height of the platform from high to low to enrich the usage scenarios of the platform. The design of the height of these platforms is related to the changes in water level. People can do kayaking, swimming, fishing and jogging in the first floor platform.

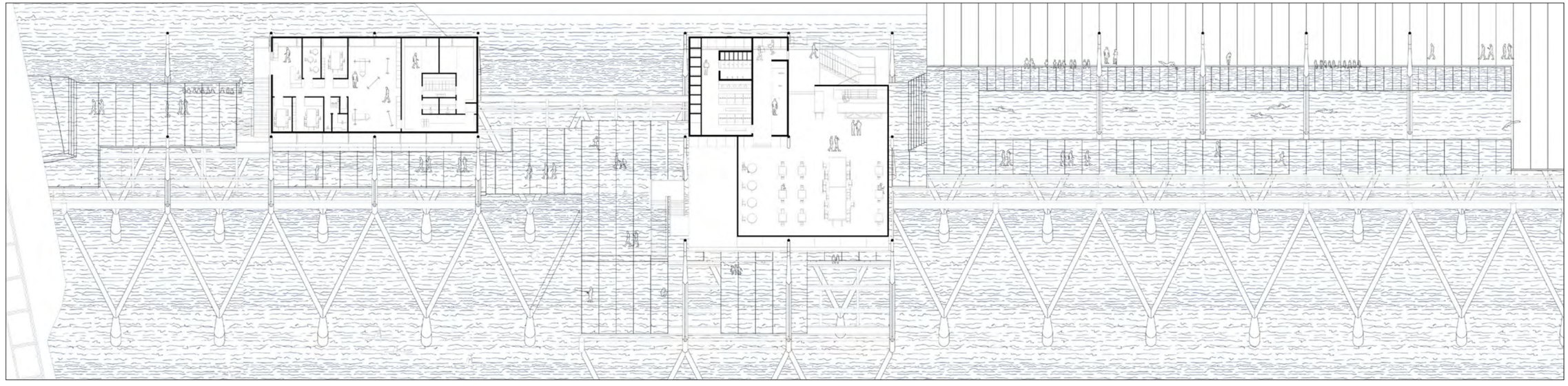
Next, without affecting the flow of the first-floor platform, we set up three functional boxes above the pier. We design the roof with variation in the height to resemble the fluctuation of the tidal water.

the structural system of the building is clearly visible. It features a tree-like structure that extends upward from a base submerged in seawater. The main body of the structure is made of lightweight steel, and the parts in contact with seawater are encased in concrete.



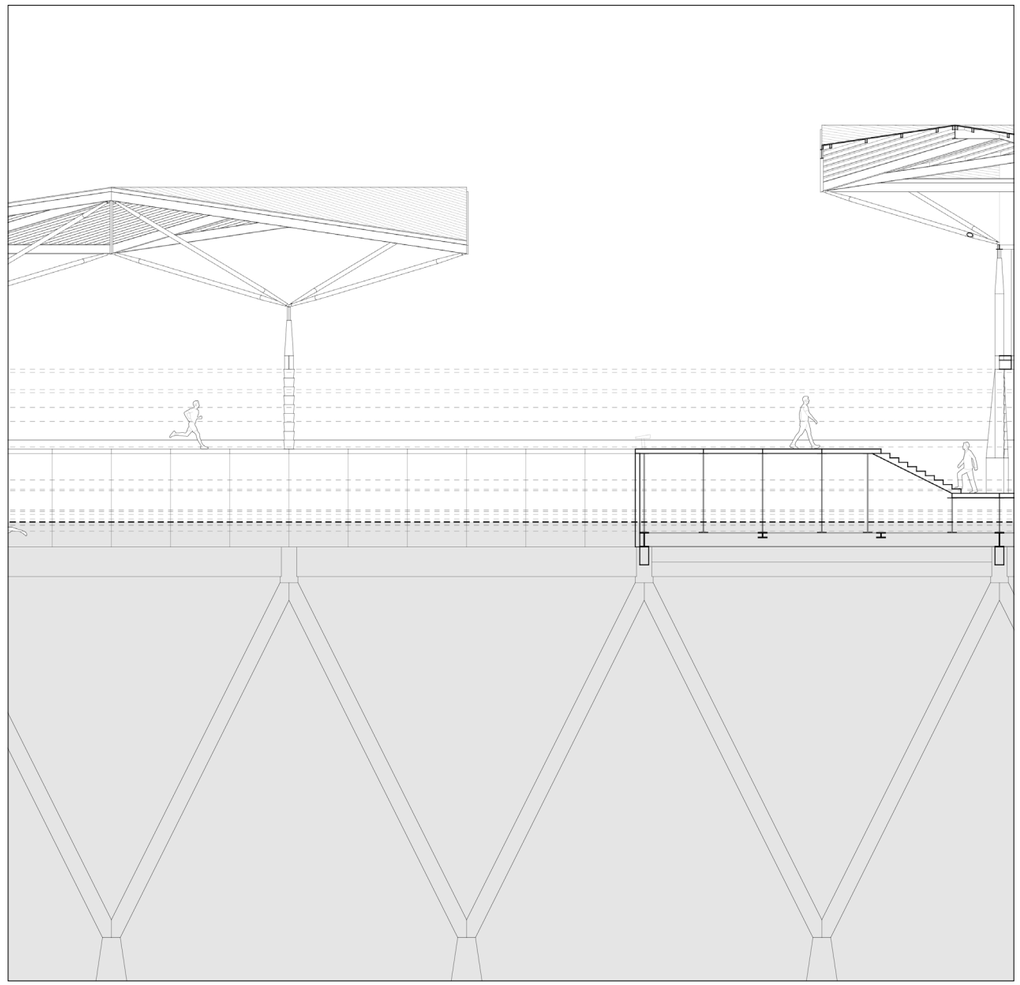
NOW-SOON

In 2024, most of the building's surfaces are above sea level. The function of the first-floor platform is a collection of various water recreation activities, where people can engage in sea fishing, swimming, kayaking, and other activities.



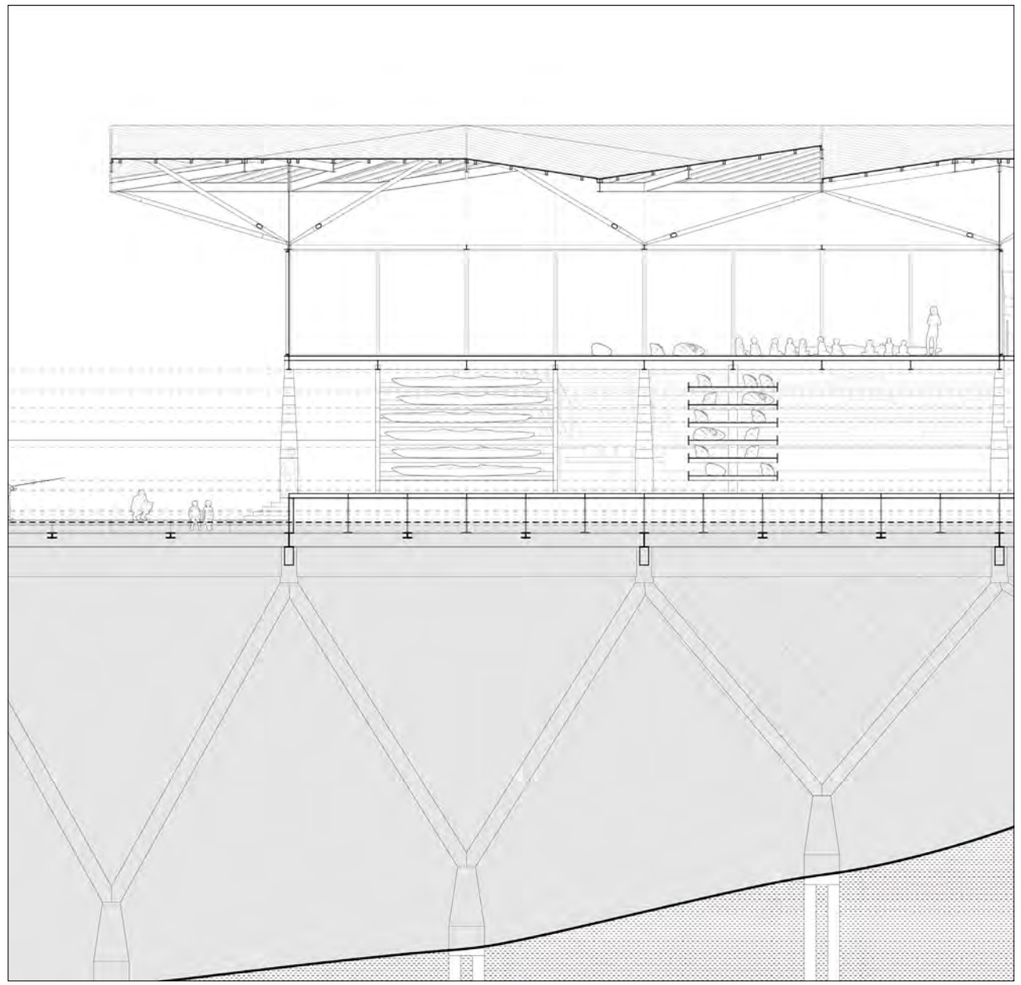
SOON-EVENTUALLY

Between 2050 and 2100, the first-floor platform of the building will be completely submerged by sea water, but the functions of the remaining second-floor block can still be used, which include a restaurant and an activity room. The building will extend a platform from the second floor to serve as a docking point for boats.



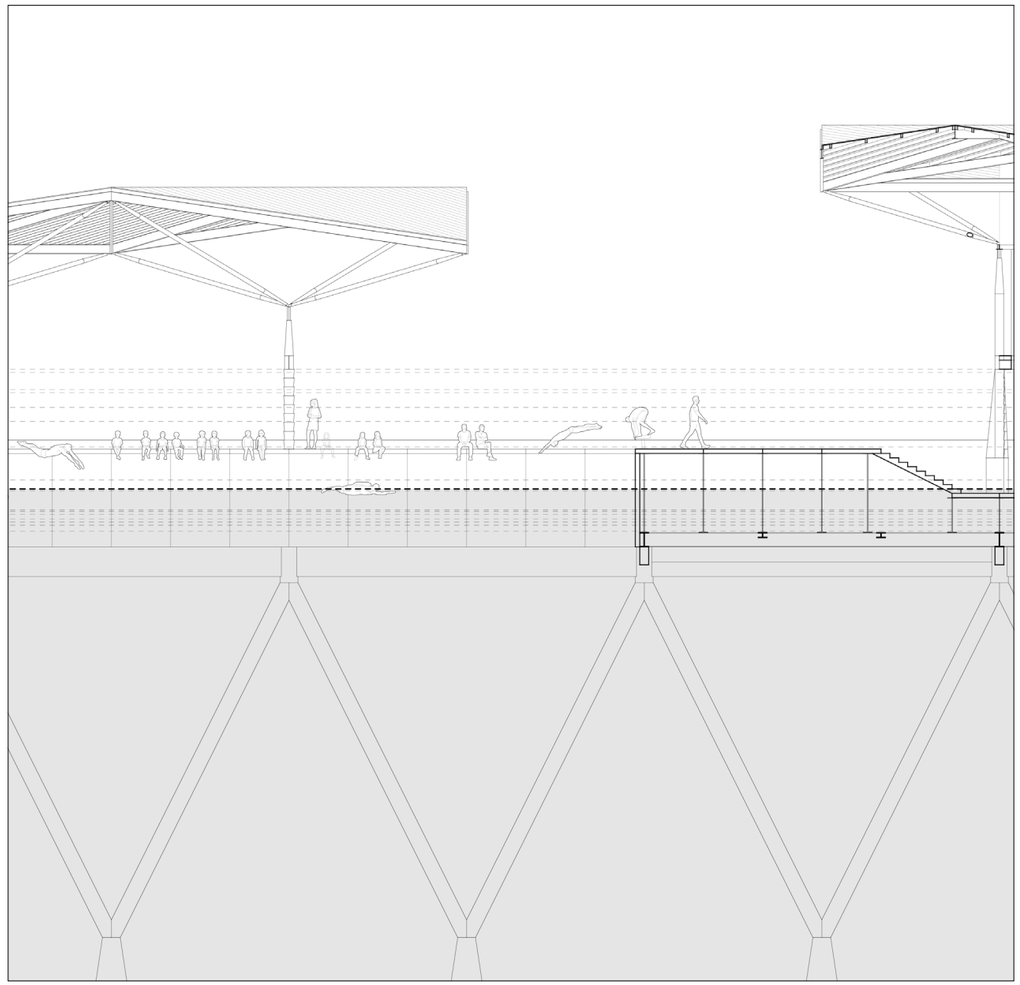
2030 LOW TIDE

During low tide, the main activities on the first-floor platform are jogging and fishing.



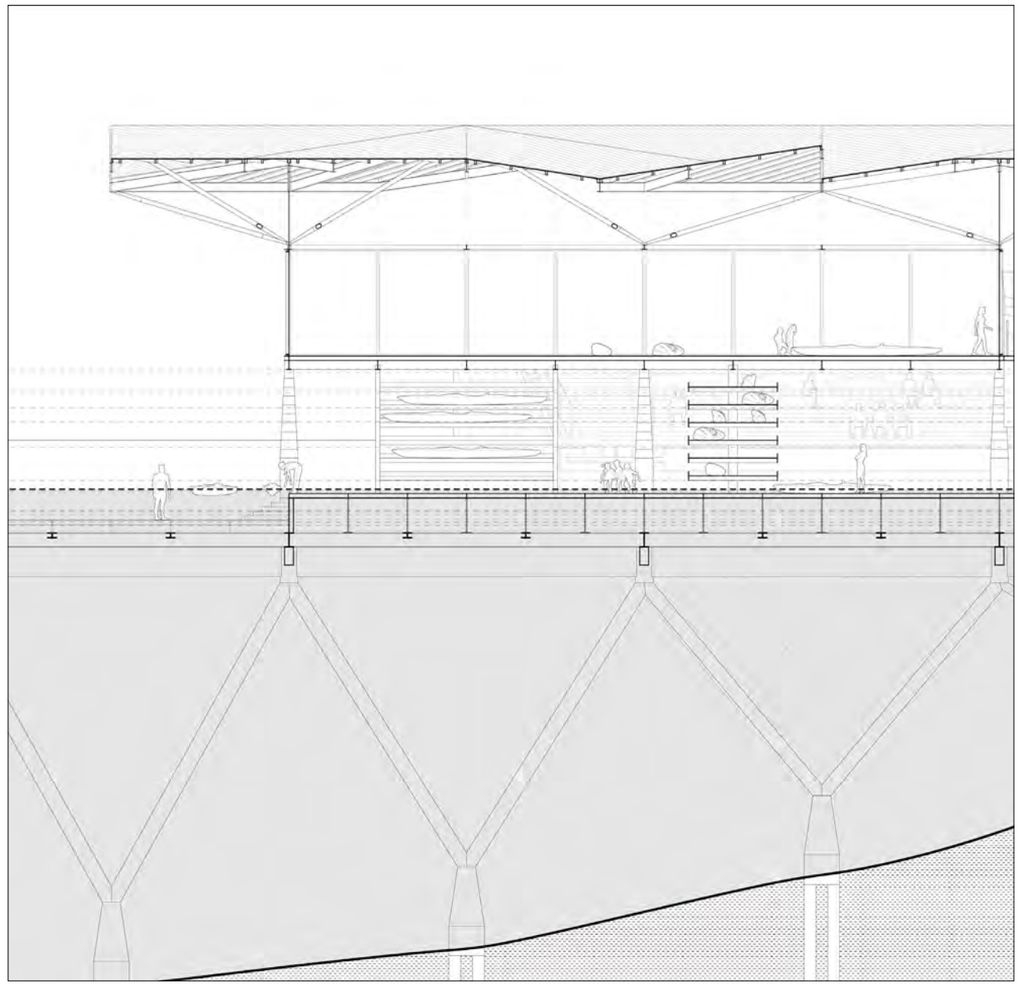
2030 LOW TIDE

The second floor serves as a kayaking classroom, where people learn how to kayak and access changing rooms.



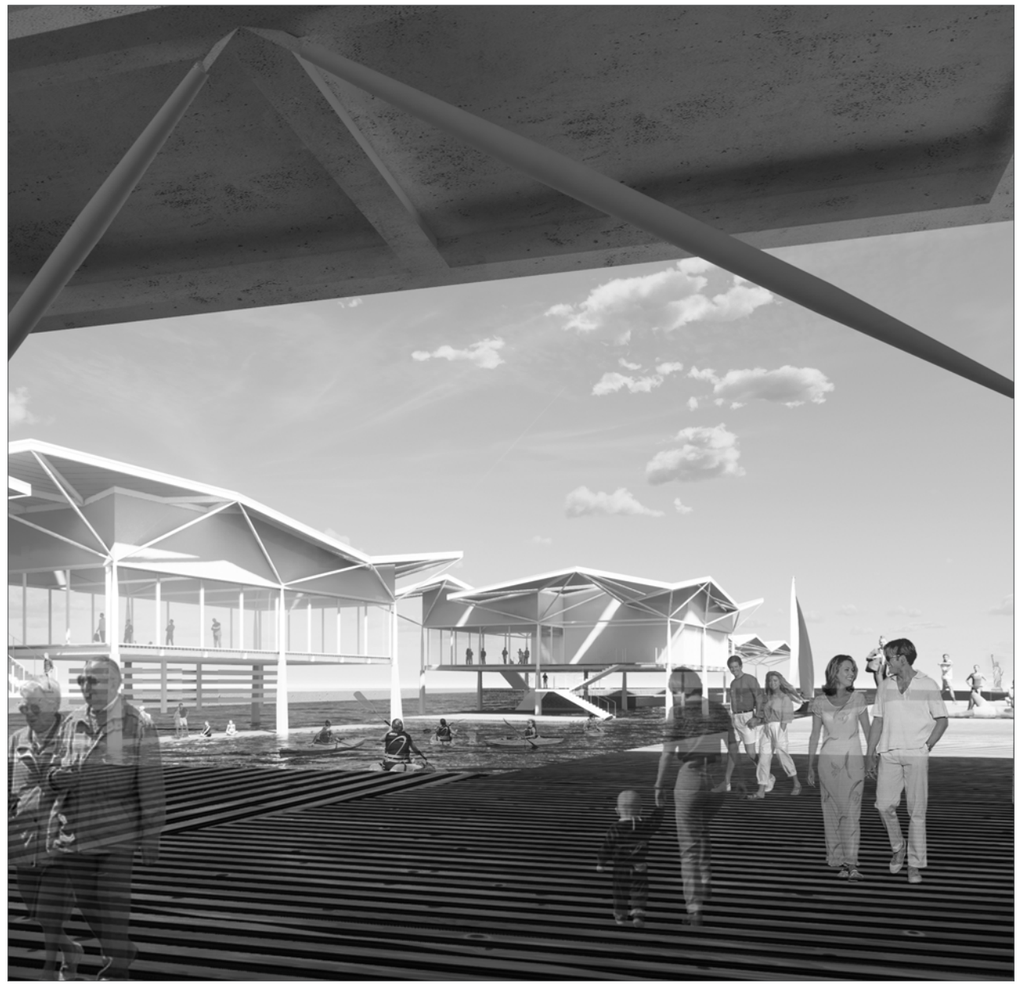
2030 HIGH TIDE

During high tide, the first-floor platform is used as a resting platform for the swimming pool, where the main activity is swimming.



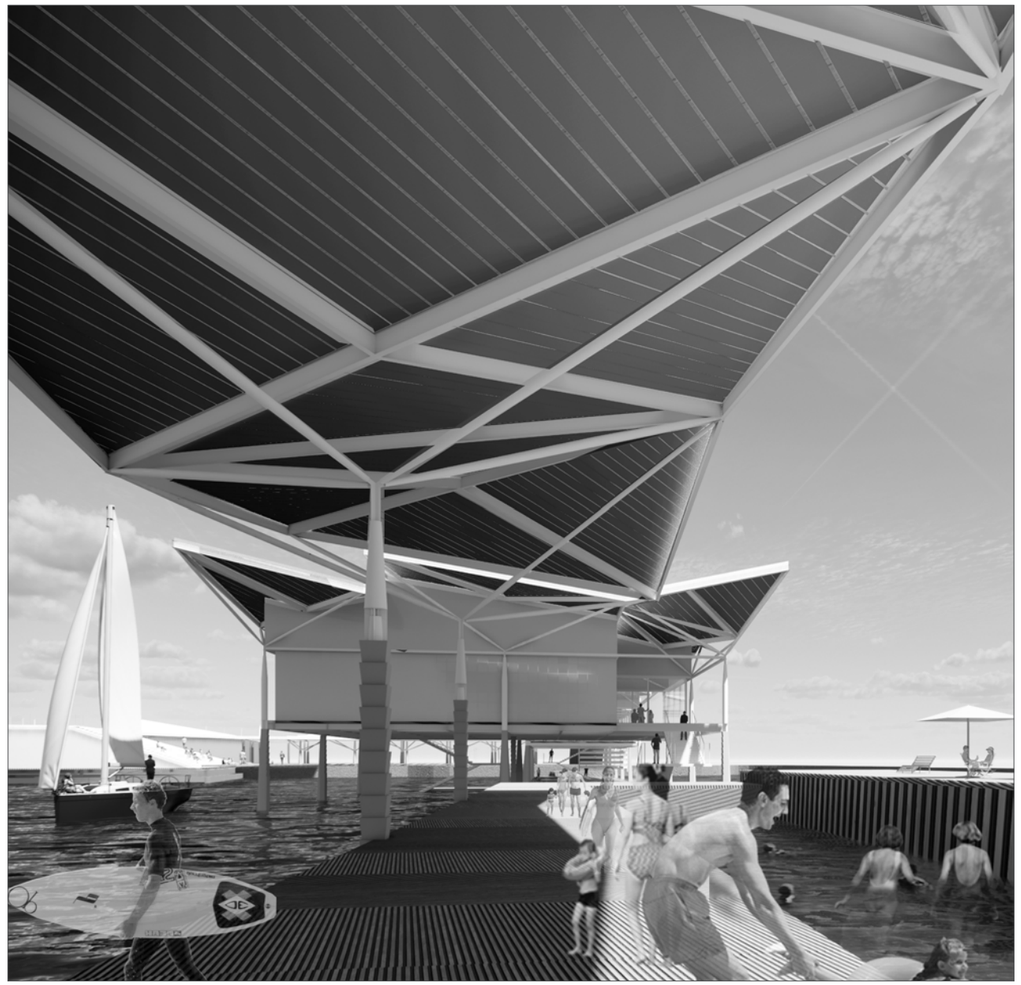
2030 HIGH TIDE

The first-floor platform here is primarily used for launching and storing kayaking boats.



Scenerio 01

The building is elongated and points towards the Statue of Liberty. The function of the first-floor platform changes throughout the day with the tide, allowing people to engage in various water activities and thereby experience the changes in sea conditions at different states.



Scenerio 02

From this perspective, the structural system of the building is clearly visible. It features a tree-like structure that extends upward from a base submerged in seawater. The main body of the structure is made of lightweight steel, and the parts in contact with seawater are encased in concrete.