

1

Studio Fall 2022 Leslie Gill Khoi Nguyen 2

Studio Spring 2023 Laurie Hawkinson 3

Transsclarities
Andres Jaque
Beril Sarısakal

4

Studio Summer 2022 Elias Anastas Yousef Anastas 5

New York Rising Kate Ascher Thomas Mellins 6

Advanced Curtain Wall
Dan Vos

7

The Contemporary
Bernard Tschumi

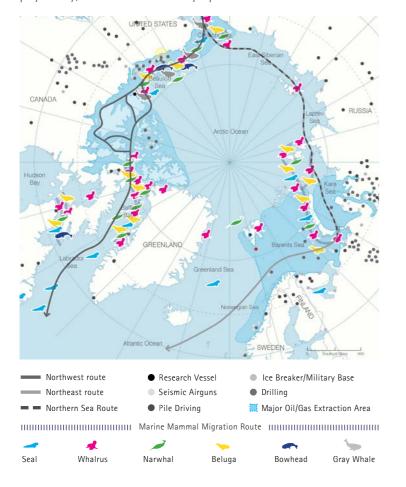


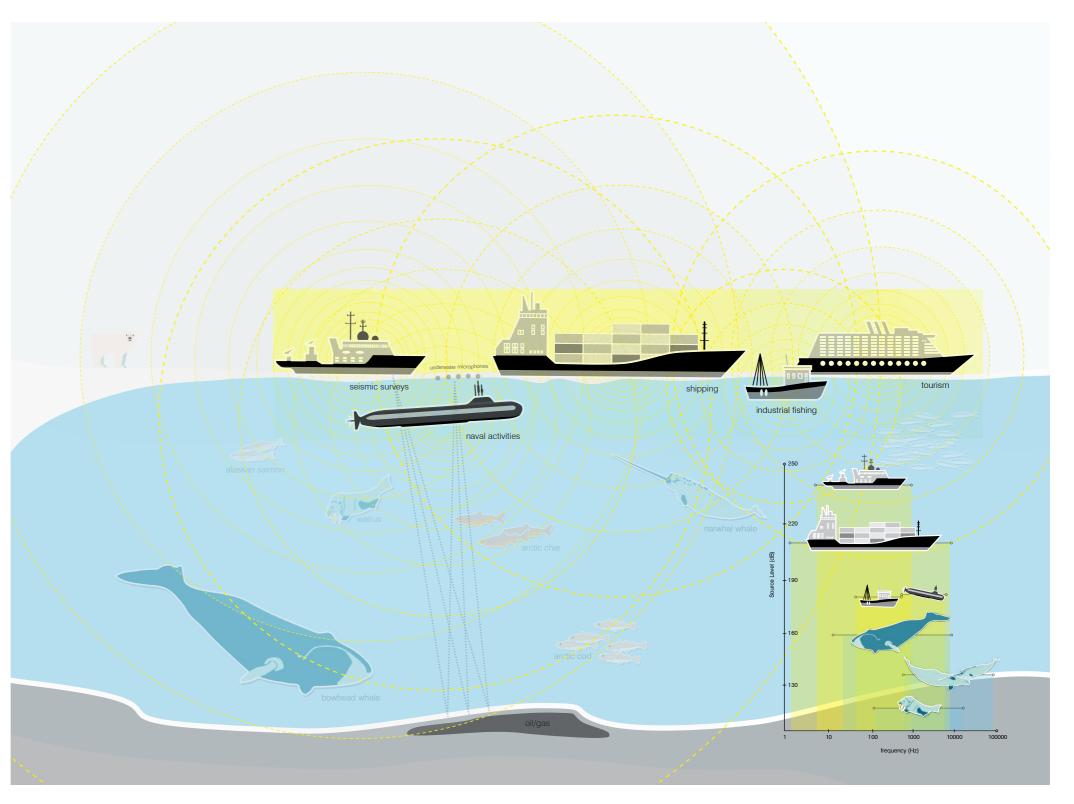
### Underwater Noise Research Vessel - Fall 2022

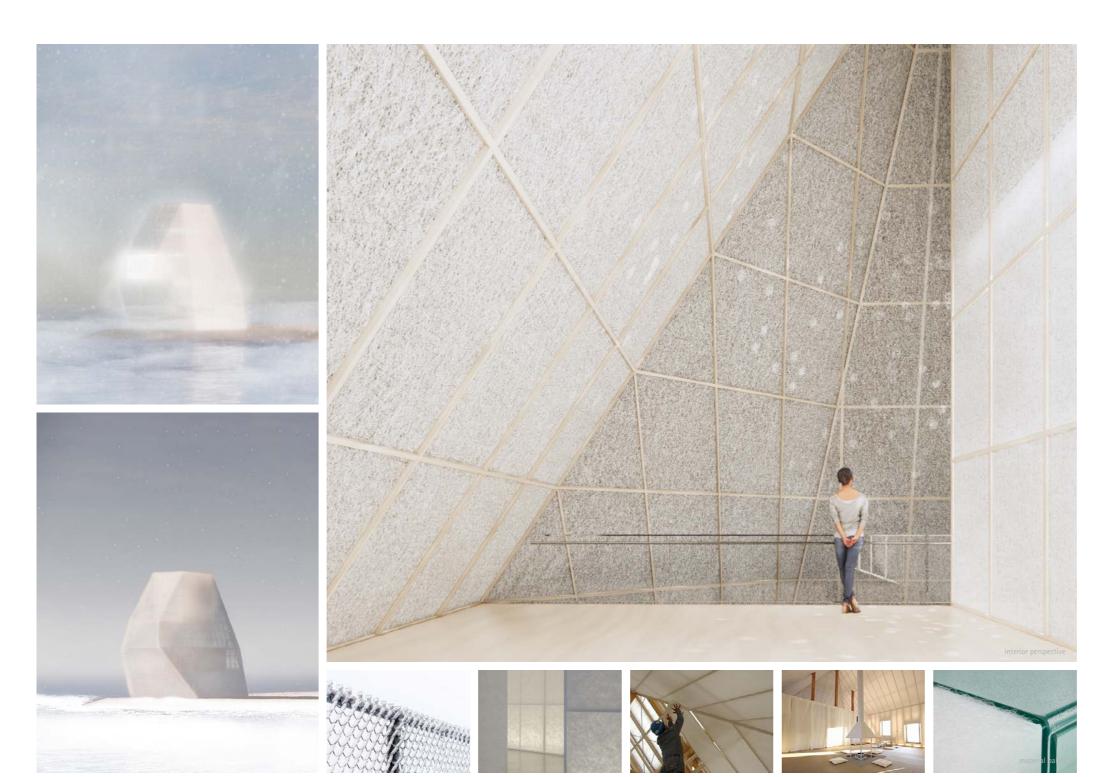
Instructor: Leslie Gill Khoi Nguyen

As the polar ice cap in the Arctic region continues to melt at an increasing speed, human activities are quickly spreading to areas that we were not able to access in the past. These newly introduced vessel traffic on water as well as deep-water oil/gas exploration activities may lead to increased underwater noise, which can be devastating to marine mammals, as they depend on reflected sound waves to navigate underwater.

Moreover, human beings cannot relate to the damage these noises bring for the marine mammals as we do not perceive sound in the same way as they do. Beyond being a data collection center to monitor and better understand the harmful underwater noise, this project also aims to translate such noise by creating disorientation in the building both visually and physically, in order to better sympathize with the marine lives.



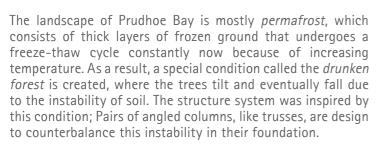


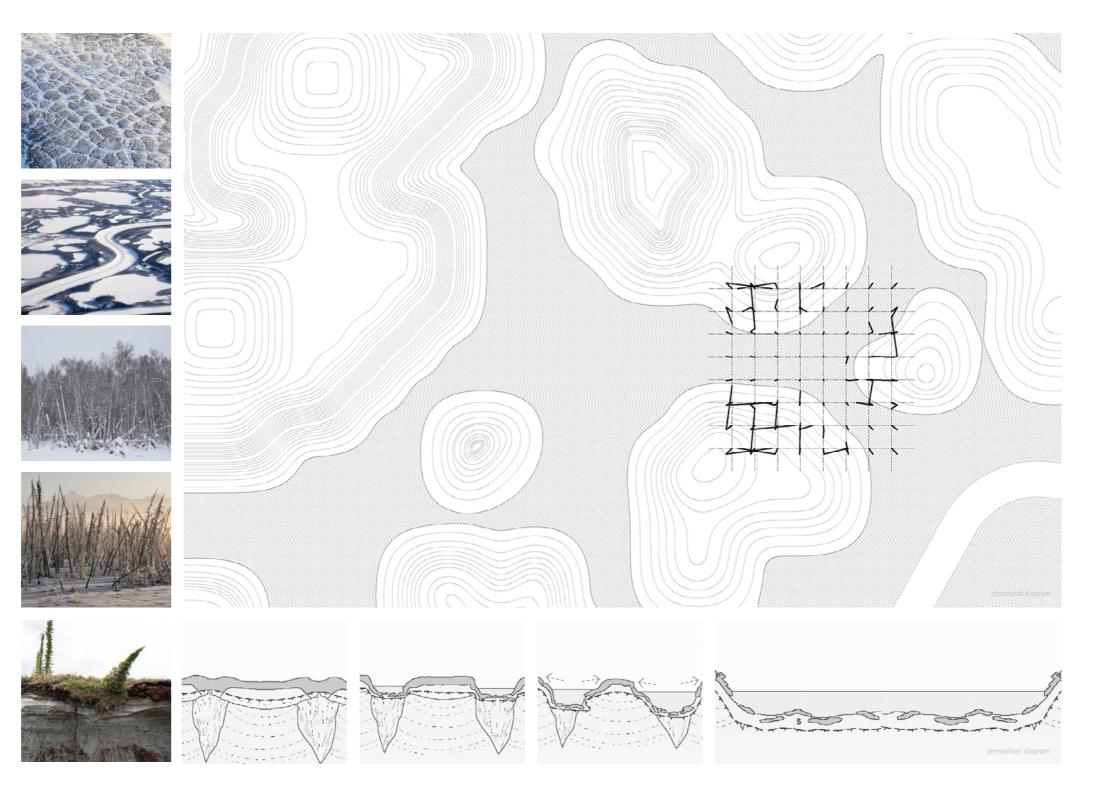


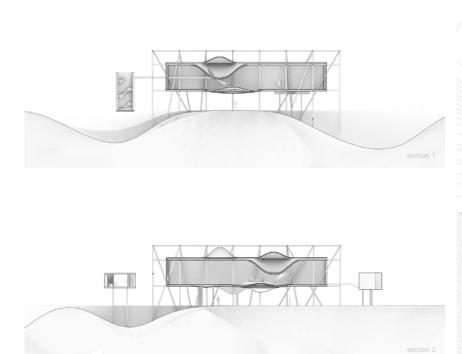


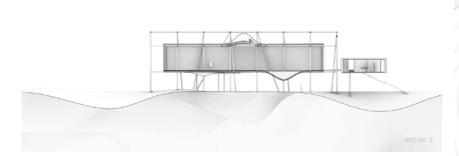
Several small remote research centers are distributed along the coastline of Prudhoe Bay, Alaska. The site is located closeby the start of the Trans-Alaska Pipeline, where lots of drilling and sea transporting happens on a daily bases. These research centers provide lodging for the researchers, as well as a deployable vessel to go out further into the ocean daily to record and monitor underwater noise. Located more in land near the region's airport, the main building is easily accessible by the public. Data gathered from the remote research centers are then transferred to and collected at the main building.



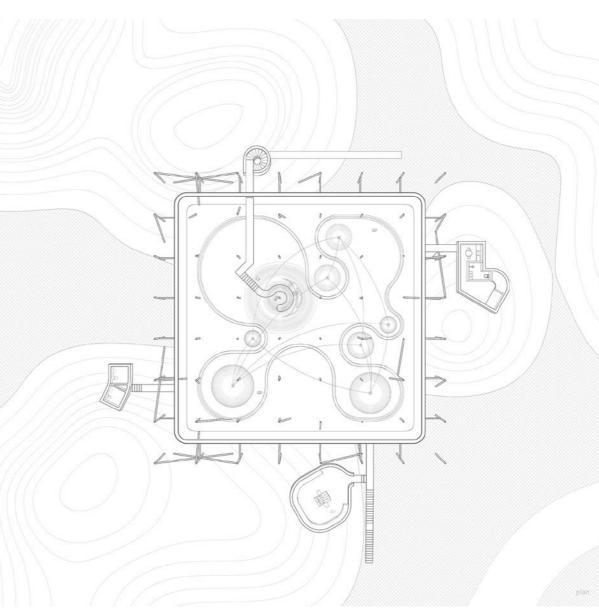










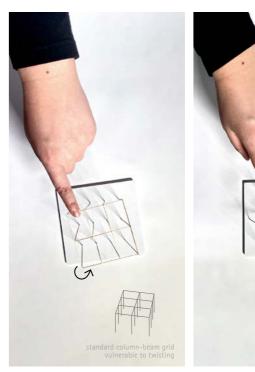






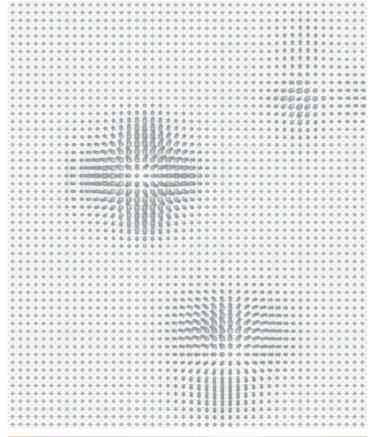








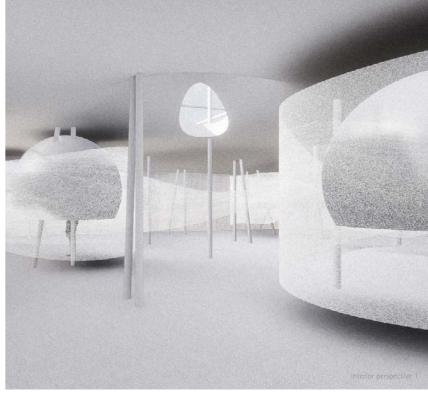
The main volume of the building is suspended in between the column structure, enabling it to be entirely flexible and elastic. Therefore, other strictly functional spaces are placed outside on the perimeter. These spaces include the living space for an on-site researcher, a data processing office, two restrooms for visitors, as well as one exterior stairwell connecting to a water vessel motor testing room which is hung from the ceiling.



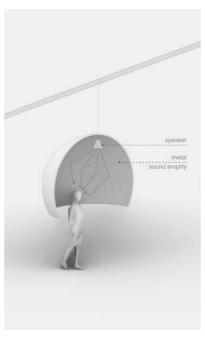


On the interior of the main volume, sound gathered by remote data collection centers in proximity are processed and translated into visual projections on the ribbon-like screen partition that divides the interior space. Inside each divided compartment, the actual sound recorded from each marine mammal is played within a metal bubble chamber, mimicking the sound reverberation condition underwater.





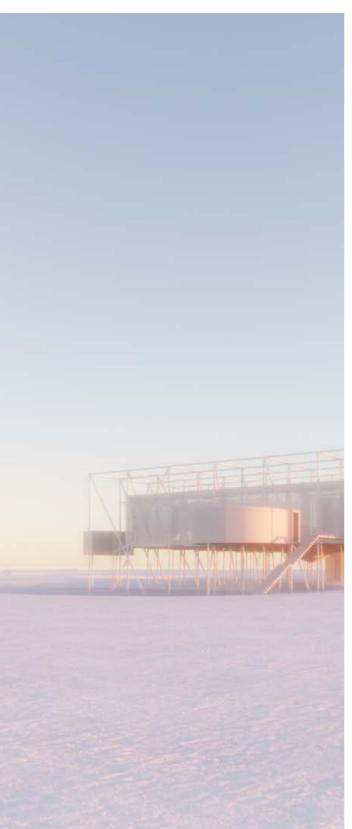
















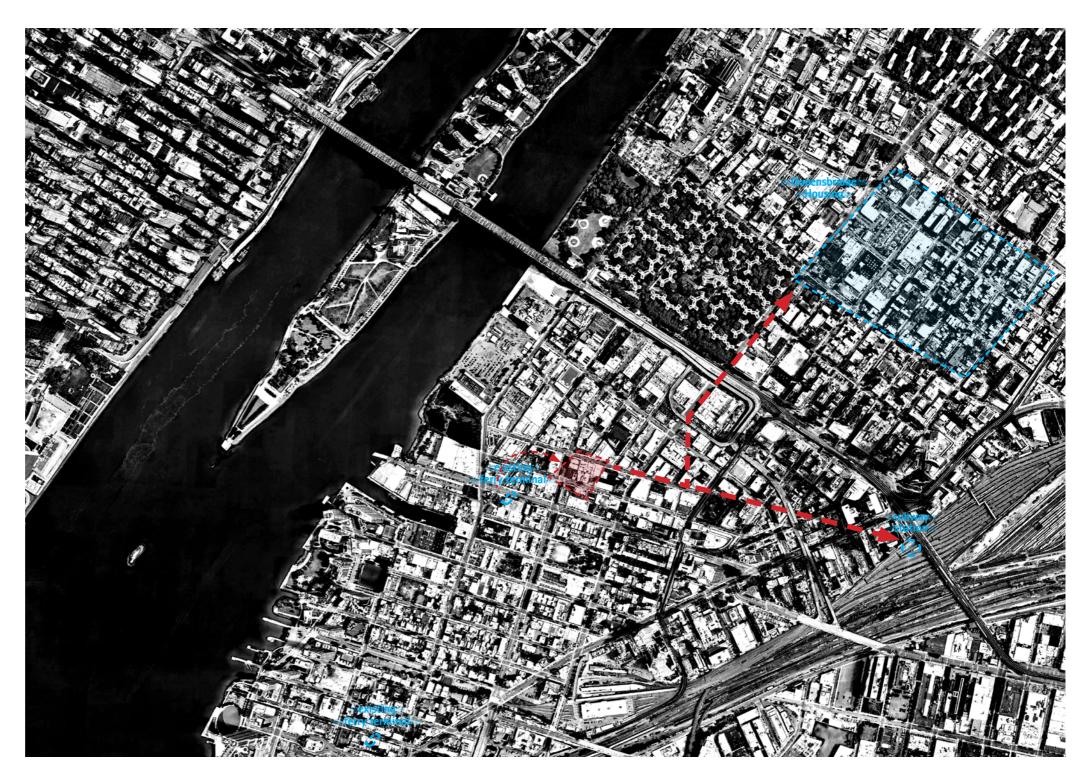
## Anable Basin Ferry Library - Spring 2023

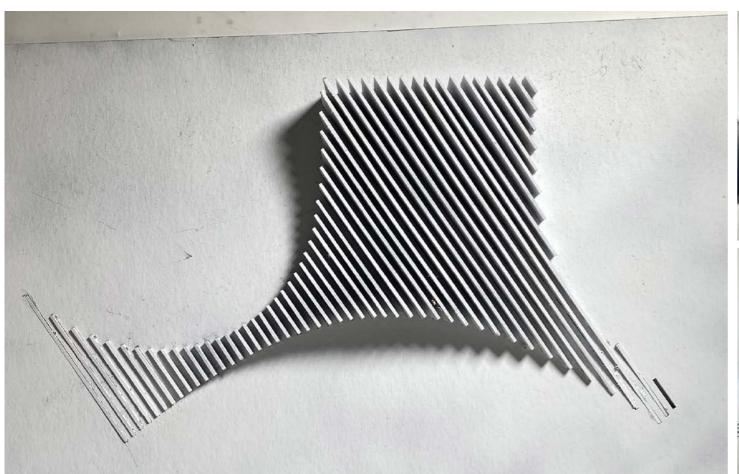
Instructor: Laurie Hawkinson

Higher sea levels and increasing coastal flood exposure pose growing challenges for the large population and major economic assets along New York City's shoreline. Historically, a number of severe coastal floods (both hurricanes and nor'easters) have struck the city, causing great harm. Superstorm Sandy in 2012 generated the highest water levels in at least 300 years and caused an estimated \$19 billion in damages and 43 fatalities. How do we mitigate this through our design at the water edge?

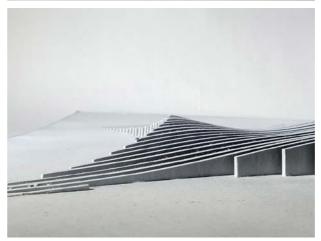
In my project, I reimagined the ferry terminal at Anable Basin, Long Island City. By moving the exisitng ferry terminal up North, it will better serve the large community at the Queensbridge Housing, which is the largest social housing project in Northern America. In addition to its function as a ferry terminal, the building also serves the community as a library, gather place, and outdoor playground.





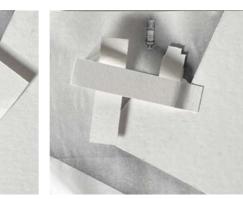
















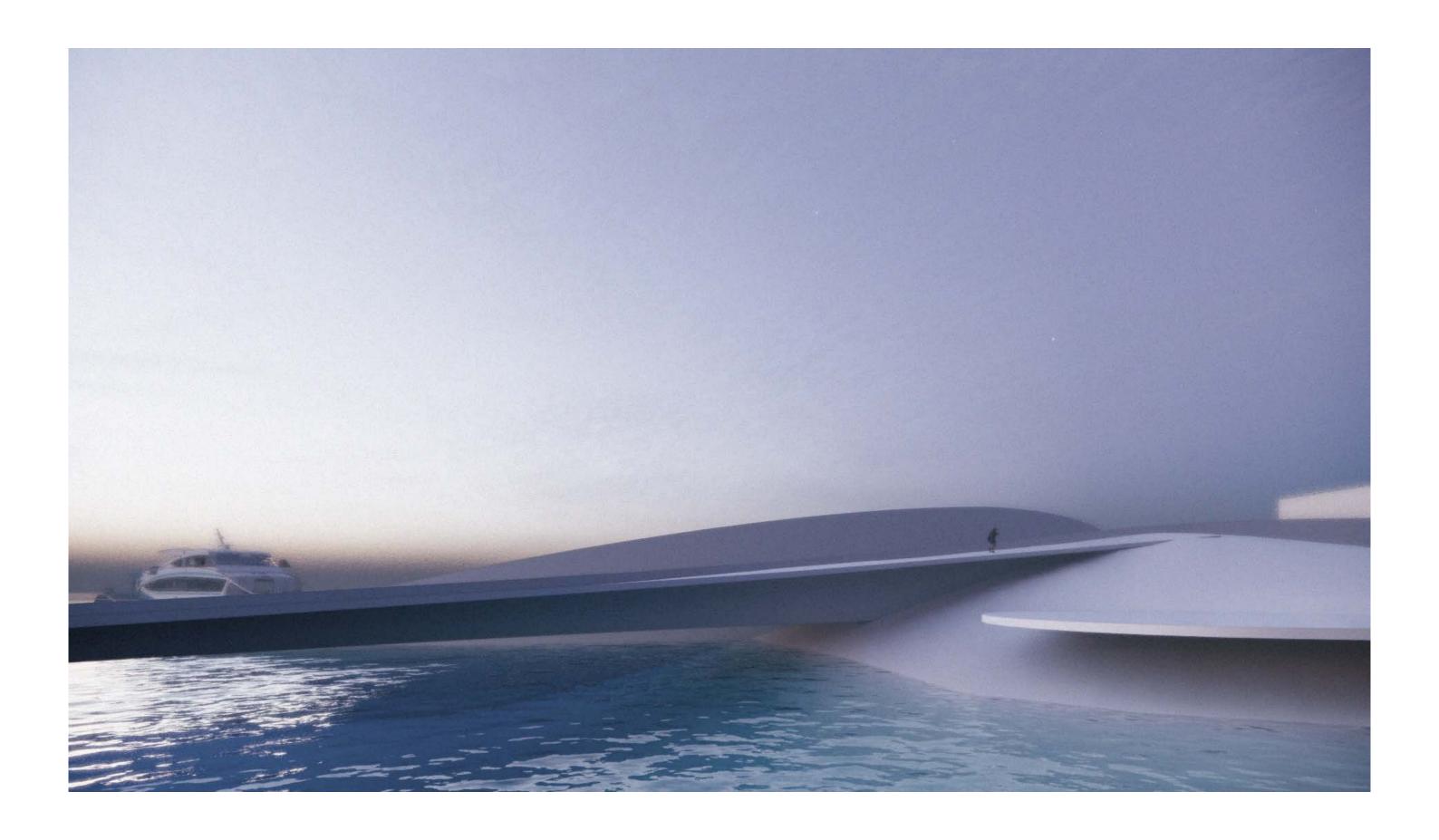


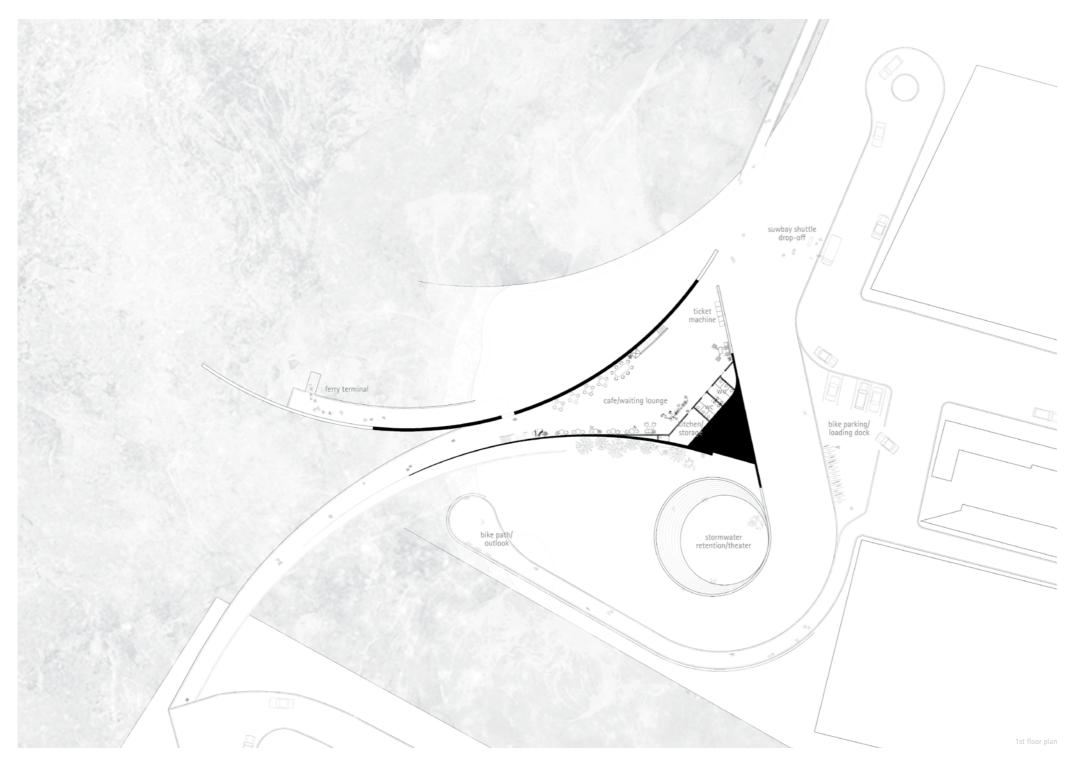






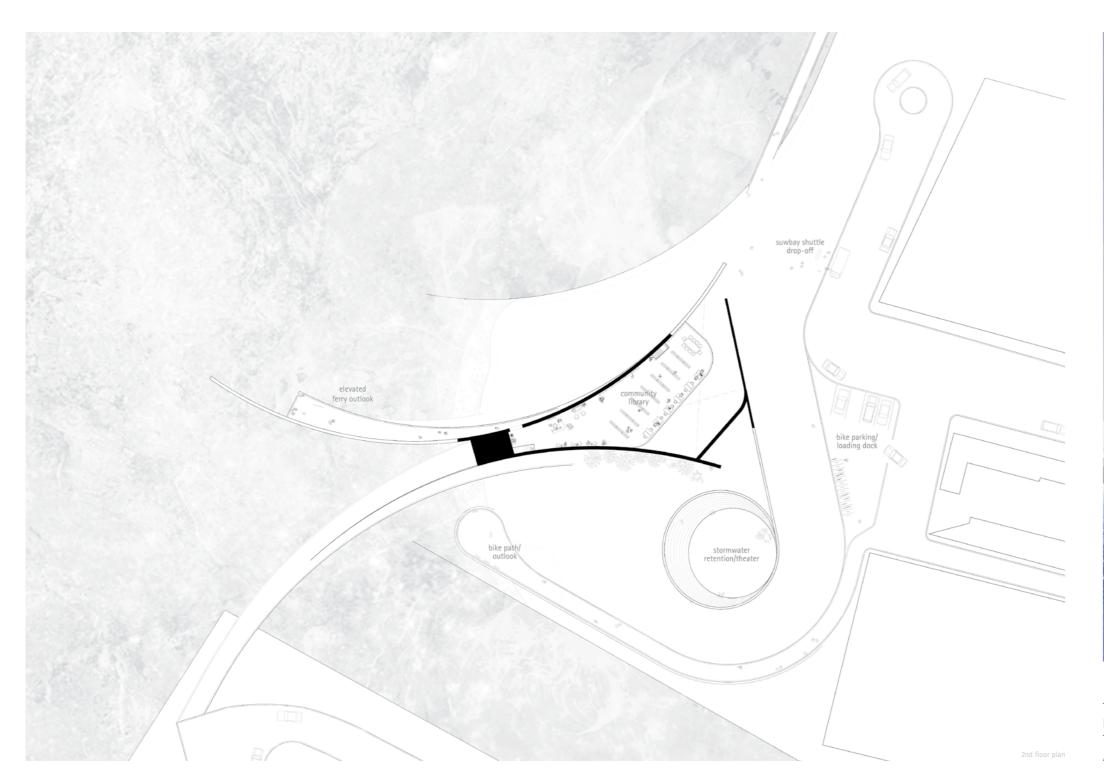
Early study models focused on how to connect the new ferry terminal back across the Anable Basin, as well as bridging towards the nearby subway station.

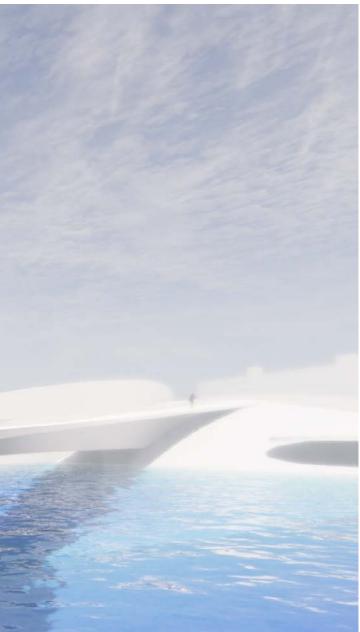




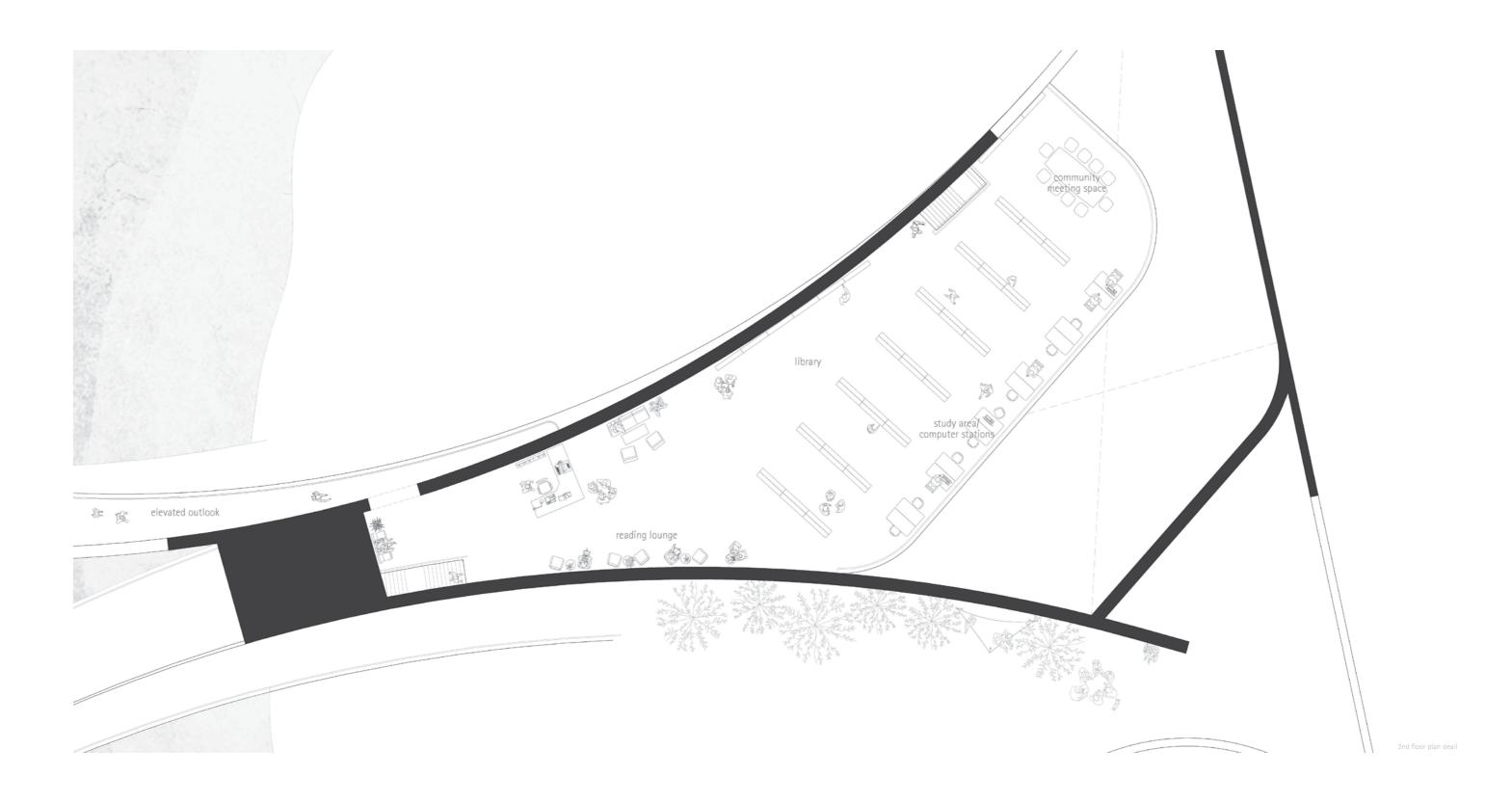


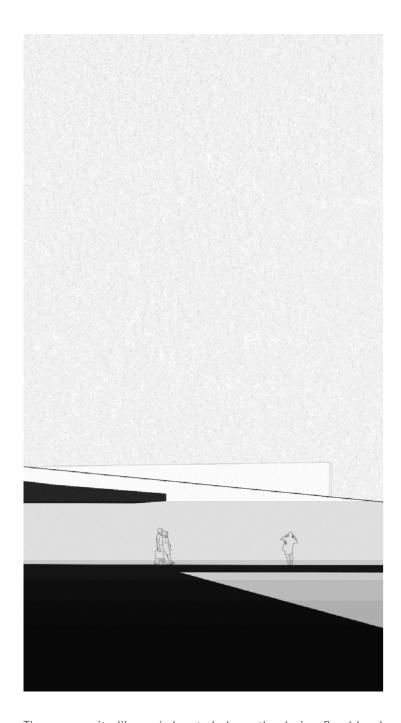
There is a waiting lounge/cafe on the ground floor of the building, with direct connection to the ferry terminal that extends over the water. The outdoor theater on site acts as a stormwater management basin in case of heavy rain and flooding.



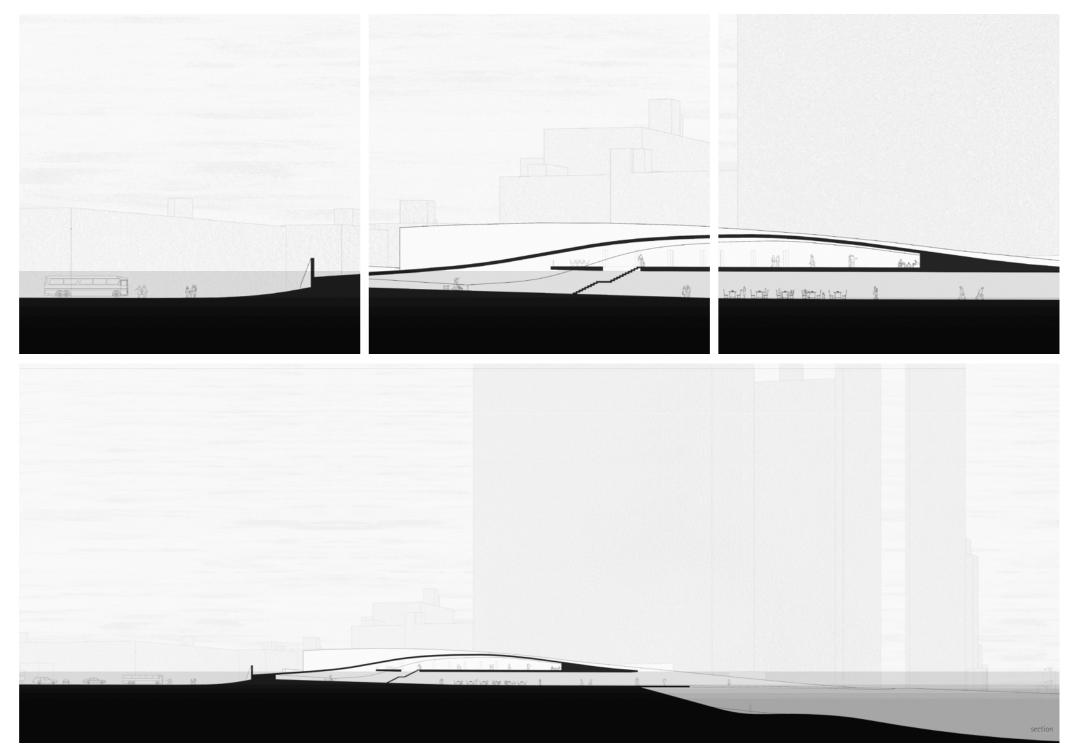


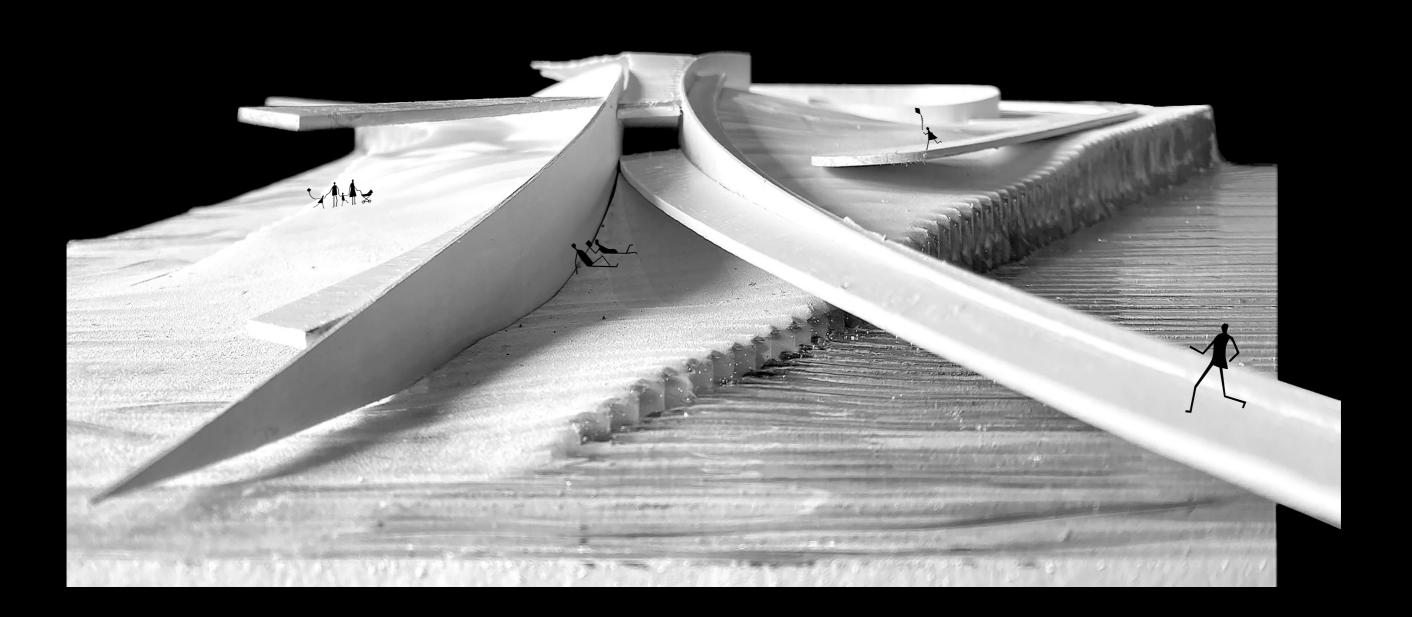
The second floor is a community library, which will act as a branch of the nearby Queens Public Library at Hunters Point. The bridge that connects to the high-rise buildings across the Anable Basin can also be accessed from here.





The community library is located above the design flood level at +15 feet, which will keep the books dry even during a 100-year flood.





### Transsclarities - Summer 2022

Instructor: Andres Jaque Beril Sarısakal

In Transsclarities during the summer semester, I researched about the Rebirth Bricks by the Chinese architect Liu Jiakun. This concept of reproposing existing building materials inspired my design for studio in the summer.



### Tara Zhang

On May 12, 2008, a devastating earthquake destroyed hundreds of thousands of homes in Wenchuan. Time and resources were limited, debris from collapsed buildings had to be cleared off and new structures needed to be built. Among volunteers from all over the country, Chengdu  $based\ architect\ Liu\ Jiakun\ also\ rose\ to\ the\ occasion,\ thinking\ about\ how\ architects\ can\ contribute$ to the city's rebuilding by developing a simple yet effective procedure. Debris from collapsed buildings was used as aggregate, mixed with cut straws as fiber and cement as the adhesive, forming lightweight building blocks that could be made by existing local brick factories in the disaster area as reconstruction materials. 1 Produced by and for the village residents, Jiakun's proposal was not just about reusing building materials in an environmentally sustainable way, but also honoring the memories of people and places that were destroyed by the earthquake. So much had been lost and now only resides in the crumbled pieces of clay, but reconstructing the community with the bricks that held this past was particularly meaningful. Jiakun refers to this strategy as the Rebirth Brick.

Producing on manual machines, Jiakun worked together with the local craftsmen to test a series of different bricks in different forms and ingredients. Smaller pieces of broken bricks were ground up and compressed together into new bricks, while larger pieces of stone were somewhat loosely joint together to make a type of porous exterior floor tile.  $^{2}$  With the gradual completion of the post-earthquake reconstruction, however, the methods of production changed and factories were built to regulate and mass-produce the Rebirth Brick, generating work for the local people and helping with the economy.  $^{3}$  But as Jiakun adopt the same  $methodology\ in\ his\ other\ projects\ outside\ of\ Sichuan,\ the\ original\ intention\ of\ Rebirth\ Bricks\ was$ 

Three years after the earthquake, these bricks were later used in the Novartis office building in the distant city of Shanghai, in a context that is unassociated with the Wenchuan Earthquake in any way. Transporting the bricks back to the job site for over 1,300 miles, the time and cost in searching for the right materials, as well as storing and processing them for remaking, were all unnecessary burdens for the contractors. Not only was this process economically inefficient and unsustainable, but the company located in Shanghai also shared no sentimental connections with the Wenchuan community. This decontextualization of building materials resulted in no merit except a possible advertising gimmick for renting out the office building. Using these particular bricks in this way is utterly artificial, deviating from Jiakun's original intention for the Rebirth Bricks to carry much more than the pure functionality of building blocks.

The primary objective of Rebirth Brick is not only about giving a second life to the fragmented clay tiles, but also about helping the local community to rejuvenate. Memories  $% \left( 1\right) =\left( 1\right) \left( 1\right$ were etched into these local building materials, recording the community's endurance as well

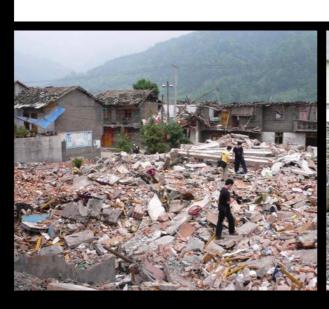
as change.<sup>4</sup> Through rebuilding the damaged neighborhoods, these bricks acted as the "...physical reincarnation of waste materials, as well as a psychological and spiritual rebirth in the reconstruction process after the disaster. "5

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Fan, Lu. "Review of Shuijingfang Museum, Chengdu, China, 2013 : Liu Jiakun/Jiakun Architects." Time+Architecture Magazine, February 1, 2016. 98-105. 2016.

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Williams, Austin. "The Simplicity of Liu Jiakun's Work." Architectural Review, February 20, 2017: https://www.architectural-review.com/buildings/the-simplicity-of-liujiakuns-work.2017.



















<sup>&</sup>lt;sup>1</sup> Liu, Jiakun. Now and Here - Chengdu Liu Jiakun: Selected Works. Berlin Aedes. 2017. 5-7. Williams, Austin, "The Simplicity of Liu Jiakun's Work," Architectural Review, February 20, 2017.

<sup>&</sup>lt;sup>3</sup> Fan, Lu. "Review of Shuijingfang Museum, Chengdu, China, 2013: Liu Jiakun/Jiakun Architects." Time+Architecture Magazine, February 1, 2016. 98-105.

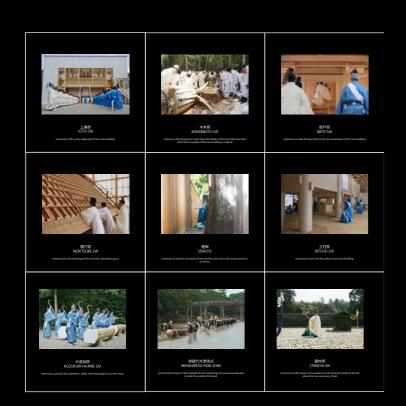
Bastéa, Eleni. Memory and Architecture. Albuquerque: University of New Mexico Press. 2004. 25. Ulu, Jiakun. Now and Here - Chengdu Liu Jiakun: Selected Works. Berlin Aedes. 2017. 50.

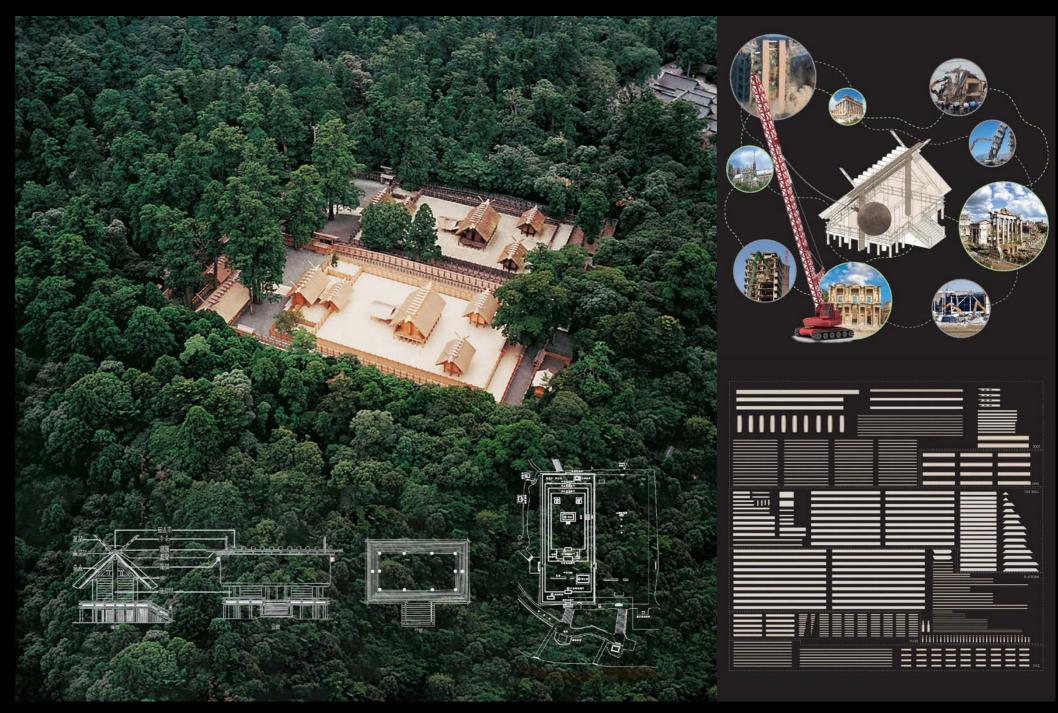
## Rebuilding Memories - Summer 2022

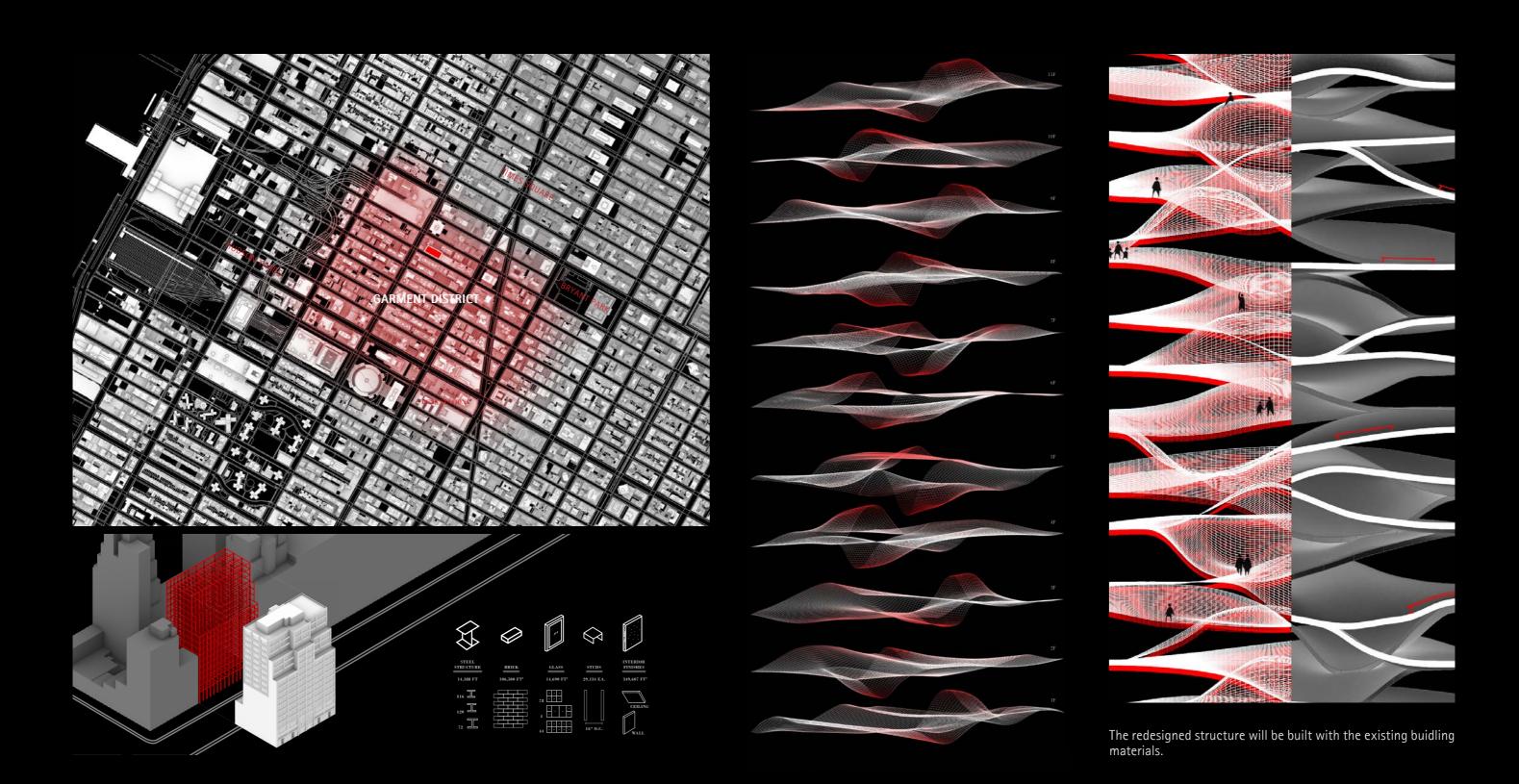
Instructor: Elias Anastas Yousef Anastas

As time goes on and technology advances, people's ways of living are constantly changing. We are seeing more and more abandoned buildings because of this, whether they have been deserted due to deteriorating structures or outdated functions. This project takes an historical building under the threat of demolition, and investigates ways to reconstruct the structure with the exact same existing building members.

The site is located in the Garment District in Midtown, which is a historical area that has been limited in its renovation possibilities. To study the concept of rebuilding, I first researched about the Ise Jingu in Japan, which is rebuilt in its exact form every 20 years.







## New York Rising: How Real Estate Shapes a City - Fall 2022

Instructor: Kate Ascher Thomas Mellins

New York Rising: How Real Estate Shapes a City offered a historical survey of the last two centuries of real estate development in New York City, with a primary focus on Manhattan. It relied on sources held by Columbia libraries and others, including material from the collection of Seymour Durst – the patriarch of one of New York's foremost real estate families and a passionate collector of the City's historical memorabilia.

In this class, I extended my interest developed in the summer semester studio and research more in-depth on the topic of the Garment District.

### The Garment District in the Early 1900's

Inscribed by the hustle and bustle of the highly developed Hudson Yards, Times Square, mix-use buildings. This paper discovers the reason for how the Garment District affected the development of the zoning law of 1916, and how the new zoning law at the time in turn affected



naking. With the invention of the sewing machine in the 1800s, the immigrants, especially

home country. In addition, the combination of many events happening at the same time period clothing for the general public. With the popularity of Broadway and other entertainment shows, Garment District. Besides everyday clothing articles, aloves, buts, contomized stage outcoms, etc.



Michitan. The gament workers worked at their homes, which was not the ideal condition



was at the downtown Financial District ones. Anothers and outside one and the law morne garment workers could no longer offerd living there. As a result, the garment industry slowly area had already been a concentrated area for clothing retail shops. In addition, with their

today, was known as the Tenderloin District, which was considered the most chaotic and for undesirable and illegal activities. No one wanted to live there, but many of the low-income garment industry workers had no choice but to establish their residences and at-home studios in show stages. During the time, most buildings in that area were small brownstone houses, which



Zhong Page 9

was filled with high-end retail stores in contrast with the local tailor shops in the Garment who domined the dress-making losser-class immigrant workers. The image of the tailors and fabric makers window shopping down the pristine Fifth Avenue in small groups after a long day streetscape, the Fifth Avenue Association (FAA) was formed. (New York Times 2016) In the early 1900s, smallpox was found spreading through clothing, which originated in the diseaseattempt to regulate the conditions of its neighboring garment industry closely, watching out for

In 1911, the State Factory Investigating Commission banned tenement work for the brownstones into lofts, designed more for manufacturing than living. They required large oper spaces with high ceilings for the sewing machines at the time. Although the garment making Association wanted to keep the workers even further away. Therefore, the people in power from the FAA threatened landfords in the surrounding area and major lending institutions to refuse

nunity, as the production process became more industrialized and moved into proper factories instead of being done at home. Rather than working with family members, the owners

took measures to control their employees, some of which were quite extreme. It was not about finishing work early. Some factories even locked their exit doors to prevent the employees



happened in the Triangle Shirtwaist Factory. One of the cutting tables on the eighth floor of the building caught fire, and just like other newly constructed lofts during that time, it was also built

kers from leaving early. This left the elevator to be the only method of exiting the burning



Avenue Association began to be even more insistent in pushing them further out of the area. for a coring regulation to keep the garment factory lofts away. He called it the "Save New York" compaign. Cooke claimed that the crowds increase caused by the influx of garment workers had

rosult. In the Newer nicture, he aimed to control and eliminate traffic, both nedestrian and

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addition to the regulation of the height and bulk of buildings, it also worked in "...regulating and

garment making community had already been relocated, willingly or not. But where could they Association tried to push them away. In the end, the New York City and the FAA decided to ment workers spreading out into areas they do not wish them to be in.

the East-West direction, having 34th Street and 42 Street as its North-South boundary. Since that area was undeveloped and completely disorganized at the time, many real-estate developers,

of manufacturing shops. In a way, being forced to be contained in one area belowd it prove stronger as a business and as a community; It formed its own ecosystem. As the area went

Kalin played an important role in shaping its streetscape. Understanding the context and immigrant workers at the time. He designed ten buildings in the Garmant District, expeand inventing a new language for the prospering community by using design.



initial 1916 zoning regulation. As the areas around the Garment District developed further commercially in the mid-1980s, especially Times Square, concerns were raised about the lead to a decline in the opportunities for garment production jobs. To address this issue, the Conversions to office use on these streets were only allowed case-by-case by the City Planning



stodified to pensit new residential buildings, as well as allowing for the as-of-right convenions For larger buildings, which are defined as over 70,000 square feet, they can only be converted into office, hotel, or residential uses with a guaranteed preservation of the equivalent measures of



country's moning regulations, whether or not we consider the mason to be fair or ethical. In tues,

Gellis, Ryan. "The Garment District: How One Pecket of NYC Bailt the Fachion Industry."

\*DirectEury-Bio. 2018, https://streeteasy.com/blog/garment-district-nyc-fashion-industry/

Montero, Gabriel. "A Stitch in Time: A History of New York's Garment District" The Garmont District Alliance. 2008.

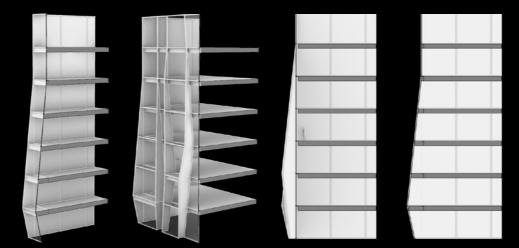
NYC Department of City Plausing. "Special Garment Center District Text Amendment." Garment Center District, https://www.npc.gov/sia/plausingsplaus/garment center/garment-center/ageage.

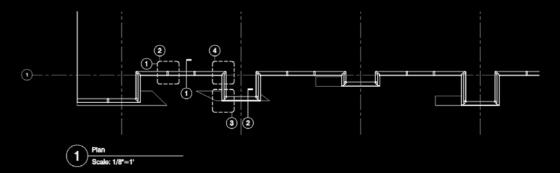
The Shysenger Masoum. "Bloosing Density: From Tenements to Towers" Exhibition at the Shysenger Masoum. 2019-2020. Williams, Sarah. "Made in Midrown" Crose Data Design Lab. 2009-2010. https://civicelatadesi.grlab.mit.edu/Made-In-Midrown

### Advanced Curtain Walls - Fall 2022

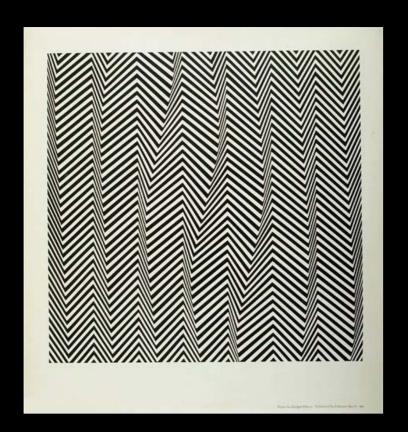
Instructor: Dan Vos

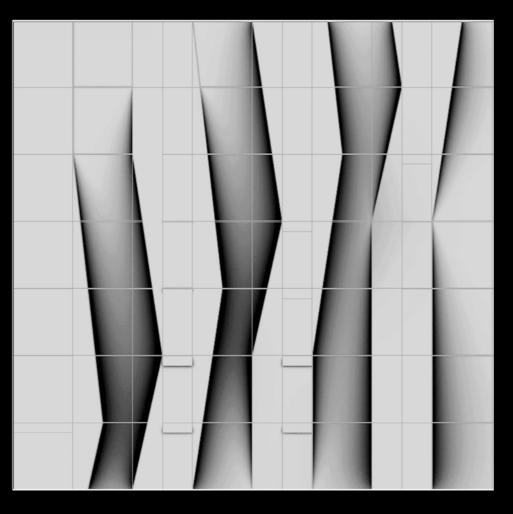
In the begining of the class, we each chose one piece of art work to develop a curtain wall design. The primary focus of the course was a semester-long Technical Studio Design Project. We designed our own unique custom curtain wall, developing detail drawings and preparing outline specifications.

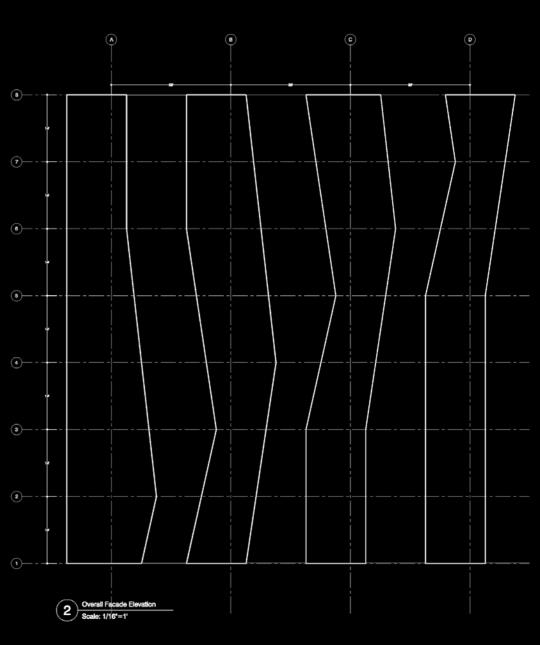


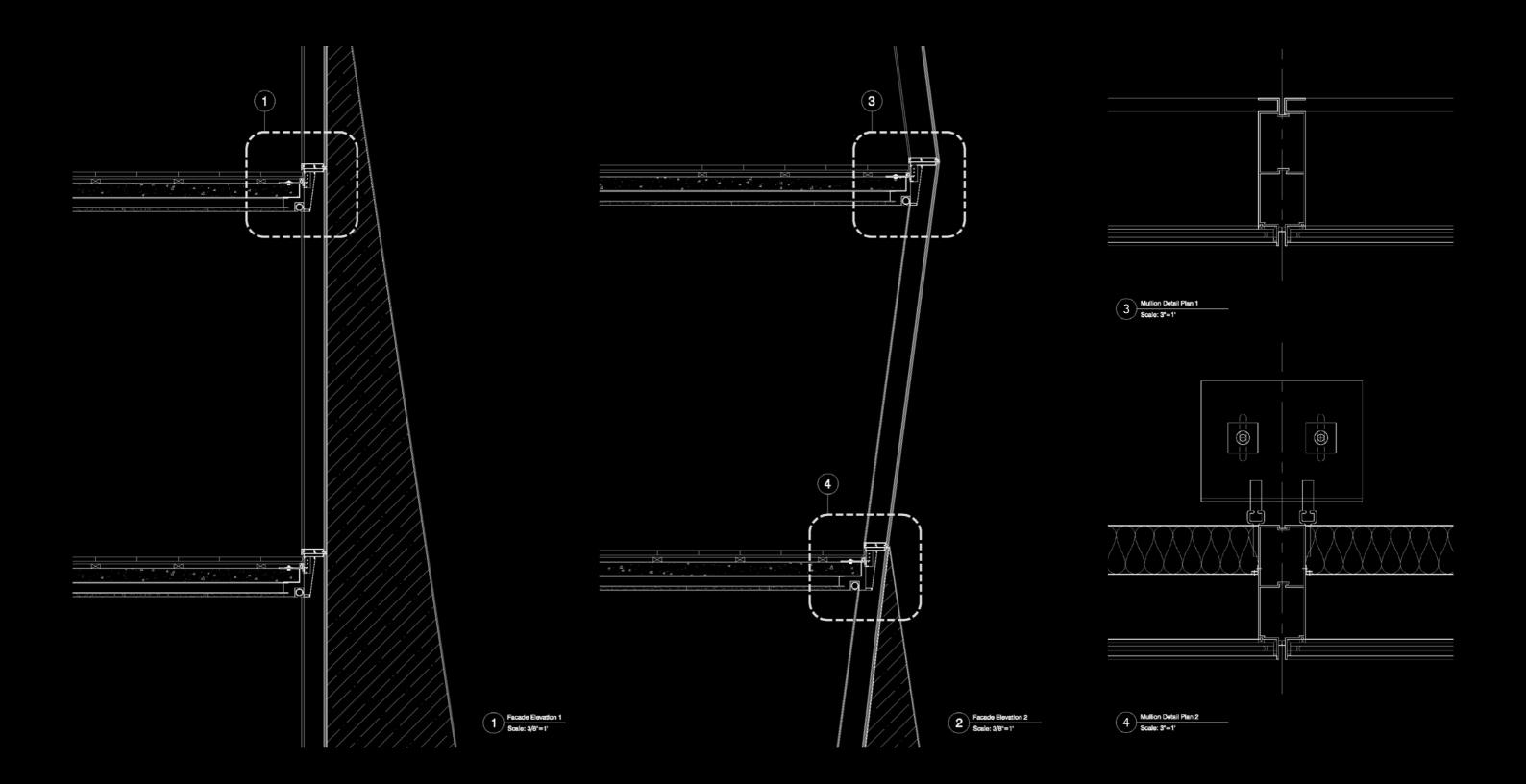


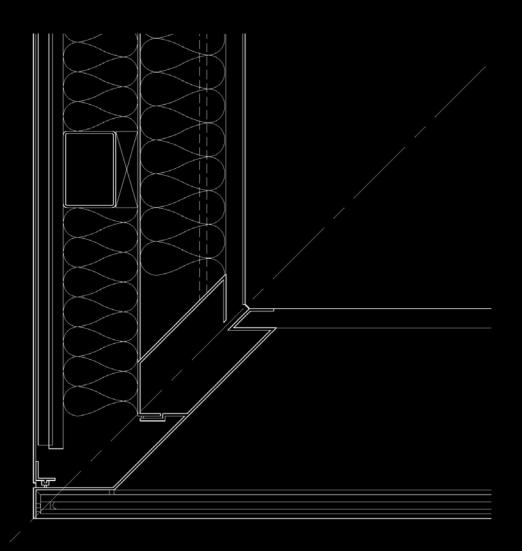
Chosen image below: Descending Bridget Riley

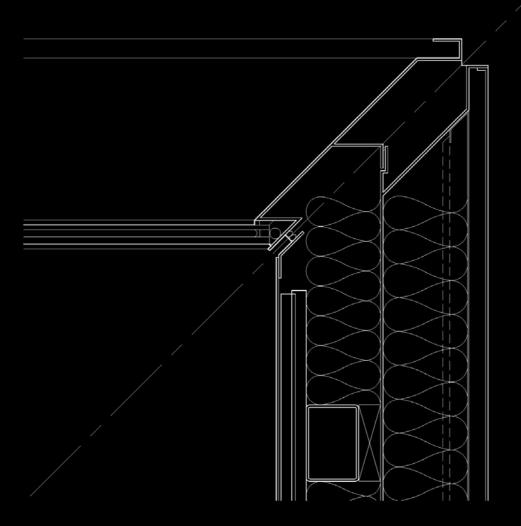








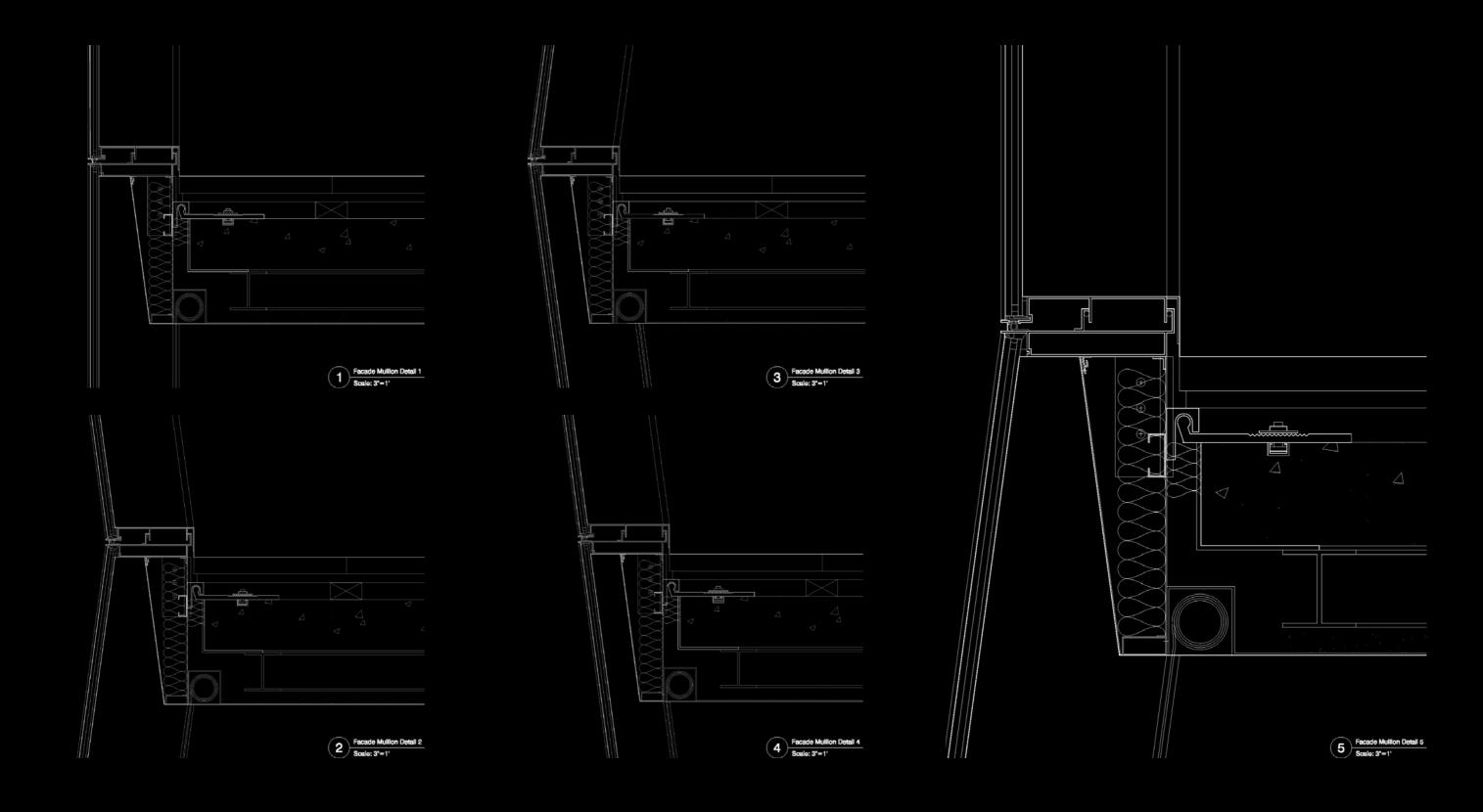




The facade design resulted in many different variations in the detailing, due to its angulation glass frams.

Mullion Detail Plan 3
Scale: 3'=1'

Mullion Detail Plan 4
Scale: 3'=1'



### Architecture: The Contemporary (Ideas And Concepts From 1968 To The Present) - Spring 2023

Instructor: Bernard Tschumi

The Toledo Glass Pavilion by SANAA is an internally organized autonomous object that creates its own context, situated on the site of a glass-making institute. Bonded by a clear boundary, the pavilion has a non-hierarchical plan that is entirely independent from its surroundings. With a careful juxtaposition of programs, visitors traverse through the building across a series of public spaces freely, abandoning the use of corridors. Layers of curved glass walls blurs the boundaries in between individual rooms with their reflections, further erasing any ordering of the interior spaces, although in an extremely organized manner.



"The Toledo Glass Pavilion by SANAA is an internally organized autonomous object that creates its own context, situated on the site of a glass-making institute. Bonded by a clear boundary, the pavilion has a non-hierarchical plan that is entirely independent from its surroundings. With a careful juxtaposition of programs, visitors traverse through the building across a series of public spaces freely, abandoning the use of corridors. Layers of curved glass walls blurs the boundaries in between individual rooms with their reflections, further erasing any ordering of the interior spaces, although in an extremely organized manner. The Toledo Glass Pavilion is both an exhibition space for the museum's glass collection and a glass-making facility. Given the program of this pavilion and its location on a glass making institute, there was a deliberate intention to show off contemporary glass making technology with all the curved glass walls.

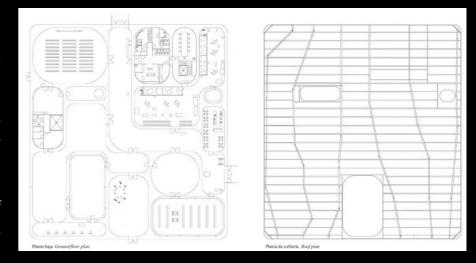
The transparent glass walls allow visitors to see across different spaces and levels, eliminating physical barriers and creating a sense of visual continuity. This transparency fosters a sense of equality and accessibility, challenging traditional hierarchies between different areas of the building. "It allows people to choose how to behave, how to move through spaces, how to interpret and establish

Relationships."The continuous exterior and interior glass walls slide gently past each other to create a shifting relationship between museum and garden, filtering the view through layers of curved glass, each with its own reflection. The buffer zones between activities perform a special function by regulating the temperature and humidity requirements of each space.

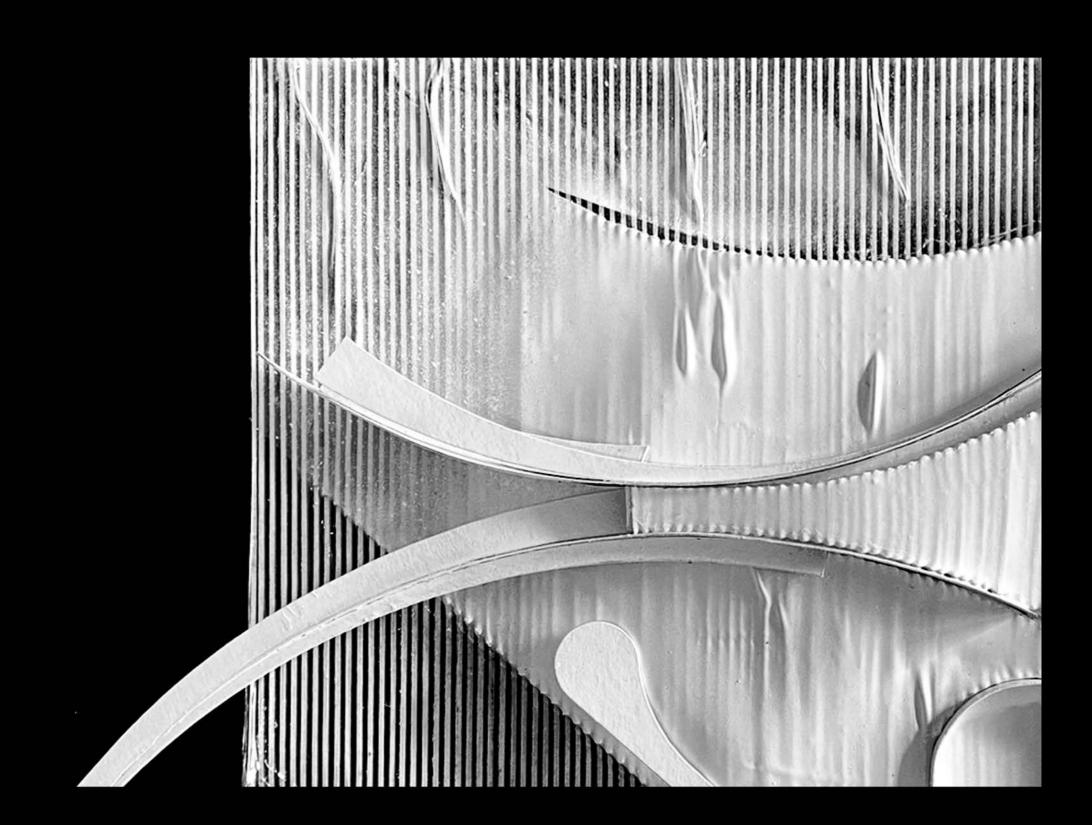
The use of layered glass in the museum serves a dual purpose: it provides a practical solution to accommodate various museum activities while also creating a vibrant sensory experience. The curved glass does not seem transparent anymore, but instead features flexible surfaces that create dynamic reflections and distortions, which fluctuate with variations in light, visitor movement, and the surrounding environment. The glass blurs visual connections between each individual room. Adjacent rooms seem to be merged with each other and the facade beyond, regardless of their shapes, sizes, or functions. The distinct separation of people inside and outside each room starts to disappear.

Due to its transparent materiality, glass invites everything in. As Sejima describes it, 'glass is a way to animate the building: by providing a view through to ever-changing interiors or by capturing the shifting character of daylight and changing colors across seasons'. In the Toledo Glass Pavilion, the layers of glass used on both the interior and exterior of the building merge together to create an internally integrated building. Additionally, when facing the outside, there are no intentionally cropped view boxes or framed windows although the exterior facade of the pavilion is entirely glass. In fact, there is almost no direct physical connection between the interior and exterior sides of the facade; there is a non-occupiable interstitial mechanical space in most places. This further emphasizes the non-hierarchical relationship between the building and its surrounding context.

Through the extensive use of glass, a new relation of viewer and art object has been created. Attention was shifted away from the object as demarcated solid to emphasize the space of the viewer, the situation of viewing, and the duration of perception. The pavilion functions to display glass sculptures, at the time becoming both a glass sculpture on display in itself. The architecture becomes scaleless, or a scalable object, entirely independent from its context. "







# Thank you

Siyu (Tara) Zhang selected GSAPP works 2022-2023