

Crossing Ground

Red Hook, NY, US

[Adaptive Reuse]

Abandoned Grain Terminal → School + Community Space

Jan, 2025 - May, 2025

Advanced Design Studio VI [Re_Use New York]

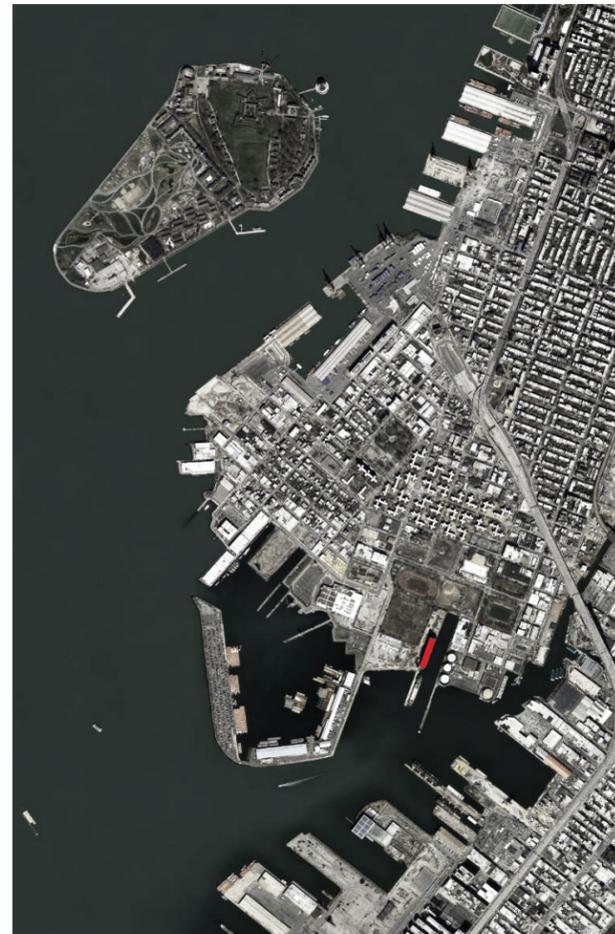
Critic : Laurie Hawkinson, Hubert Chang

Mentor : Harshvardhan Jhaveri

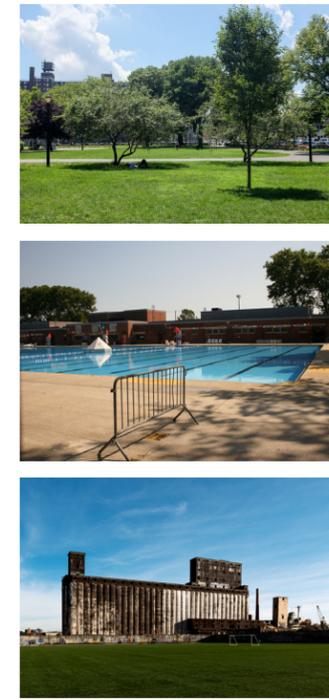
Red Hook Grain Terminal

The Red Hook Grain Terminal is approximately 70 ft wide, 429 ft long, and 120 ft tall, housing 54 cylindrical silos inside. Originally built for grain transportation via canals, its usage sharply declined as rail transport became more dominant. It officially ceased operations in 1965 and has remained abandoned for nearly 60 years.

Red Hook, where the terminal is located, is a neighborhood in western Brooklyn. As shown here, it is bordered by the waterfront on the west and south, making it historically a major port area. Naturally, many industrial facilities and warehouses were built in this region.

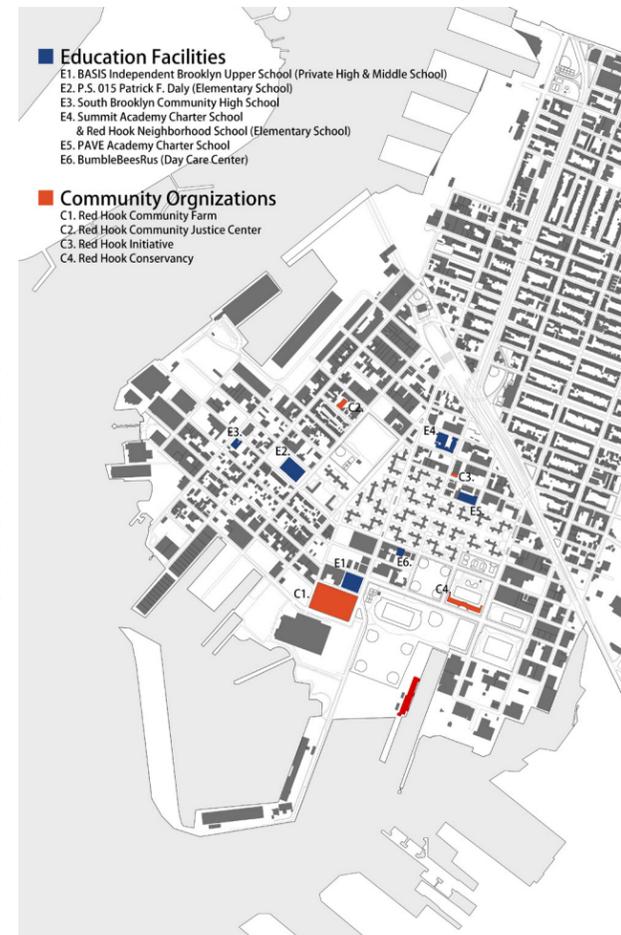
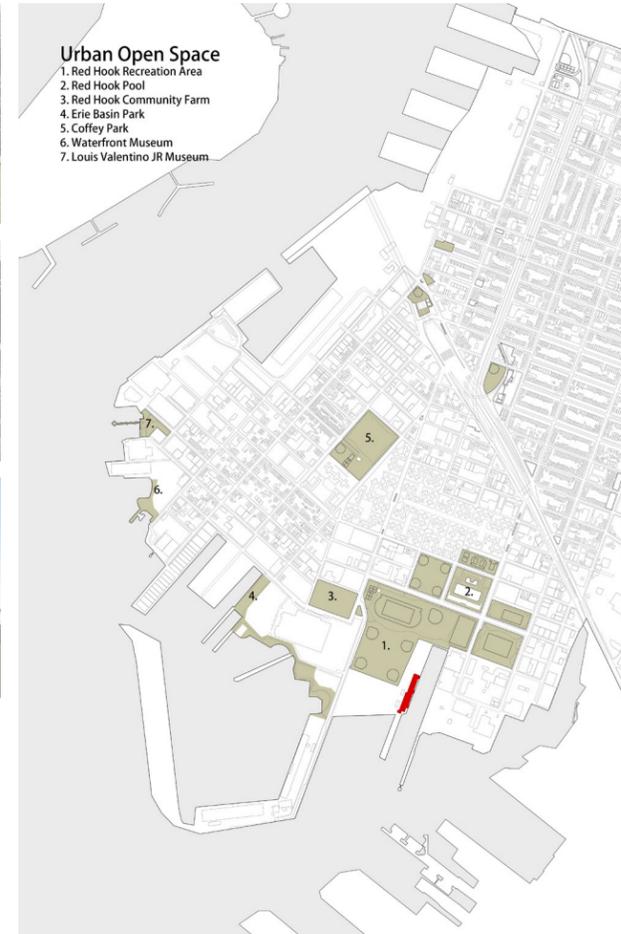


Context



Open Space & Community

There are many outdoor facilities near the Red Hook Grain Terminal for local residents. These facilities not only enhance the quality of life for the community but also function as infrastructure to prevent flood damage in the Red Hook area.

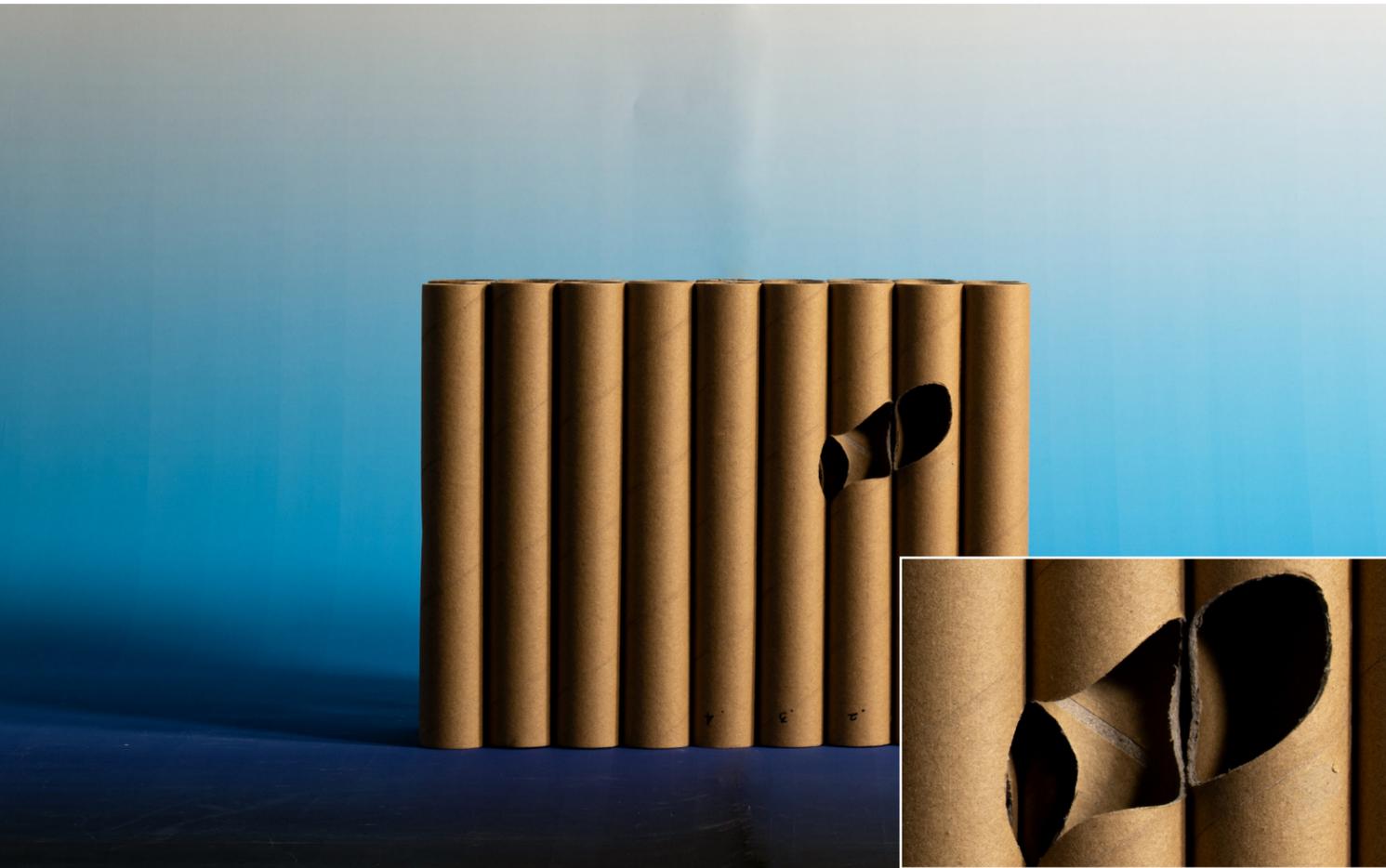


Name	Enrollment	Category	Grade
1 Basis Independent Brooklyn	721	Private	3-12
2 P.S. 15 Patrick F Daly	381	Public	PK-5
3 South Brooklyn Community High School	103	Public	9-12
4 Summit Academy Charter School	203	Charter	6-12
5 Red Hok Neighborhood School	89	Public	1-6
6 Pave Academy Charter School	473	Charter	K-8
Total	1970		
Total without Basis Independent	1249		

Population & Education

Currently, around 2,100 school-aged children live in Red Hook. However, schools located within Red Hook—excluding private institutions—can only accommodate approximately 1,250 students. This means that about 800 students commute to schools outside of Red Hook.

Given this context, I saw the potential to design a school that could offer a large outdoor sports field—something rare in New York City. I also imagined an interior space that could be shared with local residents, encouraging interactions between the two groups of users.



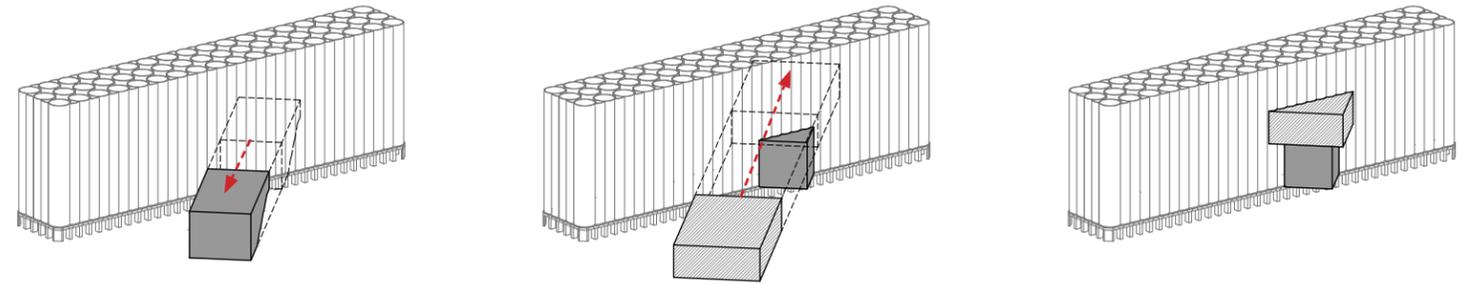
Cutting Operation

This is the concept that inspired my design. A powerful void cuts through the silo structures, serving as a kind of visual portal, a pathway, and a conduit that connects to various interior spaces within the silos.



Structural Diagram

Shared spaces between students and residents include larger programs such as an auditorium and basketball court. To create these large spaces, I first removed portions of the building and inserted massive truss structures to maintain the building's integrity.

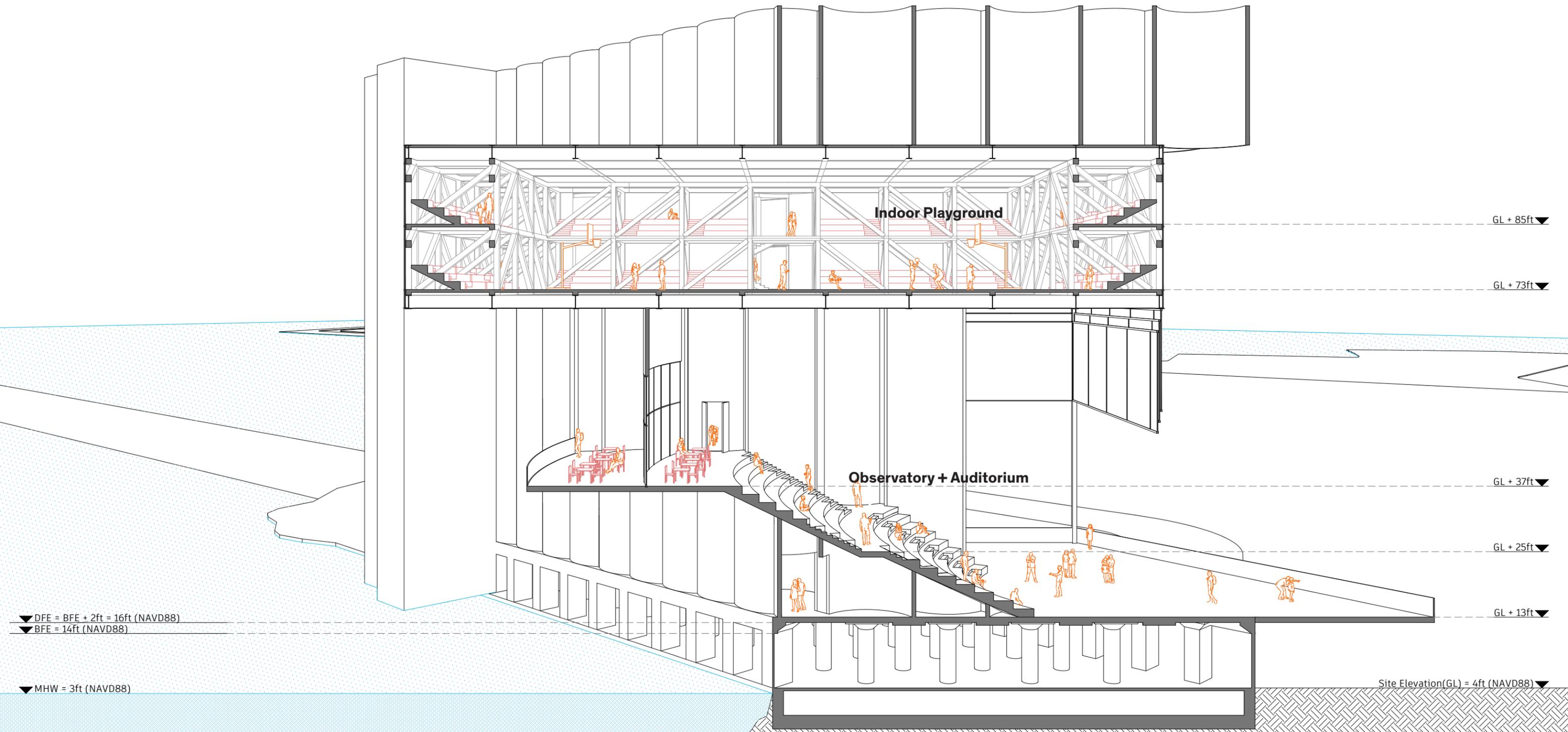


Section Perspective_1

This space also functions as an observation deck, providing views of the soccer field in front of the building and the sea behind it.

At the same time, it serves as a vertical circulation core. The upper levels are where the school is located.

The interior of the truss is hollowed out to accommodate the basketball court, and the outer portions are thickened. These thickened areas house the spectator seating and circulation routes. Classrooms are arranged around this central indoor field.



GL + 85ft ▼

GL + 73ft ▼

GL + 37ft ▼

GL + 25ft ▼

GL + 13ft ▼

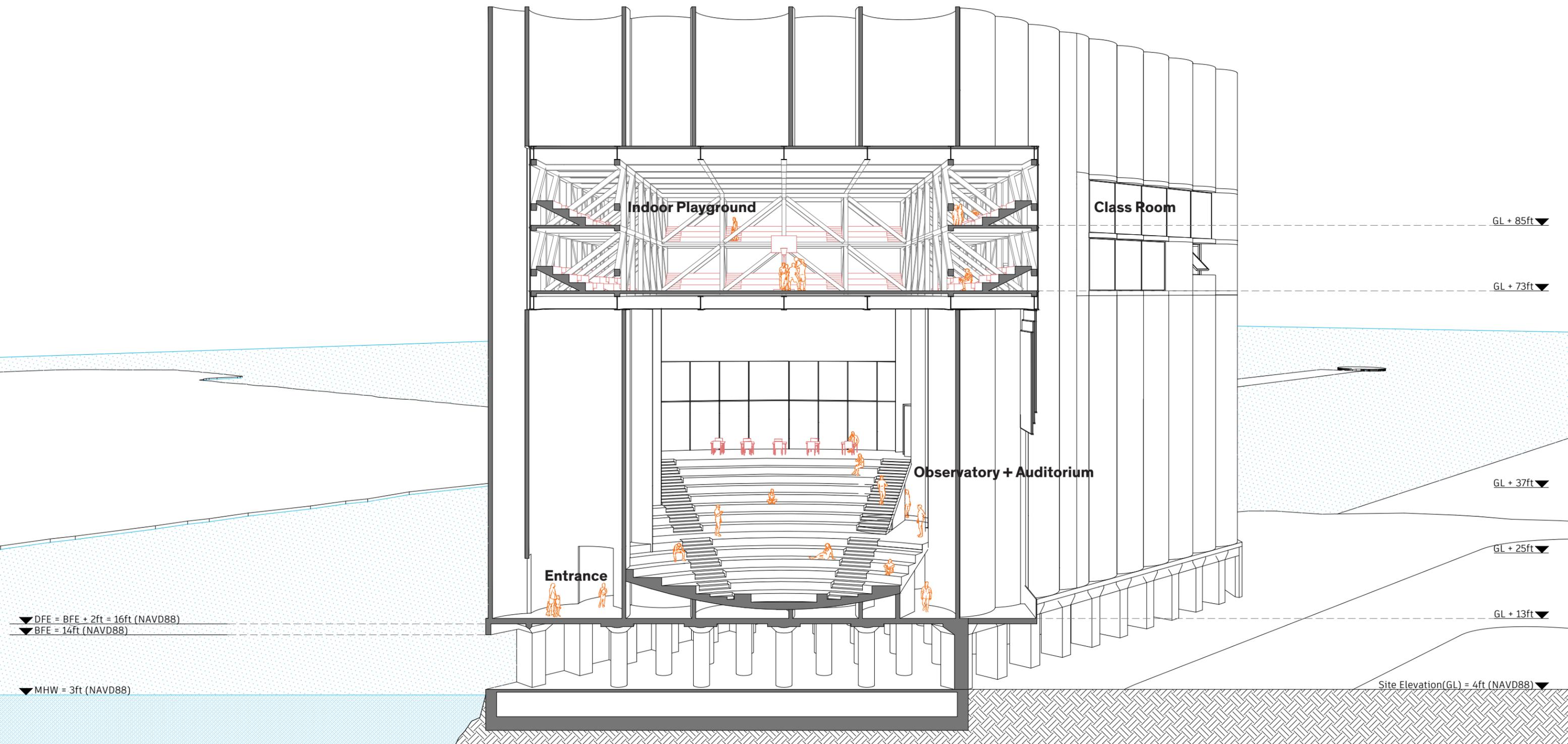
▼ DFE = BFE + 2ft = 16ft (NAVD88)
▼ BFE = 14ft (NAVD88)

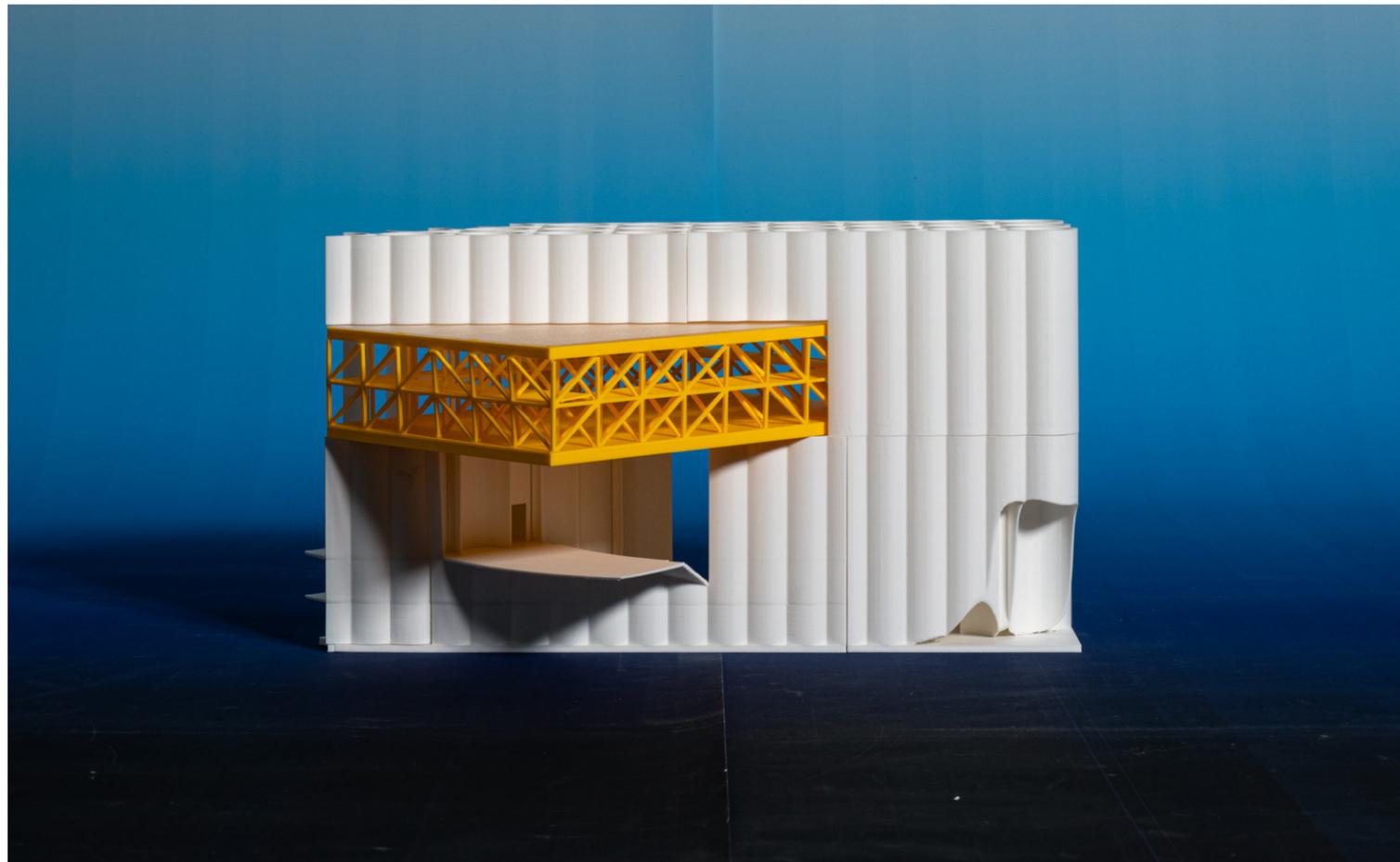
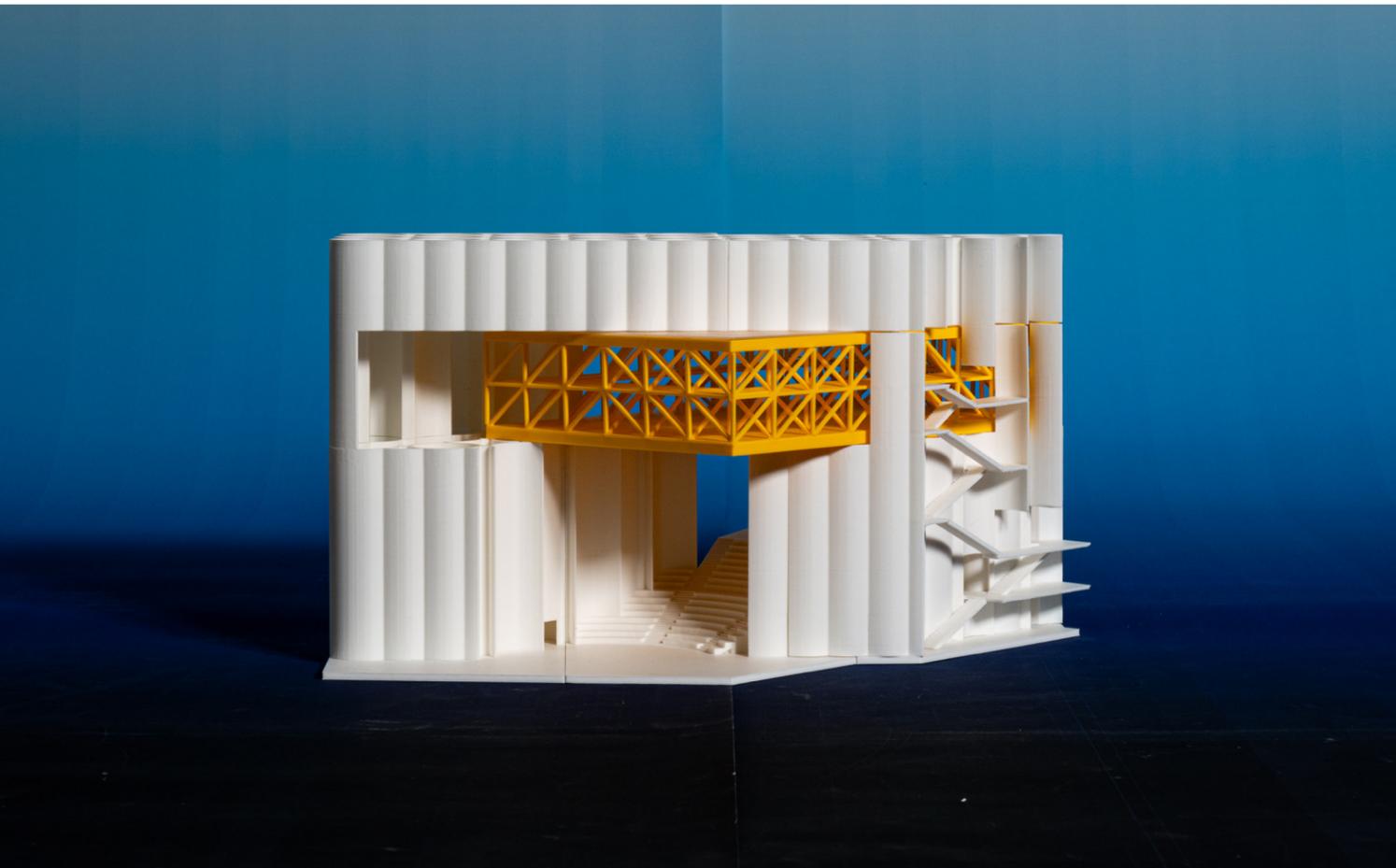
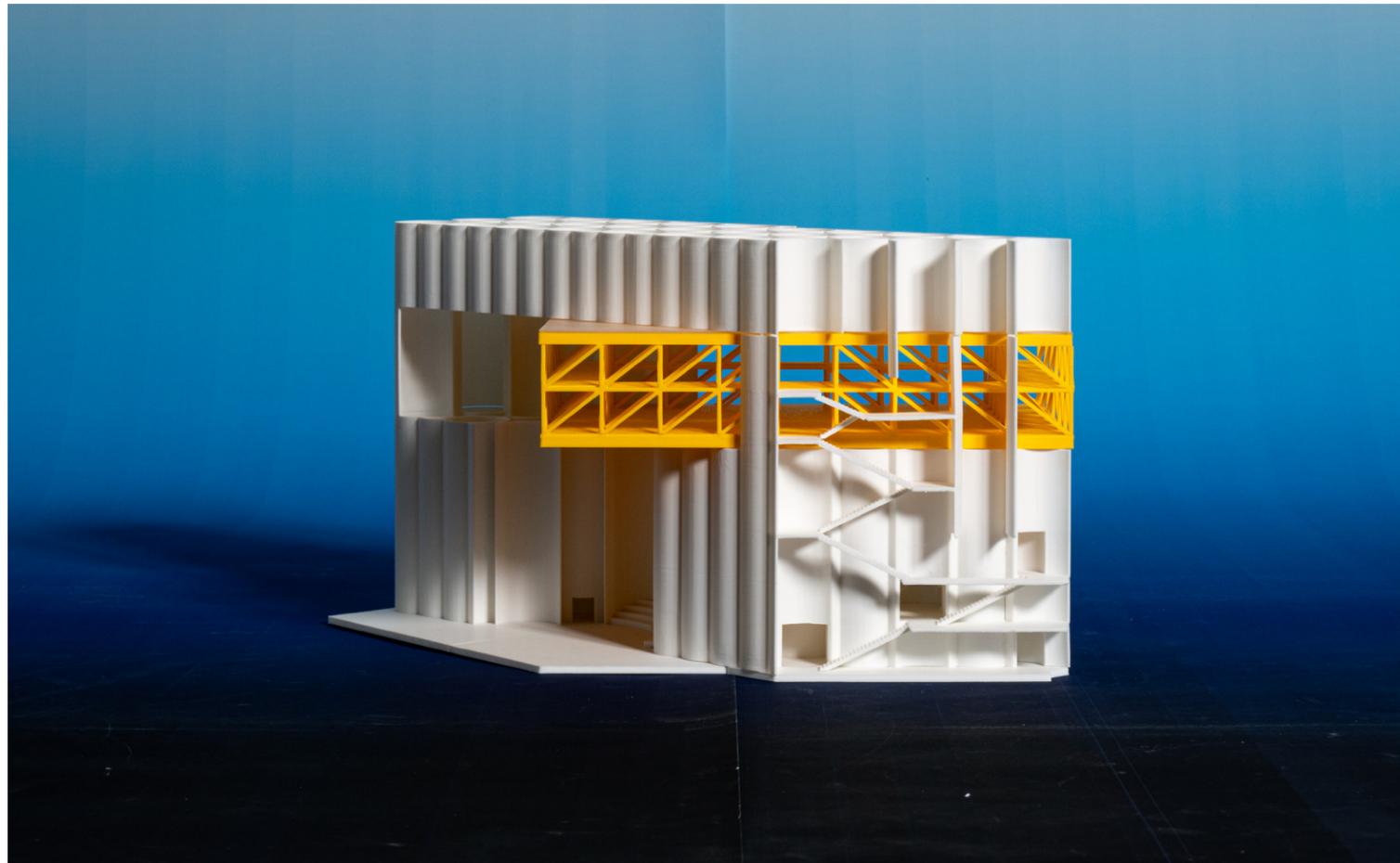
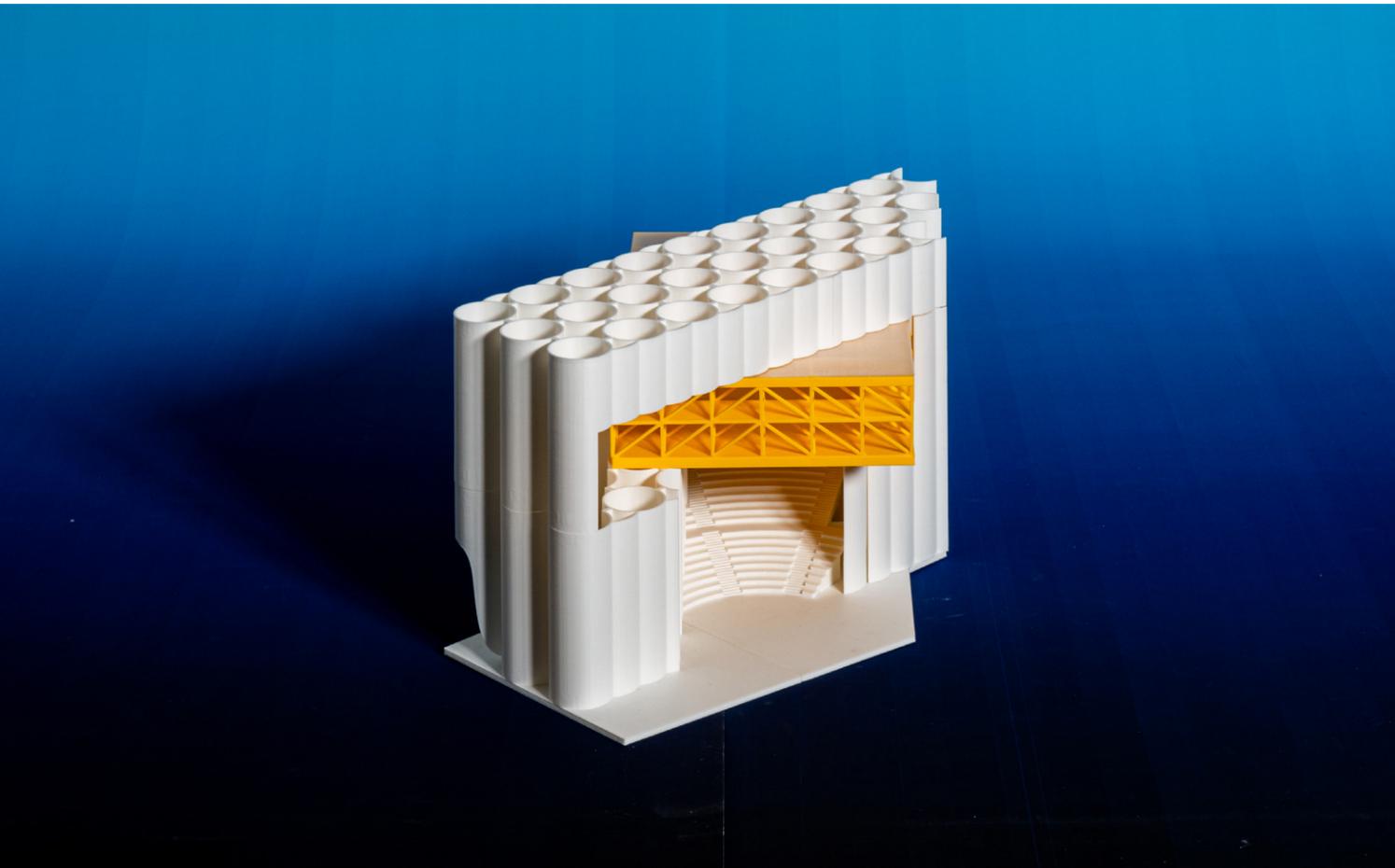
▼ MHW = 3ft (NAVD88)

Site Elevation(GL) = 4ft (NAVD88) ▼

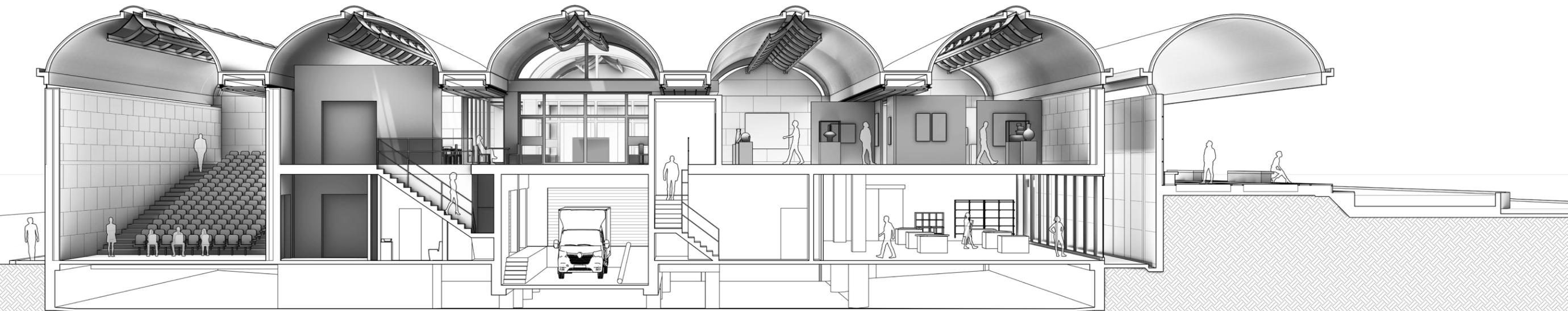
Section Perspective_2

The shared facilities between students and residents are set along a different axis from the existing building, protruding outward so they are visually noticeable from the outside. In contrast, the more private classrooms are placed using the original geometry of the silos.





Behind the Scenes



Kimbell Art Museum, 1972

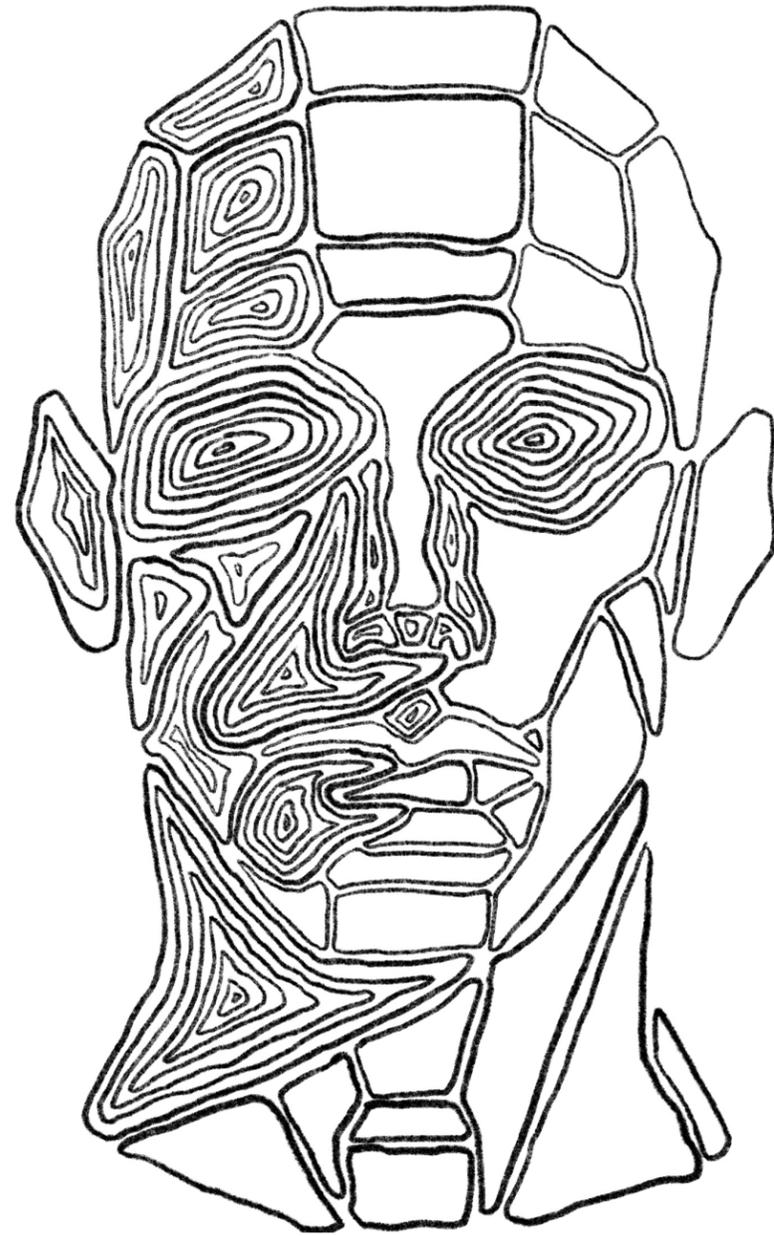
Fort Worth, Texas
Louis Isadore Kahn

The floor plan of Kimbell Art Museum is composed of a repetitive form; however, the interior reveals a variety of ceiling heights, which I aimed to highlight. Additionally, I sought to illustrate how light enters the space through architectural elements such as the light court, light well, and skylights on the roof. The primary spaces that are exposed to visitors were rendered with shading, while the secondary or service spaces—those that support the main areas and remain hidden from visitors—were depicted using only line work, without shading.

Seminar of Section

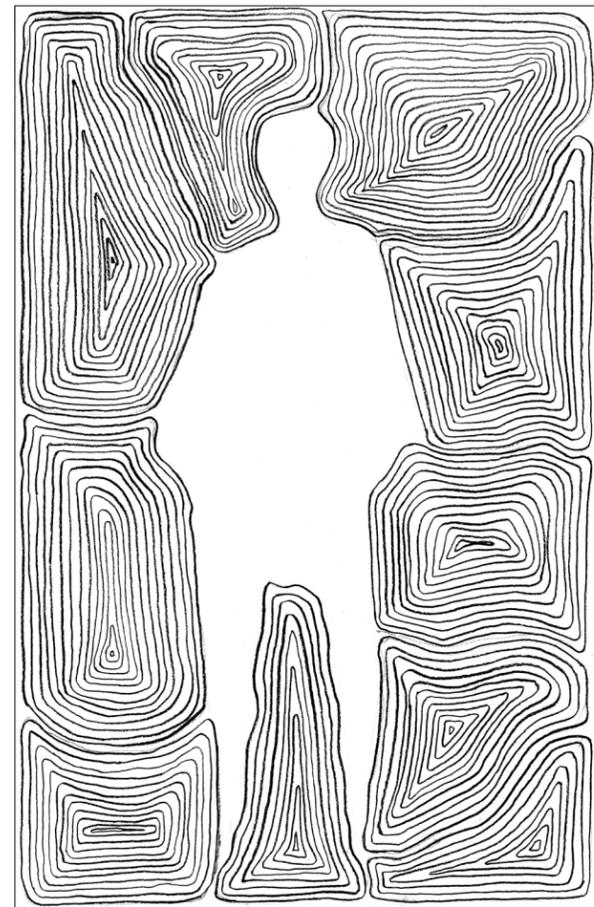
Jan, 2025 - May, 2025
Visual Studies & Representation Elective Class
Instructor : Marc Tsurumaki

Printed Thoughts

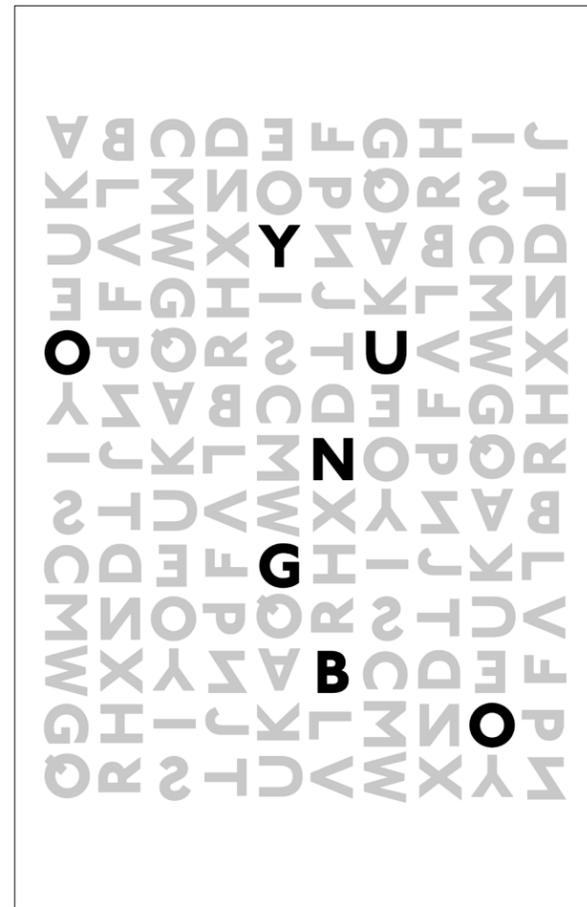


Multi Graphics and Representations

Jan, 2025 - May, 2025
Visual Studies & Representation Elective Class
Instructor : Wael Morcos



01 Analog



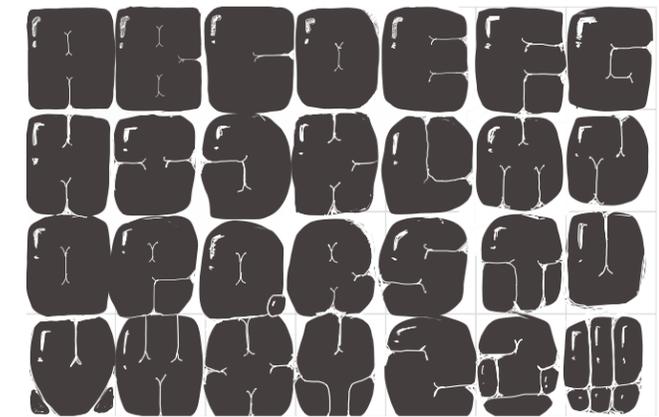
02 Digital

Exploring Dualities

I prefer stability.
 I meet the same people, visit familiar places, and find comfort in what I know.
 When I follow my daily plan and move through the rhythm of my habits, I confirm that I am a steady and grounded person.
 With every new habit I build, I feel it supporting me, making me stronger.
 Small routines accumulate to shape who I am, reinforcing my sense of stability.

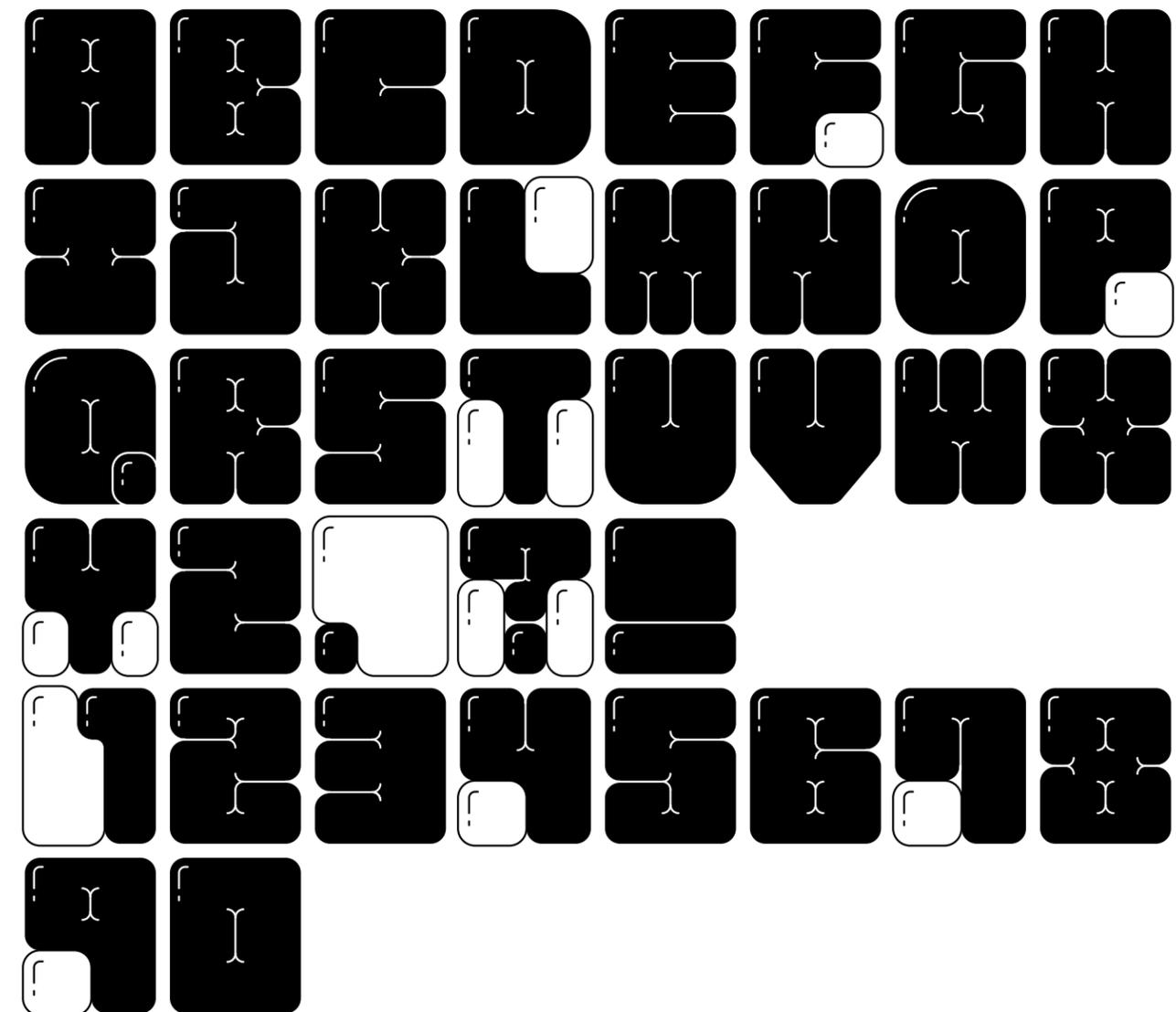
However, at the same time, I also like chaos.
 Curiosity for the new, fascination with the unknown, and imagination of lives I have never lived.
 When I break away from the familiar and step into the unknown, I discover another side of myself.
 I enjoy adventure because it is always filled with unexpected events.
 Such disorder inspires me, sometimes reigniting a passion that was fading.
 Chaos brings me fear, but at the same time, it gives me the most liberating moments.

Within me, stability and chaos take turns appearing.
 I find comfort in the familiar, yet at times, I step into the unknown.
 When these two forces are in harmony, I become both my most creative and resilient self.



Sketch design of the Balloon Typeface

Balloon Typeface



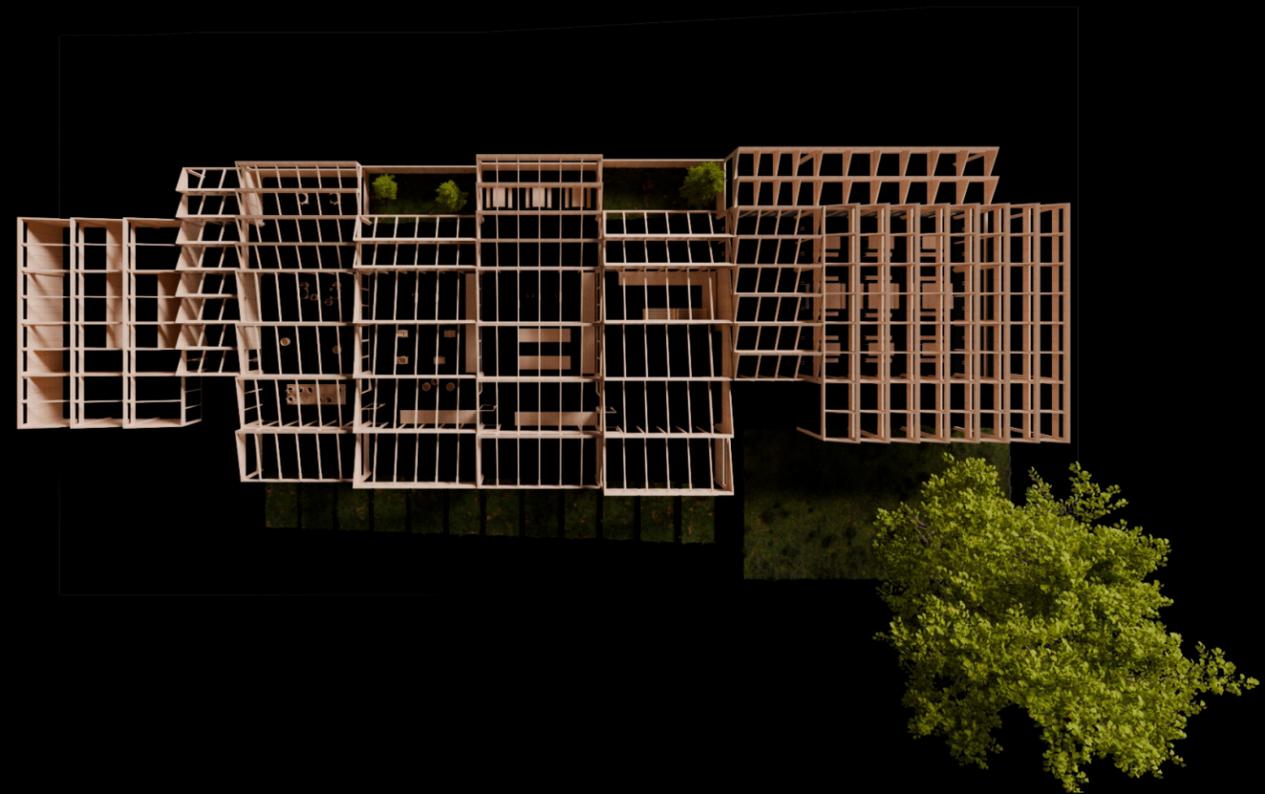
Final version of the Balloon Typeface

Beneath the Gabled Roof



Rendering Systems

Sep, 2024 - Dec, 2024
Visual Studies & Computation Elective Class
Instructor : Seth Thompson



Visual Study of Roof Orientation

This building is a tofu factory designed by Xu Tianian, characterized by its diverse roof orientations facing east, west, and north.

The first image illustrates how natural light enters and transforms the interior throughout the day. Morning light reaches the rear space through the east-facing roof, while afternoon light enters the front space via the west-facing roof. Different colors were used to distinguish the varying times of day when light penetrates these areas.

The second image highlights the building's varied roof structures. As the factory is situated along a slope, visitors can ascend via an upper corridor. A depth map was utilized to convey the spatial relationship between the upper and lower areas.

The final image presents a view of the hallway as seen from the entrance. In order to emphasize the geometry of the roof, the floor material was replaced with a reflective surface.





ISO-100 | 31mm | f/5 | 1/400 sec

Fragments of Stillness

Architectural Photography: From the Models to the Built World

Sep, 2024 - Dec, 2024

Visual Studies & Representation Elective Class

Instructor: Michael Vahrenwald

The Jerome L. Greene Science Center 3227 Broadway, New York, NY 10027



ISO 100 | 25.34mm | f/8.0 | 1/320 sec

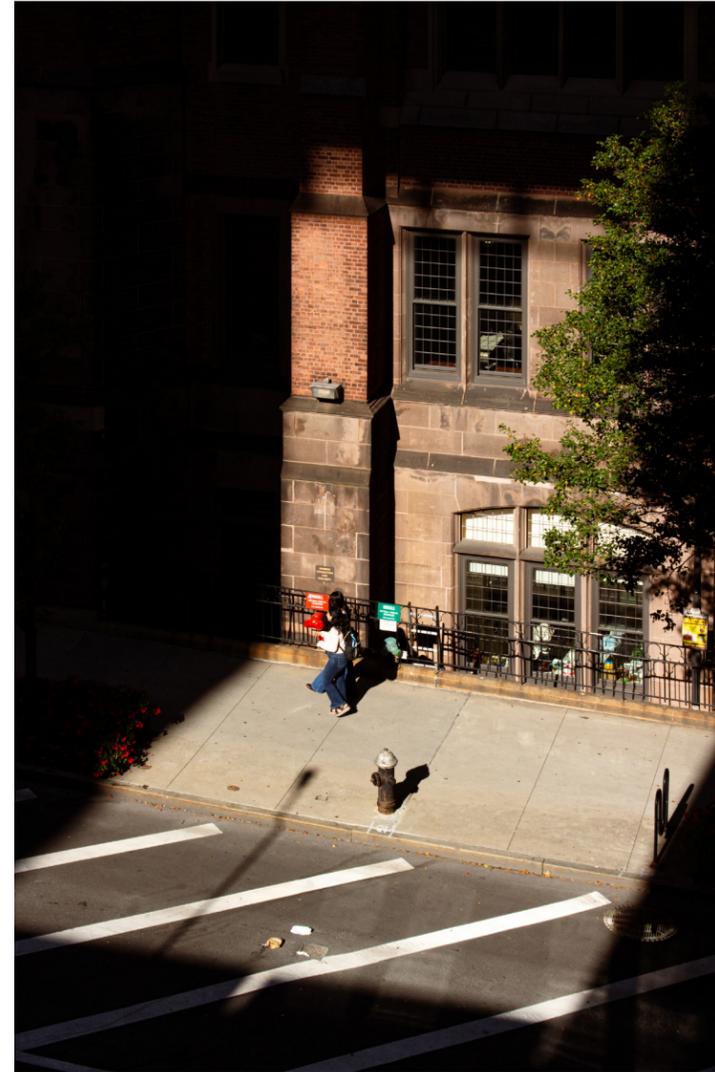


ISO 100 | 32.7mm | f/8.0 | 1/200 sec

According to the description on Columbia University's website, the Jerome L. Greene Science Center was designed to connect scholars with the broader community beyond the campus through its transparent design and public spaces. Thus, I focused on how the building interacts with its surroundings.

I started by observing the public space shared with the Lenfest Center, located right next to the building, and then moved counterclockwise around it. With no nearby buildings, I noticed that the upper levels, which receive abundant sunlight, have a different facade design. On the first floor, I observed that people actively use both the interior and exterior spaces, taking advantage of the public areas and the canopy connected to the building. However, as I moved toward areas with more pedestrian and vehicle traffic, I noticed a decrease in public space usage. At sunset, the building's facade reflects onto nearby buildings, highlighting the impact the Jerome L. Greene Science Center has on its surroundings.

The transformative qualities of light



ISO-100 | 41mm | f/14 | 1/125 sec

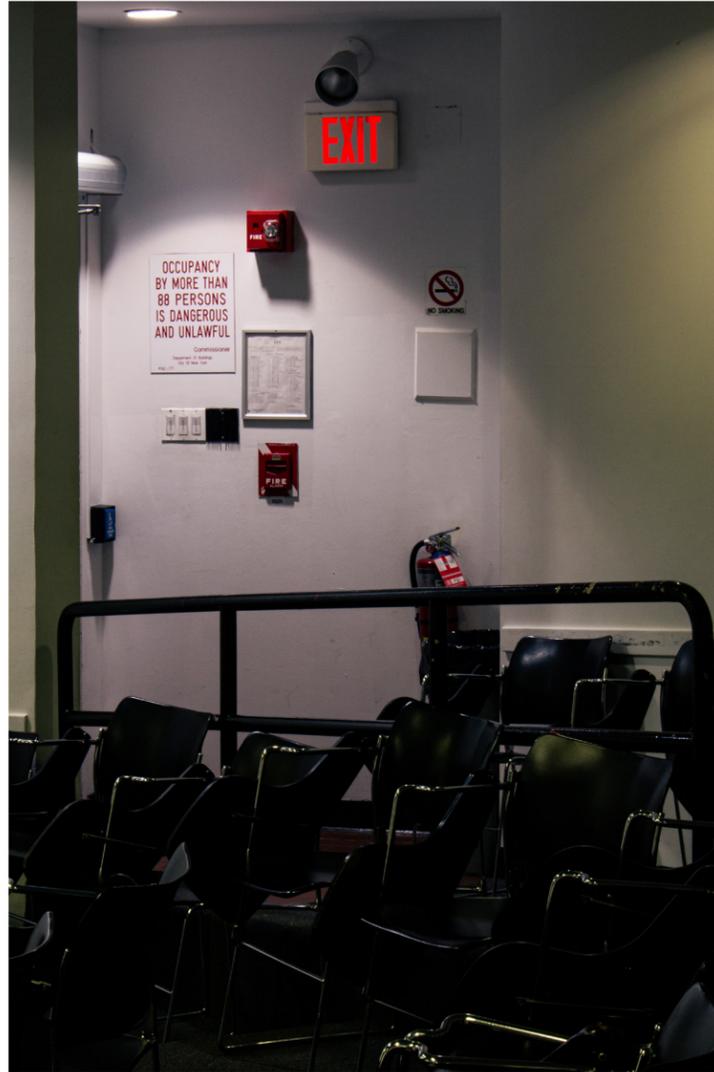


ISO-100 | 31mm | f/9 | 1/100 sec

Ghost in a shell



ISO-100 | 35mm | f/11 | 1/3 sec



ISO-100 | 55mm | f/22 | 2.5 sec

People and place



ISO-100 | 29mm | f/5.6 | 1/100 sec

EXIT

