Junzhi Deng

2022-2023
Columbia University GSAPP
Portfolio

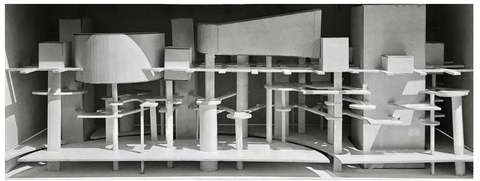
1 THE NEUTRAL ZONE

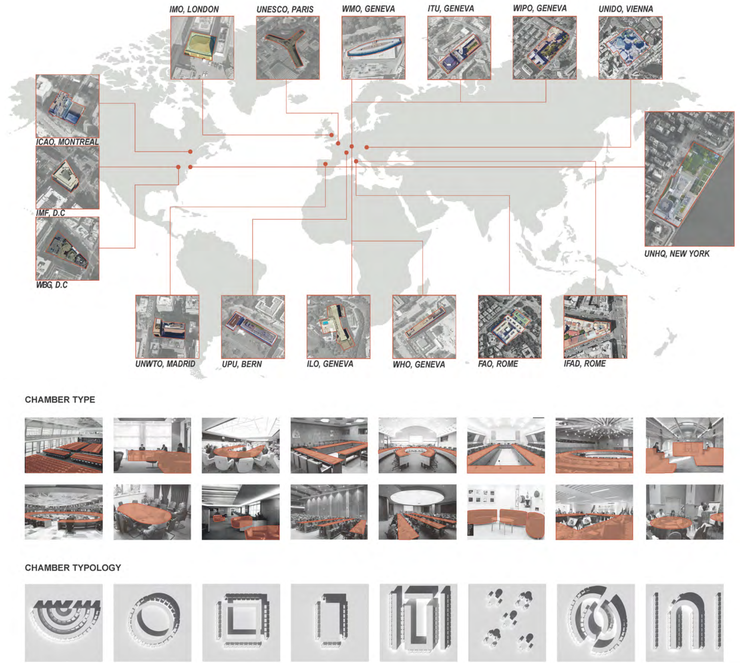
| Design Work | Co-work with Huanpeng Li, Yangxi Liu
Studio Work | Summer 2022 | Columbia University GSAPP
Instructor: Eric Bunge

"A world capital, or a temple of peace... It is too soon to use such fine phrases, non? The UN simply does not exist yet. The nations are not united. The UN is not proved. It is simply a poste de combat."
Le Corbusier, 1947

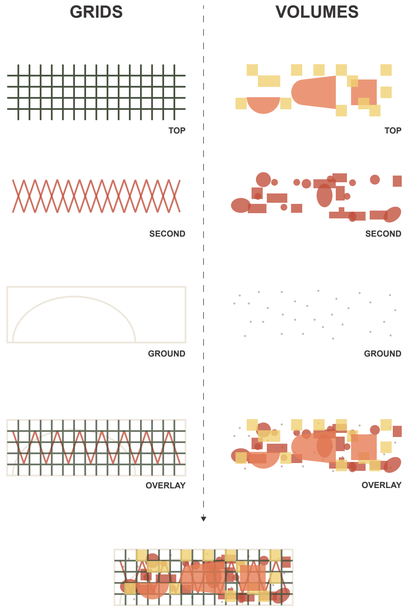
Seventy years later, the UNHQ exists; however, was ***the UNHQ ever completed?*** As with the environment or geopolitics, everything in the world is constantly changing, and so is the UN. As the UN's mission and inner workings become more complex, we propose that it will require a compact and effective space that hosts conversations between different departments.

The project, ***The Neutral Zone***, connects the original UNHQ to the northern part of the site to a new armature for inter-agency discussions and collaboration. The ground level is open to public visitors, per the original master plan. There is a visual connection between general visitors and UN staff as people look up to the zigzag grid of the second-level. The second level links multiple nodes of conversation platforms that facilitate cross-departmental conversations, also accommodating overseas UN agencies' offices. The third and highest level is organized as a square grid of paths connecting various chambers and a common hall, hinted at when people look up from the ground level. ***The Neutral Zone*** aims to improve the foundation of the original UNHQ and encourage cross-departmental dialogue. In this project, we accept the chaos of the world, and forge neutral relationships between different countries' delegates, the UN, and the general public.



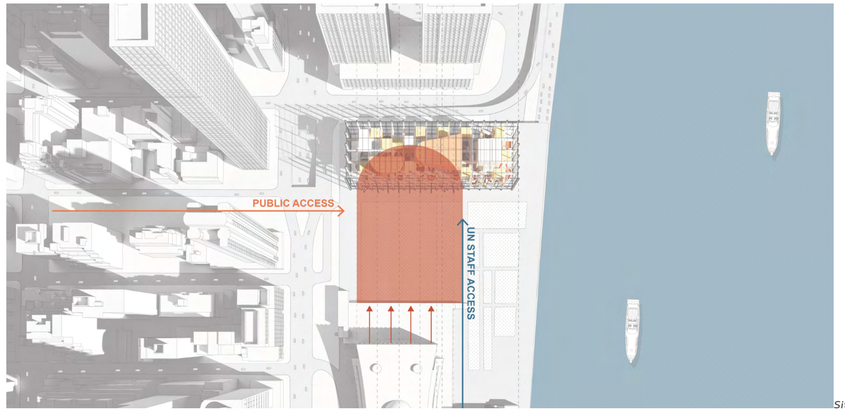


Map of UN Facilities & Chamber Typology Study



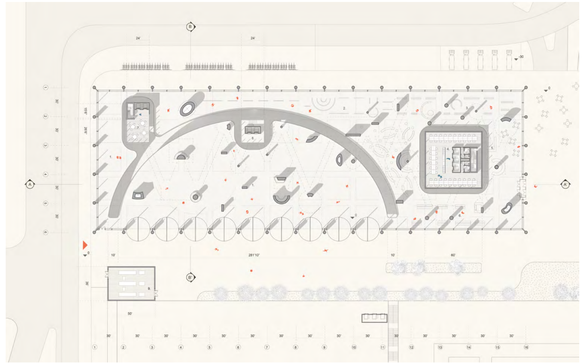
Design Strategy

Bird's-Eye View

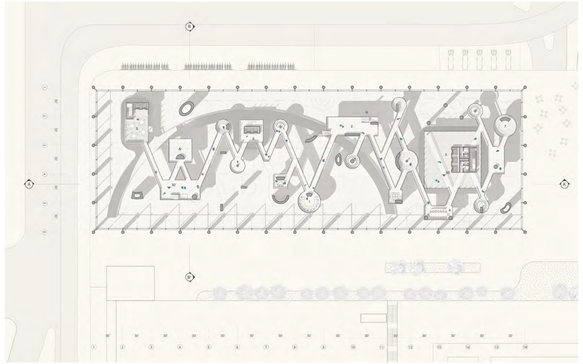


Site Responce

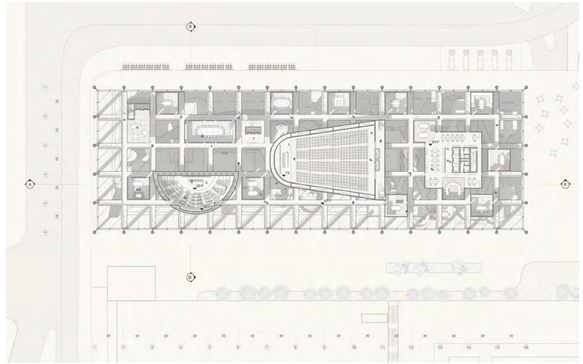
Conceptral Model



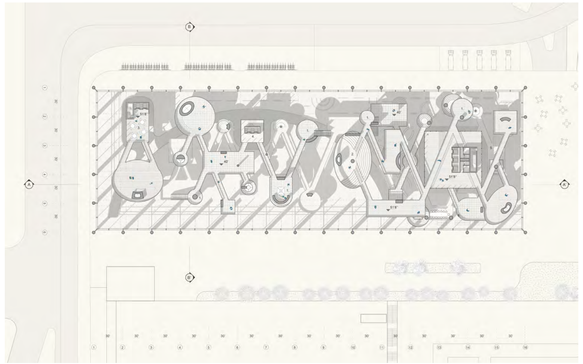
Ground Floor Plan



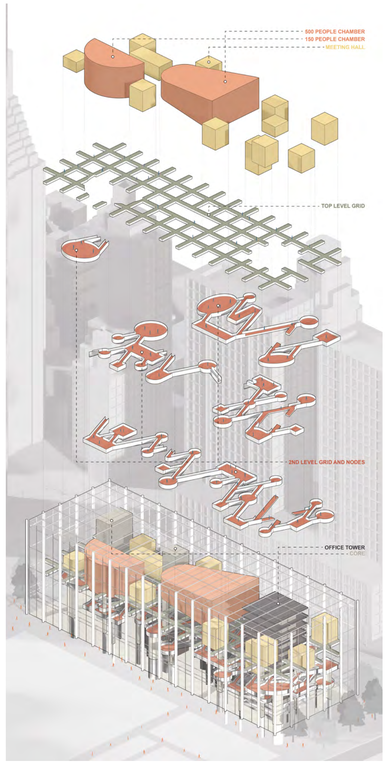
Second Floor Plan 1



Top Floor Plan

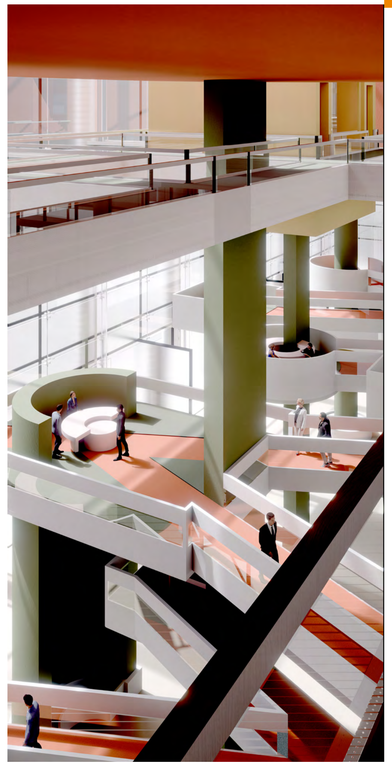


Second Floor Plan 2

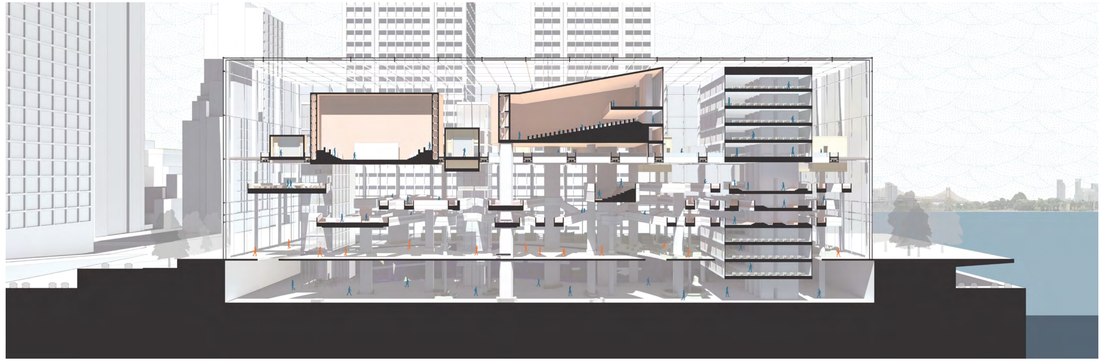


Overall Axon

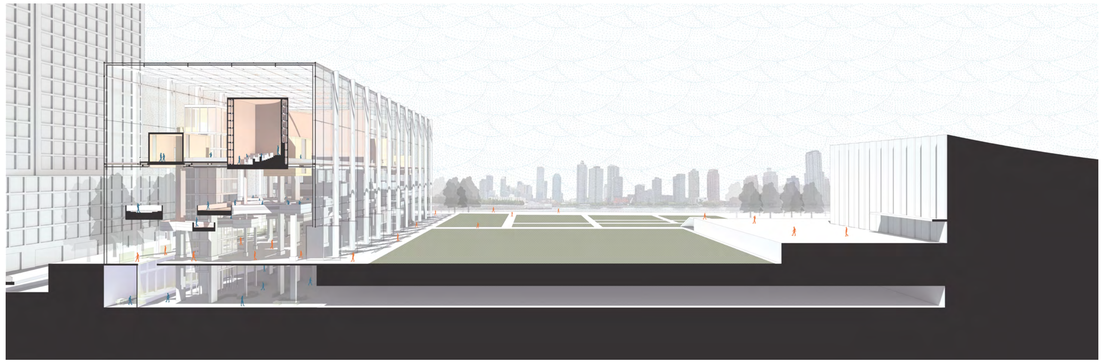
Interior View 1



Interior View 2



West-East Section

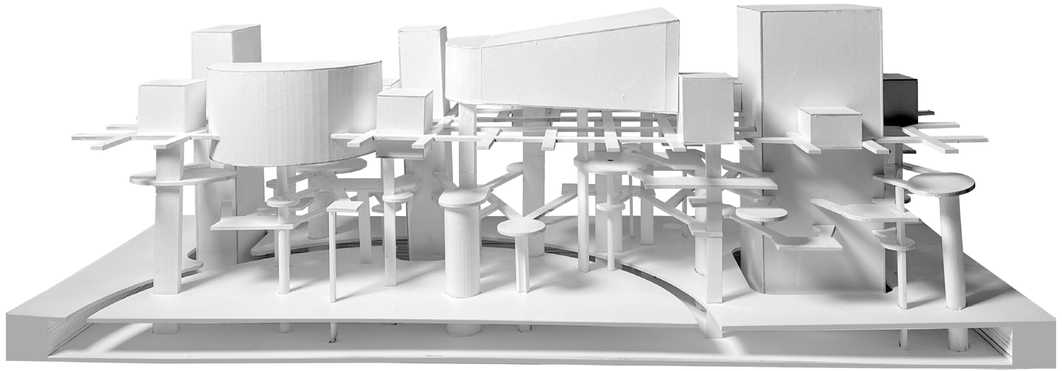


South-North Section

Ground Level Sectional Perspective

Second Level Sectional Perspective

Top Level Sectional Perspective



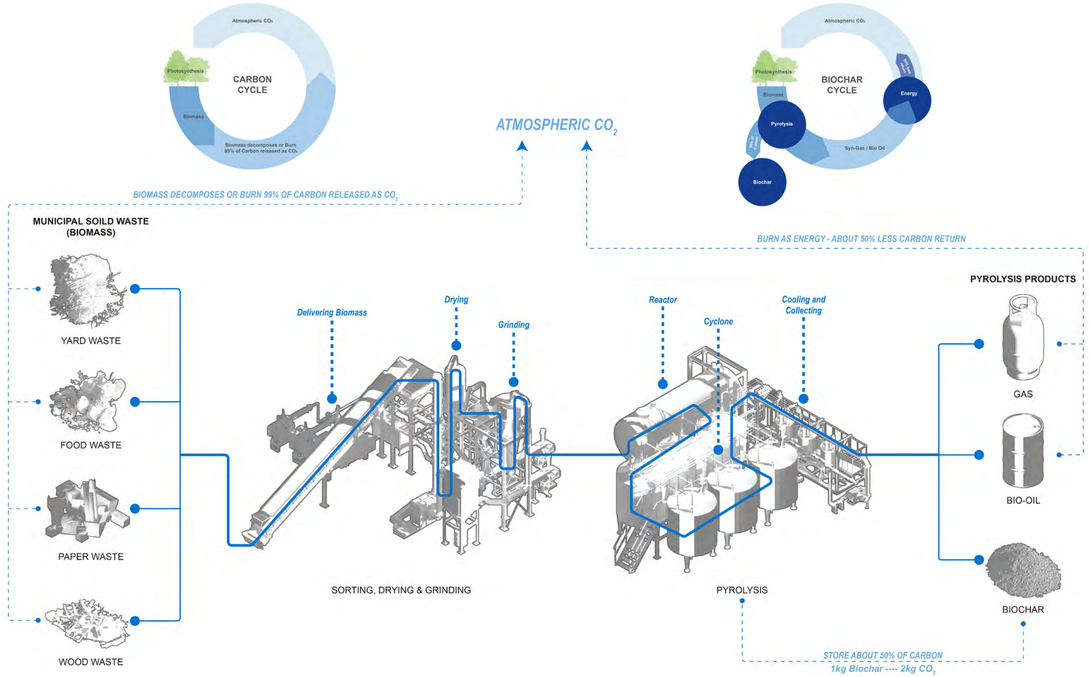
Interior View 3

Interior View 4

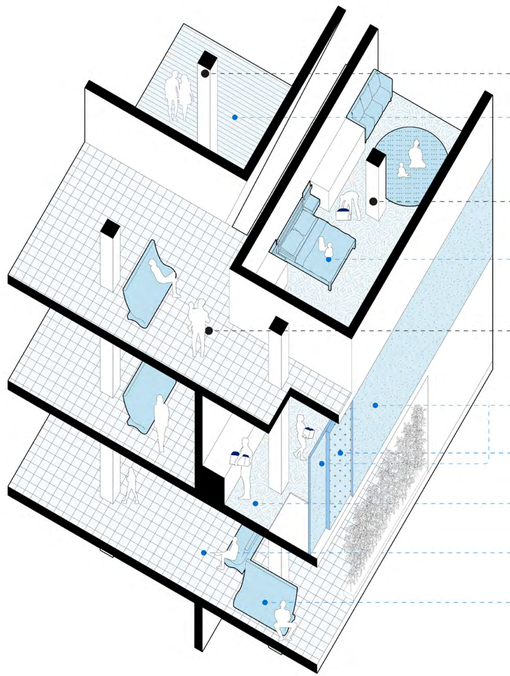
2 FROM URBAN FEED URBAN

| Design Work | Co-work with Xiangyi Deng
Studio Work | Fall 2022 | Columbia University GSAPP
Instructor: David Benjamin

Municipal Solid Waste can be converted into ***biochar***, the ***negative carbon additives***, and its unique advantage include avoiding carbon emissions from ***waste transportation and burning*** while ***permanently storing carbon inside***. Combining it with different ***building materials*** can lead to the possibility of a ***self-repairing*** building that ***redefines metabolism***. The project will design a ***new trash chute system*** that collects and converts wastes during the operation of buildings into biochar-included materials as products, which forms a closed loop circulation economy around MSW that encourages a ***new lifestyle*** about trash sorted and shared living. MSW collected from surrounding buildings will be ***re-exported*** as biochar products to make a bigger influence. This ***infrastructural system*** works both at building-scale and urban-scale, connecting buildings, forming public skywalks, and leading to ***new types of aesthetic spatial qualities around the trash chute system***.



Urban MSW Pyrolysis Process & Carbon Cycle vs. Biochar Cycle



BIOCHAR AS ADDITIVE OF BUILDING MATERIAL

COMMERCIAL

- *Biochar Carpet (commercial)*

RESIDENTAL

- *Biochar Furniture (fabric)*

COMMUNAL

- *Biochar Concrete (surface)*
- *Biochar Insulation*
- *Biochar Carpet (residential)*
- *Biochar Carpet (communal)*
- *Biochar Furniture (3D print)*

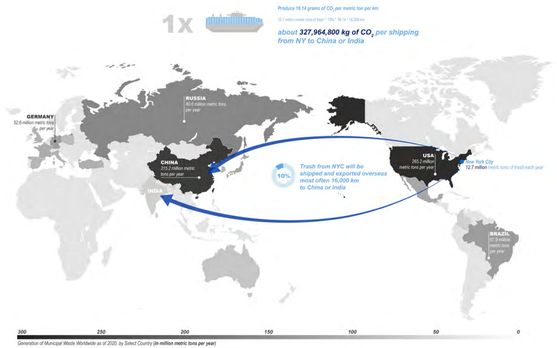
BIOCHAR QUALITY

YARD WASTE
Stronge Biochar

FOOD WASTE
Medium Biochar

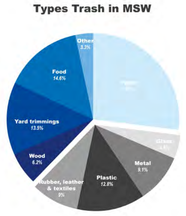
PAPER WASTE
Weak Biochar

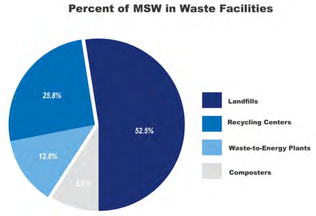
WOOD WASTE
Stronge Biochar



NYC MSW Transportation (World)

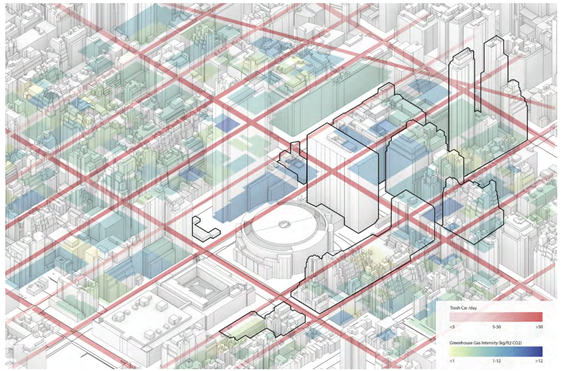
NYC MSW Transportation (US)



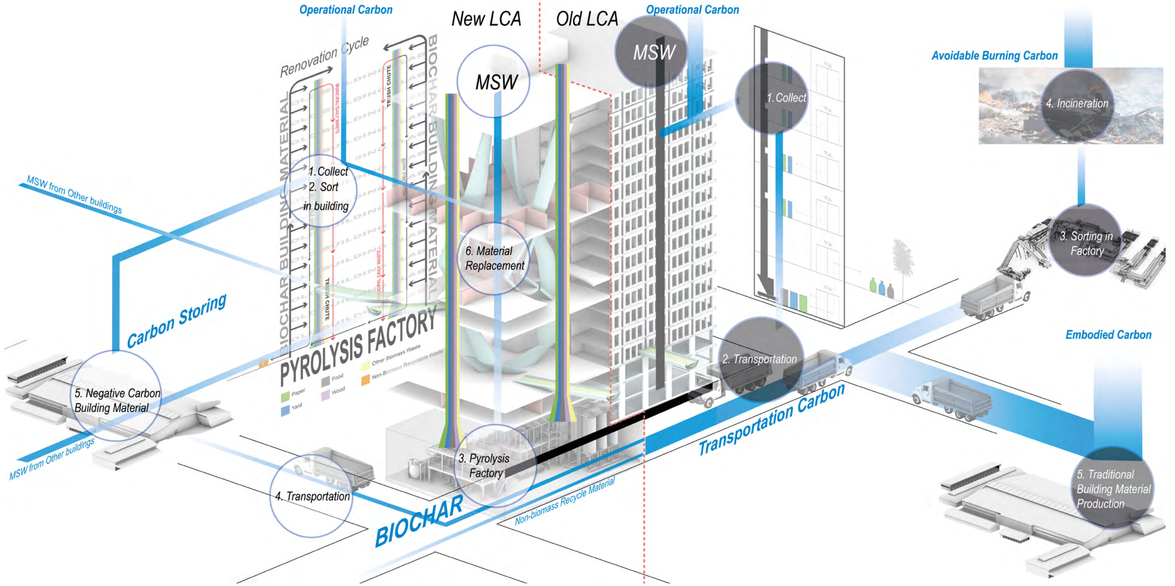


More than 60 percent of MSW have the potential to be converted to biochar, and they usually become landfills and composters in the current system, emitting a lot of carbon.

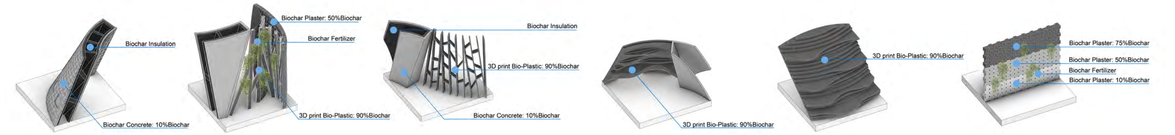
According to the construction plan, several buildings surrounding Penn Station will be demolished, 7 Penn Plaza is one of them. As one of the busiest places in NYC, we studied greenhouse gas emission of buildings on site and the trash truck density here. Both are very high, which means the attempt to reduce trash and emission in this area can be efficient.



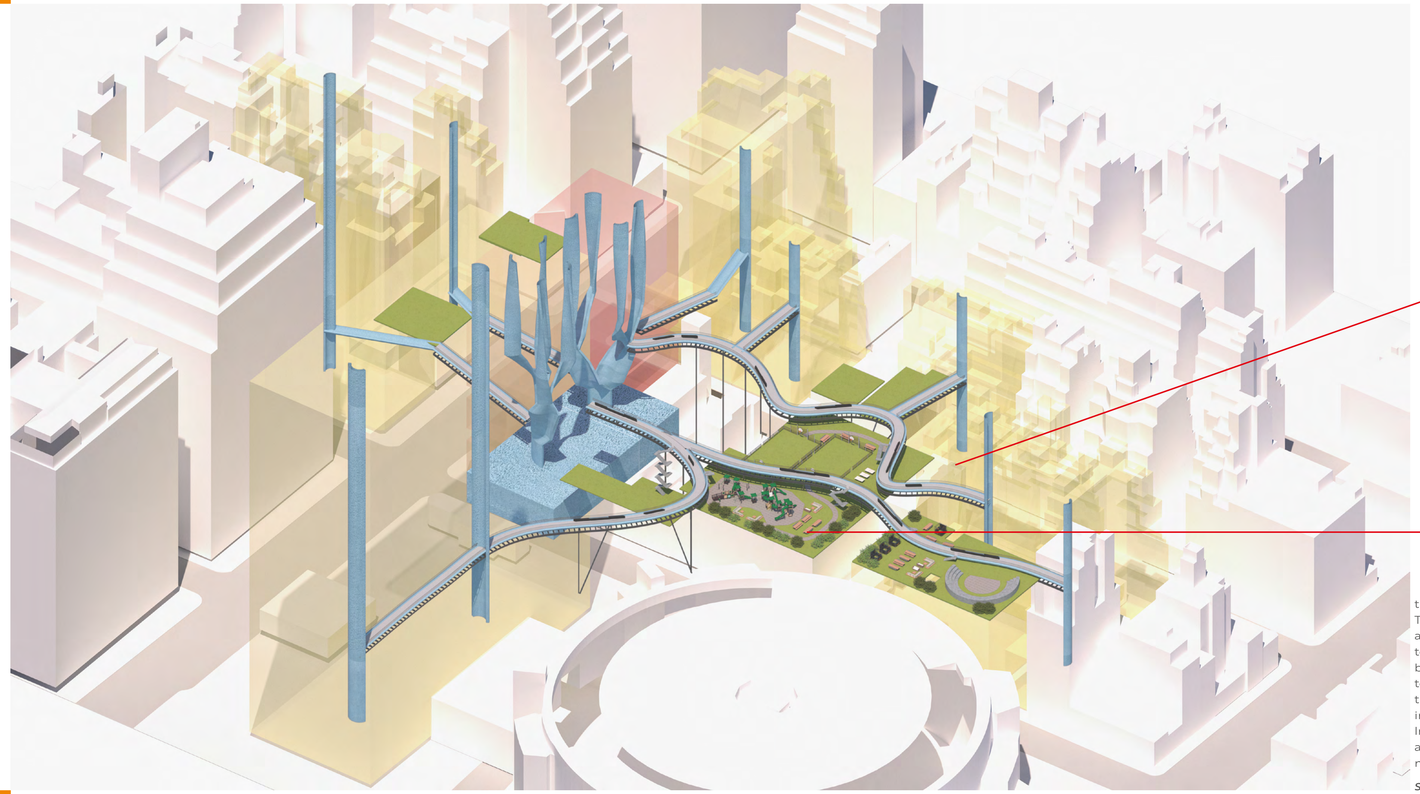
7 Penn Plaza Study



System Purpose



Typology Study



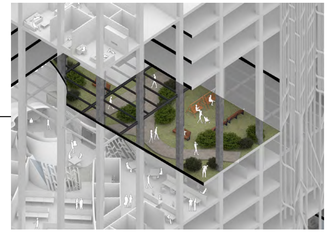
The system could work at a larger scale in the city as a new type of infrastructural system. Trash in surrounding buildings can be collected and transported through horizontal trash chutes to the central building and converted into biochar products. Those chutes are also designed to be skywalks that connect rooftop spaces in the community to create more public spaces in such a high-density area. In this way, the new Infrastructural System serves both functionally and aesthetically, and expands the concept of metabolism to a larger community scale.

System Purpose (Urban)

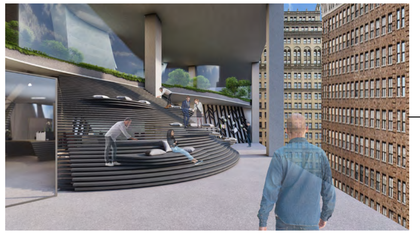
View from Walkway

View from Roof Gardon

Public Gardon



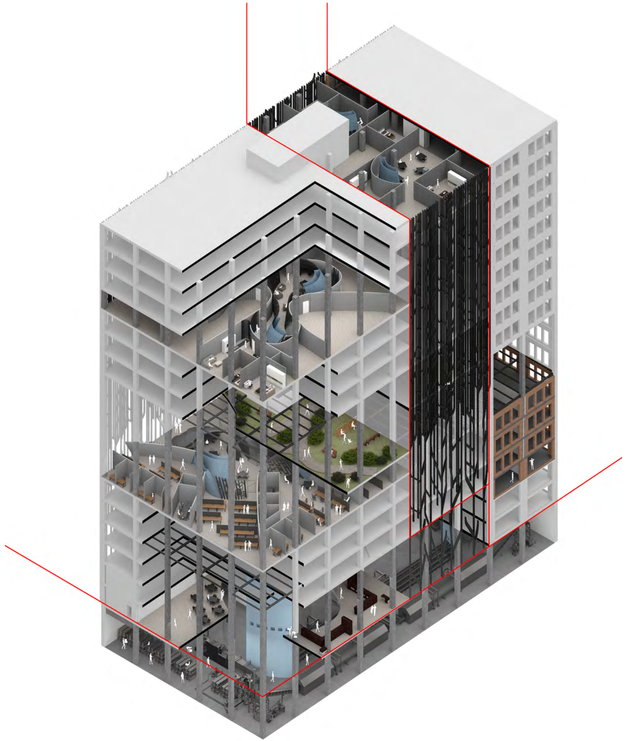
Gardon Level



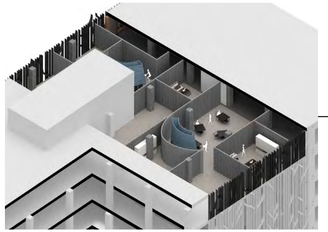
Office Common Space

Office Level

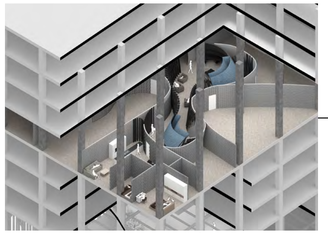
Work Space



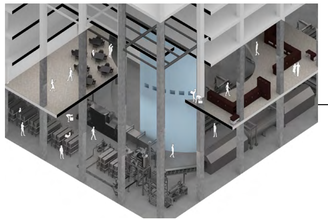
Building Phase Axon



Residential Level (Room)



Residential Level (Common Space)

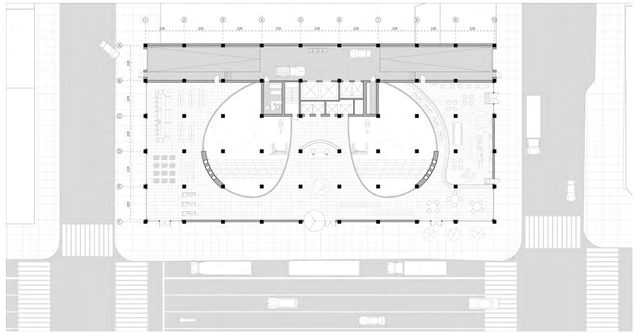


Basement Level

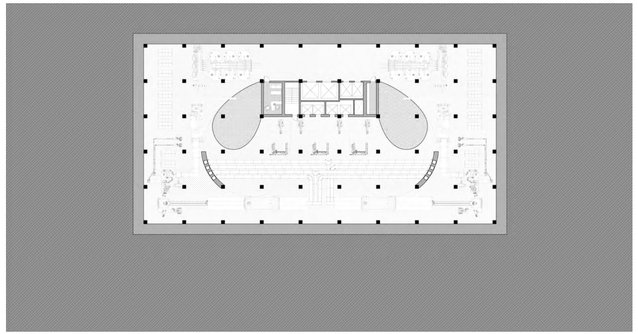
Residential Room

Residential Trash Chute

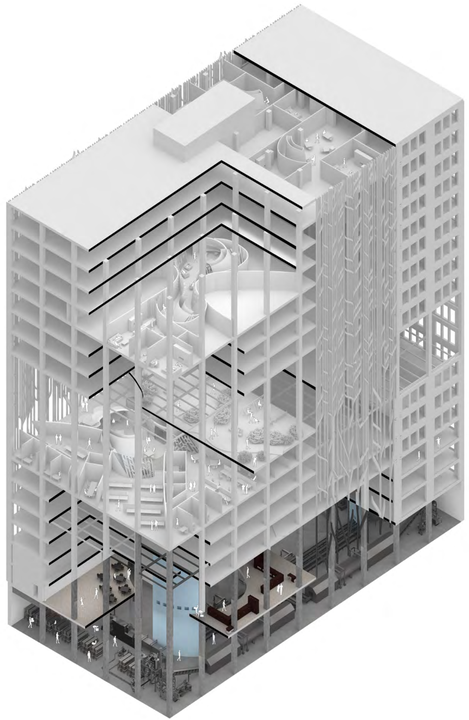
Basement Work Space

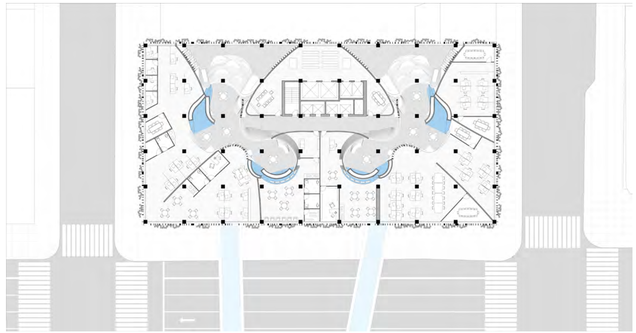


Ground Level Plan

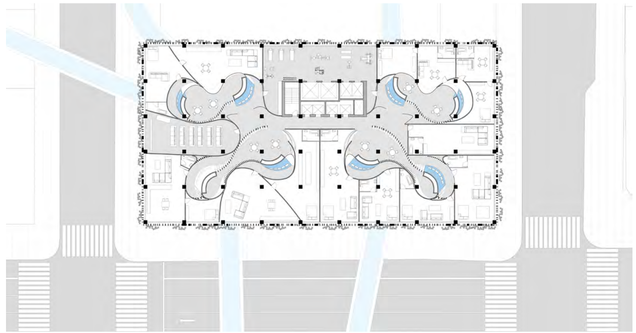


Basement Plan

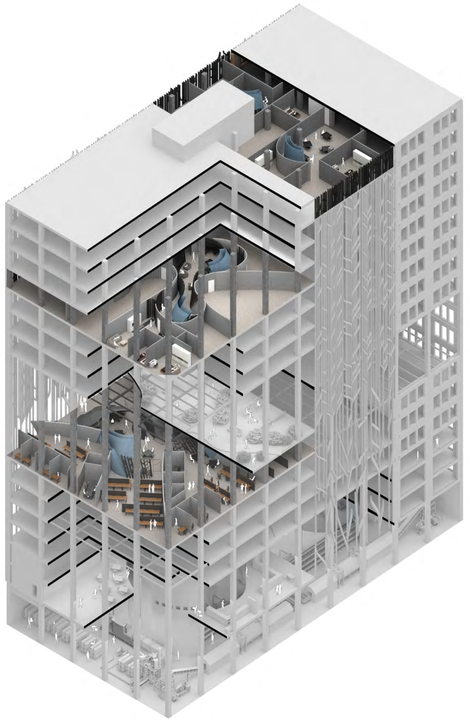




Office Level Plan



Residential Level Plan



3 MoMA: The Kaleidoscope

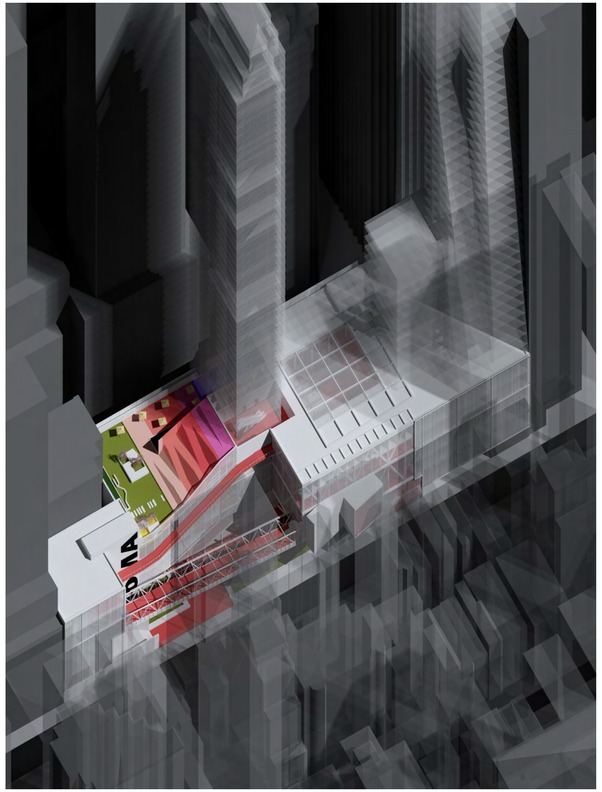
| Design Work | Co-work with Wentao Liu, Xun Lu
Studio Work | Spring 2023 | Columbia University GSAPP
Instructor: Juan Herreros

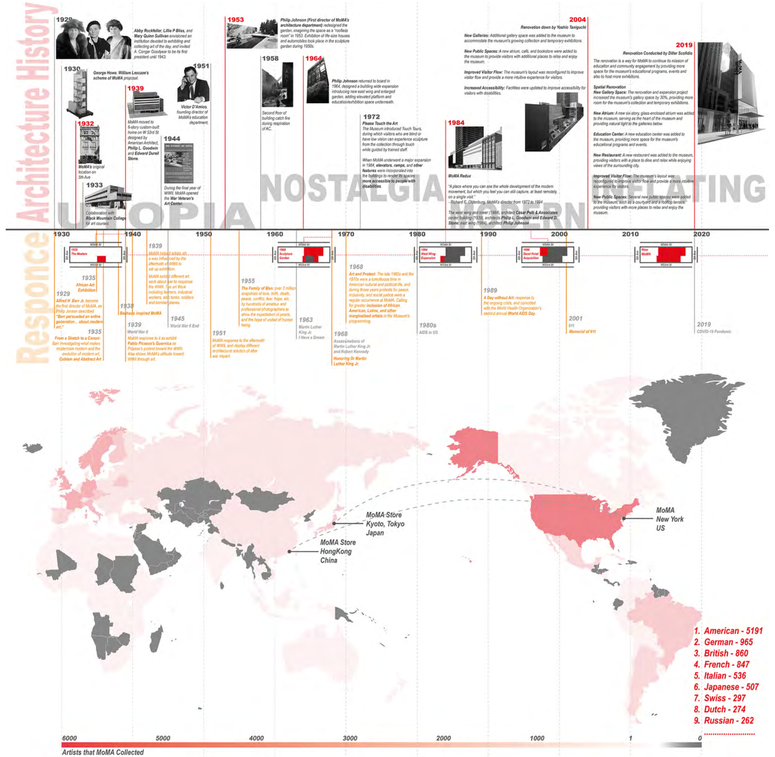
*"We aspire to be a catalyst for **experimentation**, **learning**, and **creativity**, **a gathering place for all**, and **a home for artists and their ideas**."*
MoMA's Mission Statement

Three women—Lillie P. Bliss, Mary Quinn Sullivan, and Abby Aldrich Rockefeller—founded MoMA with the radical idea of creating "a public gallery where the works of the founders and masters of the modern schools can be seen." DS+R designed the current MoMA after several expansions and redesigns. Since its founding, MoMA has prioritized education. In 1951, ***Victor D'Amico*** officially established MoMA's educational department, making it more than just an exhibition or collection of the founders and masters.

In our design, we want MoMA to ***reopen the garden*** as the main entrance and resume its educational mission by renovating it into ***a learning experience circulation-leading*** building. Compared to the old MoMA, our design divides the institution into two major programs: ***circulation***, which includes educational programs, and ***permanent collection***, which is more contained and controlled. And the sculpture garden as the main lobby is the start of ***the educational journey***. Along with this circulation, numerous public educational programs are attached, such as meeting rooms, auditoriums, media rooms, public exhibition spaces, and classrooms for printmaking, sculpturing, painting, or sketching. Also, visitors will enter the colorful rooftop for leisure at the end of the circulation. We envision the ***MoMA as a Keilascope*** that allows people to explore the unlimited possibility of images. MoMA can finally accomplish its mission and become a treasuring place in midtown Manhattan.

MoMA
The Kaleidoscope

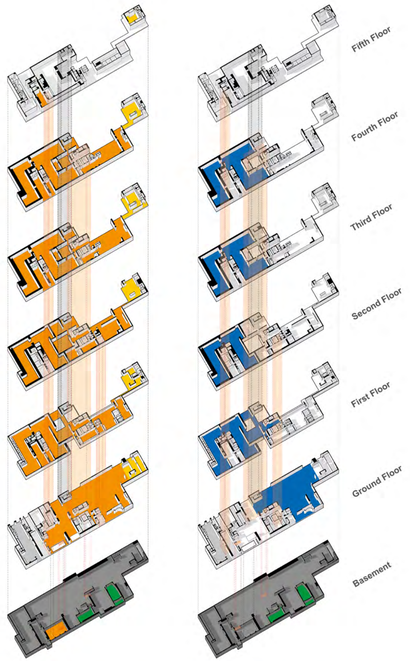




Timeline of MoMA

MoMA in a Educational Desert

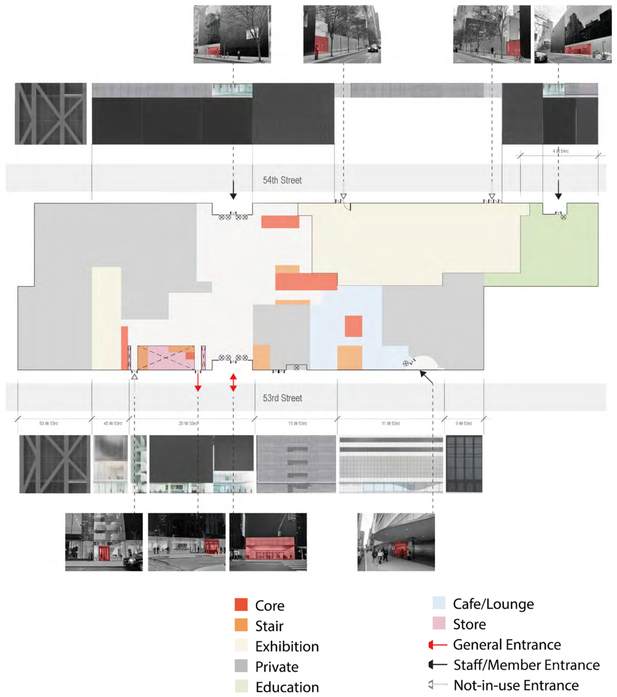
Current MoMA Opening Time

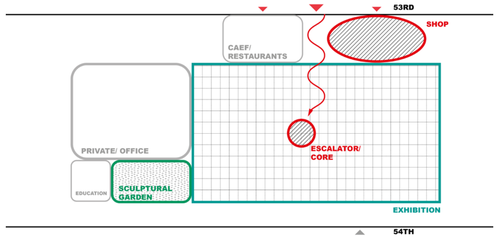


EXHIBITION TIME: *10:30 a.m. - 5:30 p.m.*
STUDY CENTER TIME: *1:00 p.m. - 6:00 p.m.*

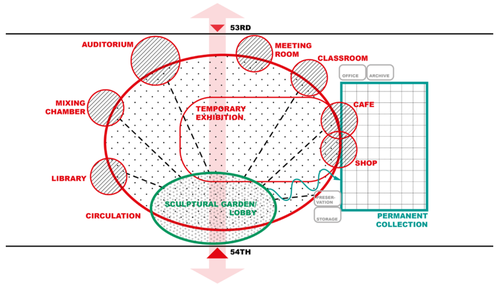
NIGHT TIME: *4:00 p.m. - 8:00 p.m.*
THEARTER TIME: *1:00 p.m., 4:00 p.m., 7 p.m.*

Current MoMA Facade and Entrance

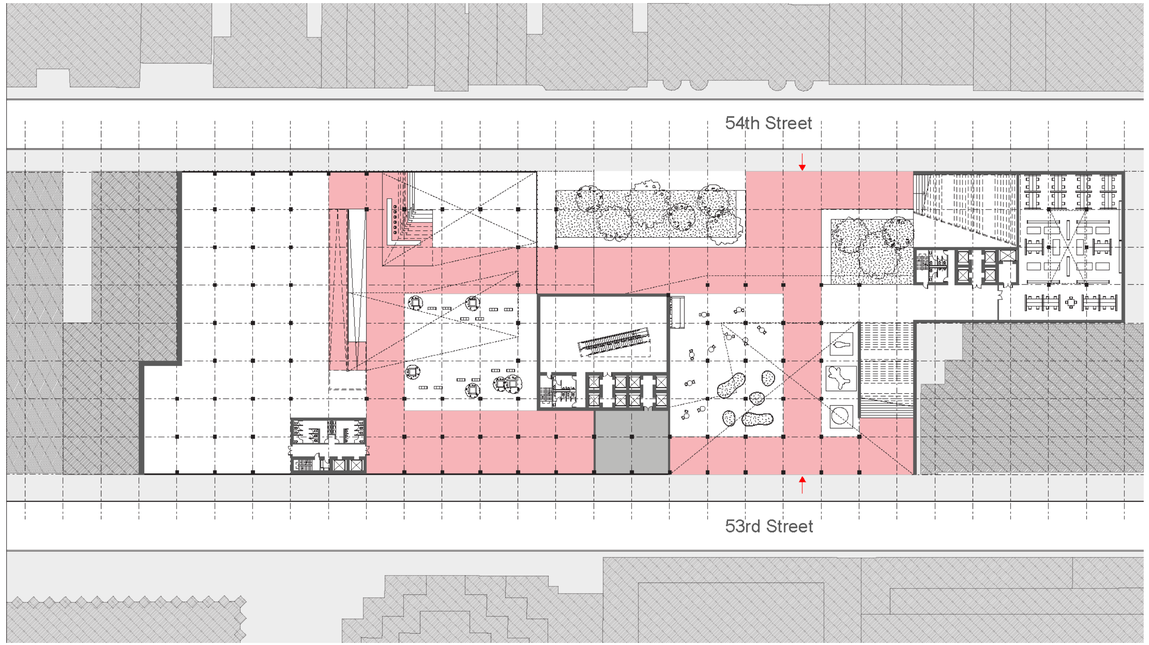




Current MoMA Program

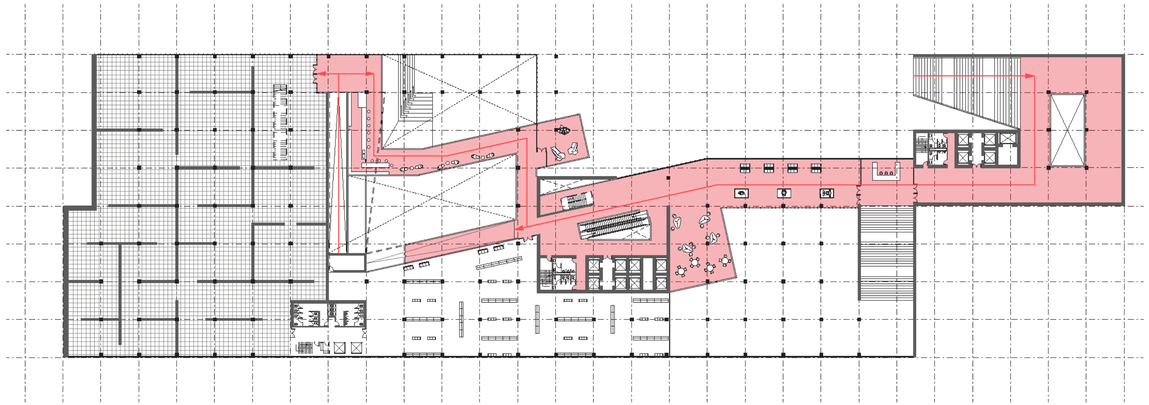


New MoMA Program



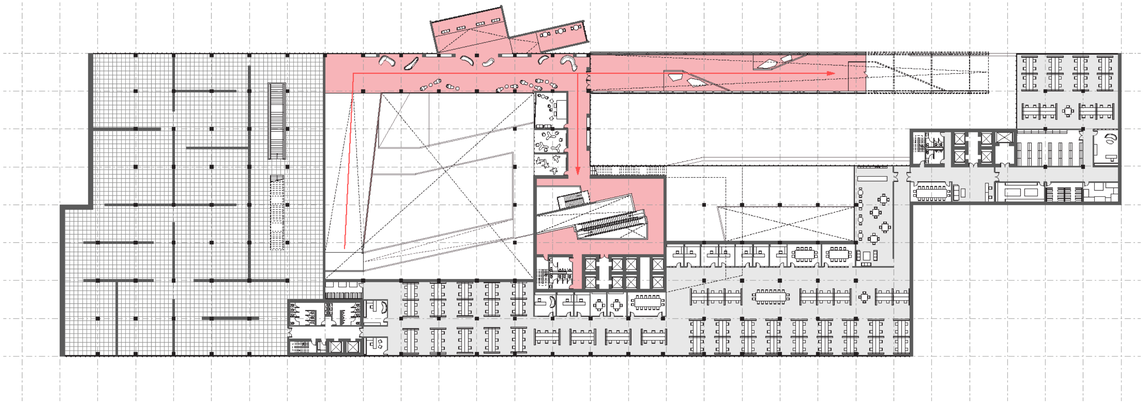
Ground Floor Plan

Entrance Perspective



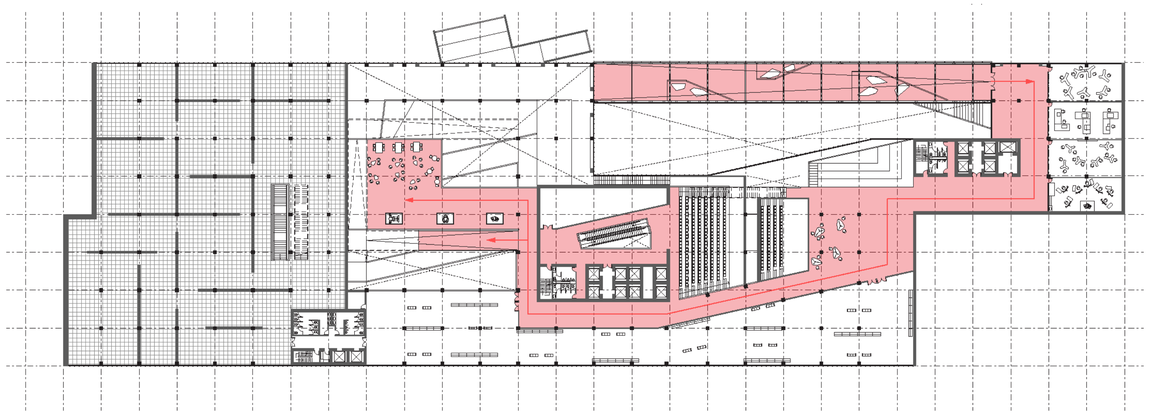
2nd Floor Plan

2nd Floor Atrium Perspective



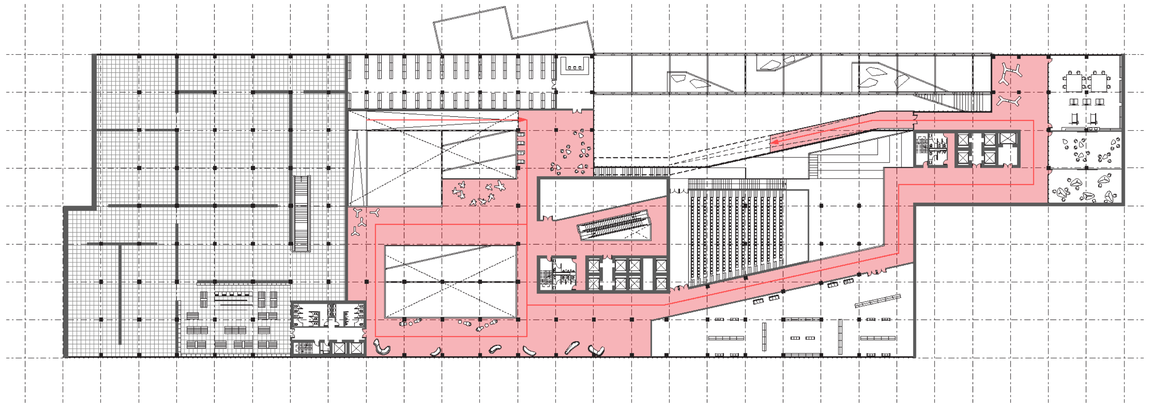
3rd Floor Plan

3rd Floor Perspective



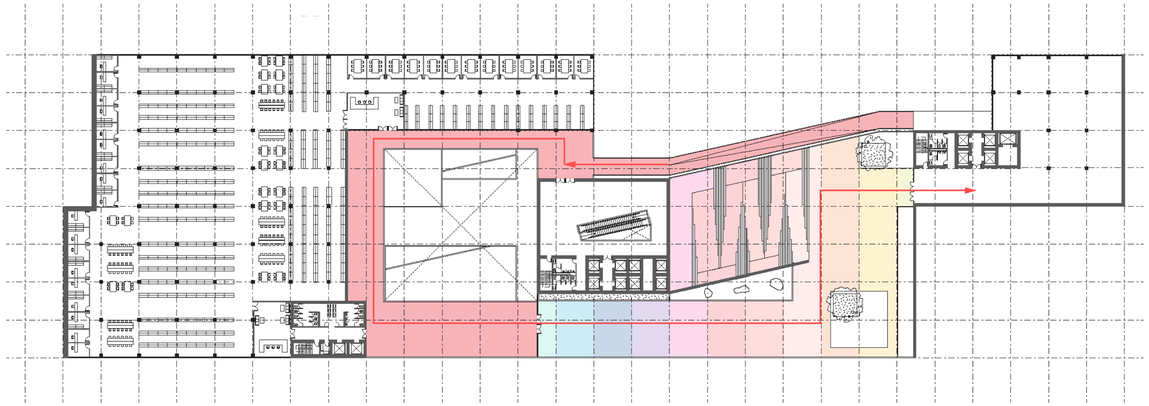
4th Floor Plan

4th Floor Perspective



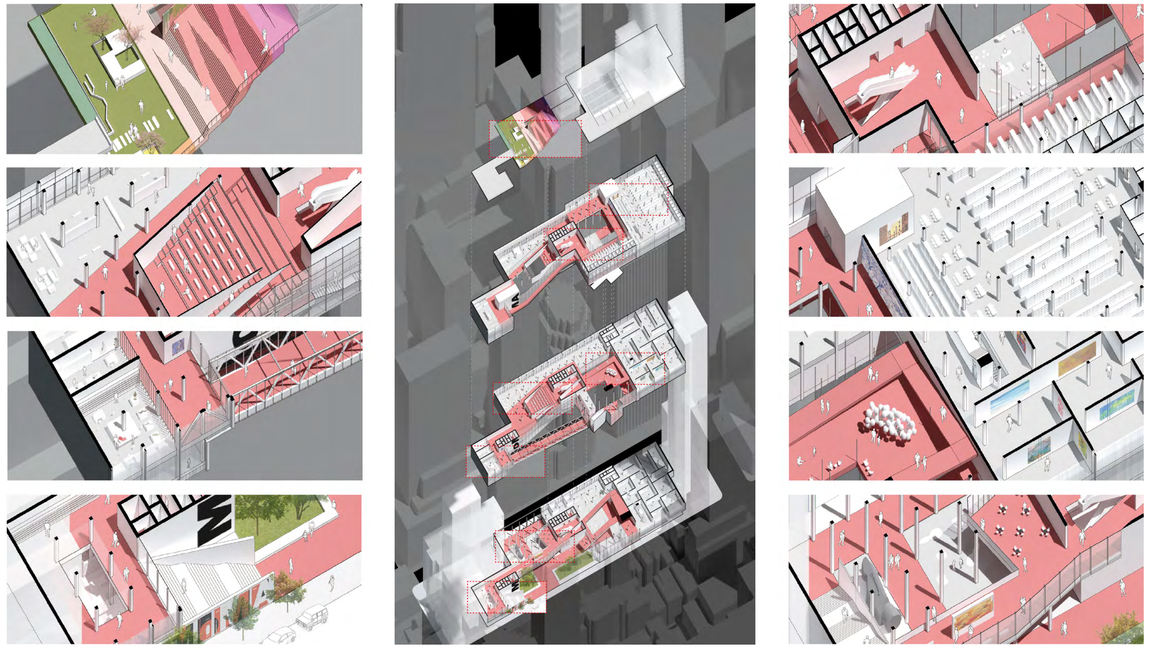
5th Floor Plan

5th Floor Perspective

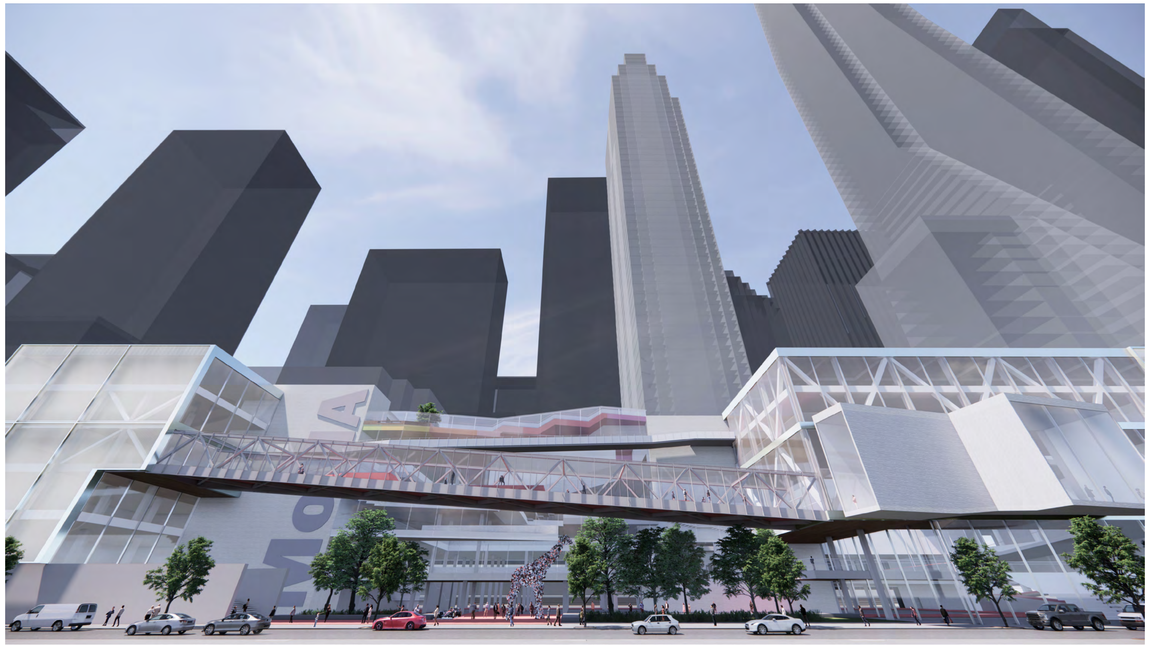


Roof Floor Plan

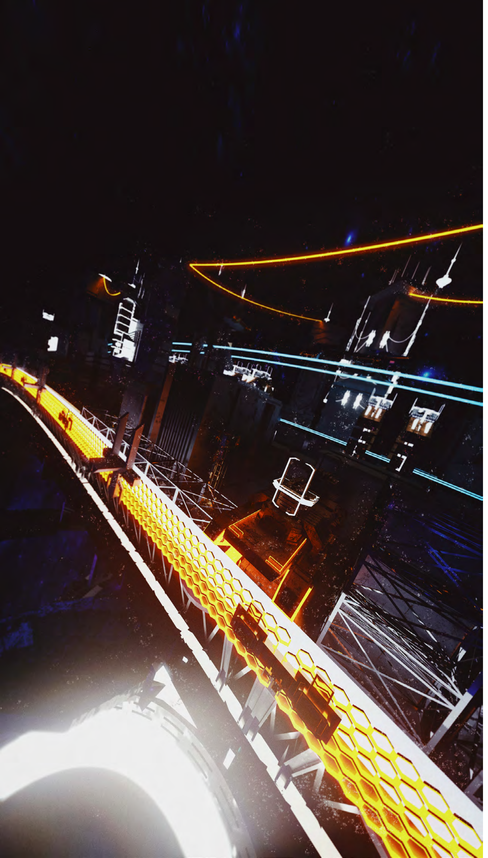
Roof Garden Perspective

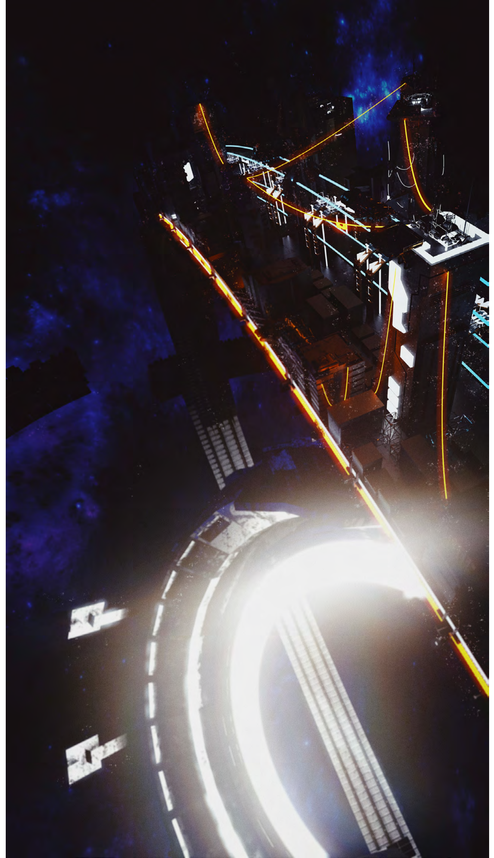


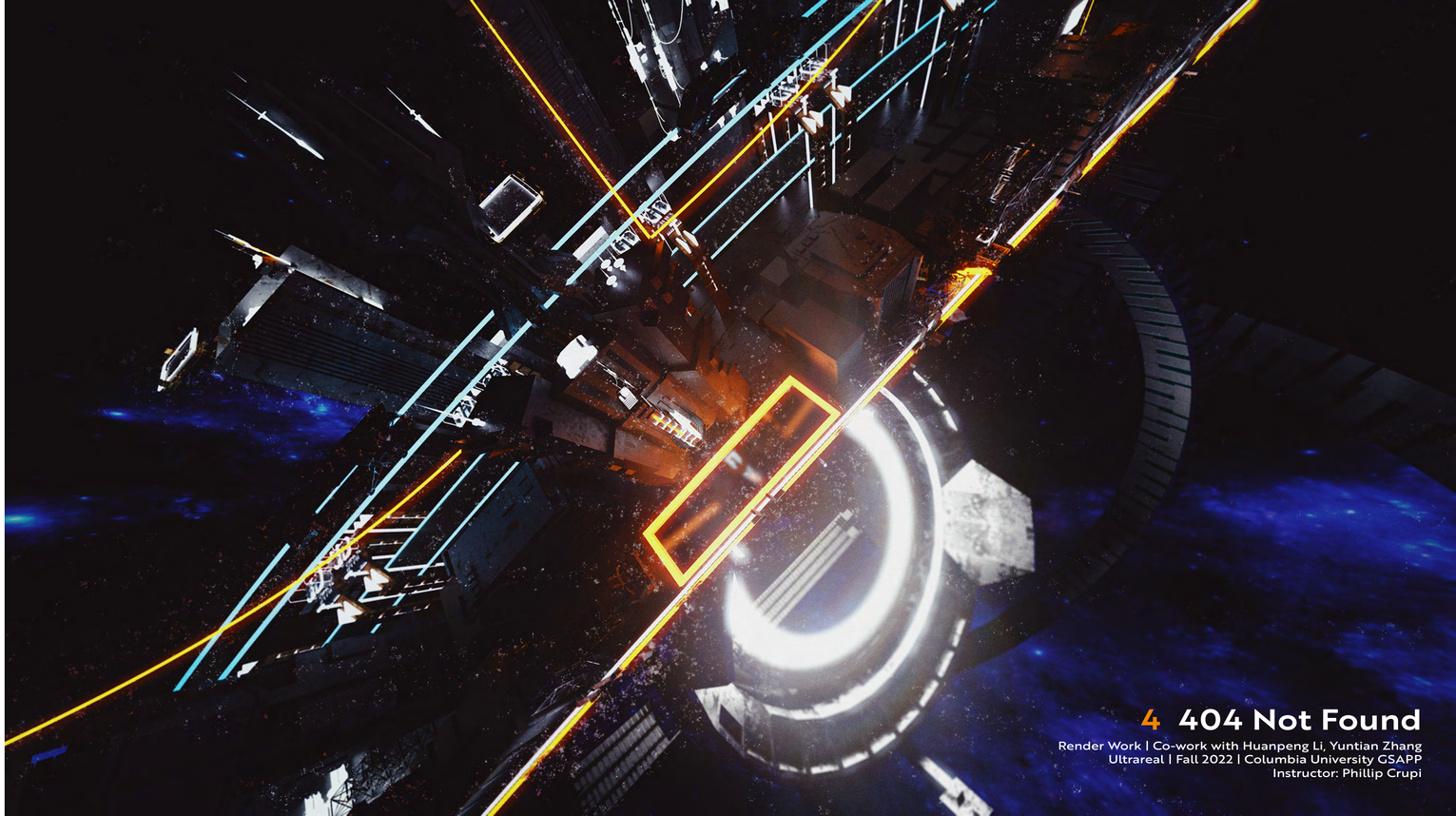
Zoom-in Axon Perspective



Entrance Perspective





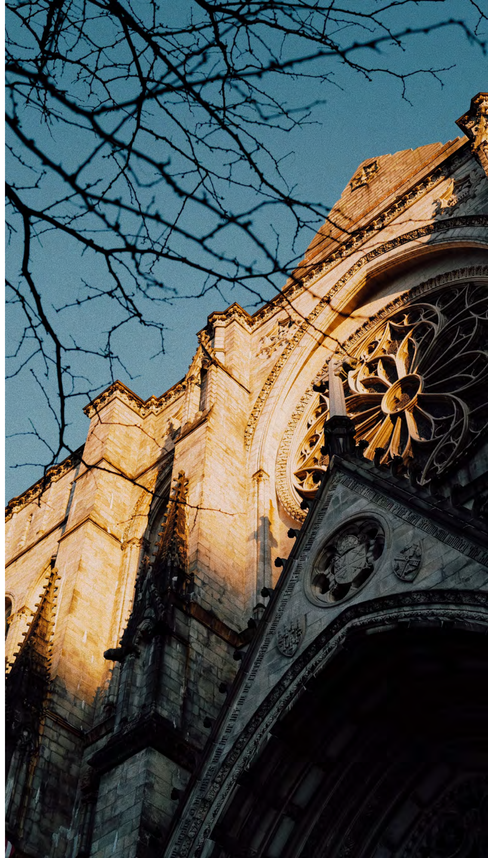


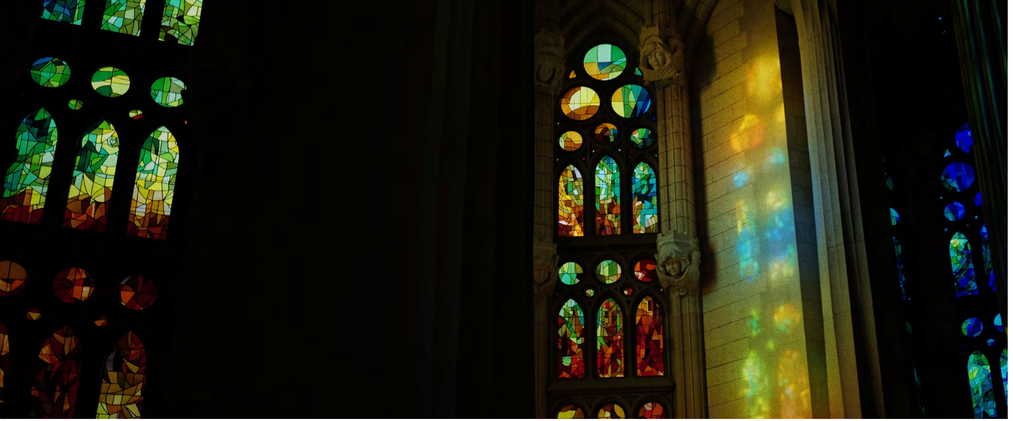
4 404 Not Found

Render Work | Co-work with Huanpeng Li, Yuntian Zhang
Ultrareal | Fall 2022 | Columbia University GSAPP
Instructor: Phillip Crupi

5 Sublime of Cathedral

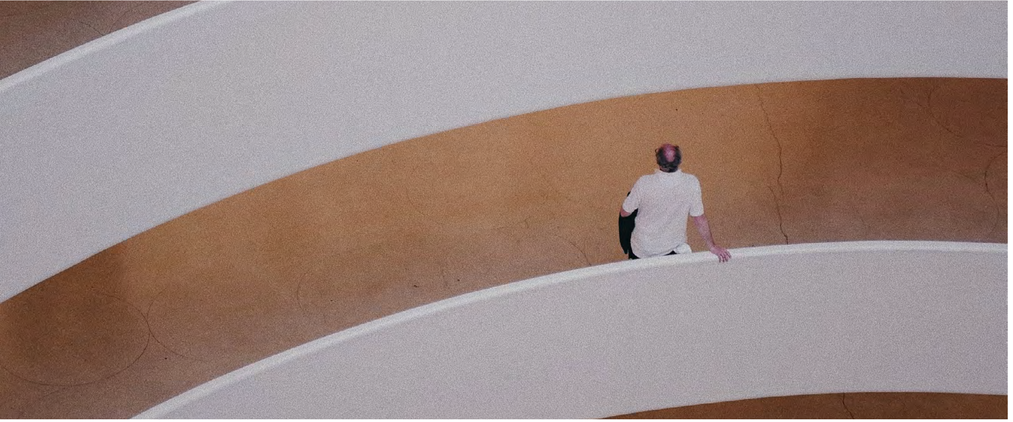
Photography Work | Individual Work
Photography I Spring 2023 | Columbia University GSAPP
Instructor: Michael Vahrenwald

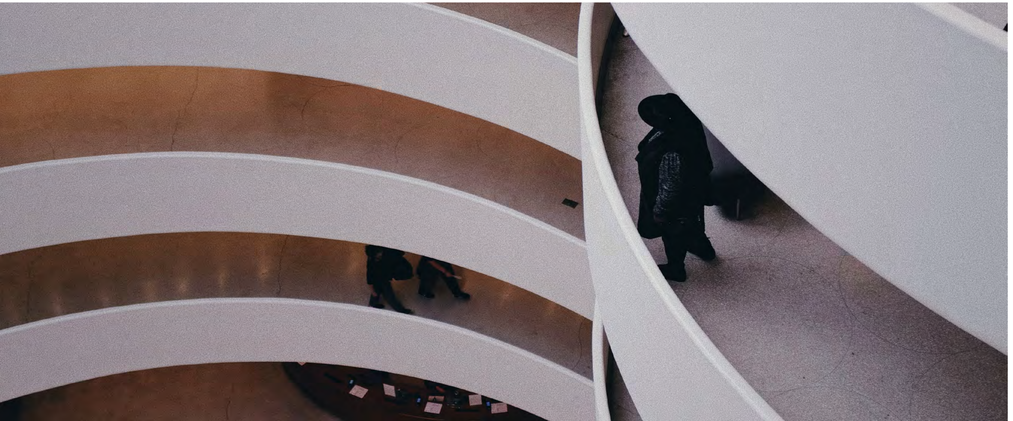




6 Sagrada Família

Photography Work | Individual Work
Photography | Spring 2023 | Columbia University GSAPP
Instructor: Michael Vahrenwald





5 People in Guggenheim

Photography Work | Individual Work
Photography | Spring 2023 | Columbia University GSAPP
Instructor: Michael Vahrenwald


sound and the room is
a surface, somehow.
ROOM