

Academic Portfolio from 2019 to 2020
Xutian LIU
GSAPP
COLUMBIA UNIVERSITY

LIU
PORTFOLIO

A TALE OF SHANGHAI THREE CITIES NEW YORK LONDON

XU TIAN



LIU

Academic Portfolio from 2019 to 2020

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Graduate School of Architecture, Planning
and Preservation
Columbia University

STUDIO

01

**Engine 198
/ Ladder 144**

Tschumi Studio Project
--the new type of fire station that
reconsider how infrastructures
intervene into daily life

02

**Neo-Nomadic
Garden**

Music Venue for East London
--Underground discreet music
industry incubator for self-
claimed artist

03

Story Fair

Story Trade Market
--a market that connect
strangers and fix lonely heart

**VISUAL
/TECHNOLOGY
STUDY**

04

Facade Detailing

A united facade system
applied on Lever House as an
renovation

05

**Techniques Of The
Ultrareal**

Render Engine as a method
to explore Architecture
Composition



**HISTORY
/THEORY
RESEARCH**

06

**Datamining The
City**

Simulation on how information
are dismissed when the internet
is down

07

Transscalarities

Research on Time Warner
Center, Columbus Circle and the
capital behind it



2019

SUMMER
Jun.03-Aug.09

12 Story Fair

Story Trade Market
--a market that connect
strangers and fix lonely heart

12 Transscalarities

Research on Time Warner
Center, Columbus Circle and the
capital behind it

FALL
Sept.03-Dec.18

36 Engine 198 / Ladder 144

Tschumi Studio Project
--the new type of fire station that
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intervene into daily life

12 Datamining The City

Simulation on how information
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is down

2020

SPRING
Jan.21-May.20

12 Neo-Nomadic Garden

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Engine 198

01

/ Ladder 144

ARCHA4105_002_2019_3 ADV STUDIO V
CONCEPT AND “ THE NEW TYPE OF... ”

New programs for the 21st Century

Instructor: Bernard Tschumi

TA: Esteban de Backer, Valeria Paez Cala

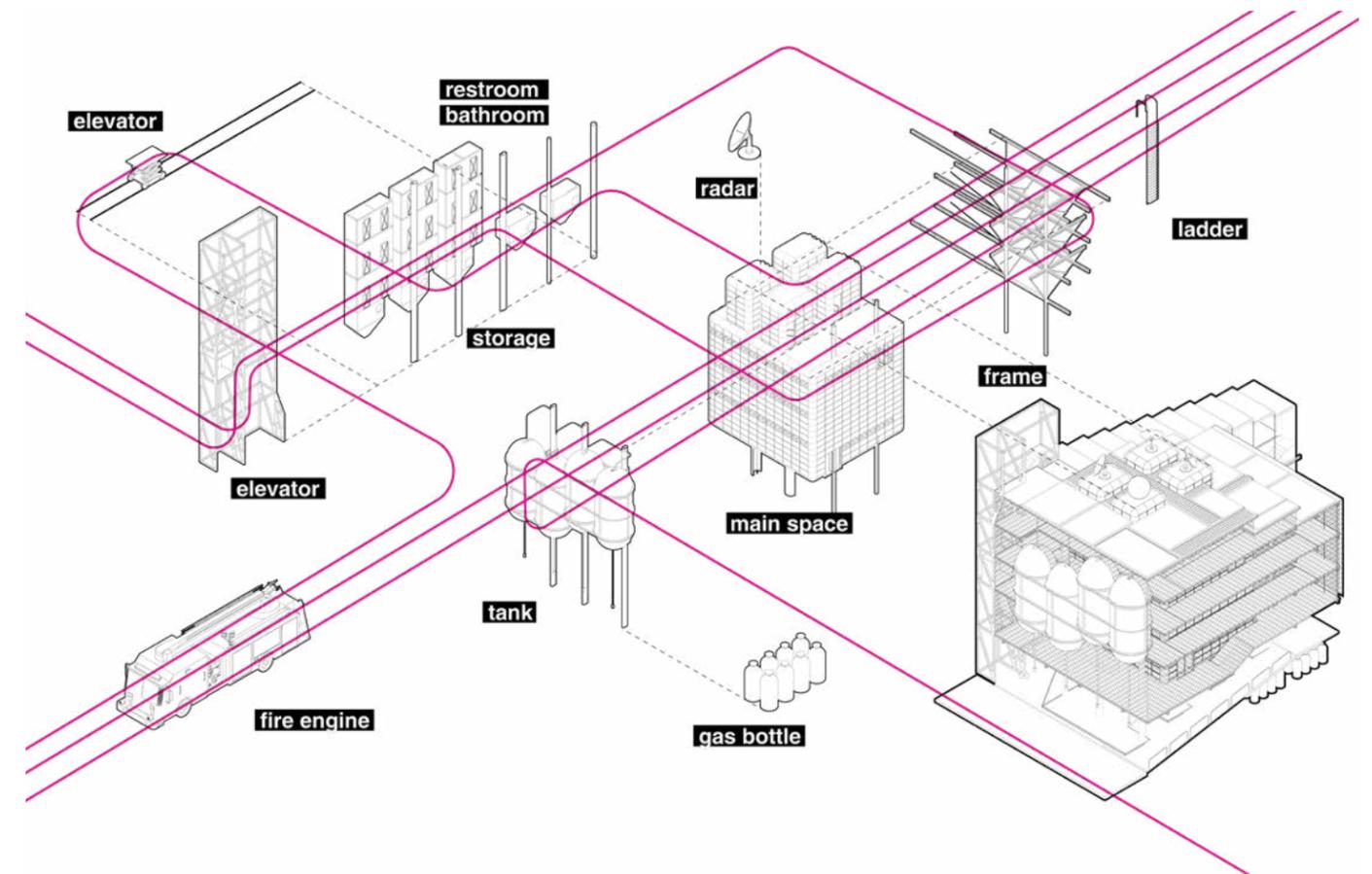
Semester: Fall 2019

Collaborator: Sneha Aiyer

The part documented in this portfolio is individually designed

Program: Fire Station

Site: New York City, New York

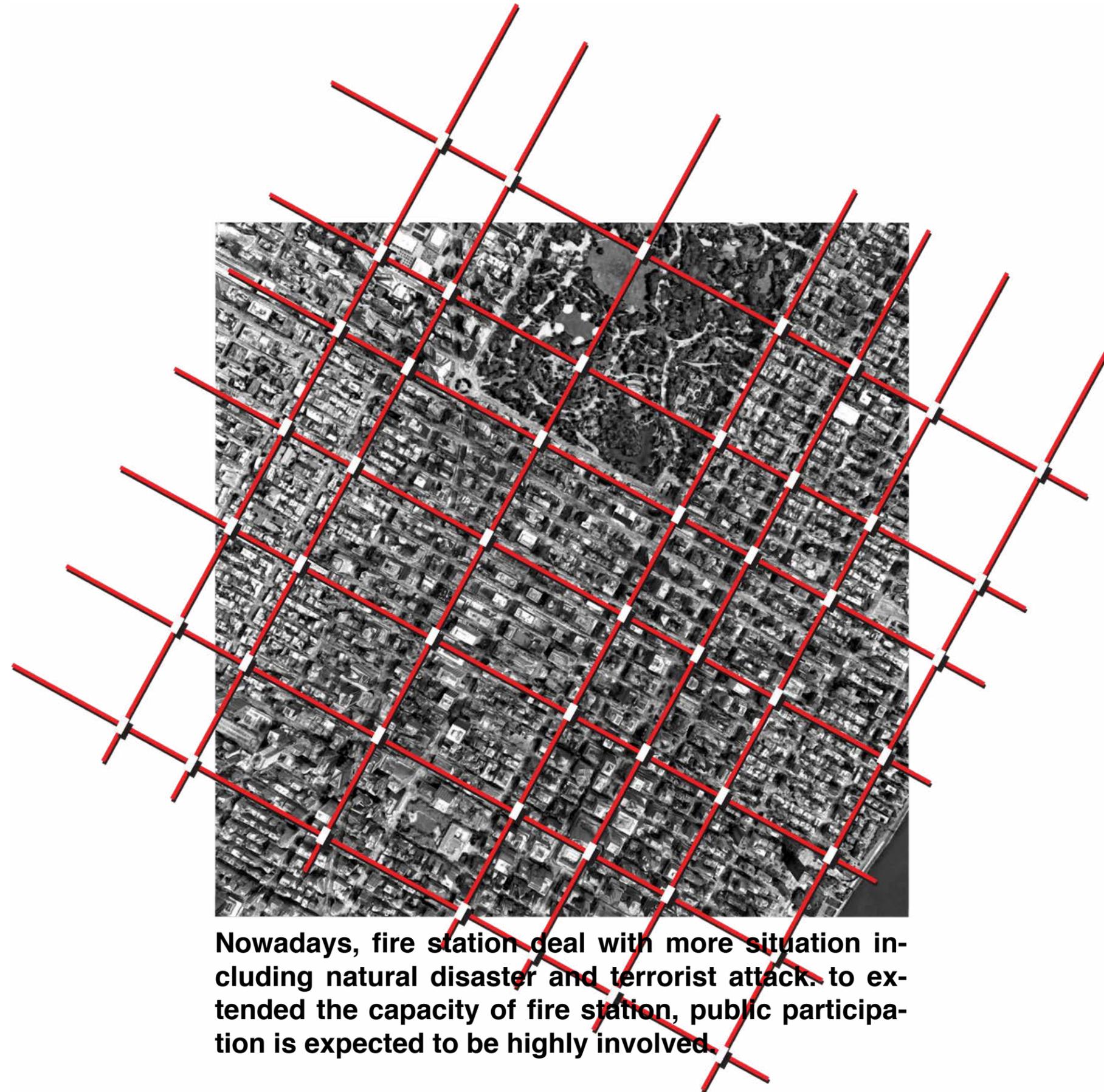


Fire Station as an Infrastructure System

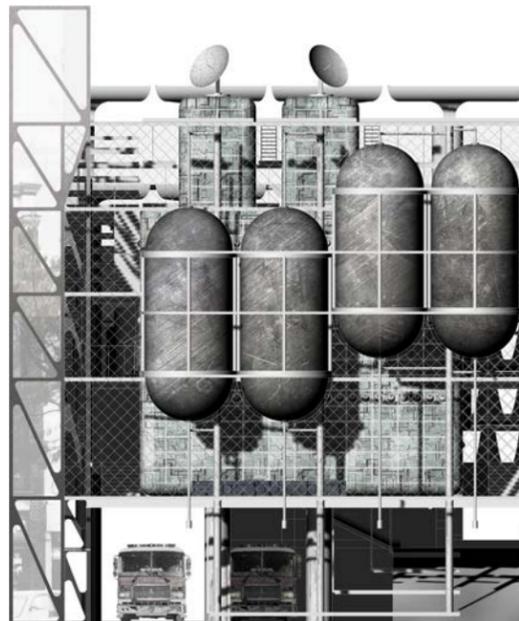
As a station, it works as the opposite way of filter. This is the place things are recombined and leave as a state of "being ready". For fire station, people and material come in separately and launch together within the carrier in this case, fire engine. In addition, when public participation get involved, the fire station should have the ability to train them in the non-emergency situation, and transform them during the emergency. Therefore, there will be two contrast/relationship in this architecture: professional & amateur; material & human.



Infrastructure seems to be an autonomous system running by themselves. However, tons of millions of people are working behind to support it. Fire Station is a perfect example to investigate.

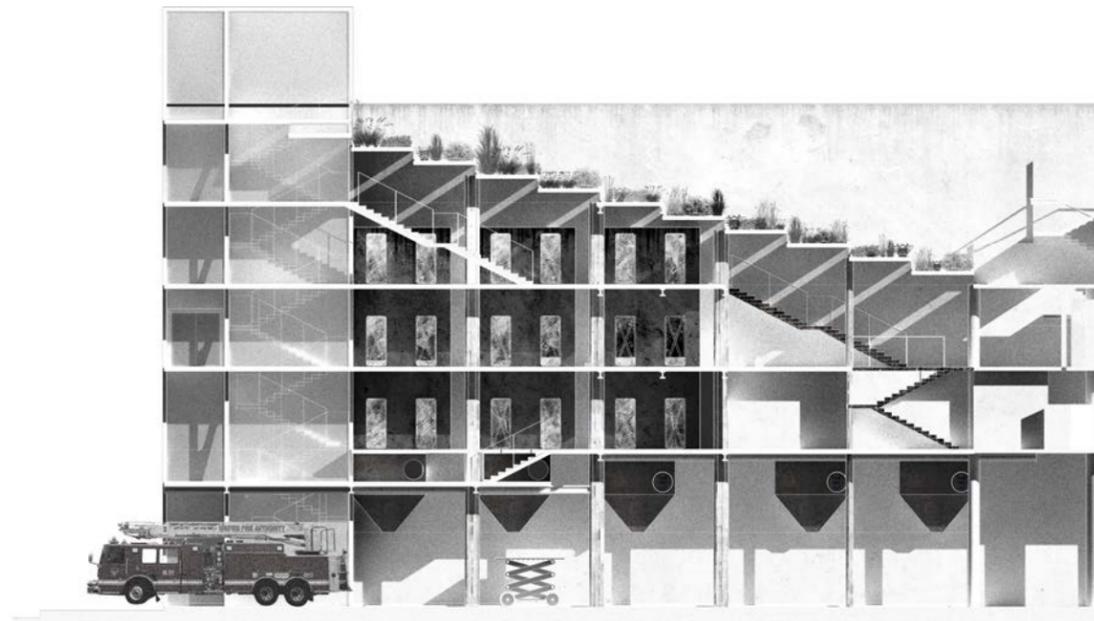


Nowadays, fire station deal with more situation including natural disaster and terrorist attack. to extended the capacity of fire station, public participation is expected to be highly involved.



Section: the Professional Fire Station Space

Since the public participation is the major issue, volunteer should be consider as a large part of this design during the day time. When the emergency happened, the new type of fire station should also have the ability to get normal people equipped. That's the first contrast Professional & Amature.

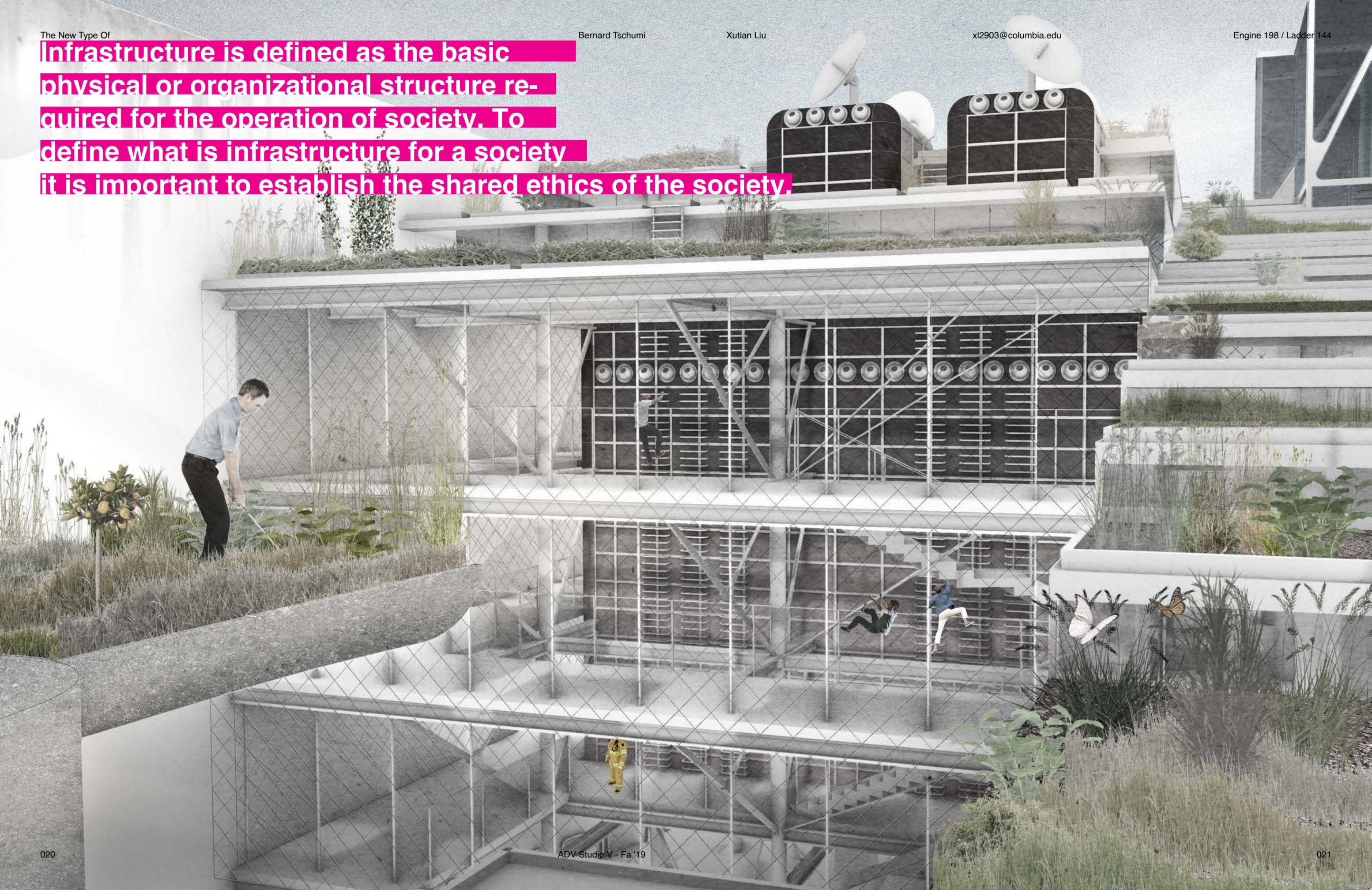


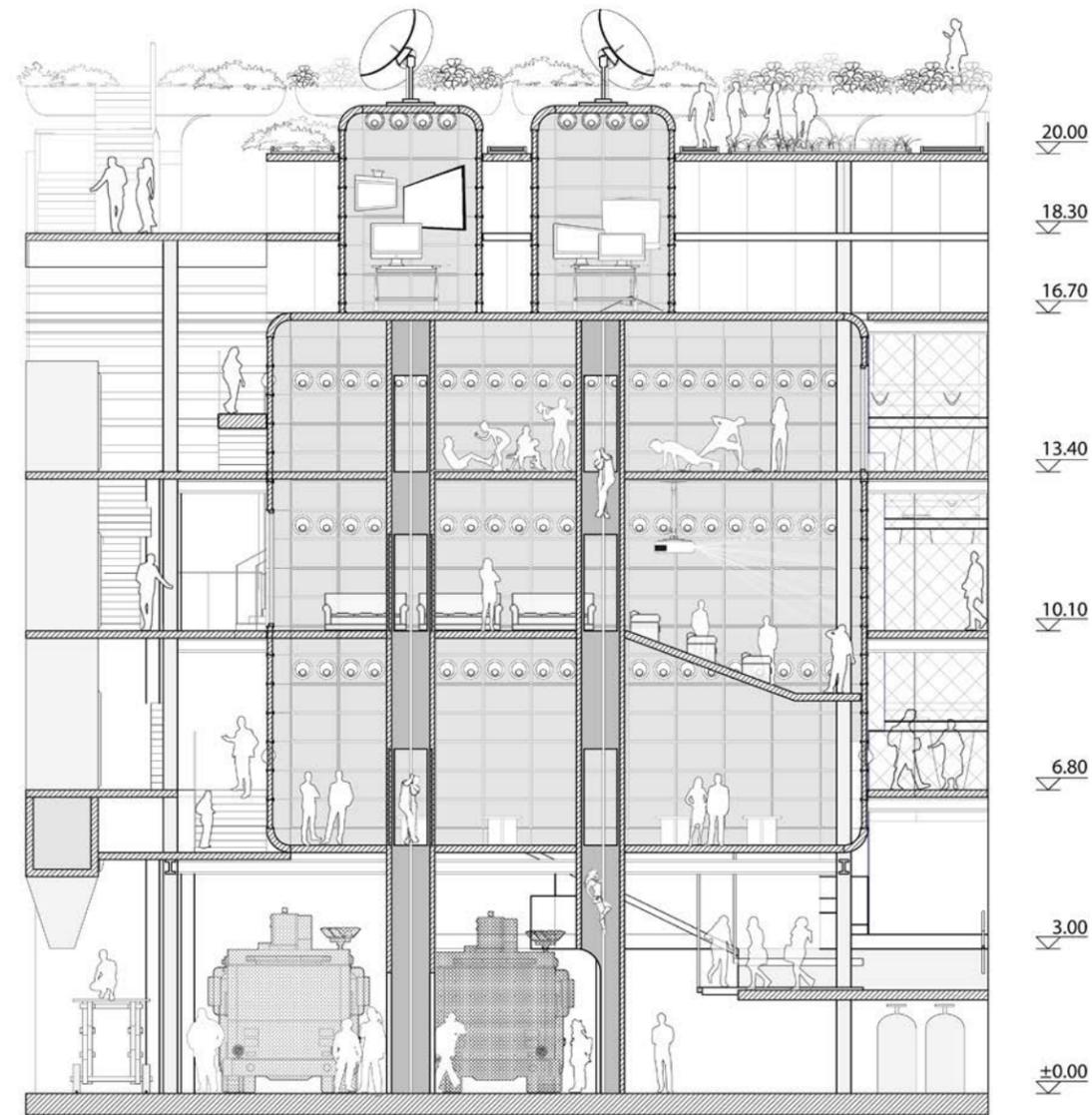
And since we start from designing infrastructure. And as for fire stations, they need large quantity of extinguishant, and sand and other material. could be liquid, could be gas and solid state. We also need to dealing with the the relationship between human and material.

Elevation: Functional Tanks with Possibility to Transform the Street into Operating Zone

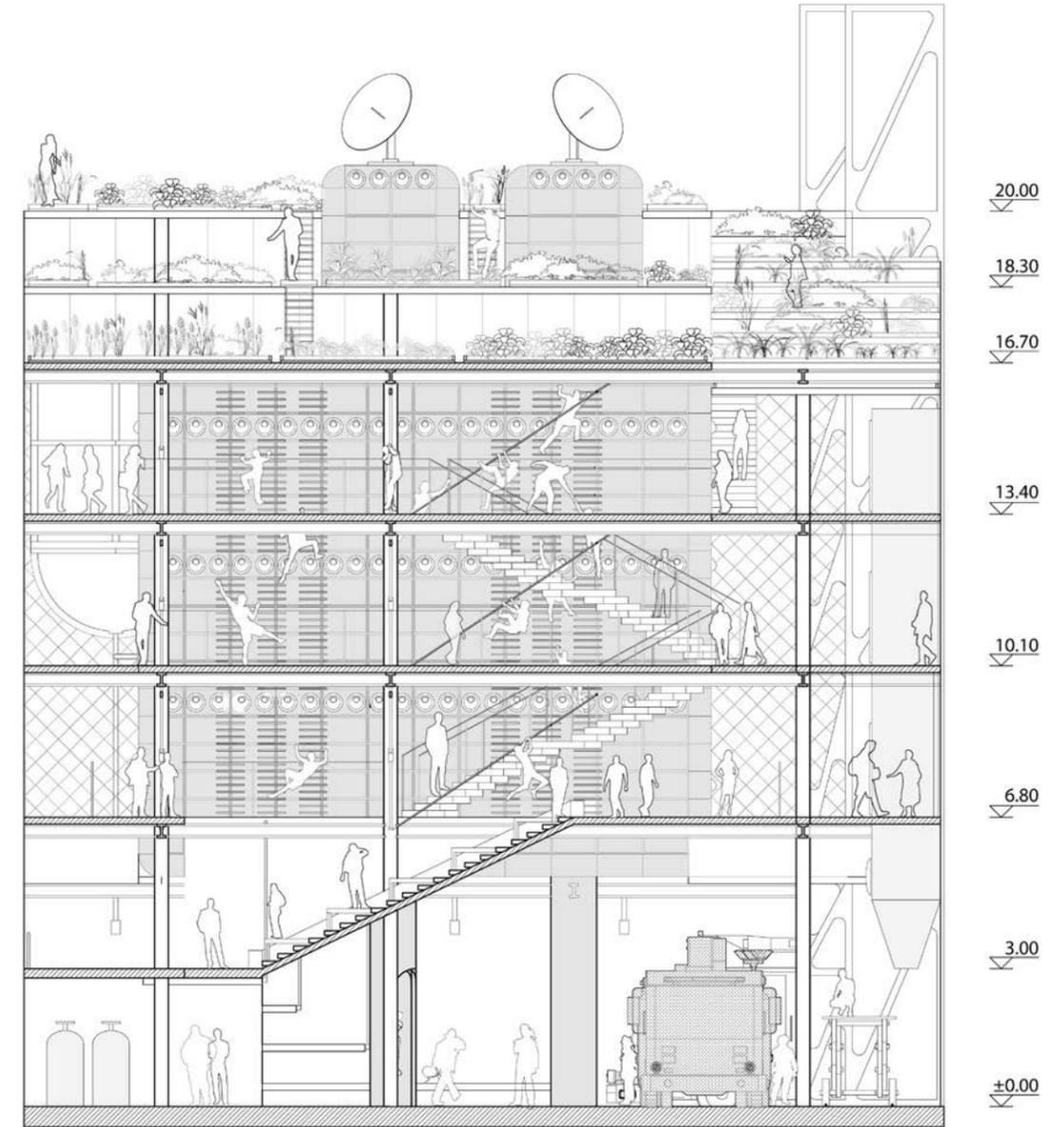


Infrastructure is defined as the basic physical or organizational structure required for the operation of society. To define what is infrastructure for a society it is important to establish the shared ethics of the society.

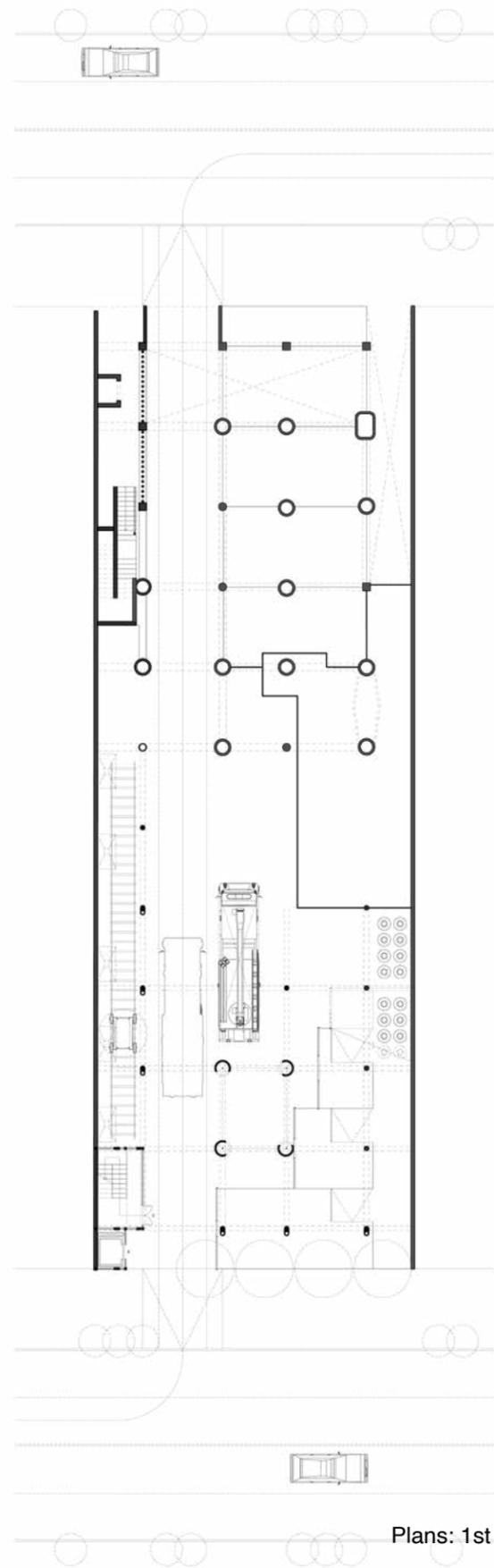




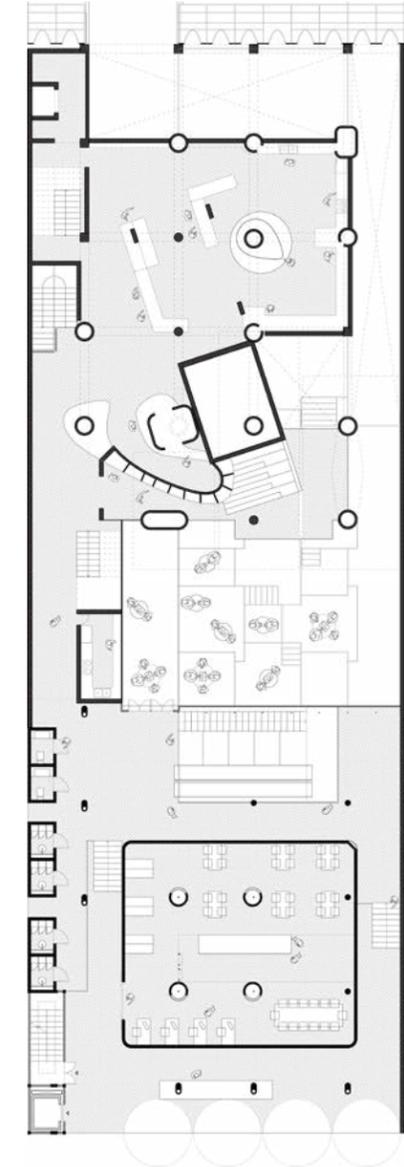
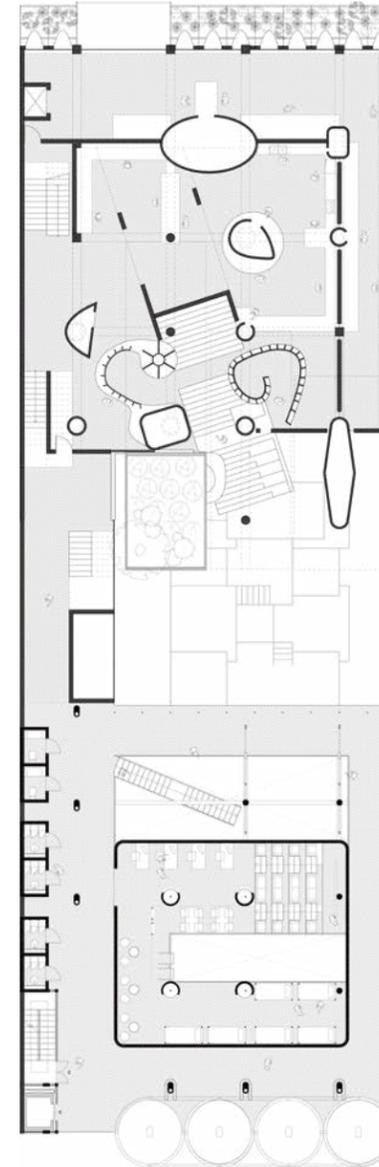
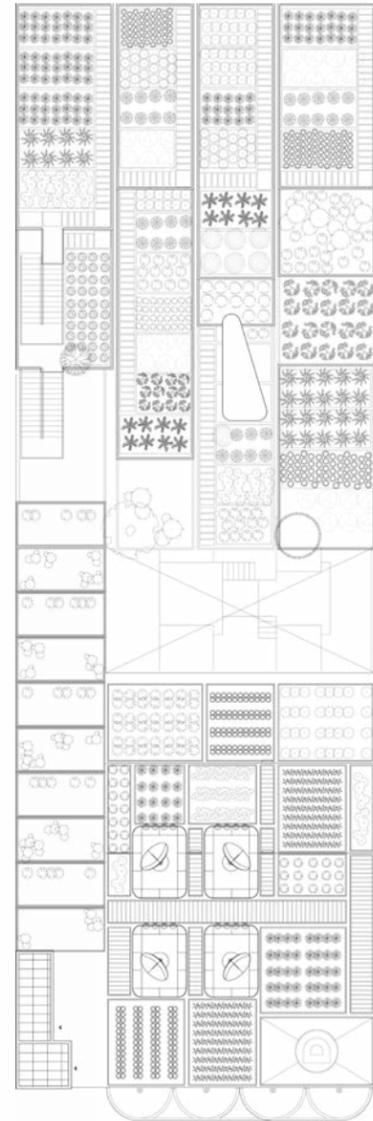
Section: the Professional Fire Station Space



Section: the Training Space

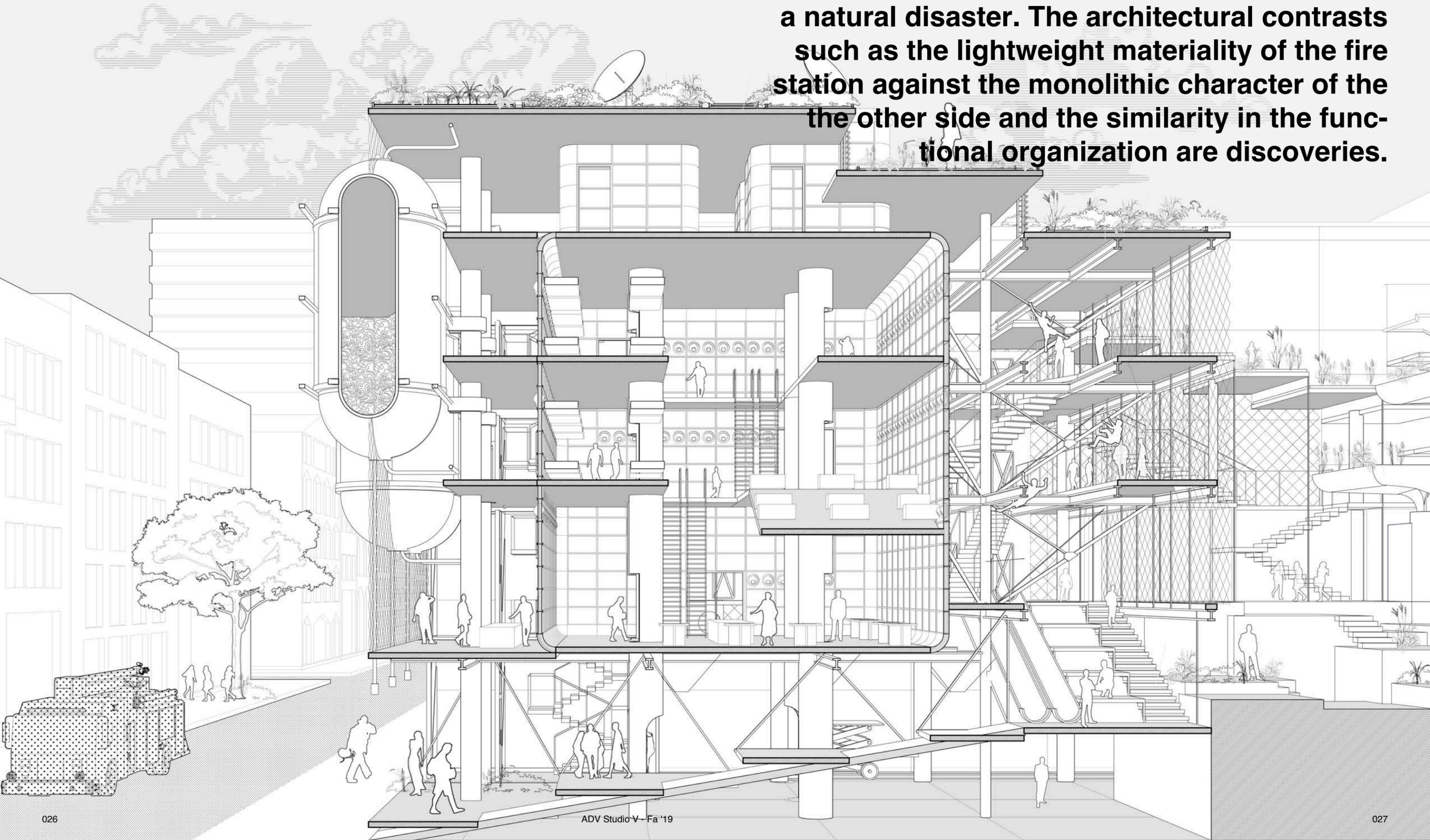


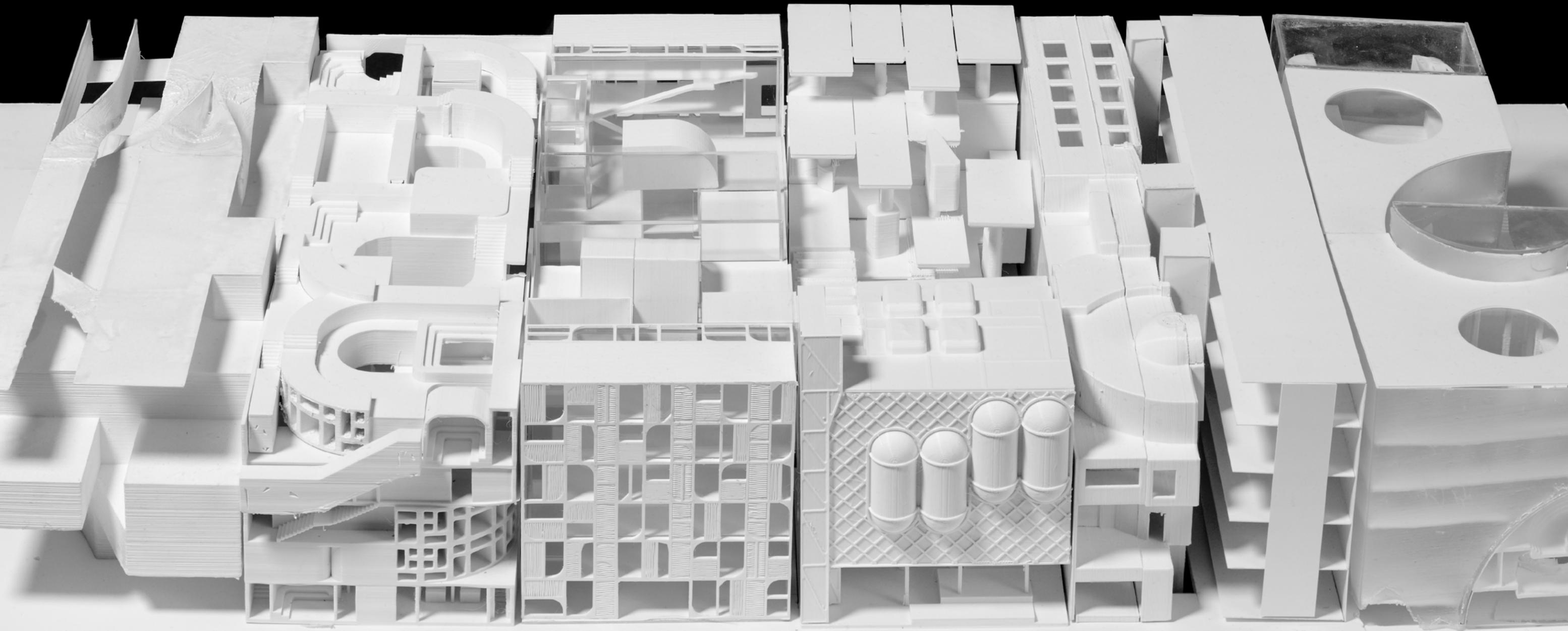
Plans: 1st Floor/ Roof

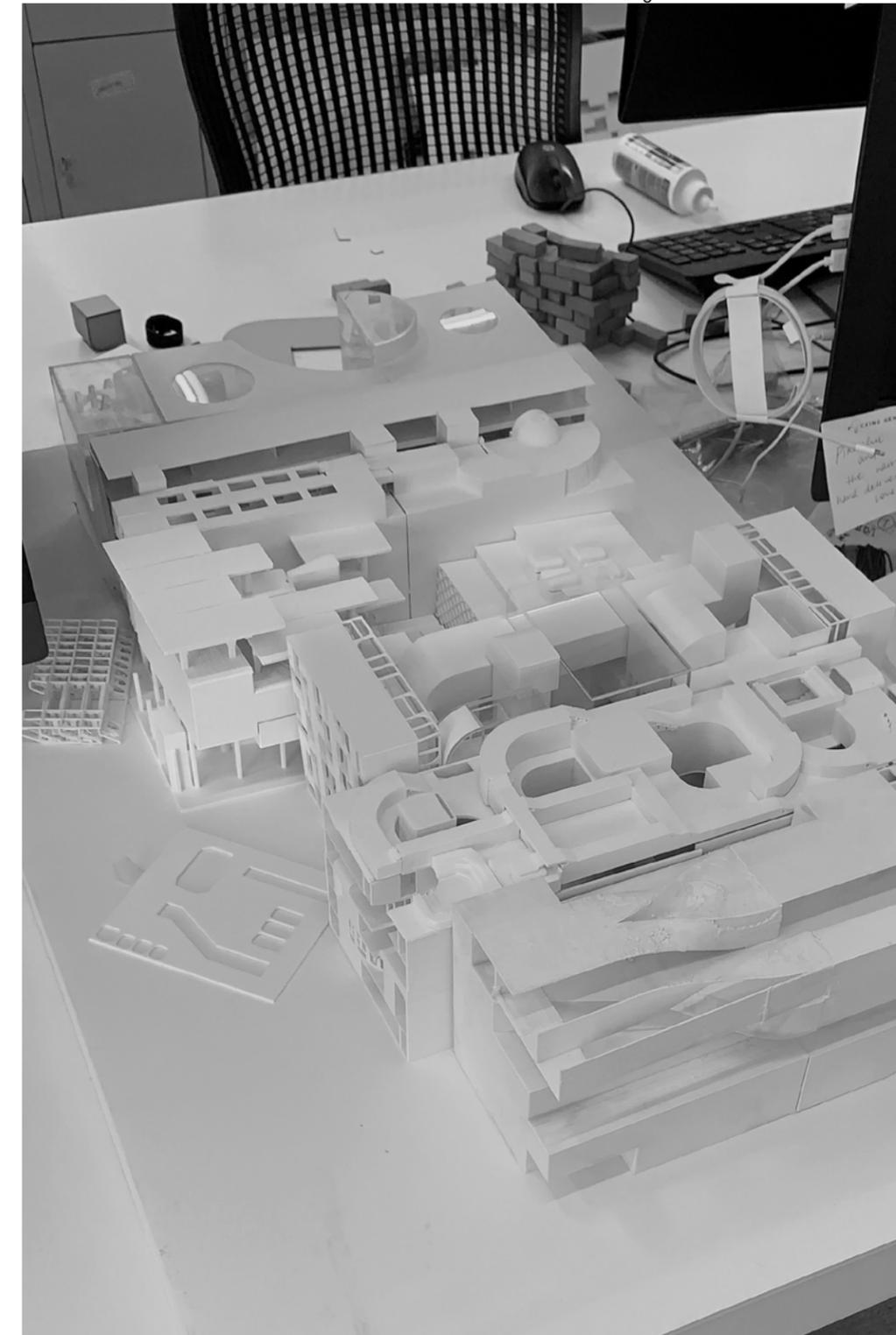
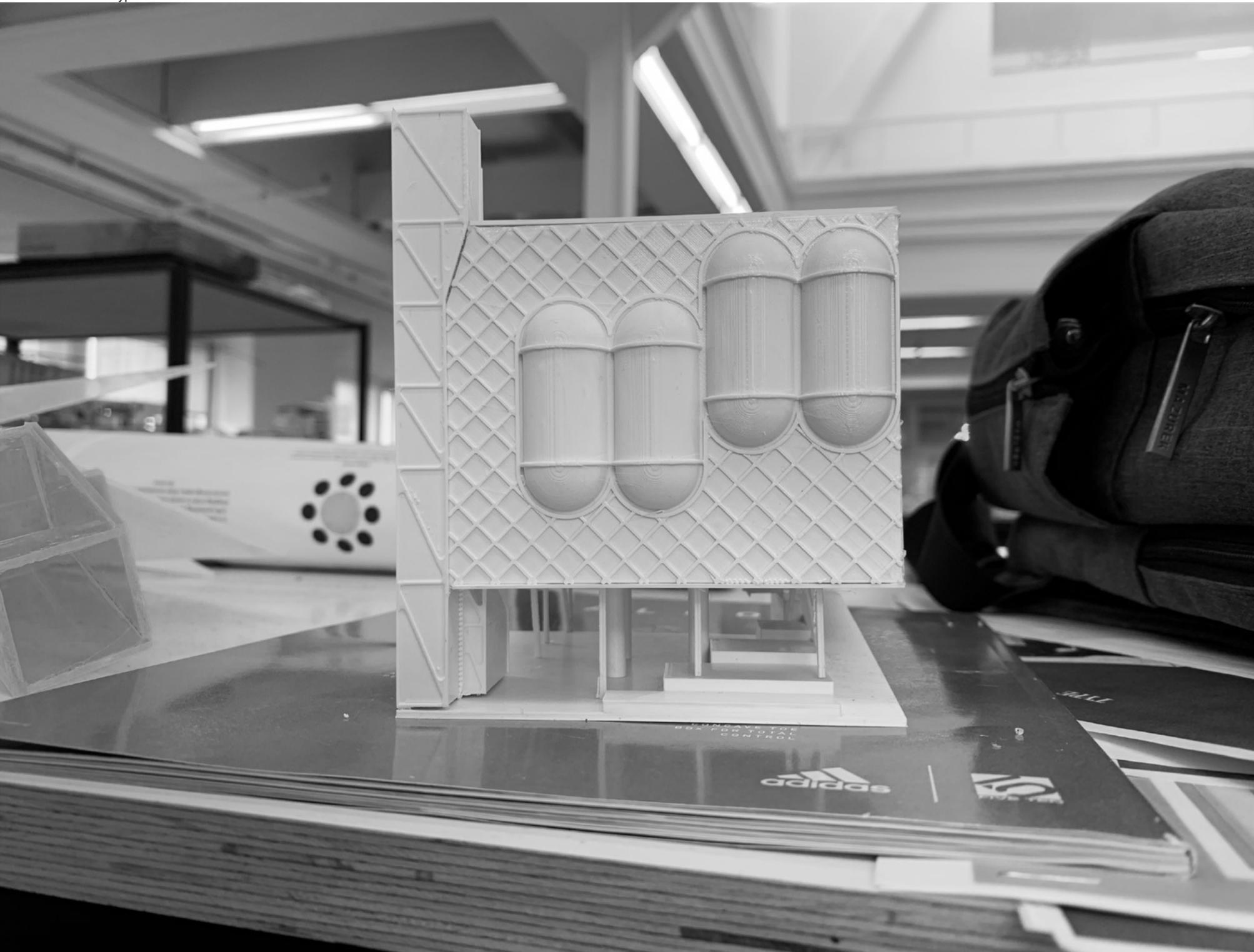


Plans: 2nd Floor/ 3rd Floor

The fire station acts as a safe space in case of a natural disaster. The architectural contrasts such as the lightweight materiality of the fire station against the monolithic character of the the other side and the similarity in the functional organization are discoveries.







In this way, the project is an attempt to give agency to architectural projects in changing the perception and role of infrastructure for the island of Manhattan.

Neo- Nomadic Garden

02

ARCHA4106_004_2020_1 ADV STUDIO VI

SOMETHING OF VALUE

Arguments for Architecture as a Value Proposition

Instructor: Galia Solomonoff

TA: Udit Goel

Semester: Spring 2020

Individual Work

Program: Music Related Mixed Use Office/Commercial Building

Site: London, UK

Music and Value

As human developing over thousand of years, we are on two ways, we go either physical reinforce or electronize. We use machine as an extension of body to be stronger physically, or we use computer to dematerialize, so that we can free the physical restriction.

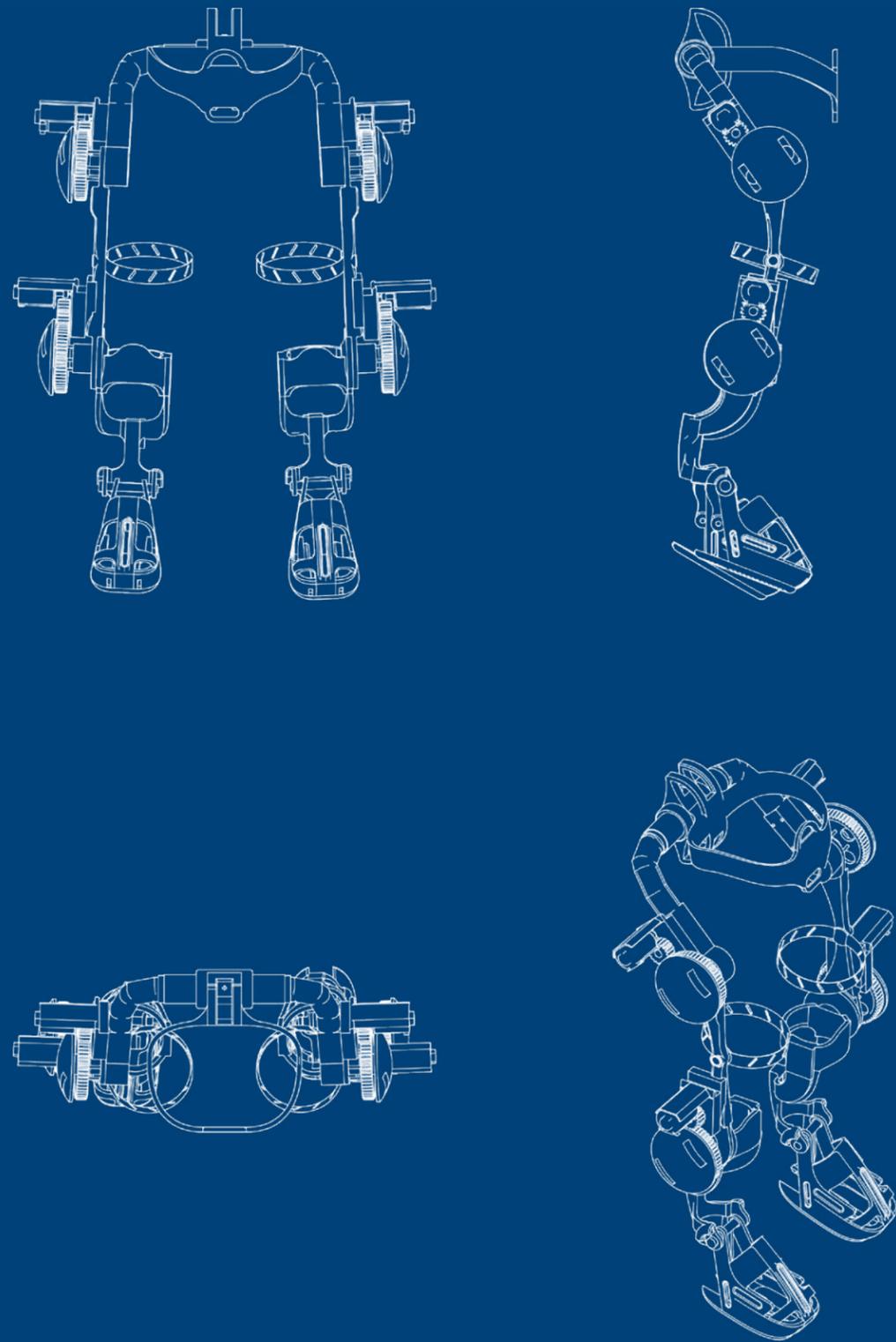
As for music, same thing is happening, we either want full sensory stimulation, sound, visual, temperature, touch, sweat. Or we strip everything down to a code, and we only preserve sound information.

So in this sense, the existence itself has value to human. This building can run as an institution to make money, to serve people as a place for full experience, and it is also a machine that create, preserve and send out the music as signal.



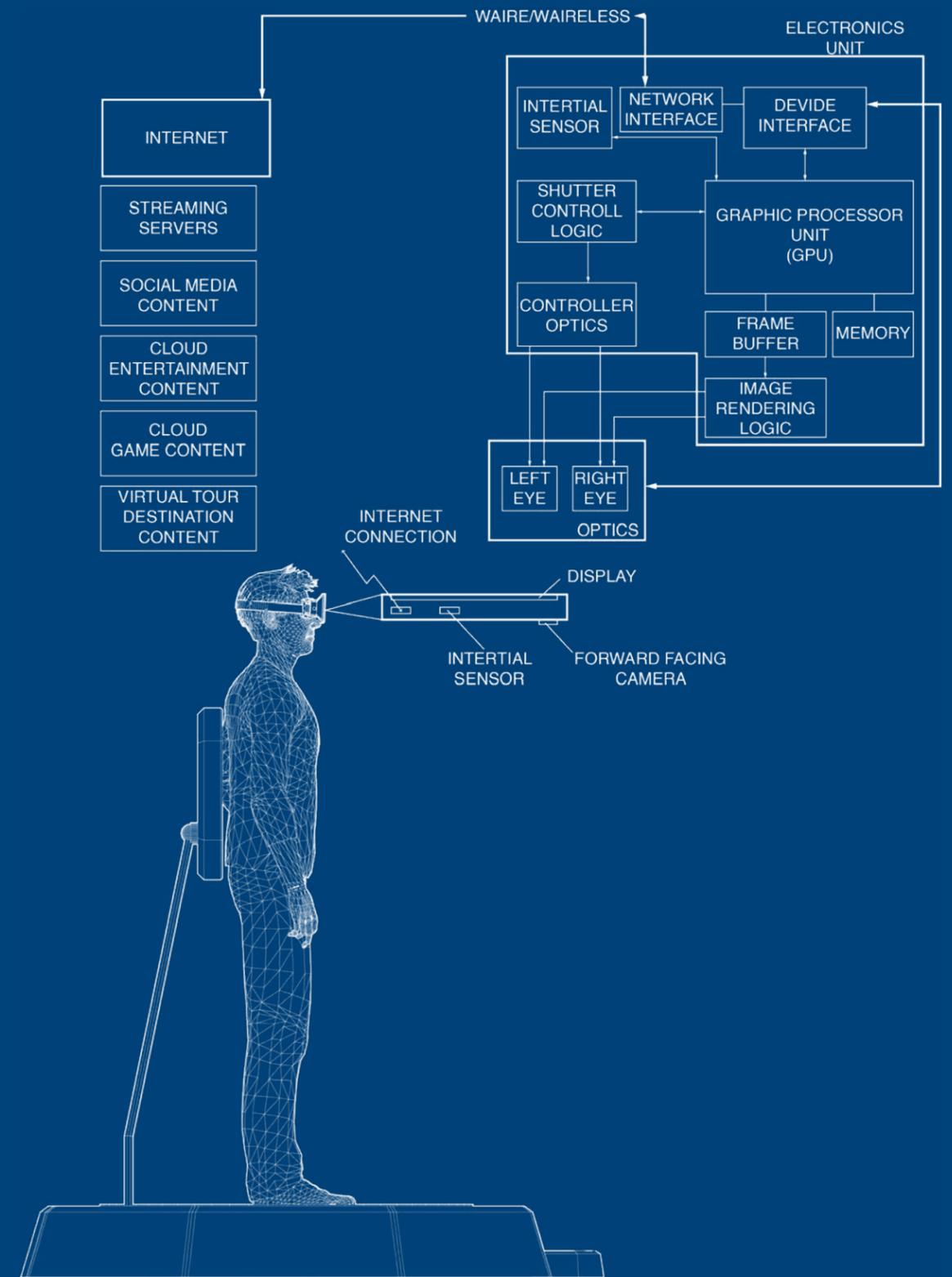
SITE LOCATION

PHYSICAL REINFORCE

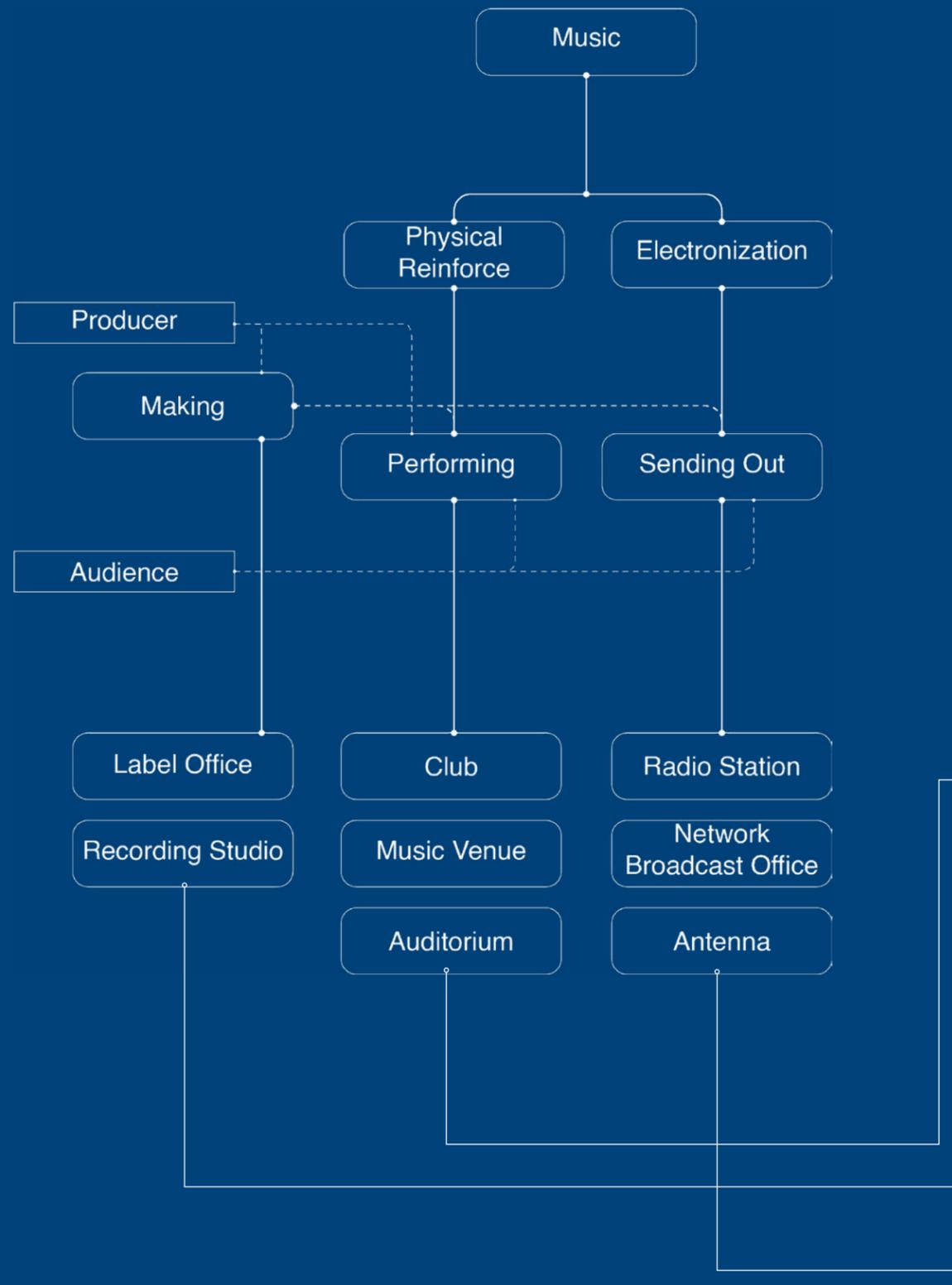


EXOSKELETON : the external skeleton that supports and protects an animal's body

ELECTRONIZATION



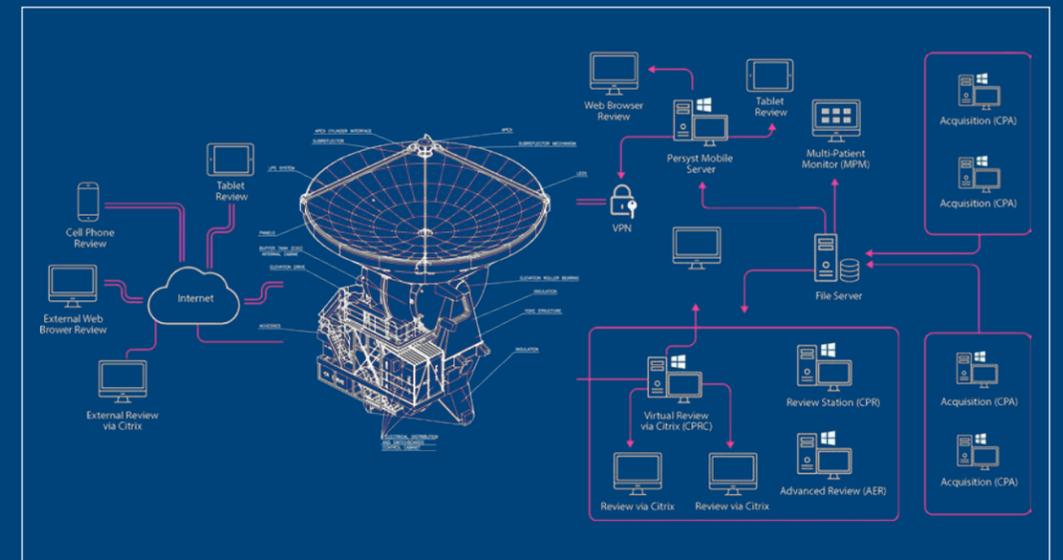
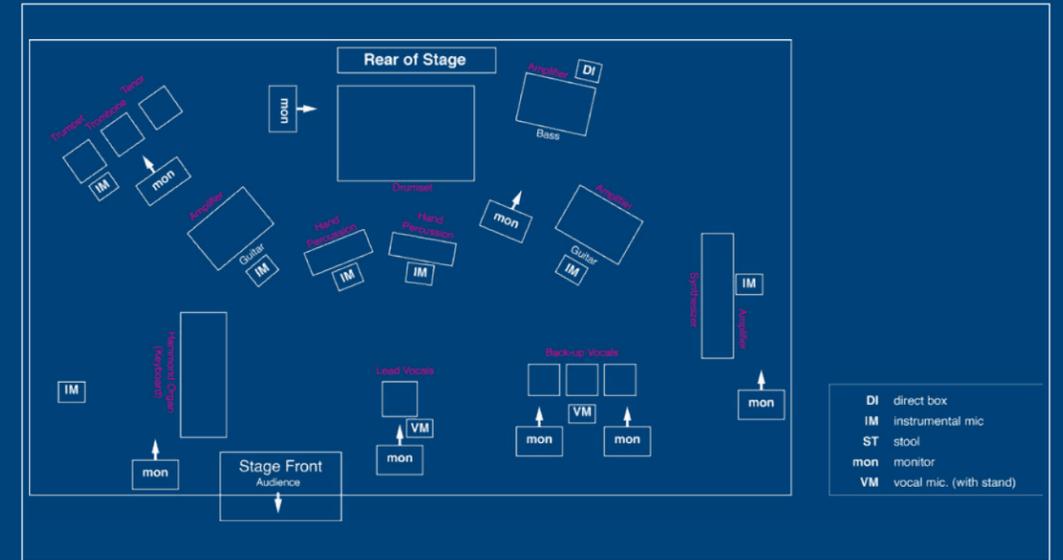
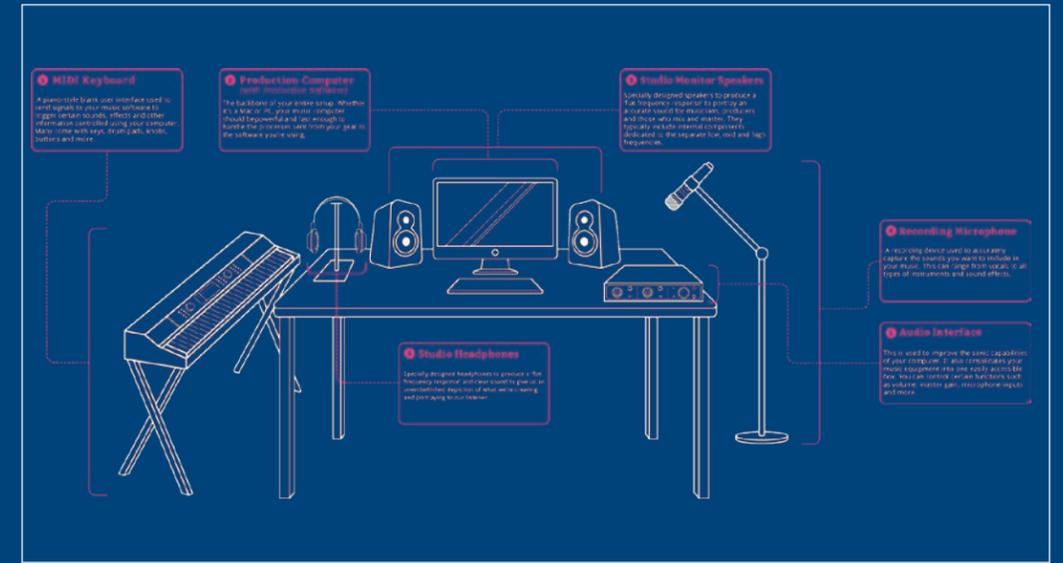
Virtual Reality System

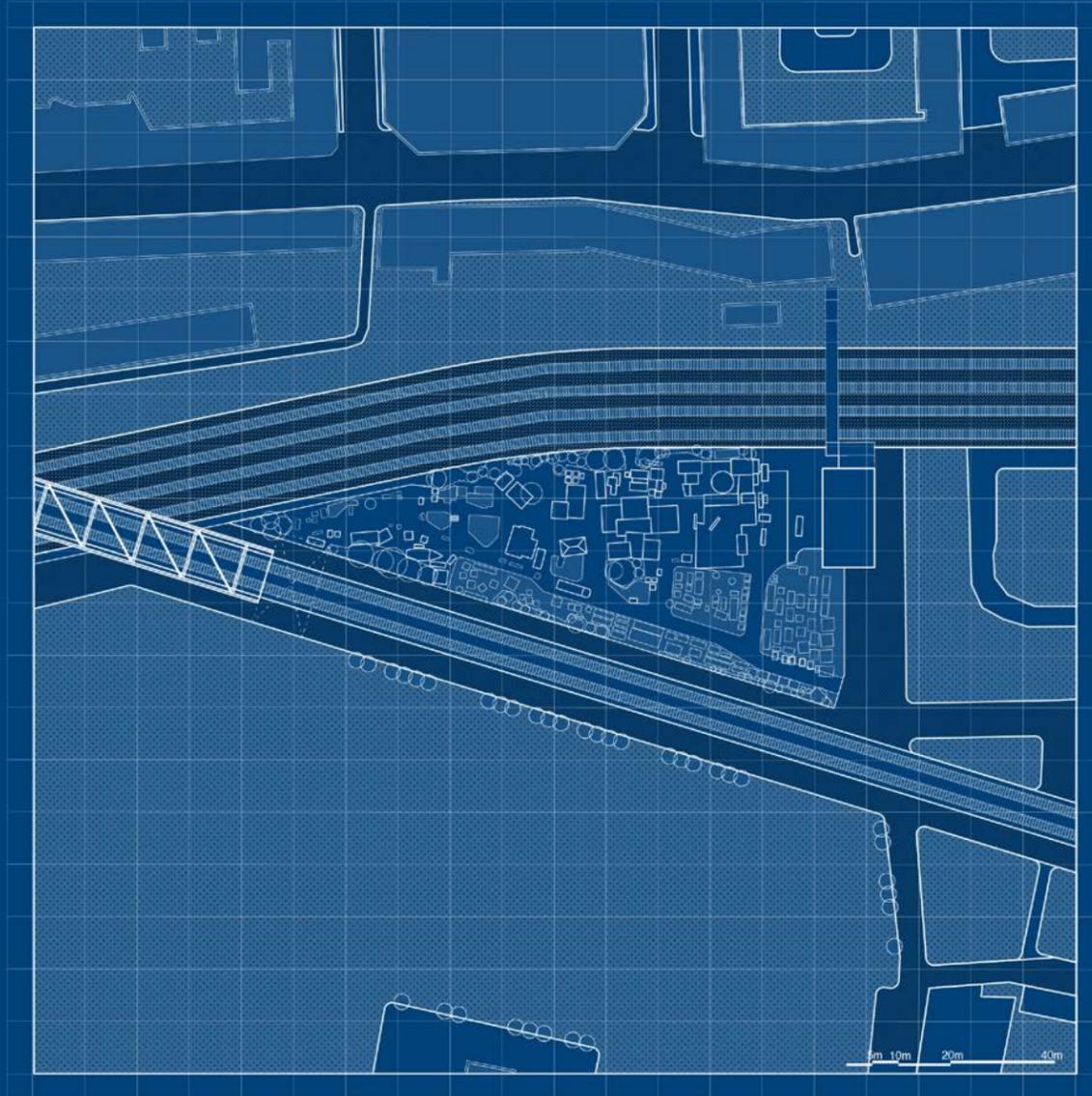


→ Making

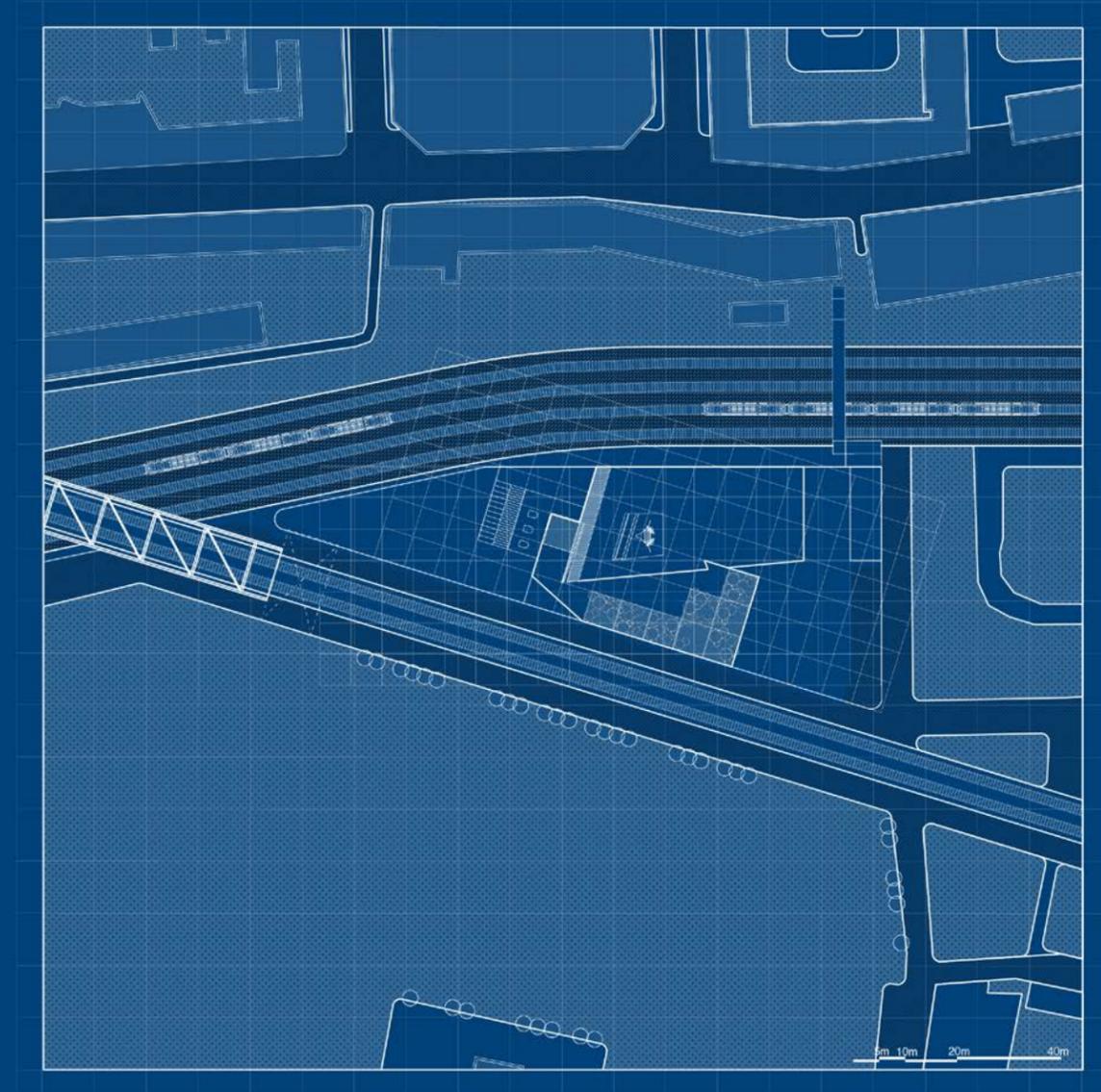
→ Performing

→ Sending Out

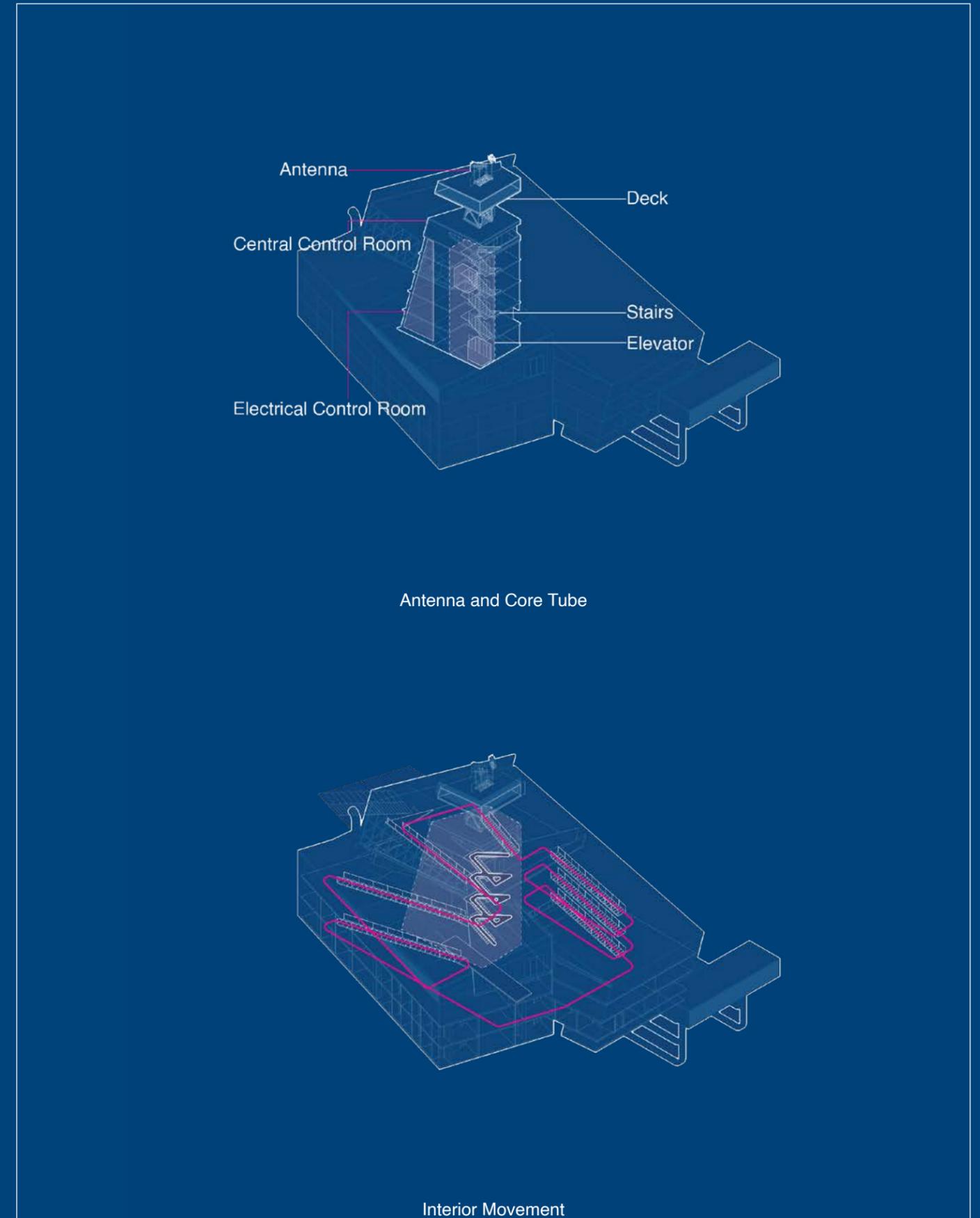
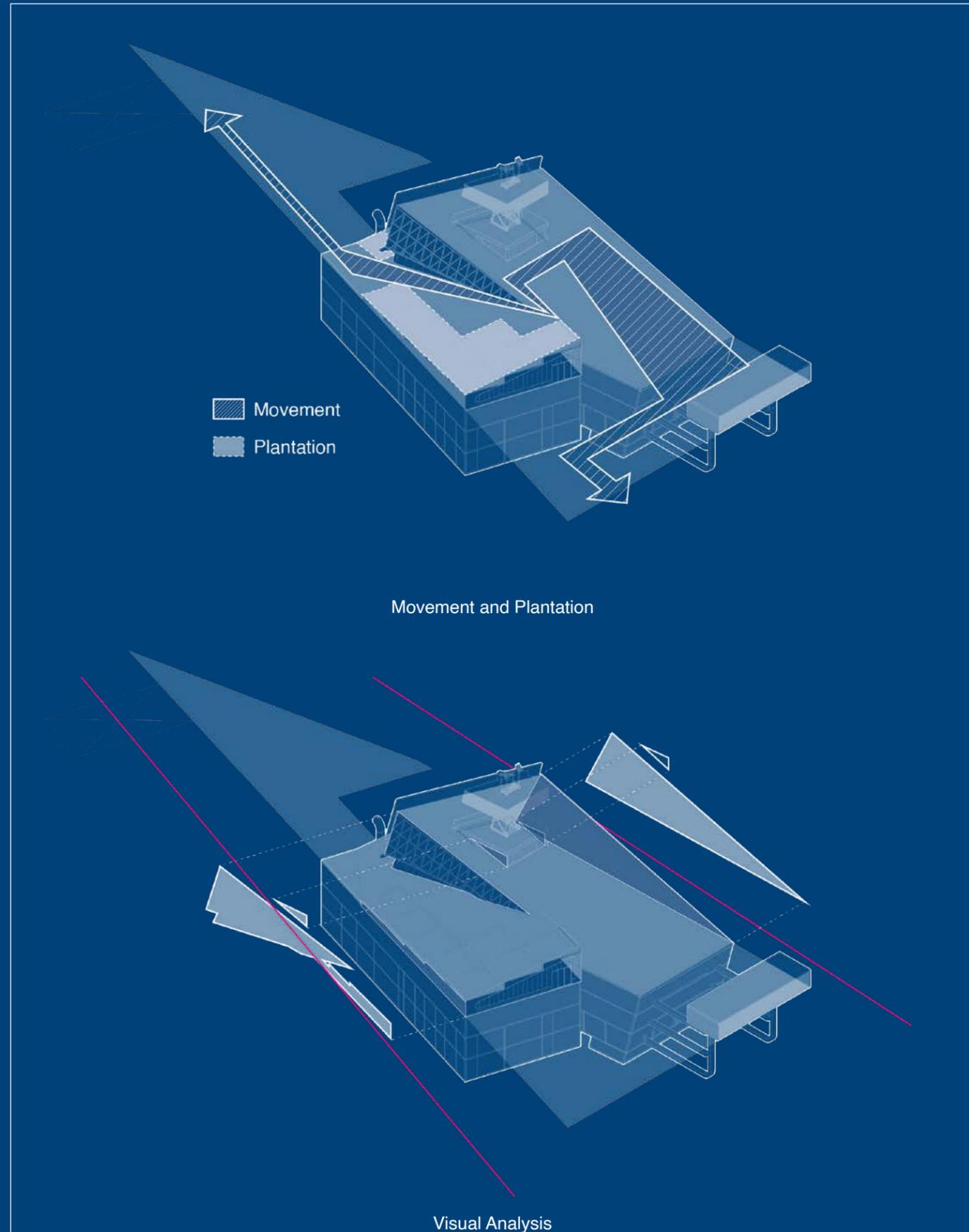




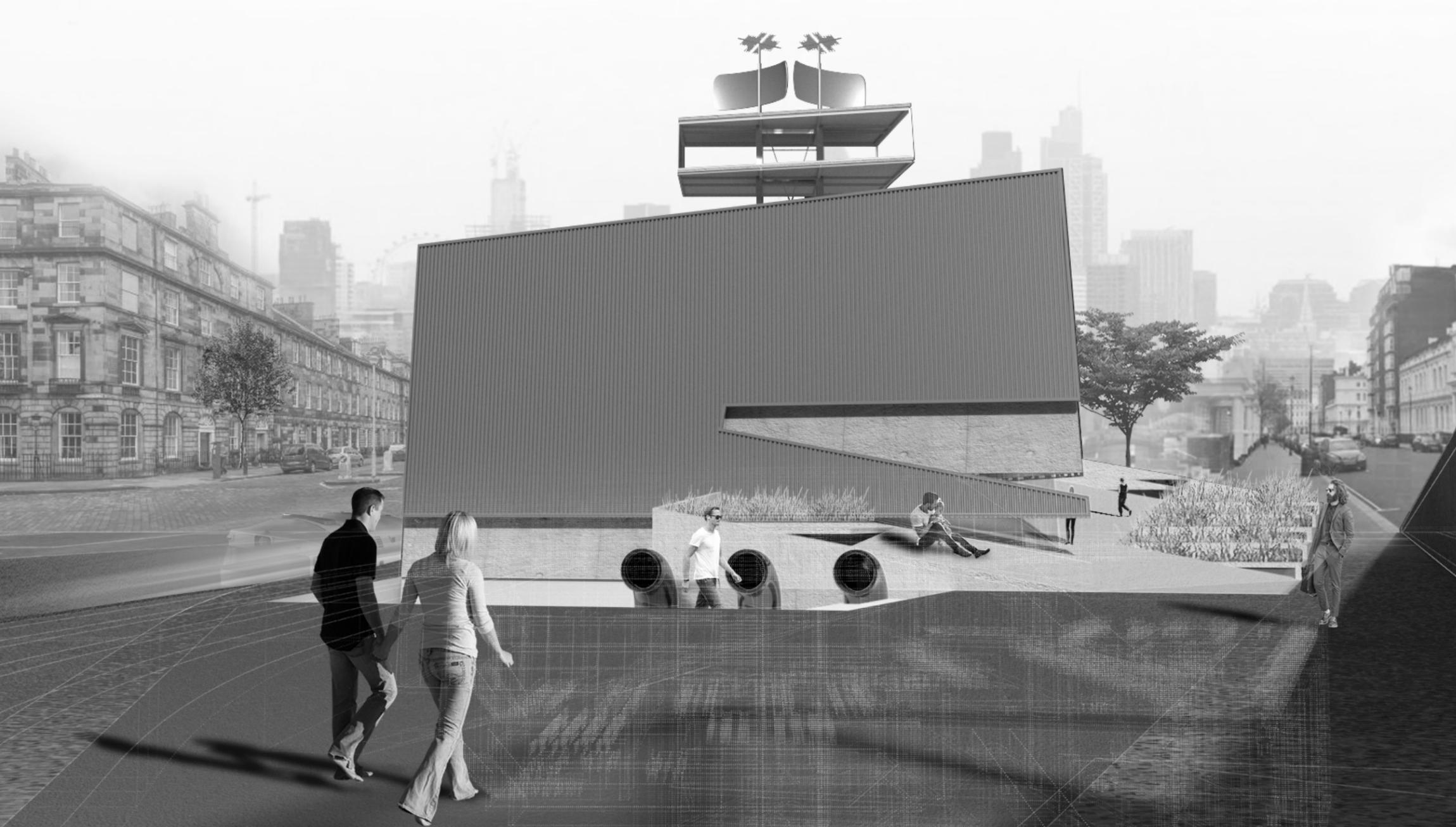
ORIGINAL SITE PLAN: NORMADIC COMMUNITY GARDEN



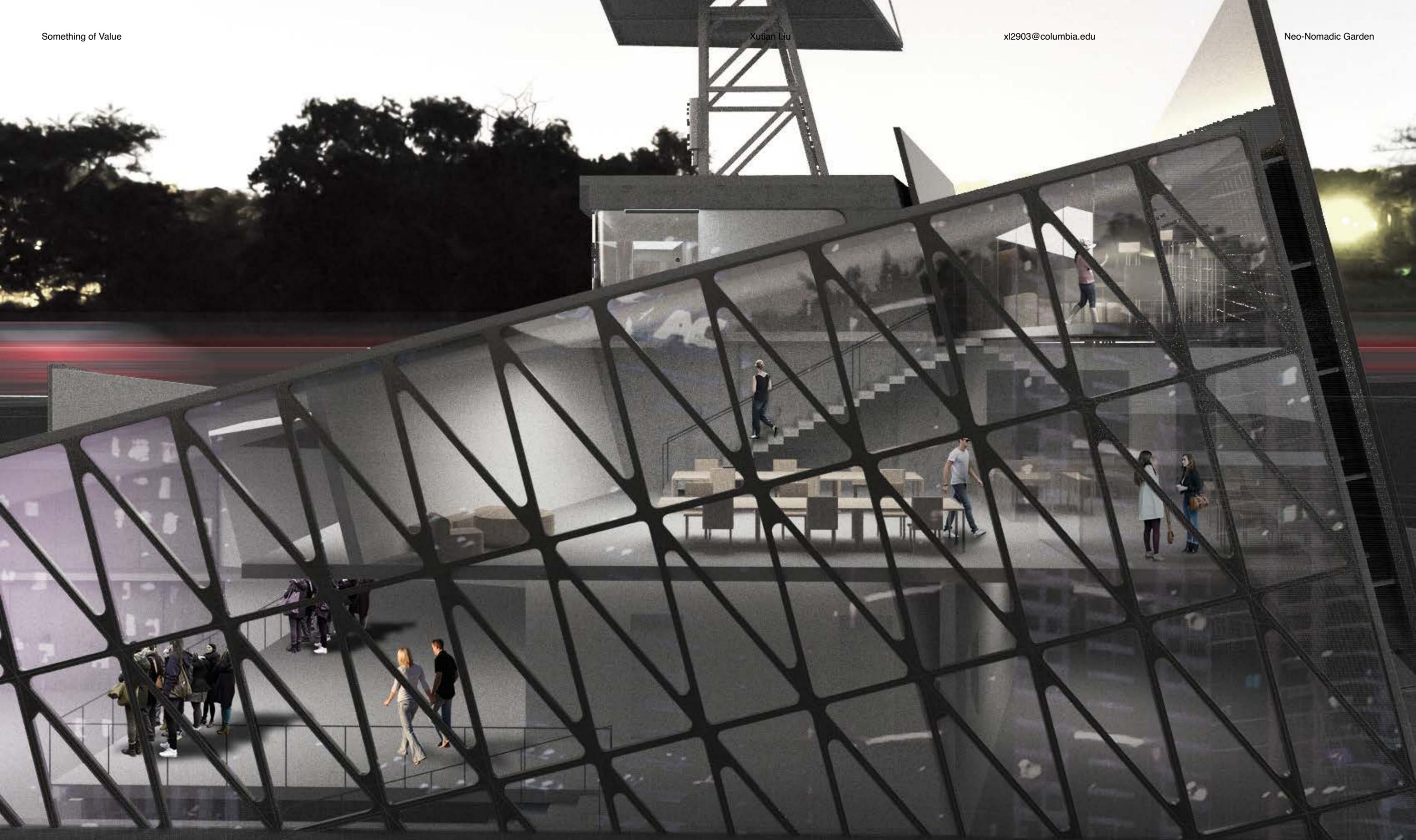
SITE PLAN

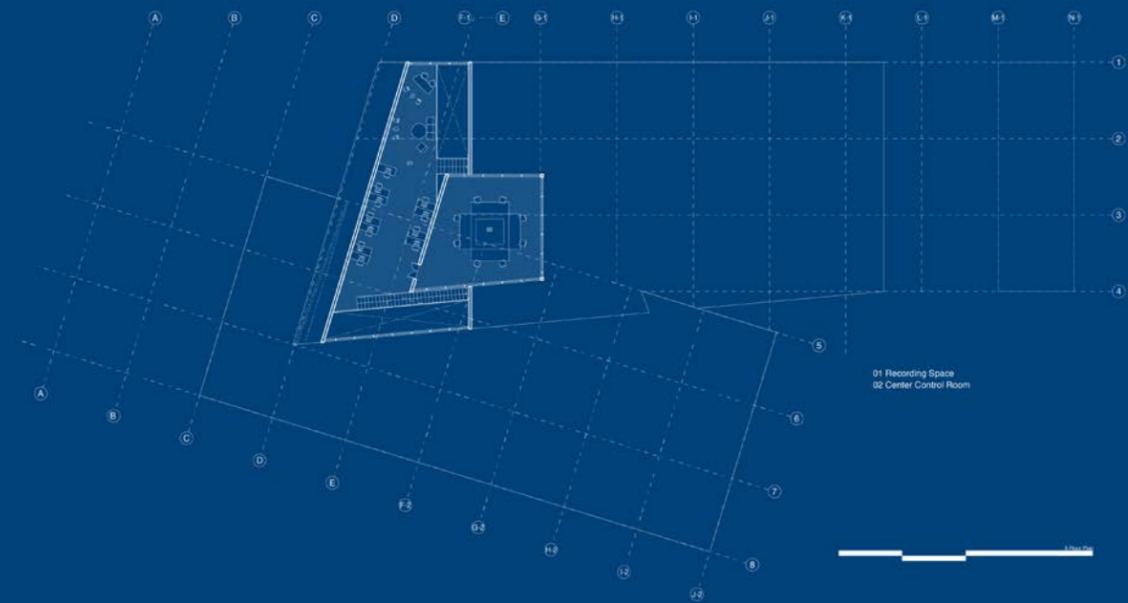


The hipster culture is being attacked by multiple reasons including safety issue by itself and bias by other people and government, also the raise of land price

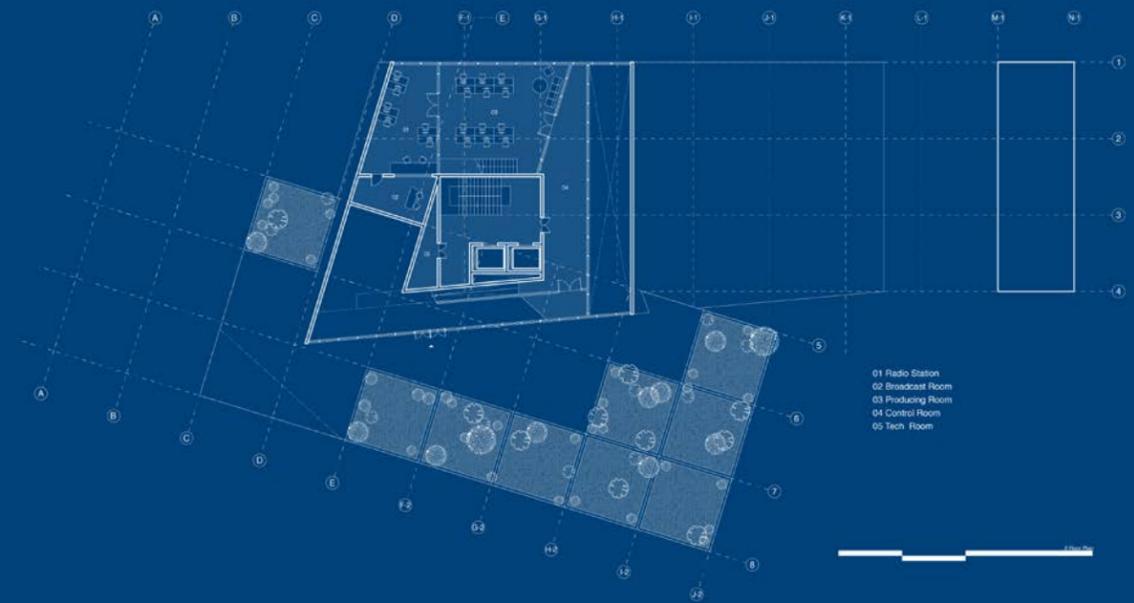


So the hipster culture need an permanent shelter where people can be creative and get inspired be each other. That's why we have this discreet Music Venue Designed here.

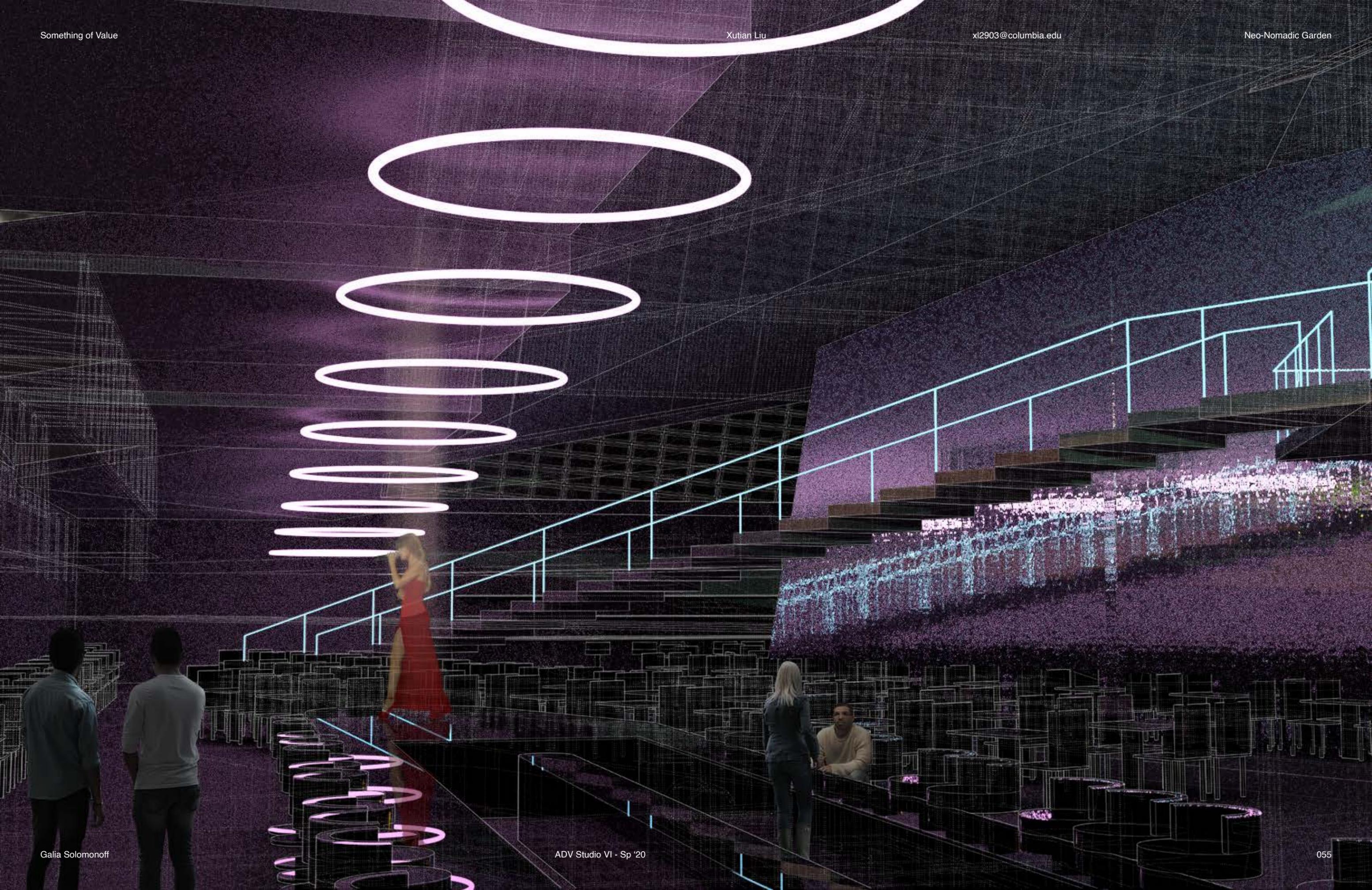




3rd Floor Plan

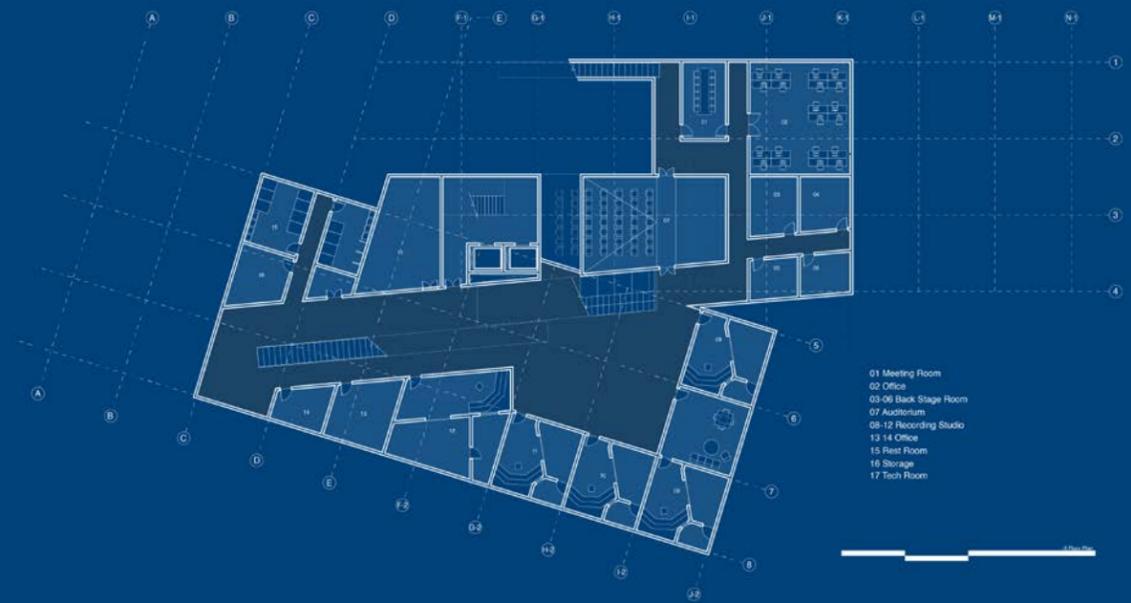


2nd Floor Plan



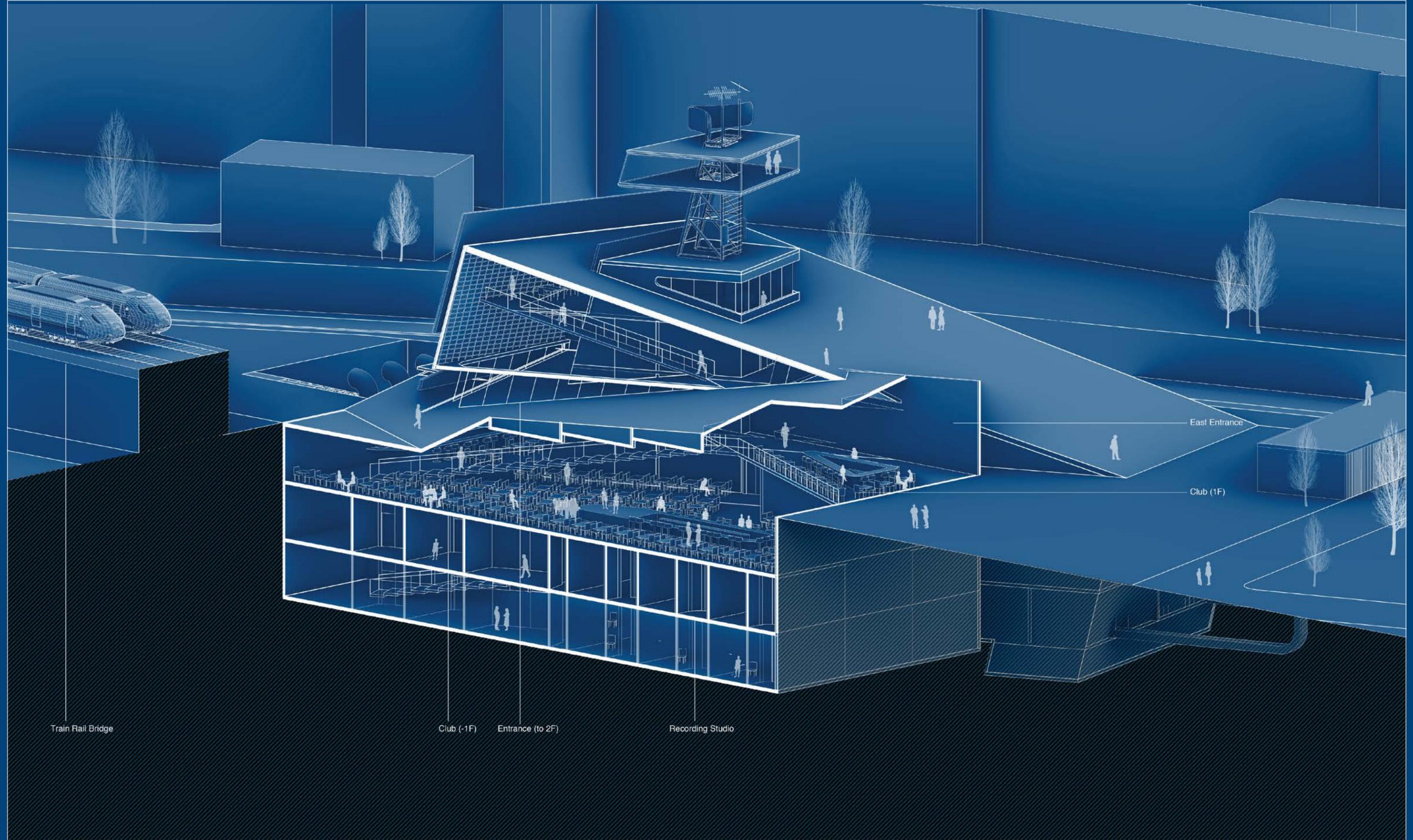


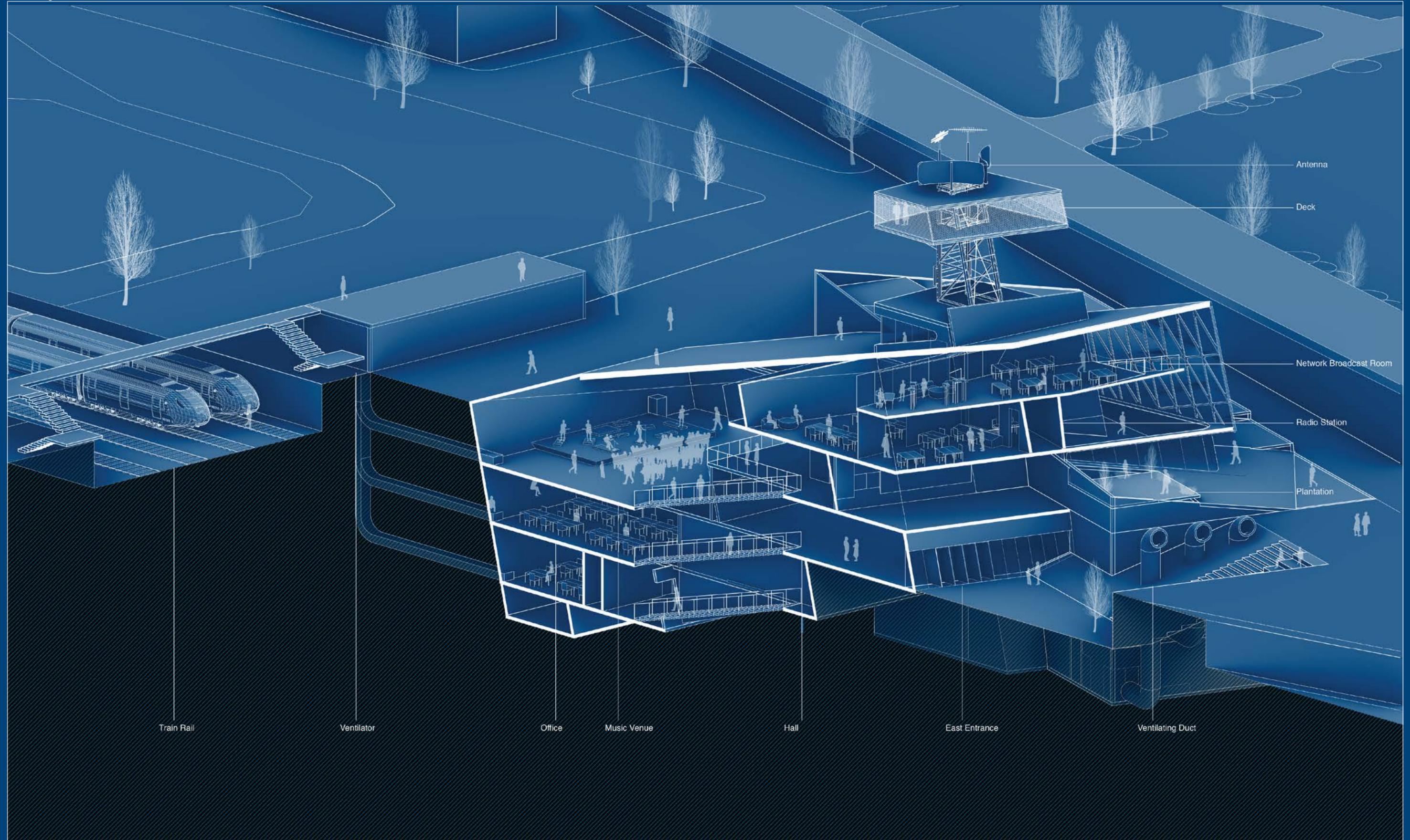
-2nd Floor Plan



-3rd Floor Plan







Train Rail

Ventilator

Office

Music Venue

Hall

East Entrance

Ventilating Duct

Antenna

Deck

Network Broadcast Room

Radio Station

Plantation

Speculated Future Story Exchange Fair

03

ARCHA4853_009_2019_2 ADV ARCH STUDIO

MARKET VALUES:

New Economies for New York

Instructor: Tei Carpenter

TA: Marylynn Pauline Antaki

Semester: Summer 2019

Collaborator: Feibai An

Program: Story Trade Market

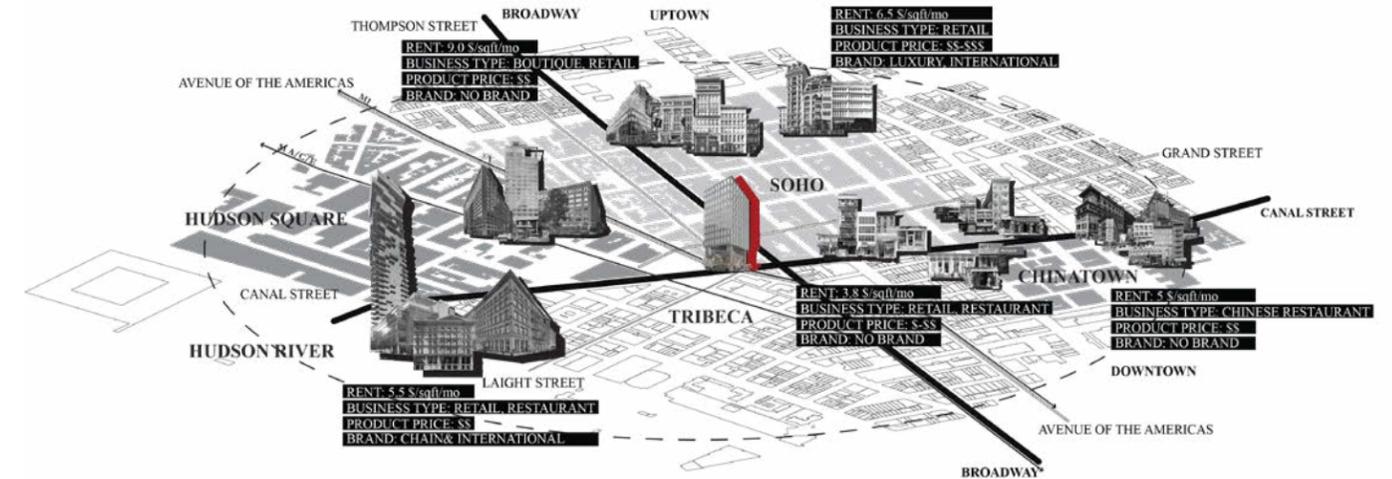
Site: New York City, New York

Value And Future

This studio designs sites of transaction and exchange—a marketplace—as a way to reflect upon its corresponding new societies.

The dominant mode of unchecked capital accumulation and economic growth has had accelerating effects on climate crisis, carbon emissions, resource extraction, and encouraged a culture of discard. To that end, increased social inequity, overconsumption, overconnection, and political disinformation have impacted peoples’ anxiety, happiness and sense of belonging. But this mode of living has reached exhaustion. Using the power of speculative design, borrowed from practitioners like Dunne & Raby, we imagine and visualize a marketplace with new economies that suggest shifts in behavior and attitudes for an alternative model of society.

Building on case study research to assemble a dossier of social models and organizations, we develop a future-oriented and speculative design for a marketplace in New York City as a manifestation and index for a new economy and value system that it facilitates.



SITE ANALYSIS

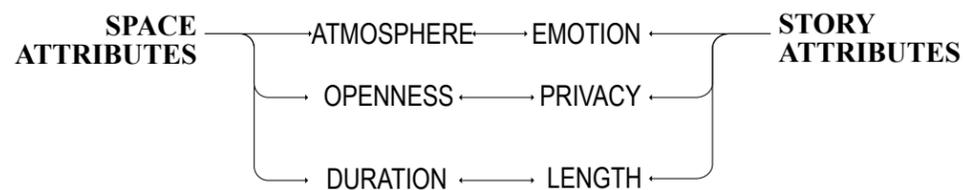


Pore, opta qui alignatemo to doluptatem. Umqui nonsequia consequasite porendaecea es el inciasp elluptaquat volupturUciissundisi si cum quas estions equoditaque esequiam iduscipsam fugitasi-nus dio berum exerum



AVL Ville.
A free artists community. Artists there lived without rules and they could do anything they want. No matter how the society operates, people have the right to choose what they want.

WHAT KIND OF FEATURE IN SPACE DO WE WANT TO CONTROL?



EMOTION *POSITIVE POSITIVE-NEUTRAL NEUTRAL NEGATIVE-NEUTRAL NEGATIVE*

ATMOSPHERE					
<i>LIGHT</i>					
<i>COLO</i>					
<i>MATERIAL</i>					
<i>HARDNESS</i>					

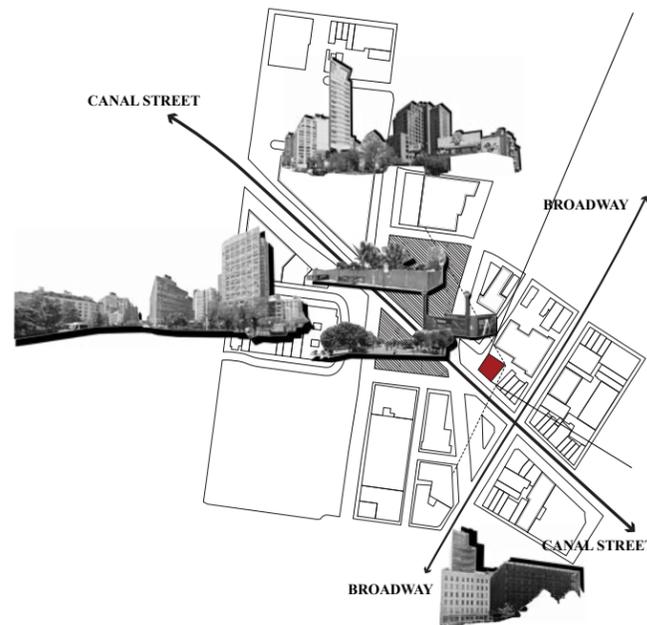
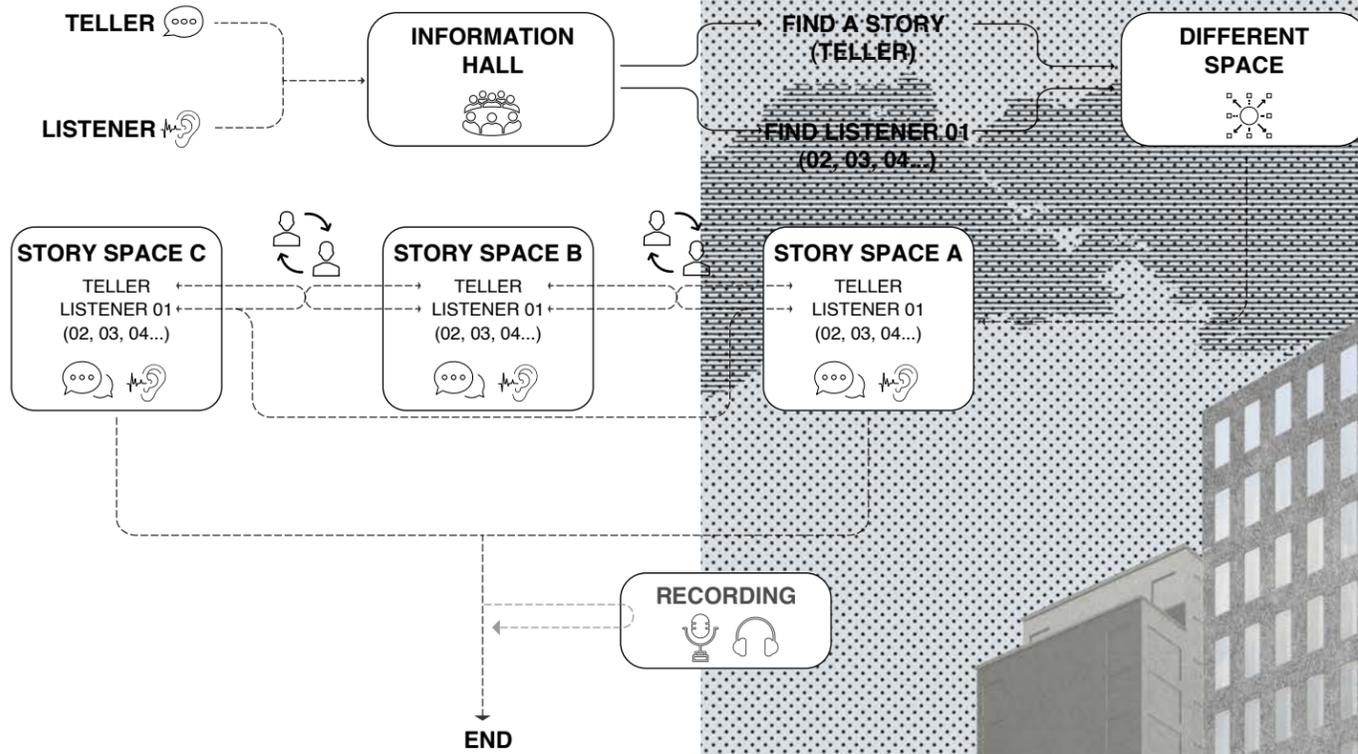
OPENNESS *PRIVACY SHAREABLE SHAREABLE-NEUTRAL NEUTRAL PRIVATE-NEUTRAL PRIVATE*

ENCLOSURE					
PENETRABILITY					

RETENTION/DURATION *LENGTH SHORT SHORT-MEDIUM MEDIUM LONG-MEDIUM LONG*

AREA					
ACCESSIBILITY					

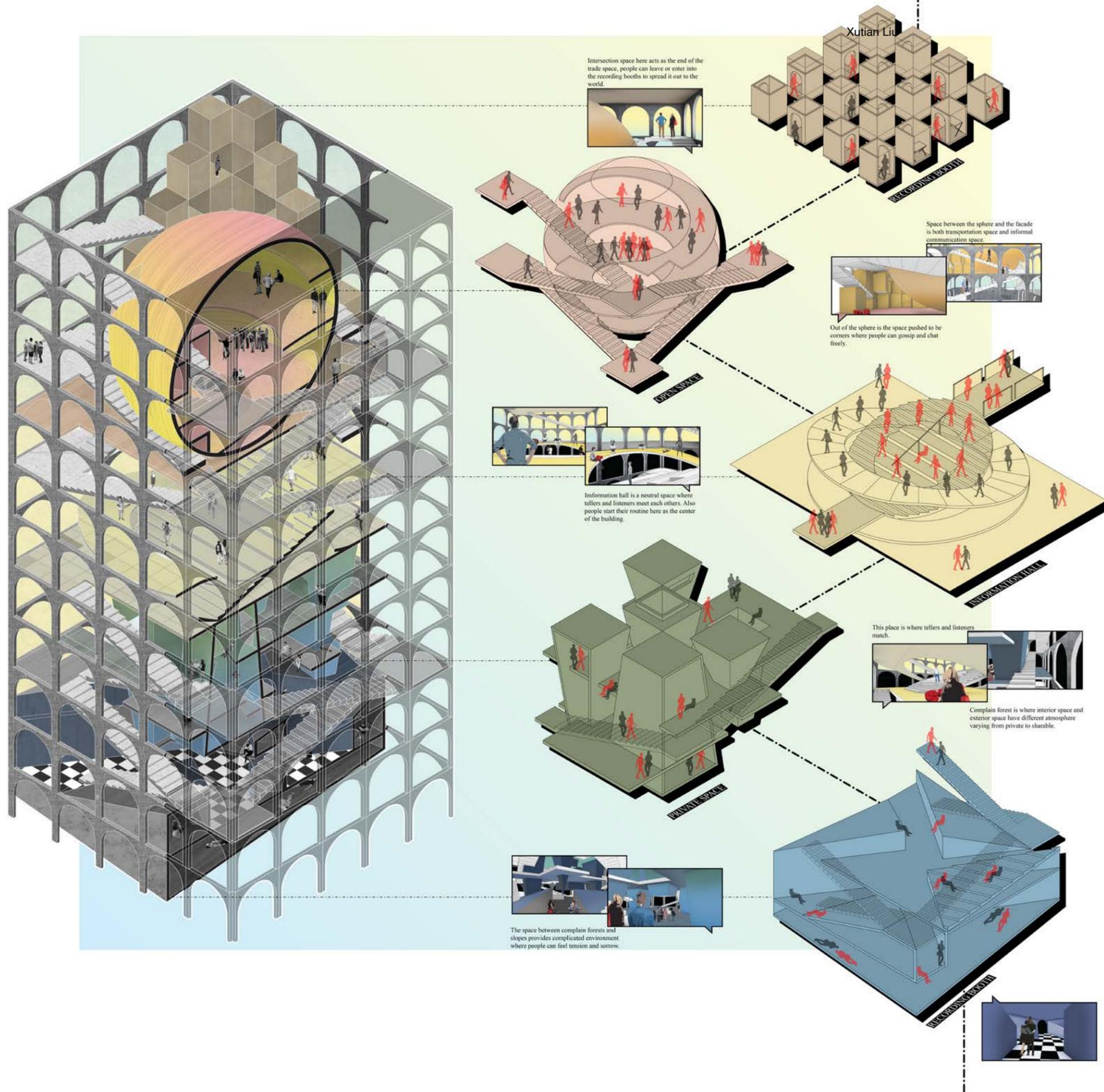
	<i>TELLER</i>	<i>TELLER'S MOTIVATION</i>	<i>LISTENER</i>	<i>LISTENER'S MOTIVATION</i>
PLEASURES	HAPPY EXCITING VAIN PRAISE-WANTING	SHARE HAPPINESS GET COMPLIMENTS SHOW OFF	HAPPY SAD WORRYING DESPRESSED GENEROUS FRIENDLY COMPARATIVE	FEEL HAPPINESS GIVE COMPLIMENTS COMPARE WITH OTHERS
SORROWS	SAD WORRYING HOPELESS SYMPATHETIC	POUR OUT GET HELP / COMFORT RENDER A TRAGEDY	KIND HELPFUL WILLING TO LISTEN COMPARATIVE EMPATHETIC	HARKEN GIVE HELP / COMFORT GET MENTAL BALANCE
SECRETS	CLANDESTINE ANXIOUS FURUTIVE SLY	GET RELIEF GET EXCITEMENT GET JUDGEMENT	TIGHT-LIPPED QUIZZY PRYING SNOOPY	GET SATISFACTION GIVE JUDGEMENT
GOSSIPS	GOSSIPY TALKTIVE EAVESDROPPING BLABBERMOUTH	GET RELIEF PROPAGANDA INDUCE JUDGEMENT	GOSSIPY EAVESDROPPING CRITICAL SNOOPY	GET SATISFACTION MAKE JUDGEMENT
CONFESIONS	GUILTY SELF-CONDEMNED ASHAMED	POUR OUT GET INNER PEACE GET INSTRUCTIONS GET FORGIVENESS	HELPFUL COMPASSIONATE FORGIVING WISE INTROSPECTIVE SNOOPY	GIVE COMFORT GIVE INSTRUCTIONS GET INTROSPECTION
COMPLAINTS	WHINY QUERULOUS WORRYING	POUR OUT GET RELIEF GET EMPATHY	TOLERANT WHINY HELPFUL WISE	HARKEN GIVE SUGGESTIONS JOIN THE COMPLAIN
NONSENSE	TALKTIVE LONELY BORED IDLE	TALK SPEND TIME ALLEVIATE LONELINESS	LONELY BORED IDLE	LISTEN SPEND TIME ALLEVIATE LONELINESS



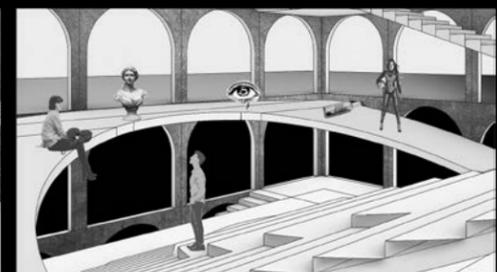
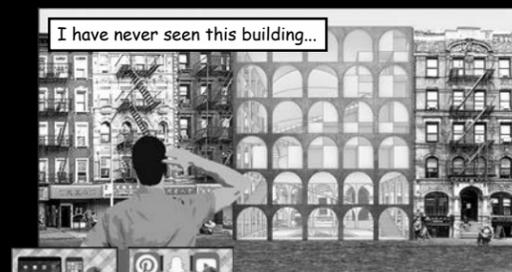
HISTORICAL LOOK

- SITE
- OPEN SPACE
- SITE
- HEIGHT>50M

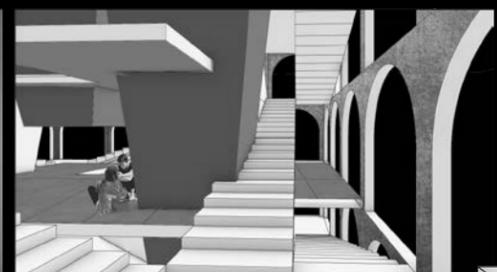
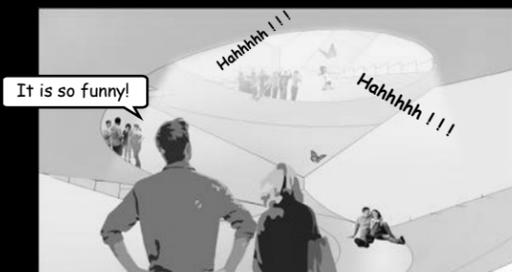
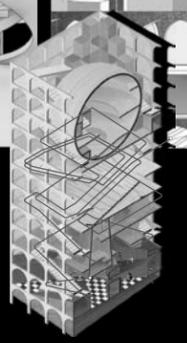
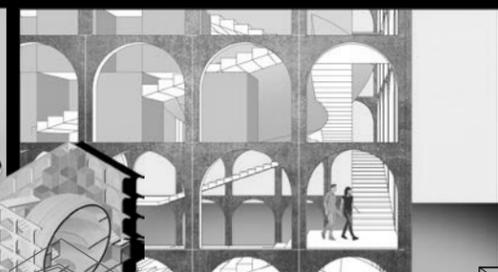


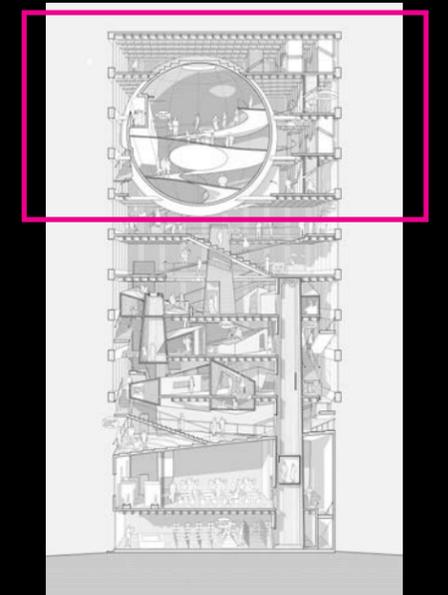
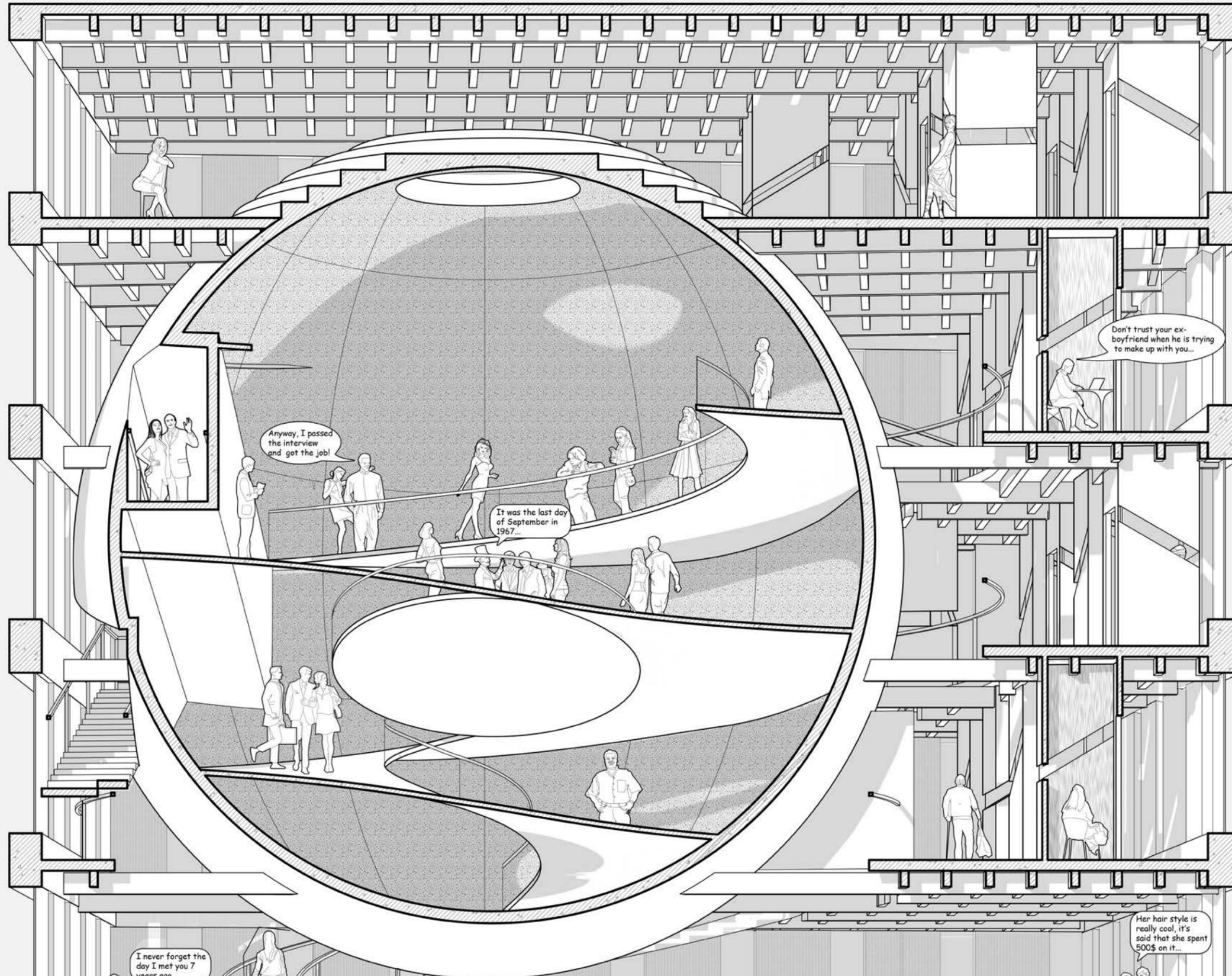


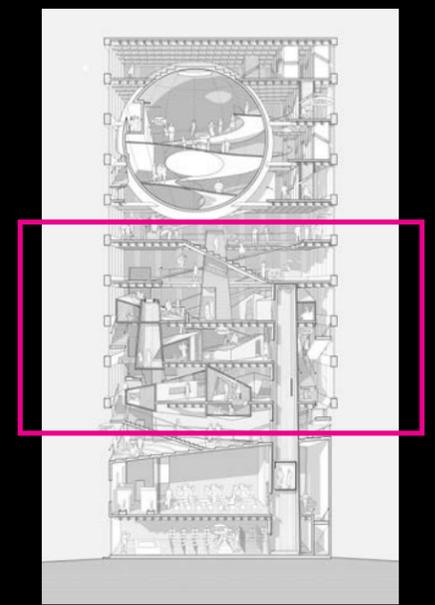
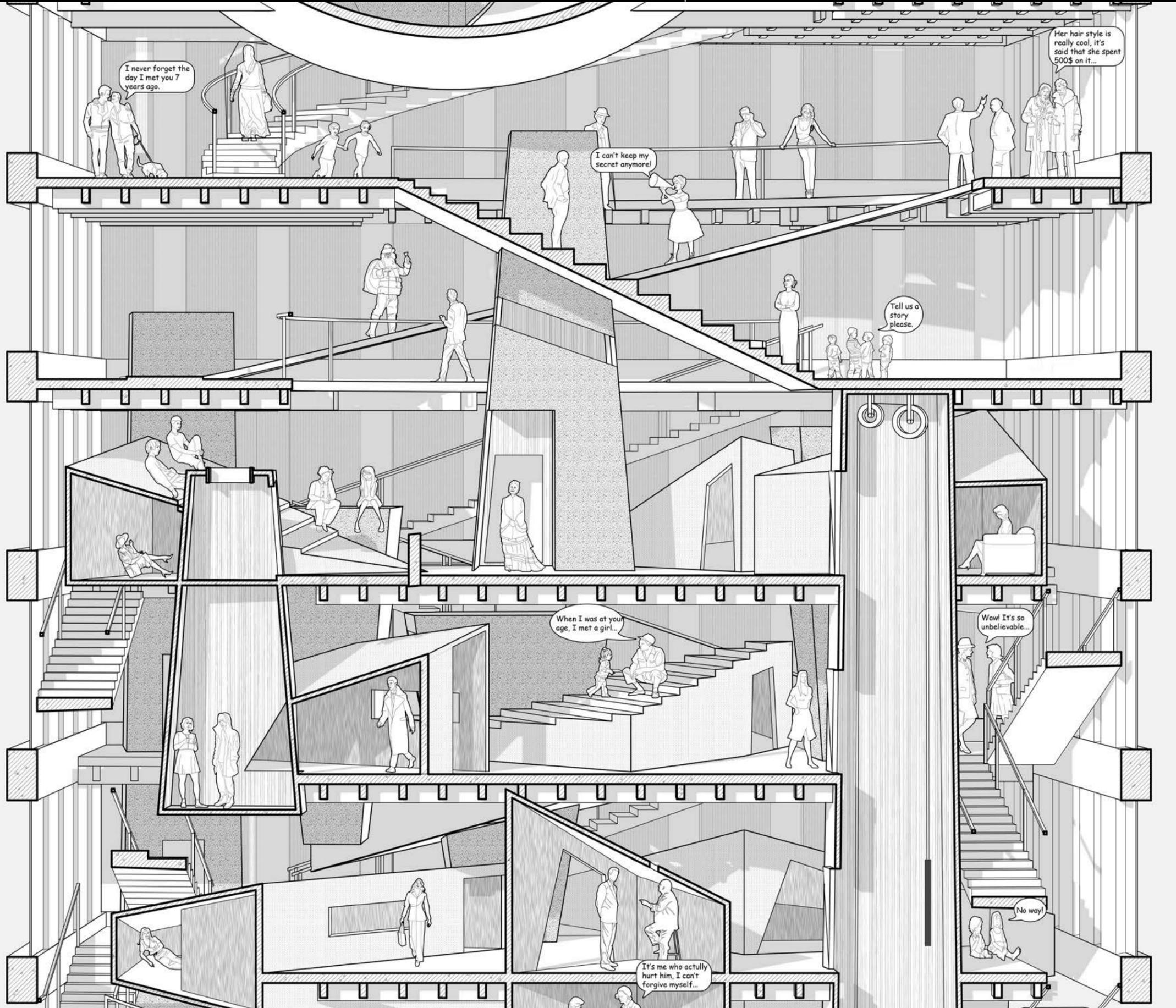
To relate story to our space. we analyzed the attributes of story. Every type of story has many attributes and they are not absolute. We listed three types of attributes. They are emotion, privacy and length, they are all divided into 5 levels. They can be translated to the spatial language accordingly, that is atmosphere, openness and duration. For instance, the most positive story may be told in the bright, warm and soft-edged space. Sad story may happen in dark and hard room.

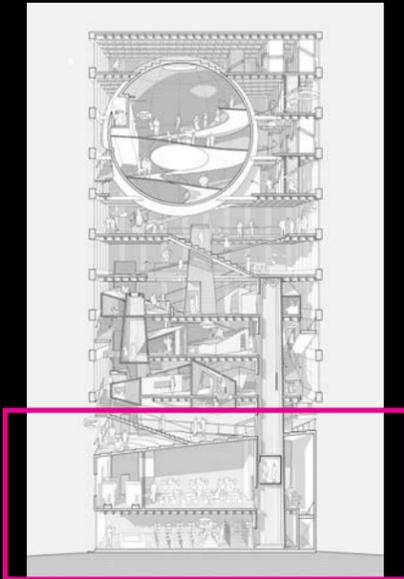
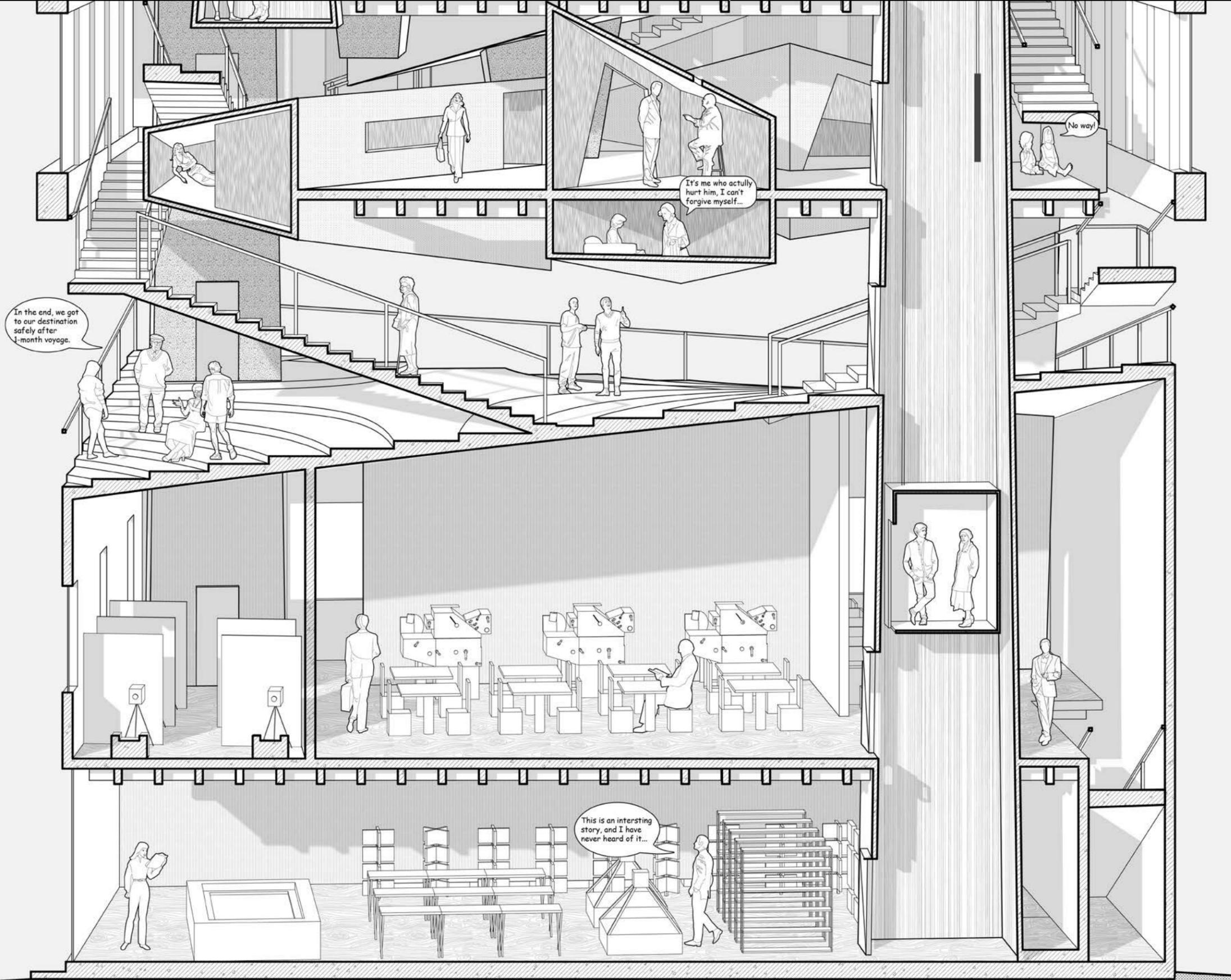


**STORY
AIR**











Have a difference in height and overlook each other's to facilitate the matching of the teller and listener. And it is also a transition space between private stories spaces and spaces for public stories.

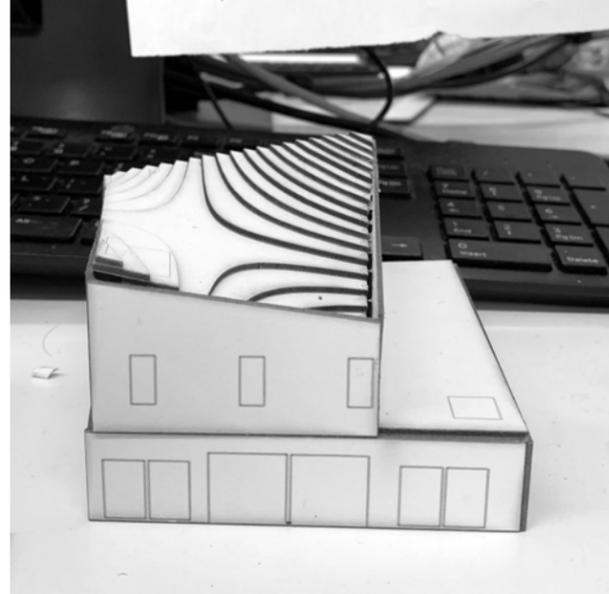
The tellers will stand on the outside circle belt ring or they can leave a representative sample on it. And the listeners will stand on the circle inside. These two parts have height difference so that they can choose mutually.



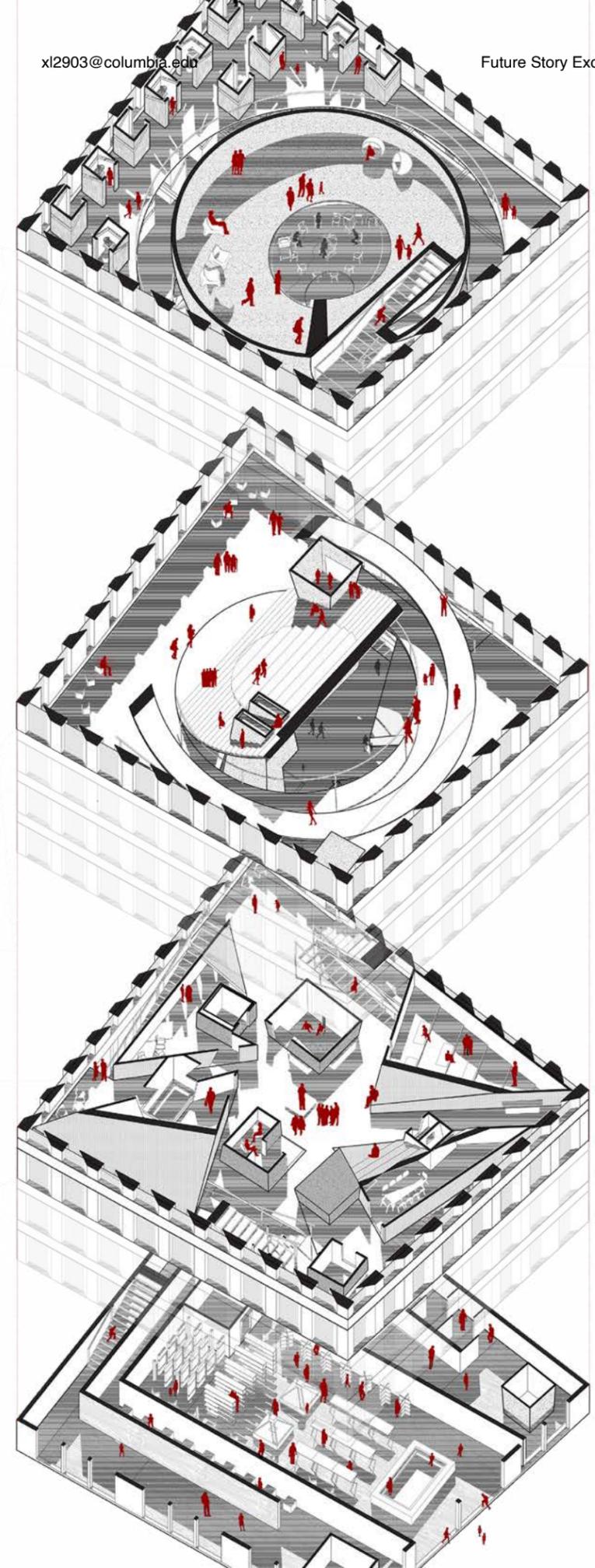
Moving down, we are now in the space for private stories. It contains two typologies, the slopes and the pyramid-look space. These shapes divide the space into small cells which is suitable for smaller groups like two people conversations.



The slopes forms a semi-closed space with its height difference caused by inclination. People can complain and gossip here.



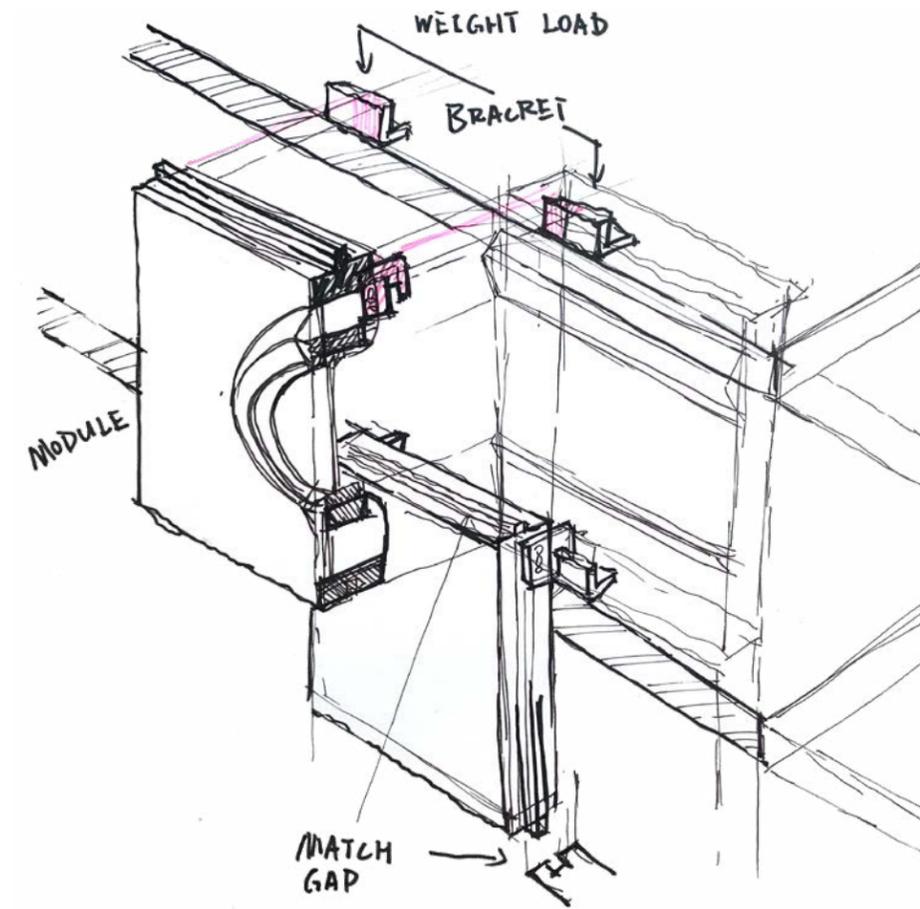
When we are discussing about this design we actually are discussing about if people are physically satisfied, what is the next valuable thing we will look for. Since humans are social in nature, how can we get more anchored in the physical world when we are slowly detaching ourselves and living more in the virtual world.



Lever House Façade Renovation

04

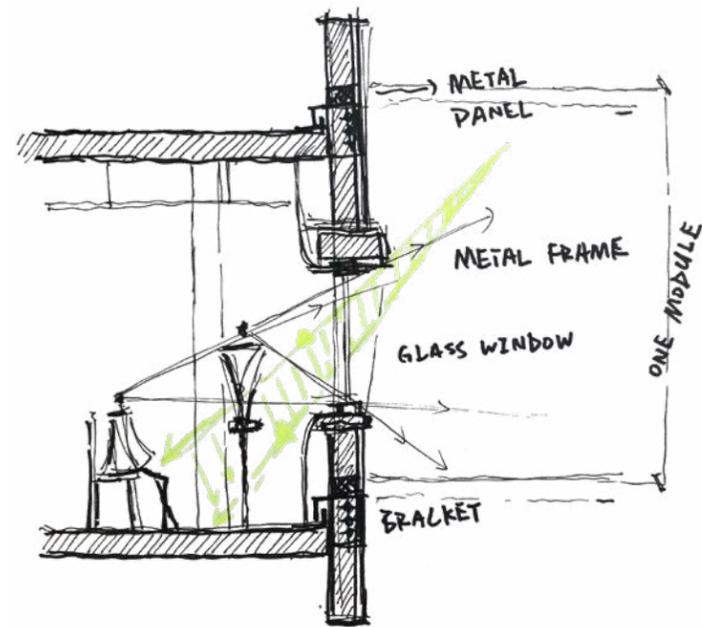
ARCHA4444_001_2020_1
Façade Detailing: A Material Understanding
Instructor: Kevin Schorn
Semester: Spring 2020
Research Collaborator: Jingjing Wu
Individual Work (Design Part)
Site: New York City, New York



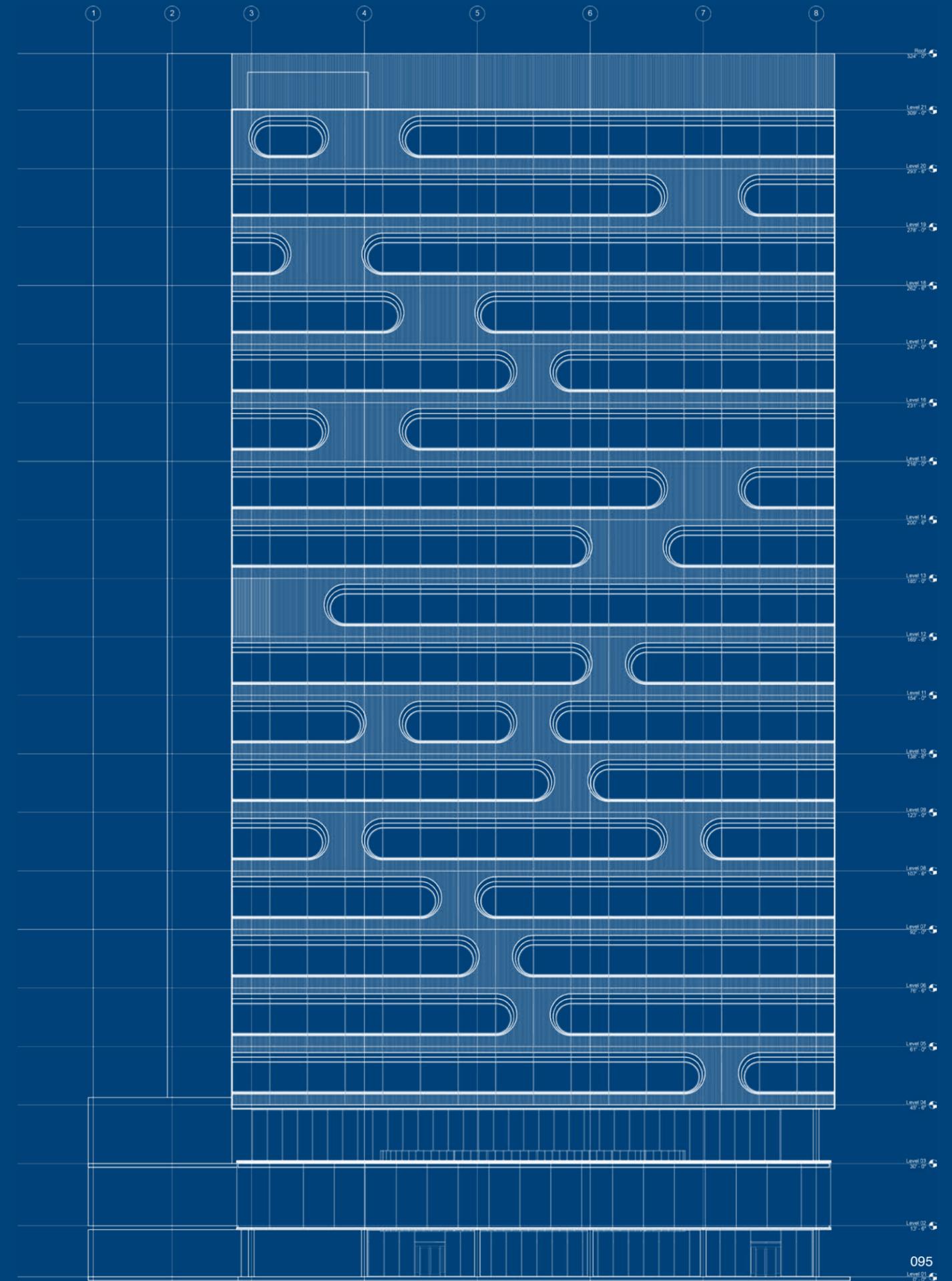
Façade and Surface System

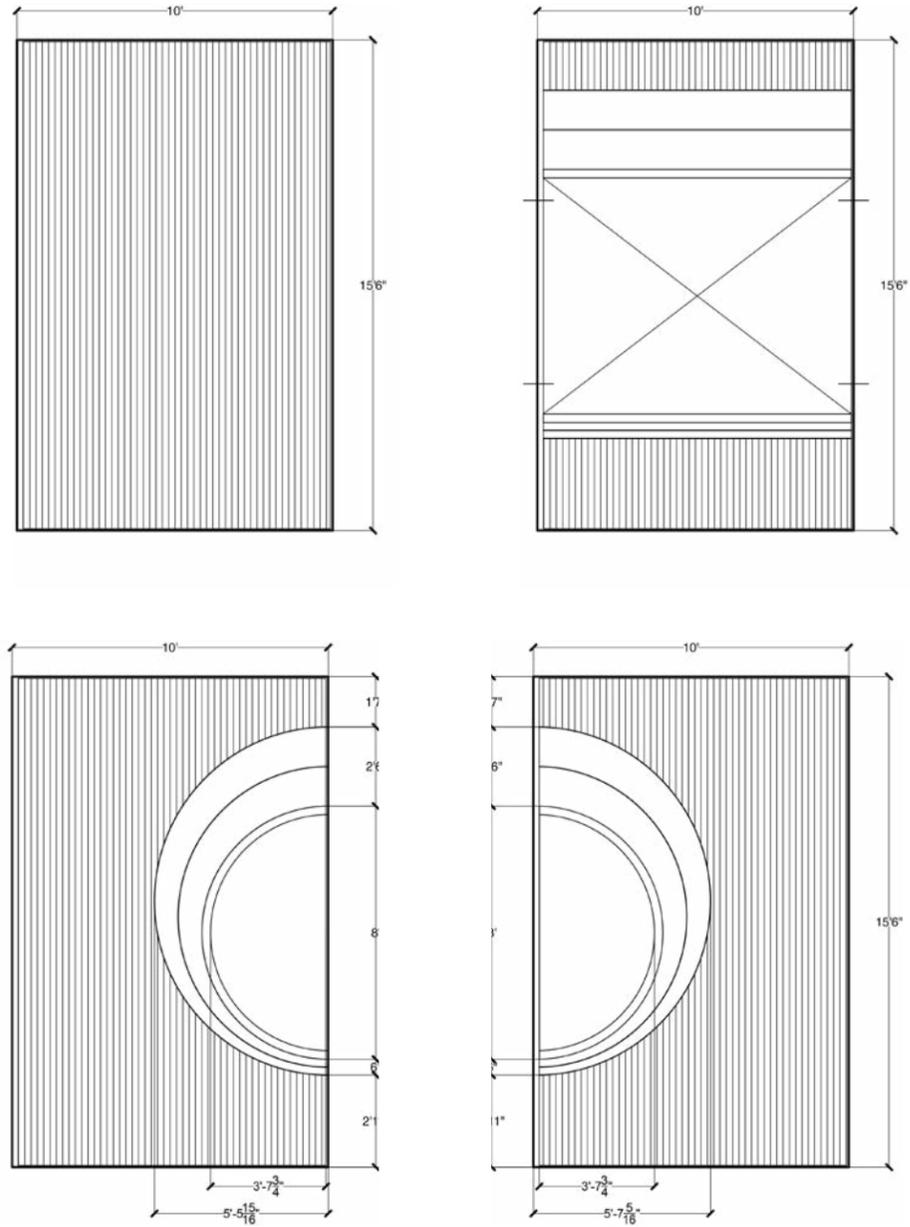
The subject of this course is the detailed design of building cladding through an understanding of materials and their physical properties.

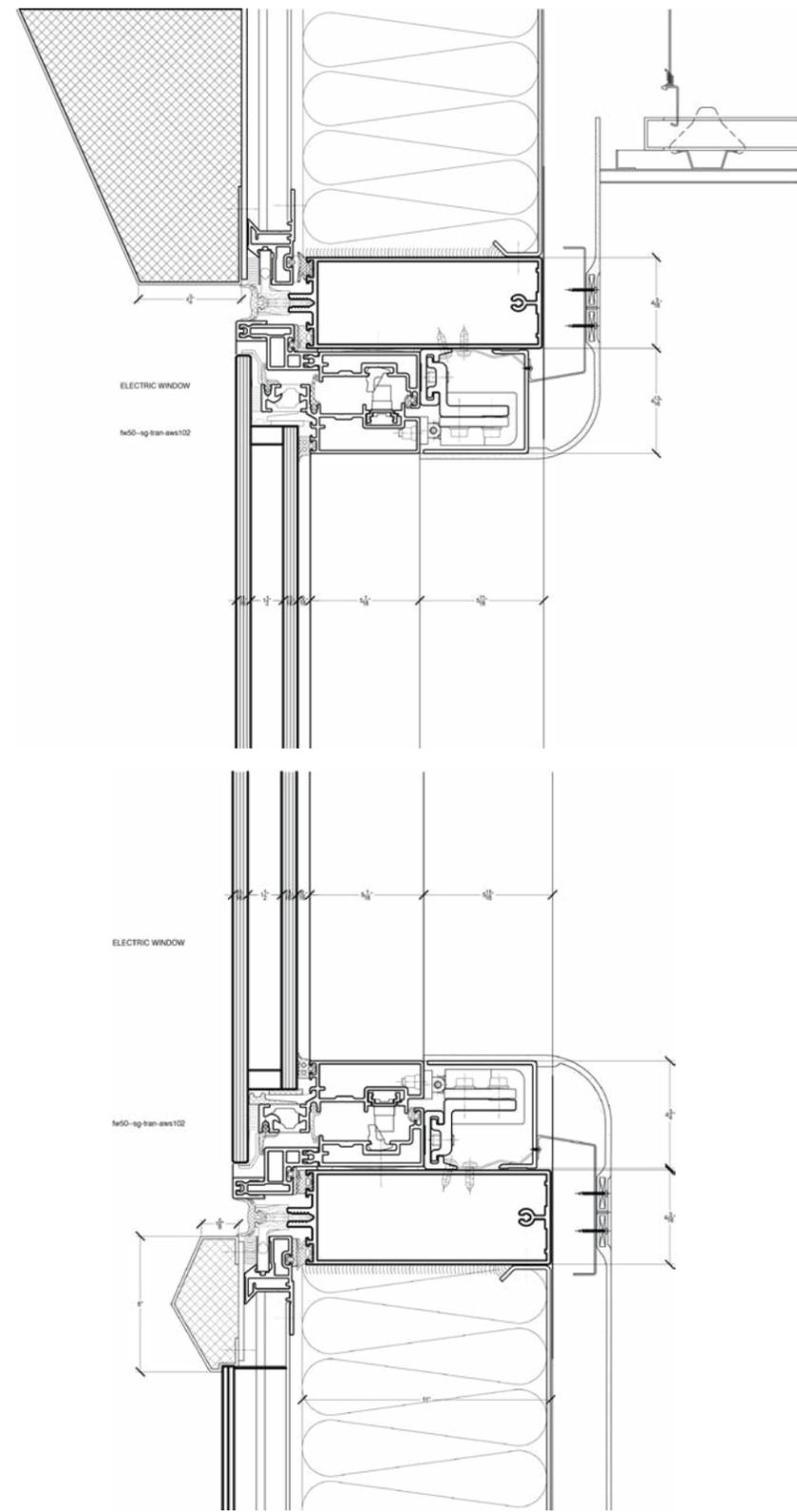
UNITED FAÇADE SYSTEM

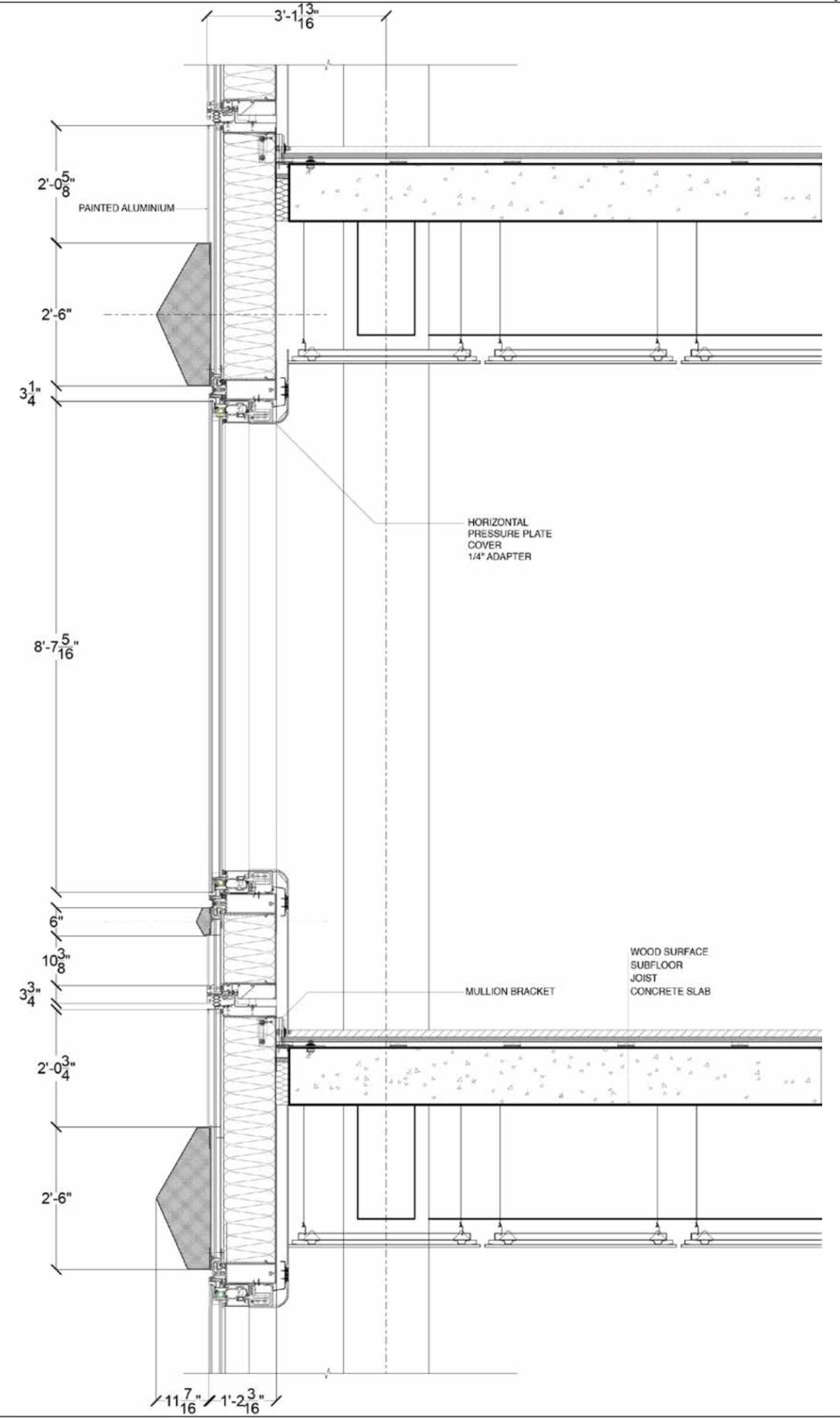
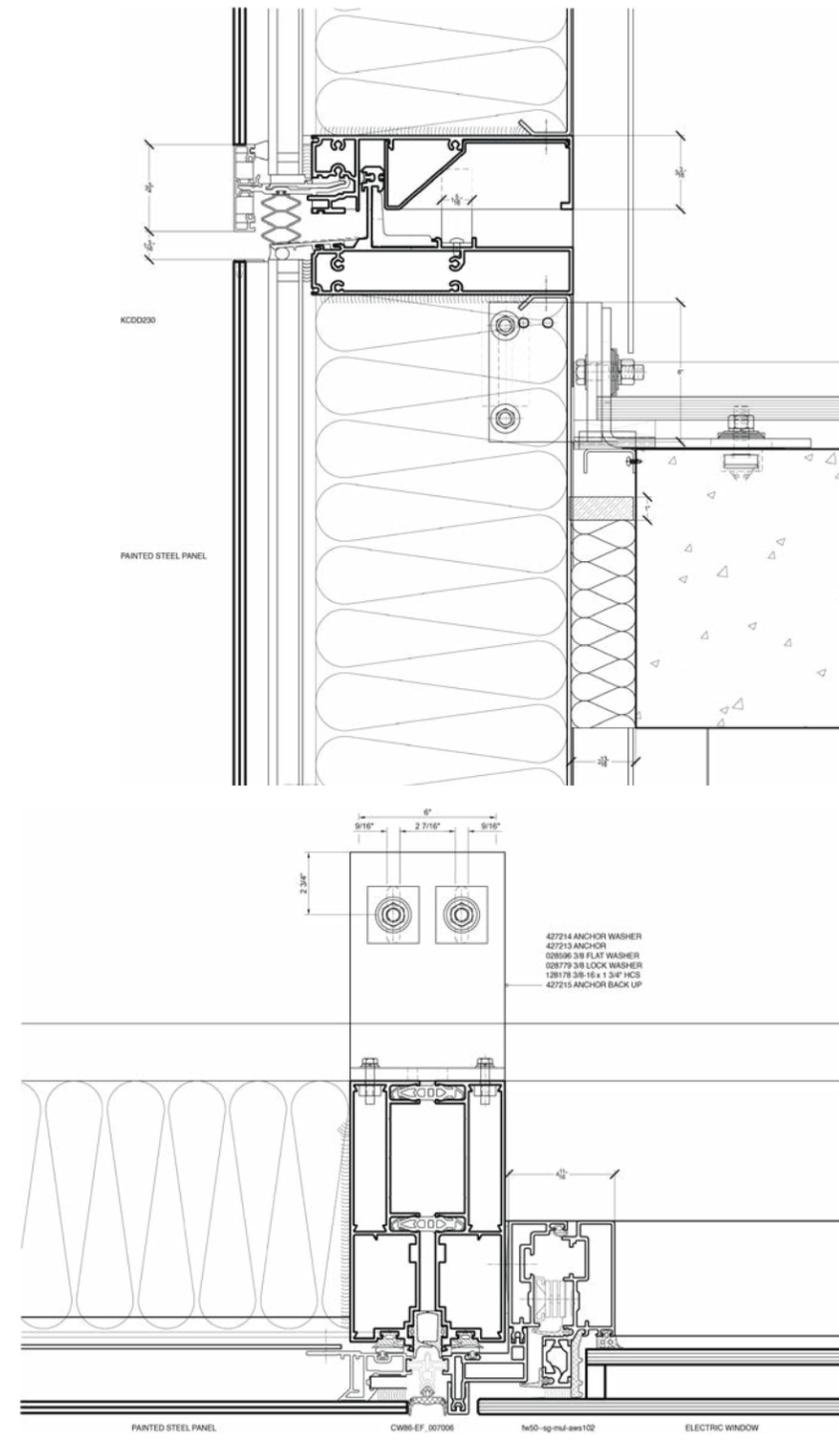


CONCEPT





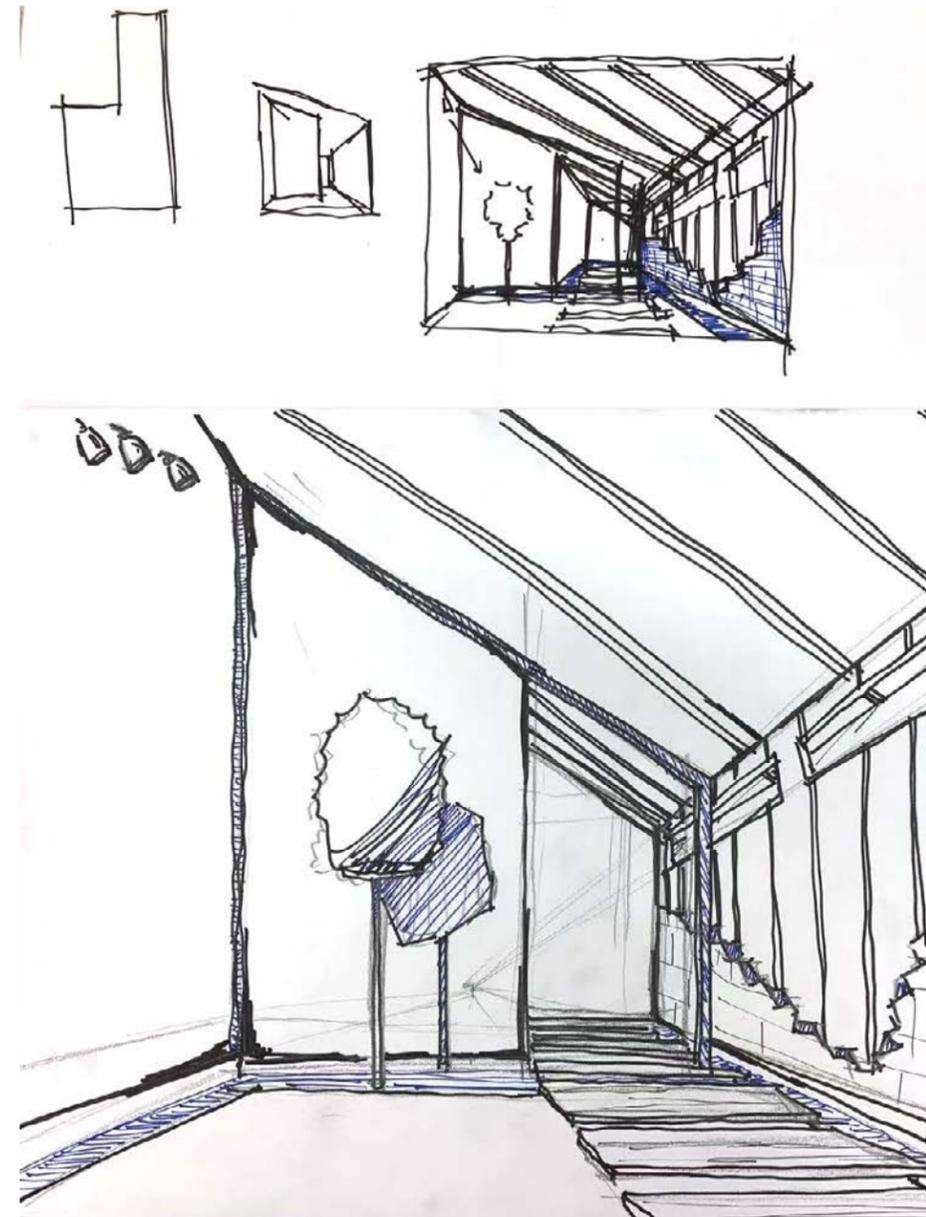




Dream In The Desert

05

ARCHA4534_001_2020_1
TECHNIQUES OF THE ULTRAREAL
Instructor: Joseph Brennan, Phillip Crupi
Semester: Spring 2020
Collaborator: Dylan Mo; Chutiporn Buranasiri
Individual Work (Interior Rendering)



Render As Composition

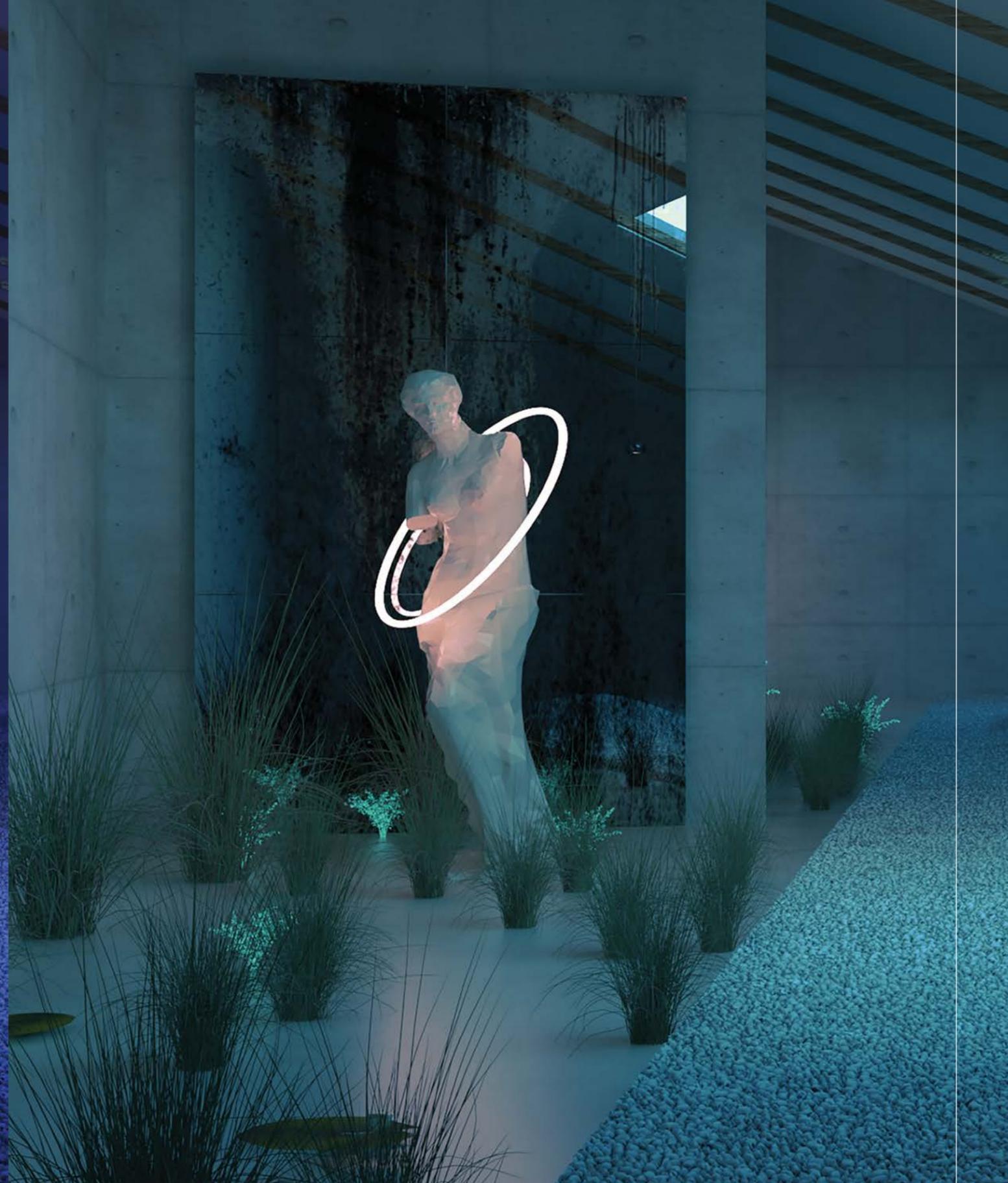
The use of perspective and rendering is often an afterthought. With the abundance of 3D modeling software and the ability to see every angle of a project instantaneously, renderings are often thought of as a last minute tool for representation.

CONCEPT OF THE SPACE AND RENDERING



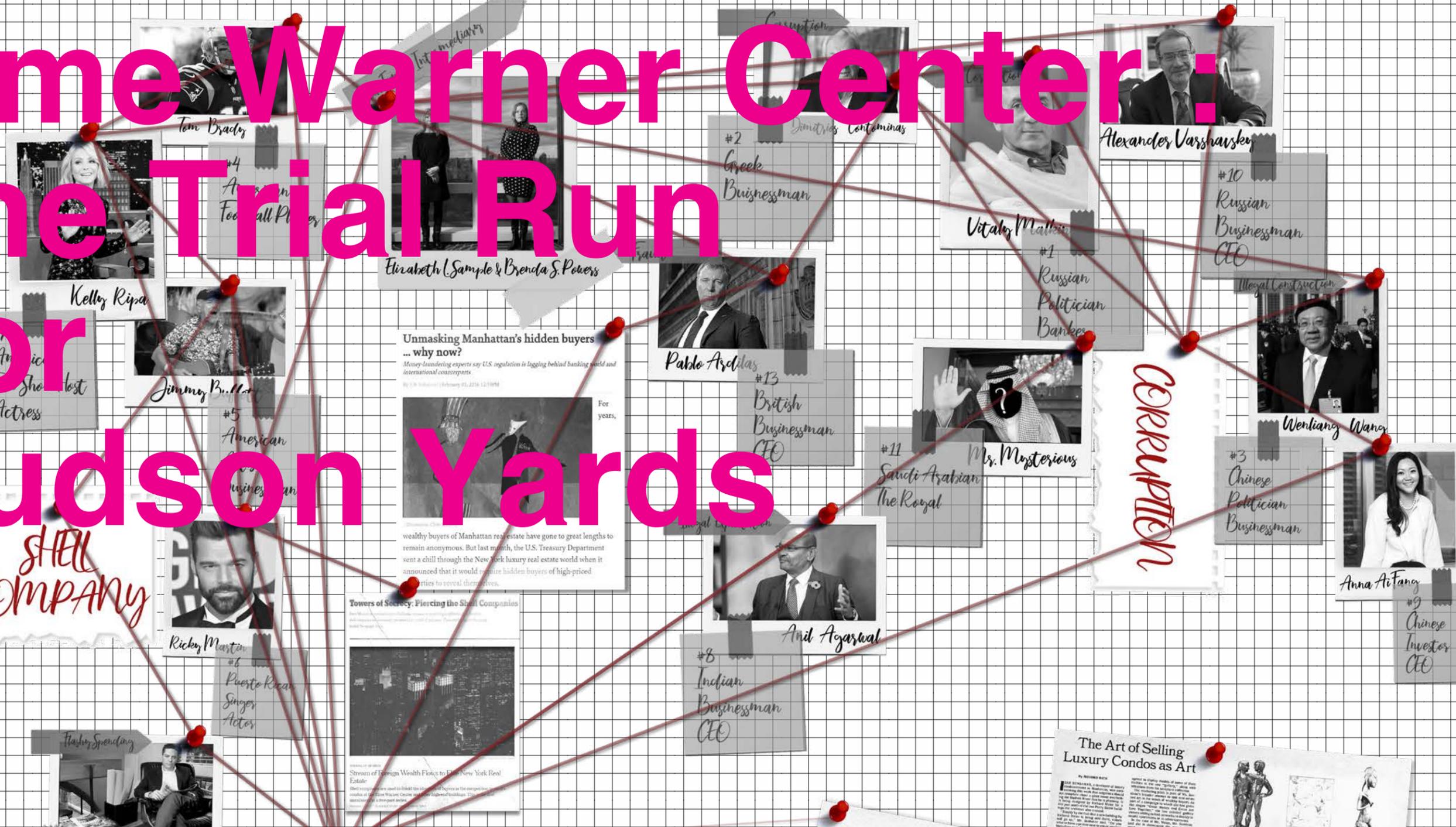








Time Warner Center: The Trial Run For Hudson Yards



SHELL COMPANY

CORRUPTION

LAUNDRY MACHINE FOR MONEY



ARCHA4402_001_2019_2
TRANSCALARITIES
Instructor: Andres Jaque Ovejero, Elliott Sturtevant
Semester: Summer 2019
Collaborator: Sritoma Bhattacharjee, Xiaoxuan Li, Ghaidaa Gutub

On the He sits in the somewhere doing something. She laughs as she discusses some fancy thing with her guest. These imaginations would never play out. They are all ghost buyers. It is all a farce.

“The building doesn’t know where the money is coming from. We’re not interested in it.” As Rudy Tauscher, a former manager of the condos at Time Warner Center, says, TWC enables a growing proportion of wealthy mysterious buyers to make the multimillion-dollar purchases with few questions asked because of US laws that foster the movement of largely untraceable money through shell companies. In 2005, 39% of the residences in Manhattan were purchased through shell companies. By 2014, this percentage rose to 54%. It is nearly impossible to establish with certainty the source of money behind these shell companies. Ownership can be shifted at any time, with no indication in property records.

Condominium 74B is owned by the family of Vitaly Malkin, a Russian senator suspected of having connections to organized crime. Anil Agarwal, who runs a mining company fined for polluting riv-

ers, purchased units 72B and 51E. Though coming from all sectors of society around the world, they have something in common: at least 16 have been the subject of government inquiries, either personally or as heads of companies. The cases range from housing and environmental violations to financial fraud. Four owners have been arrested, and another four have been subject of fines or penalties for illegal activities.

Having been embroiled in controversy for years, the project, at the turn of the century, was in financial trouble. Following the attack of 9/11, the residents of New York were weary of living in high rises. Coupled with that, the financial downturn of 2000 forced the developers- Related Companies- to look beyond the borders for buyers.

In the light of these events, the developers and marketing agents had to find novel ways of selling the building. Louise Sunshine, who marketed the Time Warner Center, prefers to look at luxury buildings as art pieces. In the advertising of TWC, she used digital images of international art- Willem de Kooning painting, a Matisse sculpture, and a 19th century African sculpture, all borrowed from a gallery in Manhattan. An expert in naming buildings, she called TWC One Central Park as opposed to its address 25 Columbus Circle, despite there not being any street called Central Park. “We wanted people to think it is on Central Park, and has spectacular views”, Ms. Sunshine says, “and if we didn’t call it that, how would anyone know.” Although a common financial model now, at the time, carefully calibrated promises- of

ostentatious luxury, views to the central park and the city, and an art piece for an apartment were key to appealing to foreigners.

Due to the stream of foreign buyers willing to invest in the building, the Time Warner Center is prohibitively more expensive than the buildings around it. Priced at \$8218 per square feet, it greatly surpasses the median rate of \$2891 per square feet of the neighbourhood around Columbus Circle, disabling the New York dwellers from buying or renting homes here. The high rate alienates the very people of the city while catering to the international clientele. A clear economic divide between the xx and xxx can be seen emerging. This is when architecture stops reflecting its people.

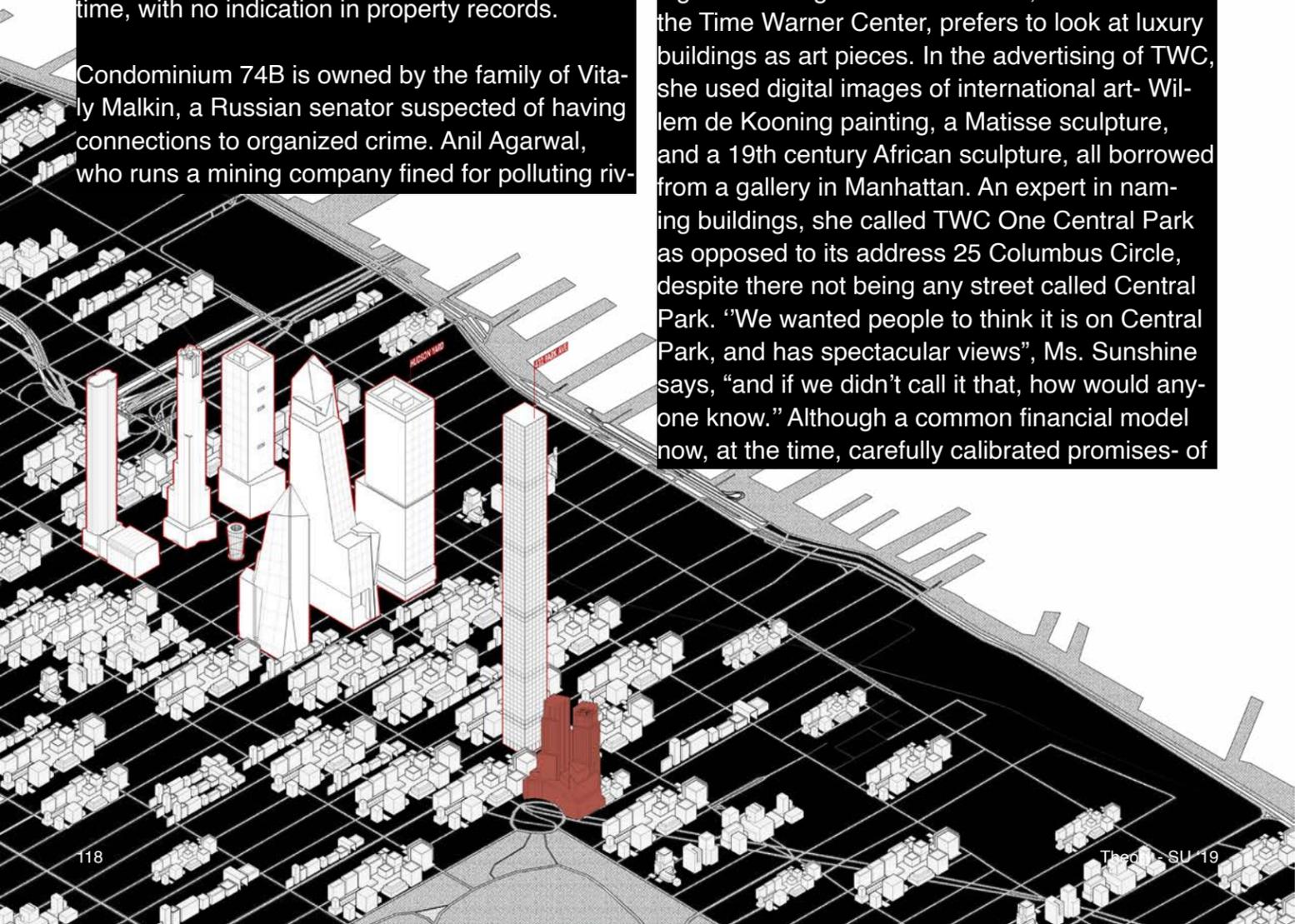
A look into the condo reveals the extent of re-engineering that was done to entertain these potential buyers. Most of the units in the building have more than 3 bedrooms with the biggest one going up to 9 bedroom units taking up the full floor level. Circular beds and grand pianos in the apartment establish a grandeur not too far behind that of the Playboy mansion. The interiors done in marble, wood and metal match the opulence of the buyers. Against the backdrop of a city struggling to find space to place a bed, a pre-kitchen, two separate dressing rooms and a personal gym paint an amusing juxtaposition.

The fantasy, emotions and ideas that each architectural project is approached with, is stripped away revealing xxx. Emotional detachment from buildings/materials due to the. Touch the cool marble on the counter. The emotional value of these materials are The marble as it travels from the quarry, is carefully fitted on the kitchen counter, MATERIALS HUMAN SCALE David Childs of SOM had little control in what would become of TWC. At the Time Warner Center, under the glitz of its curved glass facade, we find architecture performing as a vehicle for laundering money on an international scale.

Since the construction of TWC, the idea of luxury architecture as a safe haven for parking wealth, has determined much of the skyline of New York. The New York we see and know today has been completely transformed by the forces similar to those that were operating on the Time Warner Center. Recent buildings like the 432, Hearst Tower and the starchitect museum- Hudson Yards have all been designed geared towards affluent patrons beyond the country borders. The audience for these buildings has expanded to the world, excluding its own city residents in the process.

The FBI is investigating the facilitators of money laundering- the bankers, accountants, lawyers, agents setting up the limited liability companies and non-profits who aid in masking the identity of the owners of these shell companies. In 2016, the Financial Crimes Enforcement Network put forth regulations requiring the real estate companies to record the identity of the beneficiary owners for sales above 3 million dollars. However, these regulations face resistance from the real estate companies since it cuts down on their market. If implemented rigorously, the regulations might aid in reducing the scale of the impact investors disconnected from the fervor of the city have on its architecture.

The issue does not lie in just foreign investment. It is about what homes and architecture mean to people today. Sentiments and emotions attached to homes have changed. Detachment from architecture. Can we design How do we stop foreign investment from determining the type of buildings we create today. The buildings stop reflecting the spirit of the city. City focussed on preservation, geared to bring equality, capitalism. In the end, who are we really building for? How do we not let it just become a tool for the capitalist agenda. This points to a larger problem in architecture, one that plagues cities all over the world- how do we prevent architecture from merely becoming an investment vehicle for the endowed? **END**



Information Dissemination

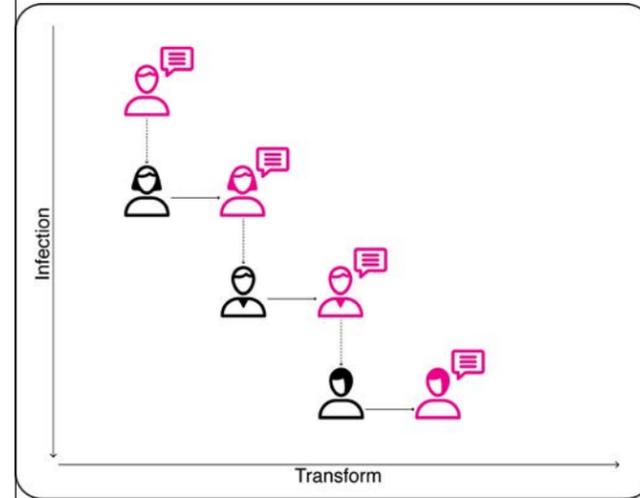


07

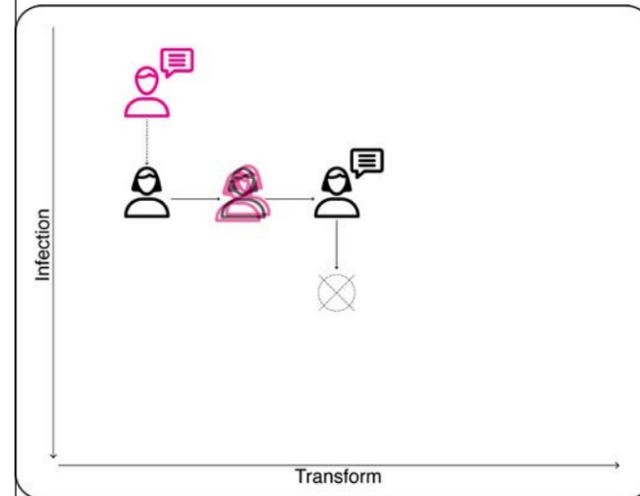
ARCHA4834_001_2019_3
DATAMINING THE CITY
Instructor: Violet Whitney
Semester: Fall 2019
Collaborator: Junwei Li (Simulation, Thesis);
Yankun Yang (Simulation, Thesis)

Three patterns:

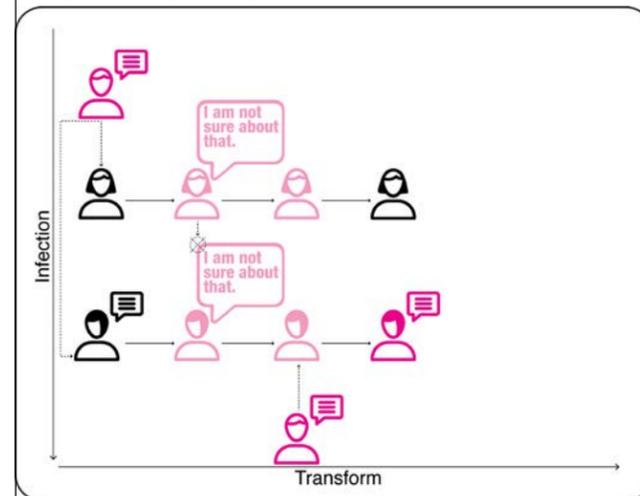
Believer(contingence behavior)



Non-believer(blunting strategy)



Sceptic (forgetting of information)



Background

A study in 2009 provides some of the strongest evidence to date that Americans prefer to read political articles that agree with the opinions they already hold.

Different news has different audiences. The way information got spread is not linear, mixed with personal preference, trust issue, and other factors, the result is complicated and unexpected.

Simulation Description

Simulation: Information dissemination in a crisis. Aim: To see which factor in the information dissemination is more essential to the whole process.

Reason: It's important because the way information got spread is not linear, it has different patterns.

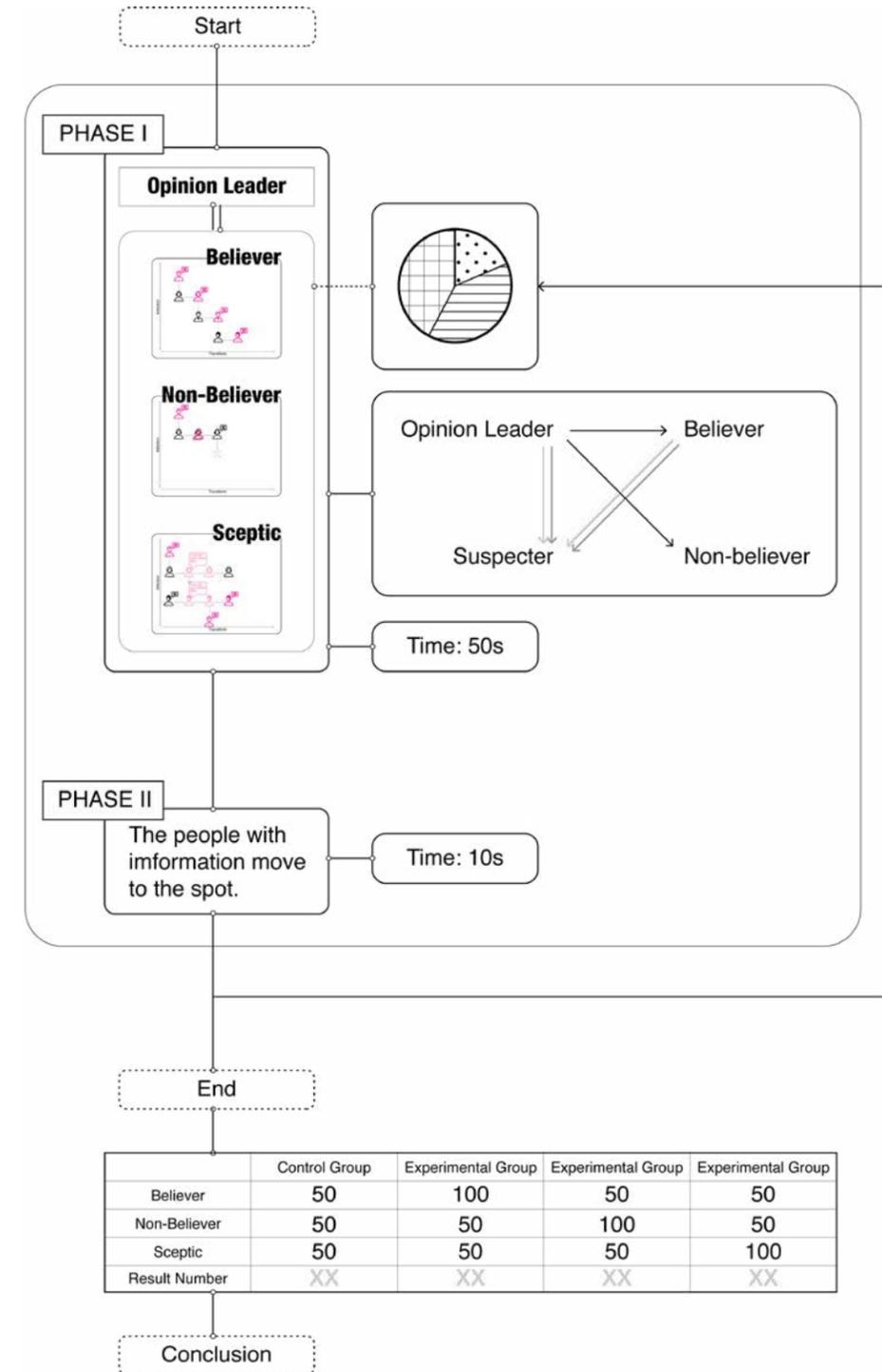
Research from Development of a Model of Information Dissemination in Society:

- Four New Mechanisms That Affect the Process:
- 1 the contingence of behavior
 - 2 the incomplete coverage of a group by the mass media
 - 3 the two-step understanding of information
 - 4 the forgetting of information

From Constructing a model of effective information dissemination in a crisis:

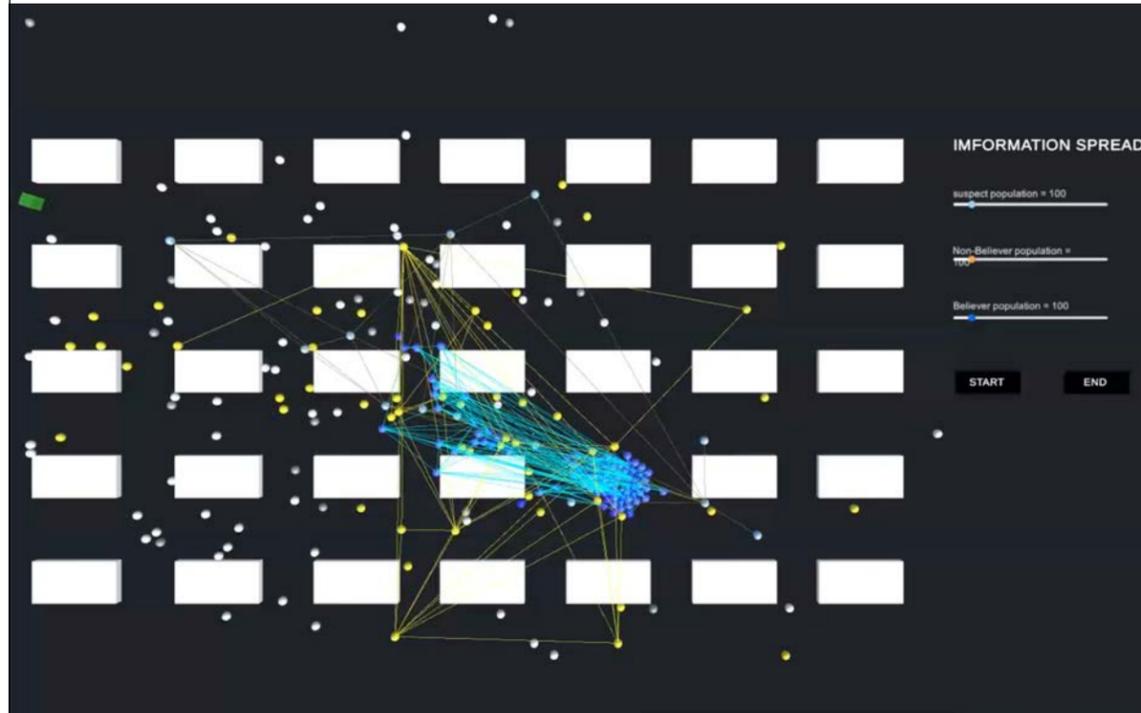
Opinion leaders:
The role of opinion leaders is to persuade rather than to inform. Opinion leaders did persuade the respondents to accept the information, of which they had previously been informed in the newsletters.

Willingness to accept new knowledge:
Analysis of the key informant interview data identified an assumption, on the part of the information providers, that not seeking information was an indication that recipients' were satisfied with the information provided. However, individuals may adopt an information blunting strategy towards a crisis, thereby choosing not to actively seek information.



Simulation Process

Believe 100, Suspect 100, Non-believer 100



Believe 100, Susceptor 100, Non-believer 200



Believe 100, Susceptor 200, Non-believer 100



Believe 200, Susceptor 100, Non-believer 100





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