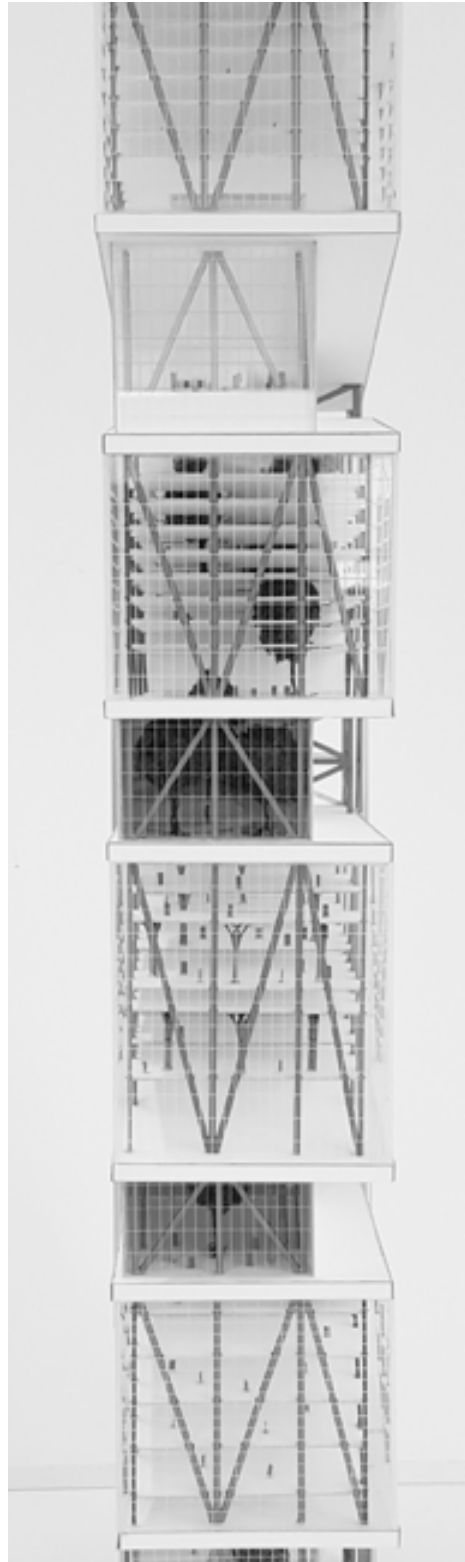


 **GSAPP Works**

Changbin Lee, AAD  
Summer 2019 - Spring 2020



## GOING UP ! VERTICAL DENSITY

Type Academic  
Individual Work  
Columbia University  
Studio

Instructor Dan Wood / Maurizio Bianchi Mattioli  
Location Hudson Yards, New York  
Date Summer, 2019

page 01

## TRANSCALARITIES

Type Academic  
Individual Work  
Columbia University  
Electives

Instructor Andres Jaque  
Location Roosevelt Island, New York  
Date Summer, 2019

page 19

## CULTURE CONTAINERS II

Type Academic  
Individual Work  
Columbia University  
Studio

Instructor Dominic Leong / Chris Leong  
Location Southern L.A.  
Date Fall, 2019

page 22

## ULTRAREAL

Type Academic  
Team Work  
Columbia University  
Electives

Instructor Phillip Crupi / Joseph Brennan  
Date Fall, 2019

page 43

## THE STREET STUDIO

Type Academic  
Individual Work  
Columbia University  
Studio

Instructor Jing Liu  
Location Fulton Mall, Brooklyn  
Date Spring, 2020

page 46

## ARCHITECTURAL DAYLIGHTING

Type Academic  
Individual Work  
Columbia University  
Electives

Instructor Davidson Norris  
Date Spring, 2020

page 57

**GOING UP ! VERTICAL DENSITY**  
THE SKYSCRAPER STUDIO

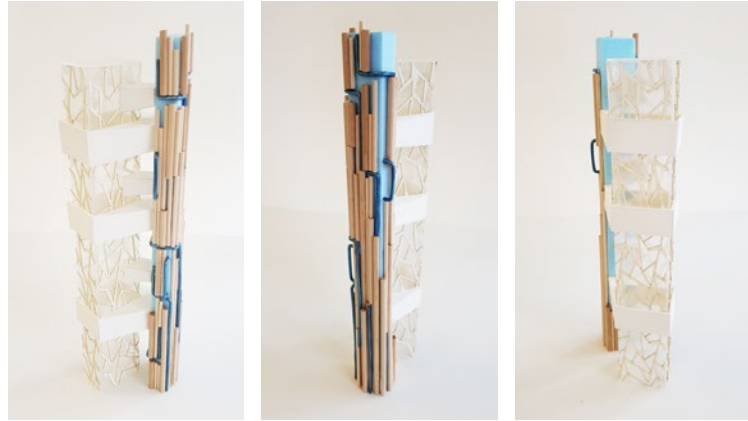
Summer 2019  
Studio Critics : Dan Wood + Maurizio Bianchi Mattioli

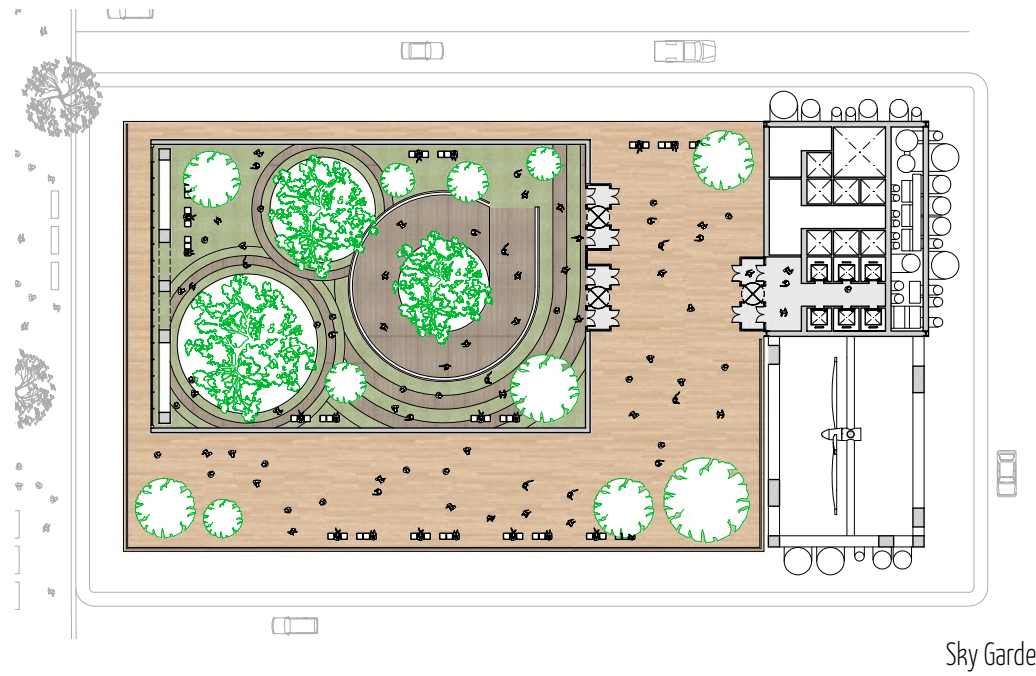
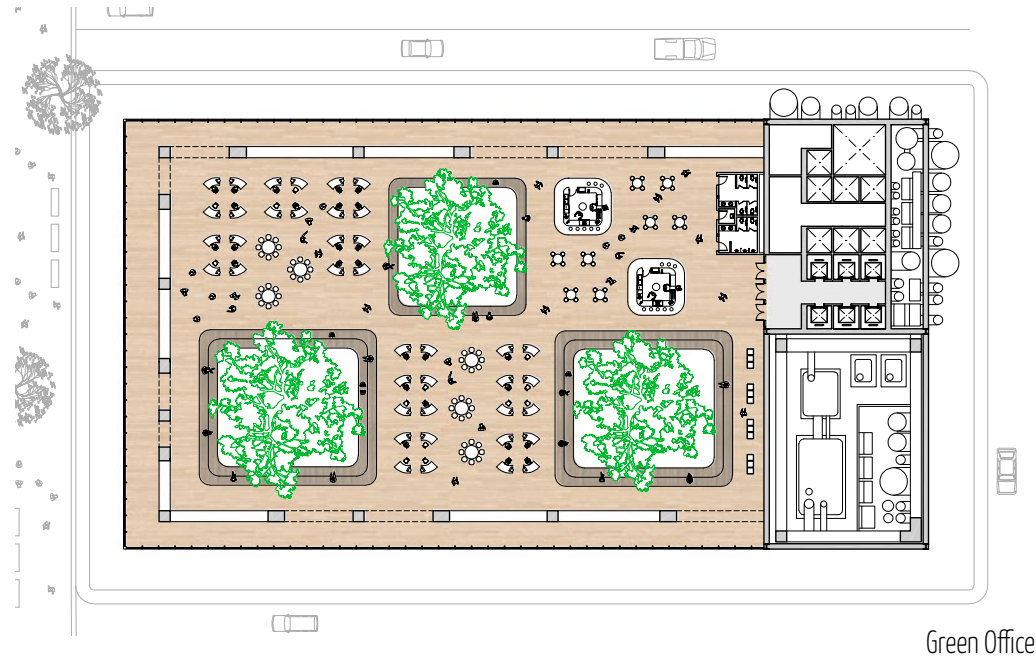
# Servant and Served Skyscraper

**Type** Academic / Individual Work / Studio / Columbia University

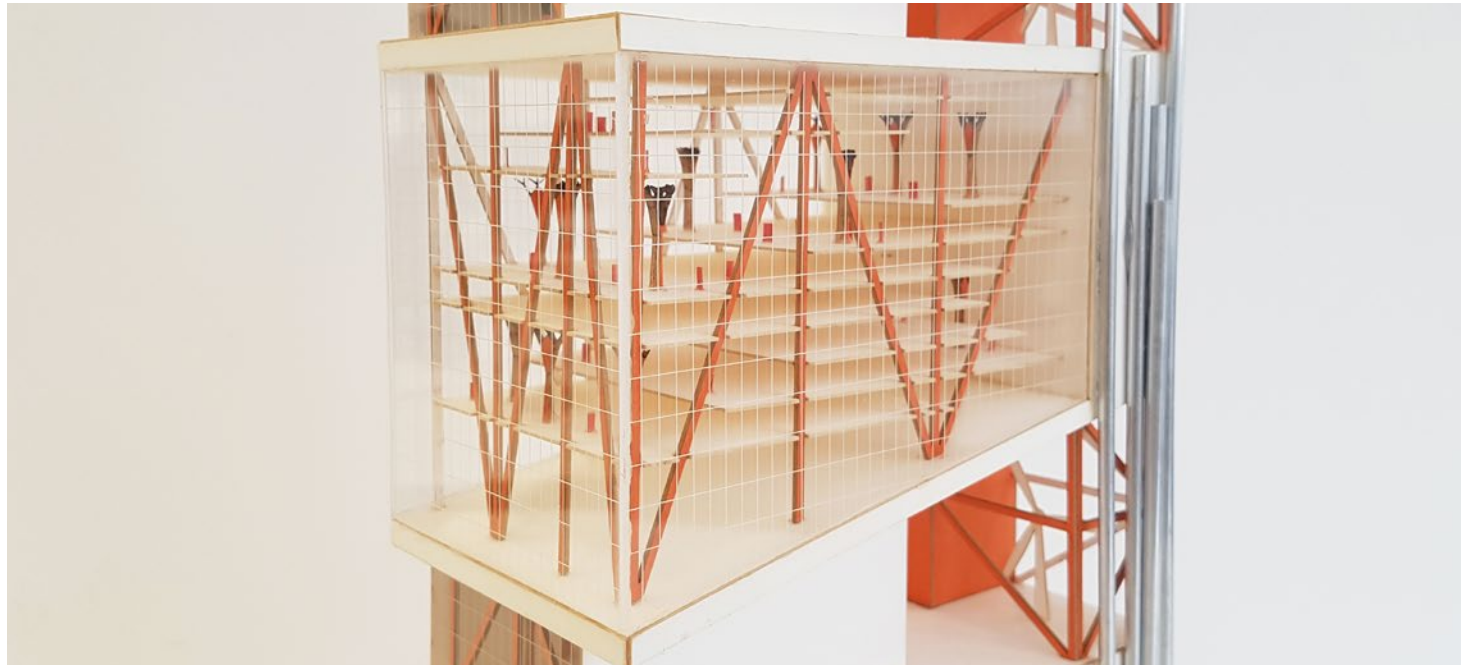
**Instructor** Dan Wood / Maurizio Bianchi Mattioli **Location** Hudson Yards, New York **Date** Summer, 2019

The main idea of this new skyscraper is to separate functional spaces from the main spaces. It has two towers, one consists of offices and public spaces, and the other mainly takes charge of all the functional roles such as circulation, structure, and mechanical equipment. Even though there have been many new companies need spacious and creative spaces for their workplace, they can't freely use the spaces since existing tall buildings typically have massive core in the middle of them. So, through this architectural idea, this new skyscraper can provide perfect working spaces for those creative companies since the served tower can freely organize its spaces thanks to the servant tower.

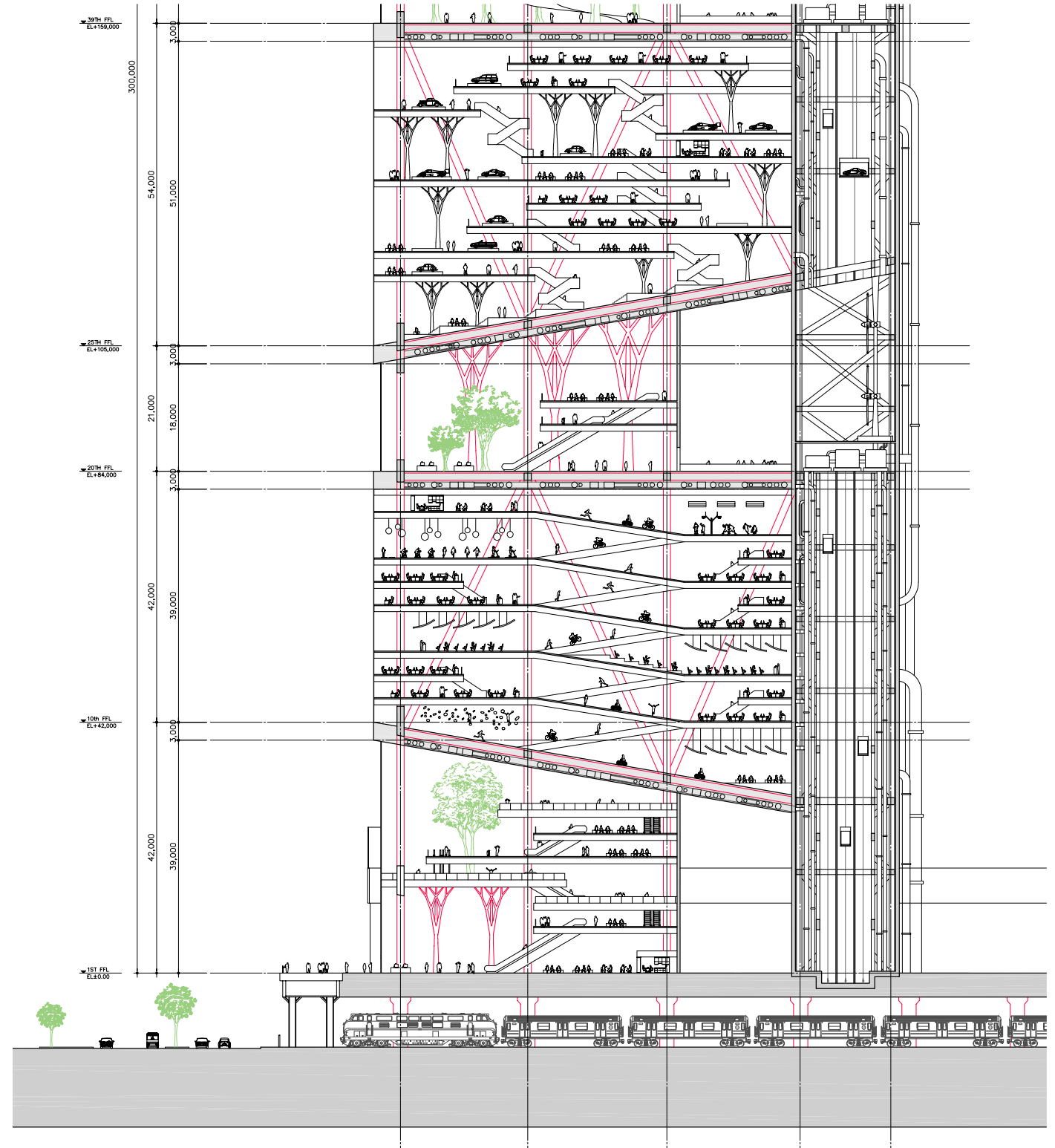




As seen in the plans, new office spaces created by the idea of separating functional spaces from the main spaces have spacious working area without any massive columns in the middle of the space. Then the working space can be mixed with large green spaces and has more refreshing atmosphere. Furthermore, spaces vertically located between main office volumes are designed as open spaces open to the public. Those spaces consist of sky garden, auditorium, and public library. These public spaces are the key factors allowing this new skyscraper to contribute to the New York city.

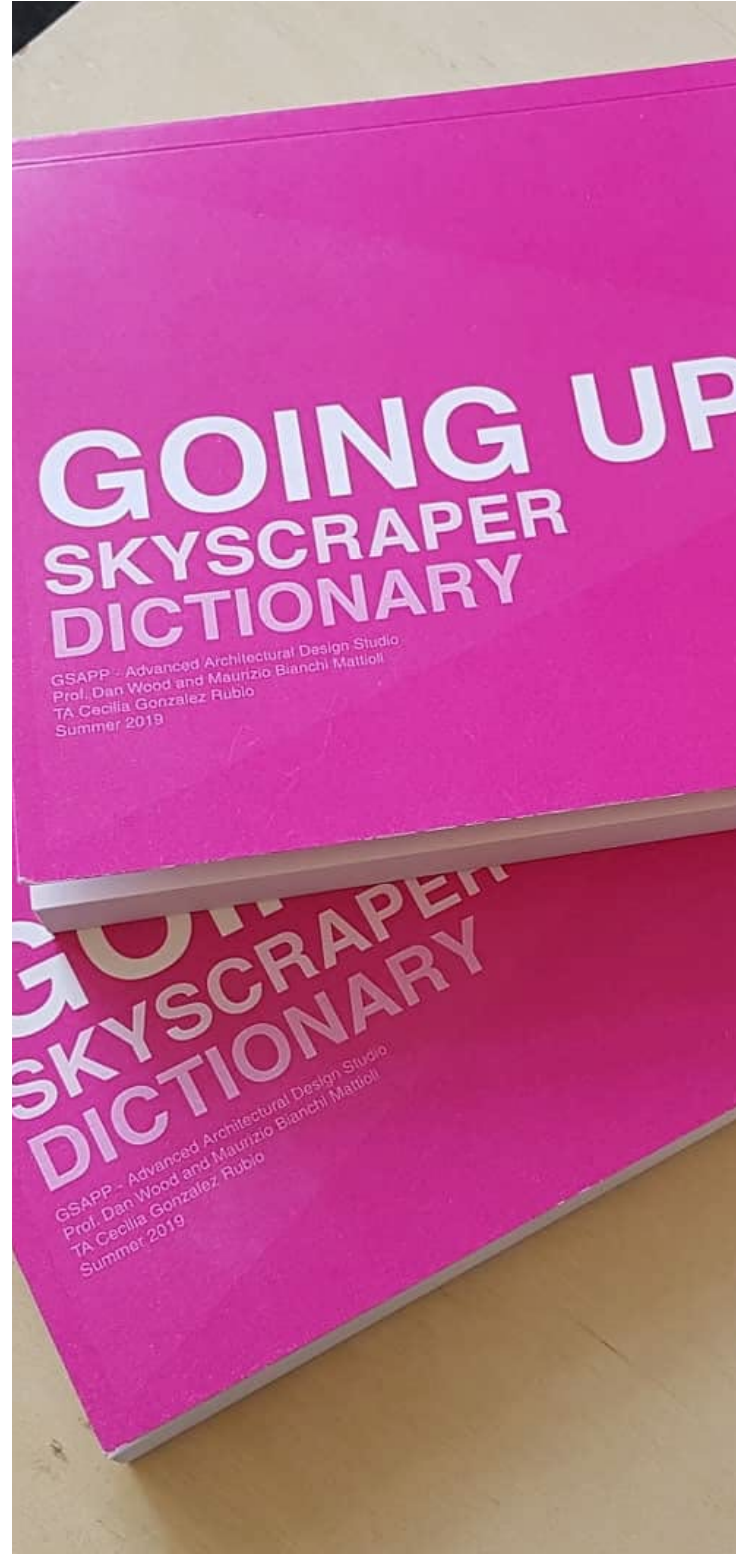


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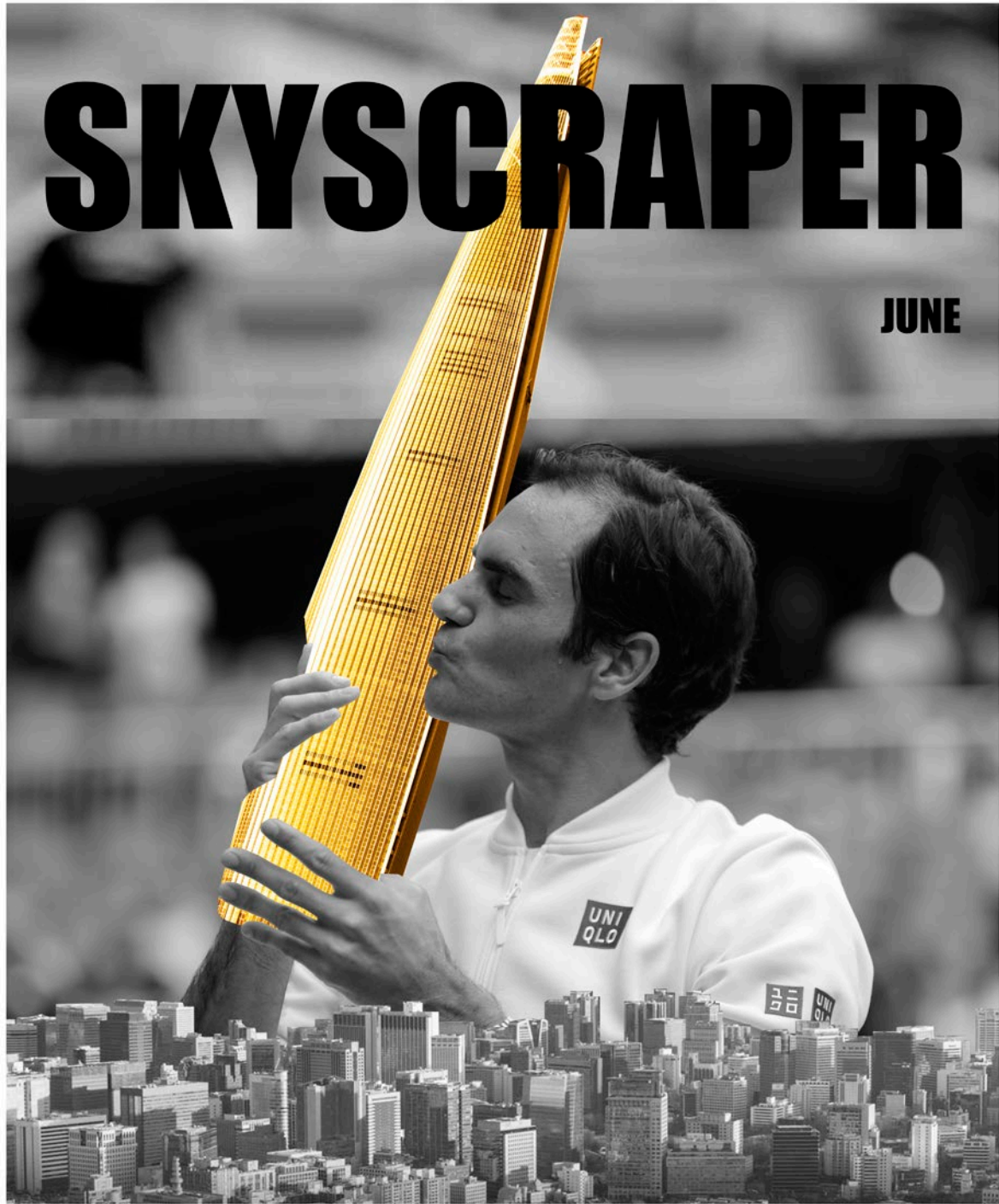


Thanks to the massive truss structures vertically embracing the entire skyscraper, main office volumes can have column-less spaces and create large office spaces for the new type of companies occupying this skyscraper. The main core inside the 'servant' building taking charge of mechanical and structural functions supports the truss structure and the whole building. The spaces inside the main volumes function as office space and also the connection between the servant and the served building.



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# SKYSCRAPER

JUNE



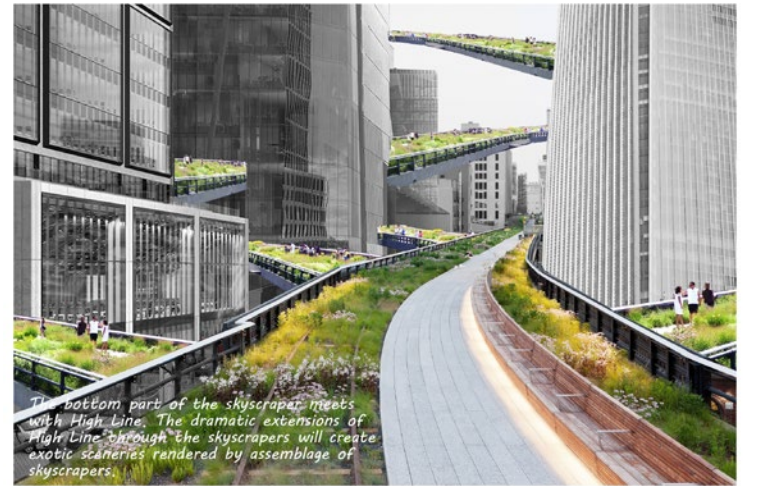
The final image is a 'inosulation trees' which grew seperately and their branches are connected with each other. The trees suck up various programs from their root to the top and allow the city to view hudson river through them.



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Since the site is located between the cityscape and Hudson river, the unique height of the skyscraper can provide the public with both fantastic city and river views by putting public open spaces such as libraries and parks on the top of it



The bottom part of the skyscraper meets with High Line. The dramatic extensions of High Line through the skyscrapers will create exotic sceneries rendered by assemblage of skyscrapers.



The most powerful image of skyscraper comes to my mind is a vacuum cleaner sucking up everything on the ground. The new skyscraper will also function as a giant vacuum cleaner in the city.

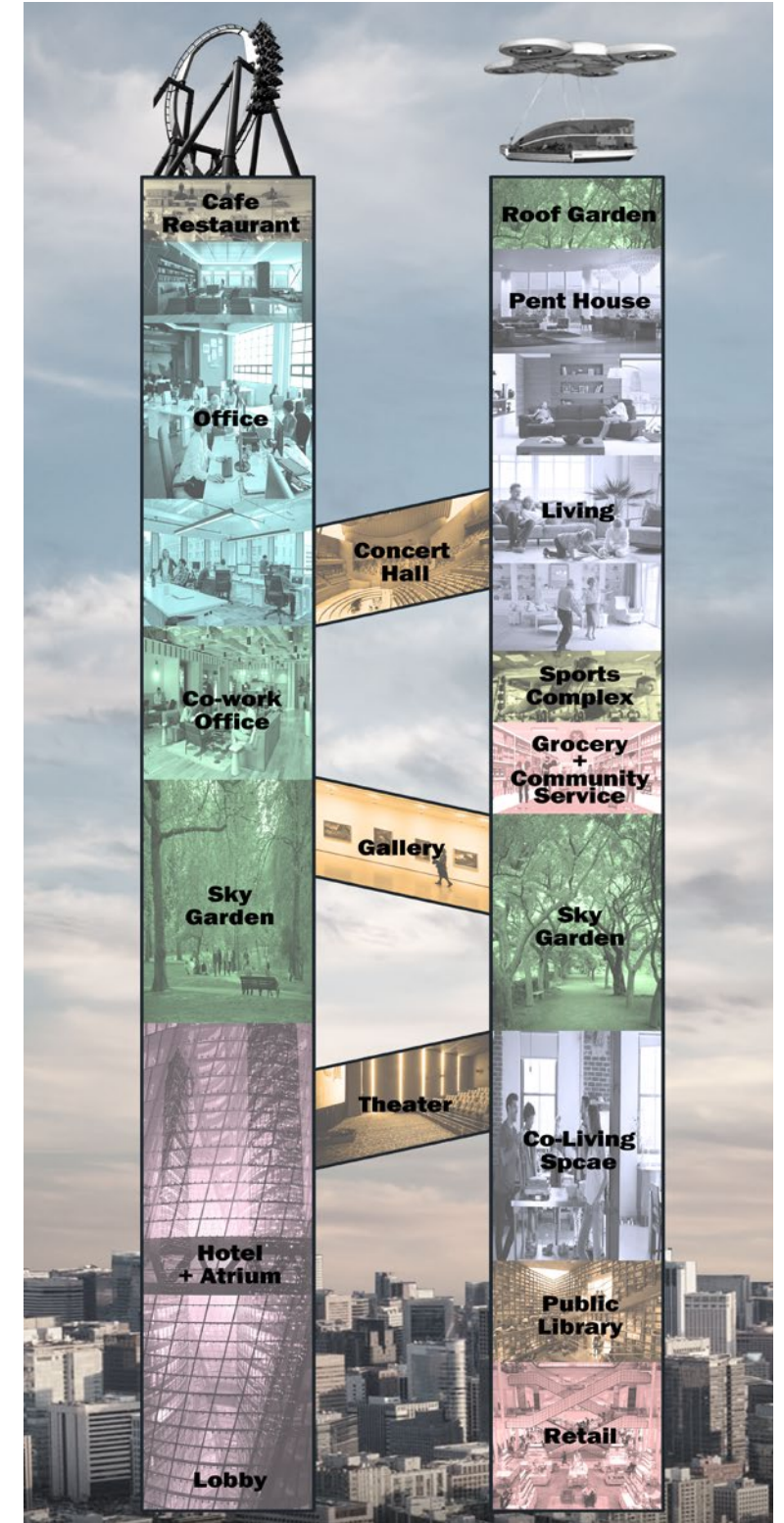
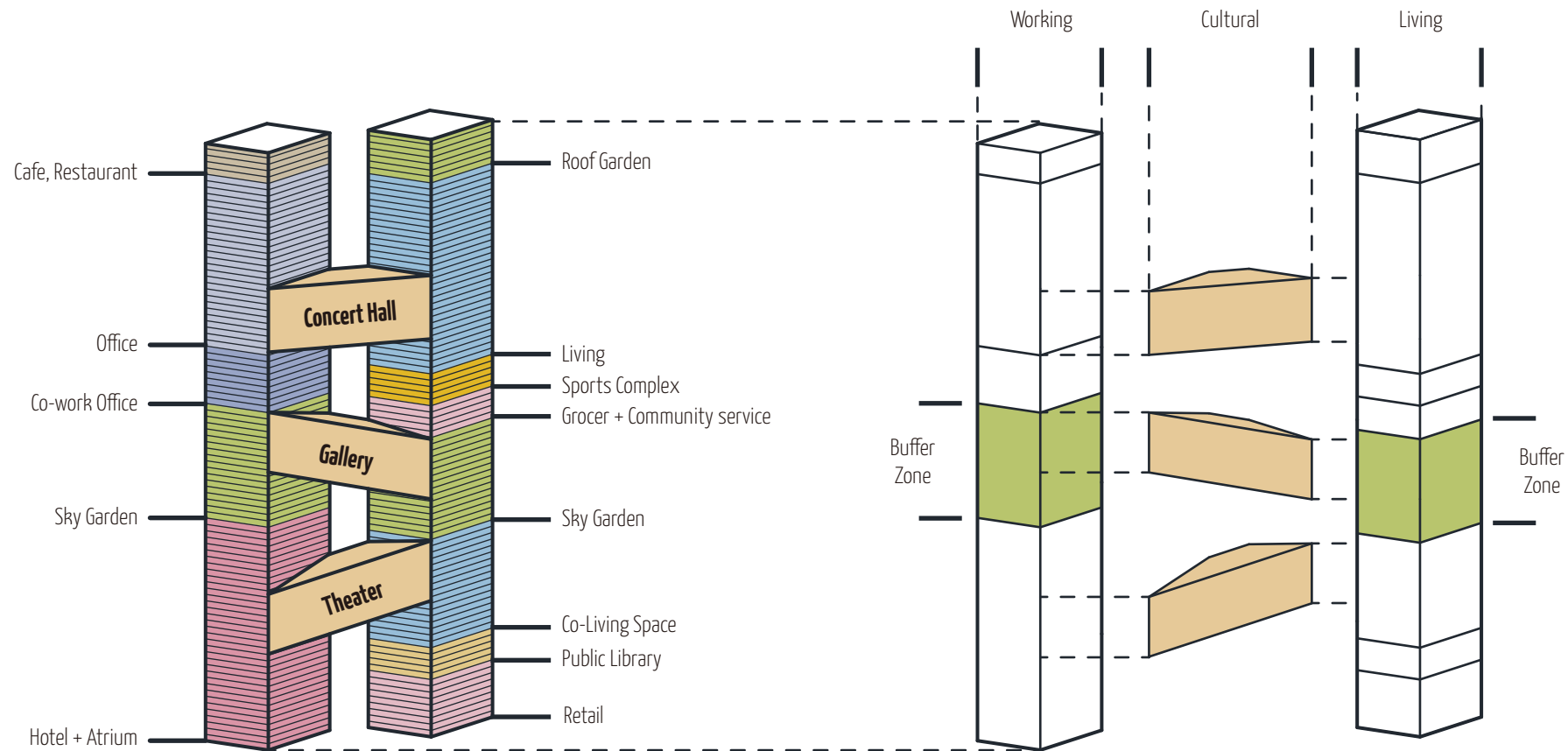


Skyscrapers in Hudson Yards function as huge walls in the city since they have massive and bulky shapes. The main idea of new skyscraper is to break the huge wall and allow people to view Hudson river through the broken wall.

Ideas of future skyscrapers

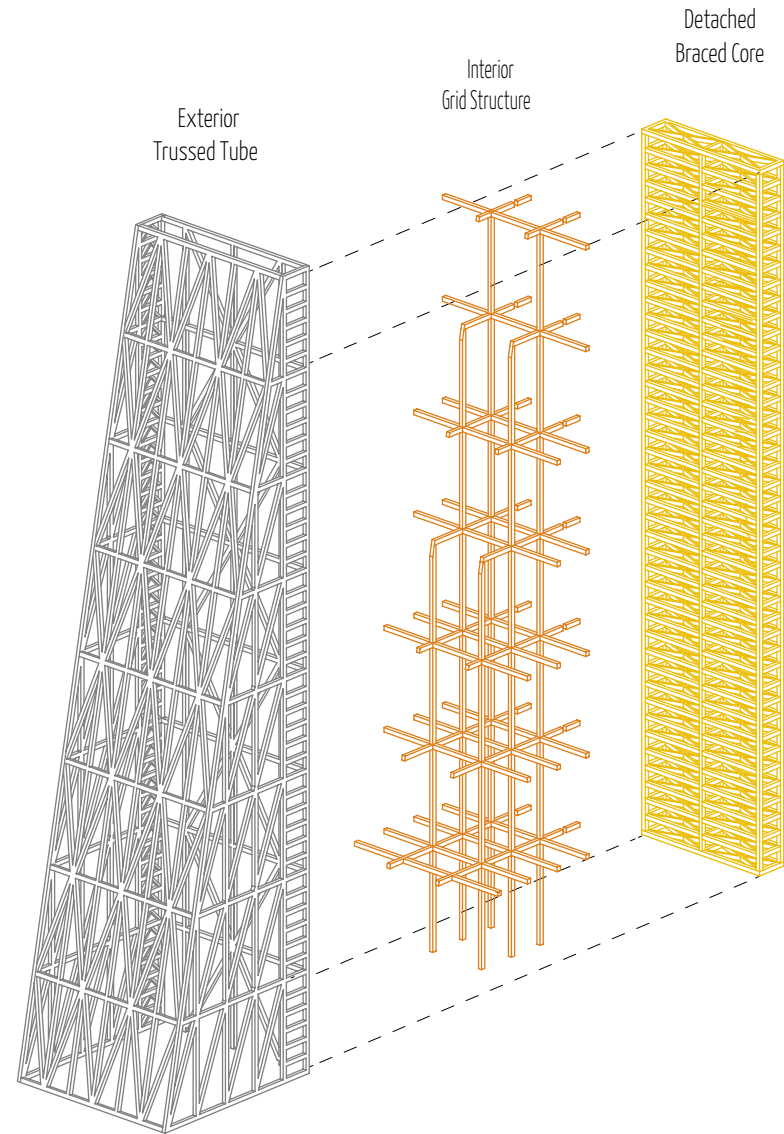
## Space of Program

The main idea of this space arrangement is separating the spaces related to living from the spaces related to working. As a result, there are three main volumes; working, cultural, and living. Cultural spaces such as concert hall, gallery, theater function as public spaces and connections between two towers. And each of working and living towers has sky gardens as vertical buffer zones between different spaces.



## Structure Model\_The Leadenhall Building

The structure aims to reinforce the geometry defined by the development envelope, which in turn created the distinctive tapering form. The primary stability structure takes the form of a perimeter braced 'tube' that defines the extent of the floor plates. This tubular steel megaframe can be read at a macro level within the city and at a micro level in the immediate vicinity of the building, the vertical circulation systems are expressed behind a façade of clear glazing offering occupants and passers-by views into and out of the building.

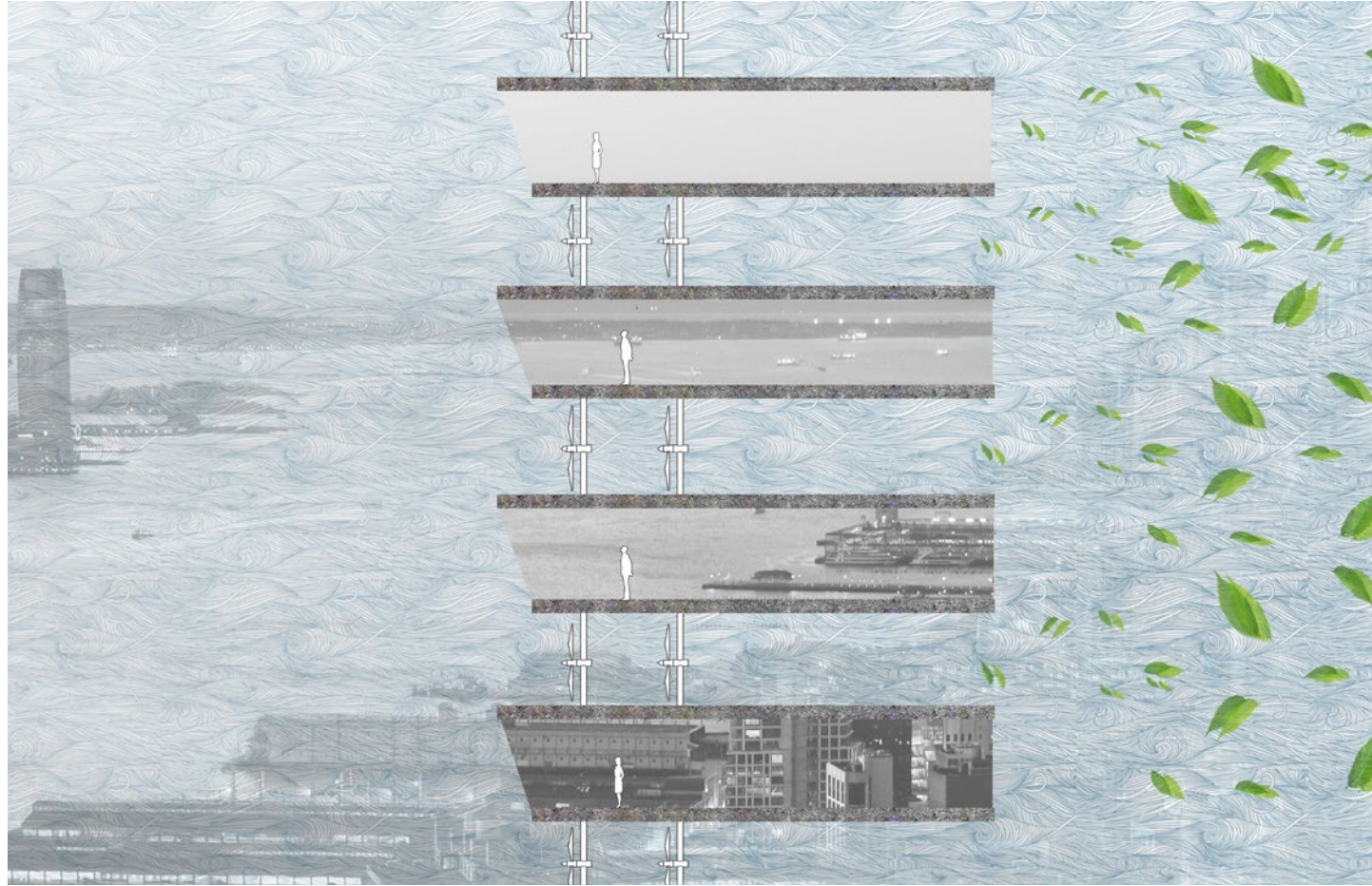


Composition of Structure

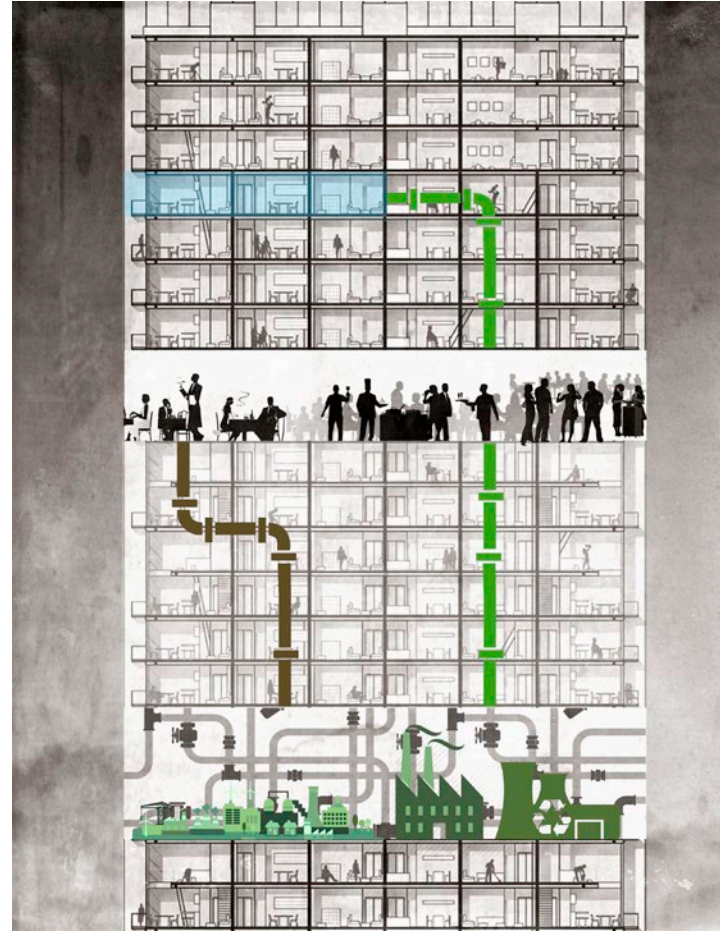


## Mechanical Skyscraper

The future of skyscraper should be concentrated on how to make skyscrapers have minimum impact on the city and contribute something to citizens' lives. Then, the mechanical system of skyscraper should be oriented to self-sufficiency and sustainability.



Urban Filter



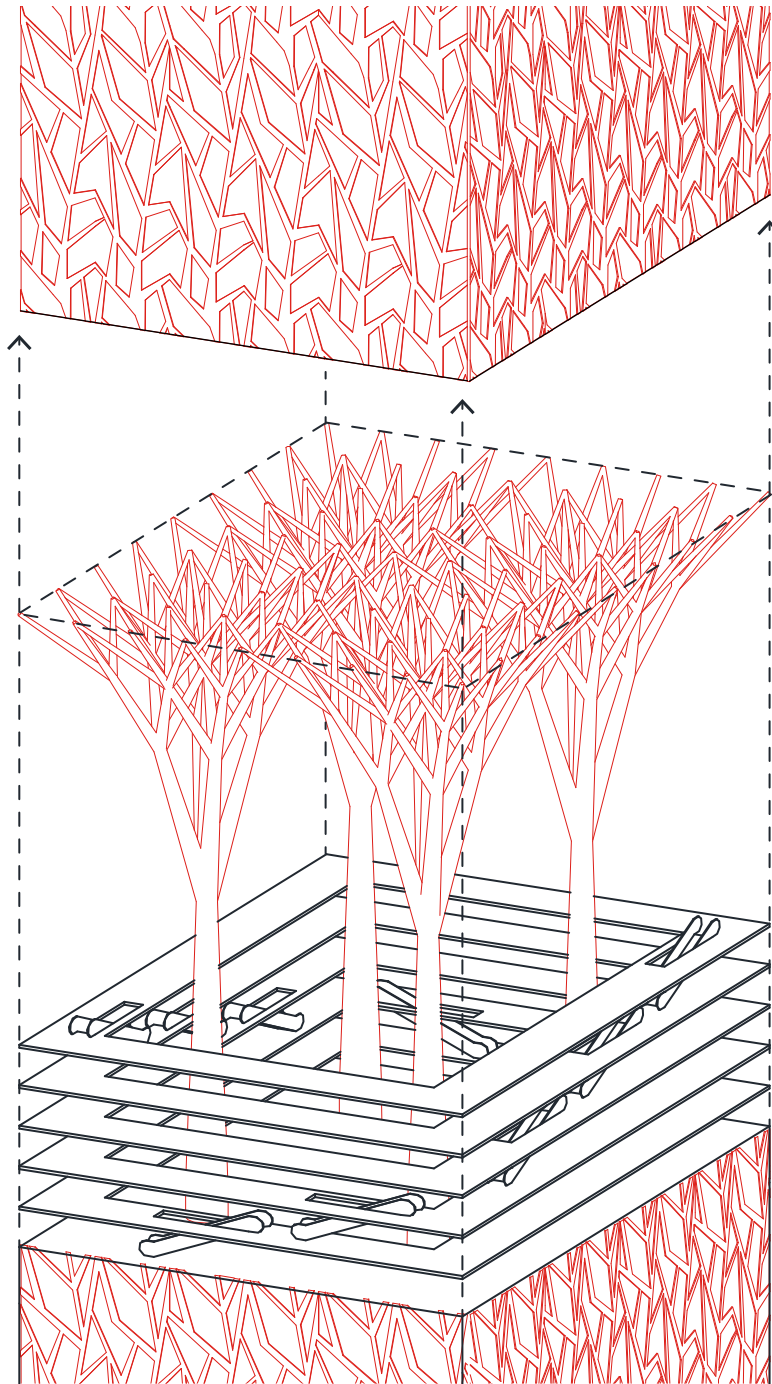
Self-Sufficient  
Recycling Power Plant



Rain Drop Sky Garden

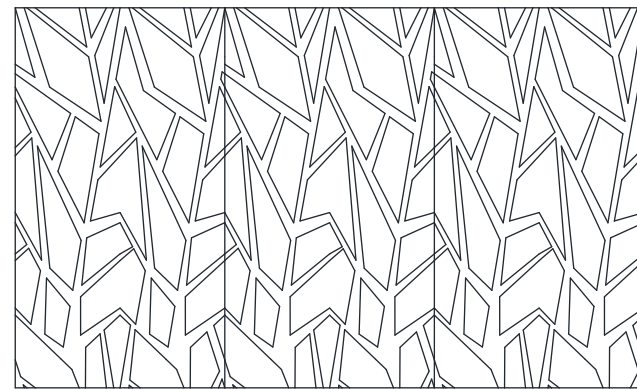
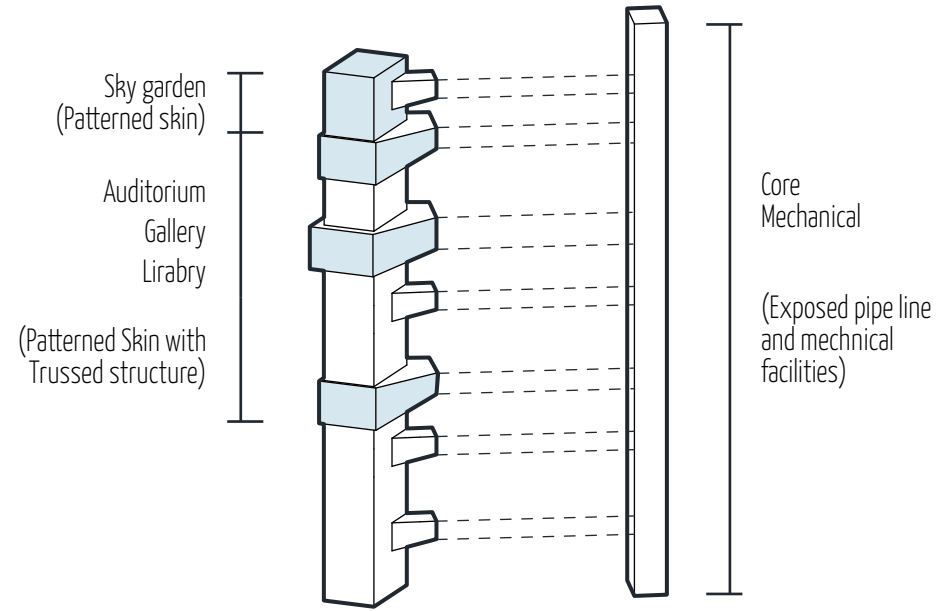
### Scheme of Skin

The main scheme of skin are derived from the initial concept of this project, "Inosculation Tree". To contribute to the public, the sky garden is on the top of the tower. The sky garden function as an iconic zone and as an open space for the public.



### Contrast

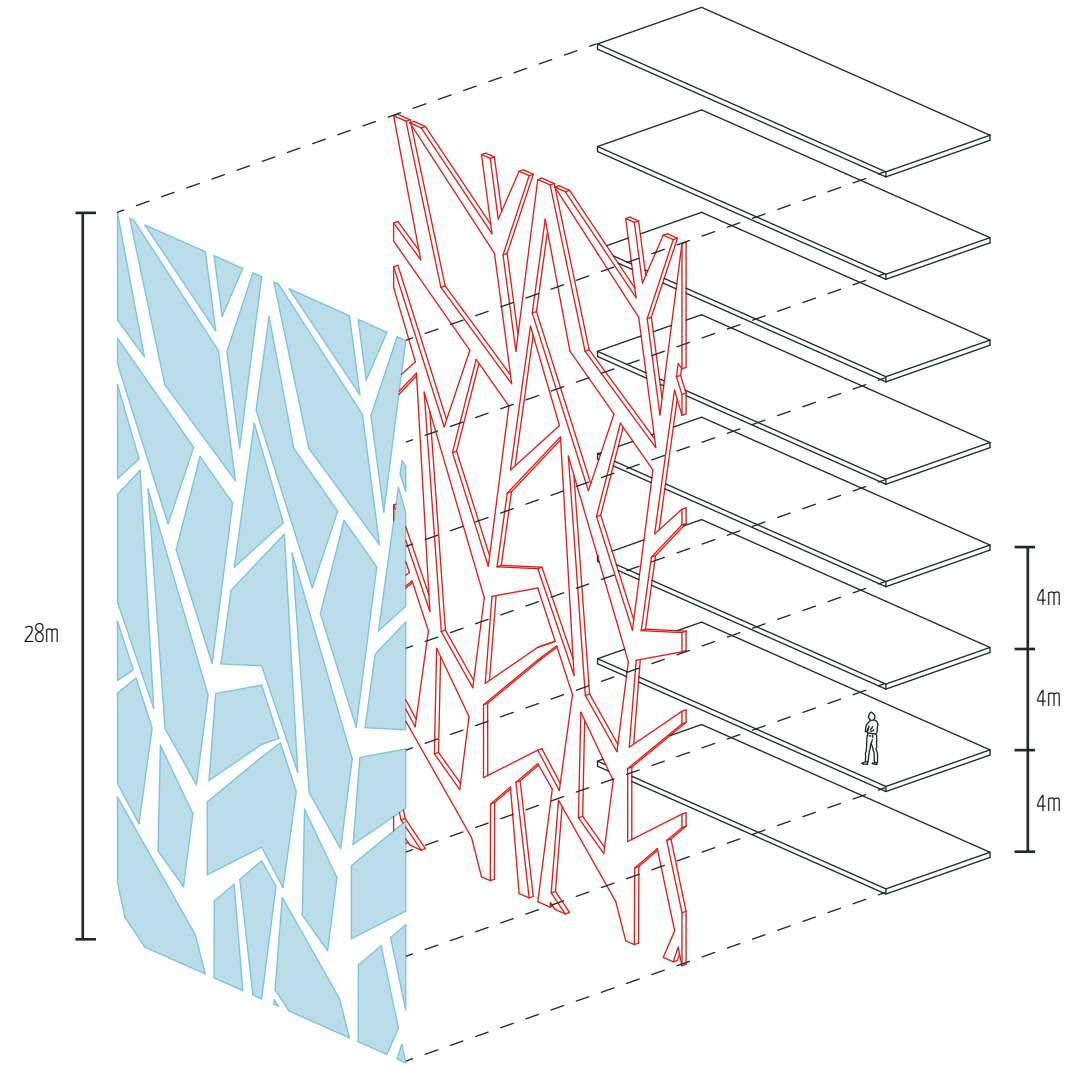
The main idea of skin is based on the different functions of two tower. To accentuate the difference between two towers, skins also have different appearance. The 'Served' tower with main programs has transparency and patterned skin, and the 'Servant' tower has exposed mechanical pipelines.



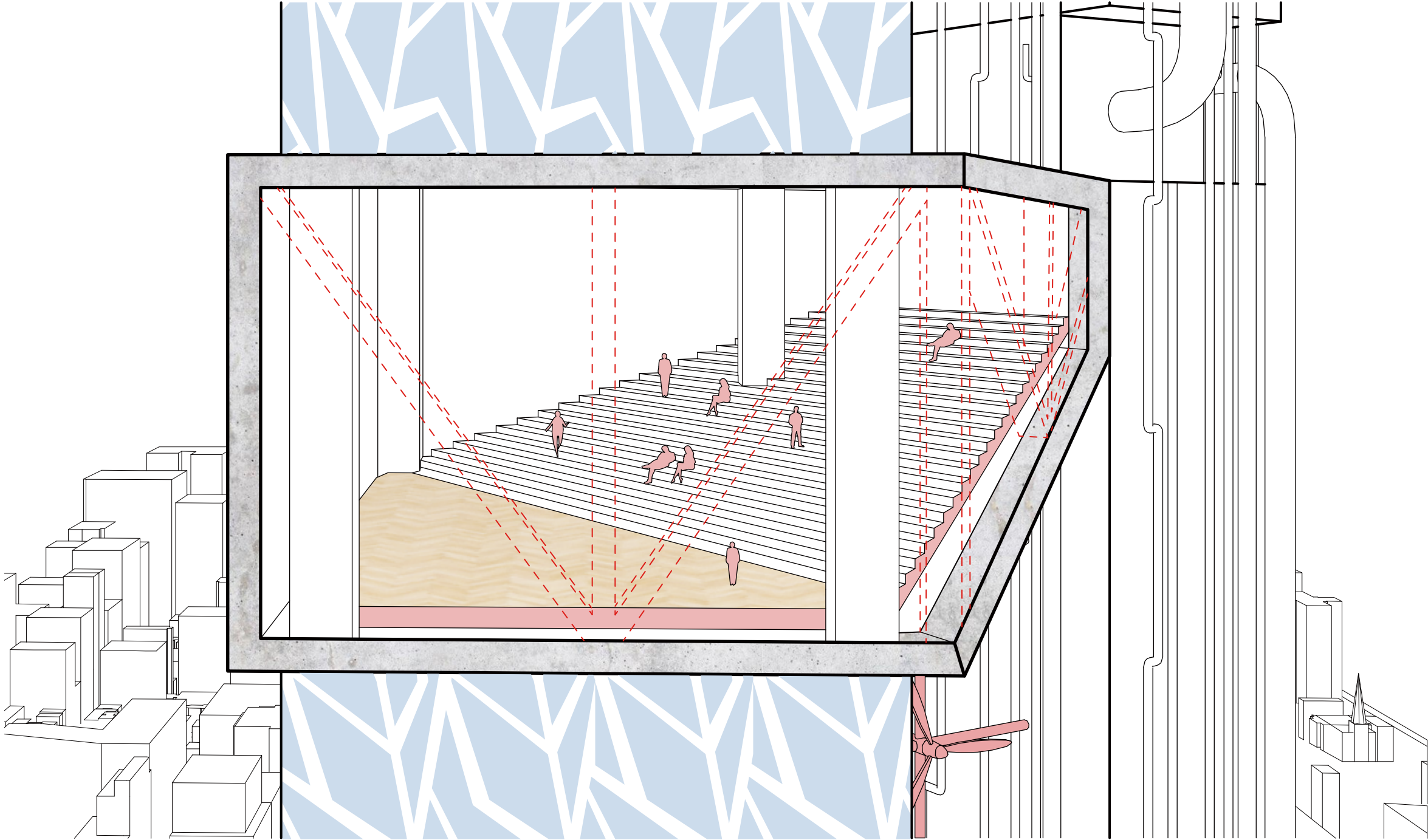
Facade Elevation

### The Pattern

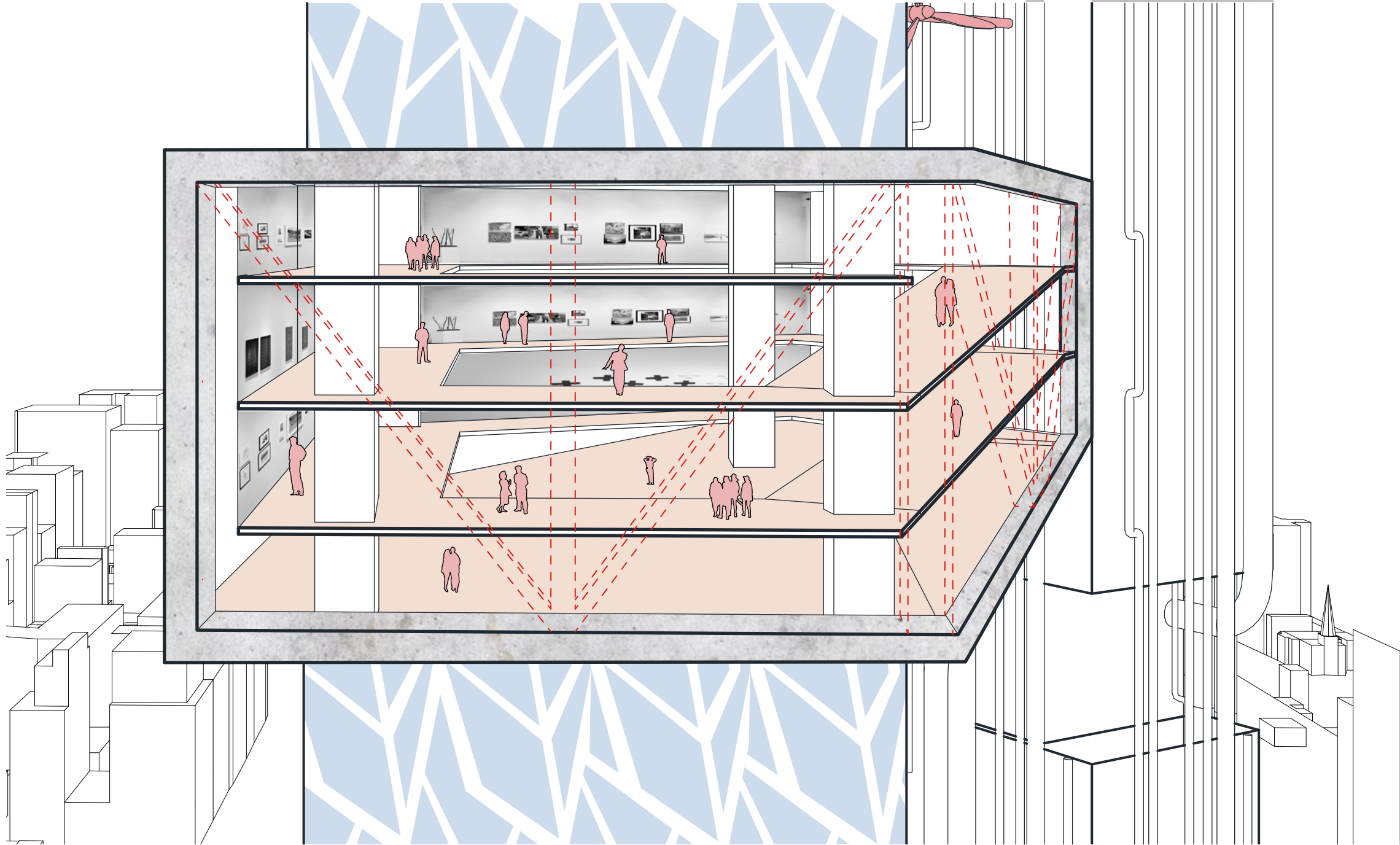
The pattern of skin also stems from the main conceptual idea. Repeating modules of the facade evoke images of tree branches and structures of tree leaves. The skin allows the building to absorb the penetration of natural light filtered by the pattern.



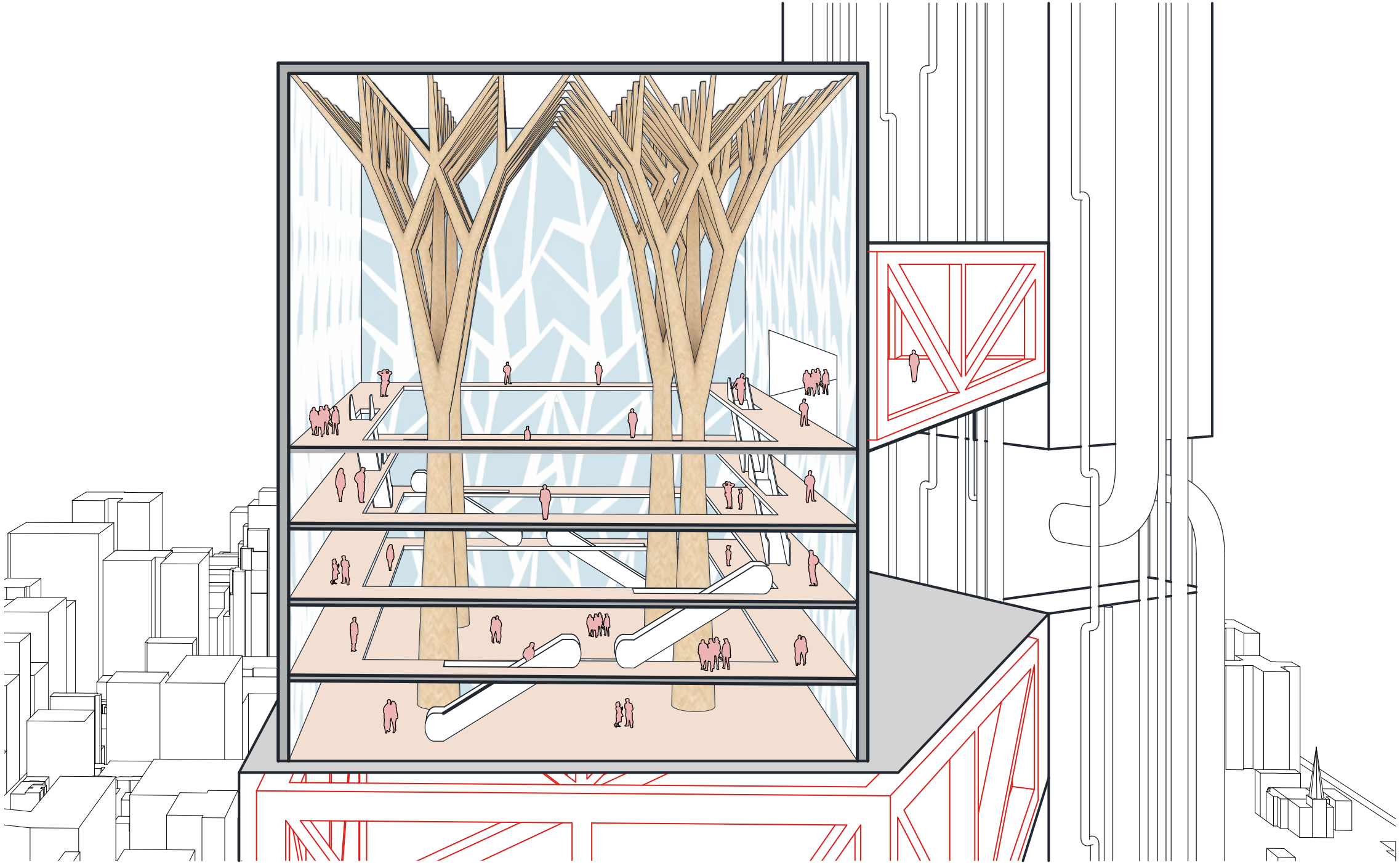
Pattern Extended



Sky Auditorium

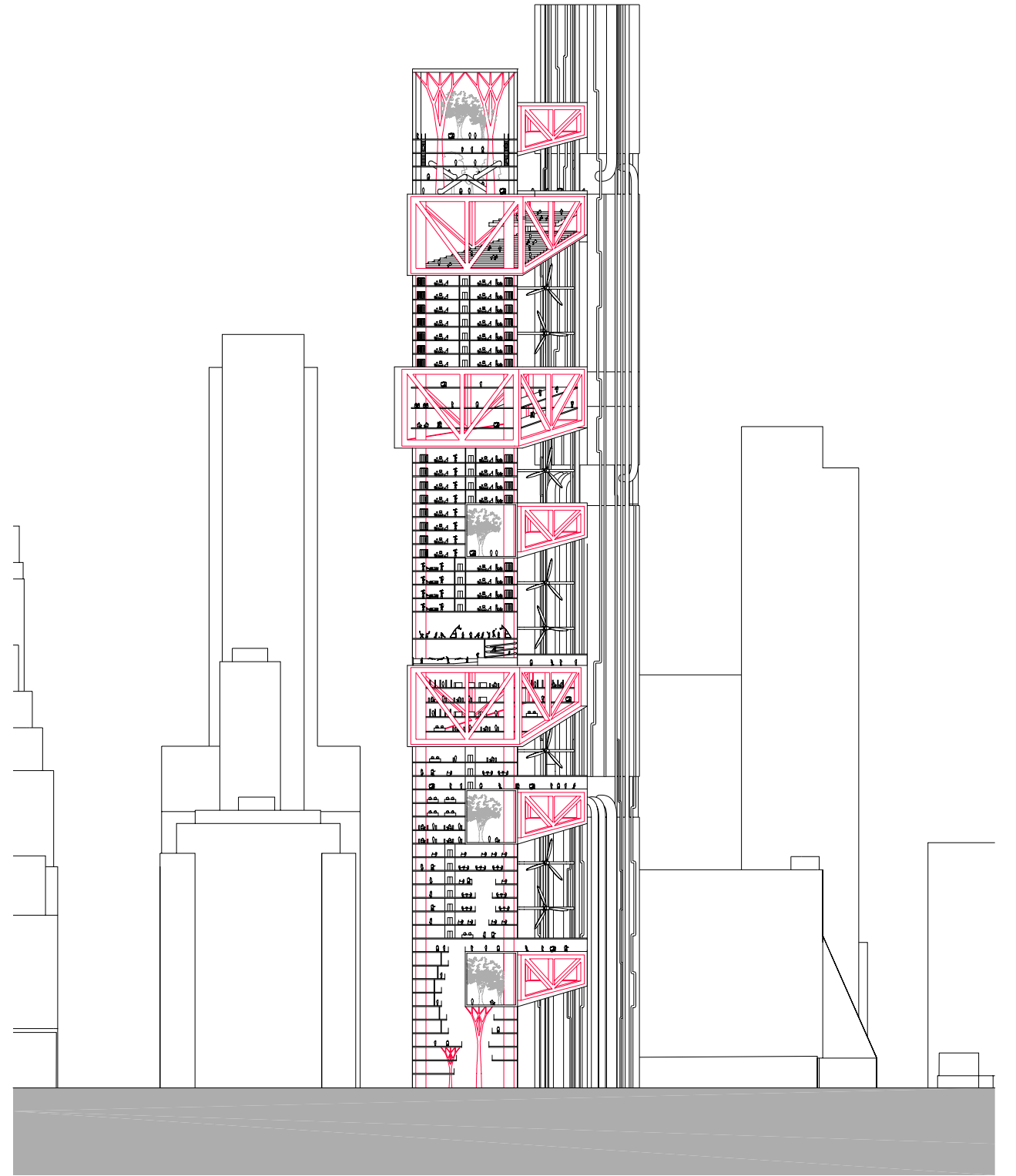
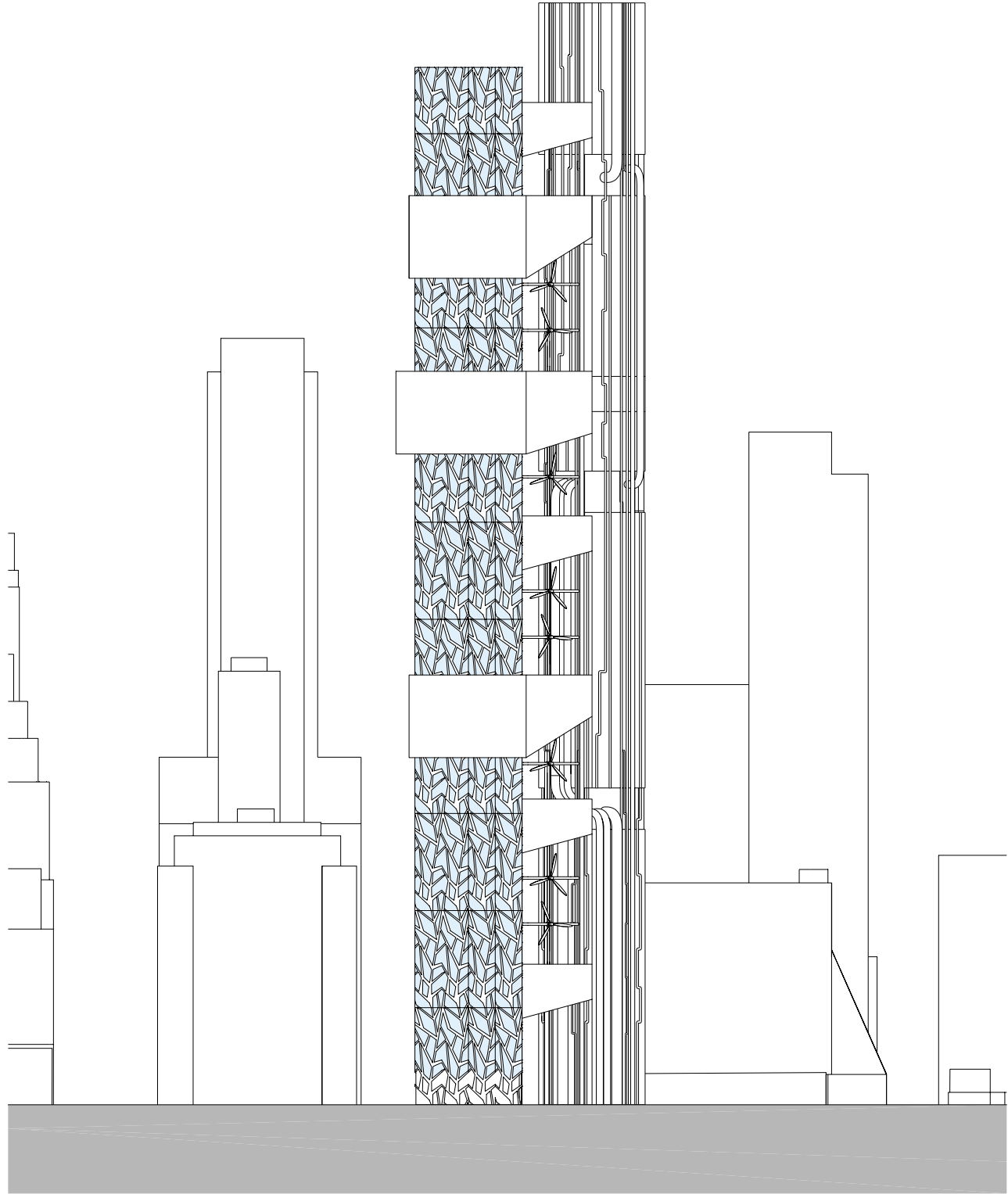


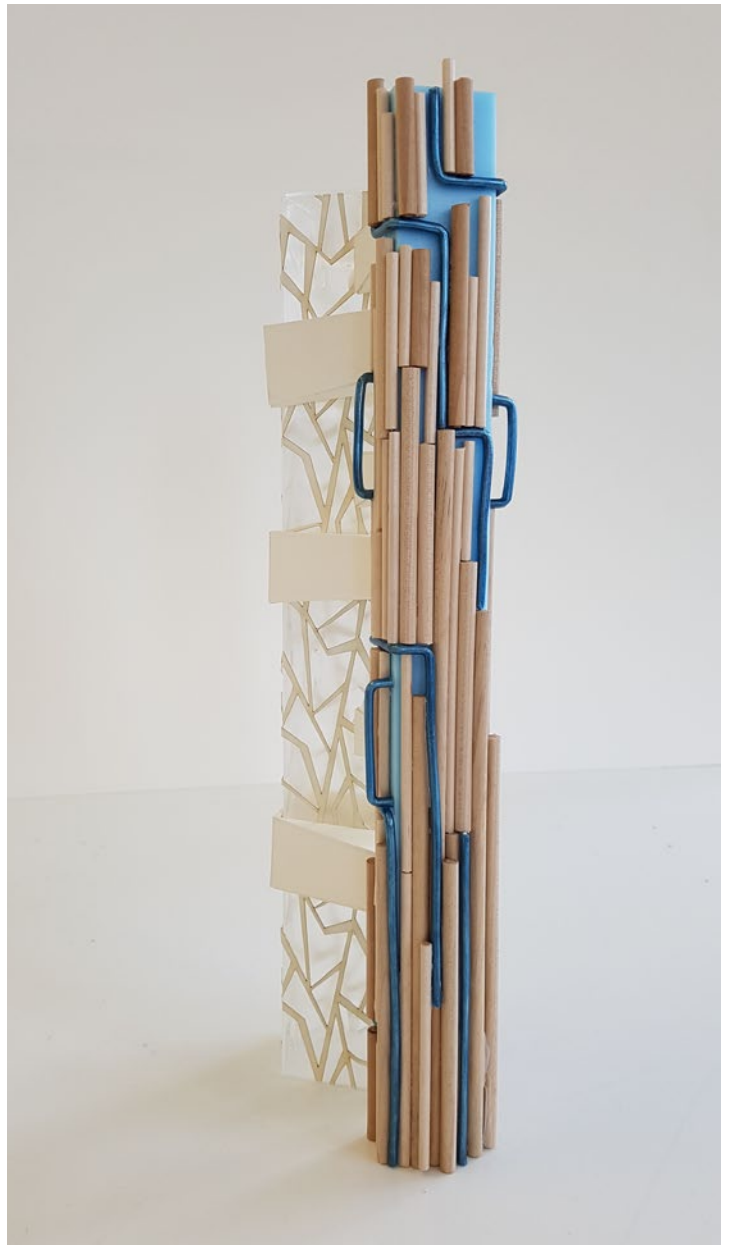
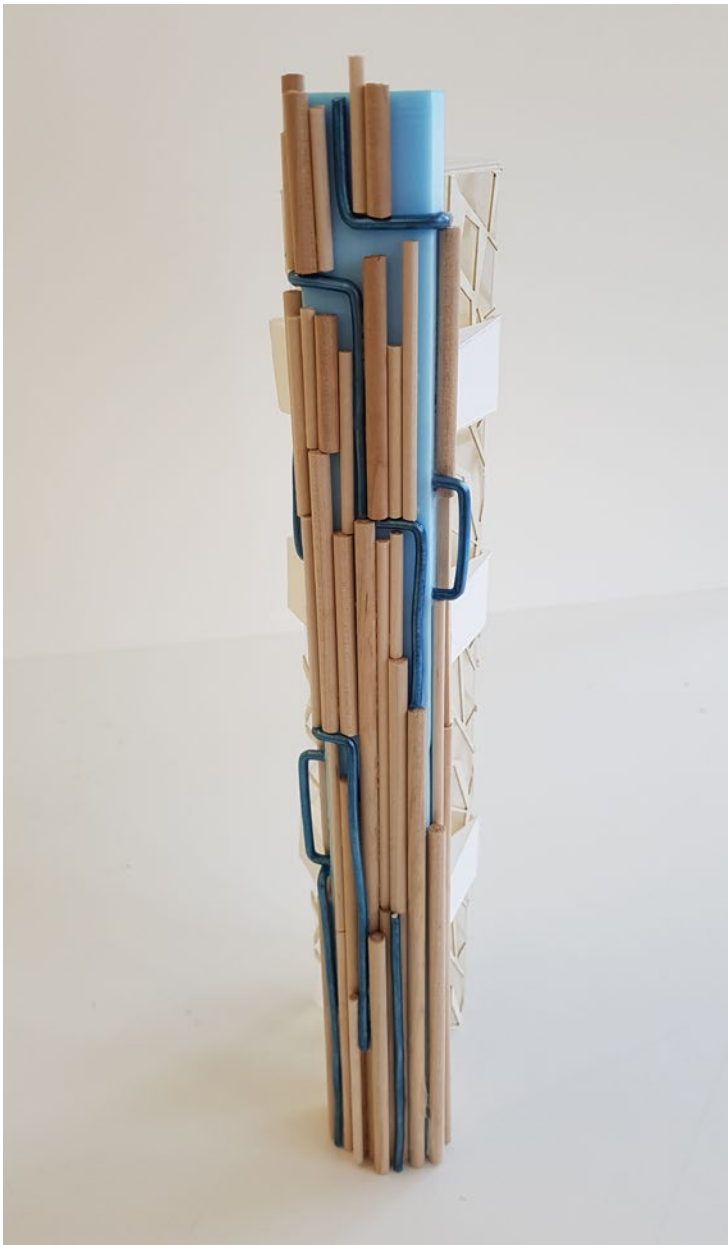
Urban Gallery

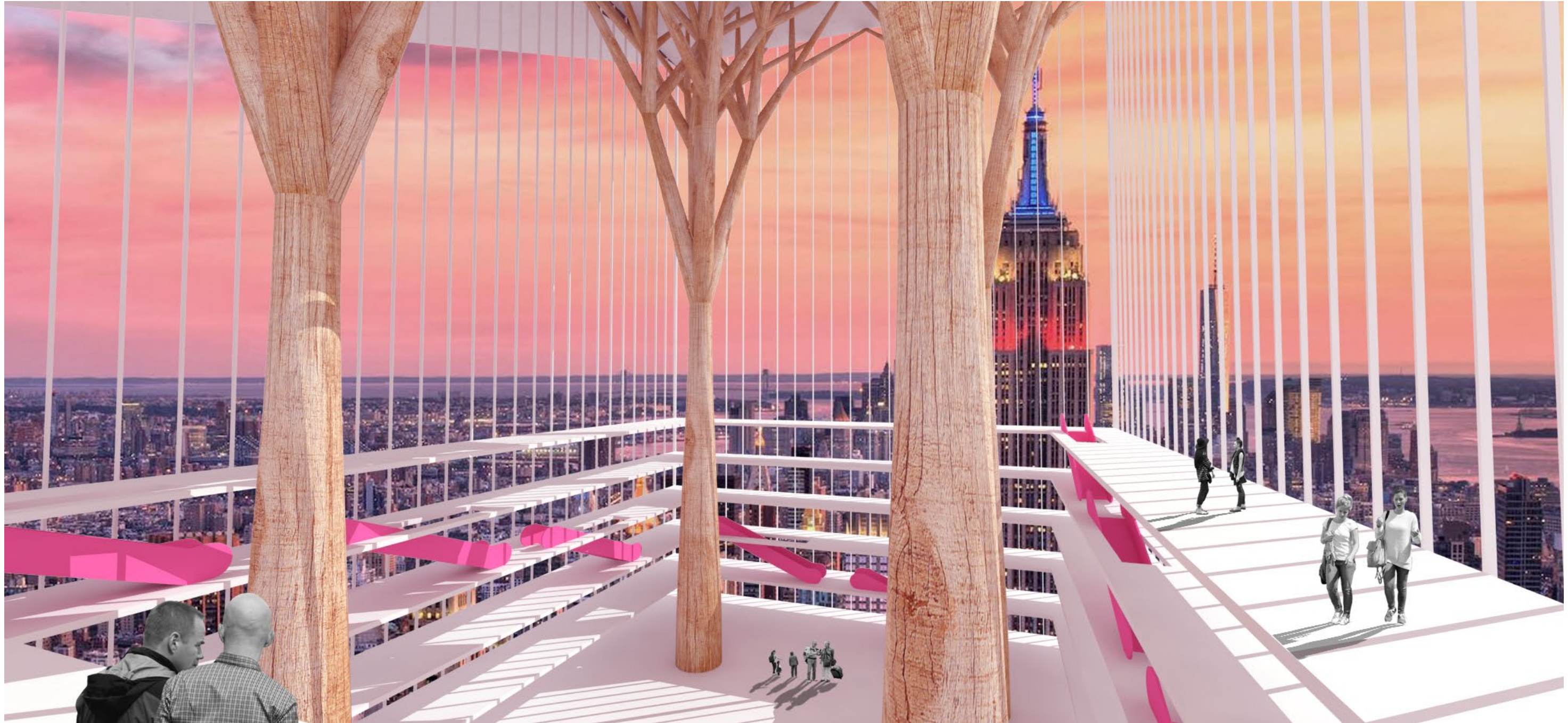


Sky Garden

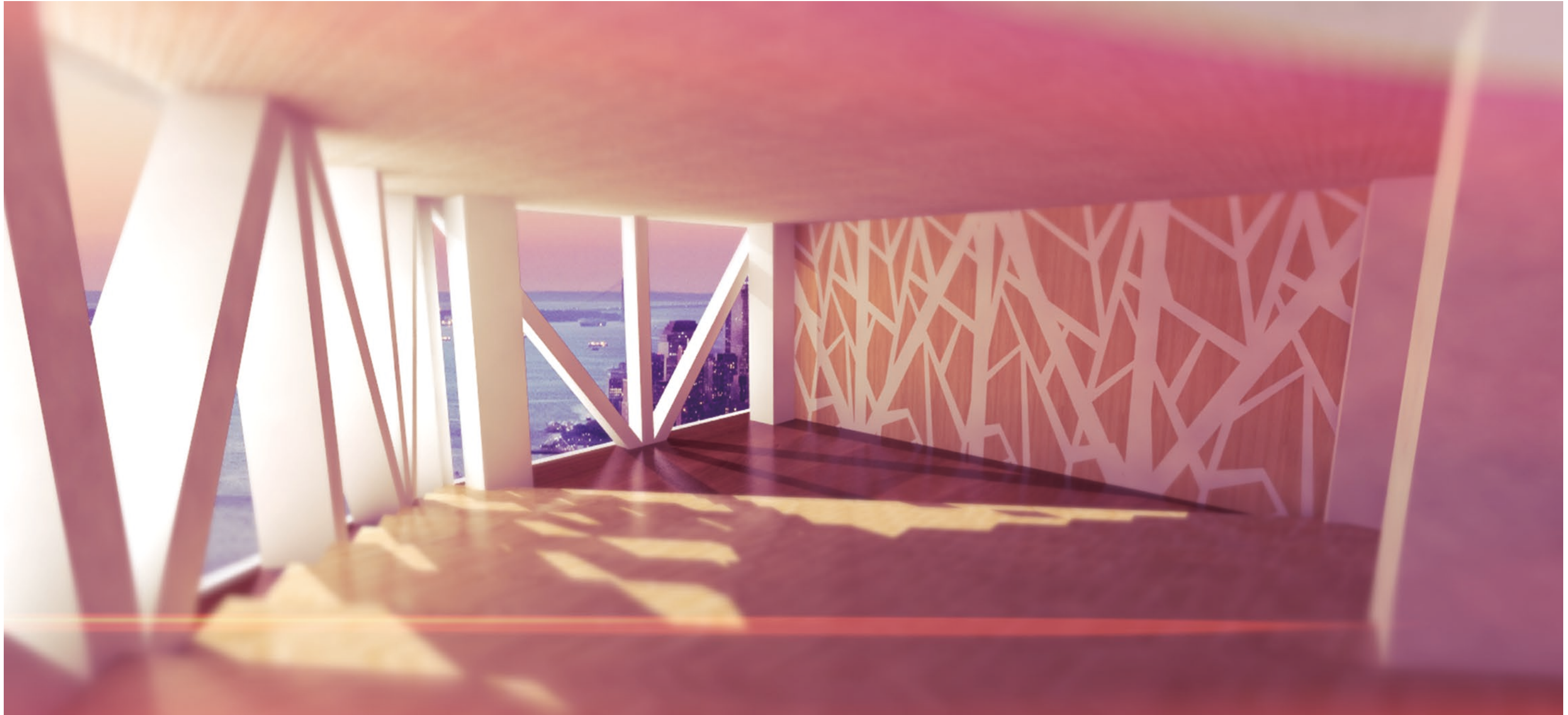












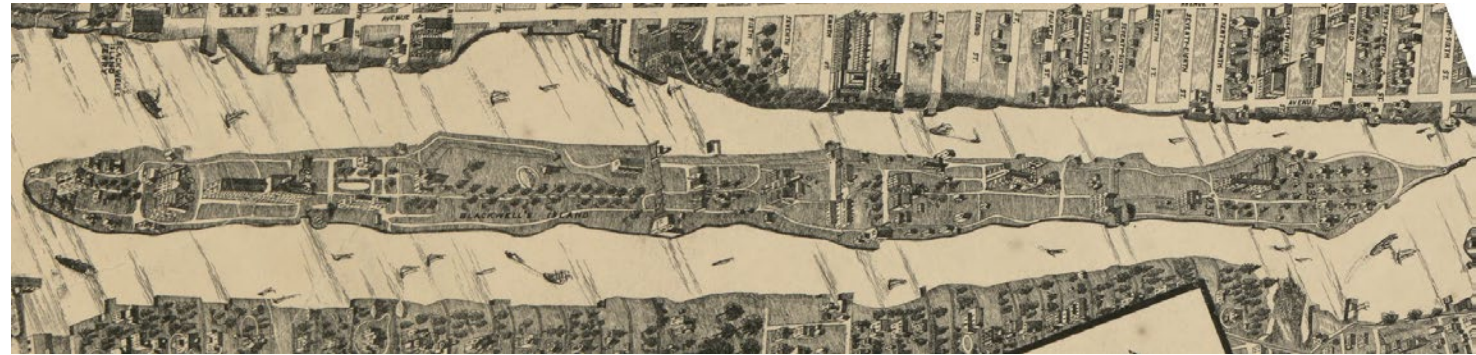
**TRANSCALARITIES**  
ARENAS OF DESIGN

Summer 2019  
Instructor : Andres Jaque

# Transcalarities, Arenas of Design

Type Academic / Team Work / Electives / Columbia University  
Instructor Andres Jaque Location Roosevelt Island, New York Date Summer, 2019

The contentious between the community of Roosevelt Island and Cornell Tech could be understood in at least two different dimensions, the first one is the political aspect and the second is the implications related to the construction and all the strategies used by the developers to keep the community satisfied. In 2011, the Mayor of the City of New York Michael Bloomberg first announced the plans for the Cornell-Tech Campus on Roosevelt Island. Recently, on 2019 the first stage of the Master plan was finished. It is estimated that the campus will be finished in 2037, a project with an extension of time that surely will impact in some way the island and its inhabitants. Demolishing a large and old hospital to build a new university campus on an island with only one street access implies different concerns from the actors involved in this conflict.



Cornell NYC Tech's Alarming Ties to the Israeli Occupation Community  
embers are concerned about Cornell's partnership with Technion-Israel  
ute of Technology, whose research and development help sustain Israel's  
occupation of Palestinian land.?

By Adam Hudson  
MARCH 1, 2013

Roosevelt Island is being screwed by both the City and the State of NY. And  
costing each and every resident money to support the services Cornell Tech  
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RIOC nominating elections run by the group, conditioned on the claim of  
RIOC's incompetence. But is any of it true?

By Adam Hudson  
MARCH 1, 2013

Left largely unmentioned was Cornell's partner in the venture, the  
nion-Israel Institute of Technology, and Technion's troubling role in the  
'Israeli-Palestinian conflict. In December 2010, Mayor Michael  
Bloomberg announced that the city was seeking proposals from  
any "university, applied science organization or related institution" to  
restructure a "state-of-the-art applied sciences research school" in New York  
City. In an effort to create technology jobs and establish itself as the East  
Coast's Silicon Valley.

"... Stanford University emerged as an early frontrunner. To compete with  
anford, Cornell sought a partnership with the Technion-Israel Institute of  
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he proposed campus. Some raised concerns about the impact the building  
ject would have on their community, including environmental and public  
health issues related to the exposure to hazardous material around the  
nstruction site. Others were worried about what construction would do to  
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of the school's connection to the Israeli-Palestinian conflict. "I do have  
concerns with the partnership with the Technion,"  
he said at the meeting. "My concern is what would  
happen on Roosevelt Island  
just because we have an Israeli institute here."

"Cornell Tech is a natural 21st-century expression of Cornell University's  
3 principles," said Robert S. Harrison, chairman of the Cornell University  
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## New York City

for more than a century. The innovative programs at Cornell Tech affirm our institution's. Some  
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Some Roosevelt Island residents have also complained about the  
timing campus construction, while others said Cornell Tech had not  
paid enough to support local neighborhood services, such as street  
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free-riding off the backs of a working population to function in an  
vironment that they really are not adequately paying for," said Joyce  
Short, a writer and longtime resident.

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Such protests heighten the possibility of security tightening around the  
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## Technion

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York taxpayer money to make a name for itself on American  
oil. "Aharoni hopes that the partnership will counter this perception  
fortifying "Israel's image as a country that is about the promotion  
of goodness, about the advancement of knowledge for all humanity."

Ido Aharoni, General Consul of Israel in New York.  
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"With  
the opening  
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Cornell University,  
in partnership with  
the Technion,  
is defining a new  
model for graduate education  
a model that melds  
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education with entrepren eurship  
and real world application."

said  
Cornell University President  
Martha E. Pollack.

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"Today's Cornell Tech  
campus opening marks  
the beginning of  
a new chapter in the  
Jacobs Technion-Cornell  
Institute's ongoing work  
to foster innovation in  
New York and beyond,

said Professor Peretz  
Lavi, Pre- sident of  
Technion-Israel Institute of Technology.

## ROSSELVET ISLAND BRIDGE The Roosevelt Island Residents

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about the impact the  
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hazardous material  
around the  
construction site.  
said Major Bill the Blissio

"It's been thrilling  
to watch the  
campus' buildings rise  
on Roosevelt Island  
and to see the  
community partnerships  
has already  
made possible."

Said Manhattan  
Borough President  
QUEENS BORO BRIDGE  
Gale A. Brewer.

"We are entering a new era  
for tech in New York, and  
the Cornell Tech  
campus is at  
the heart of it.

## Cornell Tech

was given  
the rare opportunity to

Air Quality  
Action Levels  
\* Between 0.100 mg/m3 and  
0.150 mg/m3  
– Particulate suppression  
techniques instituted.  
\* Greater than 0.150 mg/m3  
– Stop work and reevaluate  
activities

Jul 18, 2019, 0.079  
Jun 20, 2019, 0.088  
May 20, 2019, 0.080  
Apr 18, 2019, 0.077  
Mar 11, 2019, 0.089  
Feb 18, 2019, 0.079  
Jan 14, 2019, 0.081

"Roosevelt Island is being screwed by both the City and the State  
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Article: Is Roosevelt Island "Being Screwed" In the Cornell Tech I  
Monday, July 17, 2017 - 00:12 Written by David Stone

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Article: Our Chance to Kick the NY Times Ass: Is Cornell Tech "free-riding  
" on Roosevelt Island? Tuesday, December 18, 2018 - 18:21 Updated 24 weeks  
Written by David Stone

"In addition, new york city generosity toward the Roosevelt Island community  
has been consistent, beginning even while the campus was under construction and  
were being held at Google's Chelsea headquarters. Probably most significant in  
the commitment of an instructor to help PISIS 217's teachers train students incompete  
"For those of us, and we're certainly the majority, who disagree in whole or in pa  
Short's Cornell Tech-bashing. The Daily offers an apology. We're extraordinarily I  
campus growing here. And, also, here's a wrist slap for the New York Times. Try he  
legitimate spokespersons to re- present us. Real balance demands more than scarin,  
local."

The construction of the Cornell NYC Tech campus on Roosevelt Island will bring

pollution to Astoria, where the only bridge to the island is located, Ast  
Board members said during its meeting Tuesday night. The community board how  
say over the development plans because the project is located within the area of A  
Community Board 8. "They are getting a beautiful building and we are getting all  
said Vinicio Donato, Community Board 1's chairman. Construction will start in 26  
campus will open its doors to the first students in 2017. It will take another 21 ye  
the campus, which will eventually host 2,500 students and sprawl over 2-million s  
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enhance our land- grant mission, and reflect the spirit of all Cornellians."

## Barr & Barr

has broke ground on the Cornell University Veriz  
Educational Center. This is Barr & Barr's second project on the Cornell Tech  
Roosevelt Island in NYC. This is a four storey, 40,000 SF, academic building. T  
Executive Education Center will provide space for functions accommodating up  
well as four 50-75 seat classrooms; it will be adjoined to the Hotel by a shared I  
building will meet LEED Silver Certification.

Cornell's partnership with Technion because of the school's co  
Israeli-Palestinian conflict. "I do have  
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a partnership with the Technion-Israel Institute of Technology, a world-renown  
Haifa and an incubator for the high-tech industry, particularly focused on mili  
The word "isle" gives us "isolation," and the site is bounded by water on two  
the south, and the bridge to the north. Getting on and off the new campus will  
chore; the small population of scientists and engineers probably won't be mun  
justify a new footbridge, or even ferry service. Mayne tries to skate over that p  
describing the site's

## "isolated connectedness."

From: Cornell Thinks Big As Well As Bold for Roosevelt Island Campus  
Written by Justin Davidson

"At the board meeting, Naquvi worried that Technion would bring unwanted  
island, adding that possible protests of Technion could impact security."

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Cornell NYC Tech's Alarming Ties to the Israeli Occupation Communi  
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Cornell NYC Tech's Alarming Ties to the Israeli Occupation Community members are concerned about Cornell's partnership with Technion-Israel Institute of Technology, whose research and development help sustain Israel's occupation of Palestinian land.

By Adam Hudson  
MARCH 1, 2013

Roosevelt Island is being screwed by both the City and the State of NY. And costing each and every resident money to support the services Cornell Tech needs. ... Some Roosevelt Island residents have written Joyce M. Short, the Common Council's Government Relations Committee Chair. Similar allegations were made earlier in an effort to justify RIOC nominating elections run by the group, conditioned on the claim of RIOC's incompetence. But is any of it true?

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Left largely unmentioned was Cornell's partner in the venture, the Technion-Israel Institute of Technology, and Technion's troubling role in the Israeli-Palestinian conflict. In December 2010, Mayor Michael Bloomberg announced that the city was seeking proposals from any "university, applied science organization or related institution" to construct a "state-of-the-art applied sciences research school" in New York City. In an effort to create technology jobs and establish itself as the East Coast's Silicon Valley.

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### New York City

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"Cornell Tech was given the rare opportunity to ..."

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### New York City

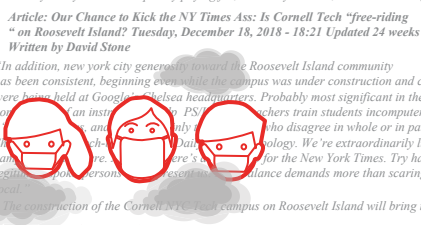
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- Construction route
- Hospital patient route
- Barging spot
- Coler - Goldwater specialty hospital
- Air monitoring spot



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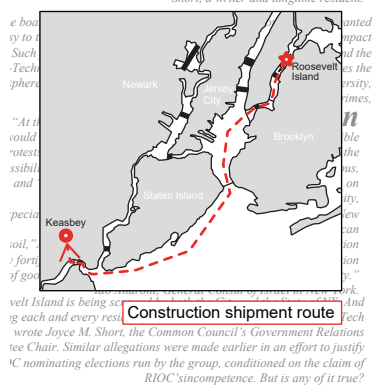
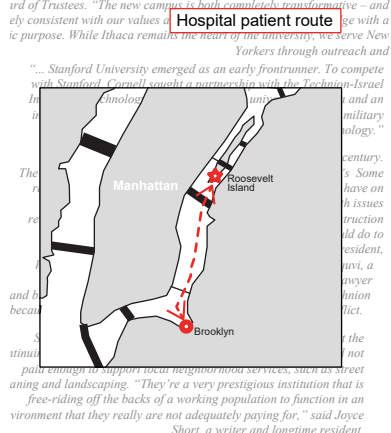
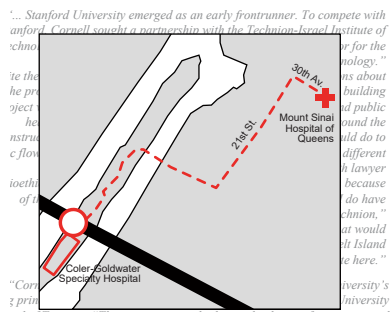
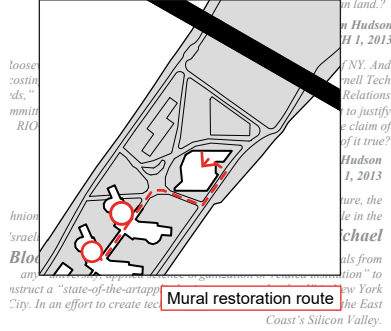
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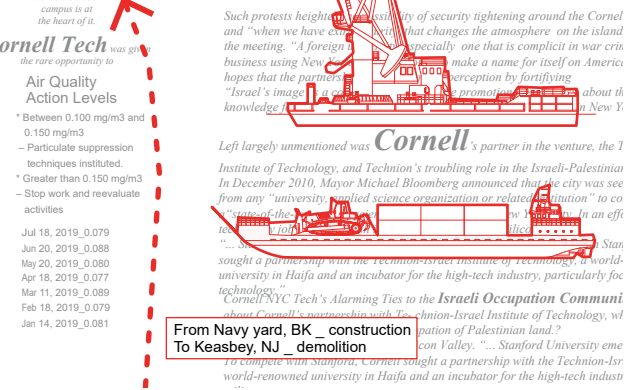
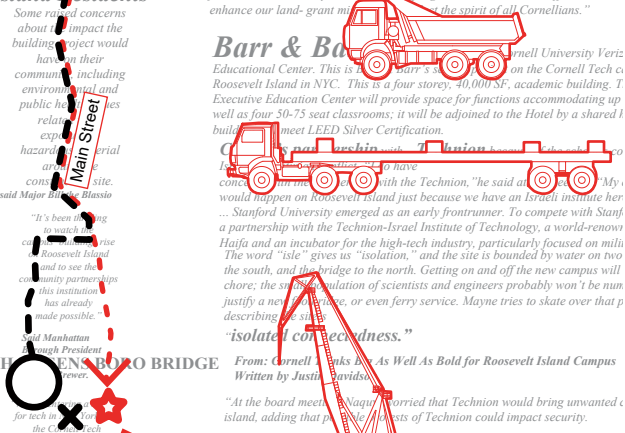
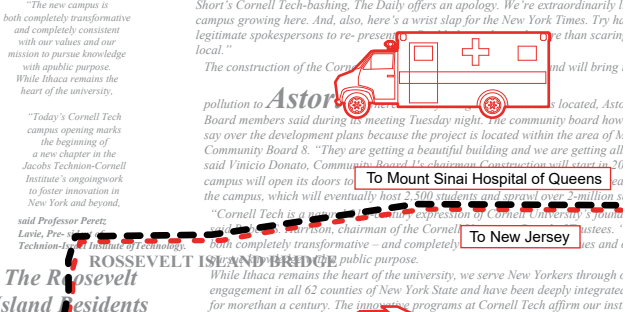
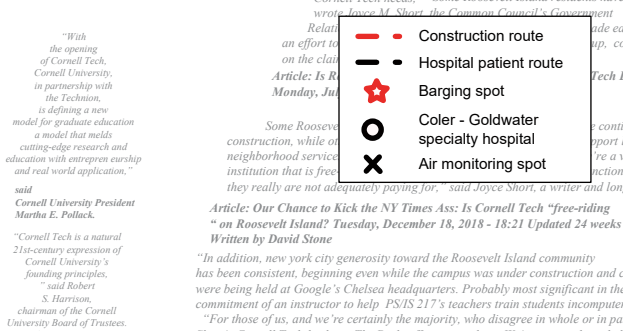
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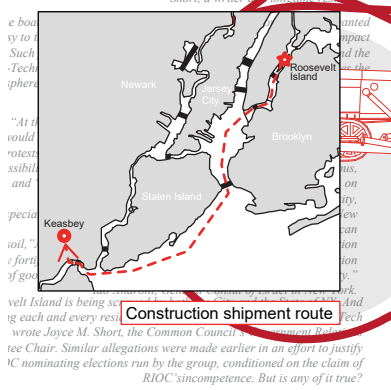
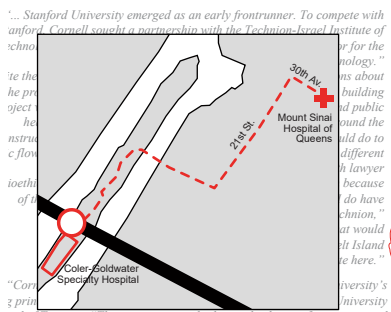
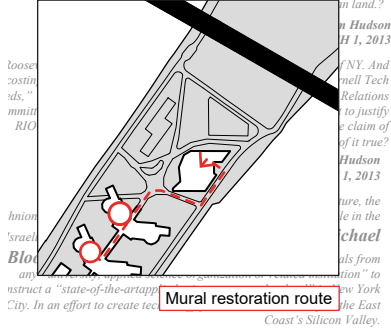
Cornell NYC Tech's Alarming Ties to the Israeli Occupation Community members are concerned about Cornell's partnership with Technion-Israel Institute of Technology, whose research and development help sustain Israel's occupation of the West Bank and Gaza.



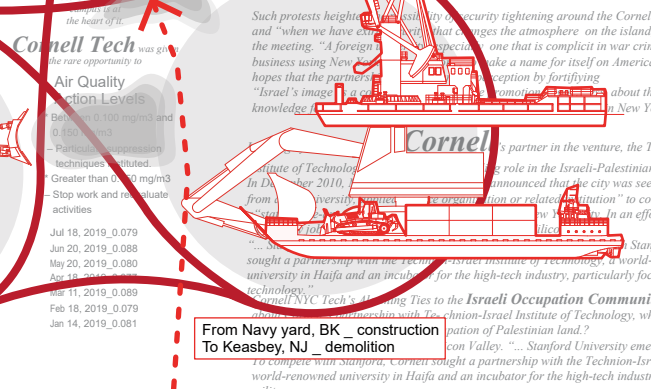
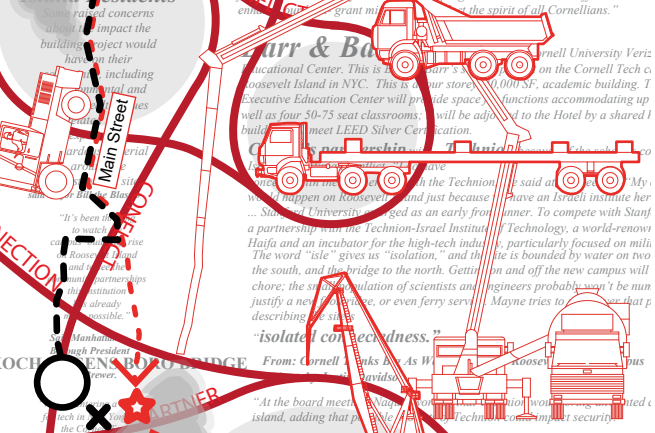
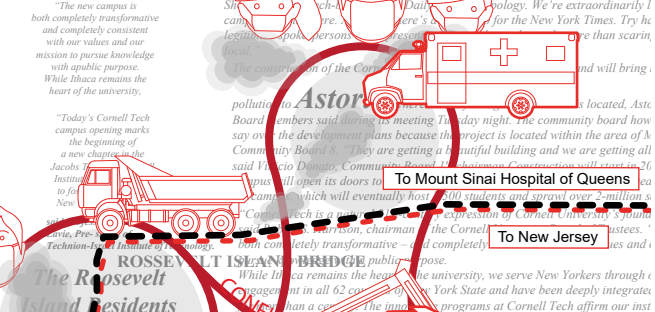
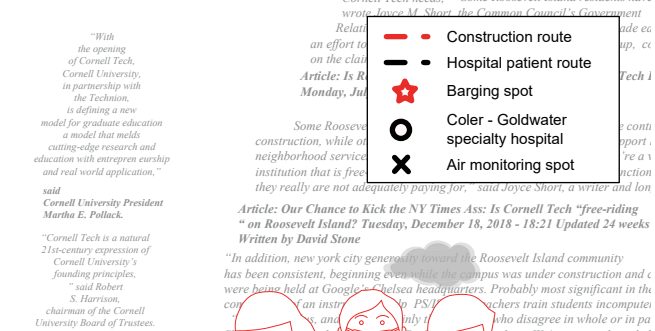
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**CULTURE CONTAINERS II**  
A CONTEMPORARY ART NON-INSTITUTION

Fall 2019  
Studio Critics : Dominic Leong + Chris Leong

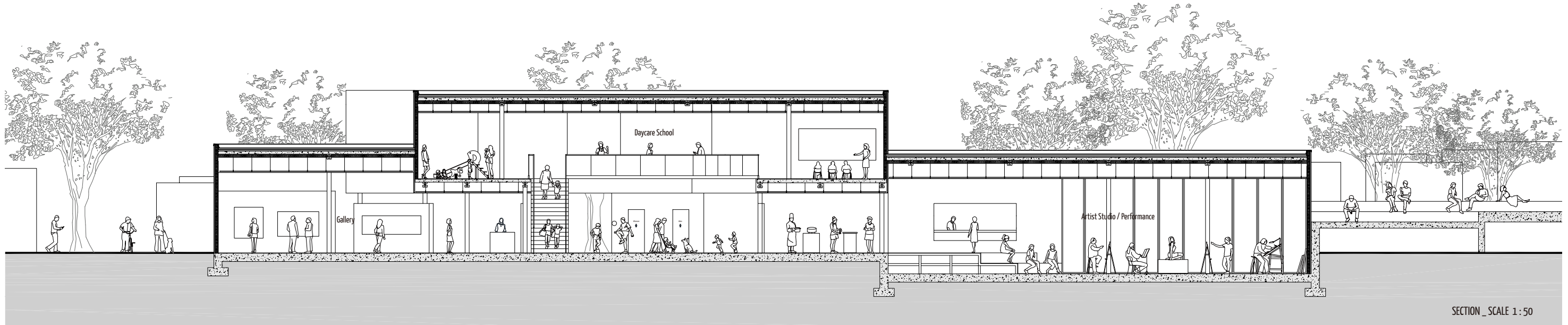
# South L.A. Art Event Park

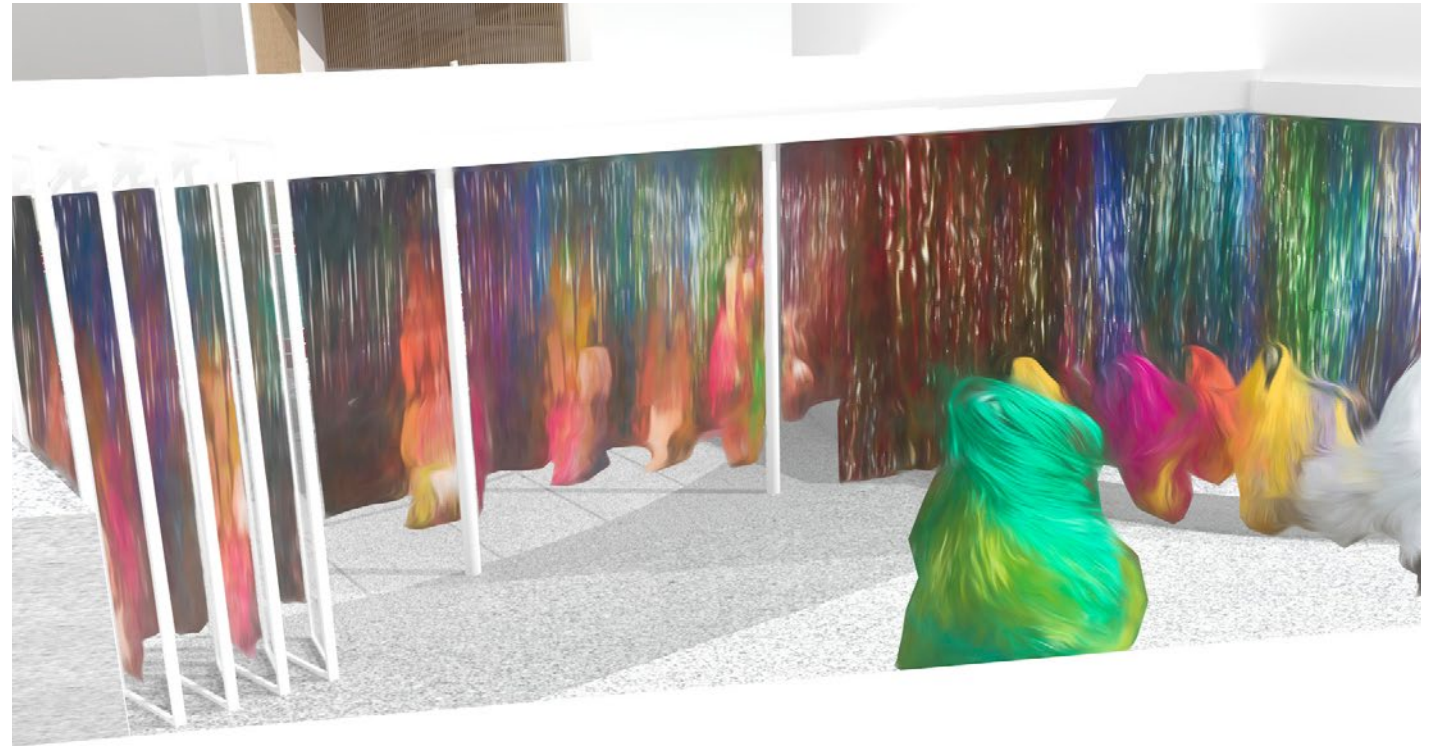
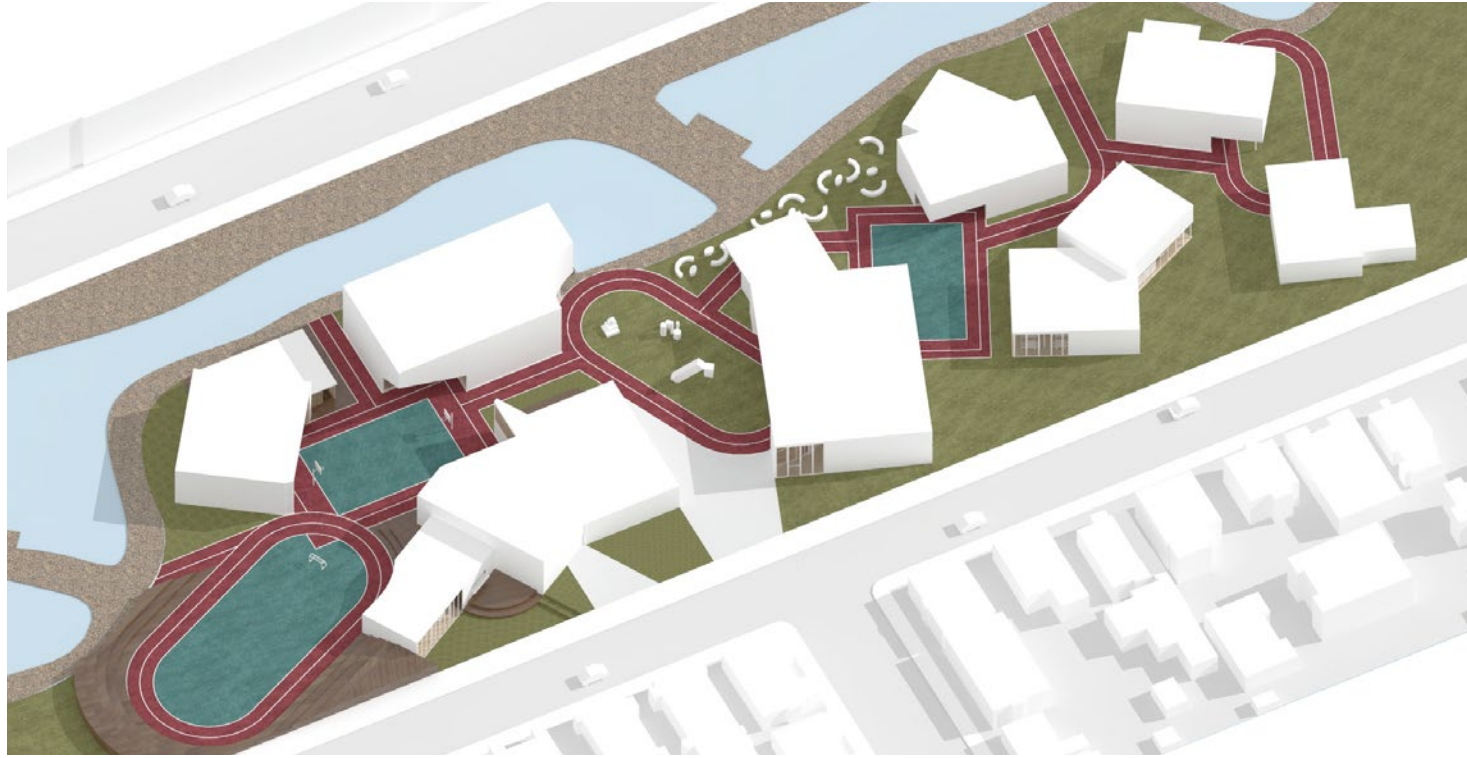
Type Academic / Individual Work / Studio / Columbia University Instructor Dominic Leong / Chris Leong Location Southern L.A. Date Fall, 2019

The project is a non-institution art event space for the South L.A. Wetlands Park neighborhood community. This non-institution sees art as flexible, temporal, and participatory events. Therefore, art spaces are not sealed and disconnected from the surroundings anymore but actively interact with different types of spaces from the community and form a new potential of flexible spaces. To successfully implant the art facility to the existing site area and make it acquire the radical hospitality, spaces for art in this project do not solely stand on the site.

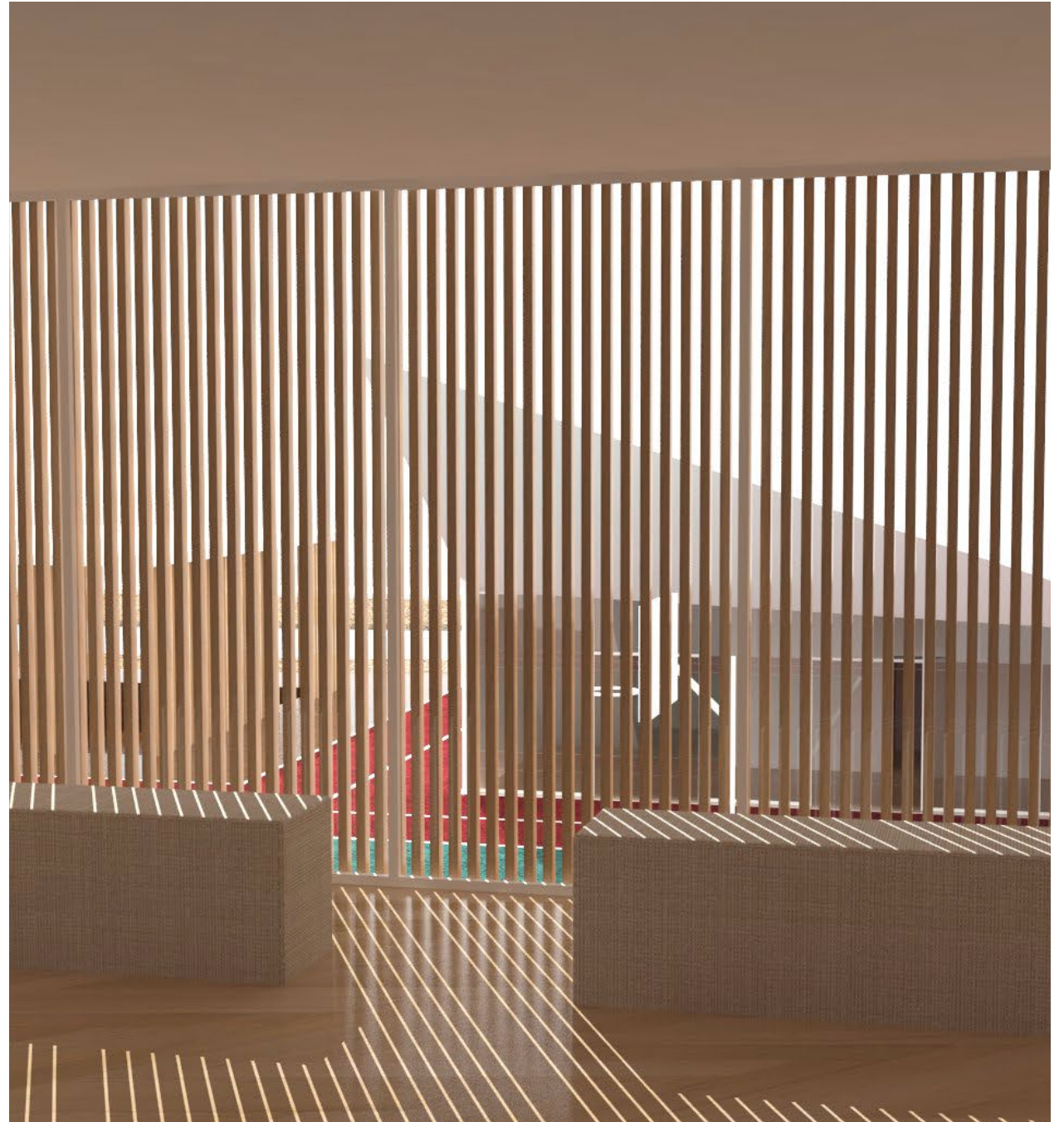
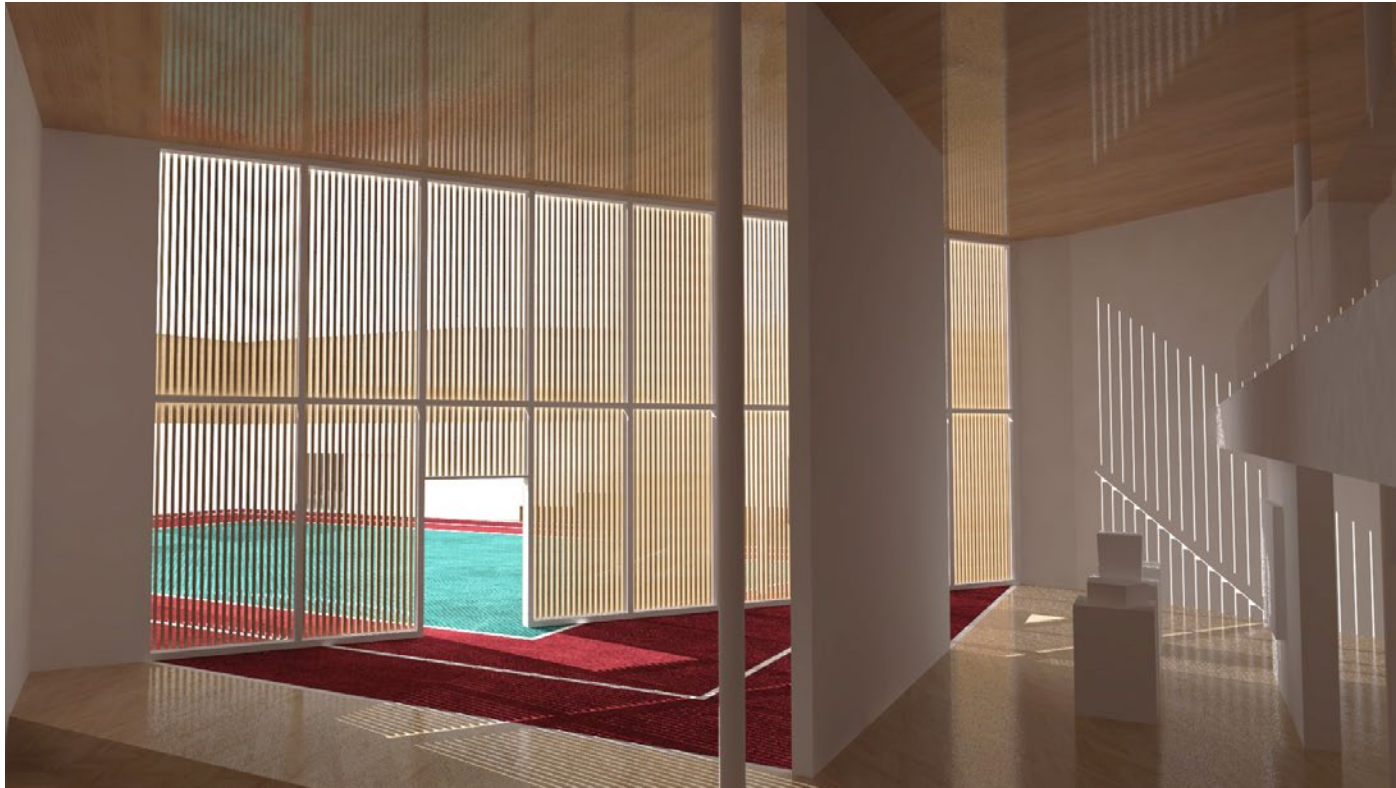
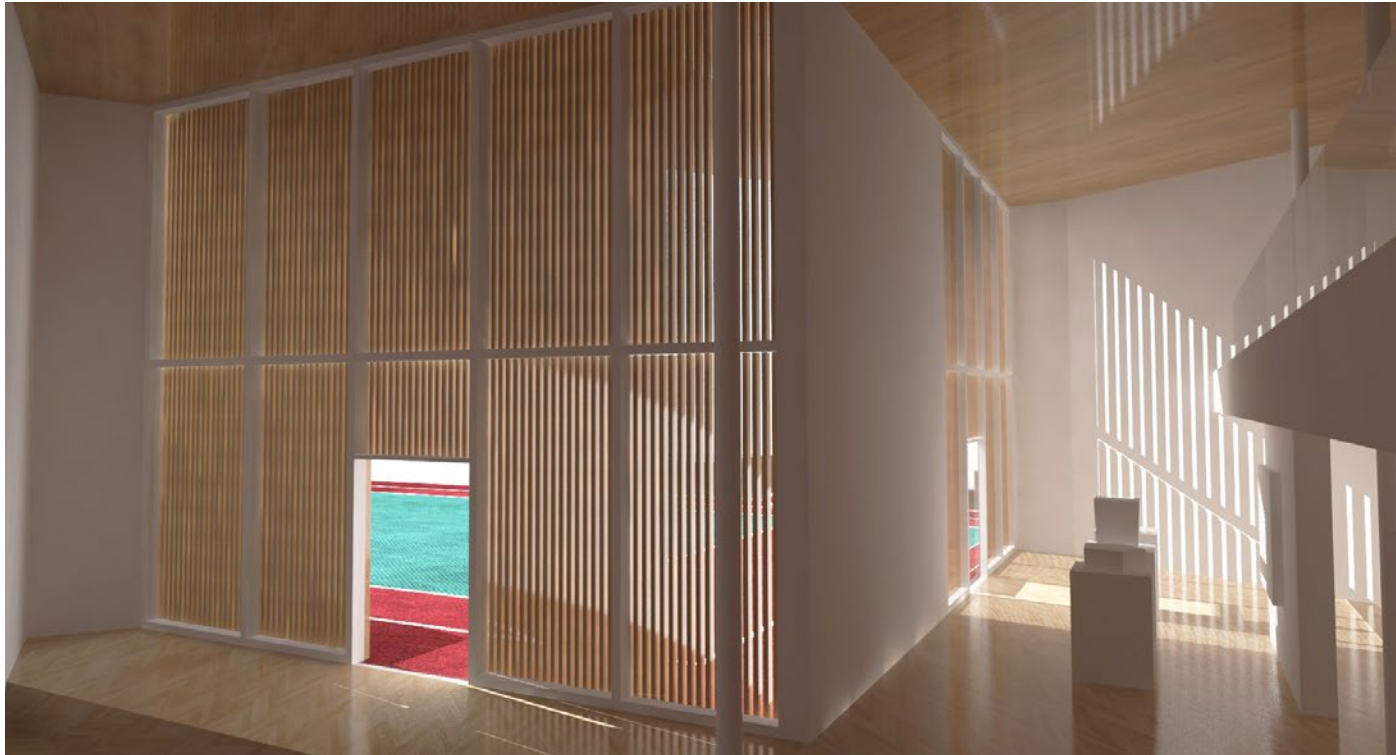


Art spaces are integrated and intersected with community spaces such as day care school, running track, and recreation center which are familiar to and necessary for the neighborhood. The integration and intersection between art and community programs create new types of flexible spaces. And such flexibility allows the spaces in this non-institution to become both formal and informal. Through various architectural strategies, one space becomes convertible and occupied by different users based on the characteristic of temporary events and activities.






The composition of the spaces is organized by responding to the existing environment. Outdoor spaces such as sports ground and running track form the new landscape based on the shape of the existing park, and the volume of spaces are situated on that landscape. One art space creates new types of flexible spaces by intersecting with other spaces and keeps interacting with the outdoor landscape at the same time. Also, the shape and characteristic of in-between outdoor spaces are defined by that intersections between different types of spaces.

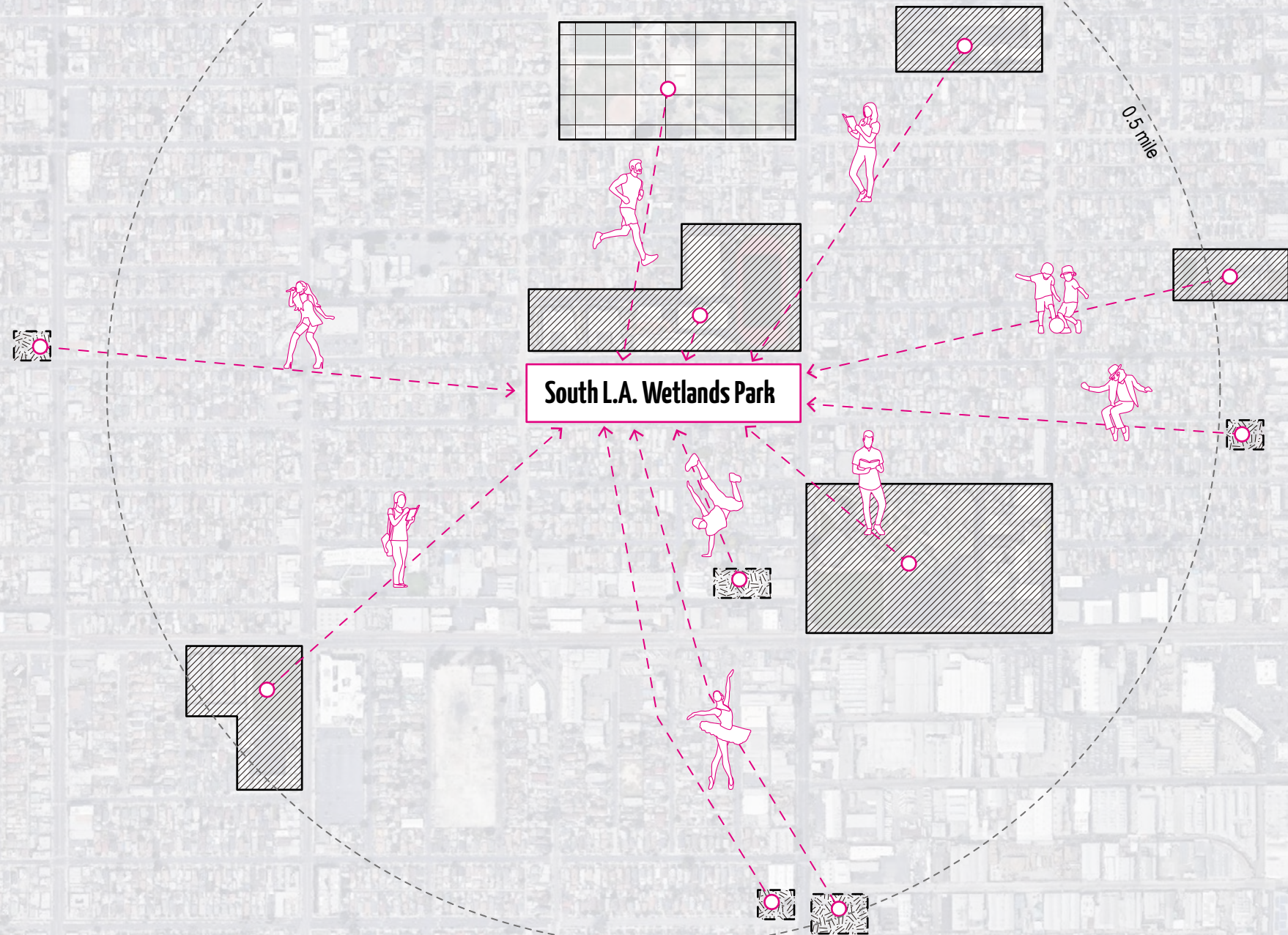


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# COMMUNITY INFRASTRUCTURE




LEARNING / RECREATION / CREATING

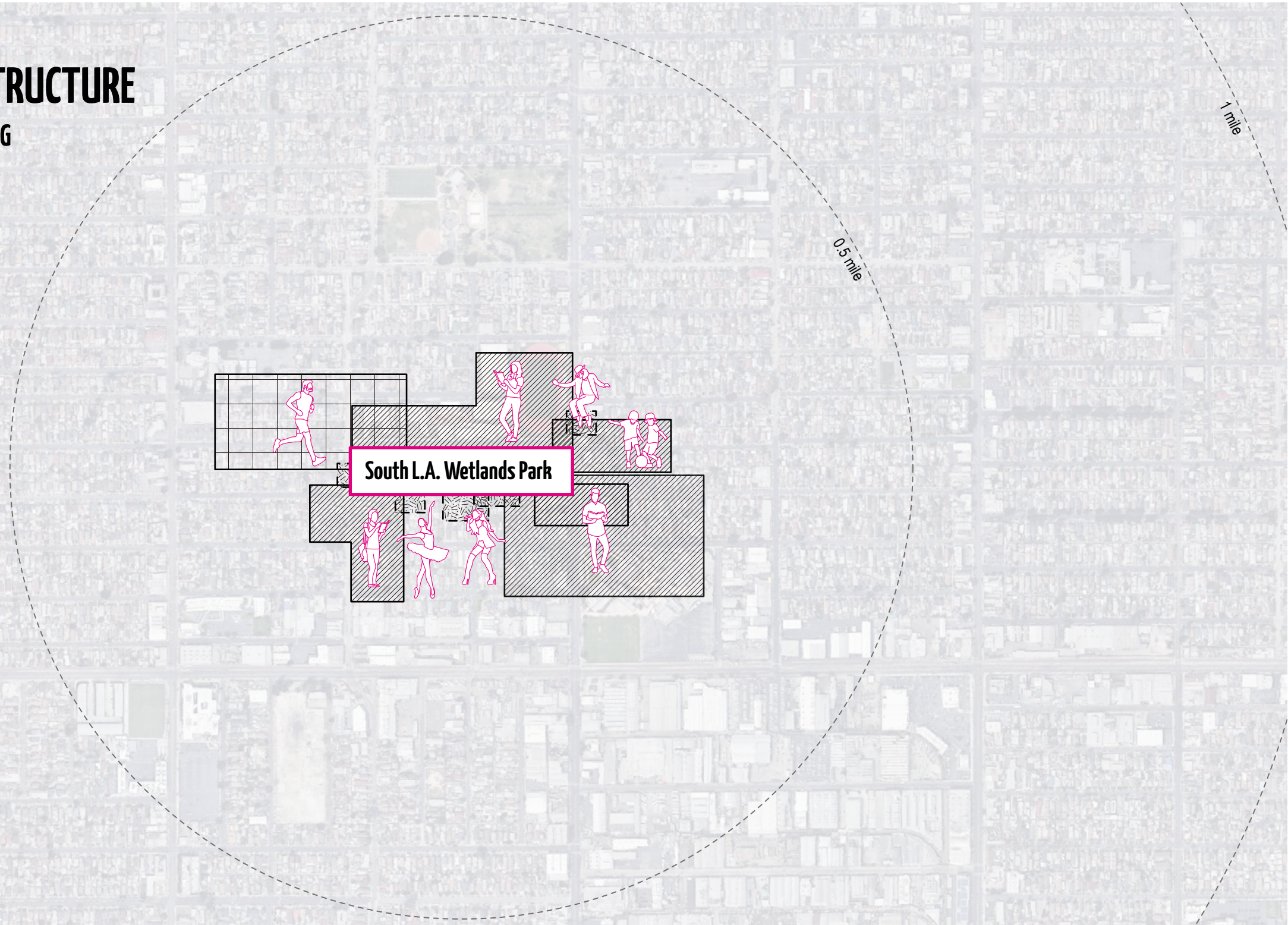
-  Learning
-  Creating
-  Recreation



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LEARNING / RECREATION / CREATING

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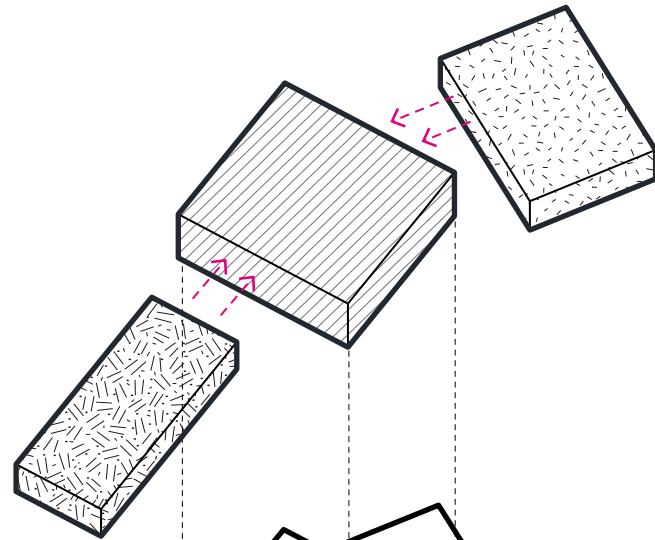




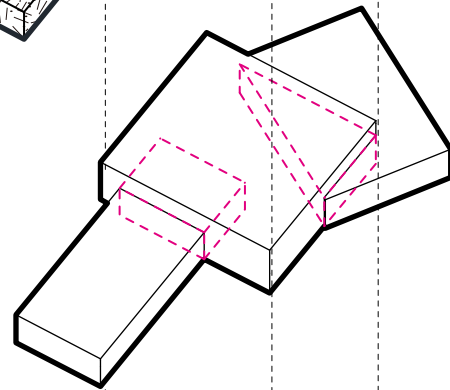
# INTERSECTIONS OF SPACES

## CREATION OF FLEXIBLE SPACES

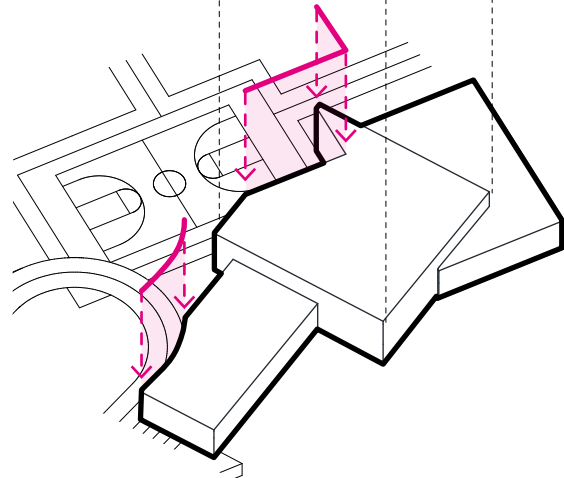
Combination of different spaces



Intersection of spaces



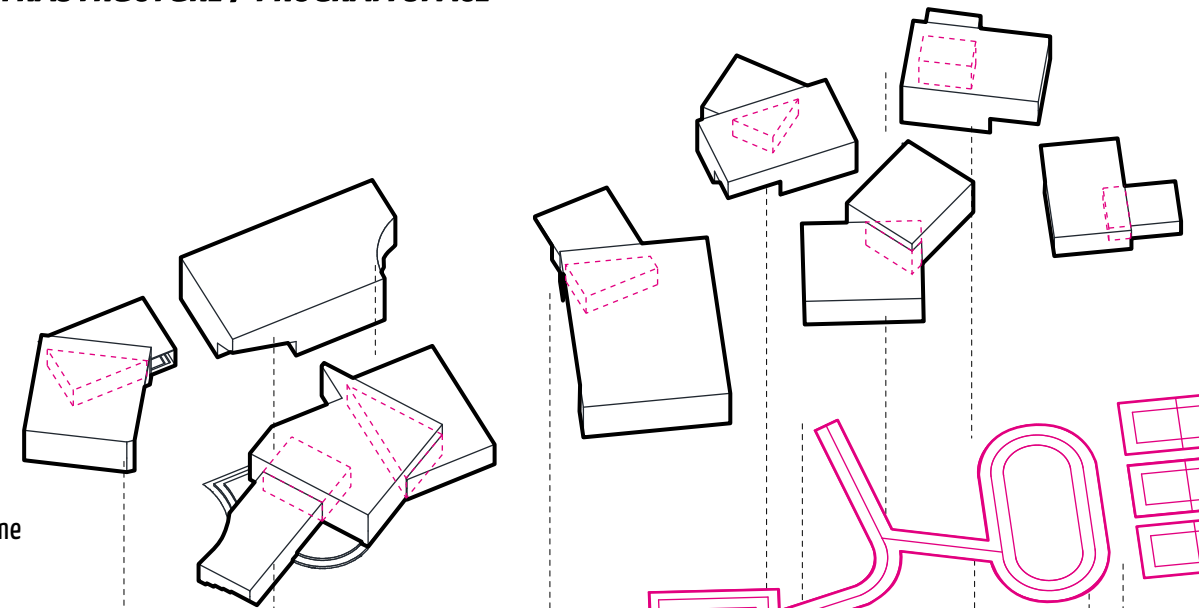
Shape defined by infrastructure



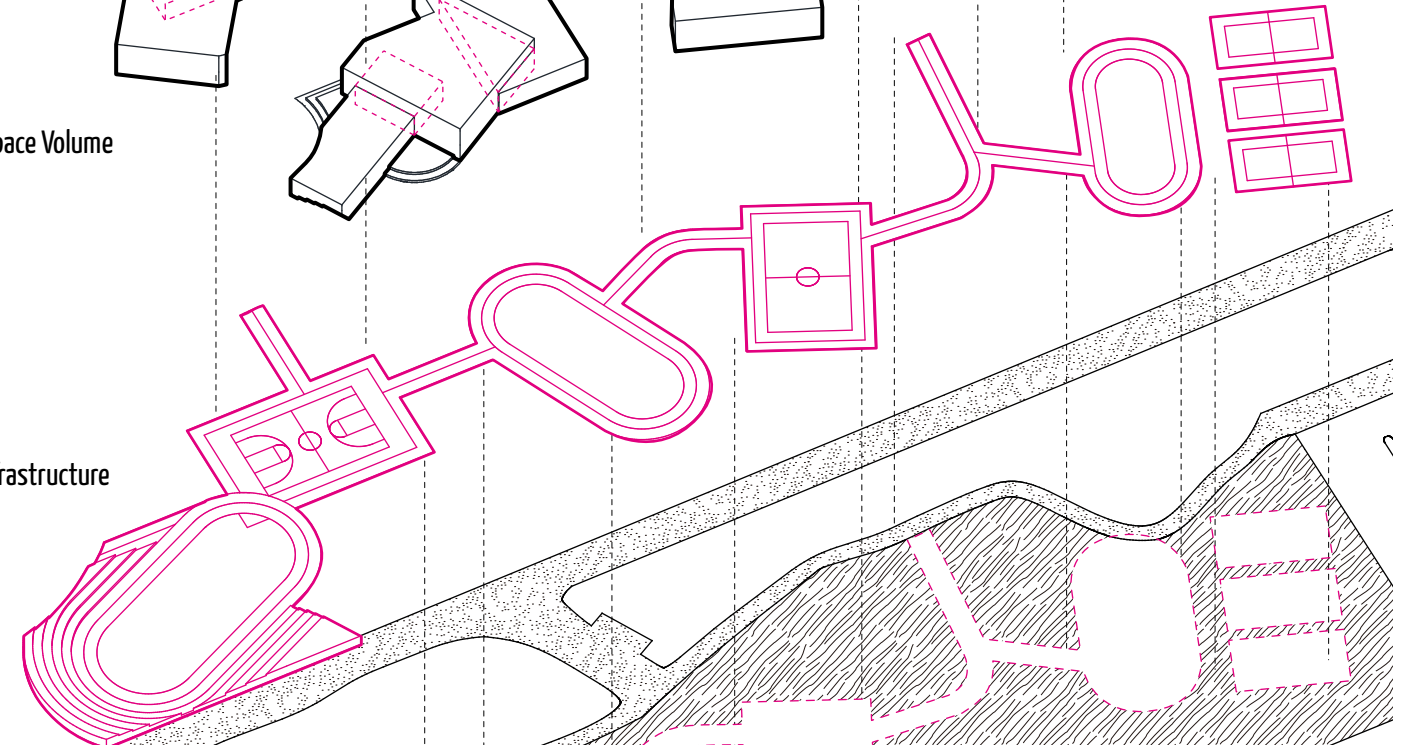
# LAYERS OF SPACES

## LANDSCAPE / INFRASTRUCTURE / PROGRAM SPACE

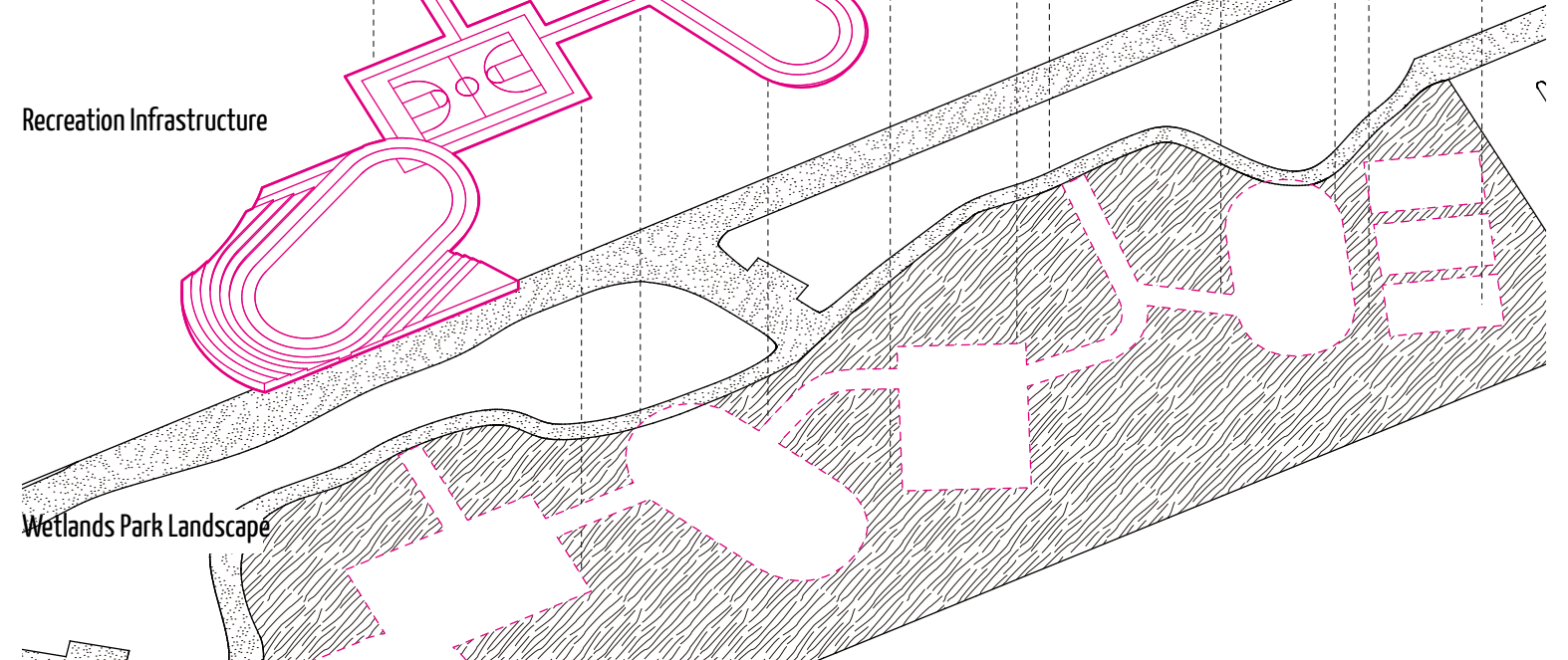
Intersected Space Volume



Recreation Infrastructure



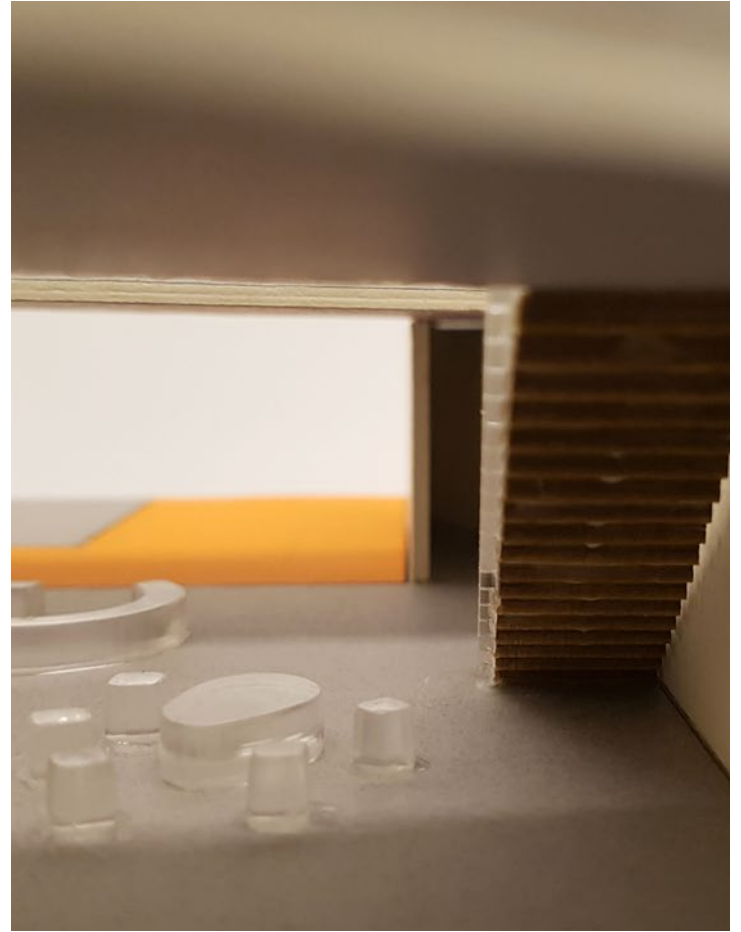
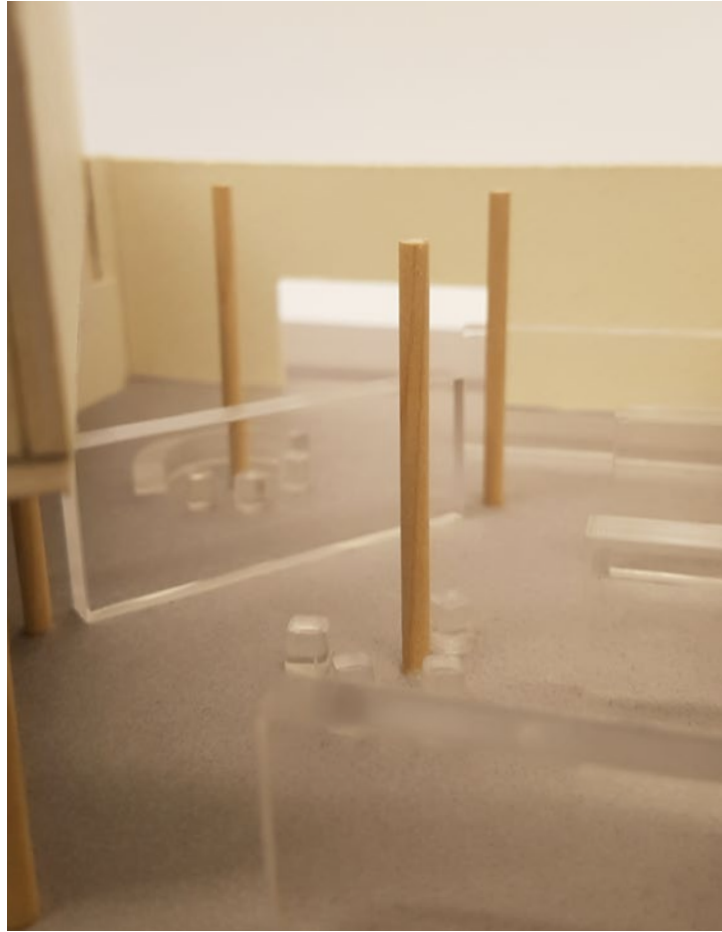
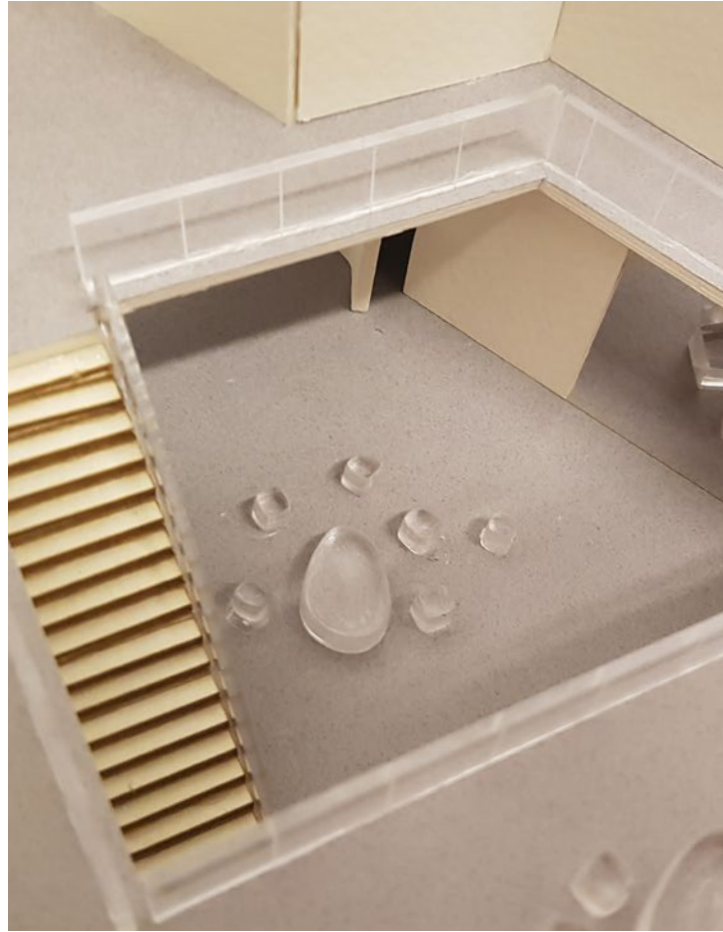
Wetlands Park Landscape





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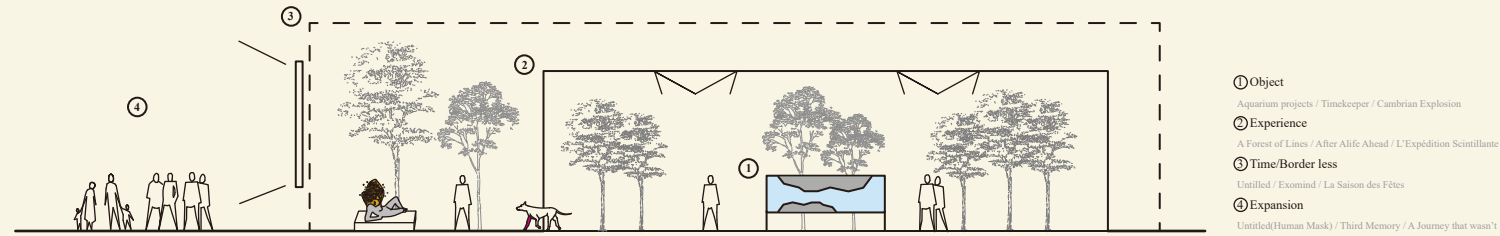




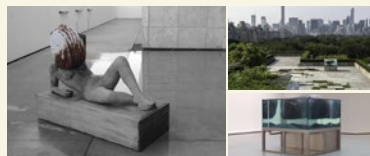
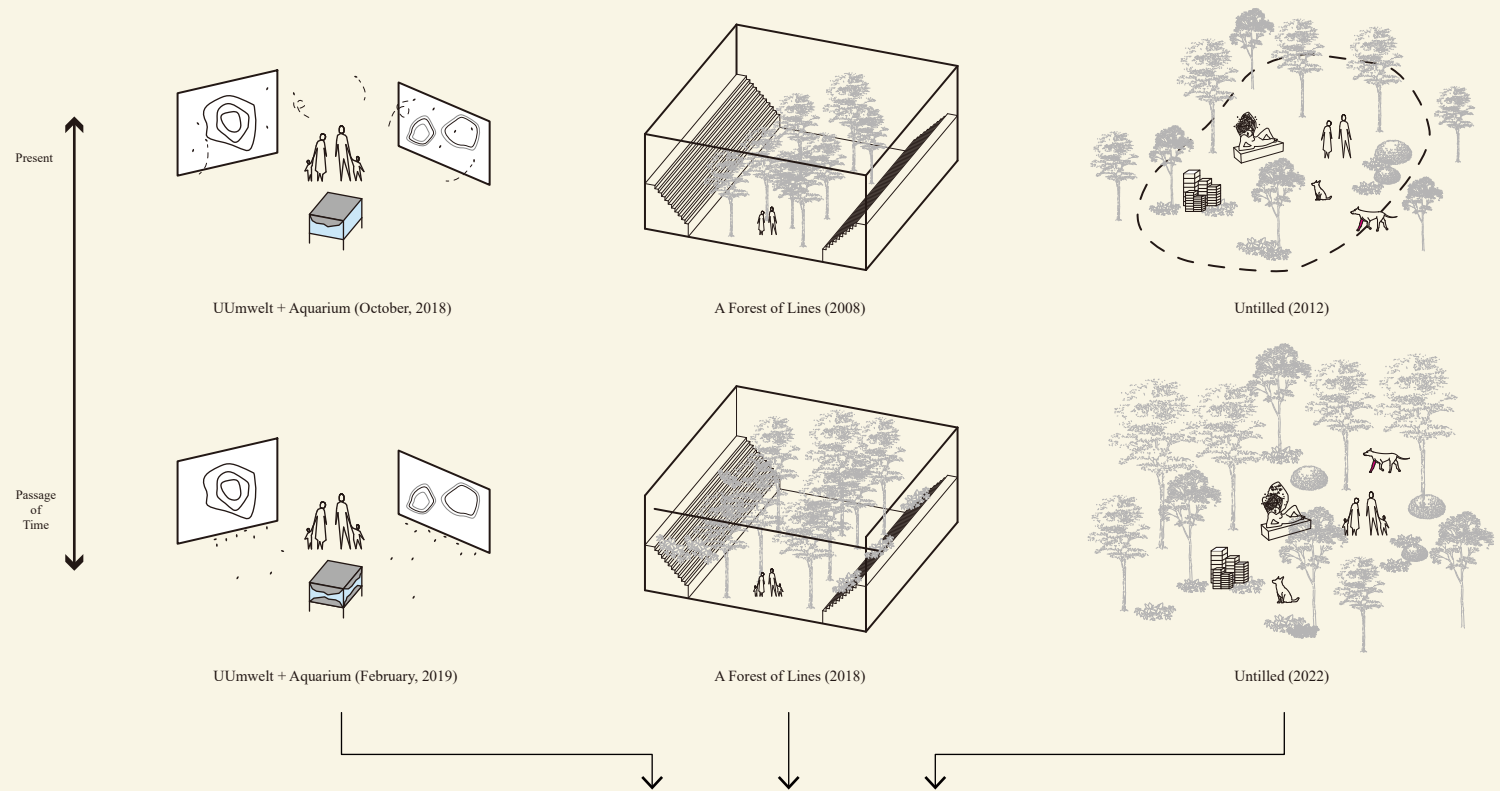
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# Scale of Art works

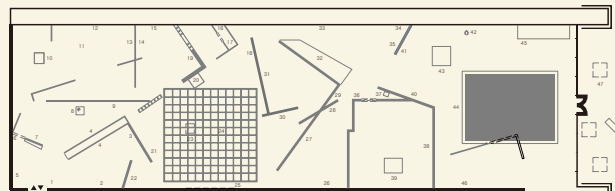
Pierre Huyghe



Scale of Works ① → ② → ③ → ④



Art work in Museum Space (Back to objects)



Exhibition Plan LACMA (2014)

".... normally a collection of different species of different places around the world that are gathered together in a system, supposed to be in nature, similar to a museum."

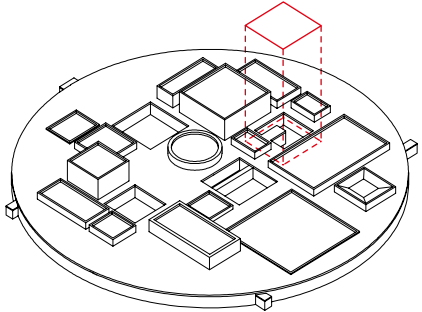
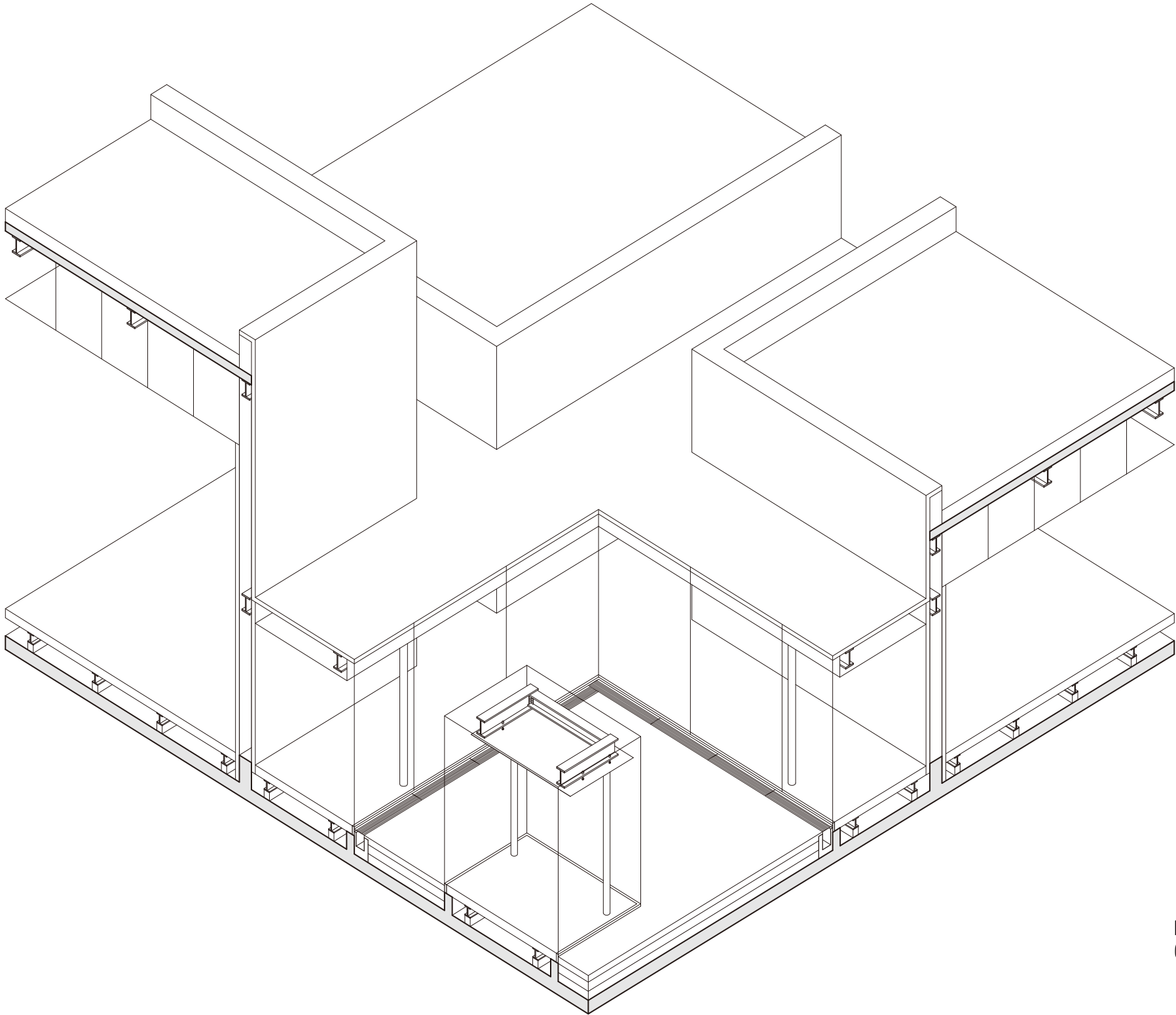


**Pierre Huyghe**  
Untitled (Human Mask) \_2014  
Born \_ 1962 (age 56 years), Paris, France  
Period \_ Contemporary art

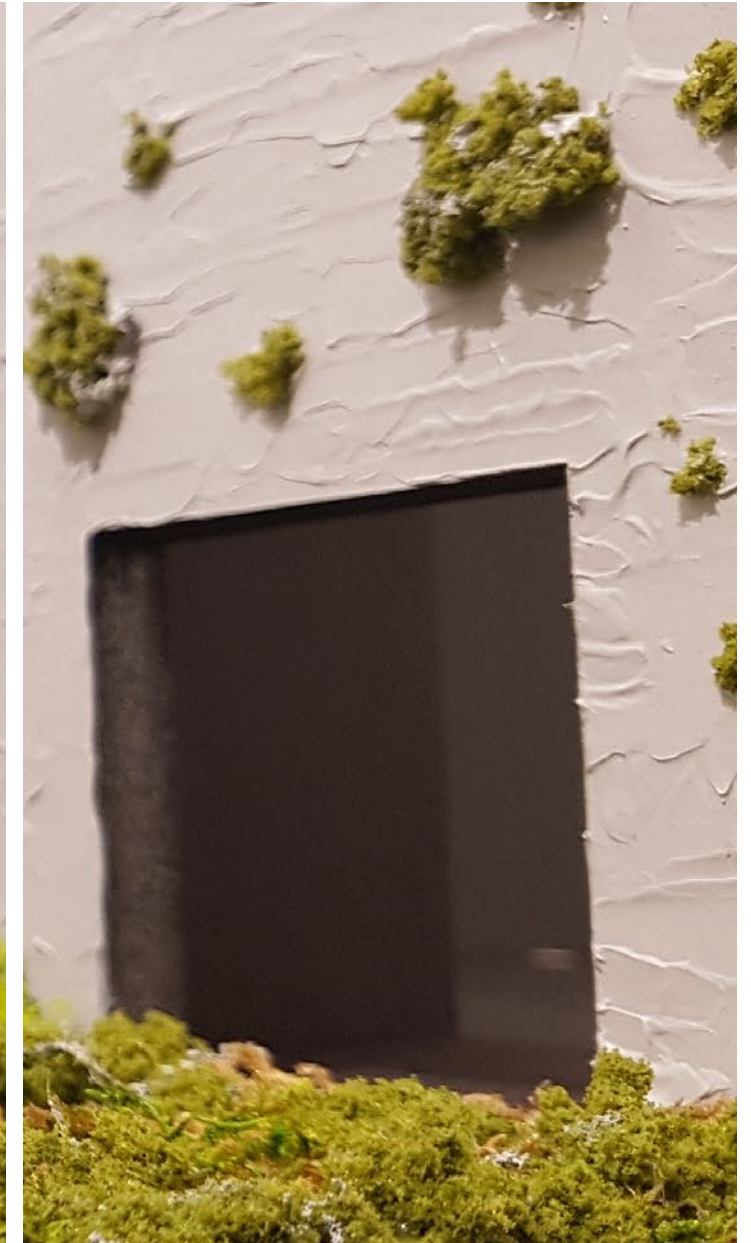
"So, the condition is set, but the outcome is not. It's completely unpredictable and contingent. And there's a part that I cannot, of course, control."

"What interested me was to find the coefficient - the part of the fiction that was contained within the particular situation. I'm trying to amplify the part of fiction that is contained in a reality, in a given situation."

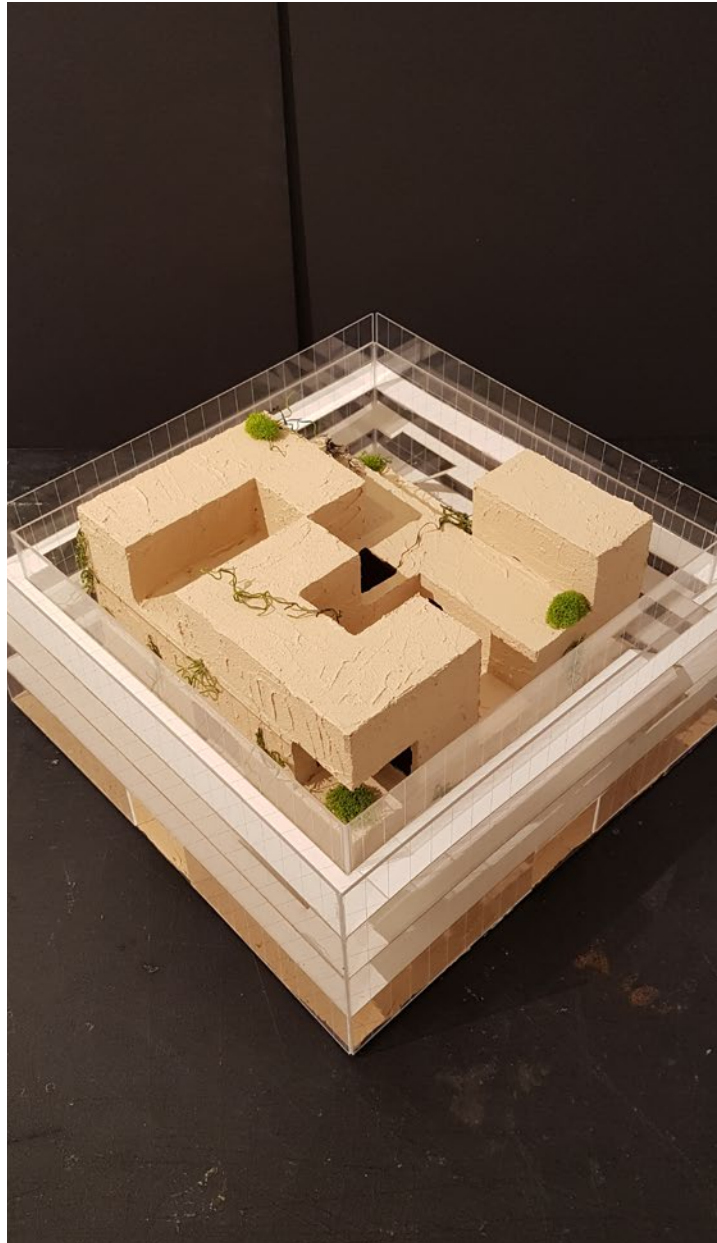
"I do some research on different, whatever field I am interested in. And then things stay on the wall., more or less. Because I don't have a specific path to follow, I'm trying to avoid remembering what I've done before."



**Isometric Section Drawing**  
Case Study \_ 21st Century Musuem (SANAA)



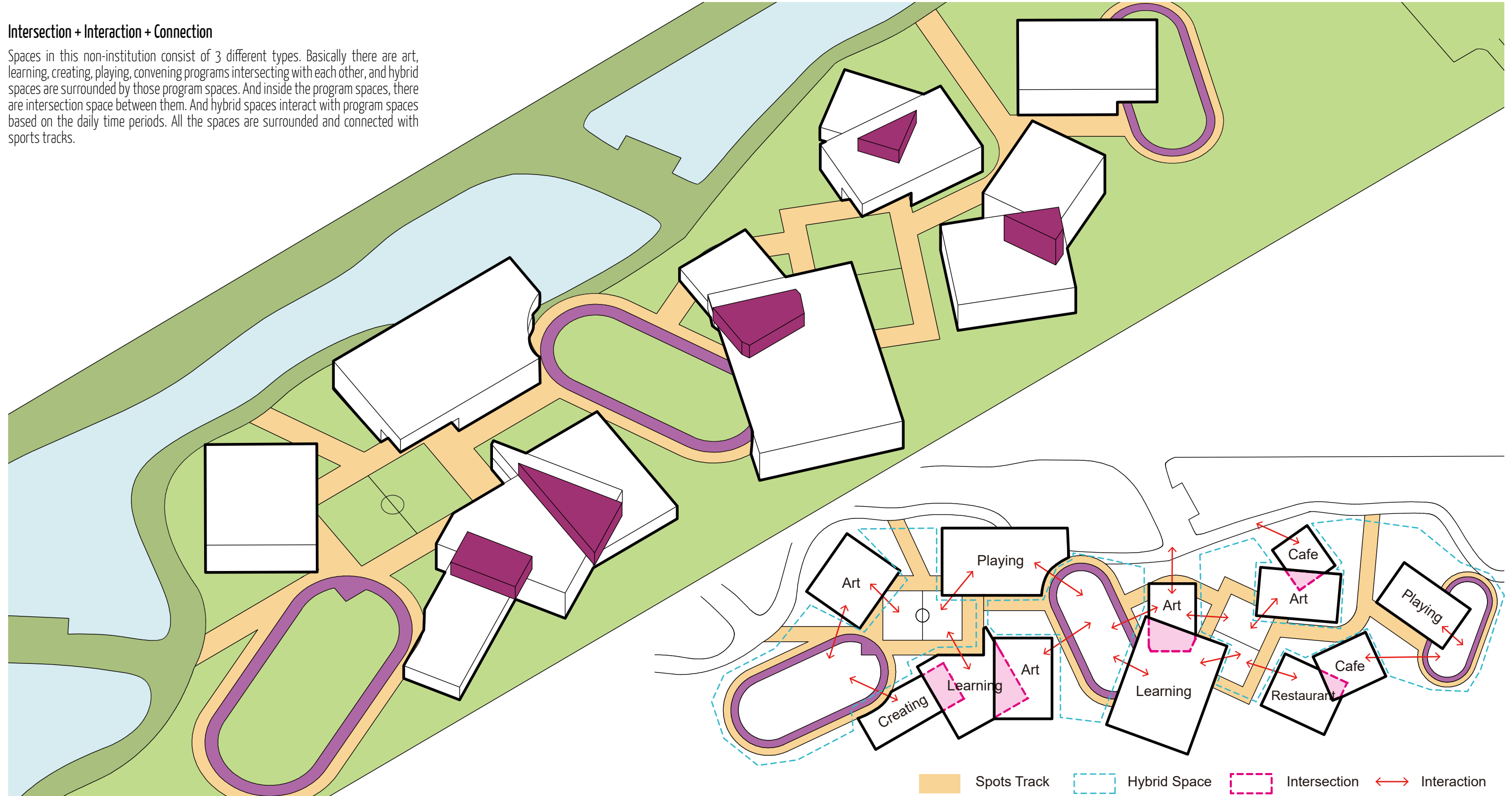






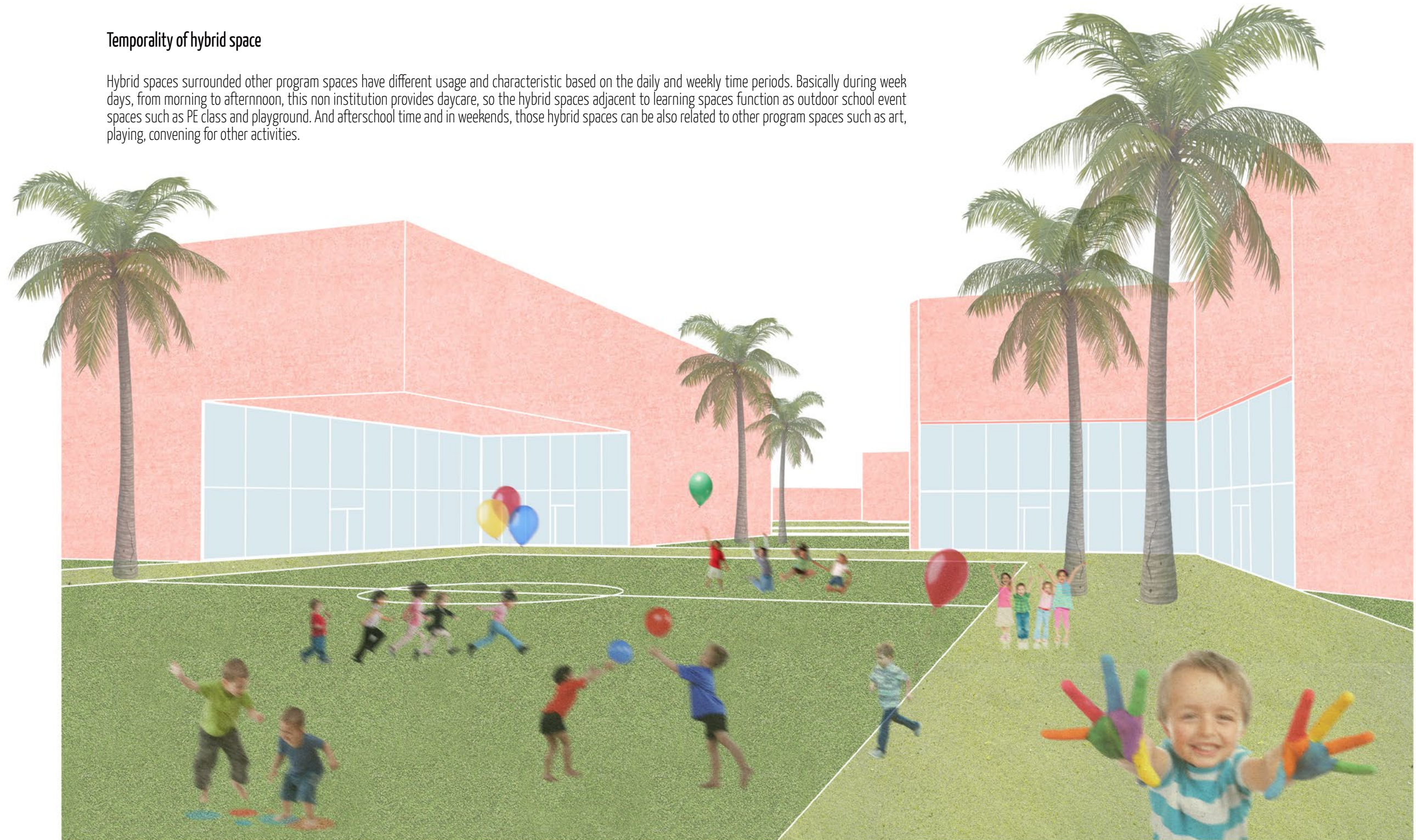
### Intersection + Interaction + Connection

Spaces in this non-institution consist of 3 different types. Basically there are art, learning, creating, playing, convening programs intersecting with each other, and hybrid spaces are surrounded by those program spaces. And inside the program spaces, there are intersection space between them. And hybrid spaces interact with program spaces based on the daily time periods. All the spaces are surrounded and connected with sports tracks.



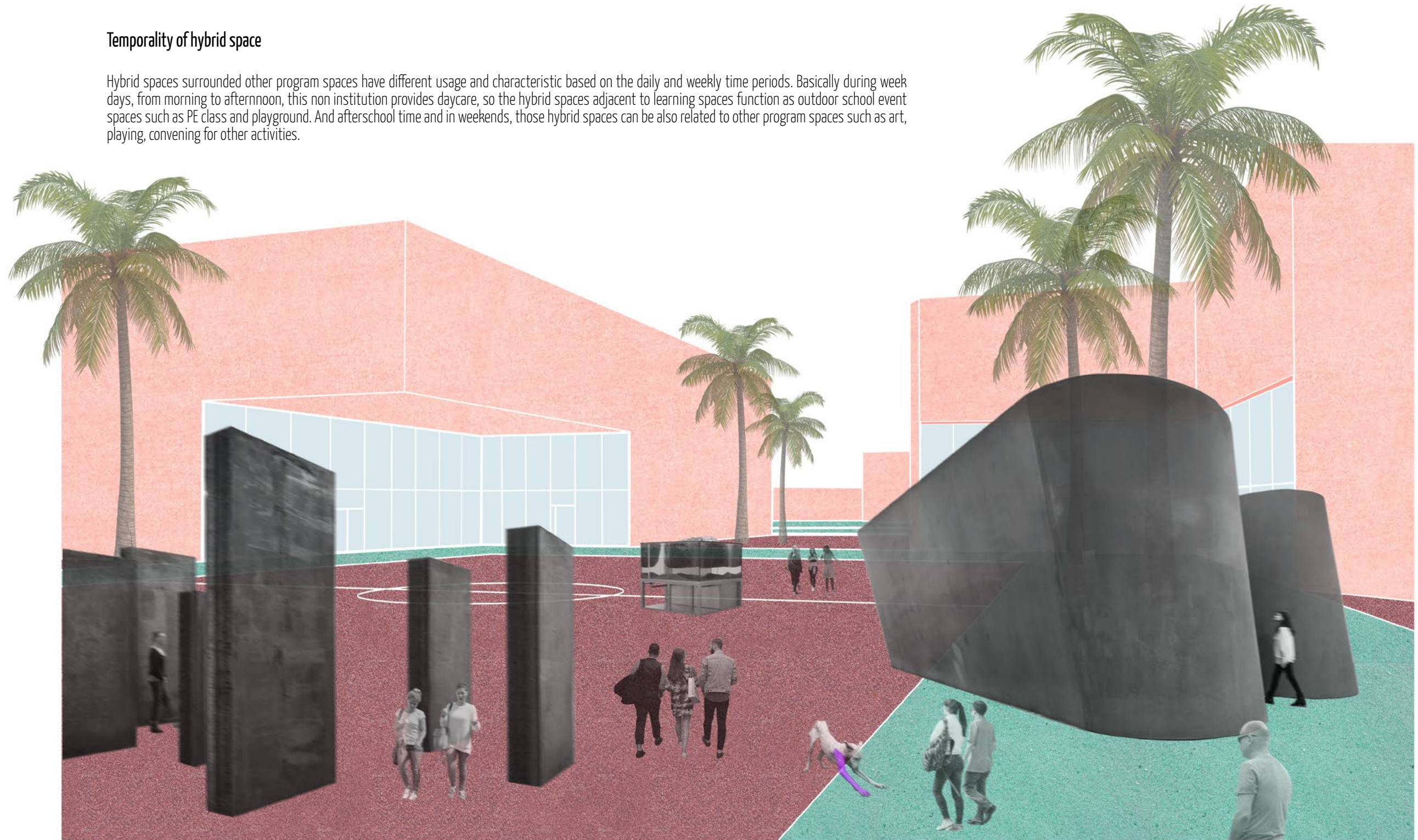
### Temporality of hybrid space

Hybrid spaces surrounded other program spaces have different usage and characteristic based on the daily and weekly time periods. Basically during week days, from morning to afternoon, this non institution provides daycare, so the hybrid spaces adjacent to learning spaces function as outdoor school event spaces such as PE class and playground. And afterschool time and in weekends, those hybrid spaces can be also related to other program spaces such as art, playing, convening for other activities.



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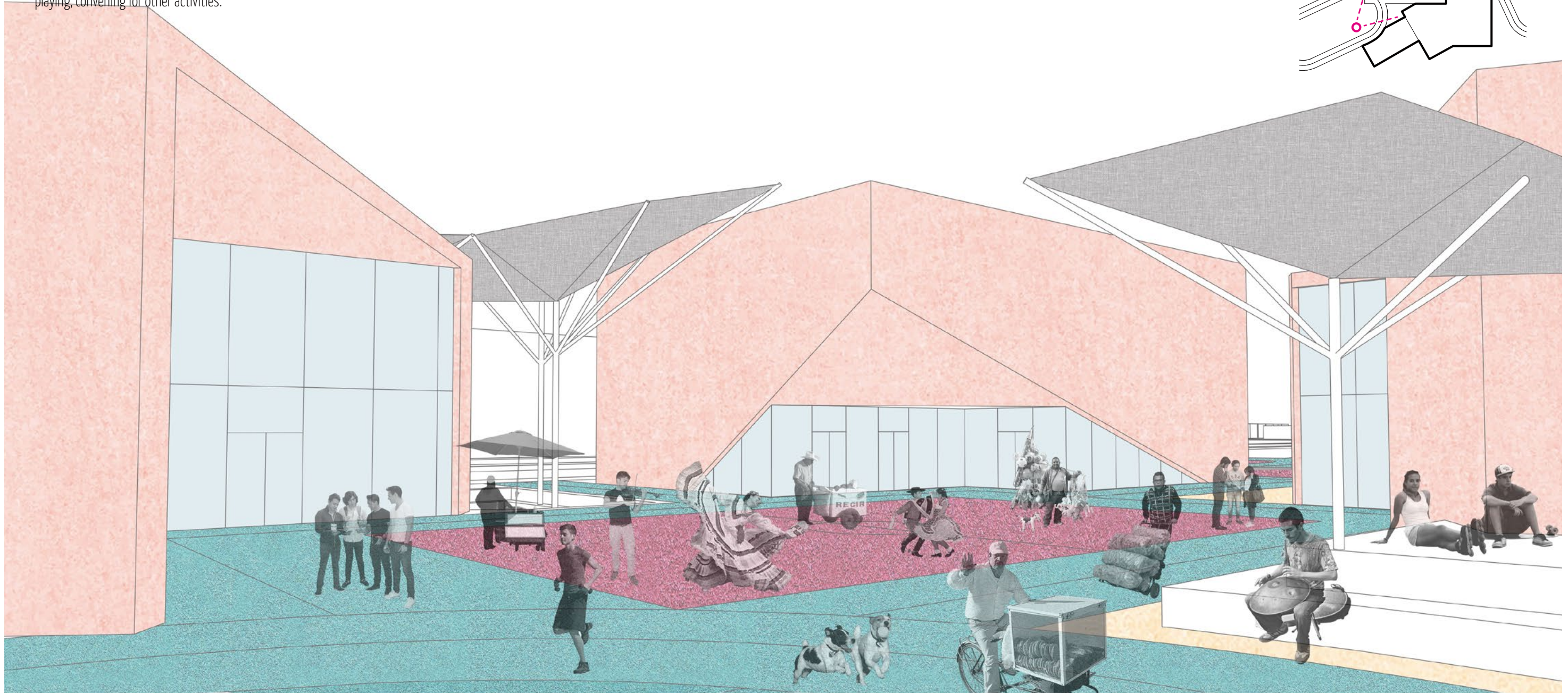
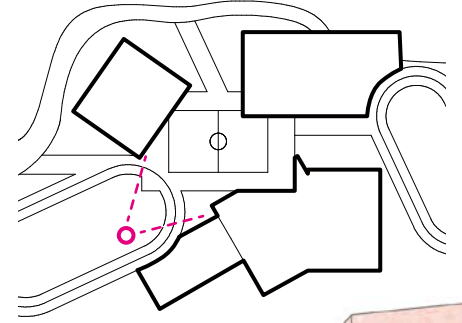
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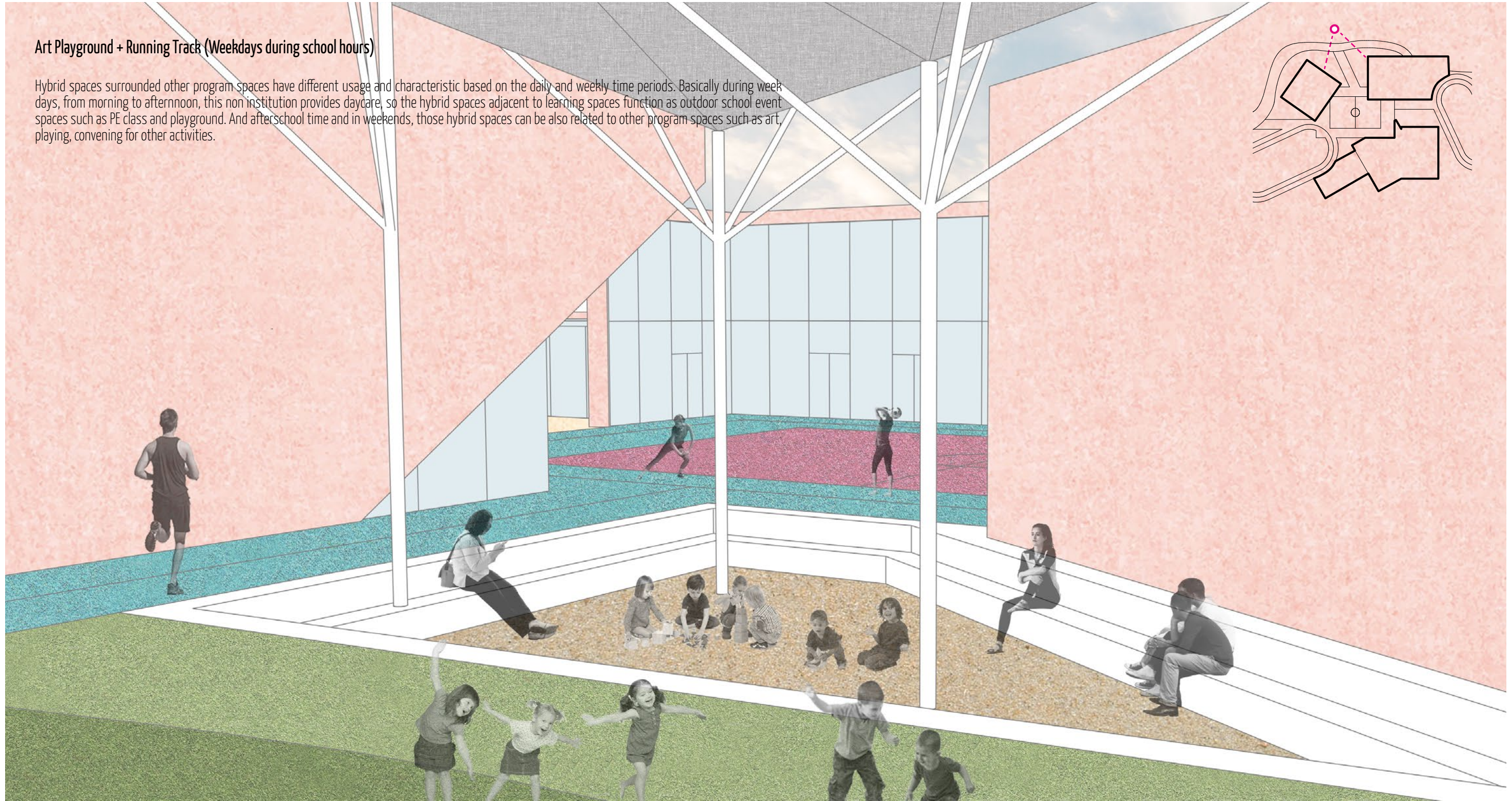
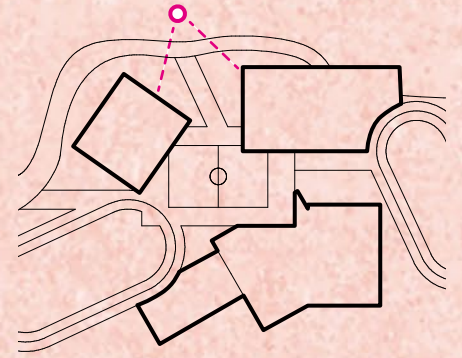
### Temporality of hybrid space\_Market Place + Running Track (Weekend)

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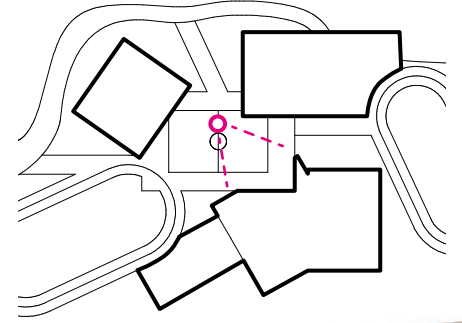
### Art Playground + Running Track (Weekdays during school hours)

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### Day care + Sports (Weekdays during school hours)

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**ULTRAREAL**  
TECHNIQUES OF THE ULTRAREAL

Fall 2019  
Instructors : Phillip Crupi + Joseph Brennan



# Techniques of the Ultra Real

Type Academic / Team Work / Electives / Columbia University  
Instructor Phillip Crupi, Joseph Brennan Date Fall, 2019







**THE STREET STUDIO**  
BROOKLYN FULTON MALL

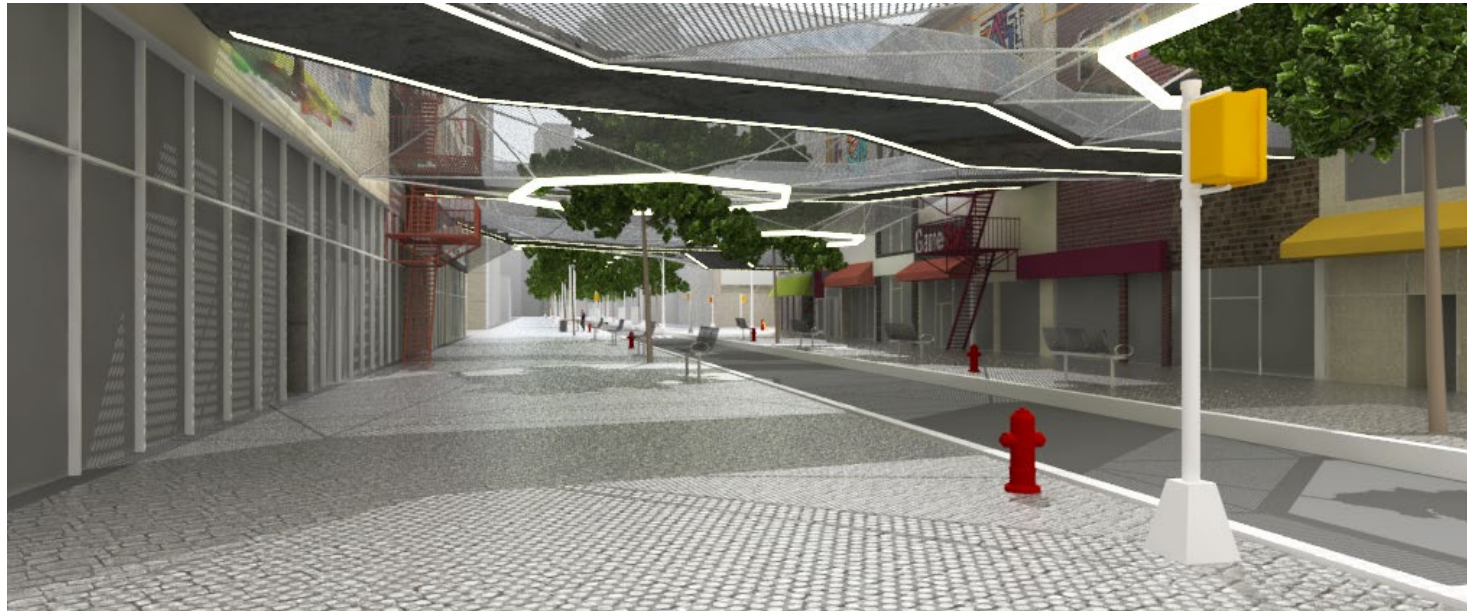
Spring 2020  
Studio Critic : Jing Liu

# Play that Funky Street!

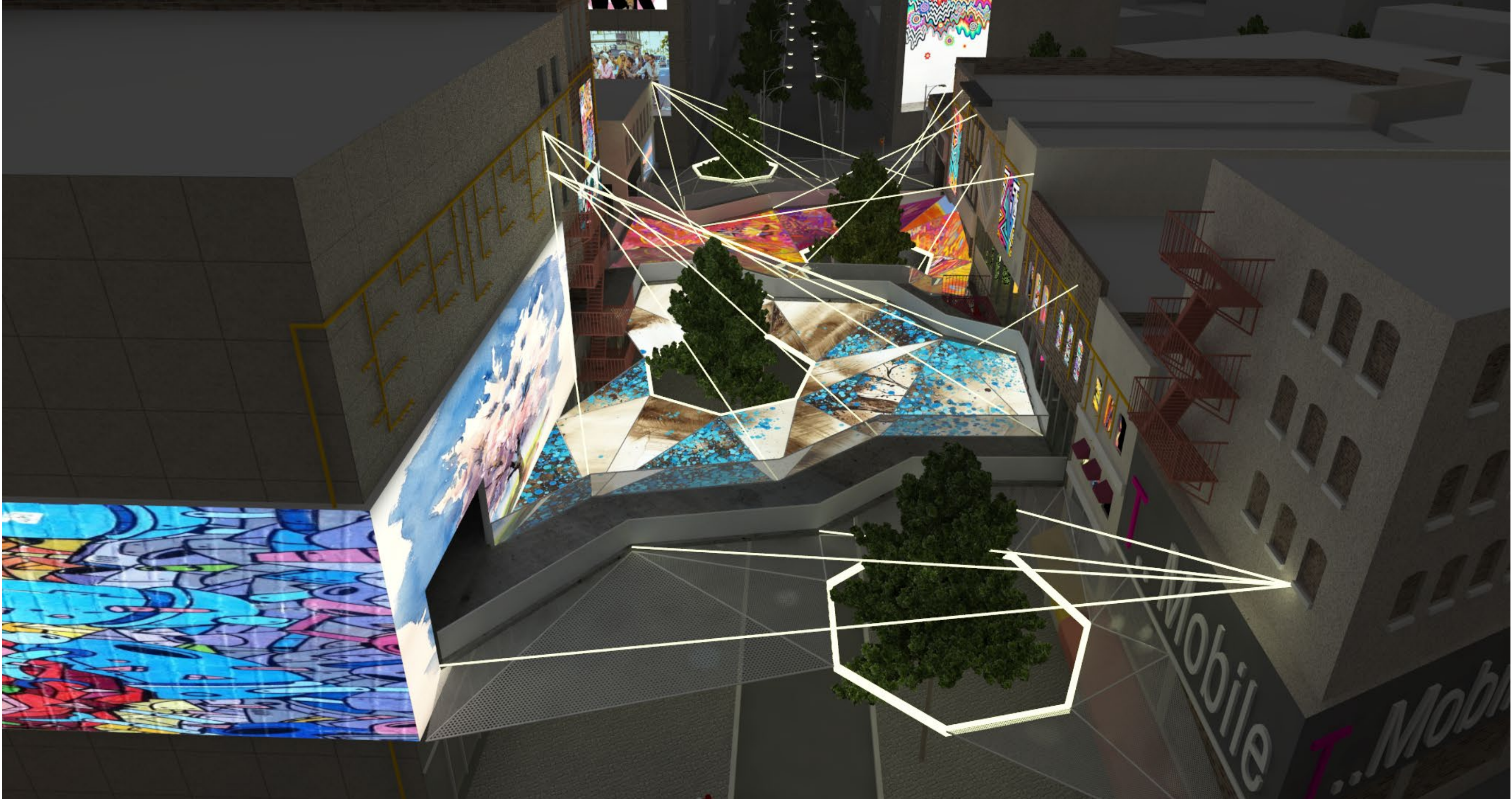
Type Academic / Individual Work / Studio / Columbia University Instructor Jing Liu Location Fulton Mall, Brooklyn Date Spring, 2020

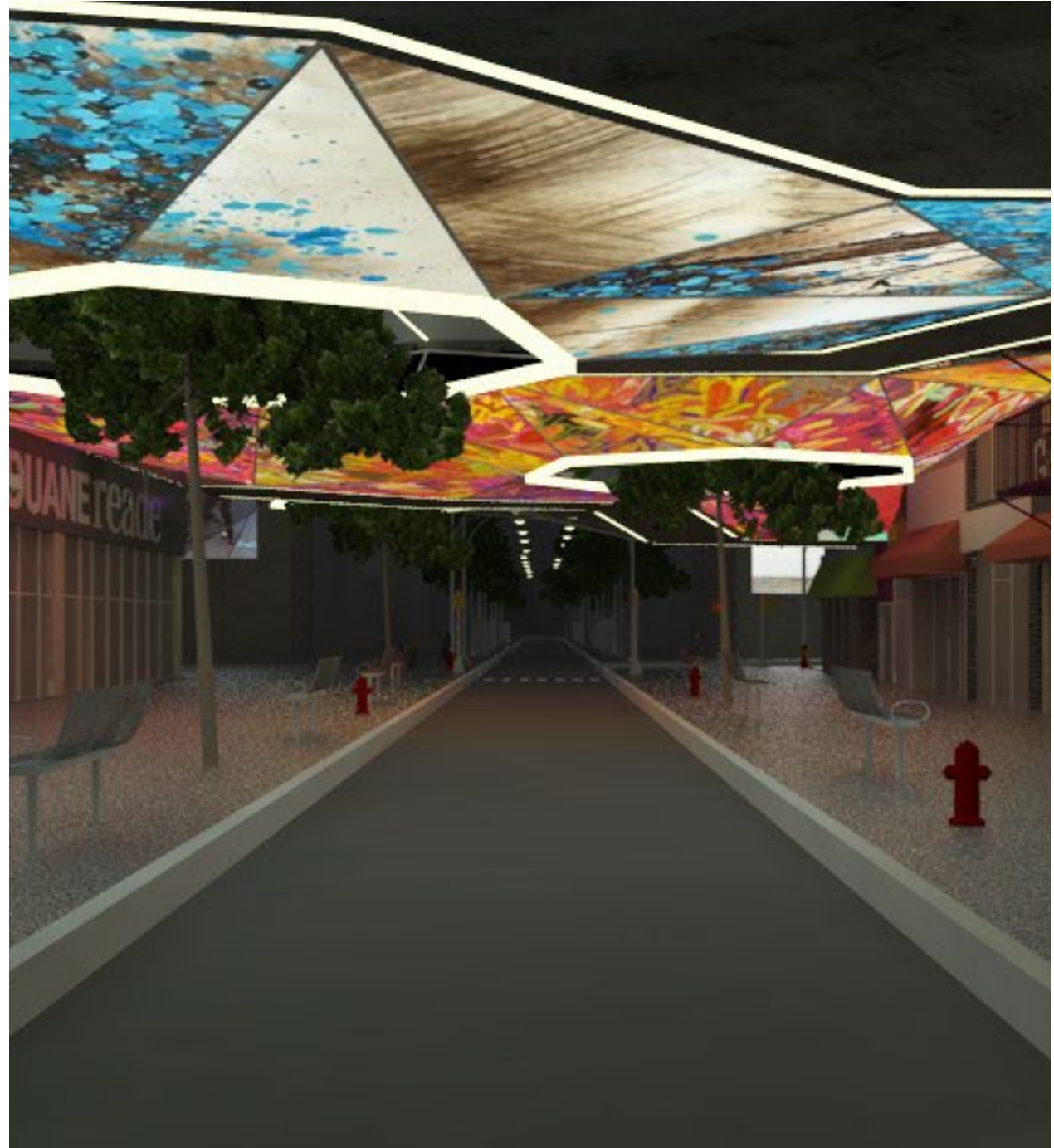
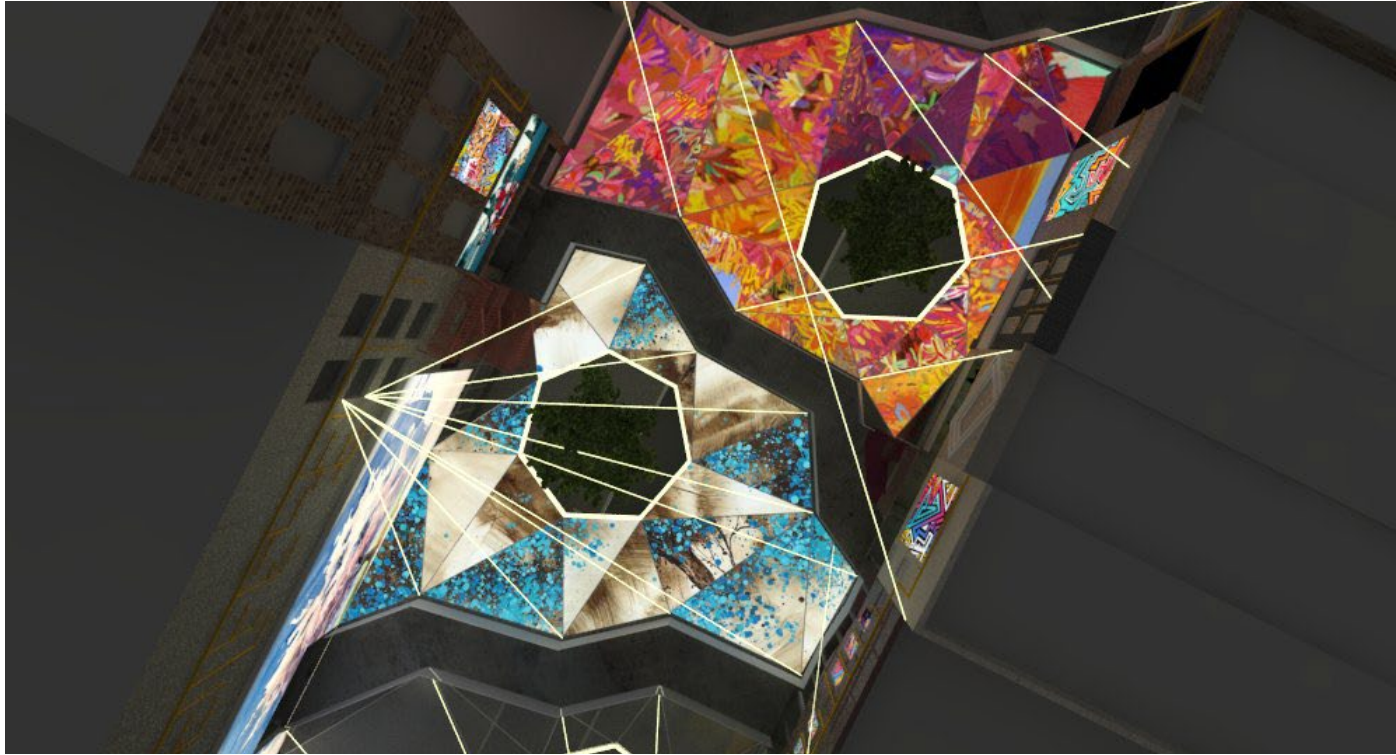
Like the High line in New York, a novel urban intervention creates new urban devices and relationships by utilizing the existing urban elements which are essential and everywhere but rarely used. The most interesting fact in the Fulton mall is the blocked façades of the buildings. And most of the space above the street level are abandoned and only used for storage space due to the economic reason. In this regard, this project focuses on finding novel ways to discover a new potential of Fulton mall street by utilizing the existing urban elements on the street.





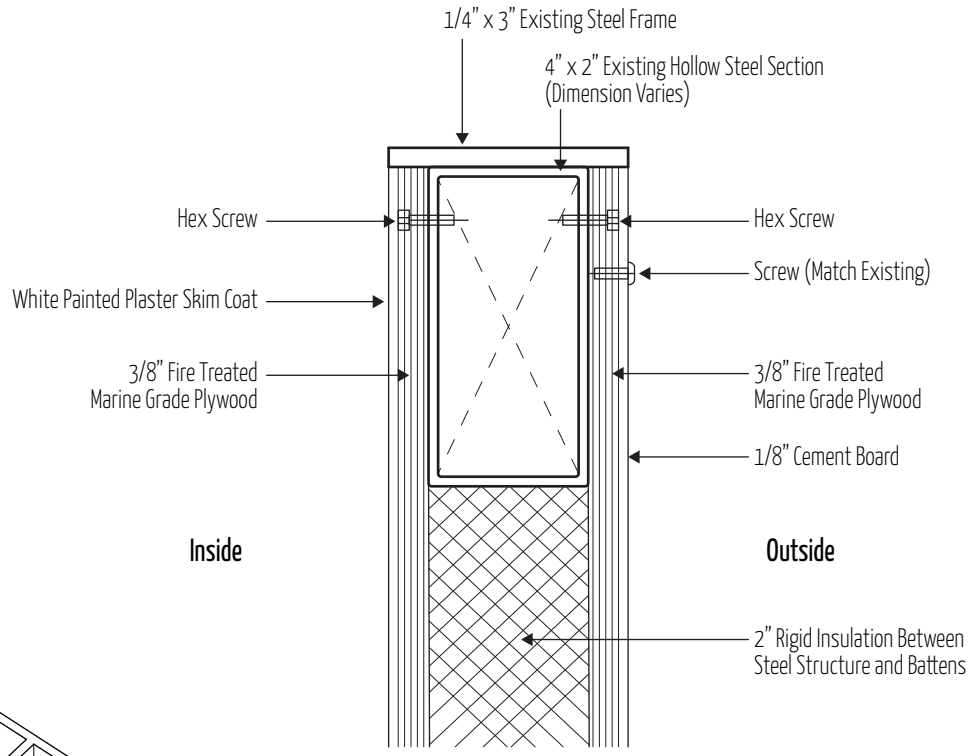
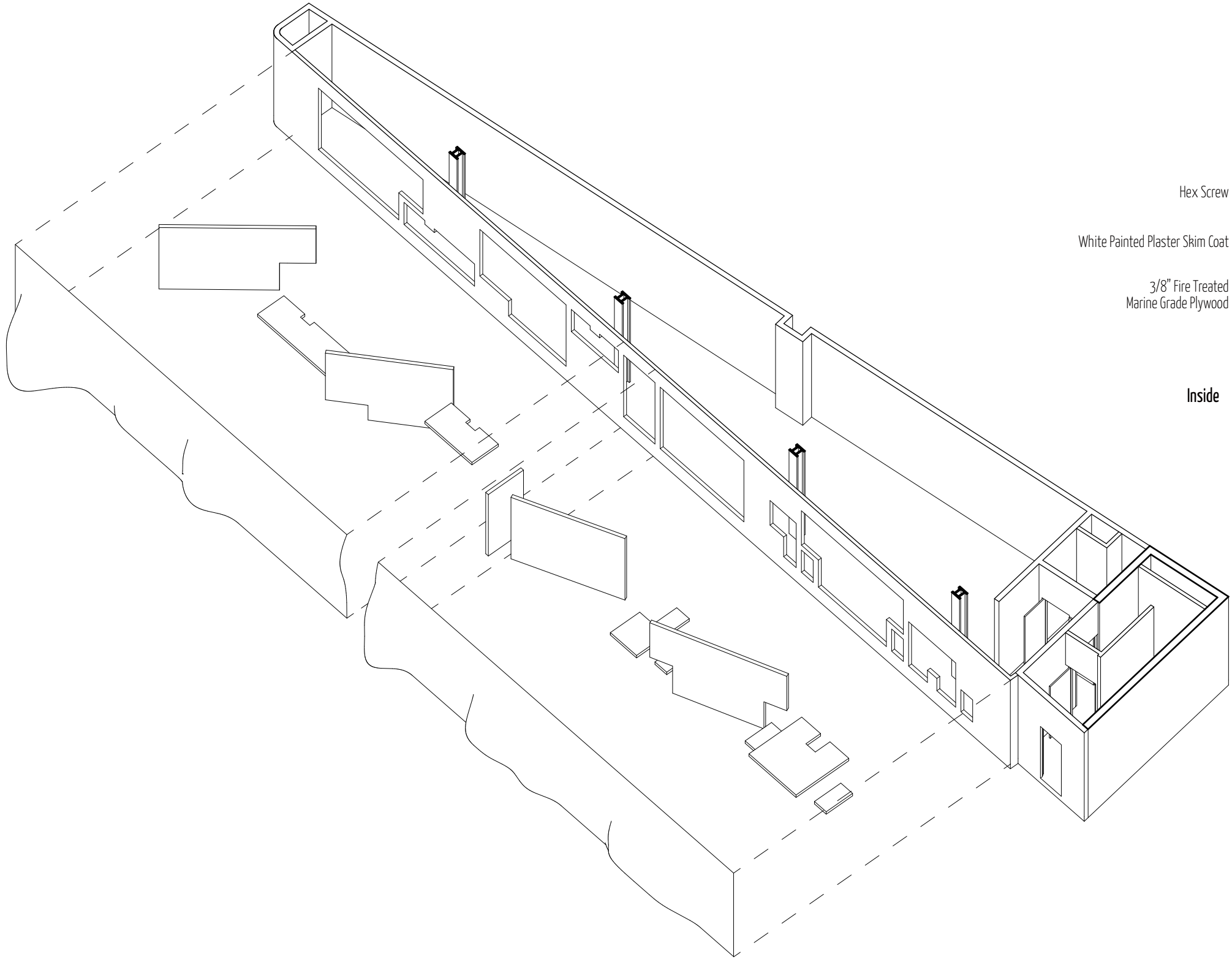
There are already existing spaces and façades above the street which are not actively used, but still they can be utilized as a structure and new a platform. So this project tries to create new urban relationships and environments, by connecting unused spaces above the street and utilizing urban elements of Fulton mall in new ways. To realize this idea, suspended structures which is supported by cables and can attach a new intervention to the existing structures in Fulton mall are added and create novel urban interventions.



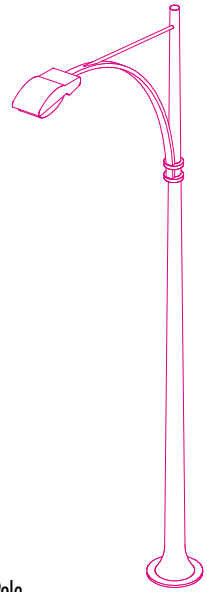


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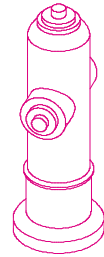


**Exploded Isometric Drawing**  
Precedent Study \_ Blueprint at Storefront (SO-IL)



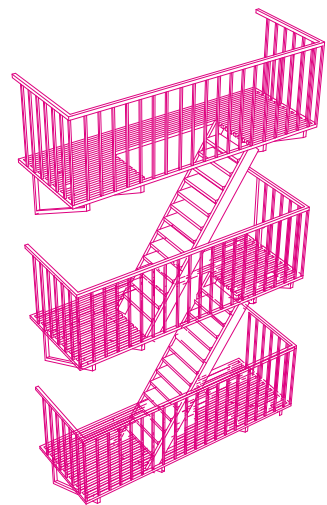
**Light Pole**

Light poles are everywhere but they are only used at night for lighting. However, these urban elements are static and solid enough to be utilized as a structure for a new manipulation. Also the source light can be used to create a novel atmosphere.



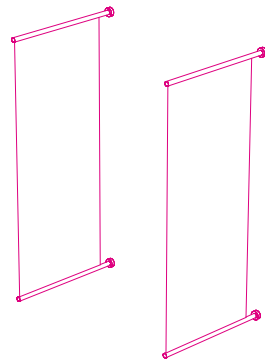
**Fire Hydrant**

Fire hydrants are everywhere in city streets but rarely used. It is a solid and static structure so can be used as urban elements to manipulate the streetscape. And it is a source of water which is an important element for this project.



**Escape Stairs**

Escape stairs attached to the outside of buildings are a conspicuous structure on the facade but rarely used. Those stairs are large and solid structures so it can be used as a static structure for new intervention between the relationship of street and commercialized facade at Fulton Street.

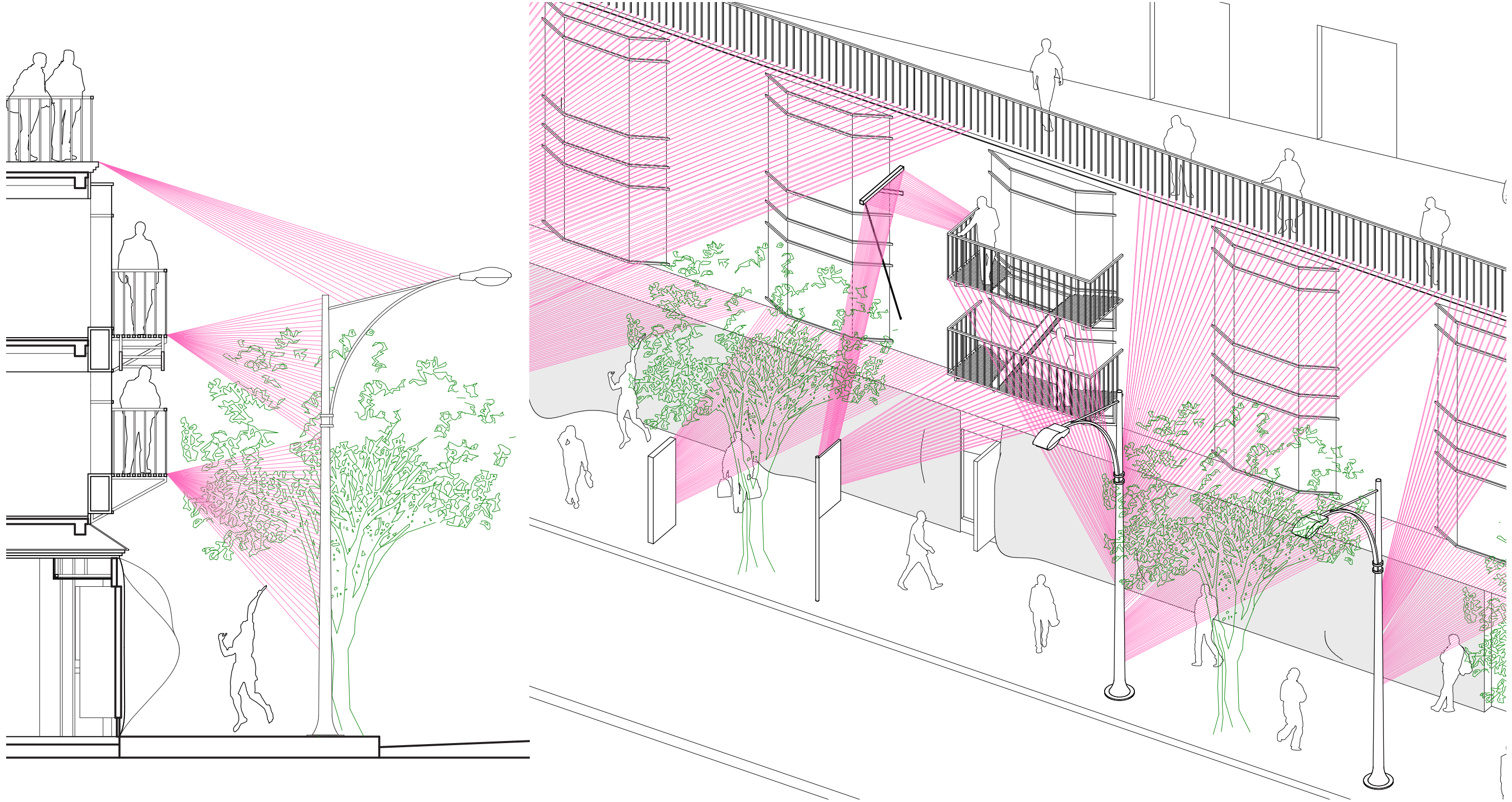


**Advertisements**

Since Fulton Mall street is one of the most commercialized areas in Brooklyn, facades of many buildings are covered with numerous advertisements and their structures. By using these structures, a new feature of the identity of Fulton Mall can be revealed.



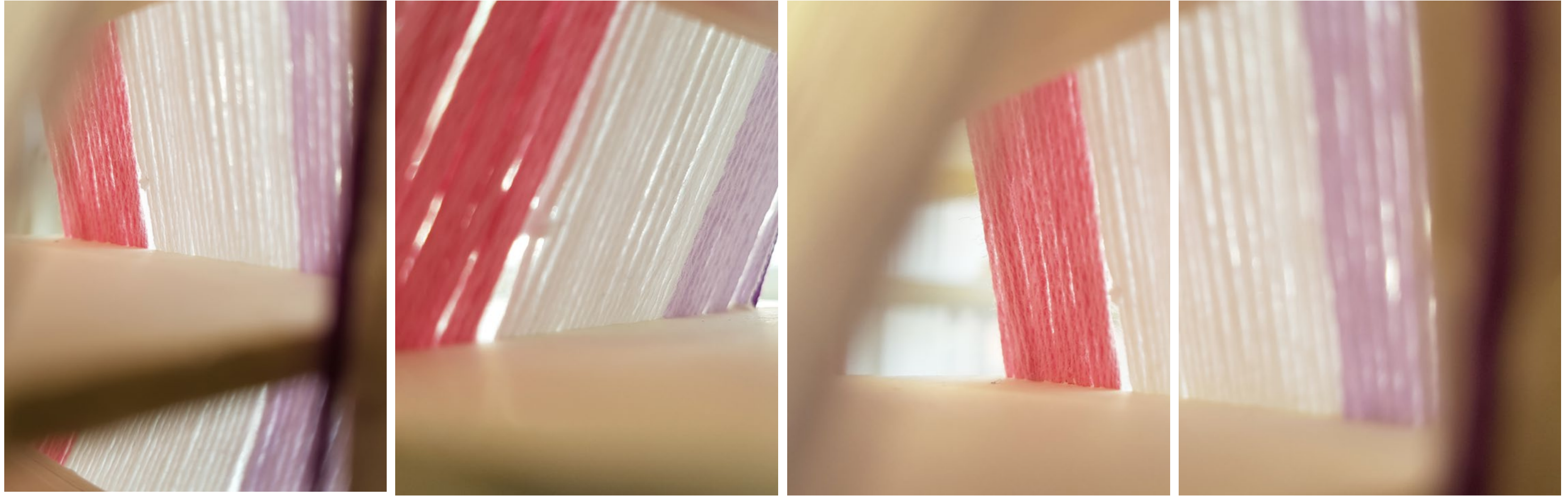
Discovered urban elements in Fulton mall street



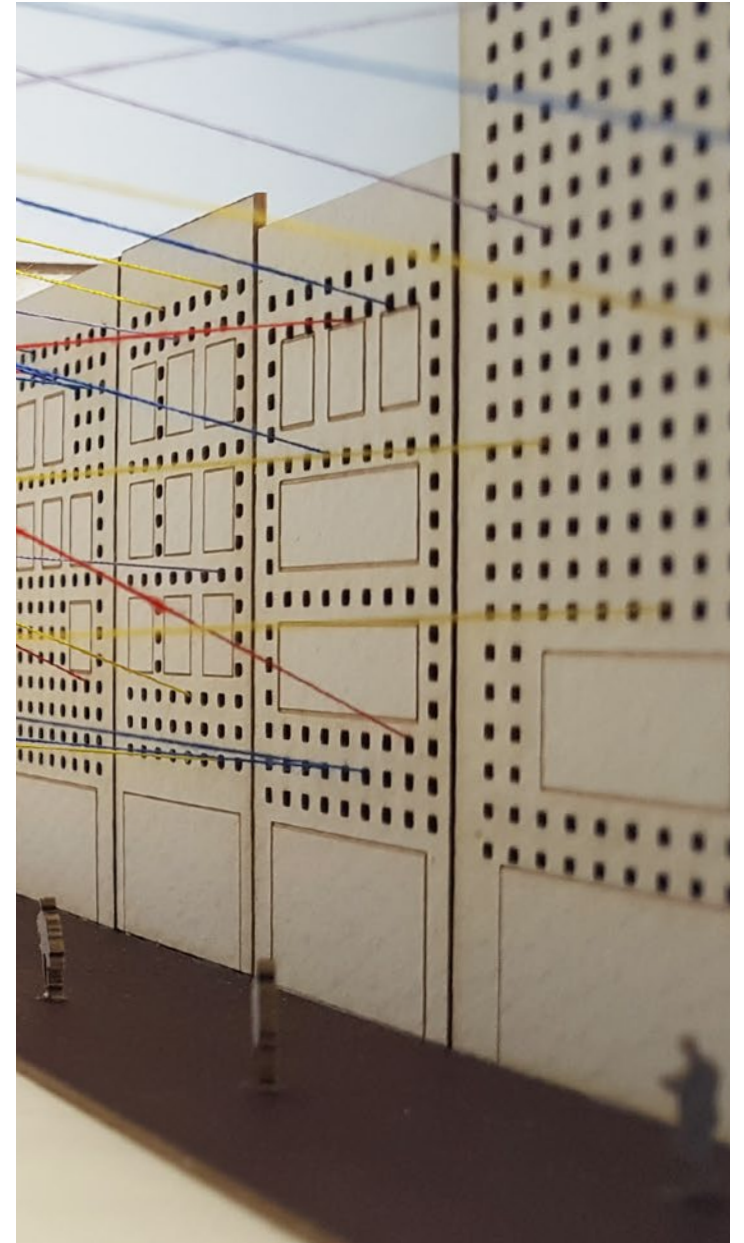
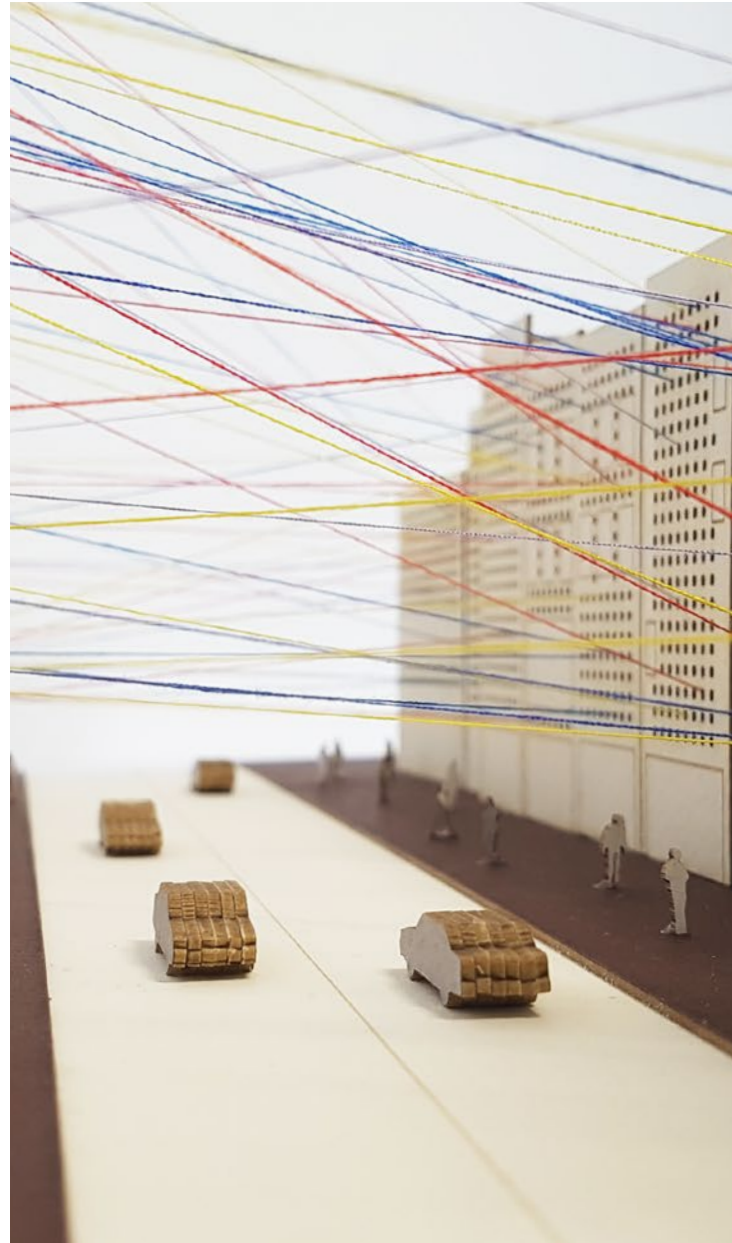
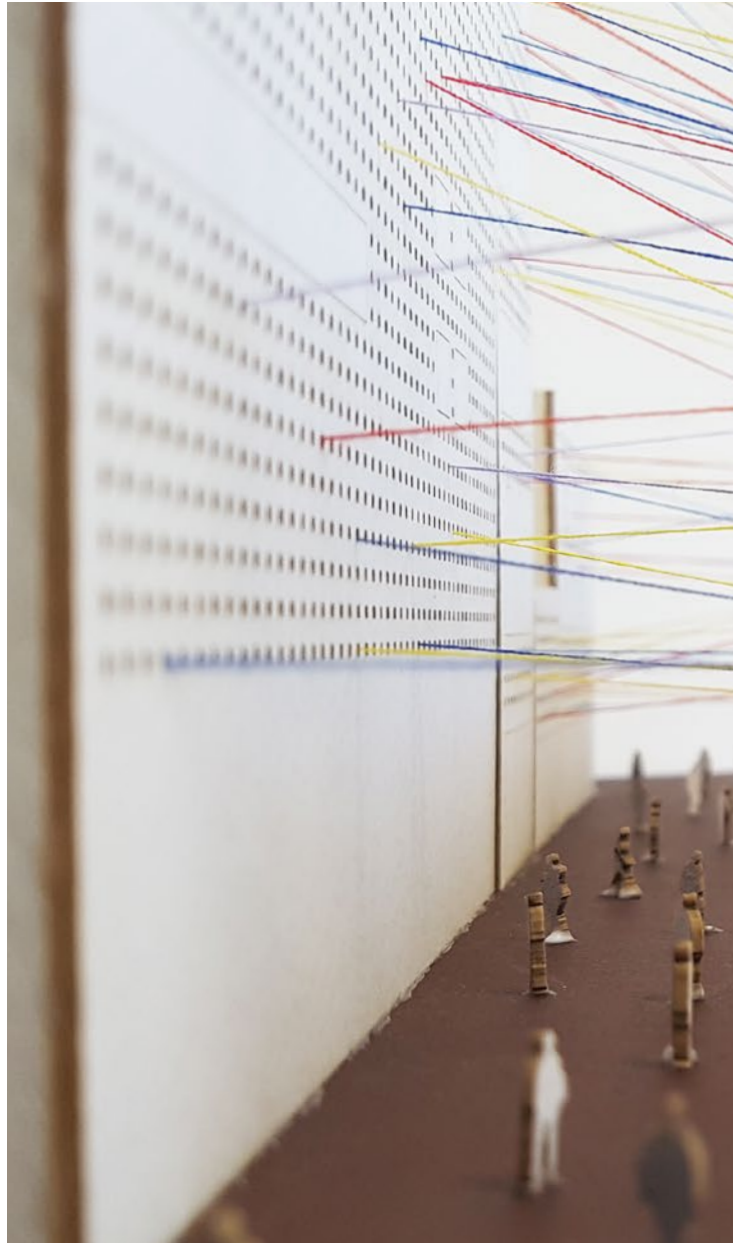
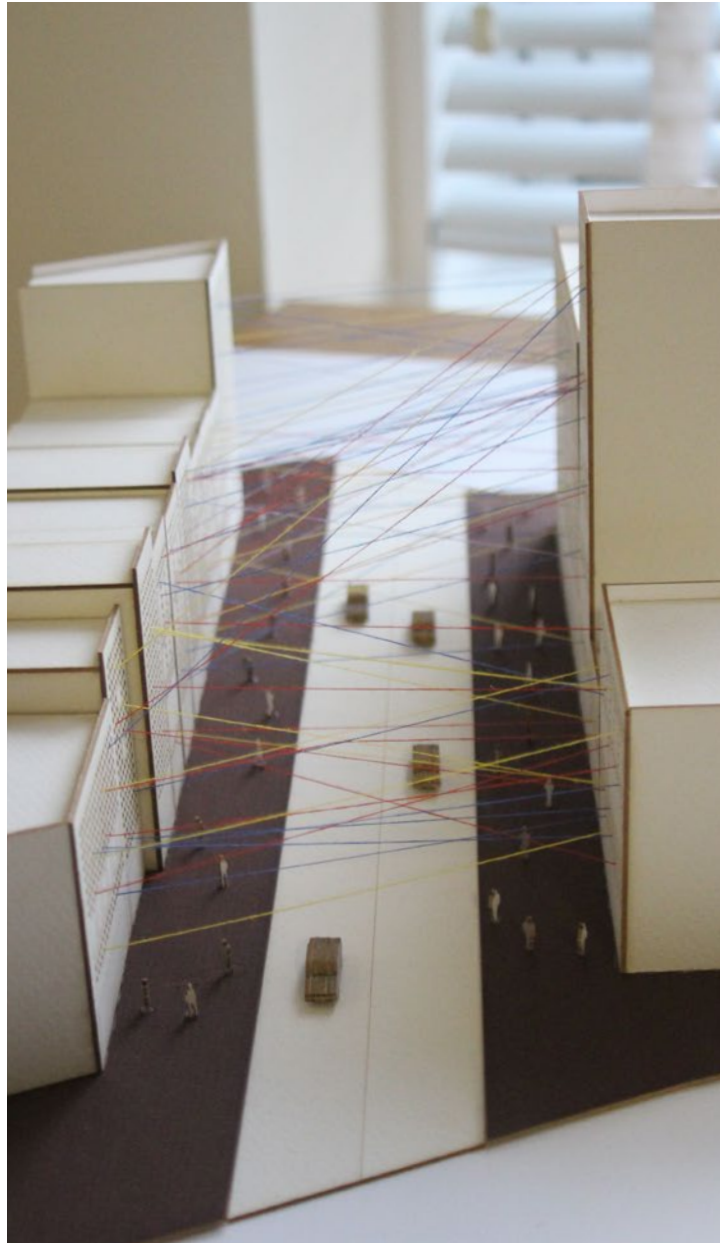


So-Il's approach to this project was to create new layer of intervention by using the existing structure of Storefront, designed by Steven Holl and Vito Acconci. And this intervention creates new relationship and layers between the space inside and the street. To develop an idea related to this project, I add another layer of intervention by extending the relationship between storefront and urban elements. So I connected the storefront to elements on the street, and new relationships are created.





Thread to Surface \_ Concept Model



**ARCHITECTURAL DAYLIGHTING**  
THE ARCHITECTURE OF NATURAL LIGHT

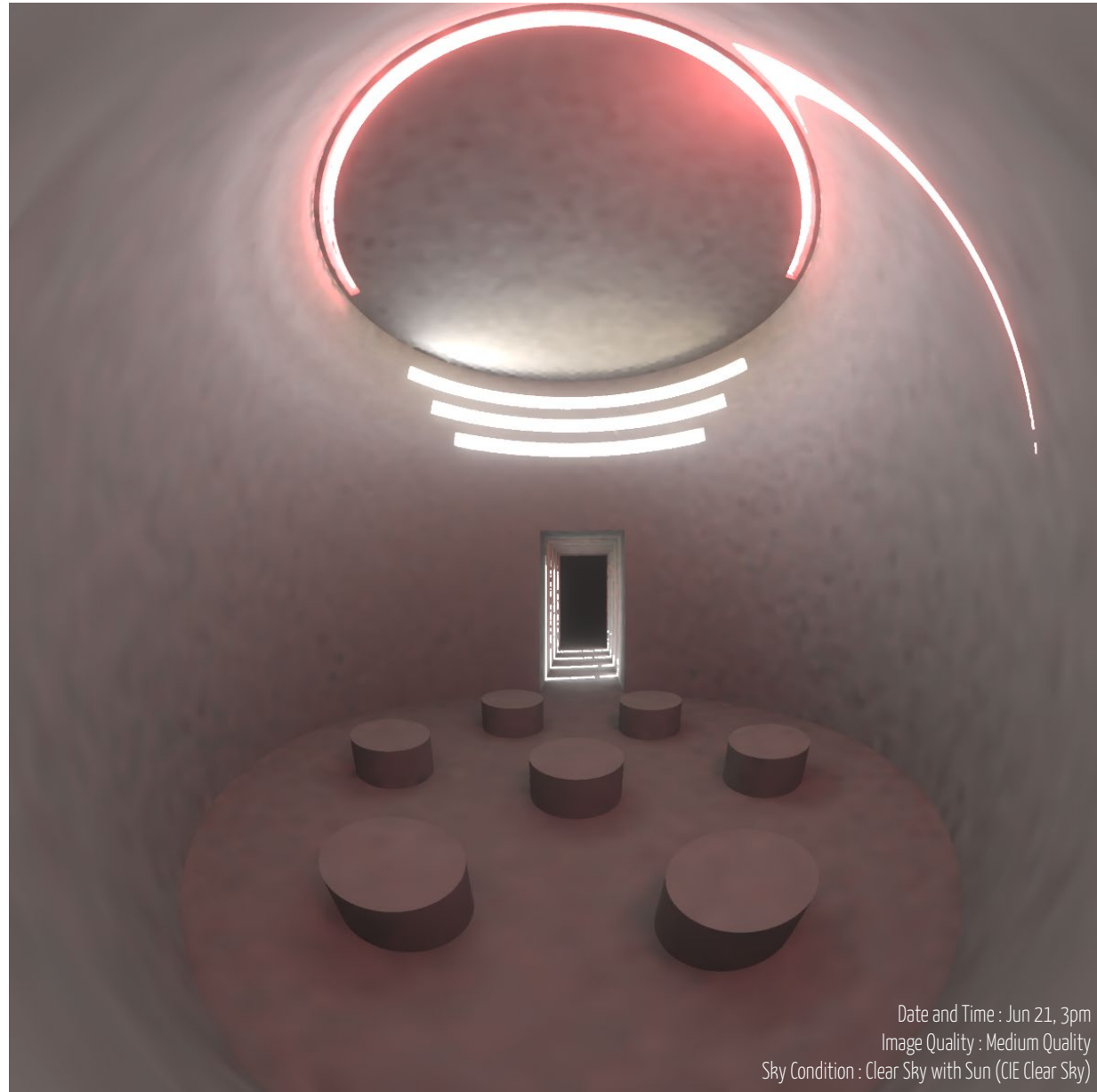
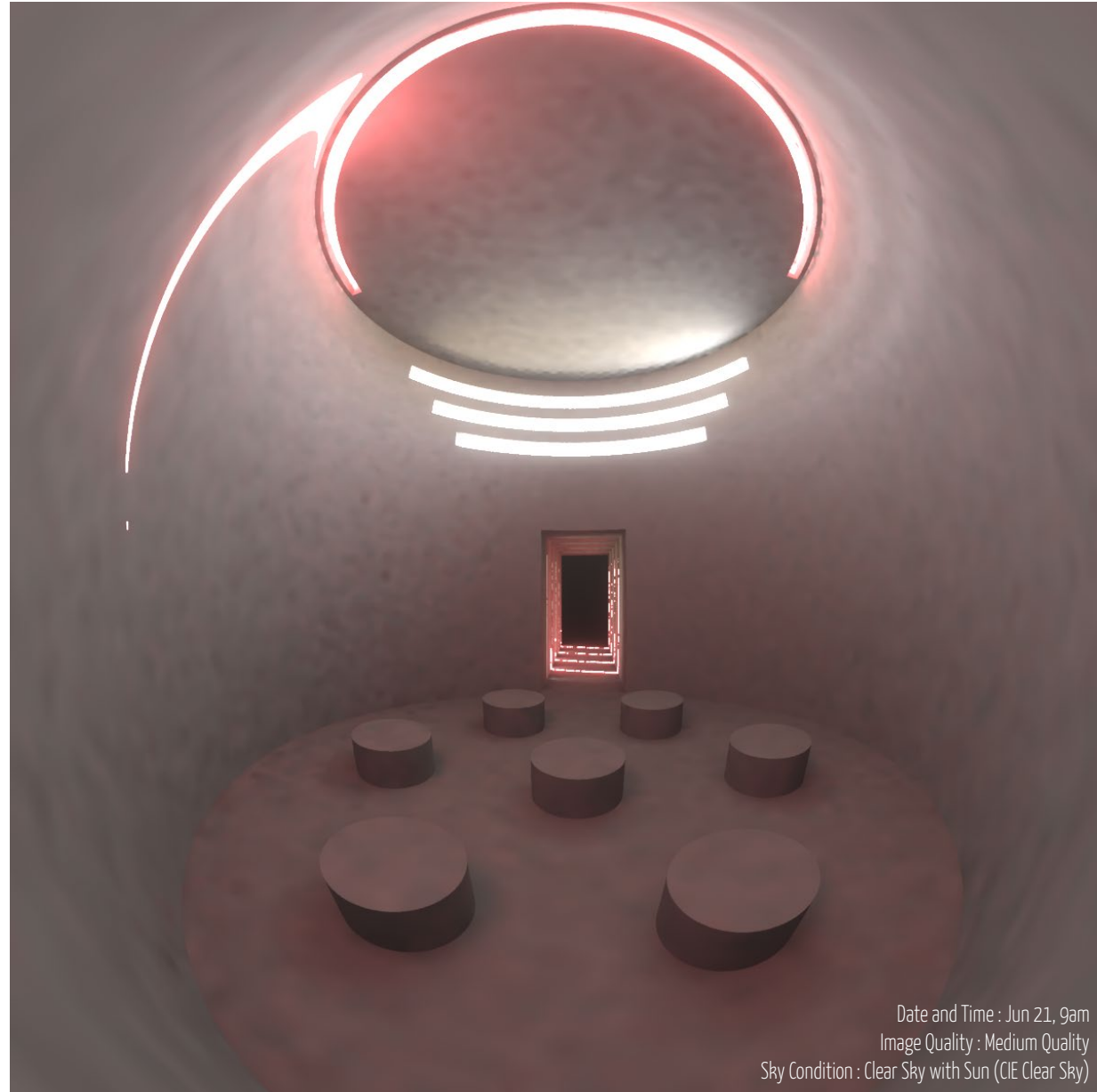
Spring 2020  
Instructor : Davidson Norris



# Architectural Daylighting

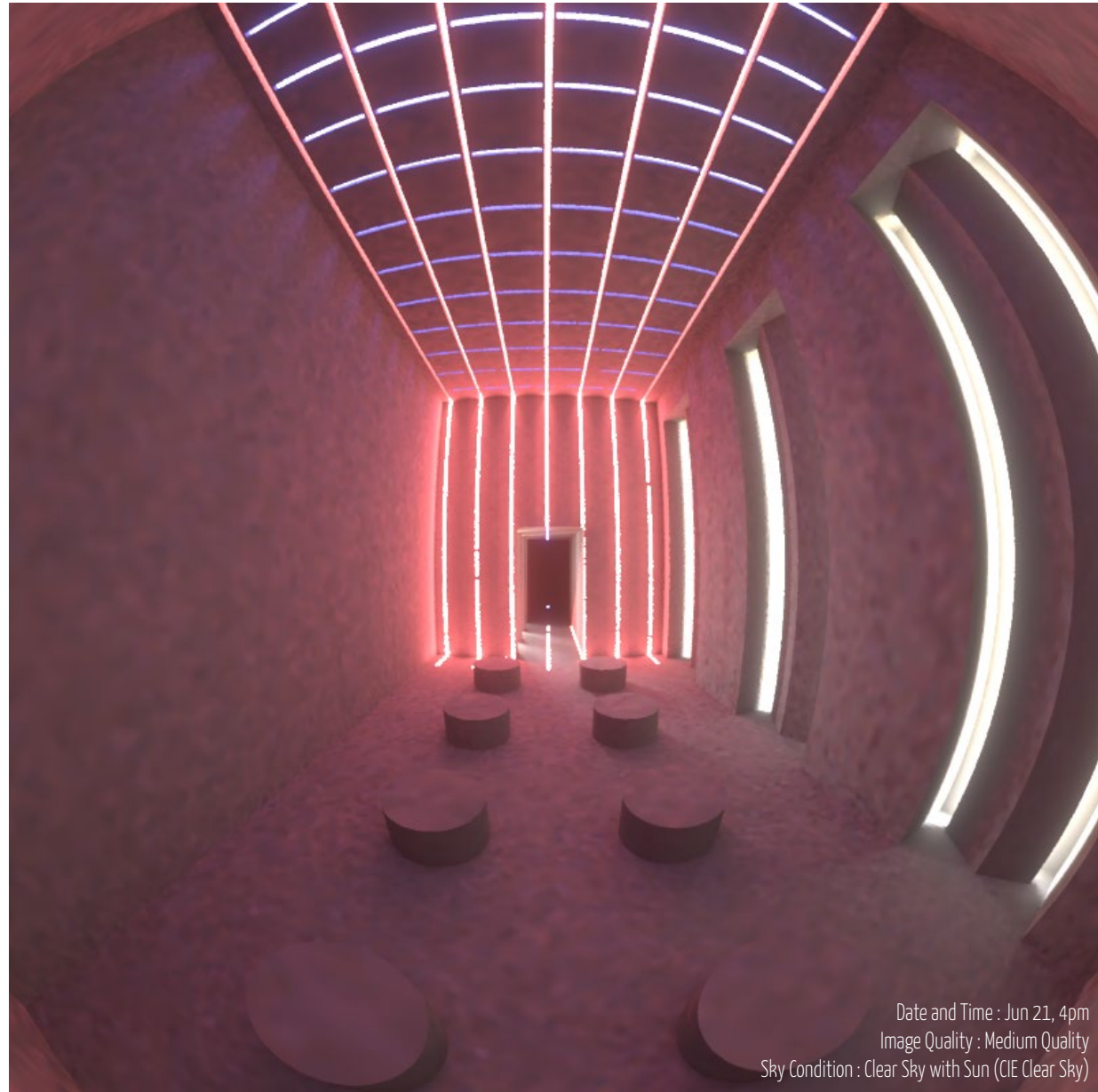
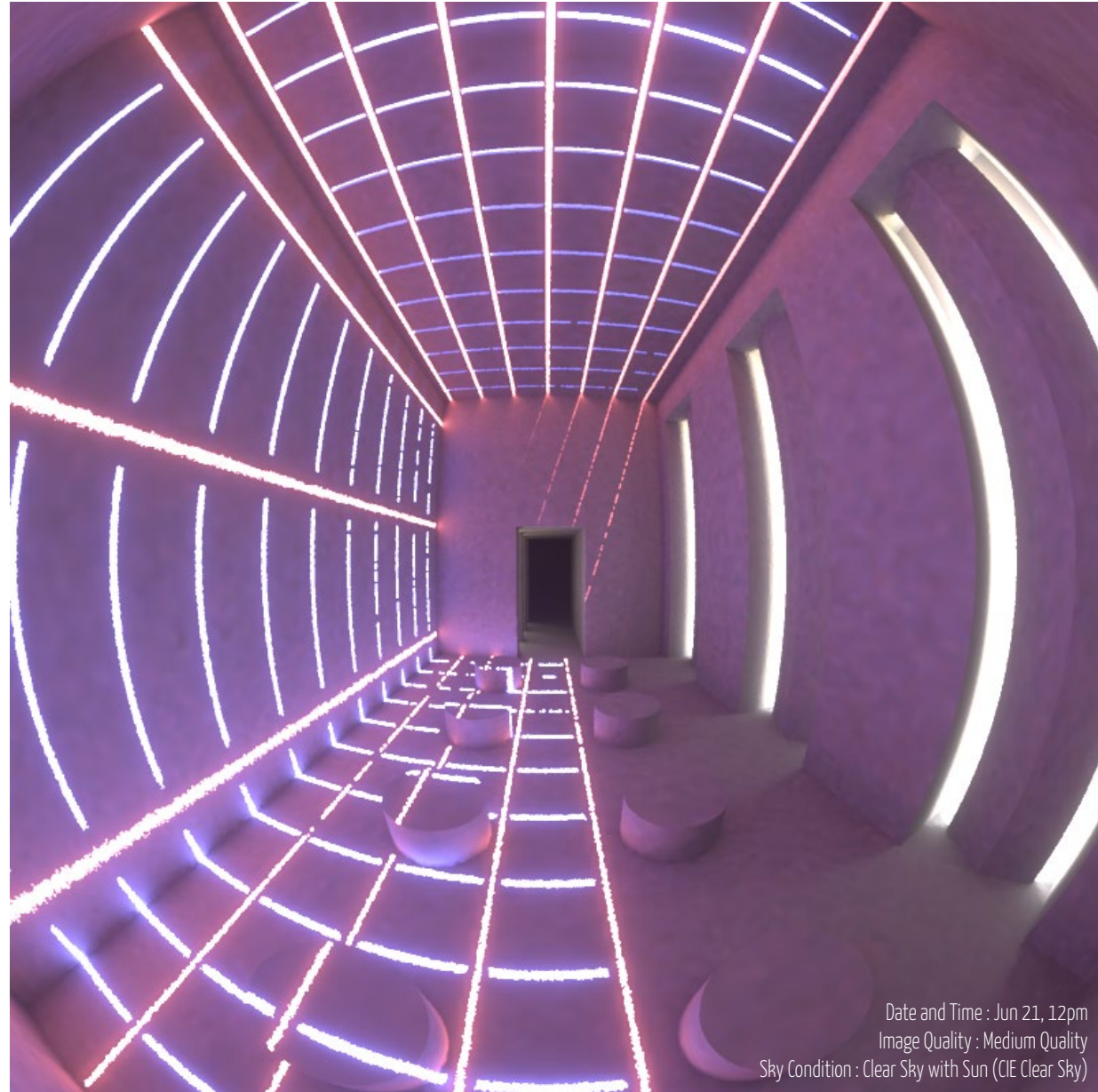
Type Academic / Individual Work / Electives / Columbia University Instructor Davidson Norris Date Spring, 2020

The main goal of Architectural Daylighting is to create daylight design sequence through various techniques. By using Rhino 3D and DIVA software, these daylight design analyzes various factors related to daylight design in architecture such as intensity, time, direction, season and so on. Based on Henry Plummer's theory, these architectural experiments delve into 6 definitions in the architecture of natural light \_ Atmospheric silence / Evanescence / Canalization / Procession / Atomization / Luminescence.



The main feature of this light chapel is the various lightscape spaces connected with corridors. So the corridor spaces are as important as the main chapel spaces. To build a sacred and poetic light sequence, the corridor space connected to the southern chapel has narrow slit windows on each wall to guide and invite people to the chapel by instill the space with changing daylight diffuse through the time periods.

Since the circular-shaped chapel selected for 'Atmospheric silence' design is located on the south, the light chapel is designed to allow visitors to feel the sense of time passing with the space imbued with the changing sunlight and light diffuse. While sitting on the chairs and observing the changing lightscape in the chapel, people can remember the tragic memory and noble sacrifices of COVID 19 in 2020.

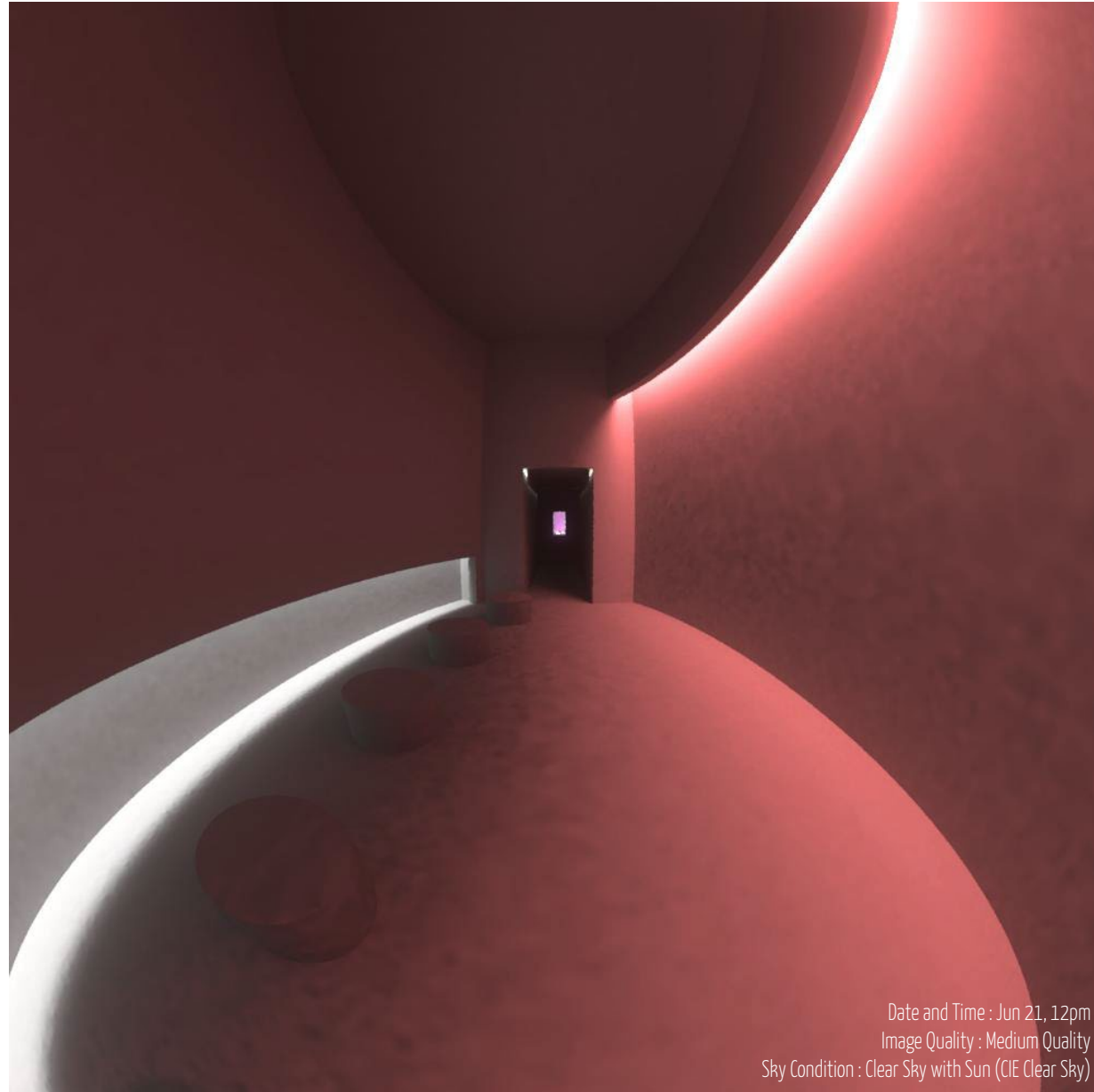
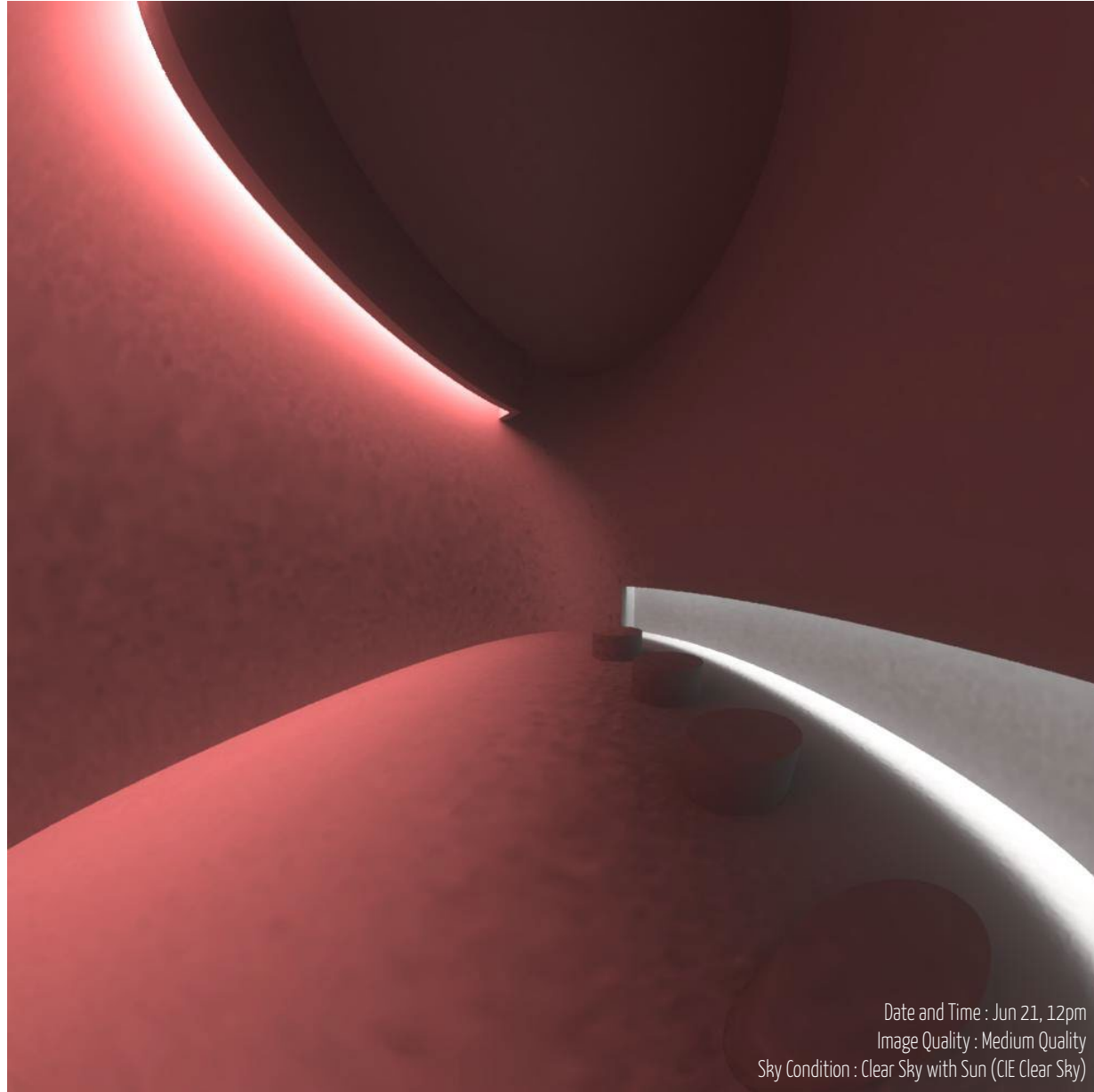


Changes and movements of natural lights give life and perceptual transformation to static building. I selected west chapel to display variety of changing light through time. Since the chapel faces the south, intervention of daylight design allows the natural light to draw orchestration of its pattern and shape on the north surface inside the space.

To make the north interior wall inside the chapel as a pure canvas for daylight ray getting into the space, this west chapel has apertures only on the south wall and the roof.

To create dramatic experience of lightscape, the chapel has lattice -patterned apertures on its roof with colored glazings. And this apertures display surreal and changing lightscape in the chapel through time. Also, the wall facing south in the chapel has indirect daylight device to prevent too much direct sun ray from penetrating into the space and emphasize the dramatic, colored light patterns in the space.

These evanescence of natural lightscape let visitors experience the signs of life amid the memories of COVID-19.



Apertures on the roof and the bottom of the chapel let reflected daylight diffuse get into the chapel space. To avoid too much direct sunlight from penetrating through the apertures, deep tunnels of light path are installed. The daylight coming through the apertures get smoother with those reflections.

The linear aperture on the north wall functions as a filter to create a colored light fall pouring into the chapel space. White wall inside the chapel becomes a canvas for the light fall.

Slit aperture on the south wall allows daylight to indirectly penetrate the space. This light is reflected several times and functions as a light well in the chapel.

These light fall and light well create sacred sequence of gentle luminescence of daylight in the light refuge.



Thanks for the beautiful memories!