



# GSAPP



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2019–2020

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2019-2020

GRADUATE SCHOOL OF ARCHITECTURE, PLANNING AND PRESERVATION  
COLUMBIA UNIVERSITY

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01

## MIRROR IN THE MIRROR

CONCERT HALL WITH THE TRANSLATION OF RELATIONSHIP BETWEEN BASIC MUSIC ELEMENTS

Inspired by music—*Spiegel im Spiegel* by Arvo Pärt and *Laterna Magica* by Kaija Saariaho, we try to find the common relationship between three basic music elements — triad, melody and bar line based on the studies on sheet music.

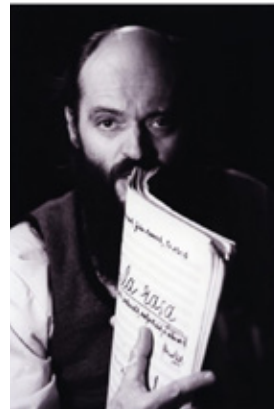
We translate 'triad' and 'melody' into two different curvy geometry — white arch-shaped surface and black thick-and-solid walls. And we combine the different representations of bar line — multiple mirror in *Spiegel im Spiegel* and red filter in *Laterna Magica* into red transparent glass.

For their role in architecture, we try to define them according to their roles in music. Triad accompanies the music like a guardian angel; melody is the basic foundation of music; and bar line divides the music into several bars. So we define the 'triad' part as connecting, 'melody' part as supporting, 'bar line' part as dividing. The red mirrors reflect and refract between white 'triad' and black 'melody', creating unexpected reflections and refractions between three colors, making the interior space more atmospheric and thus explaining the concept of 'mirror in the mirror'.

Studio Work: The Architectonics of Music  
Critic: Steven Holl and Dimitra Tsachrella  
Teamwork with Jingjing Wu

Software: Rhino, Grasshopper, Vray, Photoshop, Illustrator, Indesign, Premiere  
Spring 2020/ Prague, Czech Republic

## TRANSLATION OF SHEET MUSIC



### ARVO PÄRT

Style: an Estonian composer of classical and religious music  
 a minimalist style  
 self-invented compositional technique - tintinnabuli  
 Works: Fratres, Spiegel im Spiegel, and Für Alina  
 Status: the most performed living composer in the world since 2011

### SPIEGEL IM SPIEGEL – MIRROR IN THE MIRROR

Each ascending melodic line is followed by a descending mirror phrase  
 The triad part accompanies the melody part at each step like a "guardian angel"



### KAIJA SAARIAHO

Style: an Finnish composer from strict serialism towards spectralism and polyphonic textures are often created by combining live music and electronics  
 some work aesthetically recalling minimalism  
 Works: L'Amour de loin, Graal théâtre, Verblendungen, Orion, Petals  
 Status: the greatest living composer in a 2019 composers' poll by BBC Music Magazine

### LATERNA MAGICA



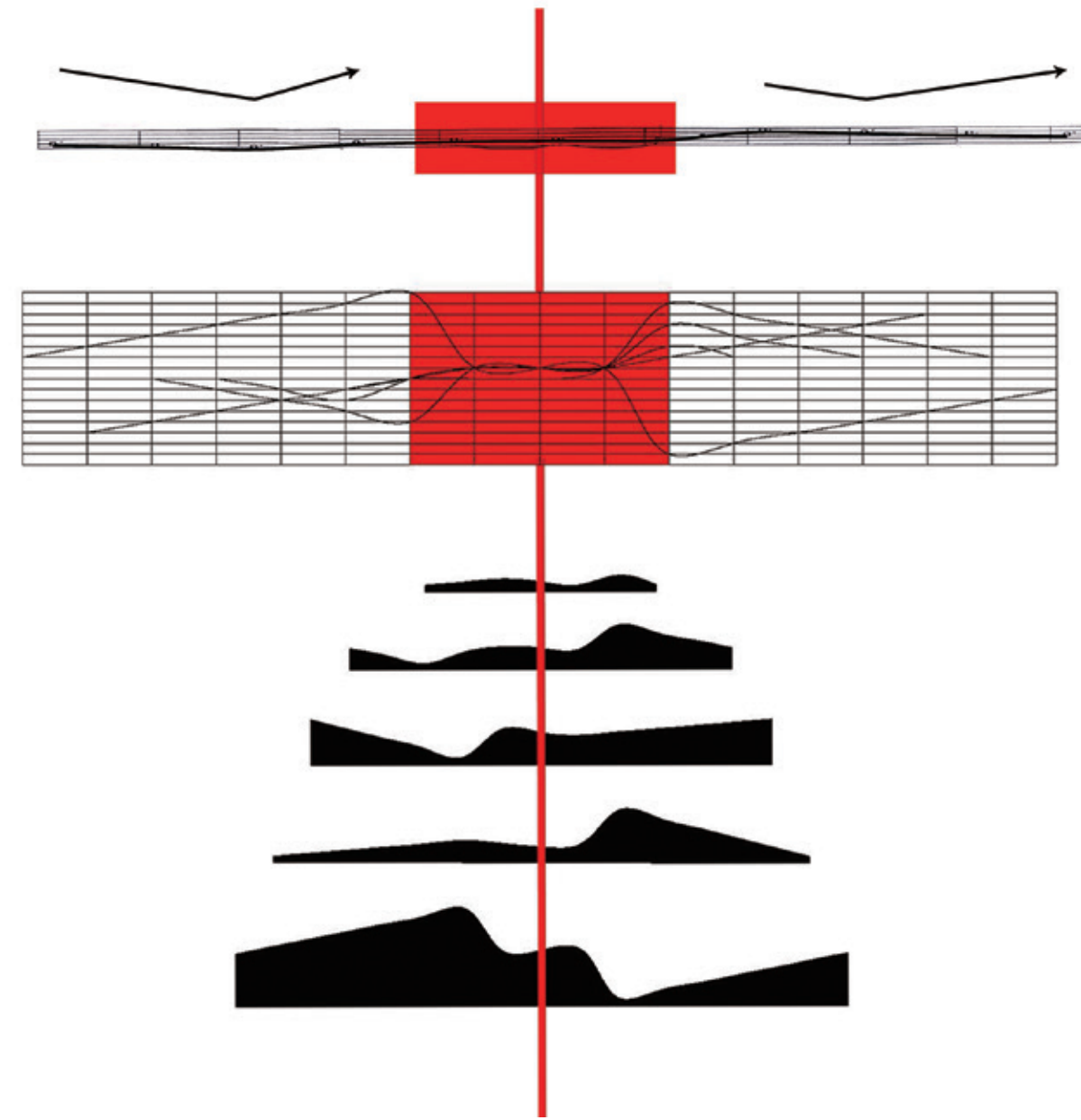
Ingmar Bergman  
 Cries and Whispers  
 Transitions go through red color

**TRIAD:** a set of three notes that can be stacked vertically in thirds

**MELODY:** a linear sequence of notes the listener hears as a single entity, the foreground to the backing elements and is a combination of pitch and rhythm.

**BAR LINE:** a vertical line used in a musical score to make a division between bars

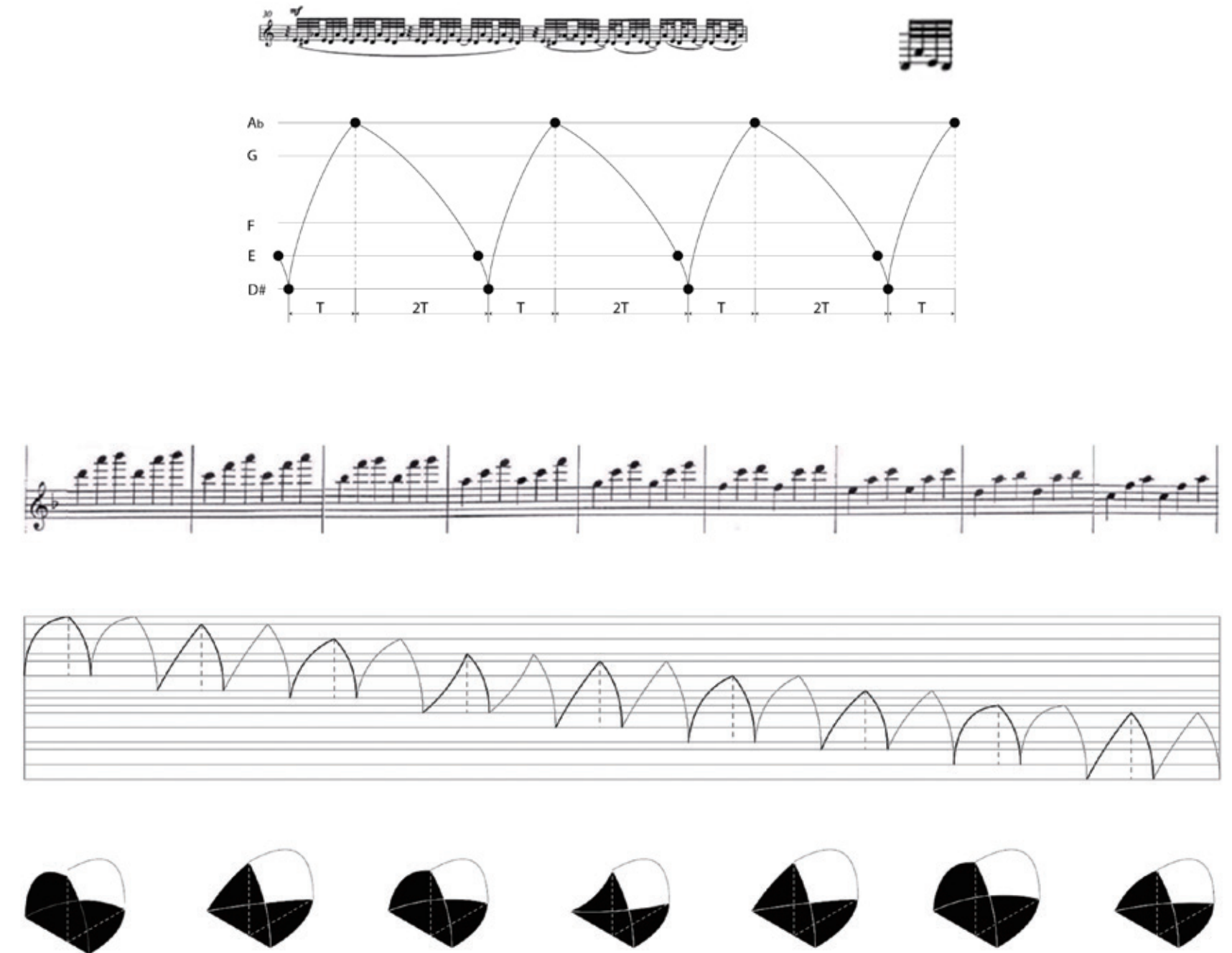
## MELODY



For melody, which is the most predominant component in sheet music, it will become the basic supporting structure — thick-and-solid black supporting walls in architectural language.

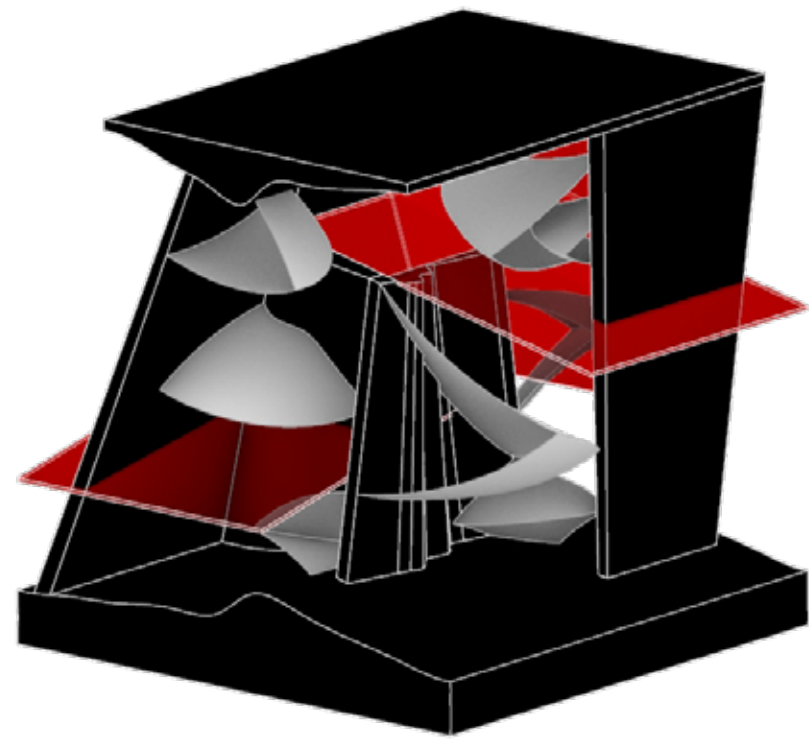
For bar line, which divides the sheet music into bars, it will become the dividing elements in — transparent red glasses architecture language.

## TRIAD

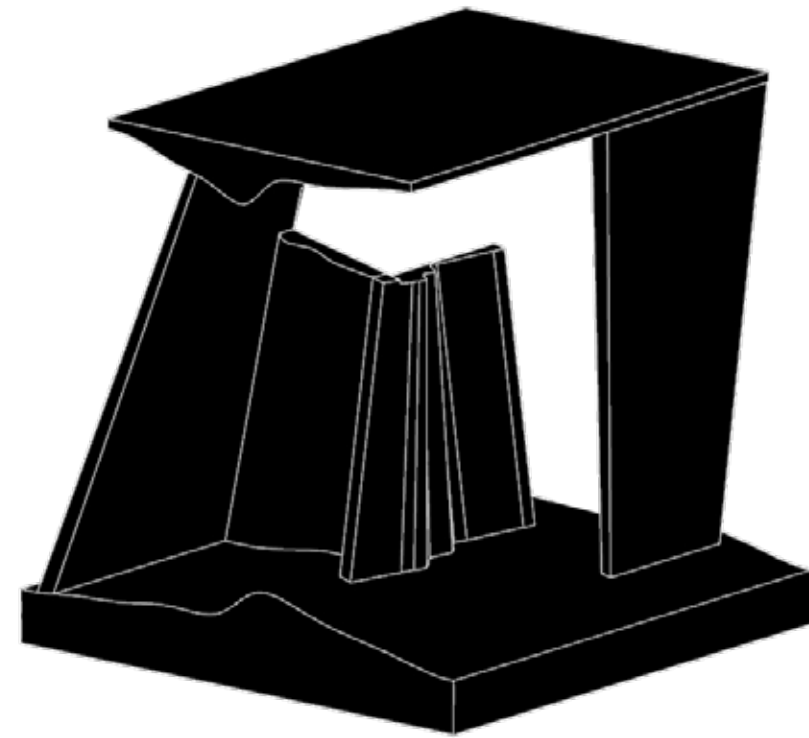


For triad, which accompanies the melody like the accompany angel in sheet music, it will become the connecting elements — the windows, doors and balconies to connect the interior spaces with different functions or connect interior and exterior spaces in architectural language.

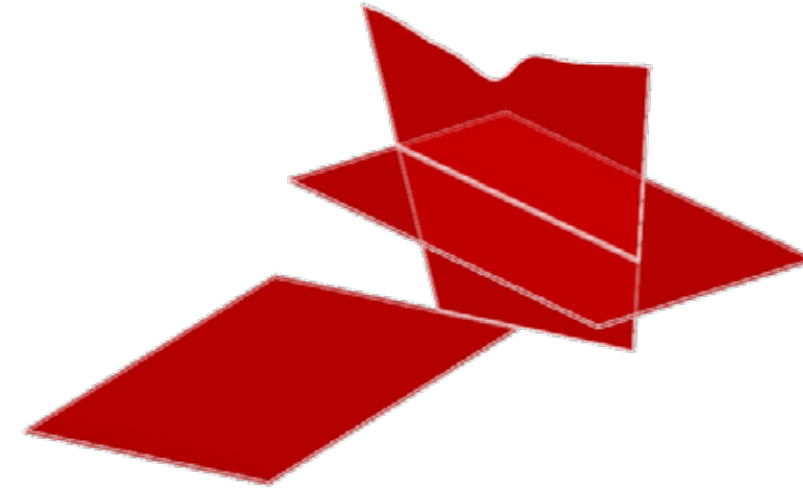
## ARCHITECTURE LANGUAGE



LANGUAGE TEST IN A CUBE SPACE



MELODY — SUPPORTING BLACK WALLS

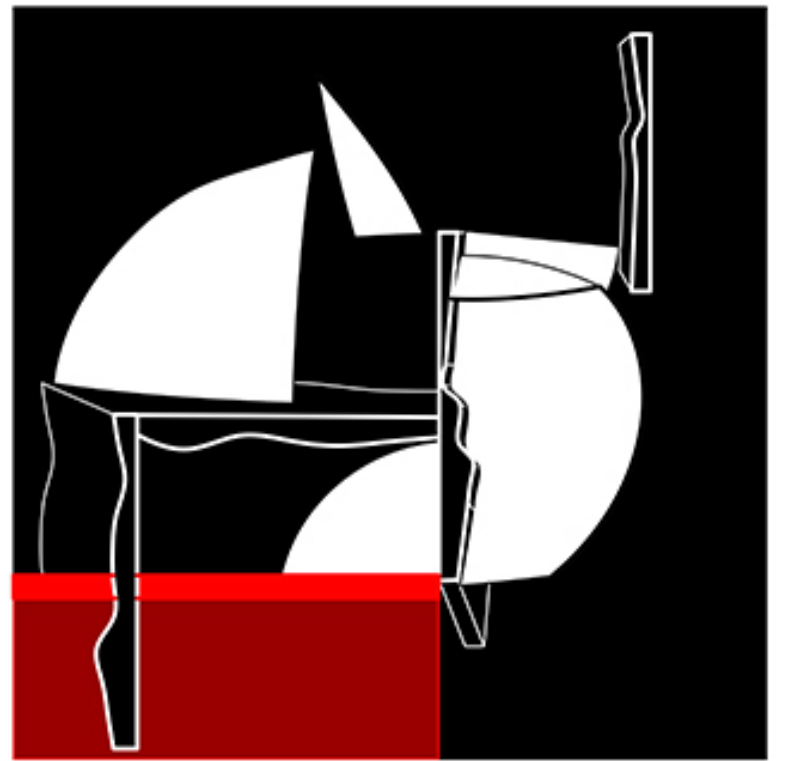
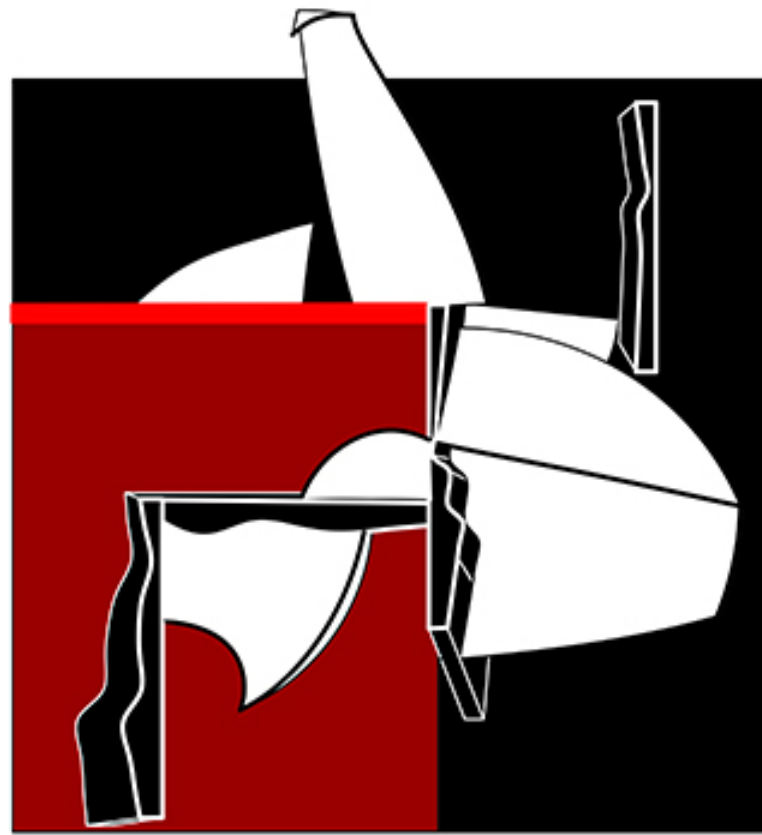
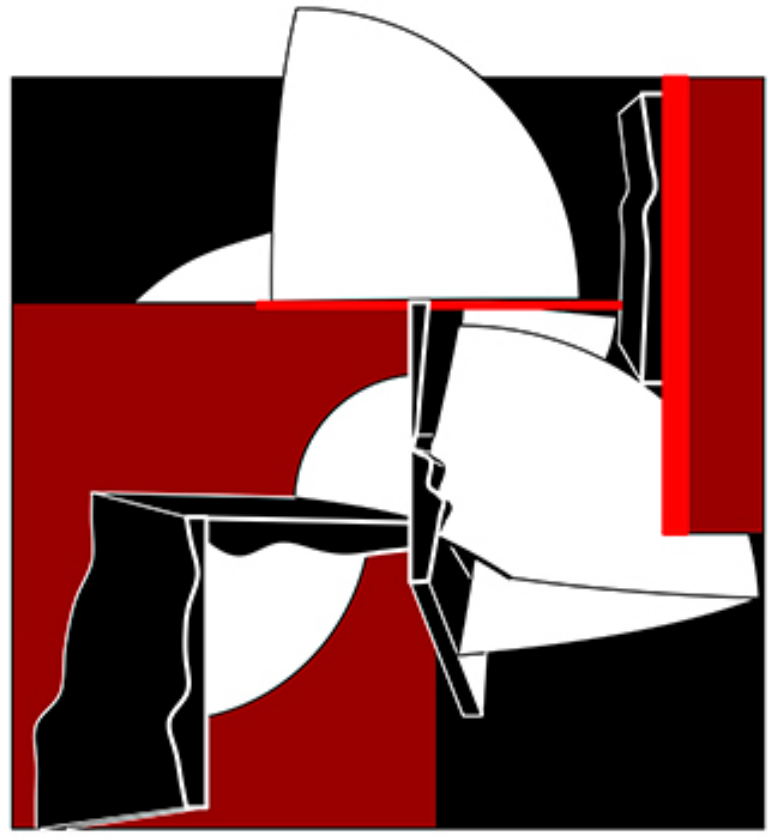
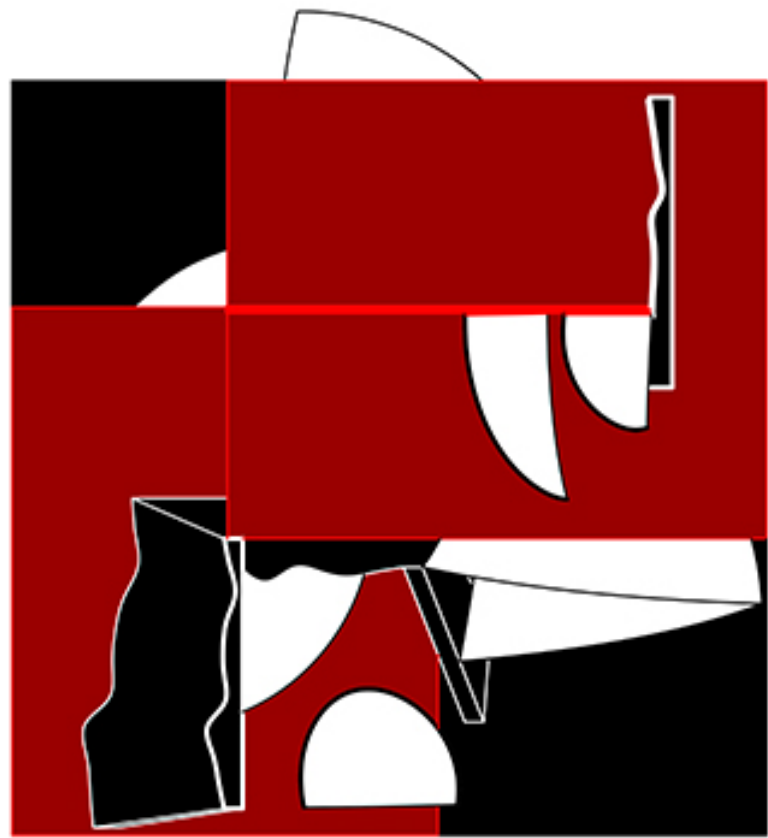


BAR LINE— DIVIDING RED MIRROR

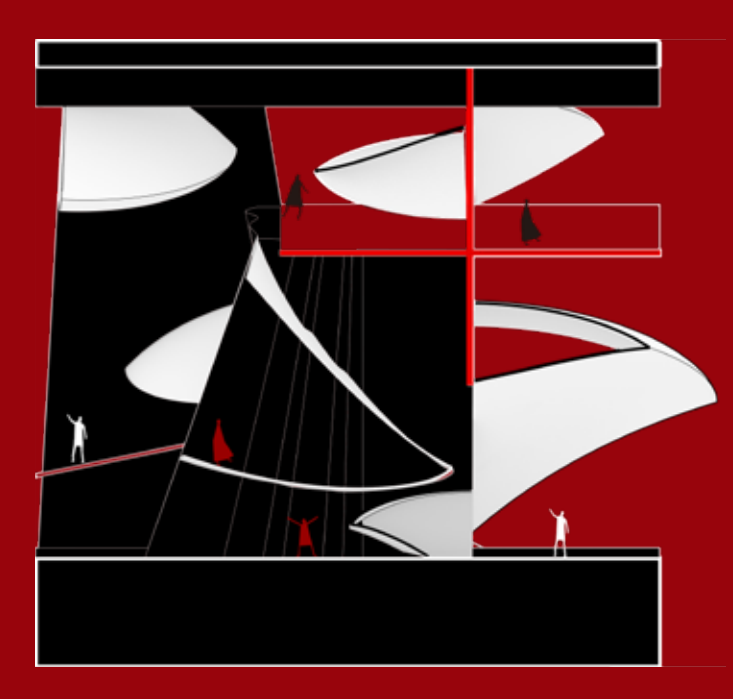


TRIAD— CONNECTING WHITE SURFACES

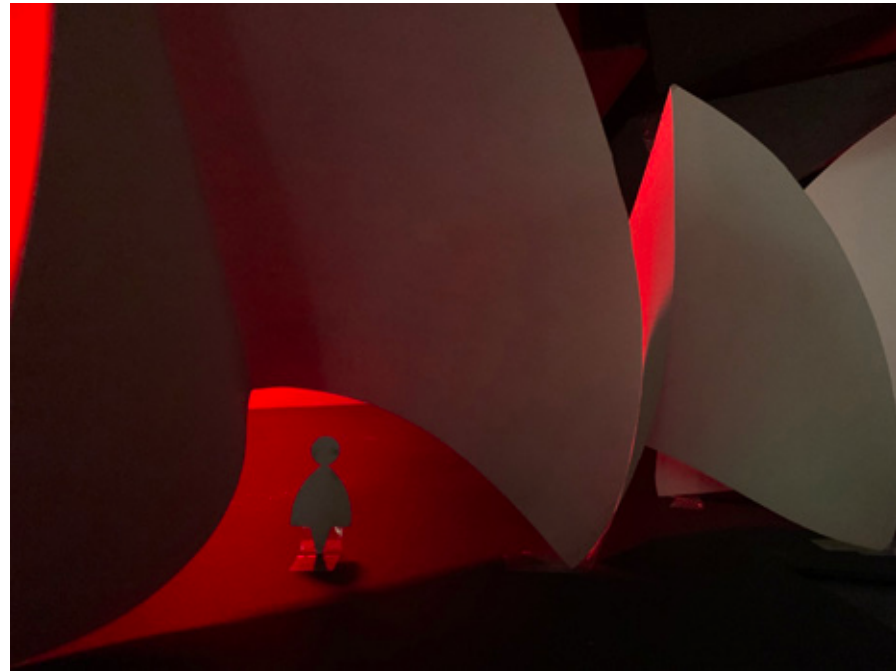
PLANS



SECTIONS



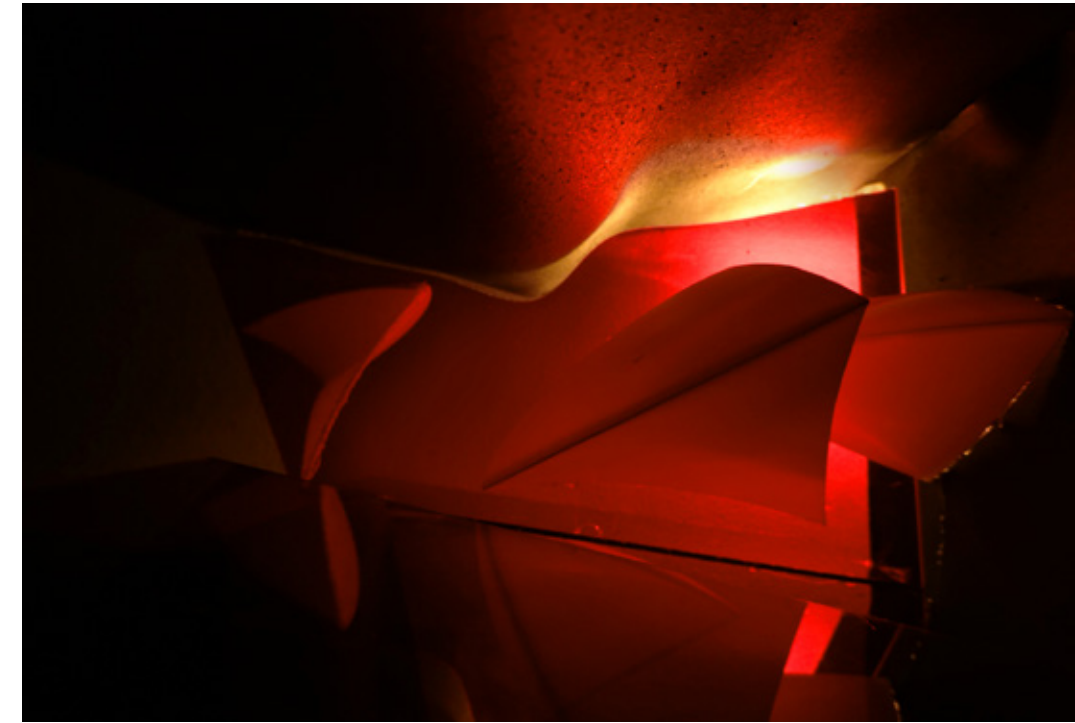
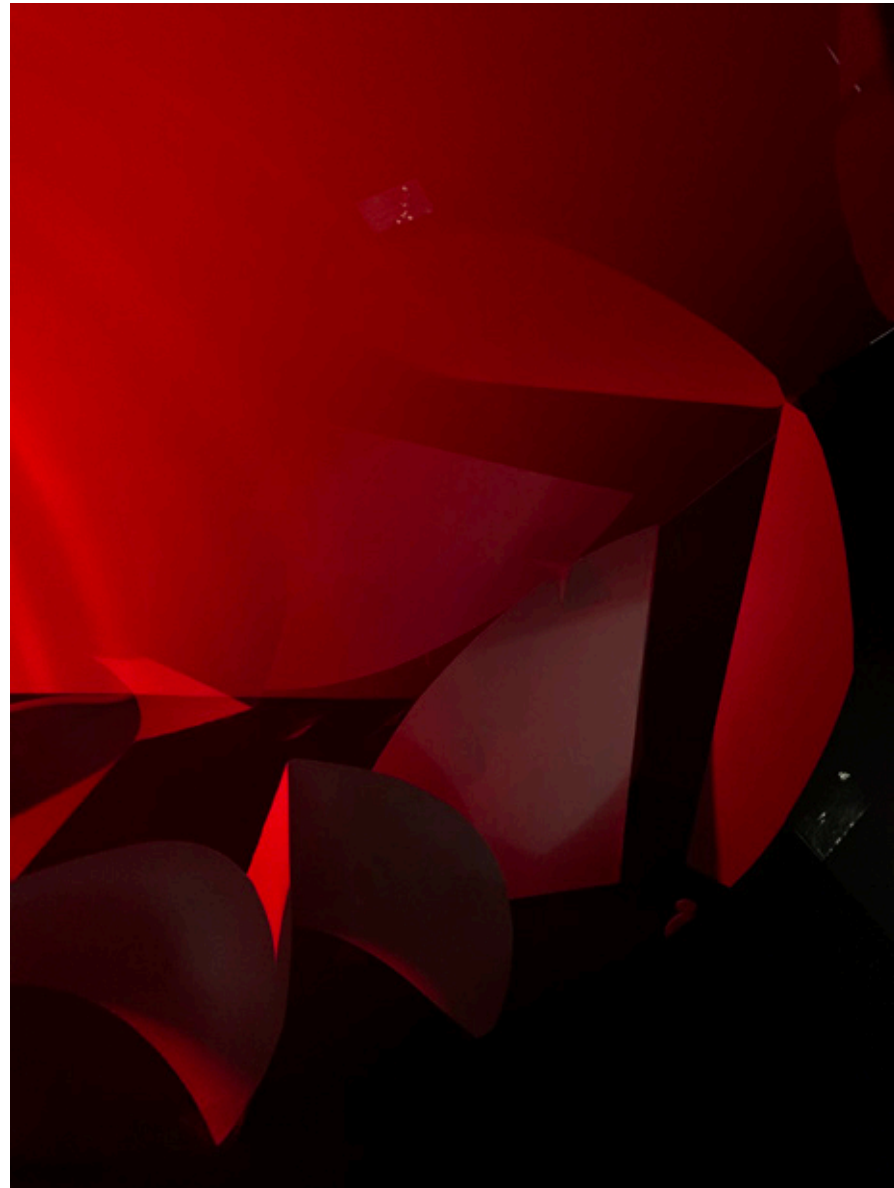




## WORKING MODEL

Black Cardboard, White Paper and Red Glass Paper

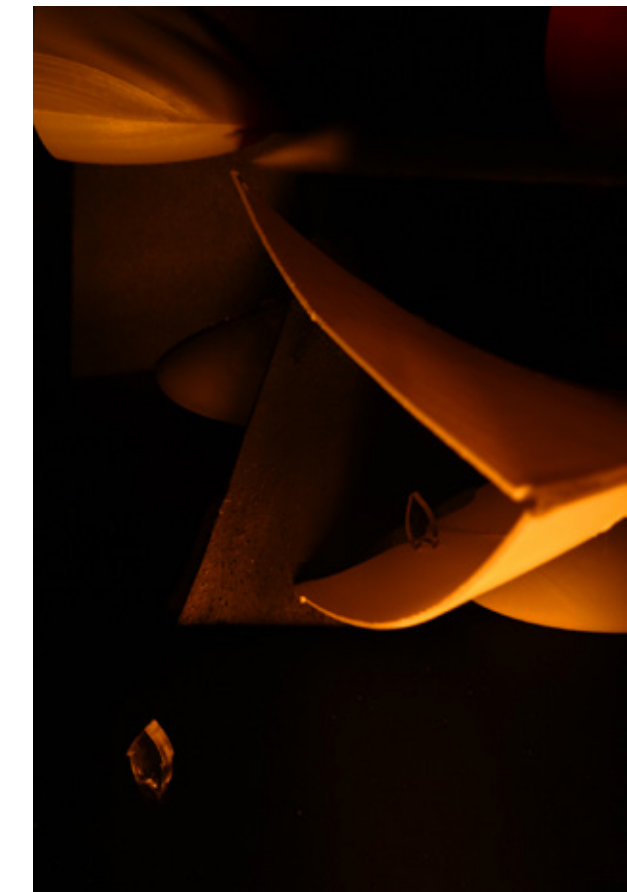
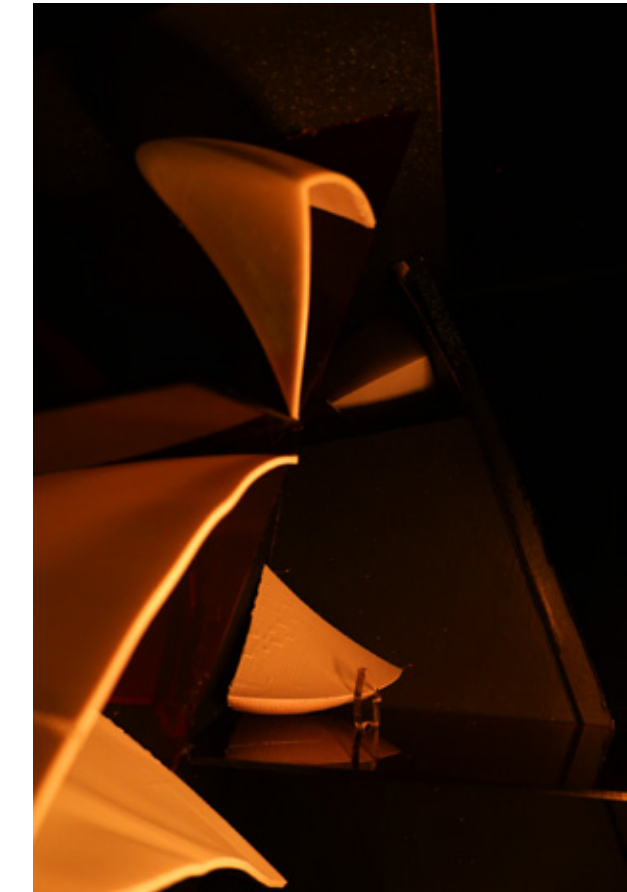
We adjusted the relationship between the three elements to have more diverse spatial experience and reflective effects.

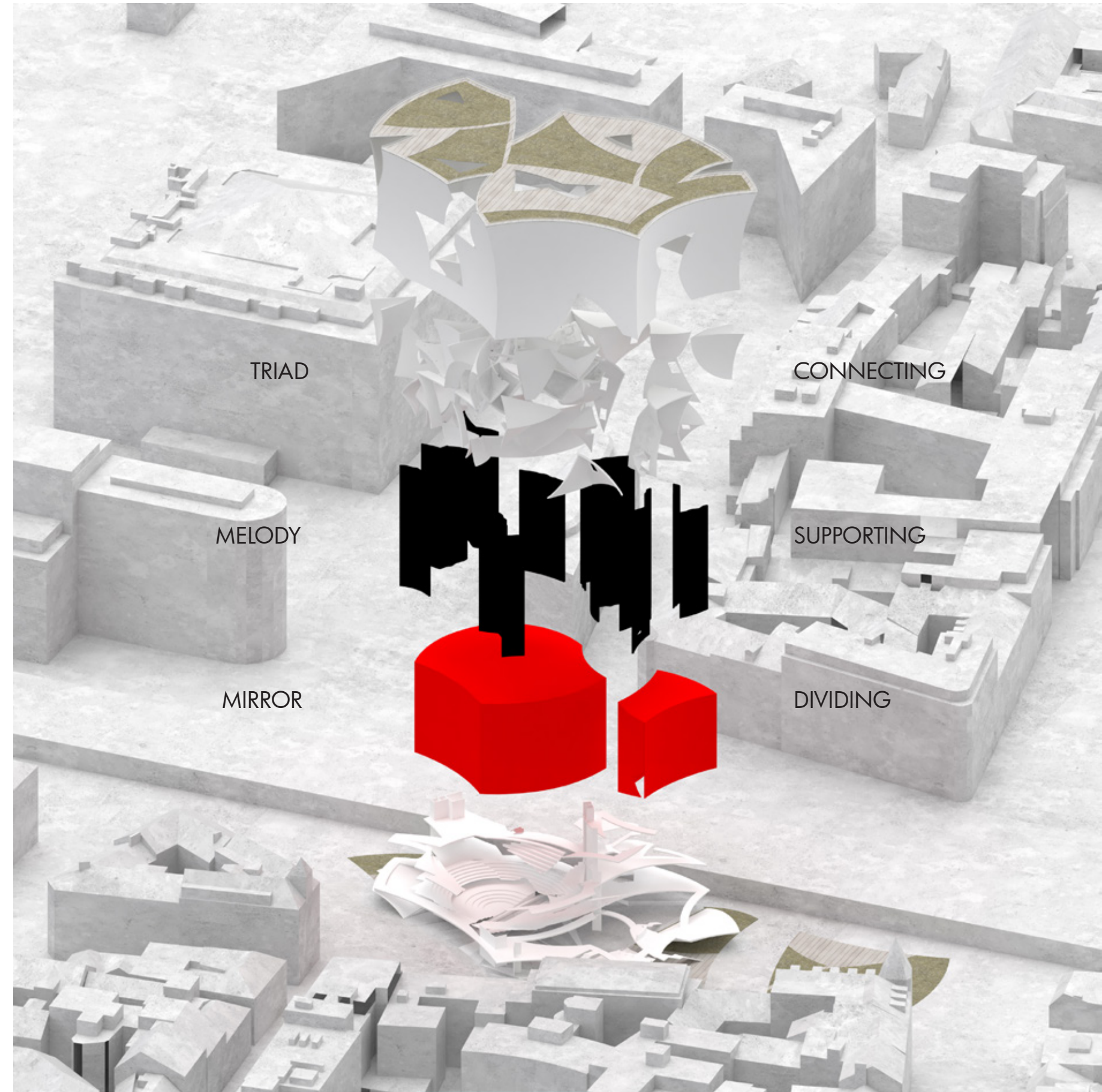
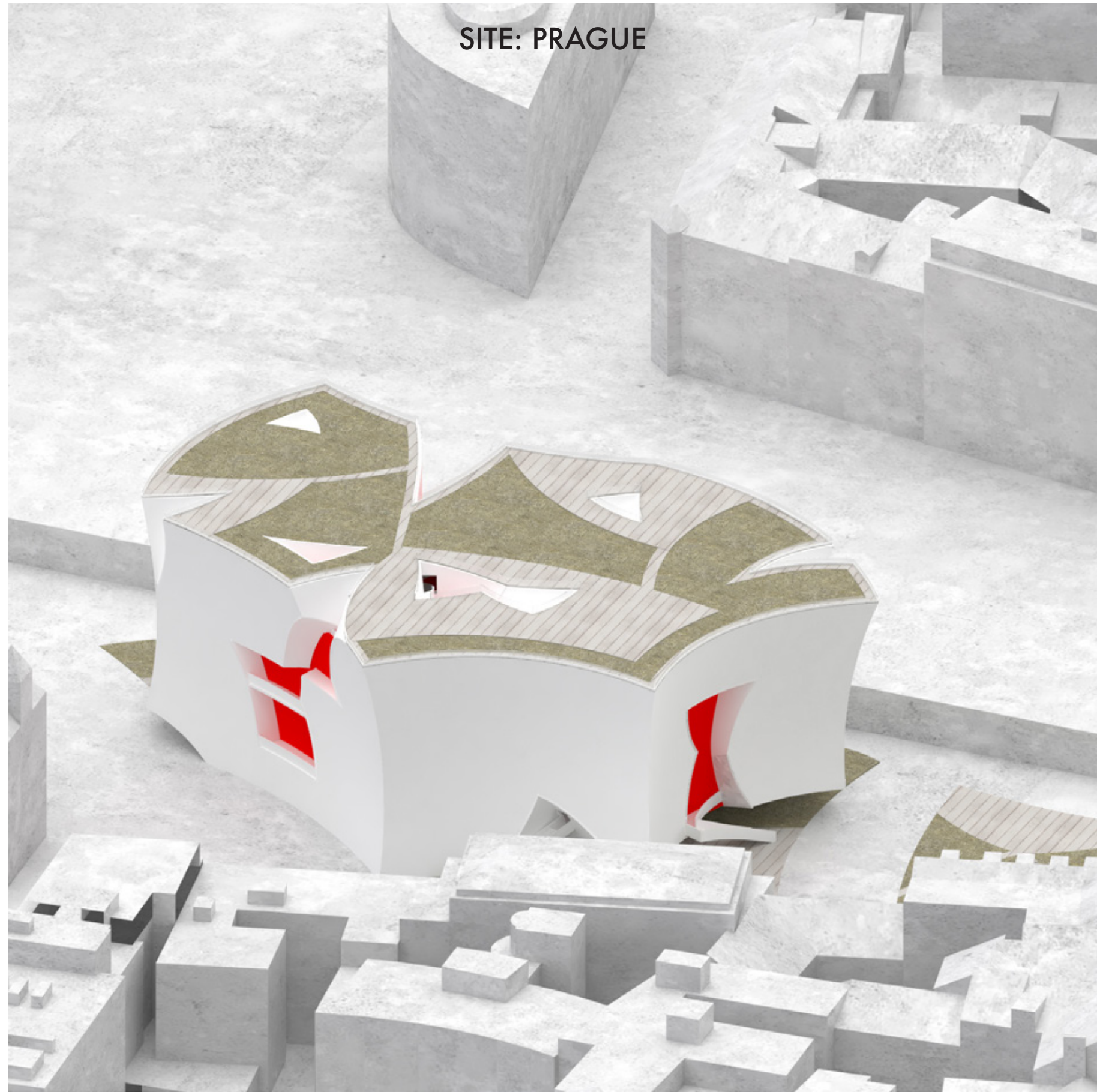


## MIDTERM MODEL

Black Cast Concrete, 3D-print White Curvy Surfaces and Red Acrylic

We tested on the material to further explore the architectural language, and also introduced some artificial lights to see the effects of lights on reflections and refractions.

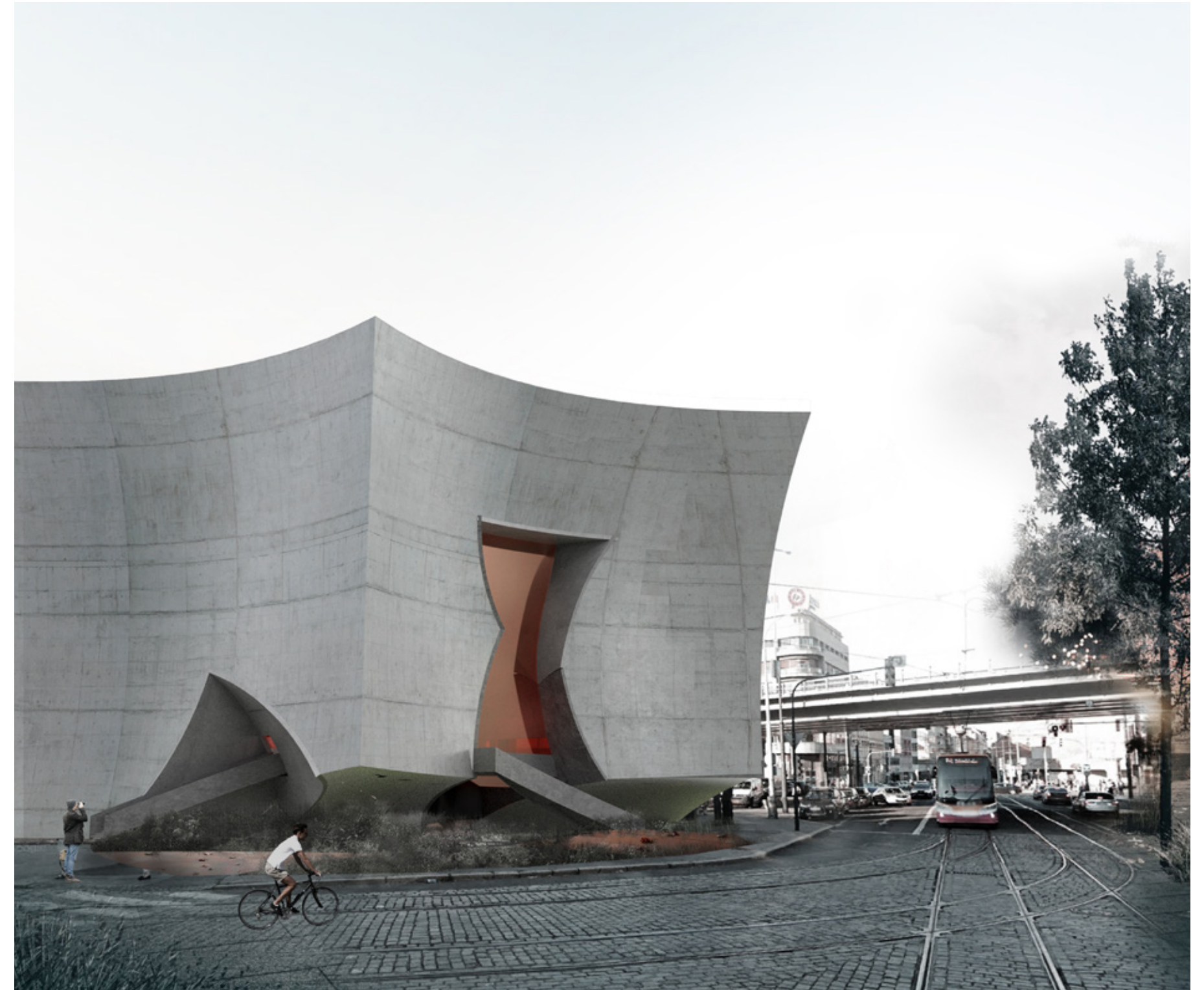






#### FLOATING ENTRANCE

We made the entrance floating, so people have to go up stairs first to enter the concert hall.



#### OPEN PLAZA

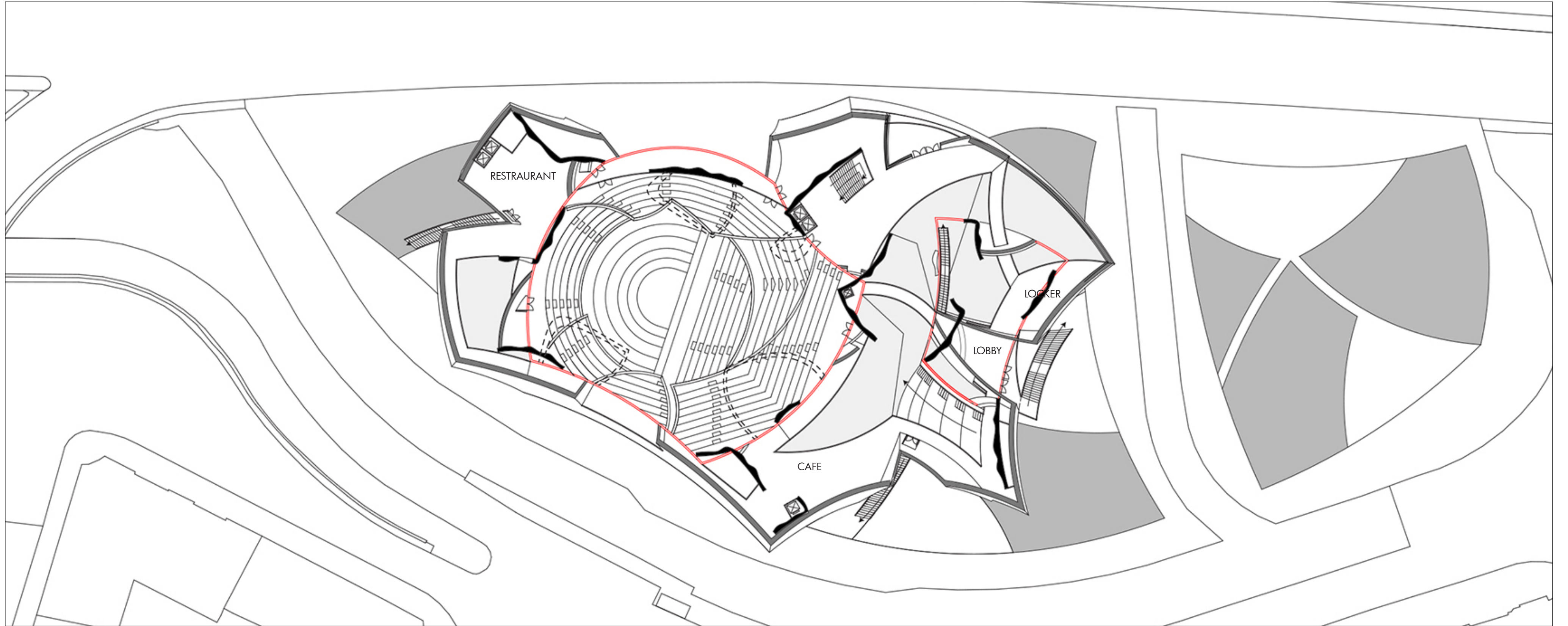
We designed a plaza to be connected the cafe entrance, so people could have coffee either indoors or outdoors.



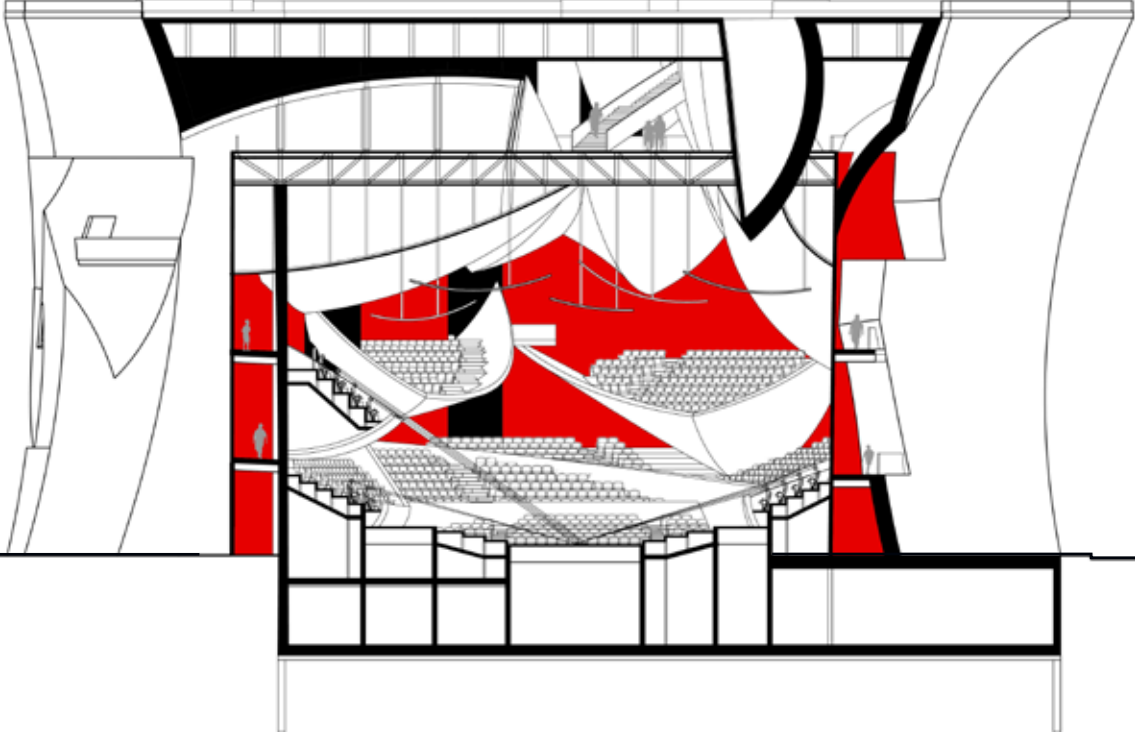
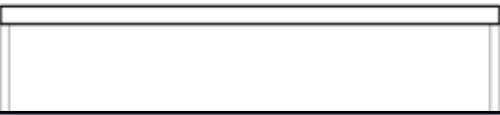
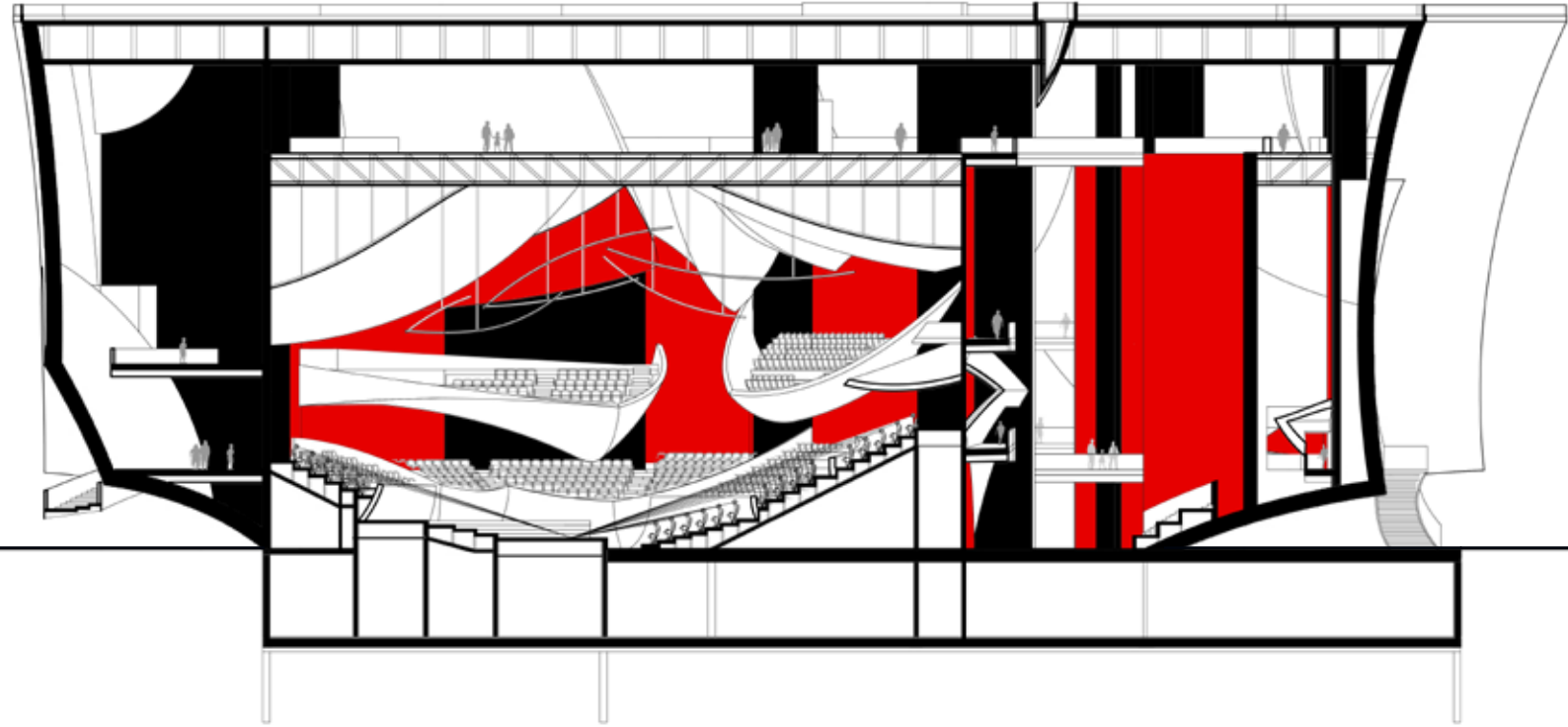
BALCONY

The balconies provide people with the interactive experience between interior and exterior.

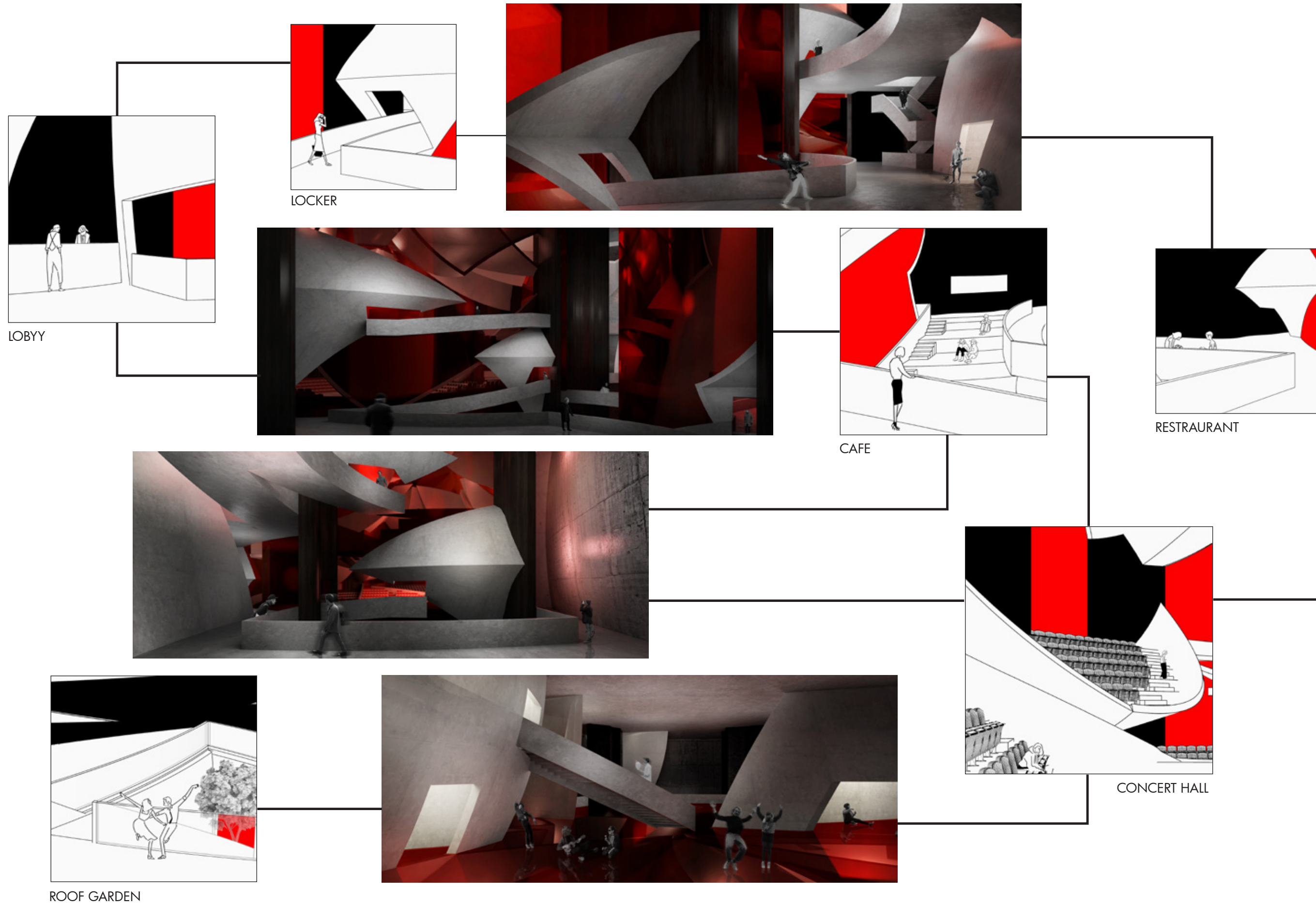
# PLAN

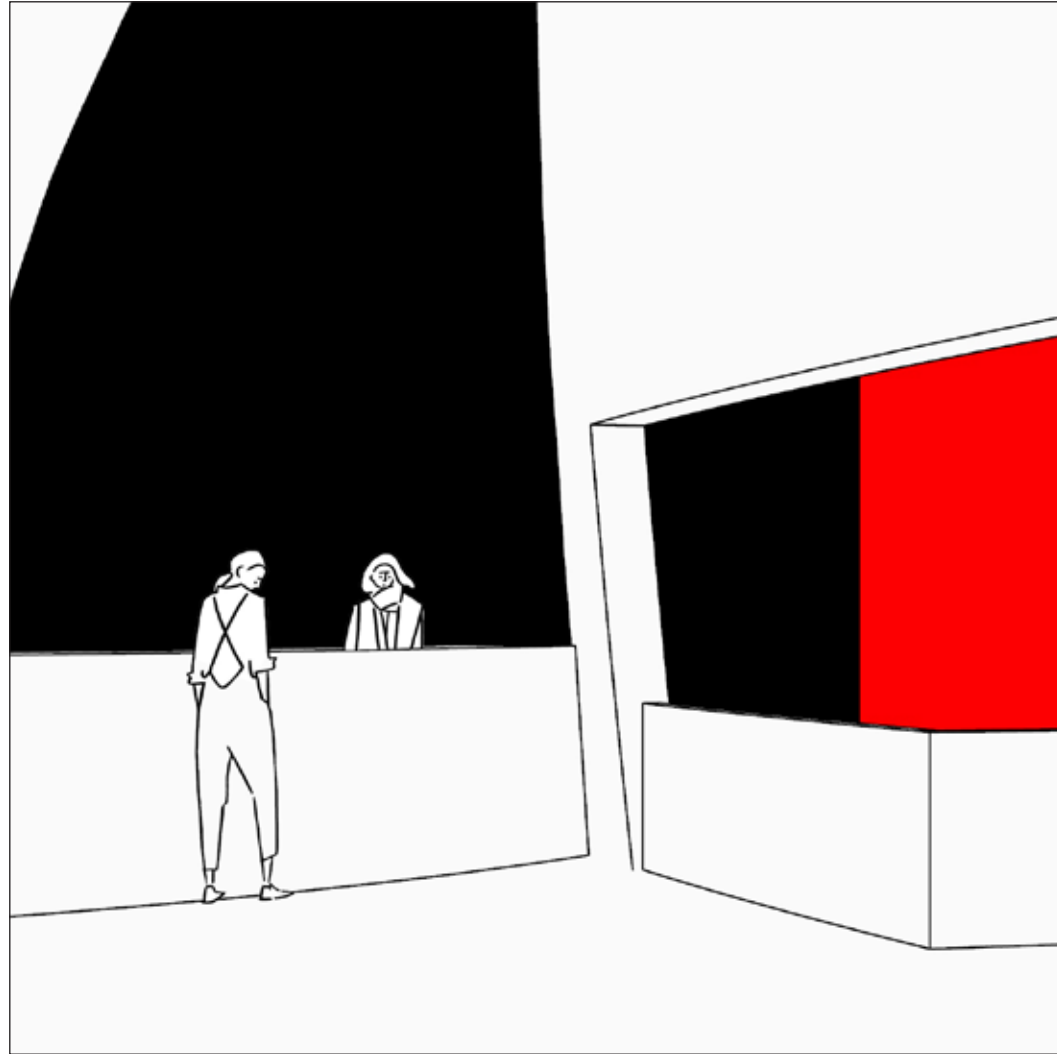


SECTIONS

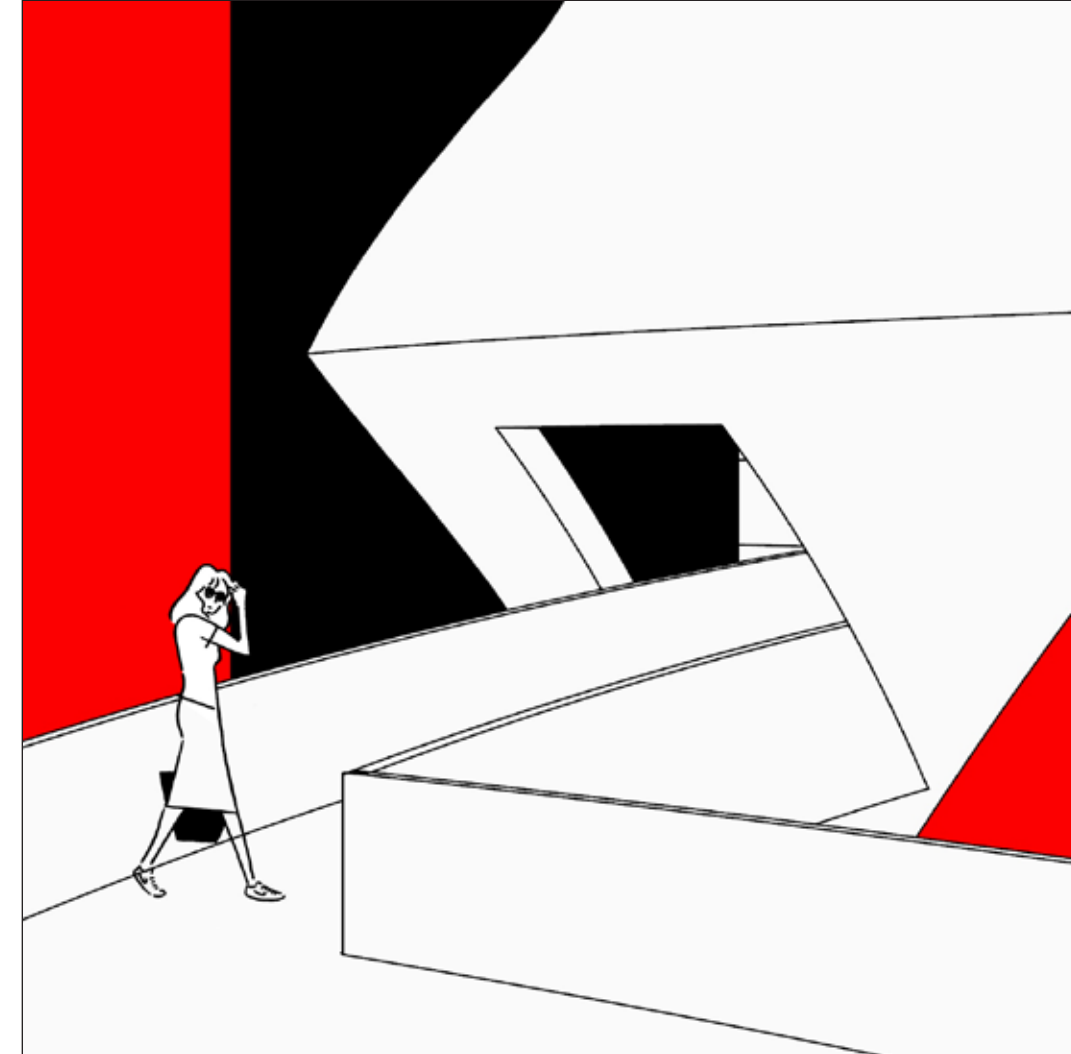


# MOVEMENT





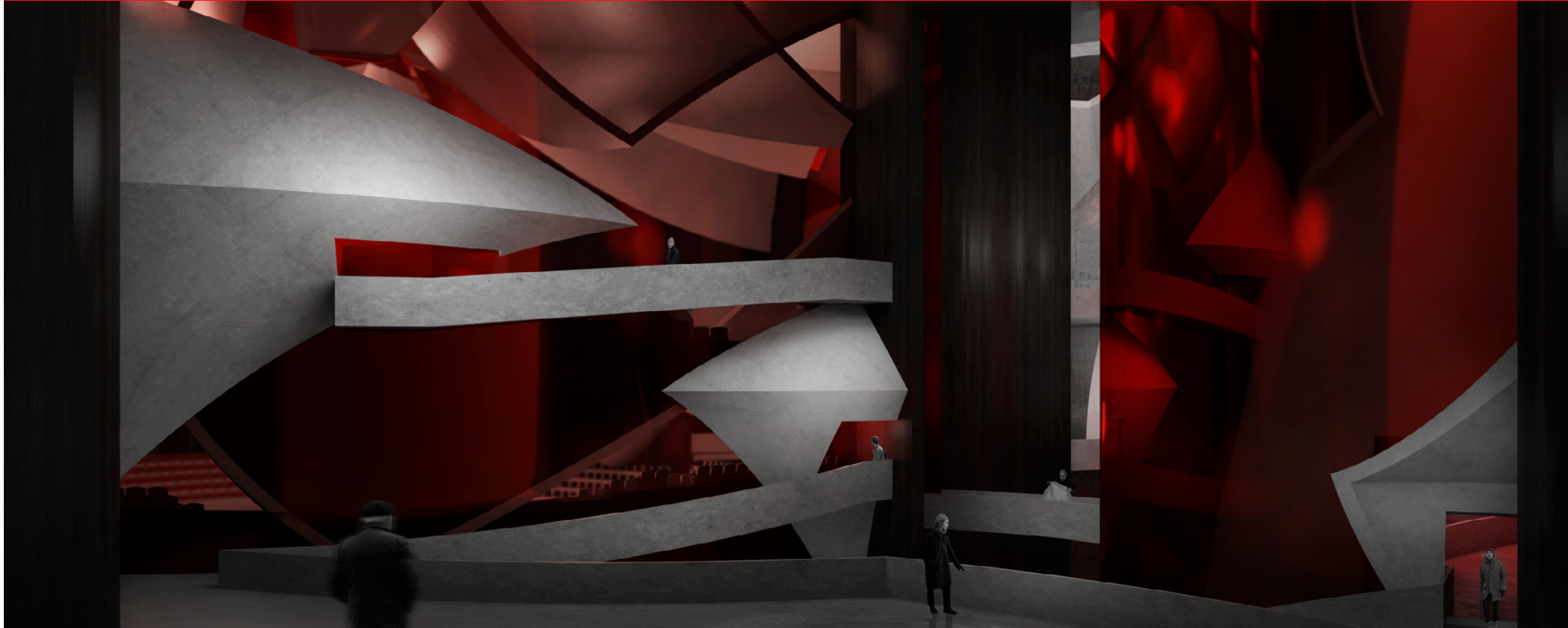
LOBBY

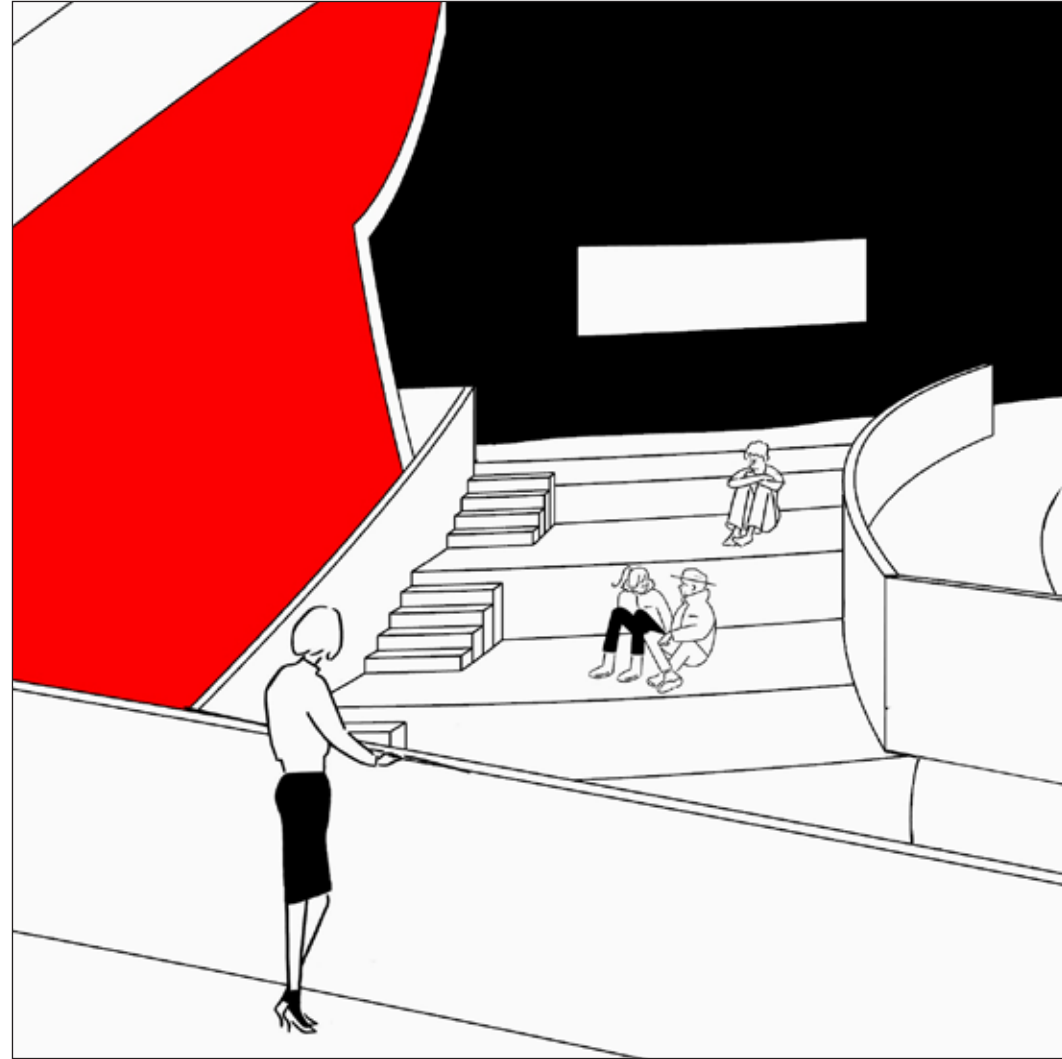


LOCKER

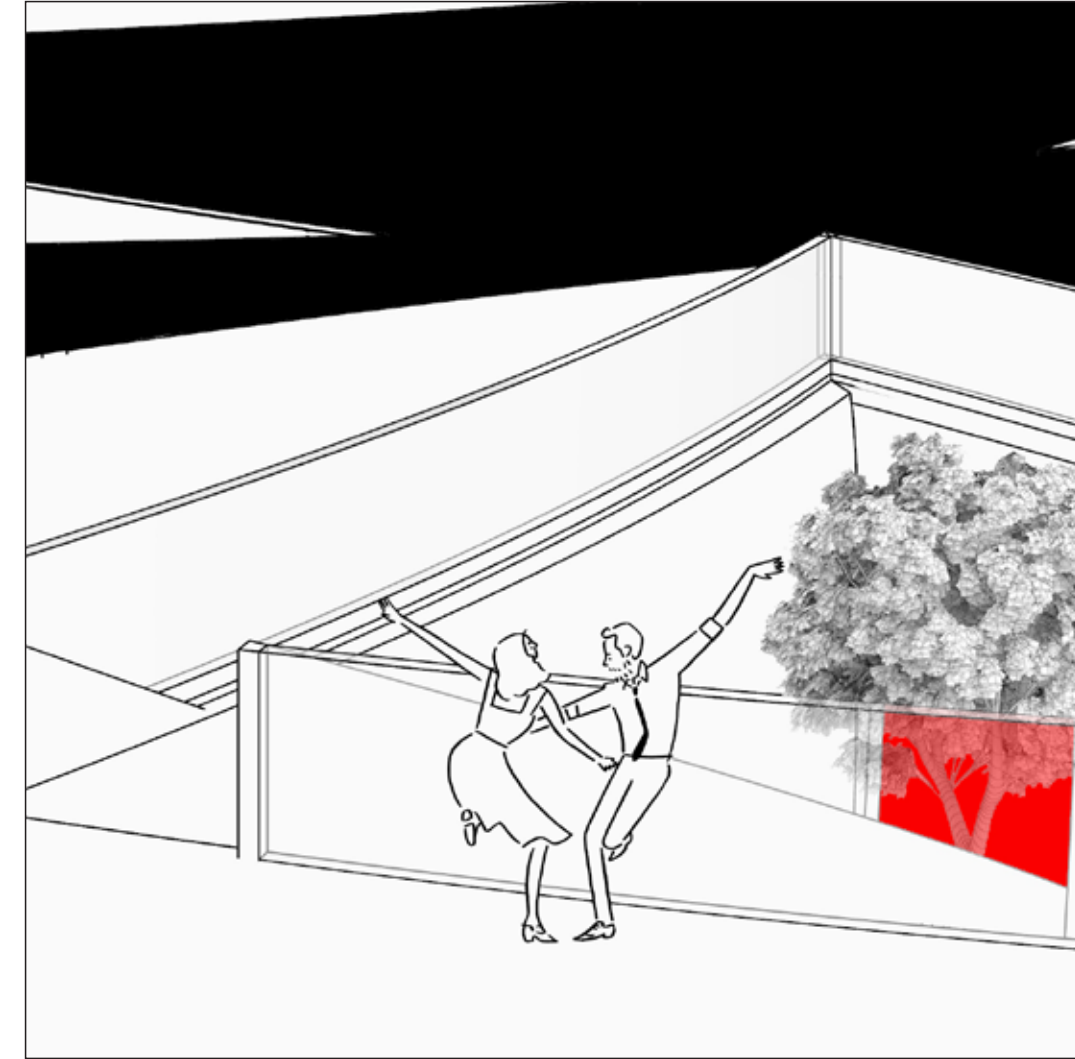




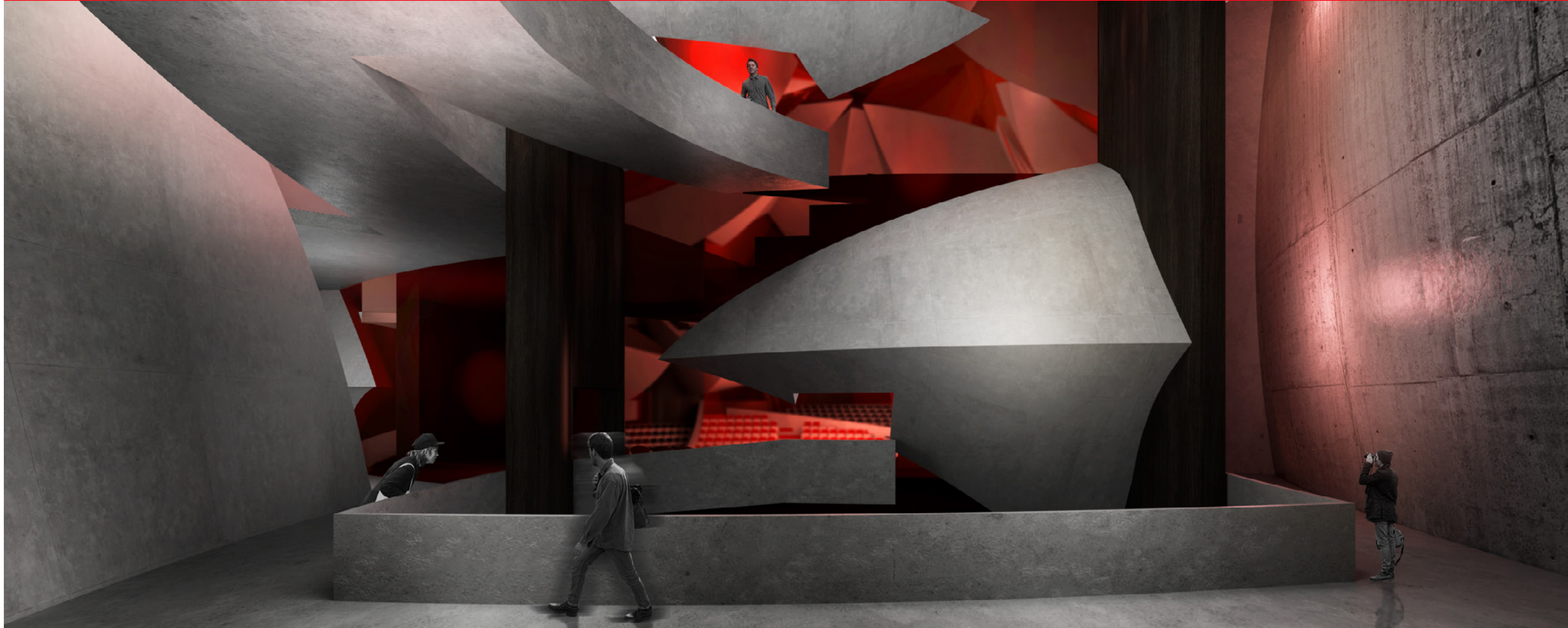


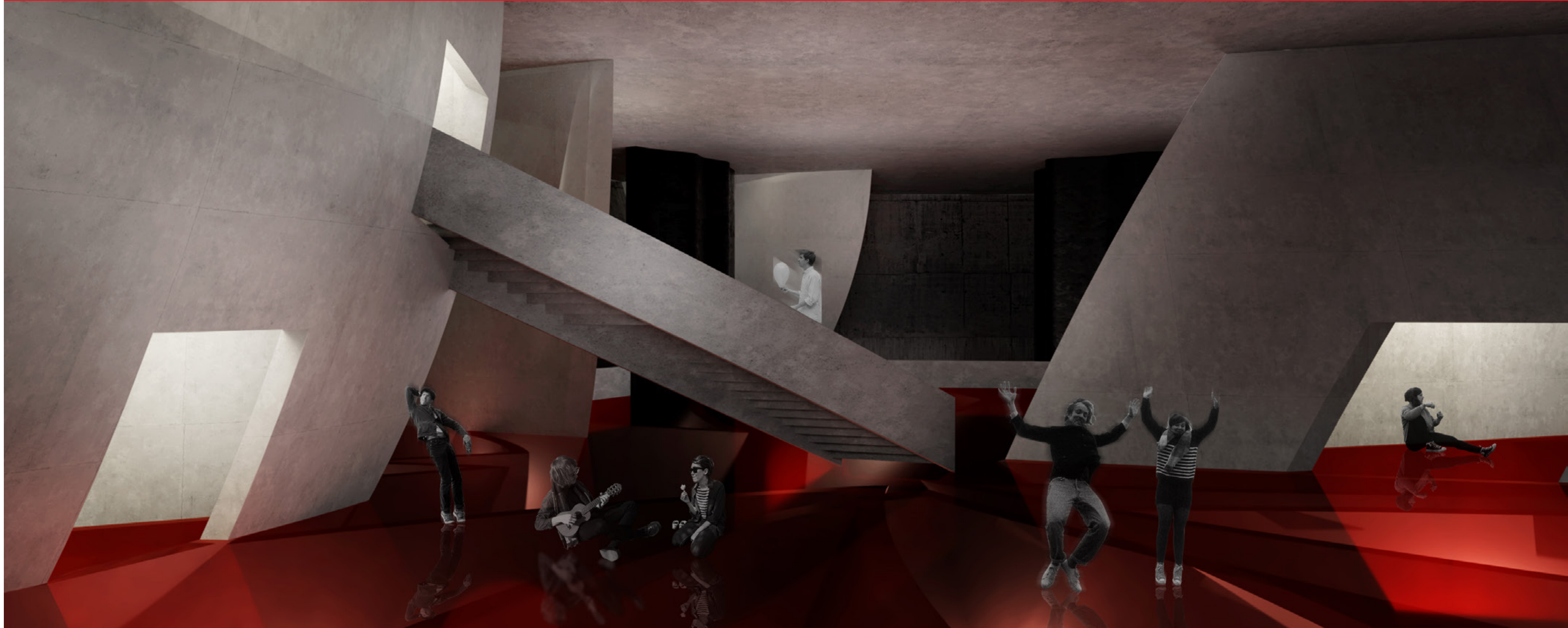


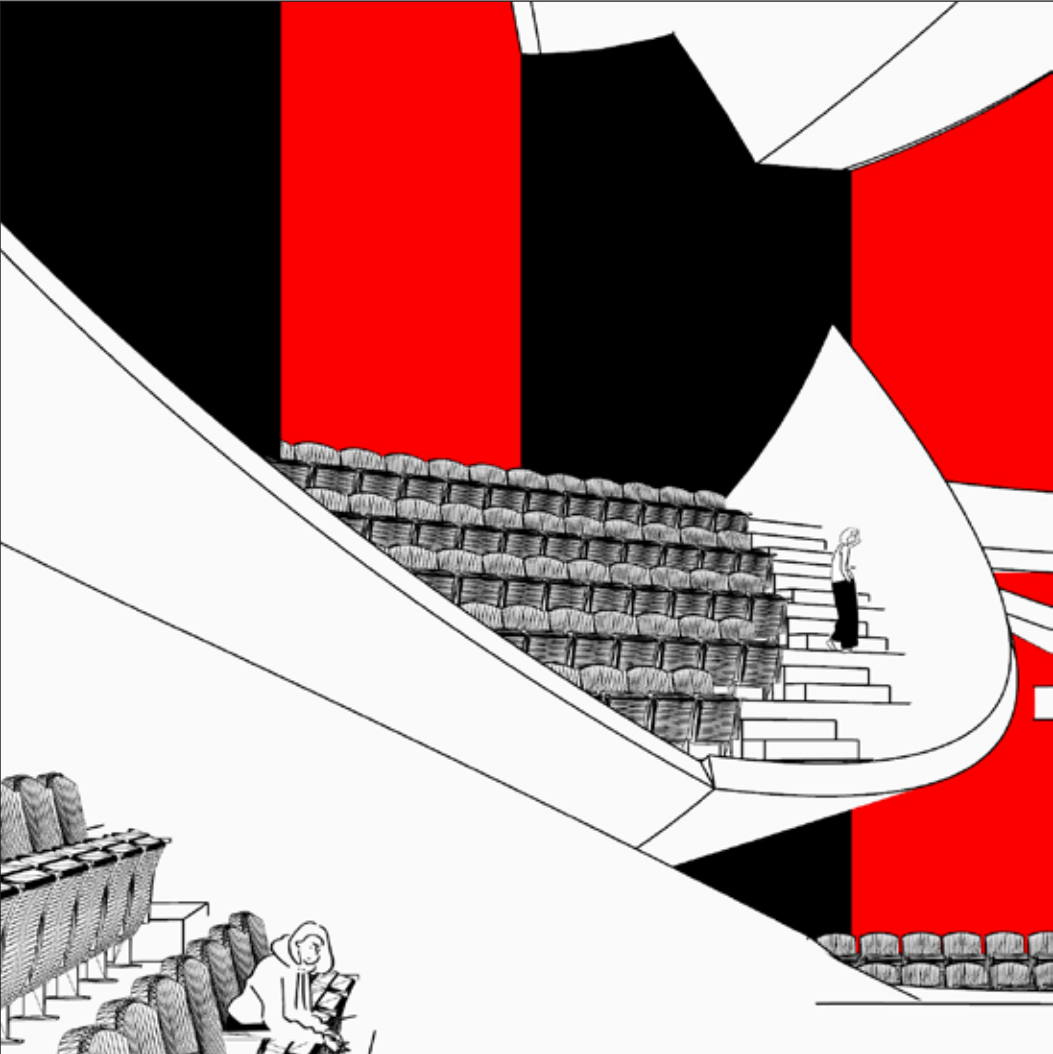
CAFE



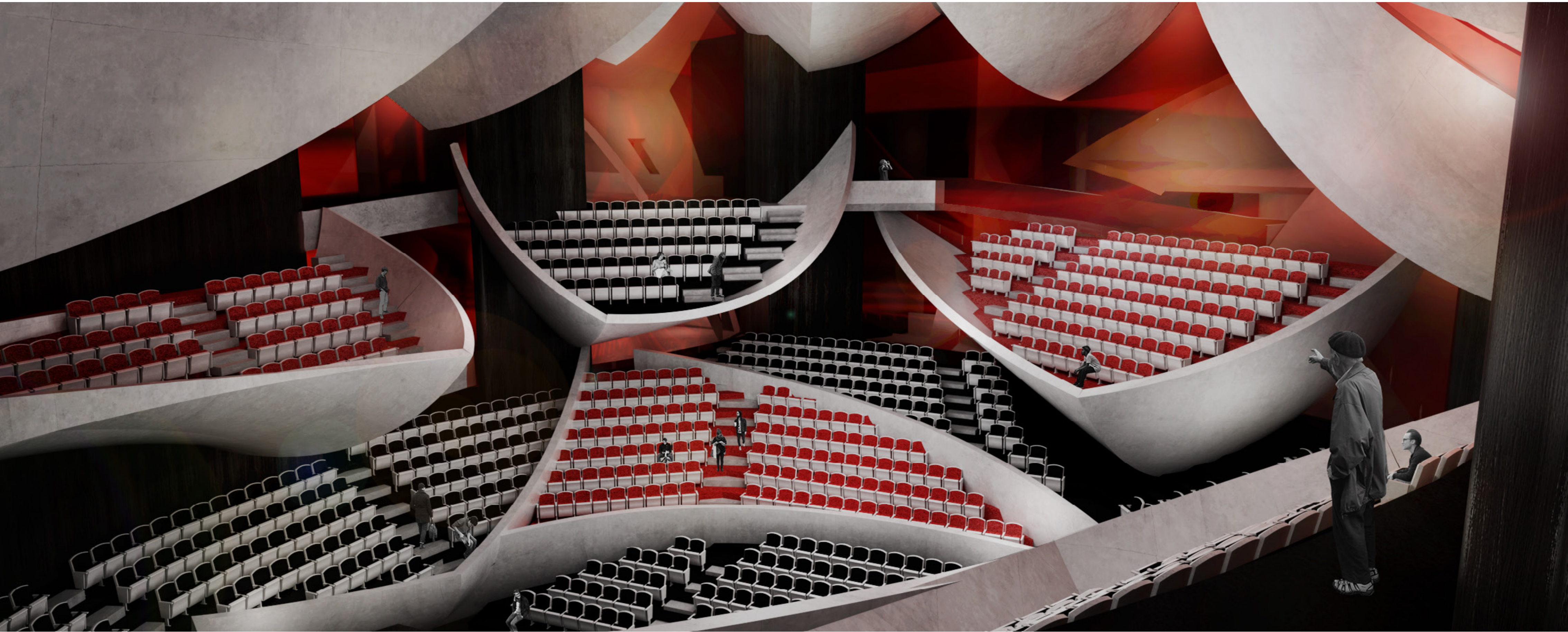
ROOF GARDEN

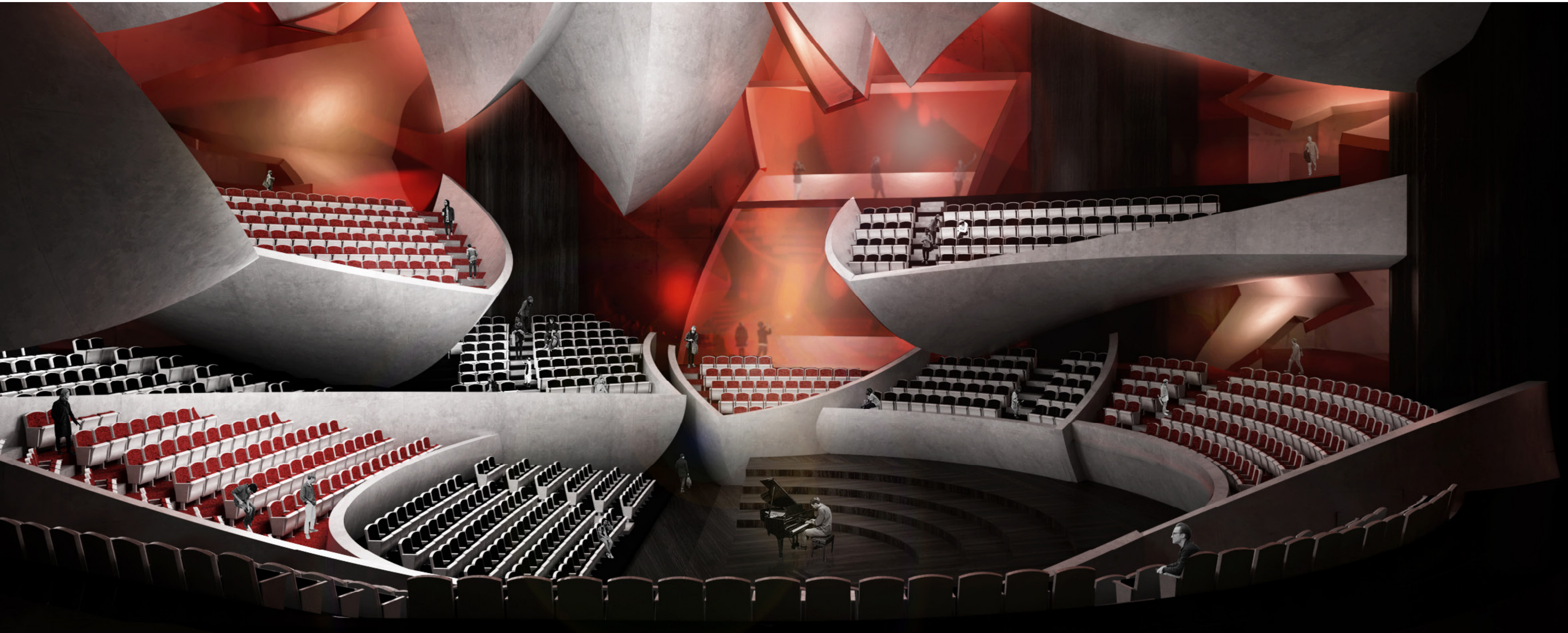






CONCERT HALL









## 02

### MALL WITHOUT STORES

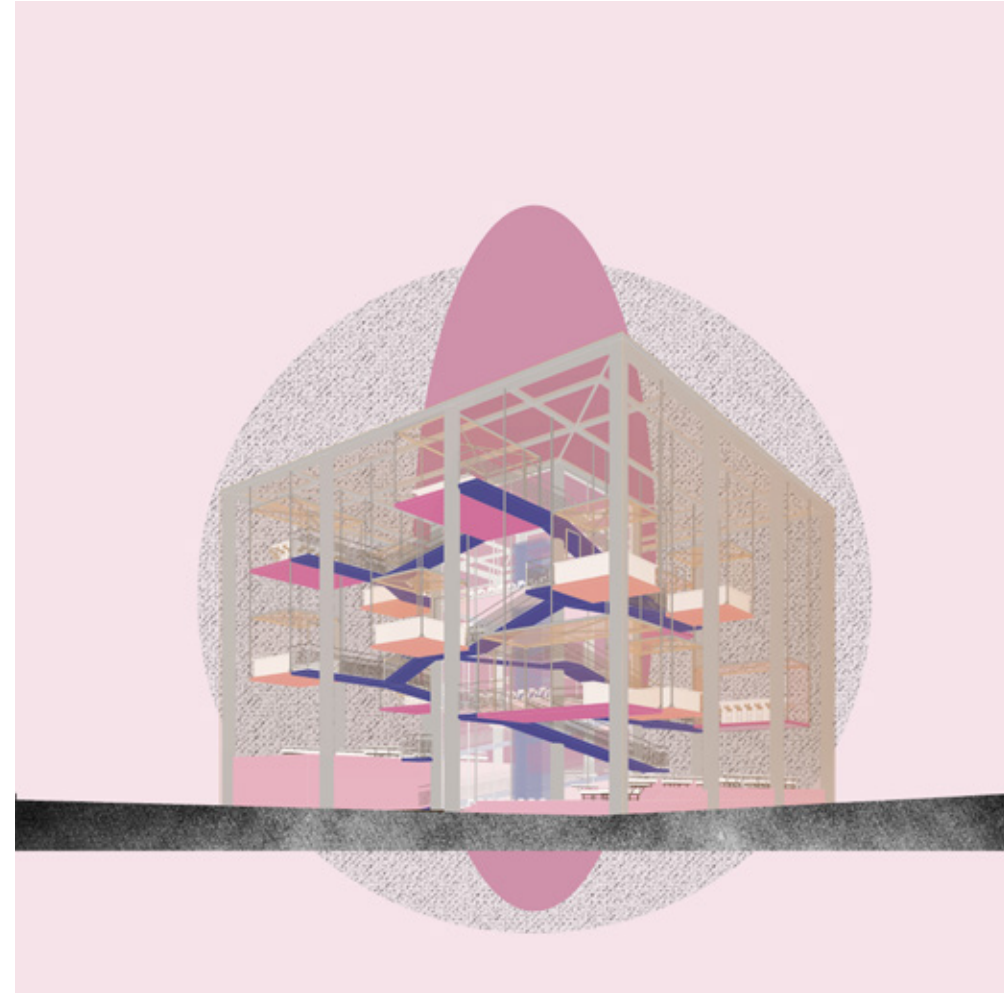
MALL FOR ONLINE SHOPPING WITH THE METAPHOR OF SEVEN DEADLY SINS

We're investigating the social typology in a typical Manhattan block. This project is a shopping center for online shopping, which is a new typology to encourage social activity through the metaphor of seven deadly sins while keeping the convenience in consumerism to improve customers' shopping experience. There are two main factors in the project, fitting and social. Fitting space is designed differently according to people's different status and requirements when trying different products.

The social area is designed as a metaphor of seven deadly sins to generate seven social types (one to one, one to group, group to more, group by chance, gather together, group exchange and immersed meeting), and seven social space accordingly (which are intimate space, hierarchy space, growing space, irrational space, static space, exchangeable space and cyclic space). The social space and fitting space, together create a shopping center for online shopping, combining consumerism with social activities.

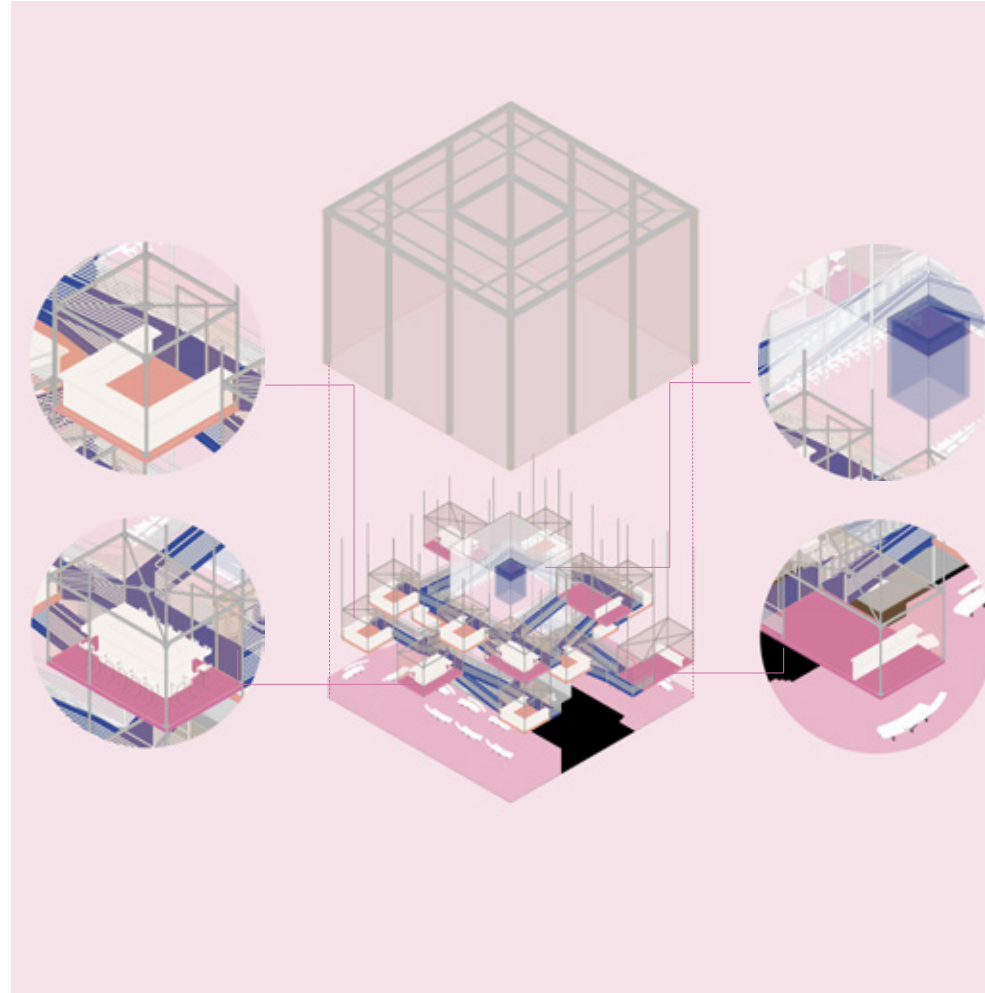
Studio: New Programs for the 21st Century  
Critic: Bernard Tschumi  
Teamwork with Siying Chen  
Software: Rhino, Keyshot, Photoshop, Illustrator, Indesign  
Fall 2019/ Manhattan, New York, New York, United States

# GLUTTONY



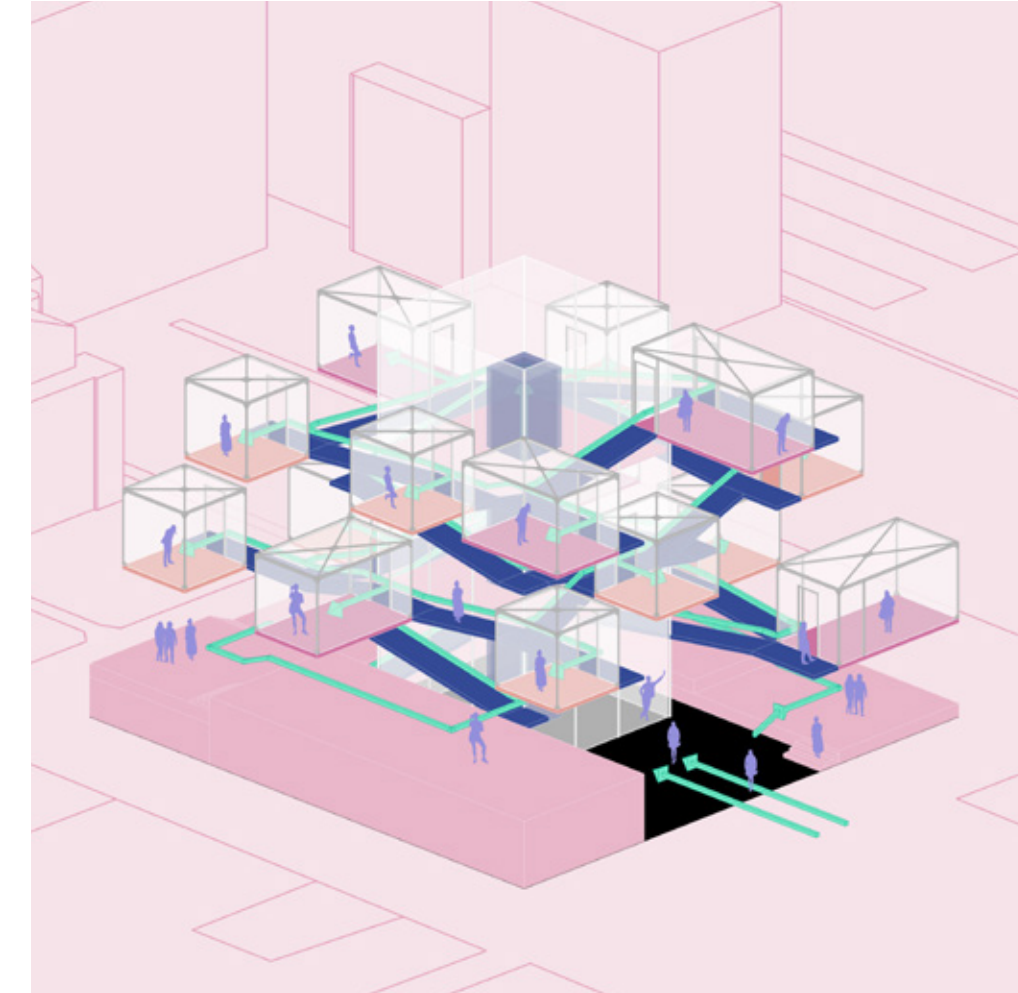
## RESTAURANT + GYM

The restaurant is composed with stepped platforms for buffet. Customers are forced to walk along the path to get the food and tables while seeing people working out in the central space.



## NO ONE CAN AVOID WORKING OUT IF THEY WANT TO EAT.

The project consists of blocks as rooms inside of the larger cube. Those blocks are connected by movement such as stairs, ramps, and are hung from the roof.

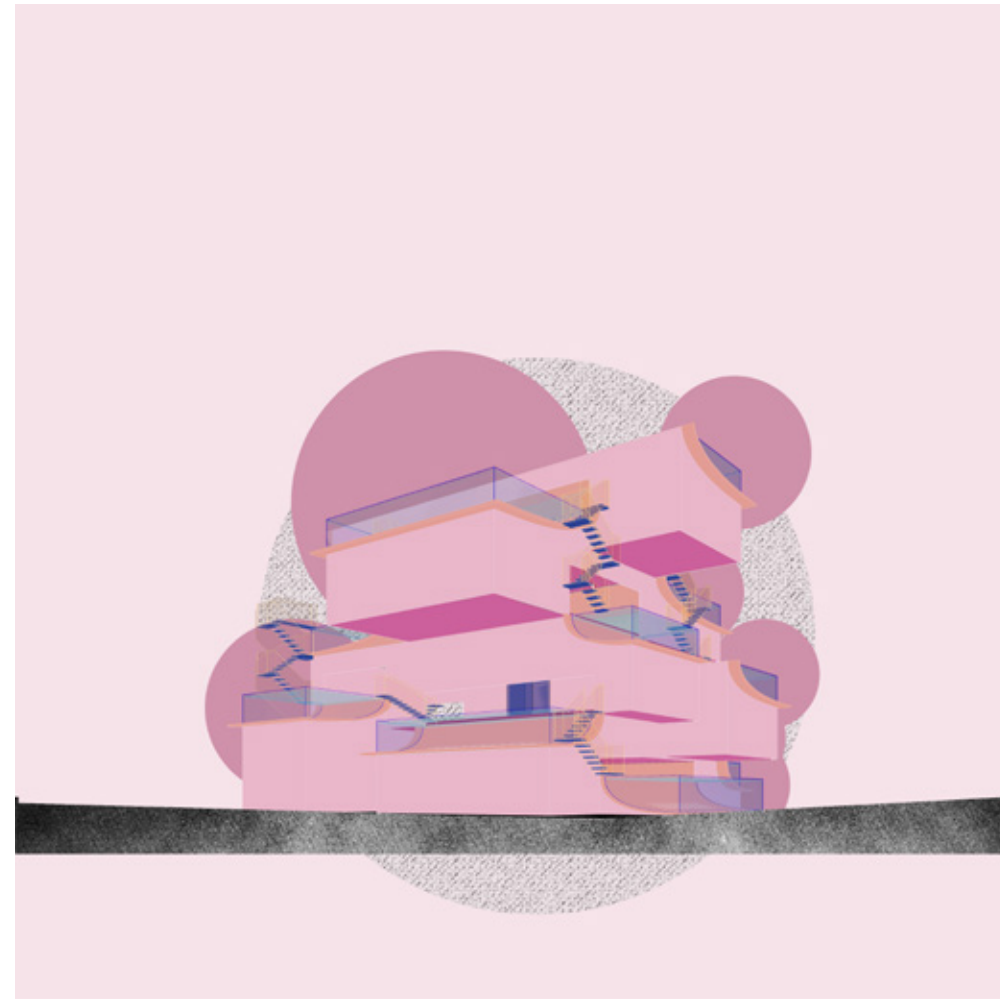


## TORTUOUS MOVEMENT

There is an elevator in the middle, providing vertical circulation in the gym. Stairs and ramps are used to connect each rooms in the restaurant, forcing customers to create more movement in the project.

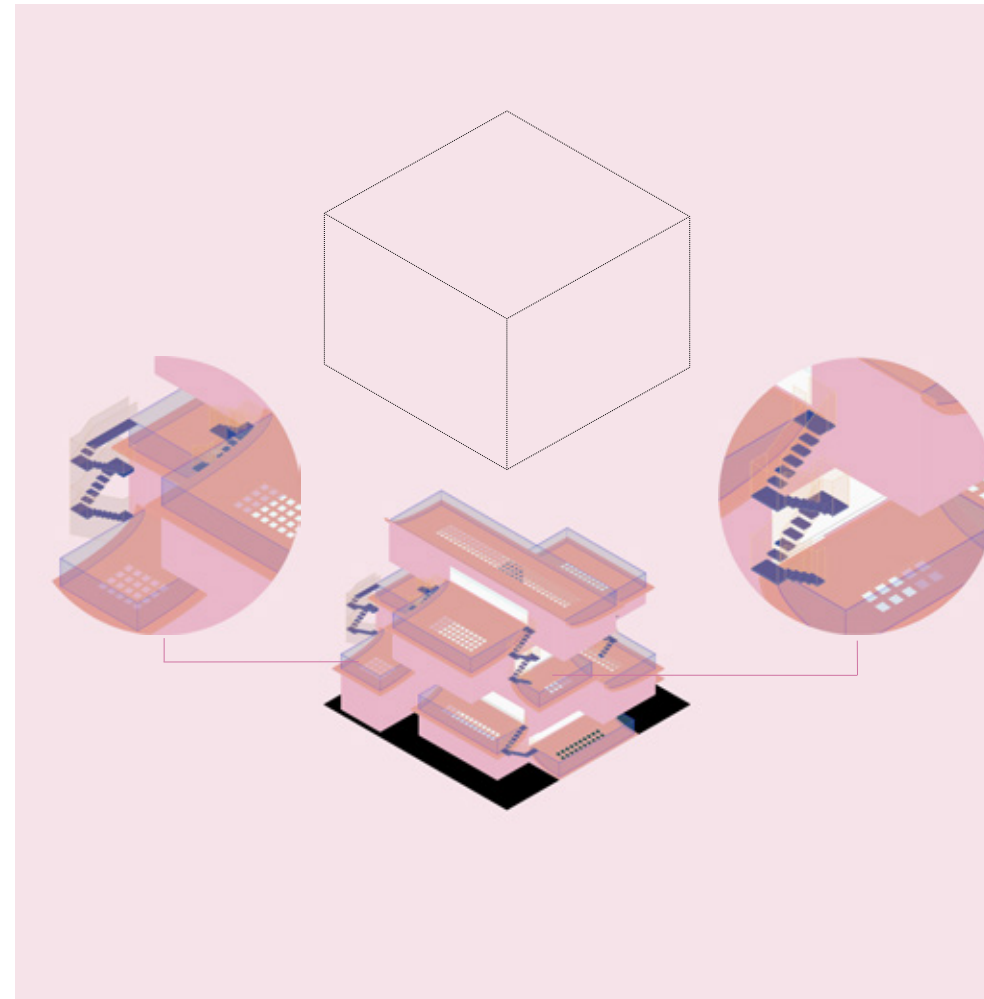


# LUST



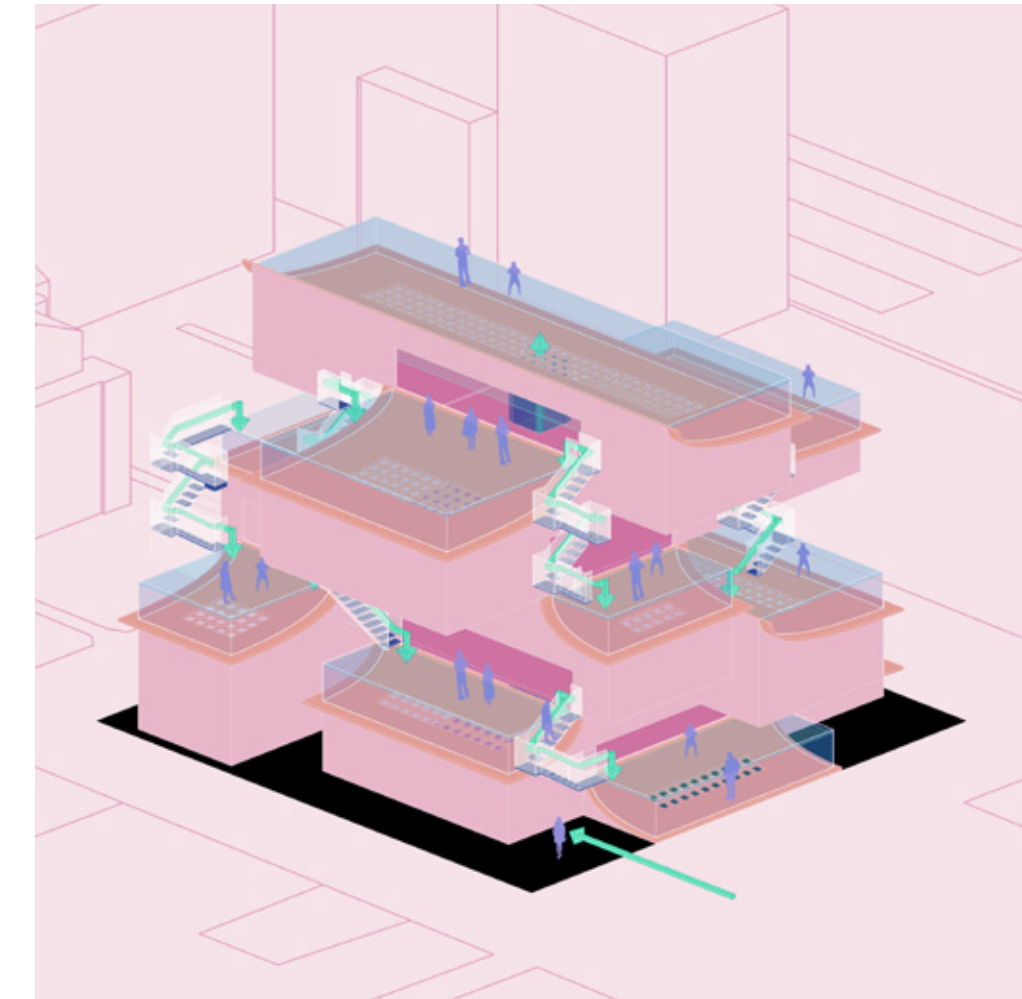
## THEATER + SWIMMING POOL

Similar to promenade theater, audience swim around in the swimming pool at their own path and peep into different theatrically designed rooms for the show.



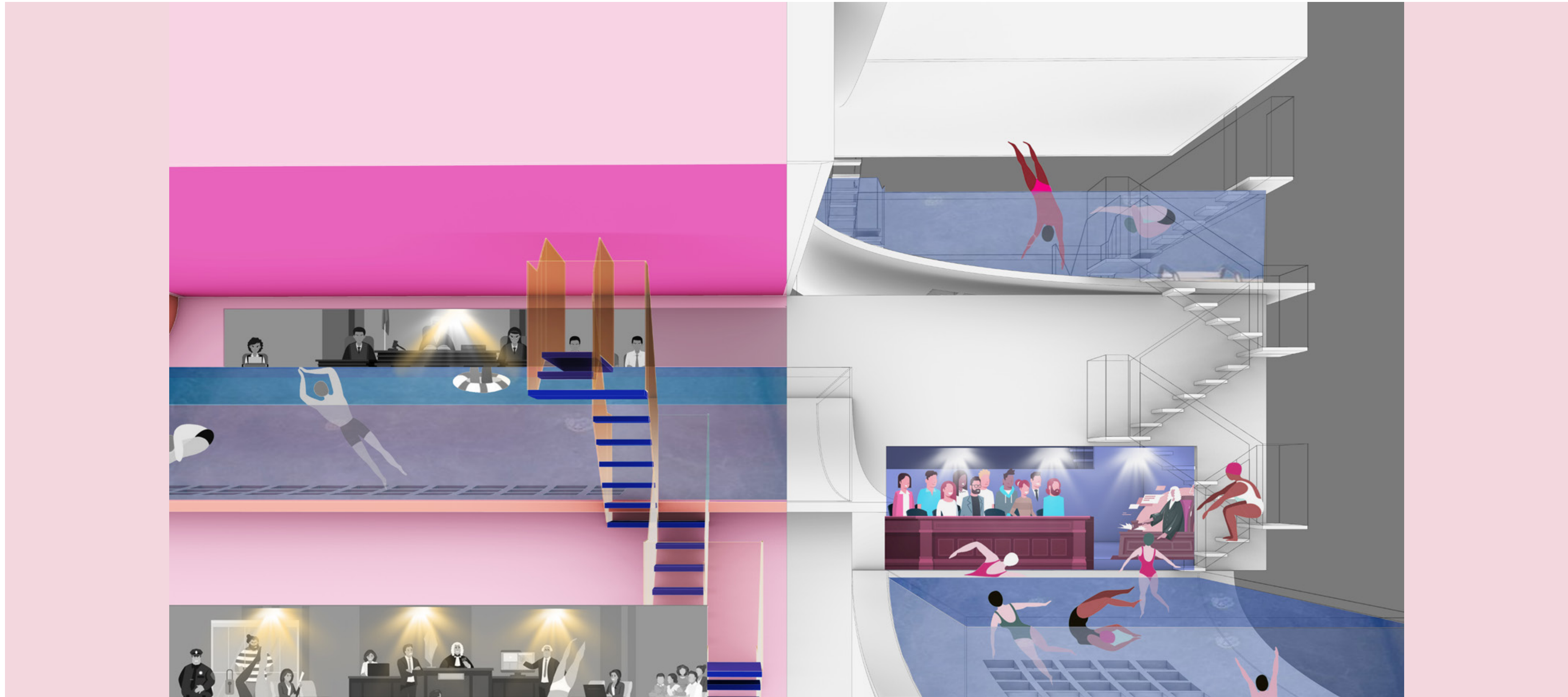
## PEOPLE WHO ARE PEEKING OTHERS ARE BEING PEEKED.

Challenging the scale of architecture elements, window, in the project, the perceptual connection between rooms is through the holes like peeping.

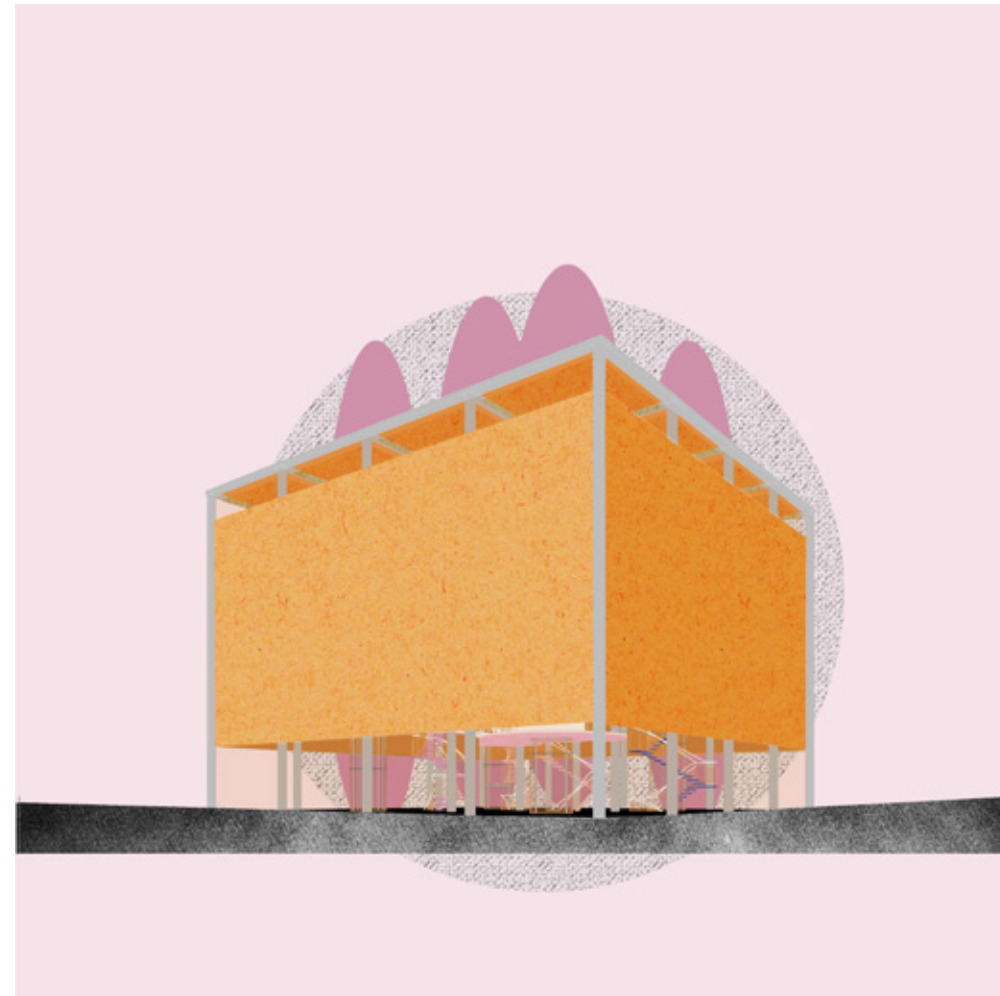


## FREE MOVEMENT

There is a clear but hidden vertical circulation between each theater for the performers. The movement in the swimming pool is free and people can flexibly choose their own routes like the experience in promenade theater.

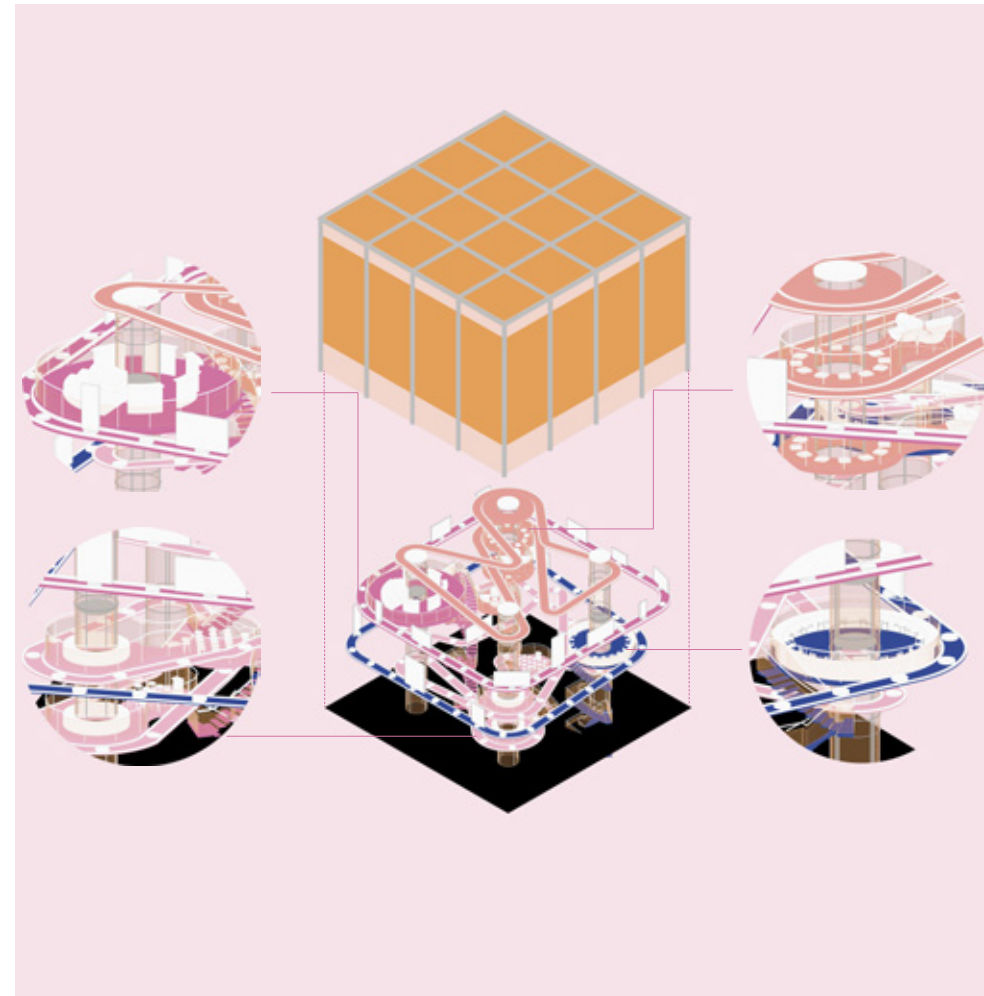


## SLOTH



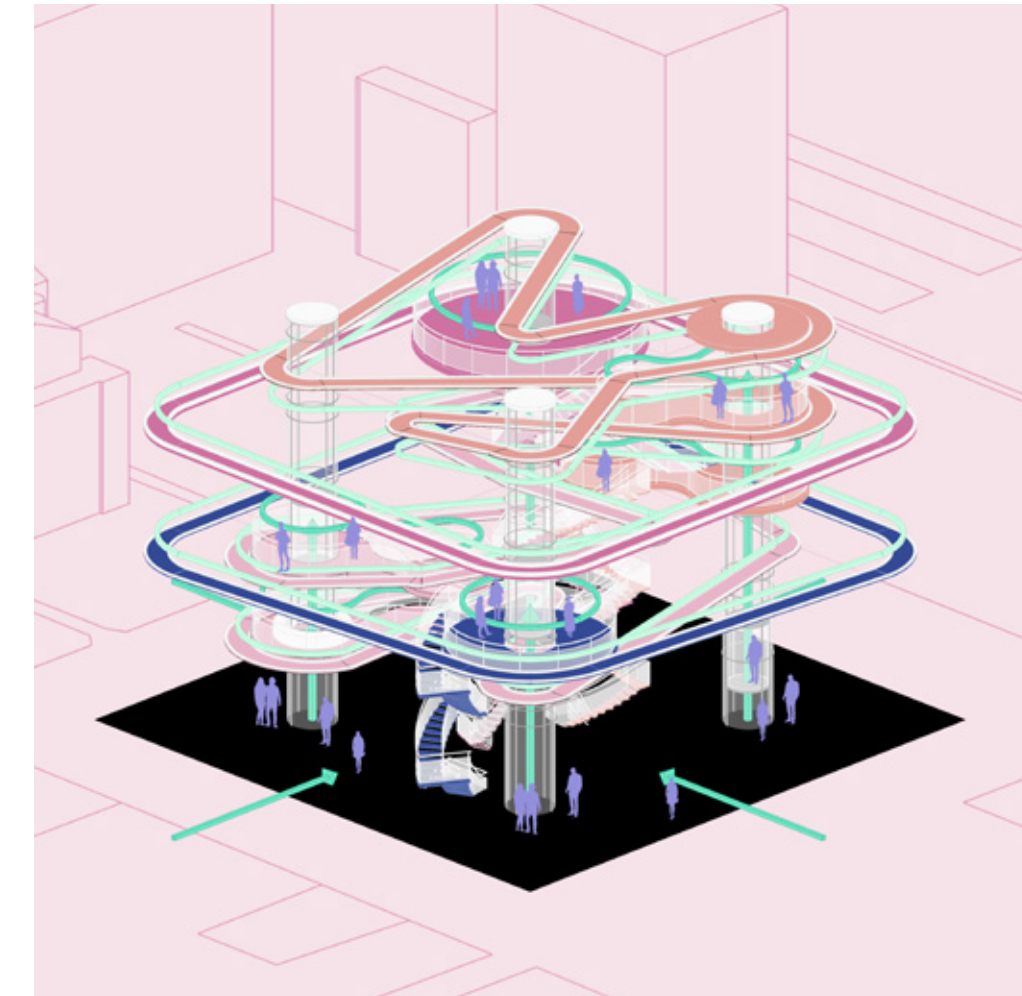
### GALLERY + LOUNGE

Inverting the traditional gallery in which exhibition is static and visitors are walking around, the conveyers provide a new possibility of moving exhibition for the people in the lounge.



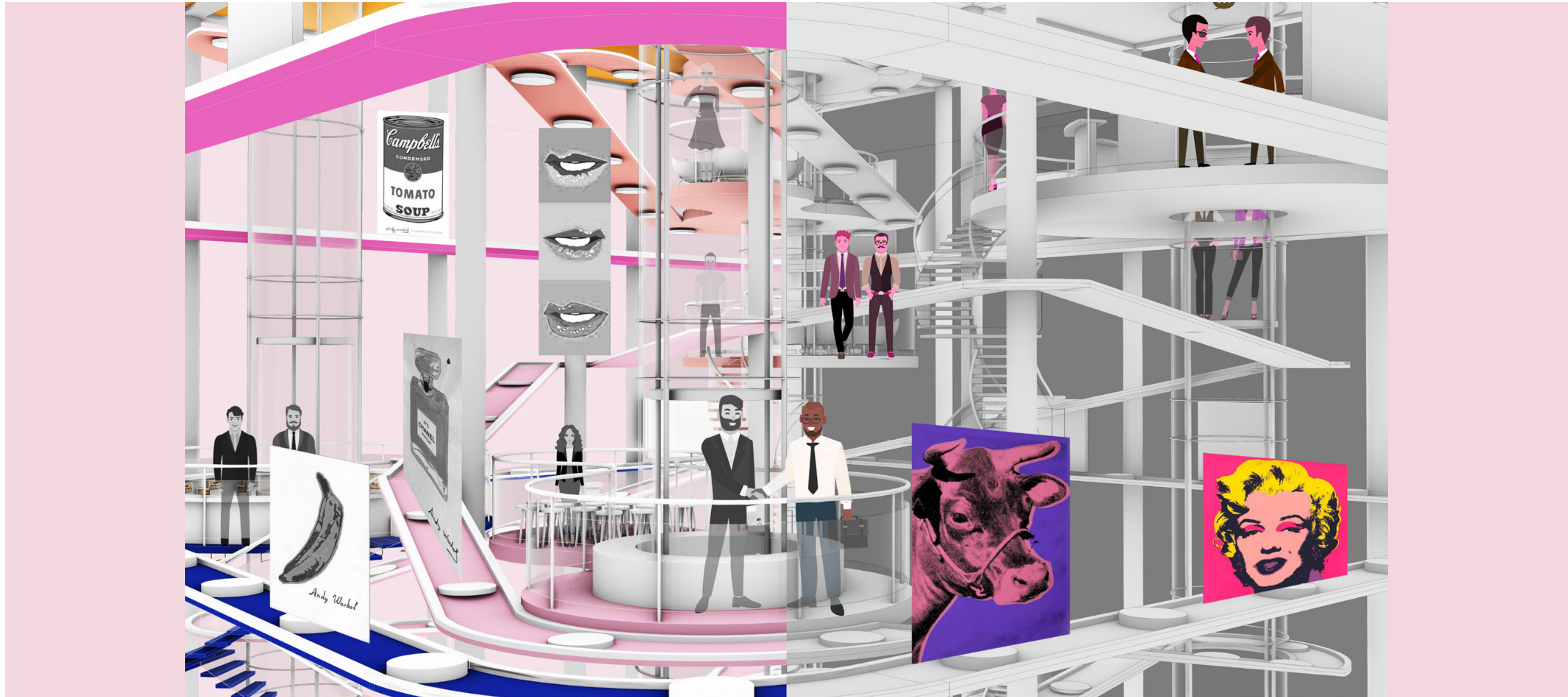
### LAZY PEOPLE CANNOT TRULY APPRECIATE ART

Reconsidering one of the most important architecture elements floors, the project investigates the idea of floors as only platforms without horizontal circulation from one to another.



### NO MOVEMENT

There are mainly four vertical circulations consists of elevators and stairs, connecting to the four platforms. Horizontal movement for people is relatively limited in the project. The conveyors are only for artworks.



# WRATH



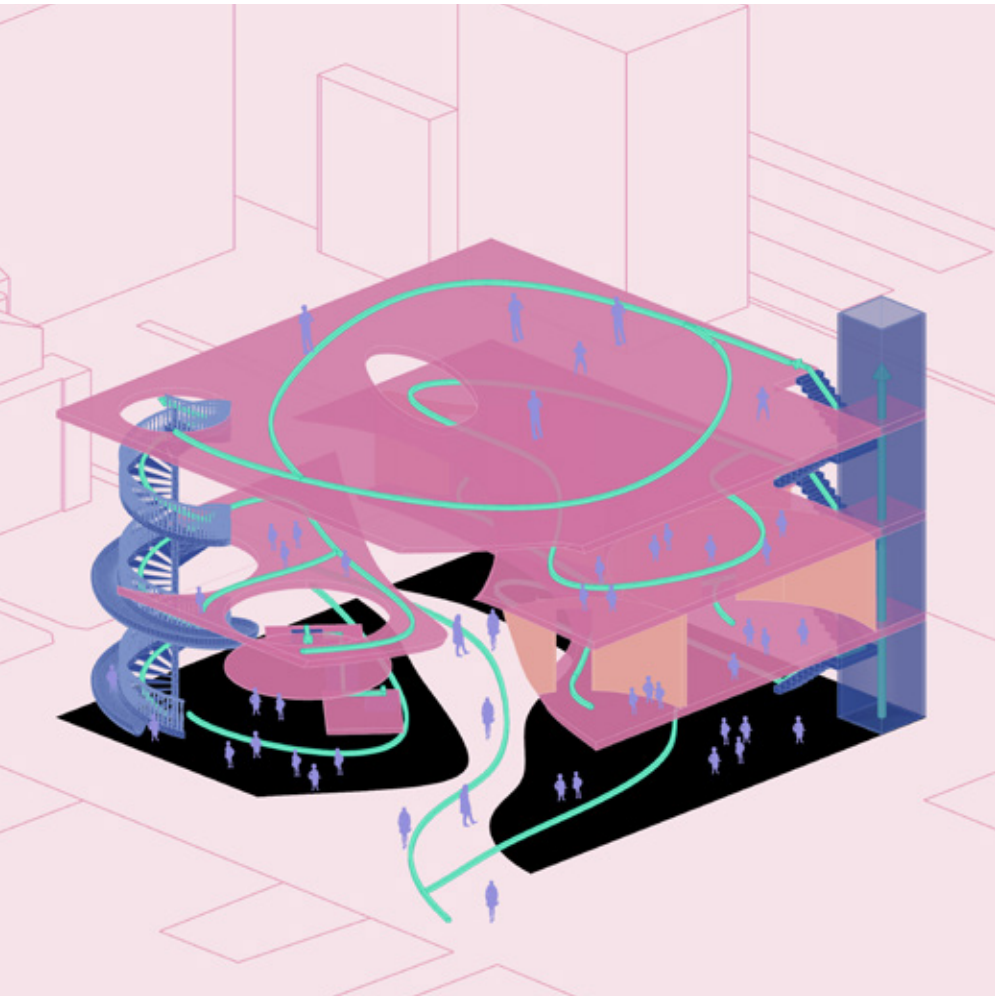
SCHOOL + AMUSEMENT PARK

The project is divided into two space, one for study and one for play. Kids from one side can see others from the other side of the room, but the space is not connected except at the top.



CALM DOWN BEFORE GOING TO PLAY.

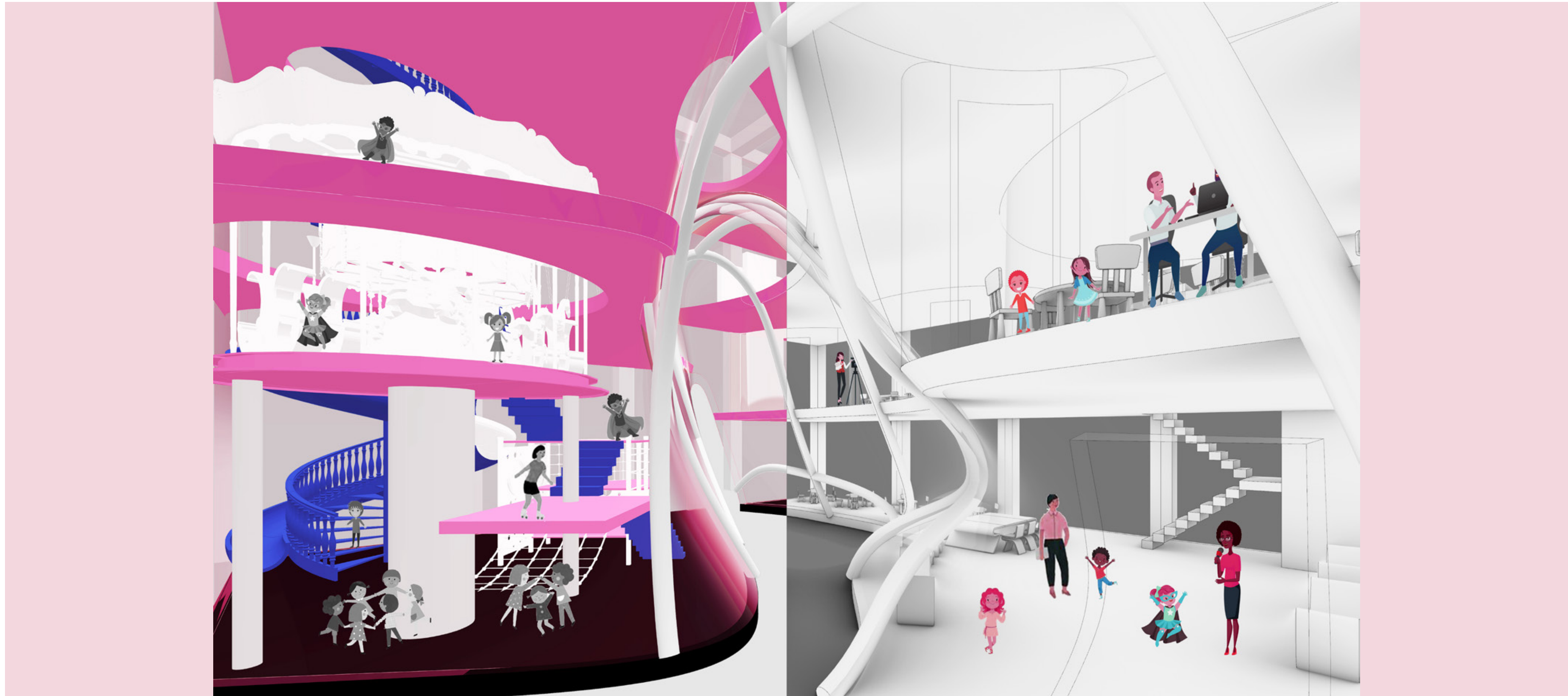
The void is punched into the cube and the space is split into two. The intervention in the middle separate the project spatially but the view on both sides is connected.



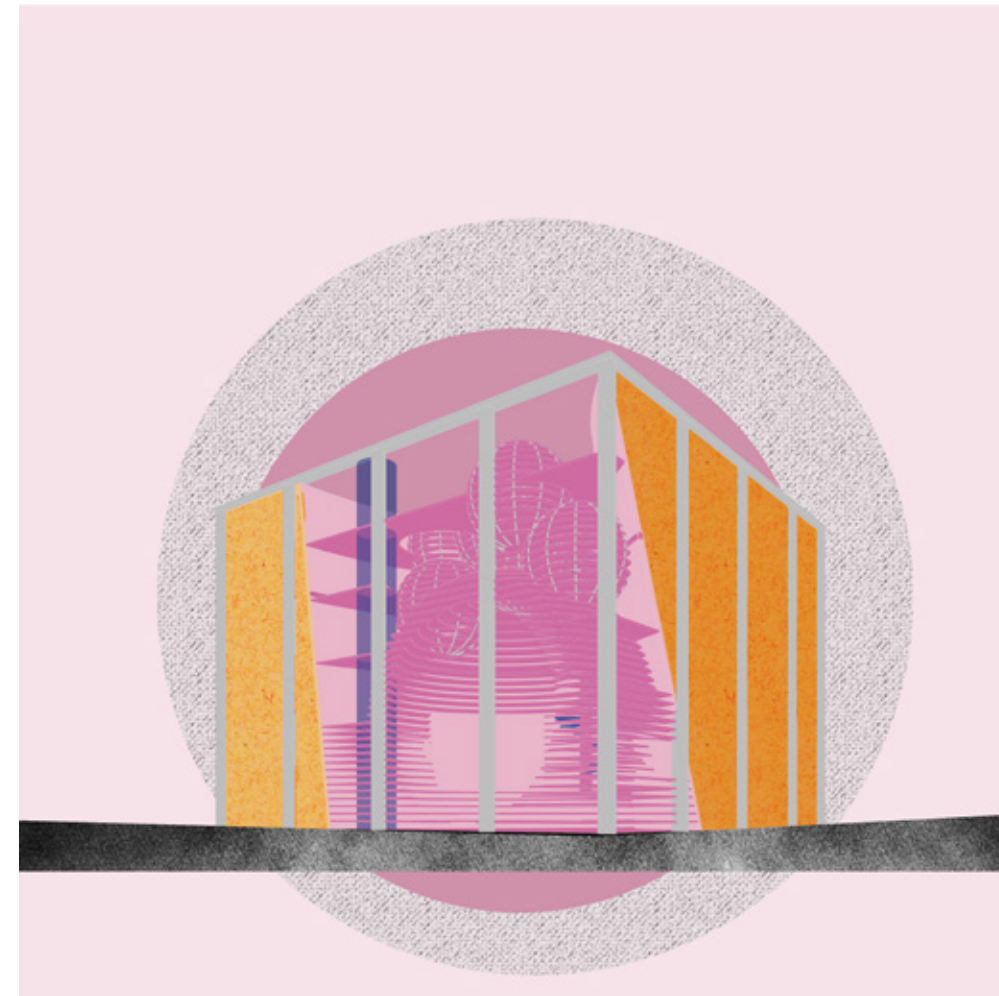
CONNECTED MOVEMENT

Movement is not only enabled by stairs and elevators located at the corners. Corresponding to the program, sliders and climbing installation are combined with vertical circulation to provide an alternative way for the users in one part.



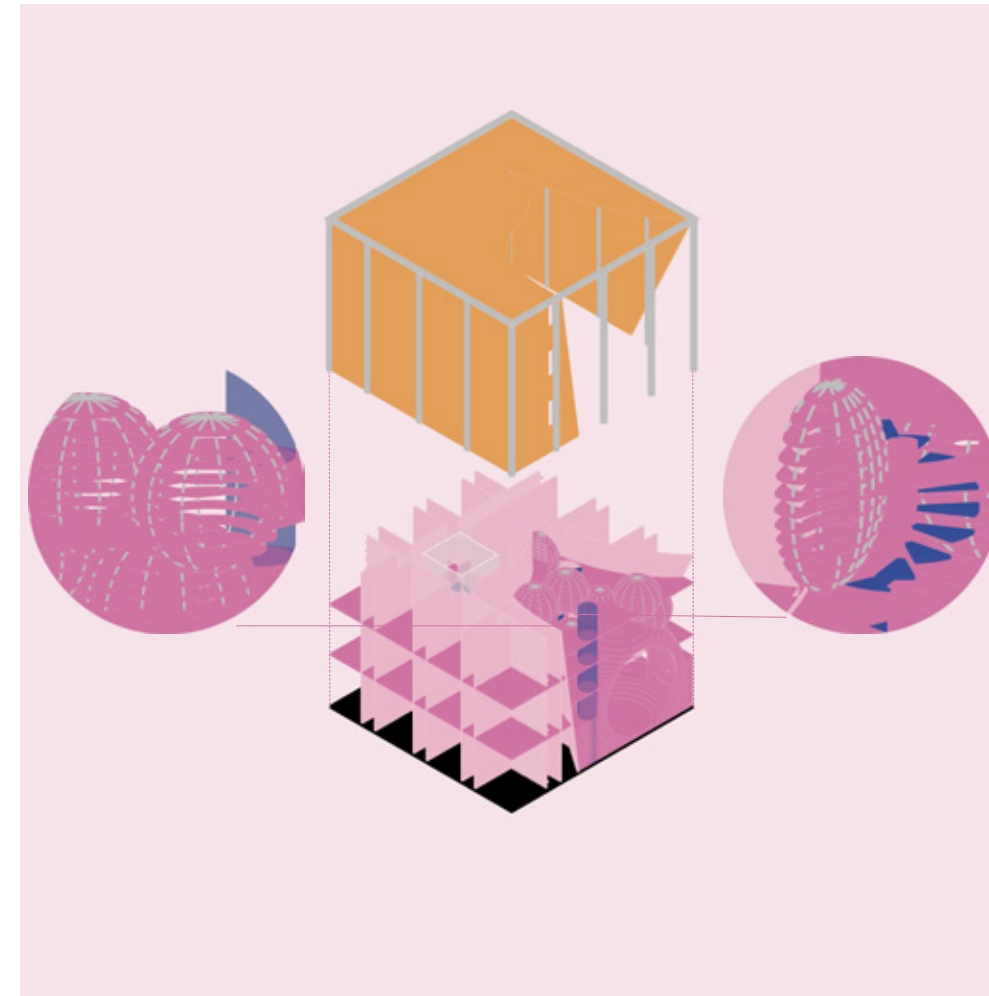


## ENVY + GREED



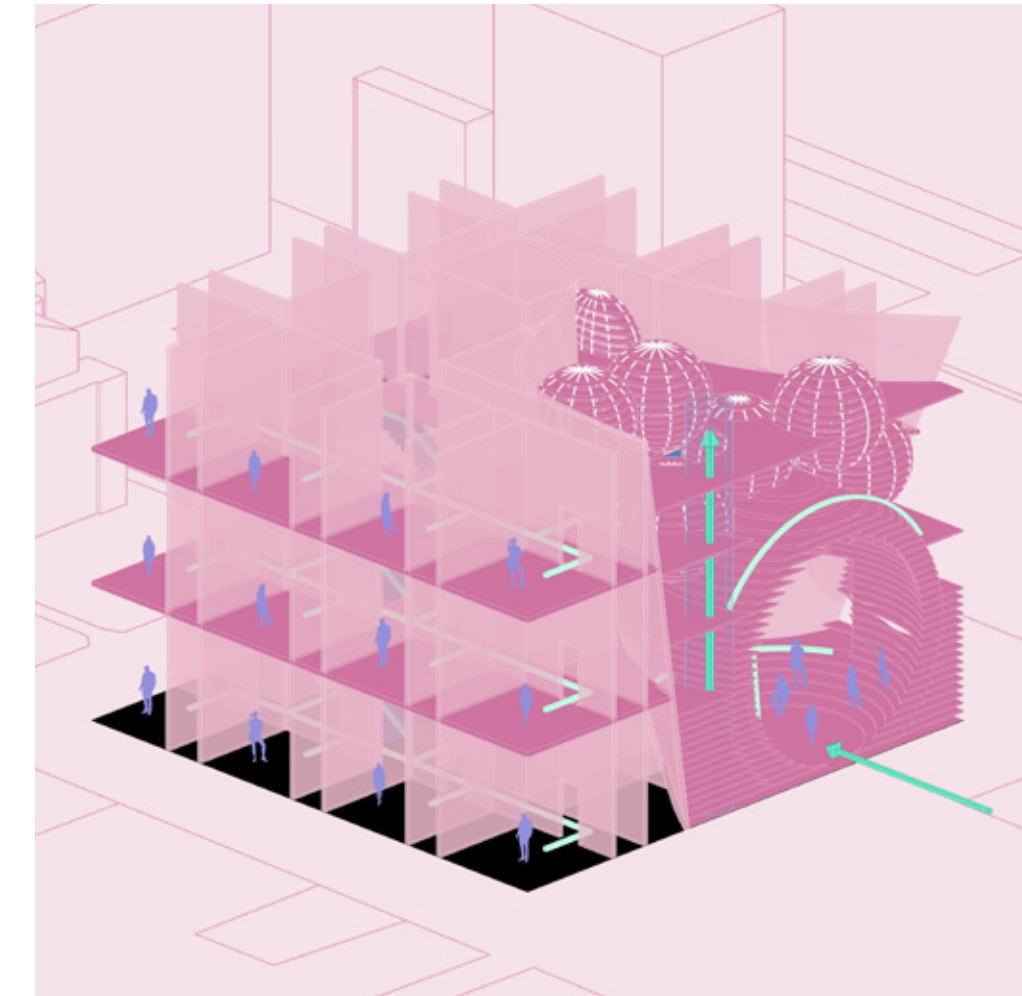
### PET NURSERY + PRISON

The pet nursery, as an intervention at the prison, breaks the original equality and balance in the space. And the flowing and free space of the pets also contrasts with the rigid space of prisoners.



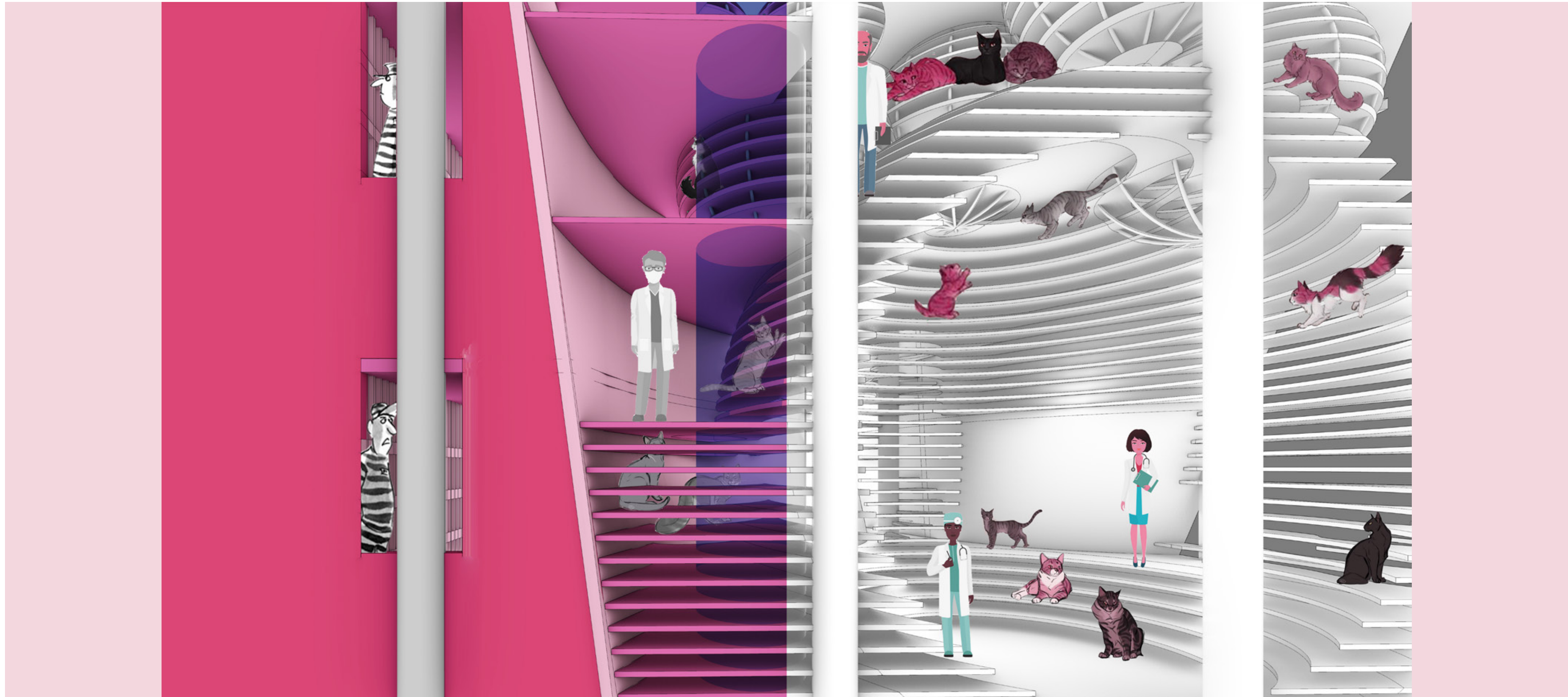
### LIVING CREATURES ARE BORN WITH ENVY AND GREED.

The space is equally divided into rooms at the beginning. The equality and balance between the rooms are broken when the order is disturbed by the increasing wall which grows into another program finally.

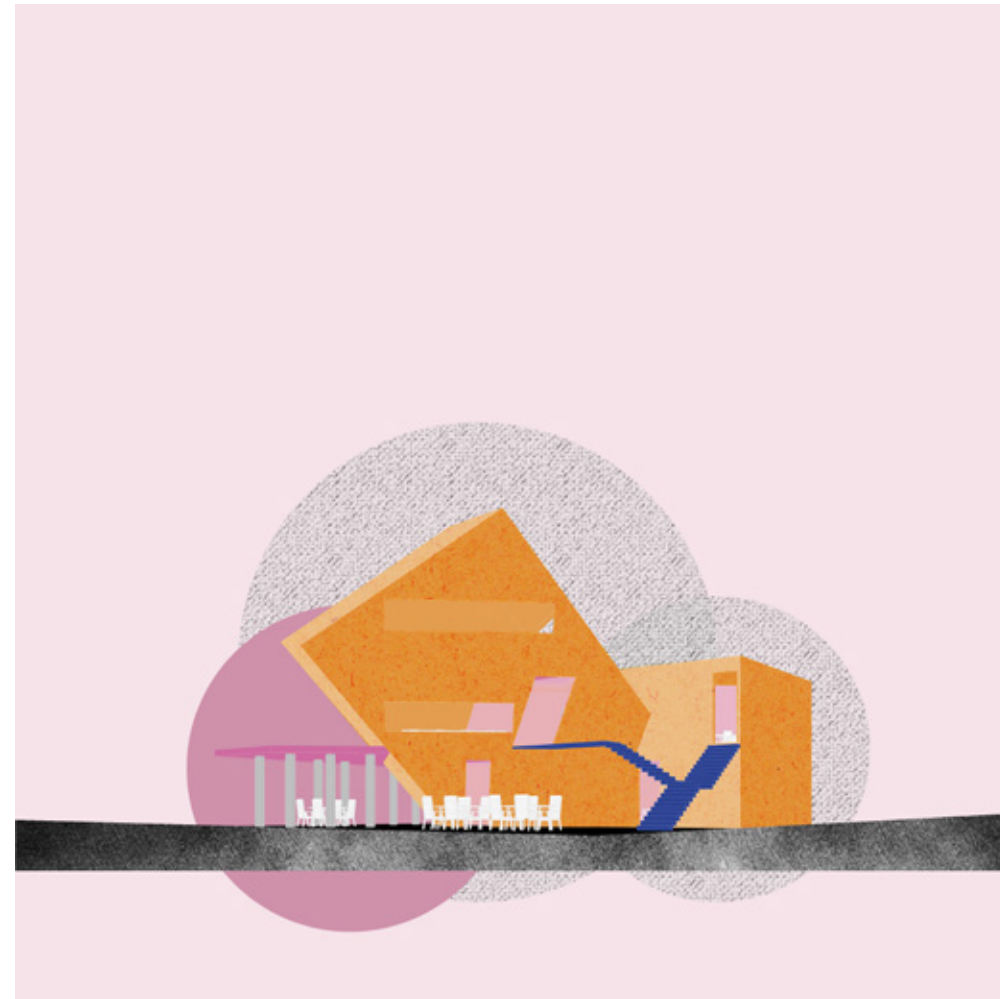


### CONTRAST MOVEMENT

Stairs are located in the middle of the prison, providing a clear and direct view of the movement. On the contrast, the pet nursery is composed by stairs which creates spherical figuration in the space. The stairs providing movement for human outside the sphere and playing space for pets inside the sphere.



# PRIDE



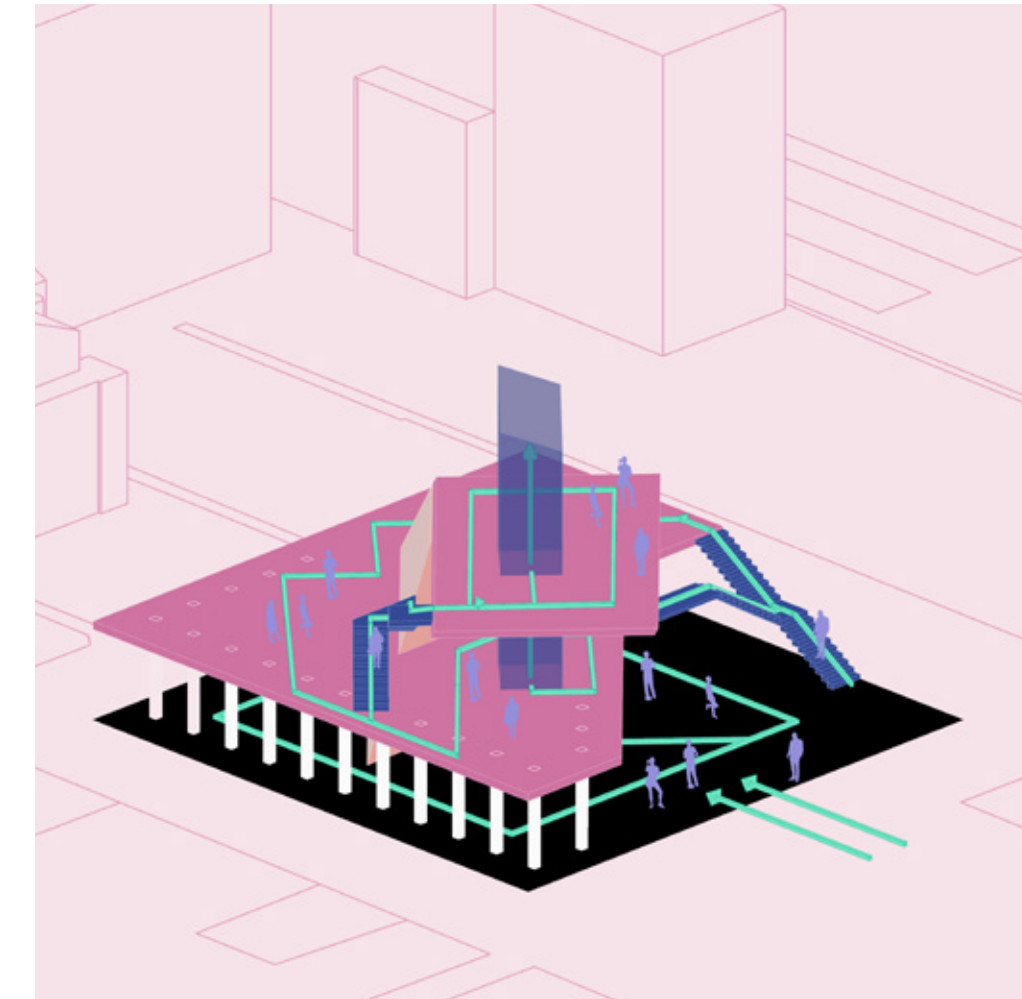
## OFFICE + CONFERENCE

Public and private program have contrast with space. Conference room is located in the middle of first floor, surrounded by glass walls. Office with separated walls are on the second floor. The third floor is the open office space.



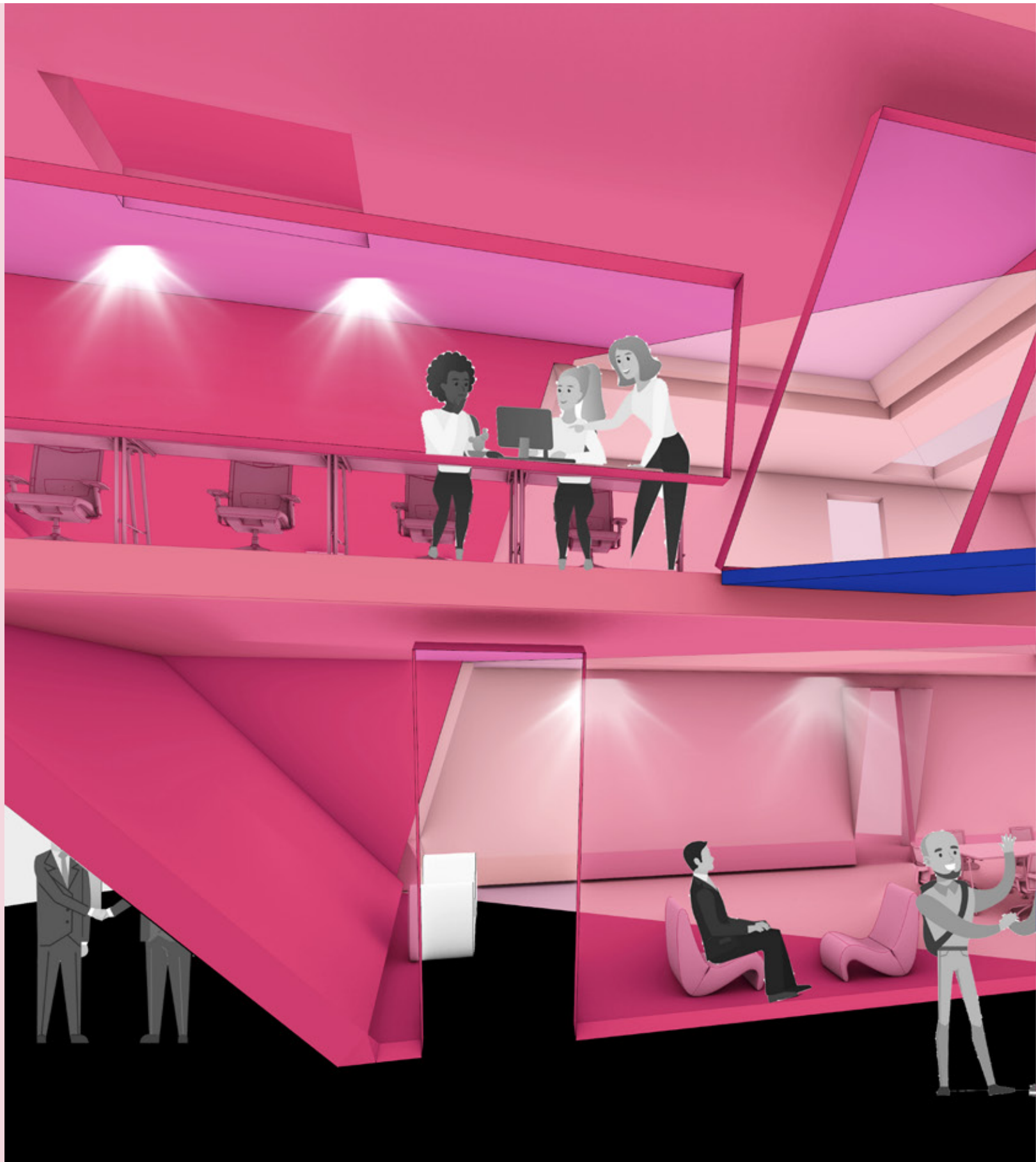
## ROOMS CAN HAVE HIERARCHY BUT PEOPLE SHOULD NOT.

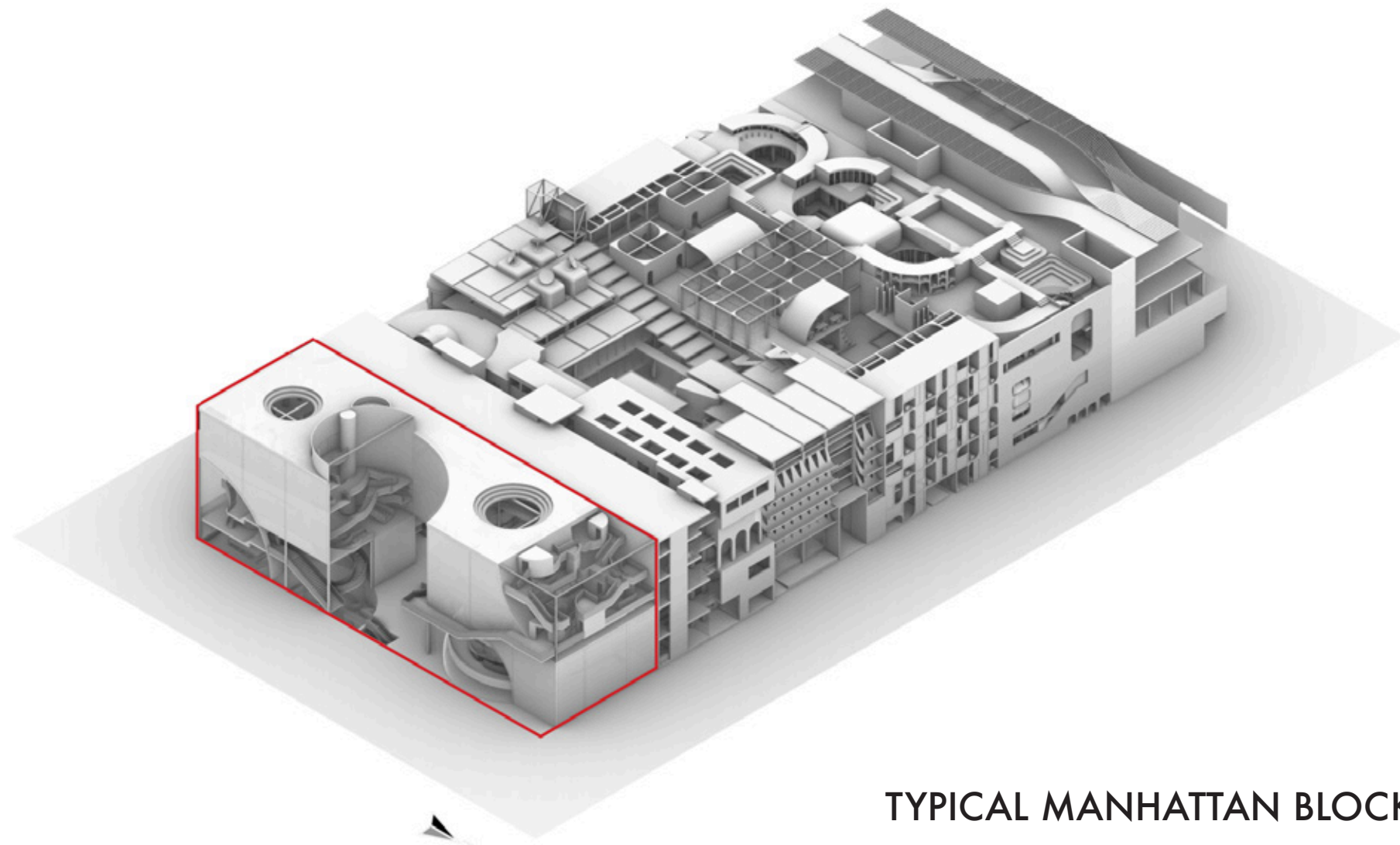
Rooms are arranged in three levels to establish the hierarchy for space. With sloped angle exterior walls and windows, views are blocked from the bottom but open at the top, with the space getting more public from bottom to top.



## INVERSED MOVEMENT

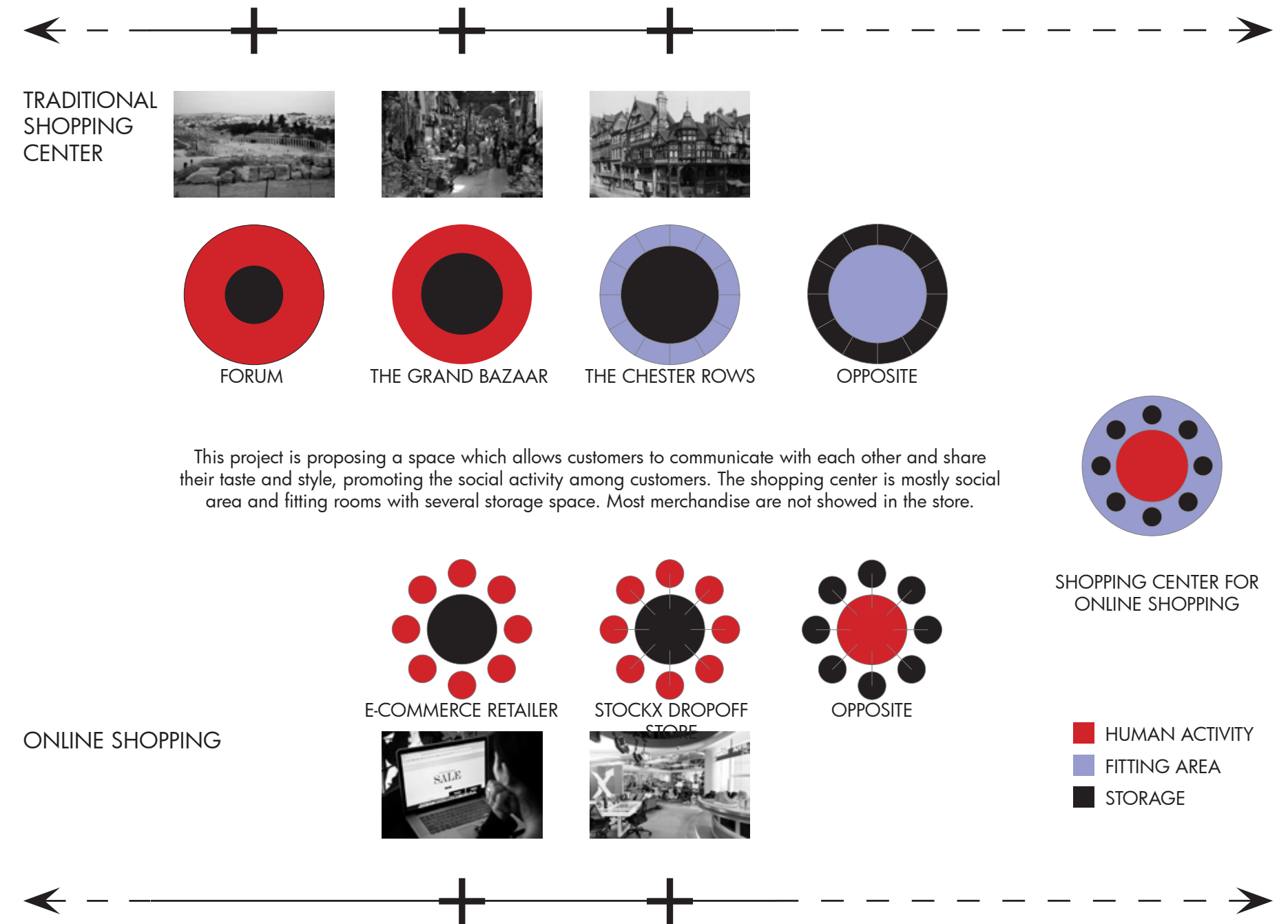
There is an elevator located in the middle of the project, connecting the three levels of conference room, private office and public office. Stairs are used to connect the three floors from the outdoor space.



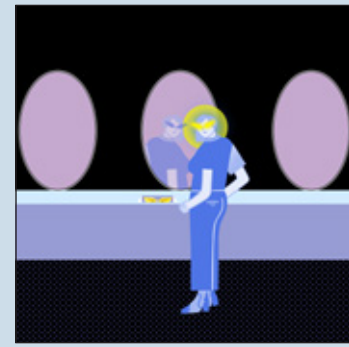


### TYPICAL MANHATTAN BLOCK

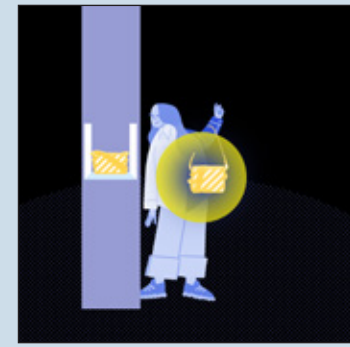
We're investigating the social typology in a typical Manhattan block. This project is a shopping center for online shopping, proposing a new social typology through consumerism.



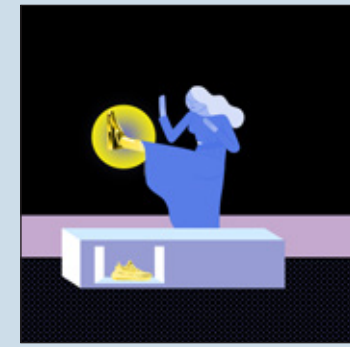
FITTING



MAKEUP + EYEWEAR



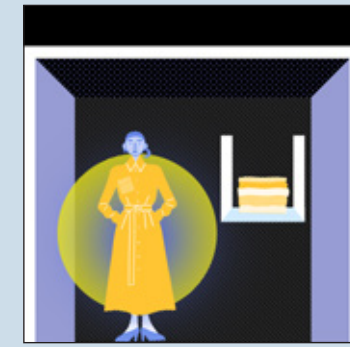
BAGS



SHOES



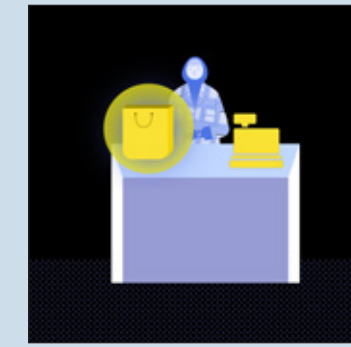
TOYS



CLOTHES

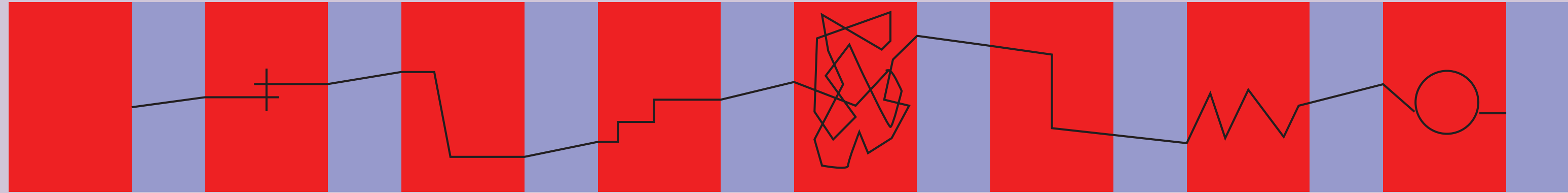


ACCESSORIES



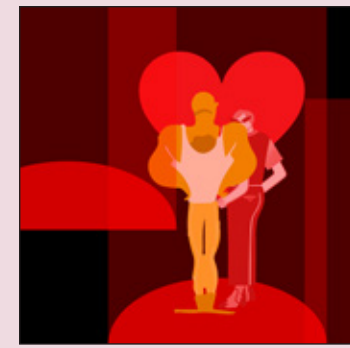
CHECKOUT

SPATIAL TYPE



RAMP INTIMATE SPACE RAMP HIERACHY SPACE RAMP GROWING SPACE RAMP IRRATIONAL SPACE RAMP STATIC SPACE RAMP EXCHANGEABLE SPACE RAMP CYCLIC SPACE

SOCIAL TYPE



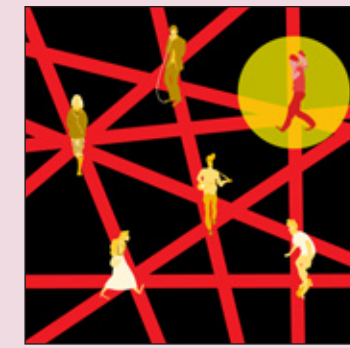
ONE TO ONE



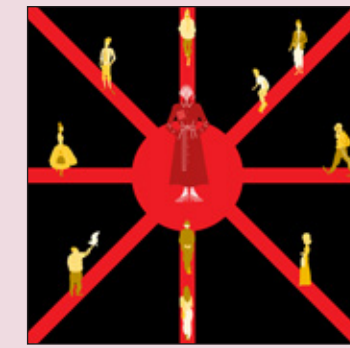
ONE TO GROUP



GROUP TO MORE



GROUP BY CHANCE



GATHER TOGETHER

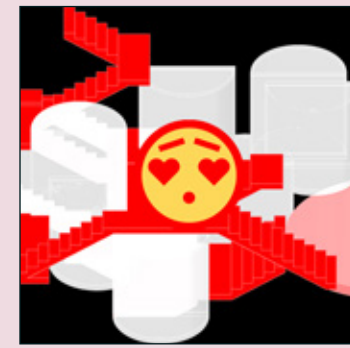


GROUP EXCHANGE



IMMERSED MEETING

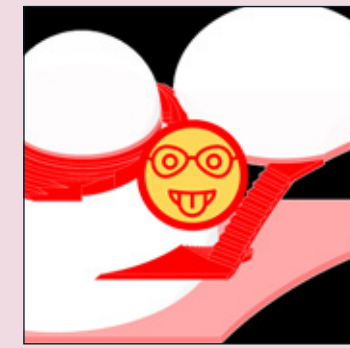
SEVEN DEADLY SINS



LUST



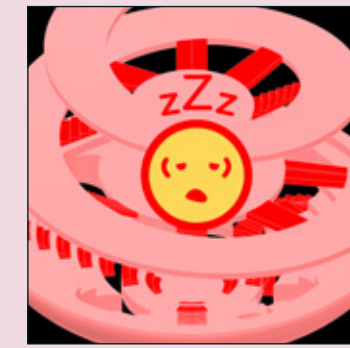
PRIDE



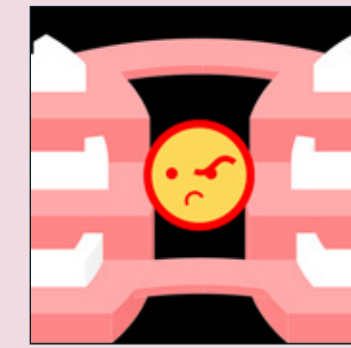
GREED



WRATH



SLOTH



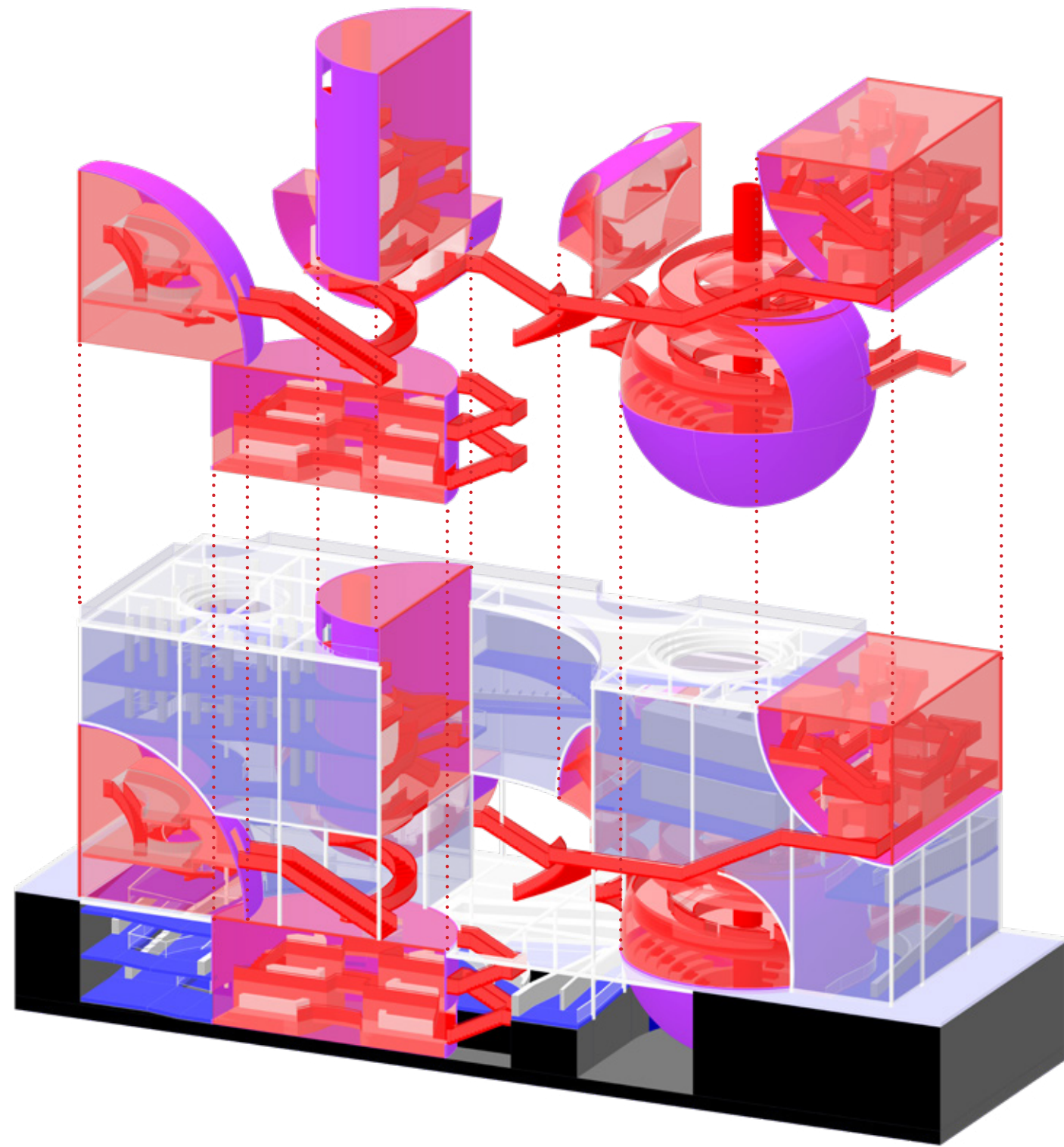
ENVY



GLUTTONY

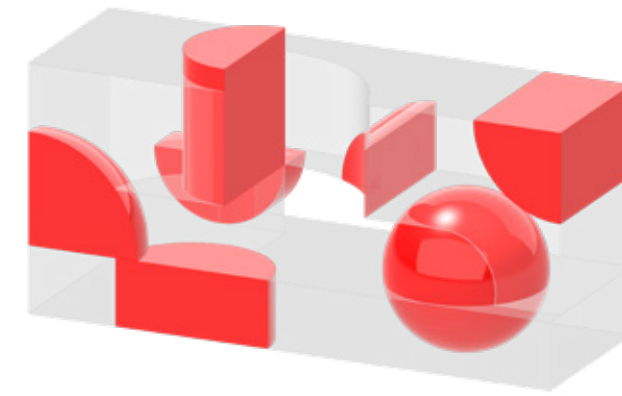
We are also exploring the metaphor of seven deadly sins as an alternative way to create architectural moment in the project.

There are two main factors in the project, fitting and social. Fitting space is designed differently according to people's different status and requirements when trying different products. The social area is designed as a metaphor of seven deadly sins to generate seven social types and seven social space accordingly.

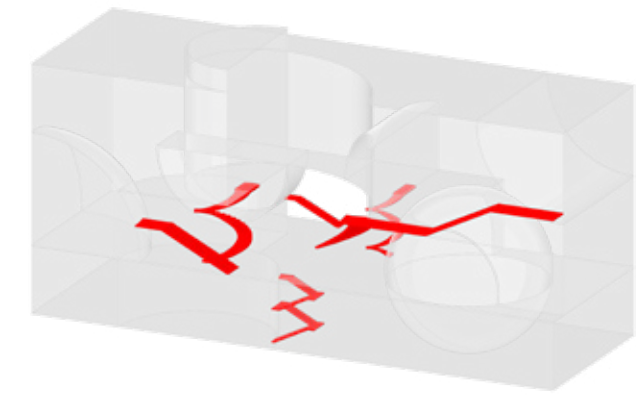


**FOUR PROGRAMS**

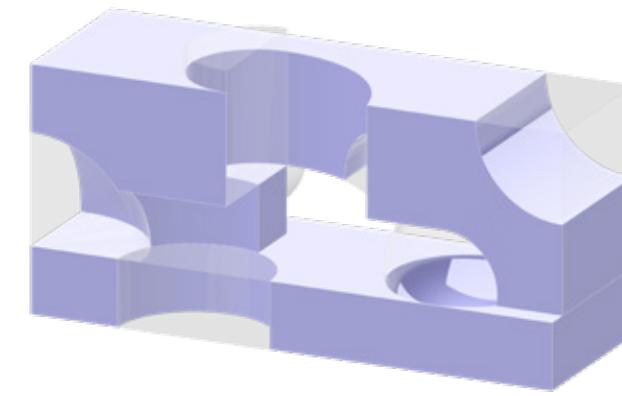
More specifically, the social area mainly serves as the mirror space, providing customers with the space for seven different social activities, to share their tastes and make new friends. The seven mirror space is connected to the middle open area with the walkways, which is the stage for customers to express themselves and show off their style. And the fitting space where customers can order, get and try the products they saw online. Those products are stored in the storage designed according to the different dimension, shape and materiality.



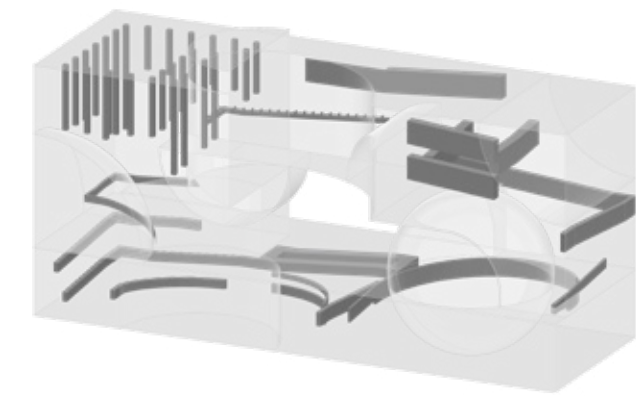
SOCIAL AREA – MIRROR SPACE



SOCIAL AREA – WALKWAY



FITTING SPACE



STORAGE

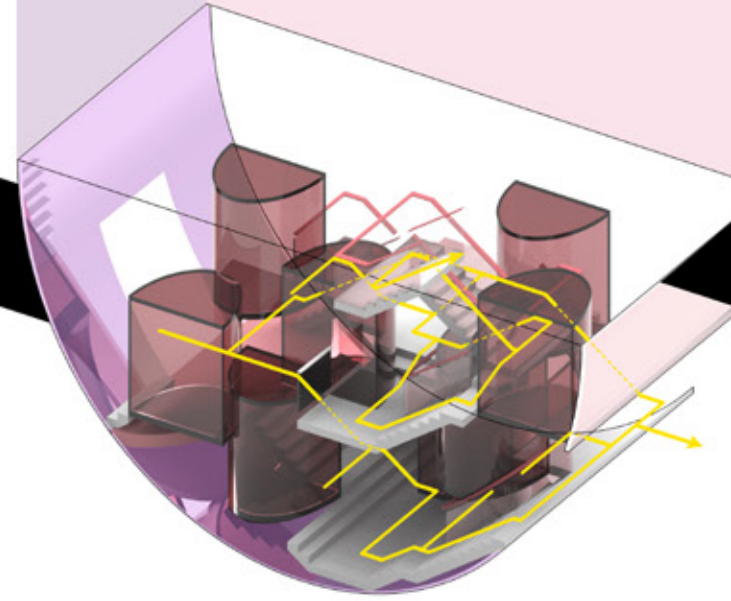
- WALKWAY
- FITTING ROOM
- MIRROR
- STRUCTURE
- PLATFORM
- RAMPS
- STORAGE



## MOVEMENTS

There are two main movements for the story in the project. Unlike most buildings in Manhattan block that people access from the two ends, the main entrance is in the middle encouraging more people to the open social area, following the outdoor walkway to the seven mirror space, which is the first movement. The other movement is the loop creates by the seven social area corresponding to the seven deadly sins, connected by the fitting space, in where there is only ramps to keep customers moving, creating contrast with the platforms in the social area, which encourages customers to stay.

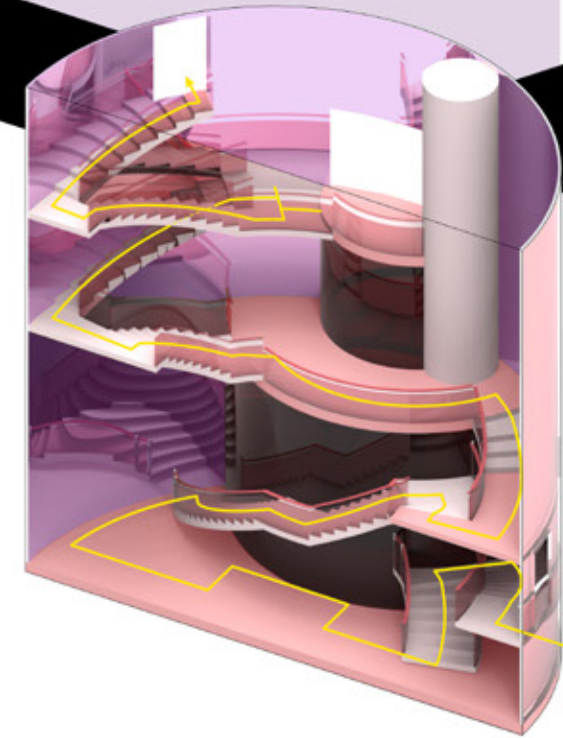
Then going to the lust social area. It is designed as the intimate space for one to one social type, such as gossiping. There are rooms with the same dimensions overlaying with one another. The size of the modular is limited to fit in only two people. Those rooms are made of glass, including the roof and floor, people inside the room are exposed in a way. But the overlaid arrangement of the rooms creates a certain coverage and privacy for the space.



First start with the fitting space for makeup and eyewear, the storage is designed as desks for customers to try on the product.

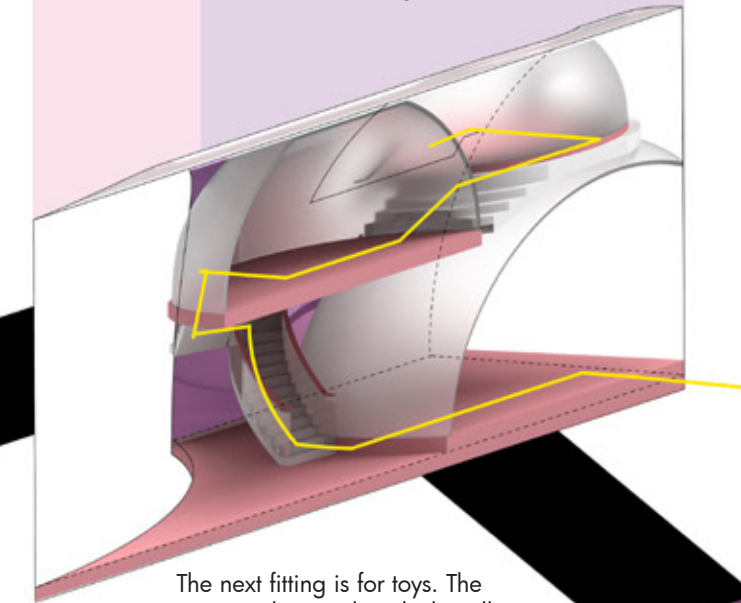
The following fitting space is for bags. The storage is tall to hang or store bags inside.

The second social area is pride, which is the hierarchy space. The social type is one to group meeting for presenting. The area of the three layers of platforms increase when it goes down, creating the hierarchy in space. The platform at the top is the stage for presenting, sharing the style and taste with the large group of people.

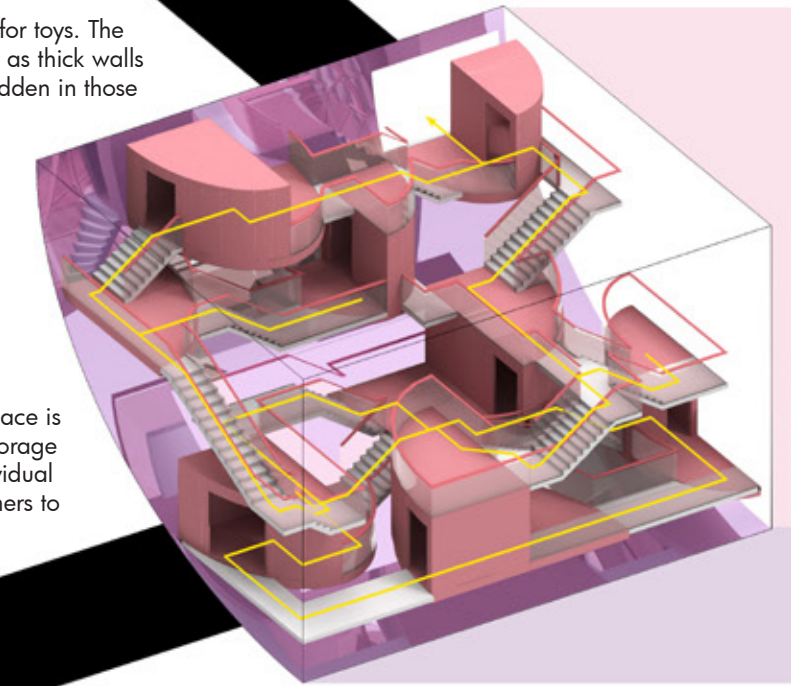


The next fitting space is for shoes. The storage is designed as bench, so customers can get the shoes from the storage while sitting on it and try the shoes.

The third social area is greed. It is the growing space for social activities such as clubbing. Customers will meet more people when they walk into the space as there are three rooms getting larger in the space, allowing larger accommodation following the movement.

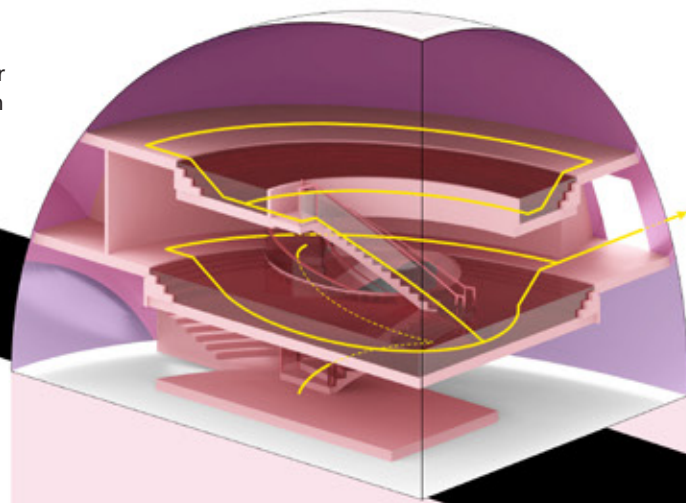


The next fitting is for toys. The storage is designed as thick walls and the toys are hidden in those walls.



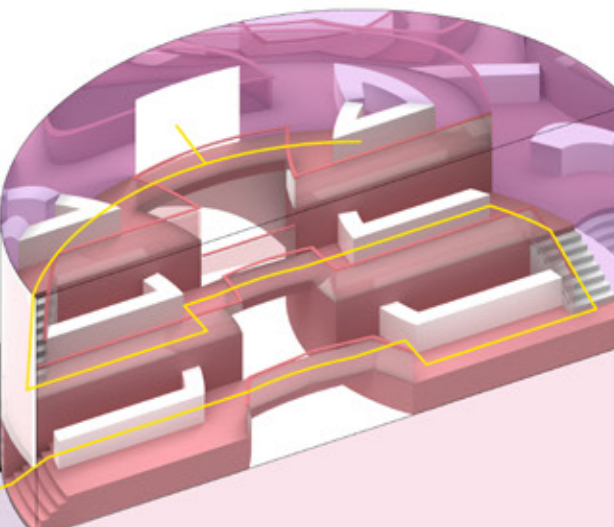
The following social area is wrath which we defined as irrational space. The social type is meeting by chance and the space is used for rocking. There are different route in the space, leading to different rooms with no clear direction. So customers cannot participate which room they will be in and whom they will meet next.

Finally, customers have completed a loop and they can choose either go out or start an new loop again.



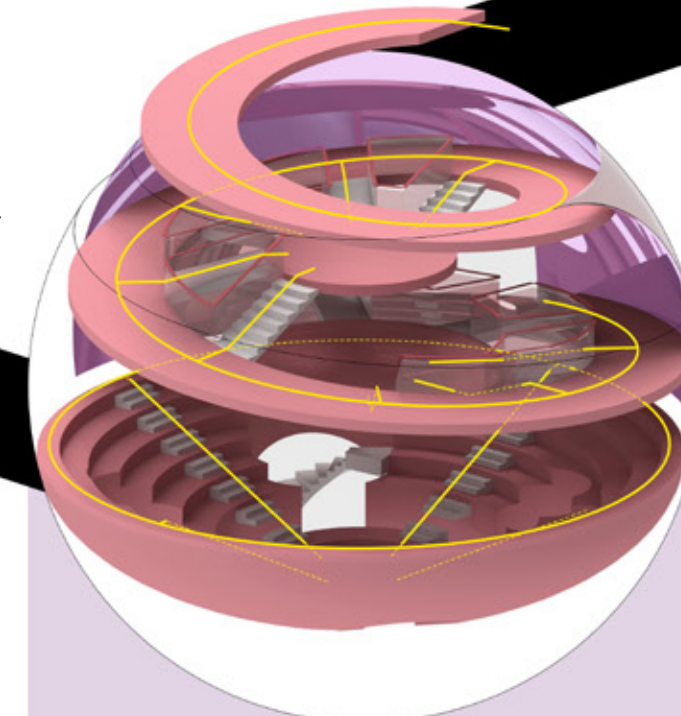
The next fitting space is actually a checkout space, which is the last step.

The next fitting room is for accessories. The storage is either hanged from the top for hat or sit on the ground for jewries or gloves.

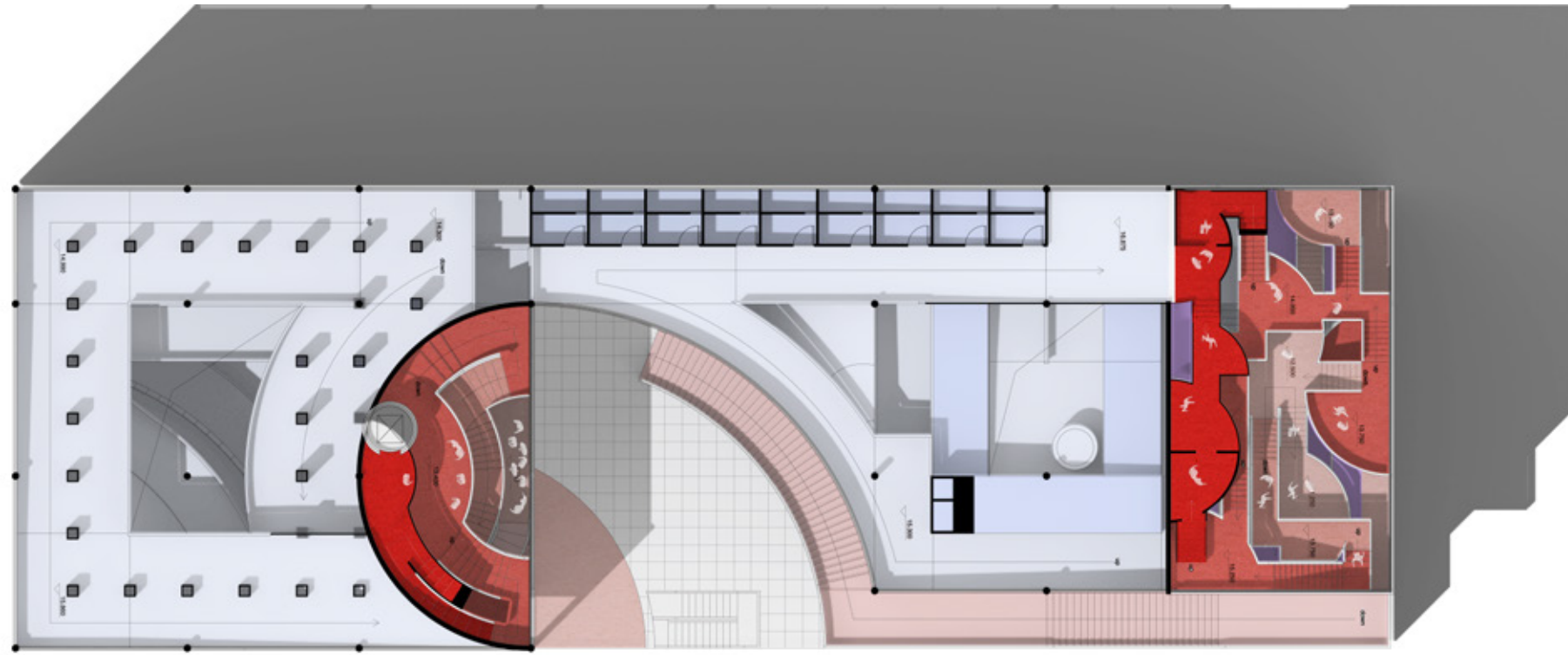


The next social area is Envy. It is the exchangeable space, proposing a social type, meeting by shift. This are is also for dining. The space is divided in to two and connected by the bridge. Customers on the two sides can see each other, but if they want to meet each other or want to get snakes from other dining tables, they need to shift to the other side.

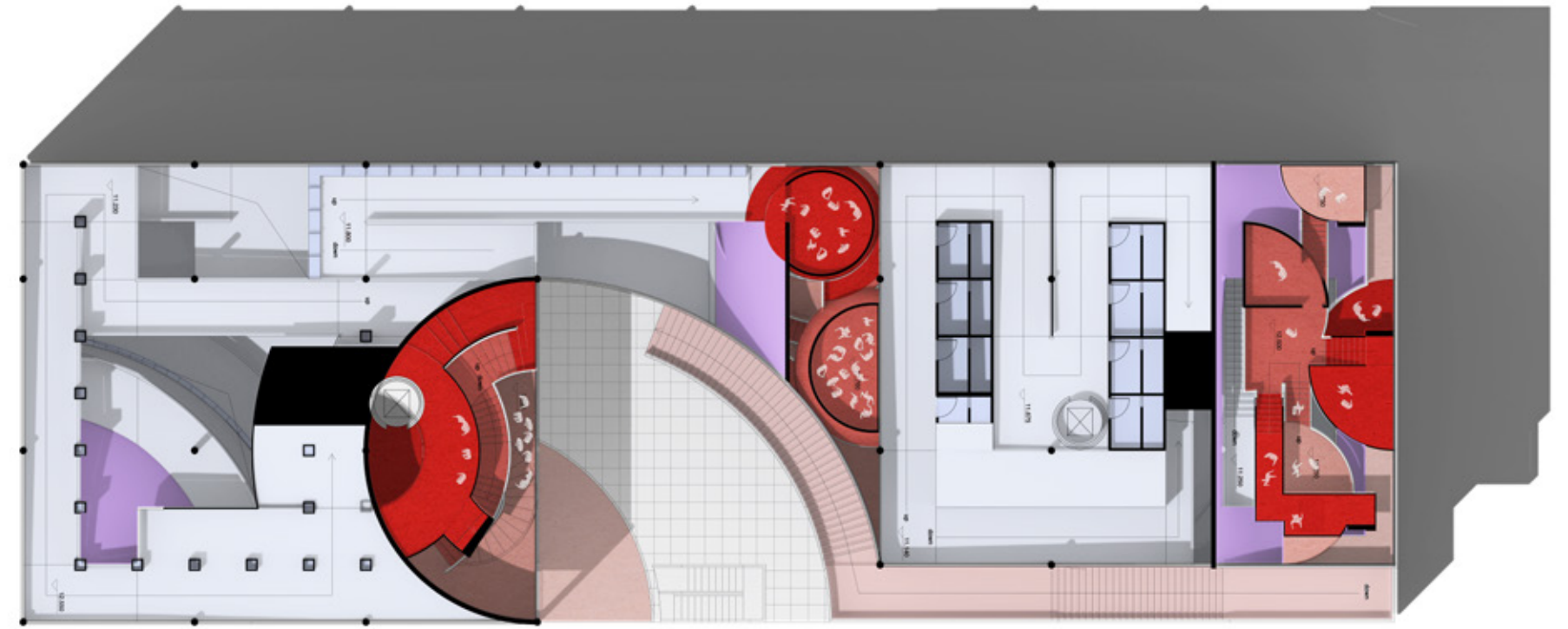
The last social area is gluttony which we defined as cyclic space, proposing the immersed meeting in the social type. It is a two story bathing space, with two separated circulation, one through the water and create a small loop, the other one avoid water, leading to the outside and start a new round again.



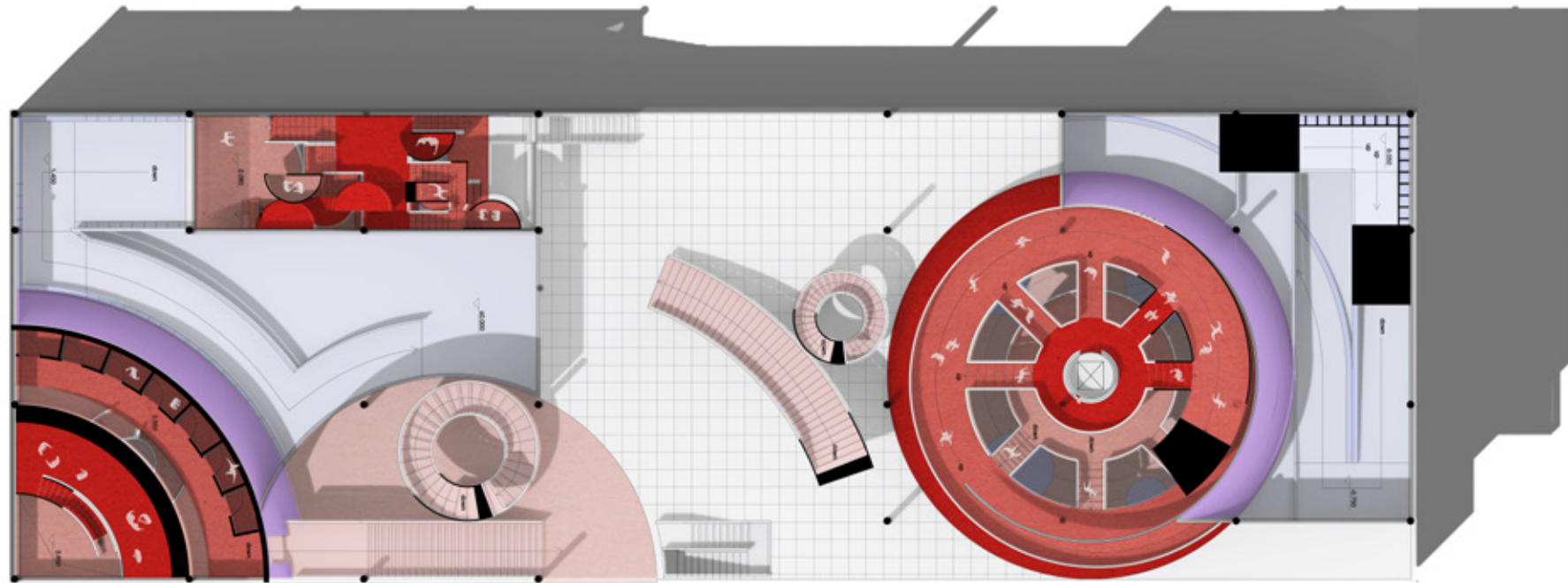
The next social area is sloth, which is designed as the static space for group to more meeting. The ramps are connected to the center platforms from different directions, gathering people together in the middle. Also there are stairs following the shape of the sphere, providing customers a space to sit or lay down and have a rest.



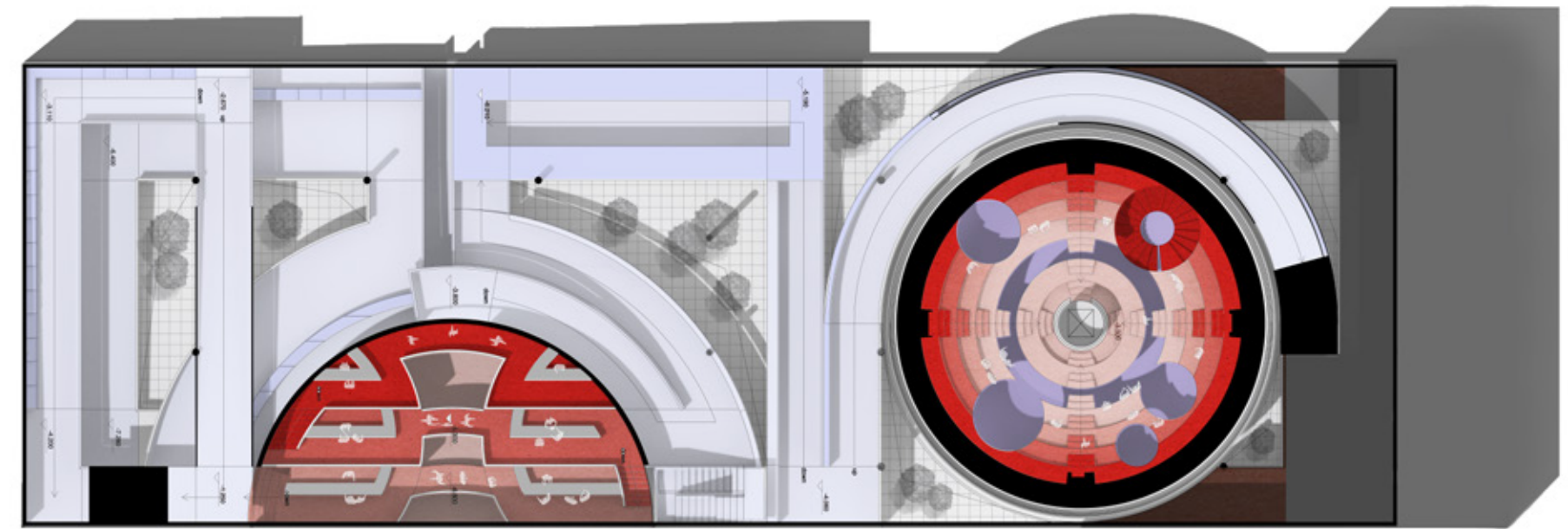
FLOOR PLAN +17.5M



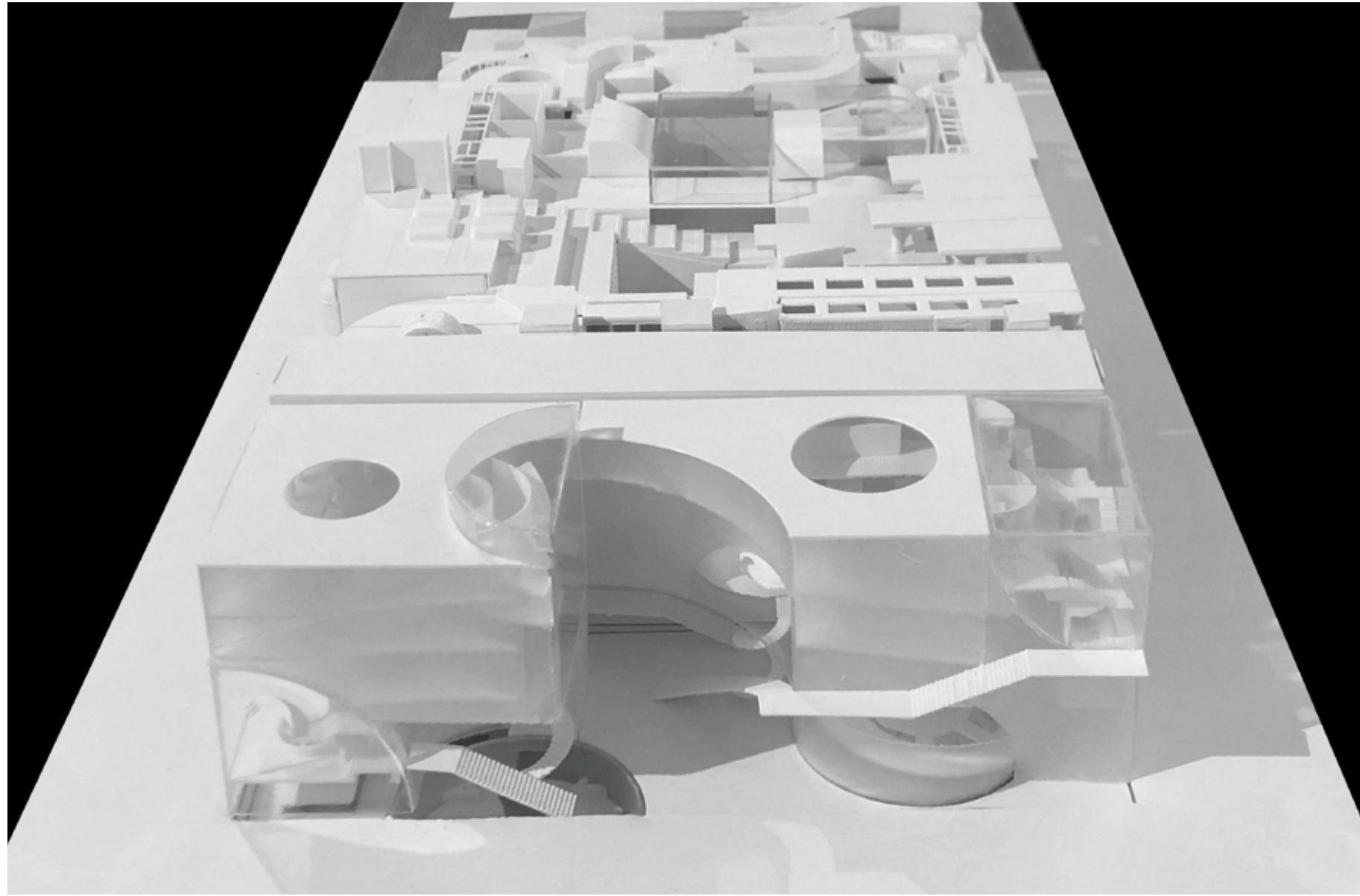
FLOOR PLAN +12.5M



FLOOR PLAN +5.0M



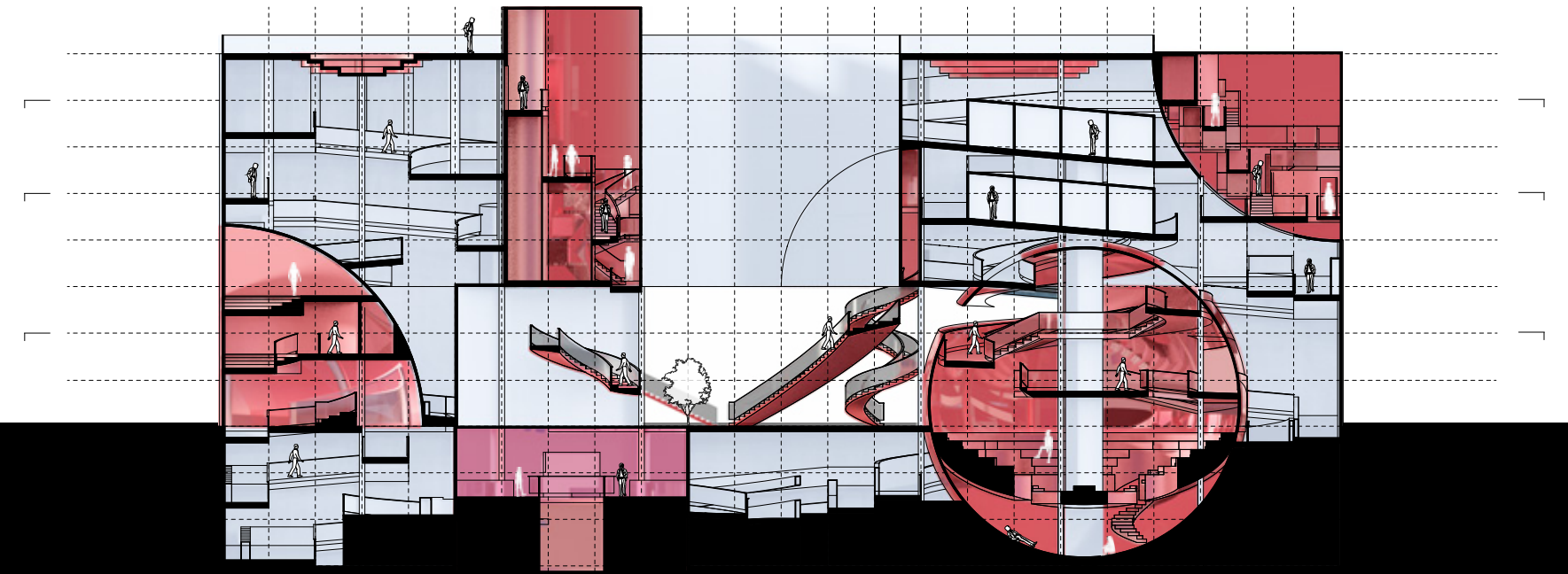
FLOOR PLAN -1.25M



SHORT SECTIONS



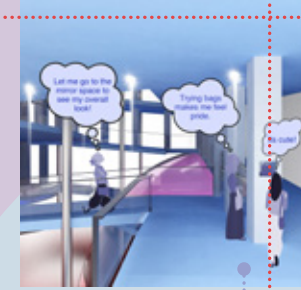
LONG SECTION



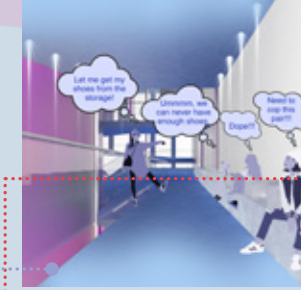
PRIDE – HIERACHY SPACE



LUST – INTIMATE SPACE



FITTING- BAGS



FITTING- SHOES



FITTING- MAKEUP + EYEWEAR



FITTING- TOYS



GLUTTONY – CYCLIC SPACE



FITTING- CHECKOUT



FITTING- CLOTHES



WRATH – IRRATIONAL SPACE



FITTING- ACCESSORIES



ENVY – EXCHANGEABLE SPACE



SLOTH – STATIC SPACE



FITTING- MAKEUP + EYEWEAR



LUST – INTIMATE SPACE  
SOCIAL TYPE: ONE TO ONE MEETING  
GOSSIPING



FITTING – BAGS



PRIDE – HIERACHY SPACE  
SOCIAL TYPE: ONE TO GROUP MEETING  
PRESENTING



Let me get my shoes from the storage!

Ummmm, we can never have enough shoes.

Dope!!!

Need to cop this pair!!!

FITTING – SHOES



This party is fabulous!

Wanna to go to next bigger party with more people!

Seems they have fun inside!

GREED – GROWING SPACE  
SOCIAL TYPE: MEETING MORE CLUBBING





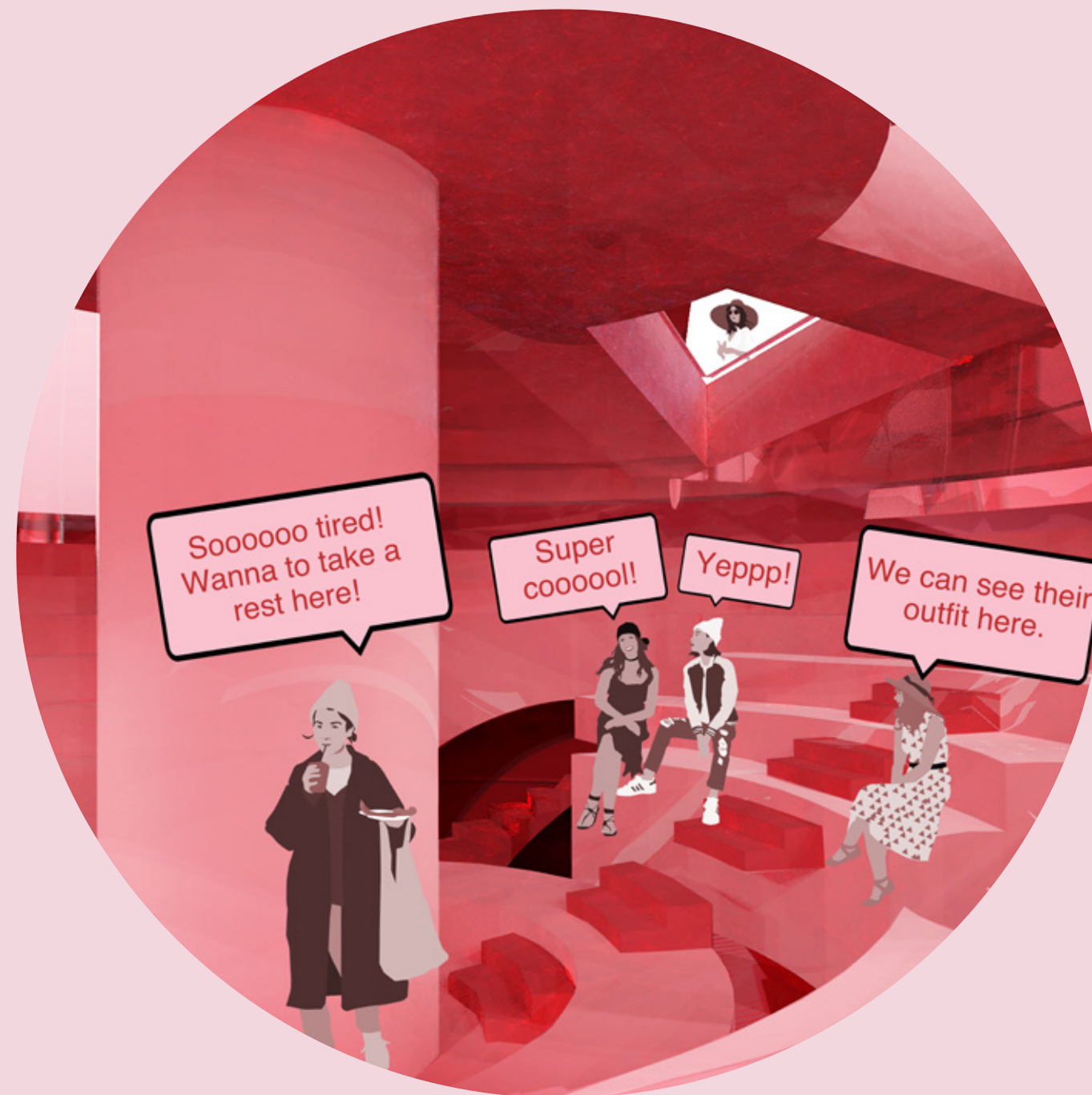
FITTING – TOYS



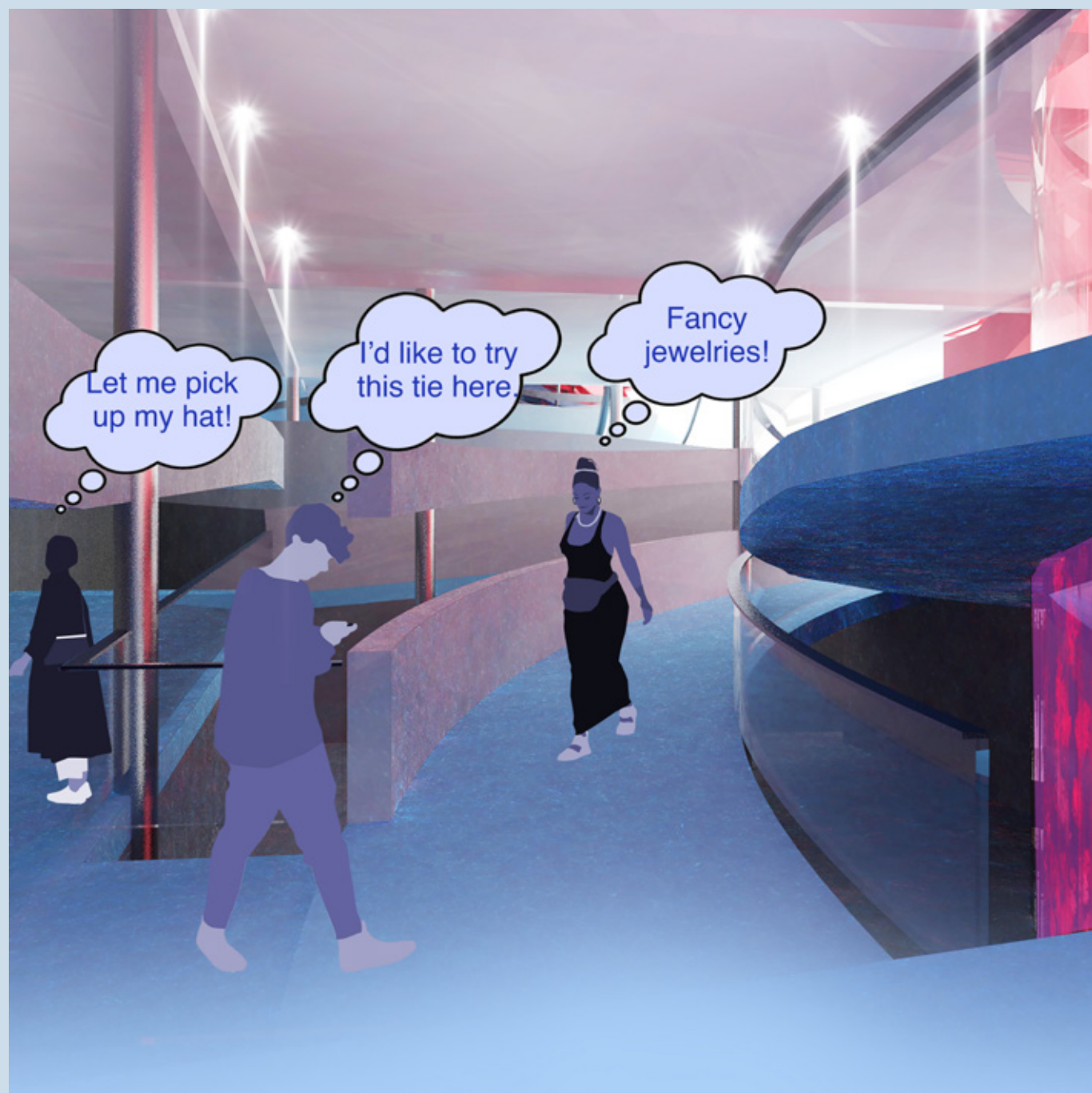
WRATH – IRRATIONAL SPACE  
SOCIAL TYPE: MEETING BY CHANCE  
ROCKING



FITTING – CLOTHES



SLOTH – STATIC SPACE  
SOCIAL TYPE: GROUP TO MORE MEETING  
INSTAGRAMMING



FITTING – ACCESSORIES

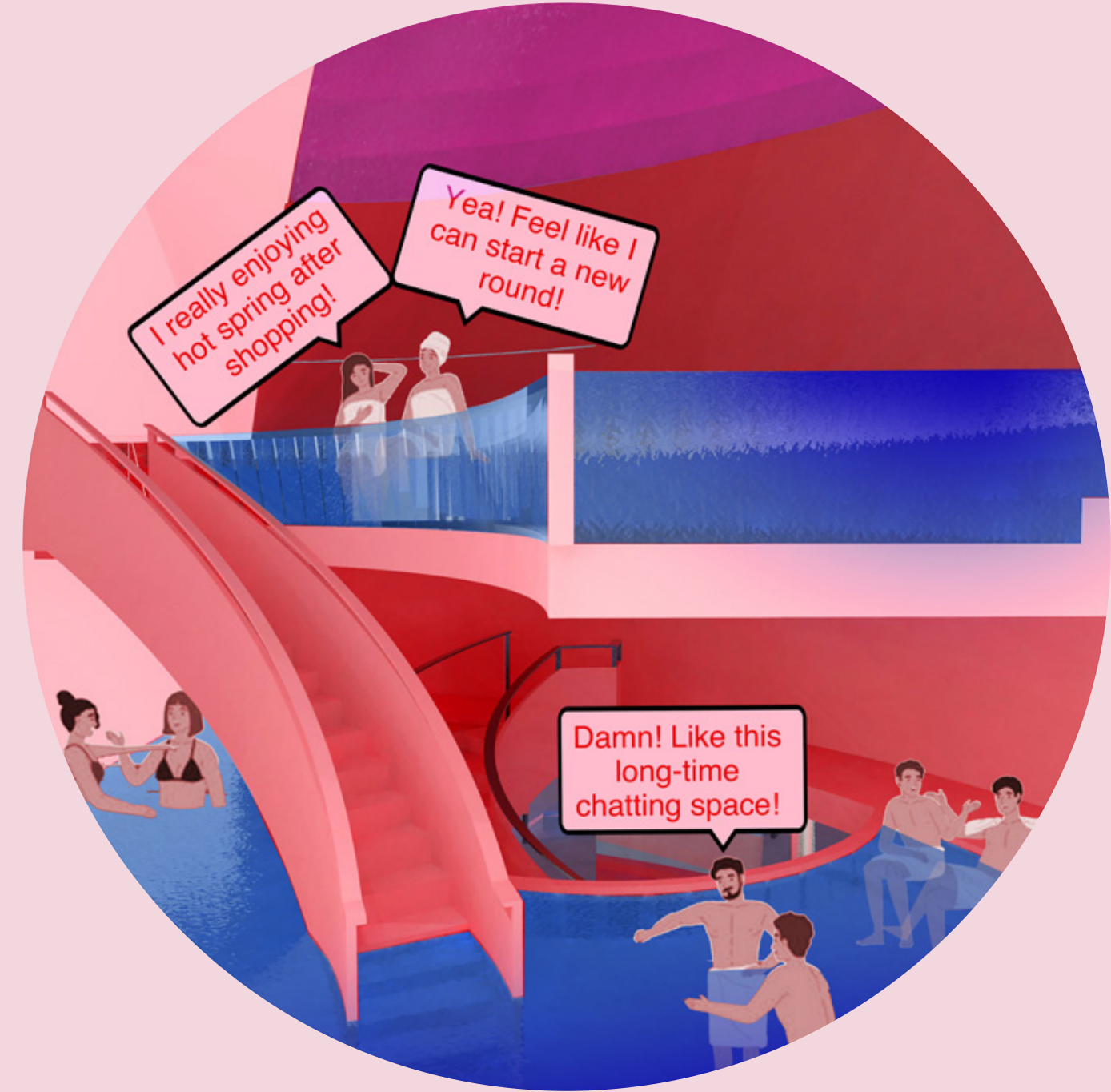


ENVY – EXCHANGEABLE SPACE

SOCIAL TYPE: MEETING BY SHIFT  
DINING

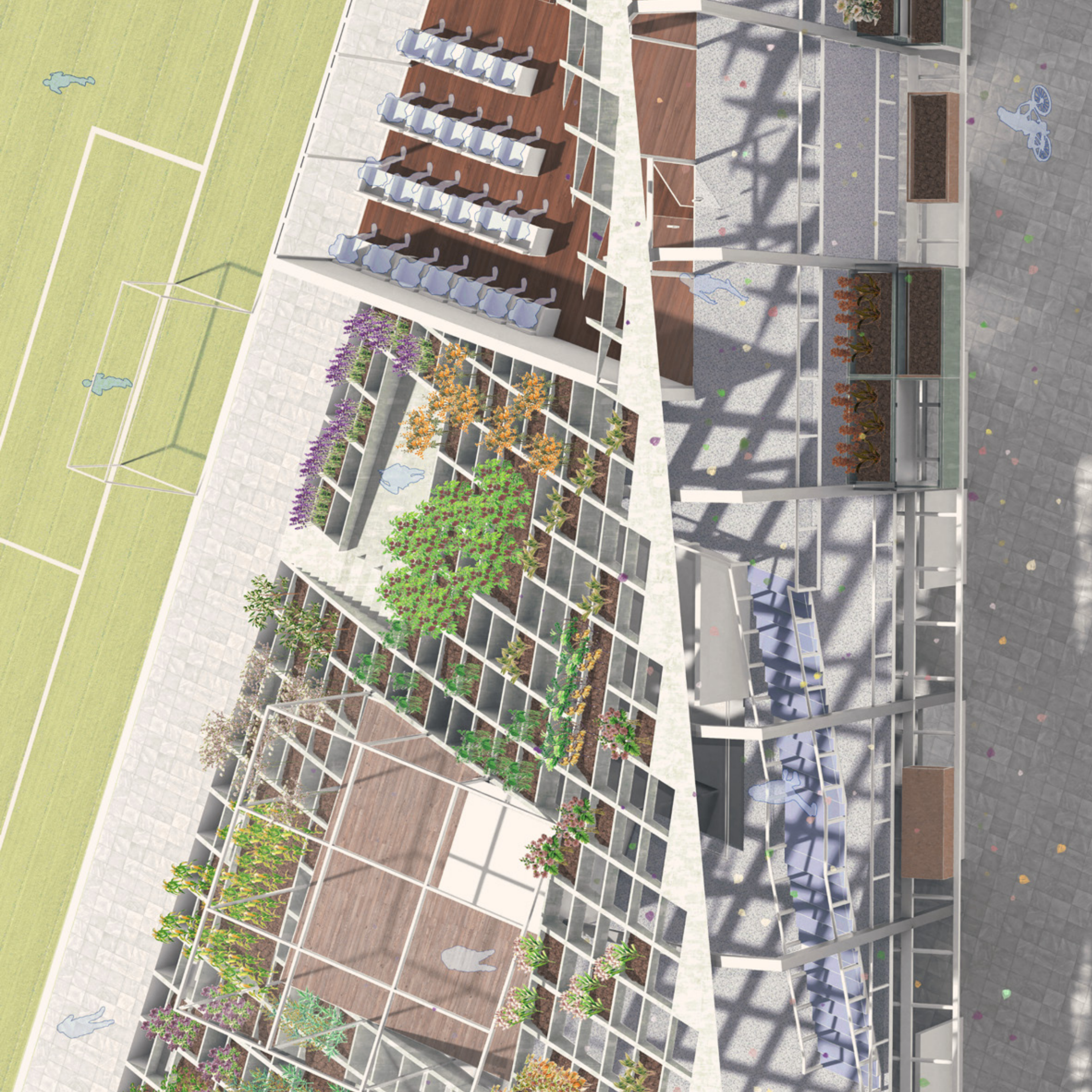


FITTING – CHECKOUT



GLUTTONY – CYCLIC SPACE

SOCIAL TYPE: IMMERSERD MEETING  
BATHING



### 03

## SYNCHRONY AND DIACHRONY

VERTICAL FARMING CEMETERY WITH THE TRANSLATION OF THE HISTORY AND ACTIVITIES

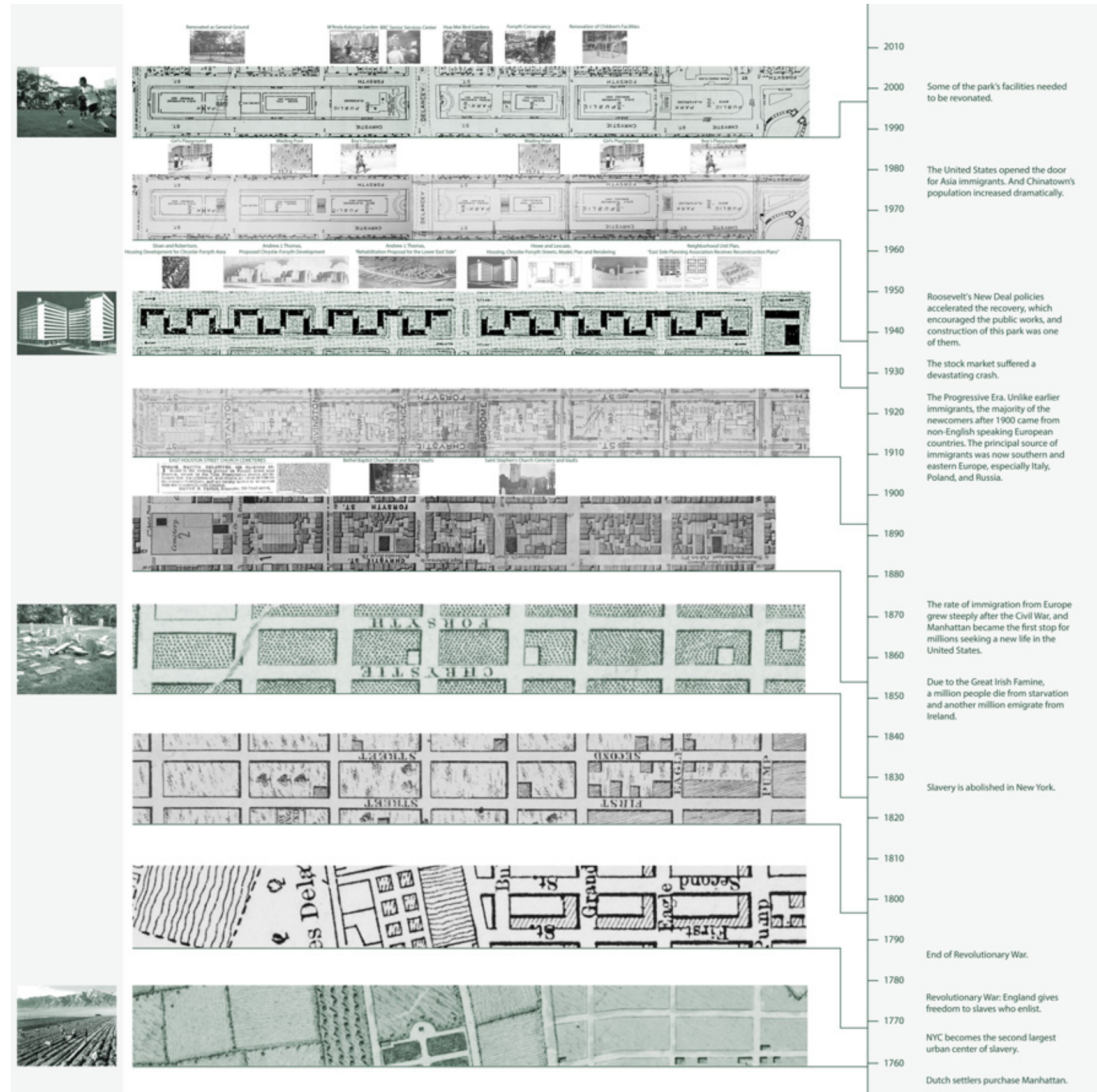
To build a dialogue between the history of site and current diverse programming, this proposal combines the system of vertical farming, disposition of the dead, community activities and experiential space, which also constructs a new relationship between life and death in urban context. Vertical farming is a direct response to the grand farm history that can also be beneficial to the urban environment.

The disposition of the dead is composting, with a vertical conveying system inspired from the apartment proposal in history, about 10,000 people died in Manhattan each year can be recycled to the life of plants, give another conceptual layer to the vertical farming. The immigration history with a wide spectrum of ethnicity is translated into the species of planting.

With an extreme thin thickness of this infrastructure, the sports fields and other areas of community activity are preserved as much as possible. It passes through the whole site with variations, reflecting the complexity of site condition and enhancing the strong concept in urban space.

Studio Work: Urban Palimpsests  
Critic: Karla Rothstein  
Teamwork with Guangwei Ren  
Software: Rhino, Grasshopper, Vray, Photoshop, Allustrator, Indesign  
Summer 2019/ Manhattan, New York, New York, United States

## SYNCHRONY – HISTORY



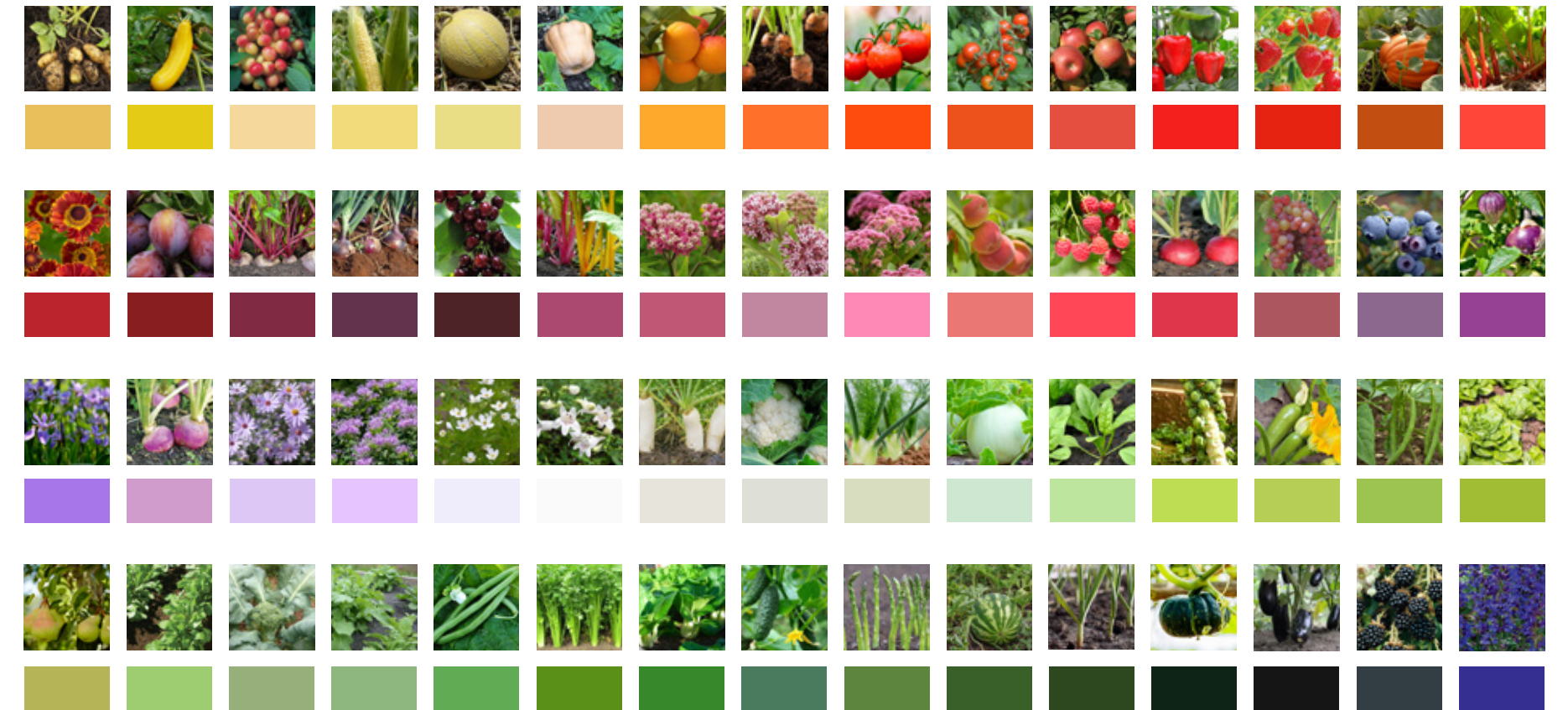
## DIACHRONY – ACTIVITIES

The title of our project is Synchrony and Diachrony. The temporal relationship is expressed through the combination of the history on this site and the diversity of current programming and community activities. And this concept is also conveyed by the multi-dimensional dialogue between life and death.



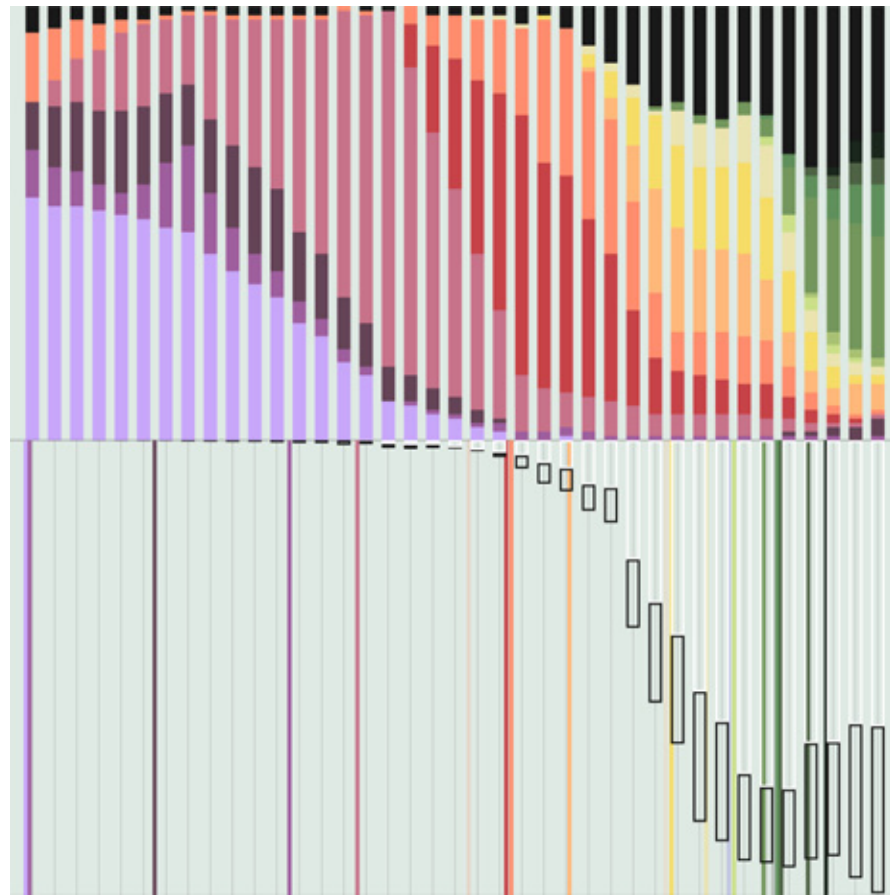


## THE FRUITS, FLOWERS AND VEGETABLES IN NEW YORK CITY



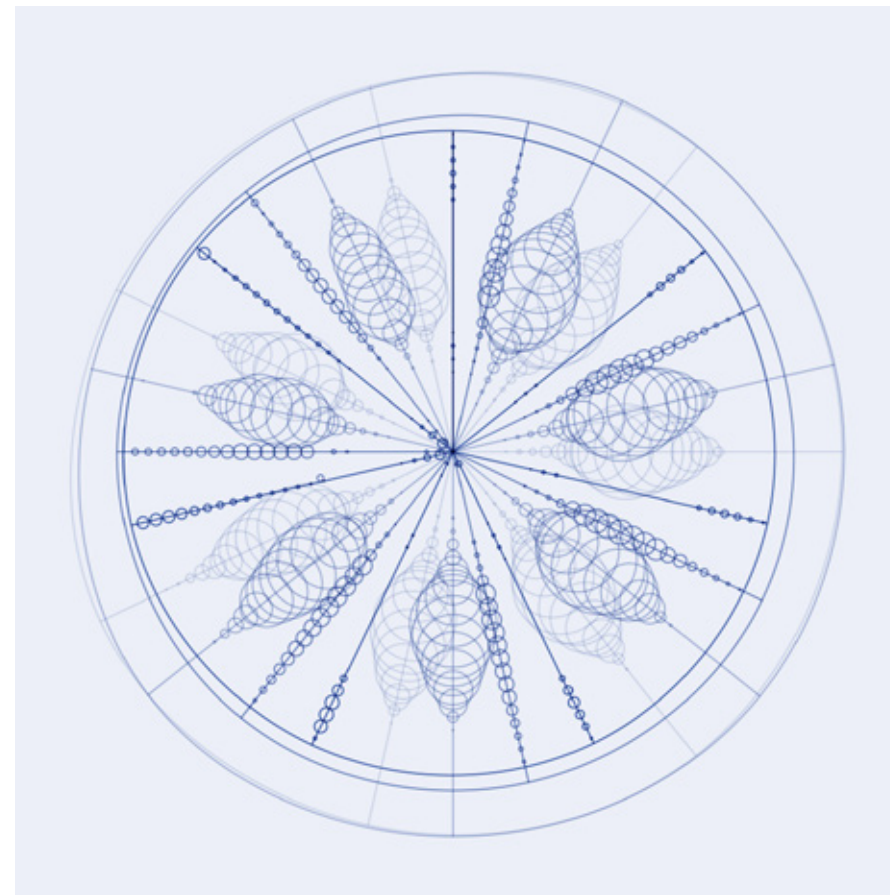
The collage shows the concept of transforming the cemetery into vertical farmland and relate each vessel with a different fruits, flowers or vegetables grown in NYC to construct a colorful scene for the park. And Besides, we will take the most of the activities happening on the site and also try to introduce some new activities which is in the balloons to to make up for the time blanks and then activate the site.

This palette shows most of the fruits, flowers and vegetables grown in New York City. The colorful scene is a translation of the complicated immigration history of the site. And besides, the palette provides the dead people with diverse choices to represent the lives of themselves. Thus, the random colorful farmland will create a vivid and dynamic vertical cemetery.



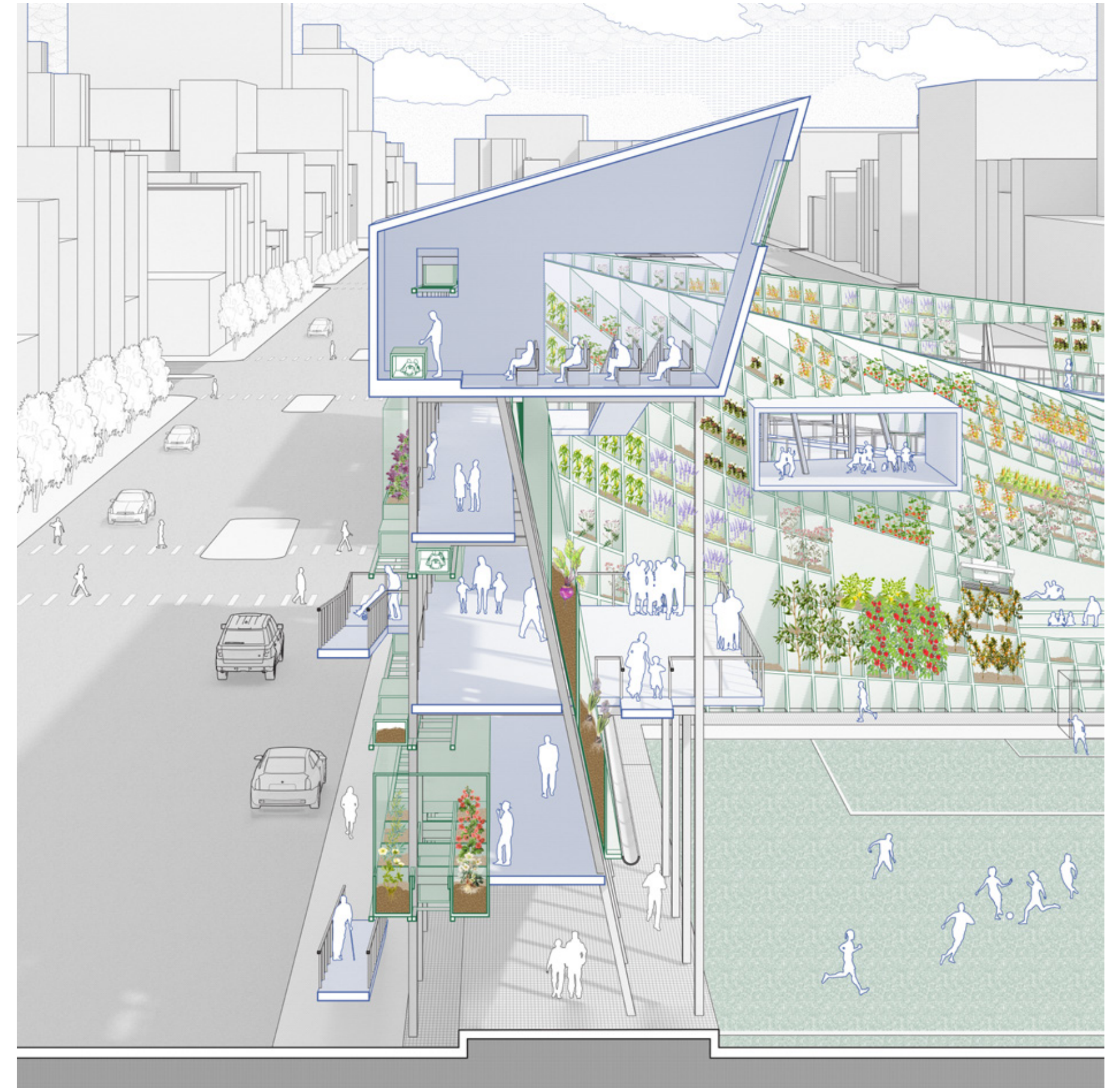
DATA ANALYSIS OF HISTORY

The datascape shows the changes in the population composition of different races. The changes is in accordance with the history of the site. The first immigrants from Europe farmed on the site. After the revolutionary war, it became a cemetery for African-American slaveries. With a majority of diverse newcomers, the government planned to raise a housing proposal to encourage public works. But the project finally did not work out. And then after the United States opened the door for Asian immigrants, the site began to be a park to serve the surrounding residents.

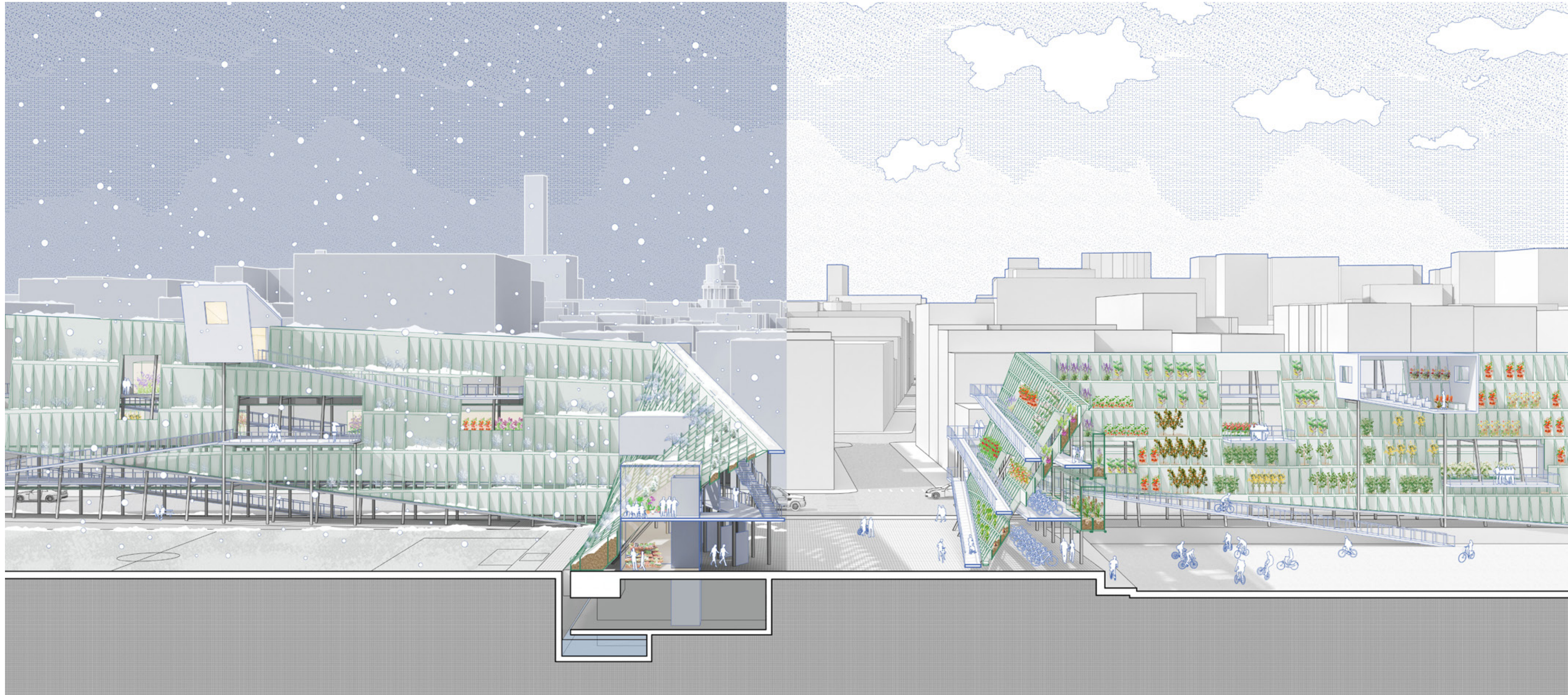


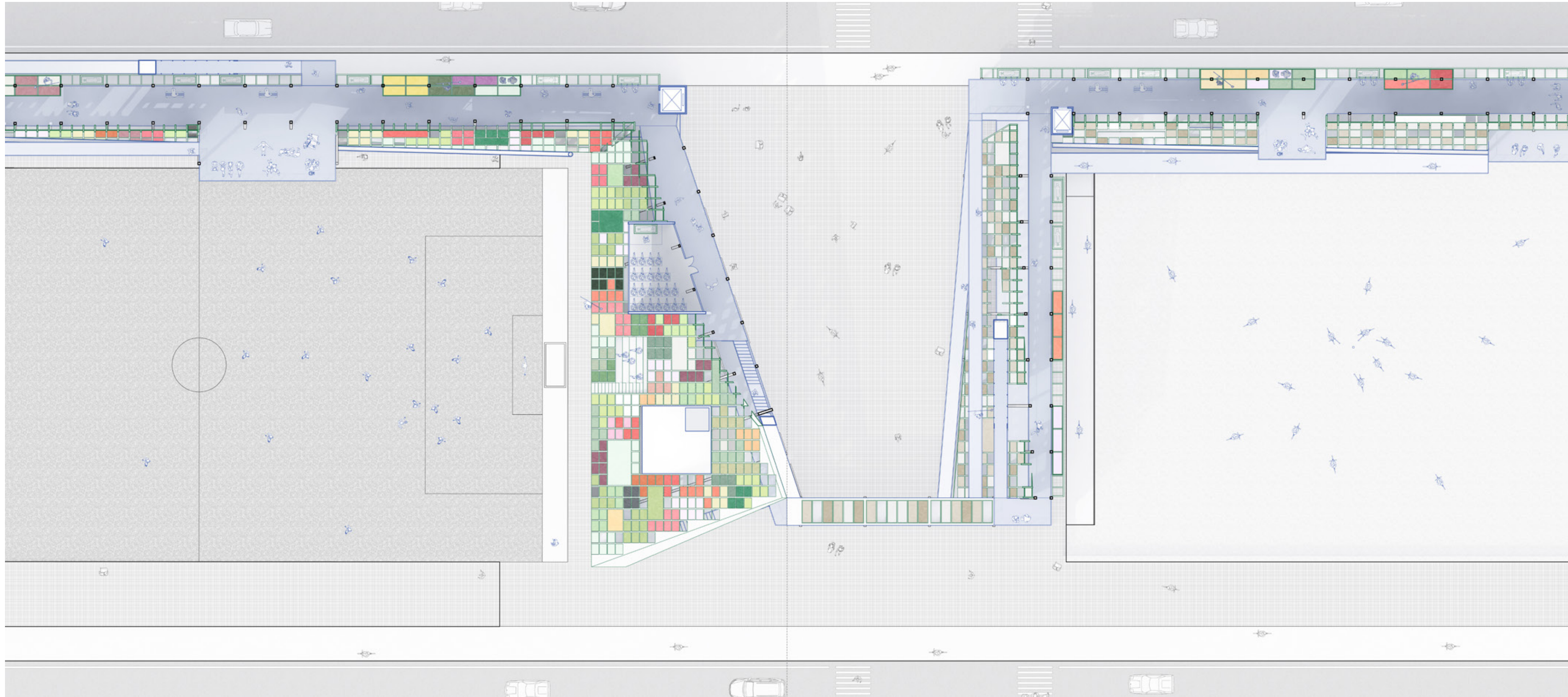
DATA ANALYSIS OF ACTIVITIES

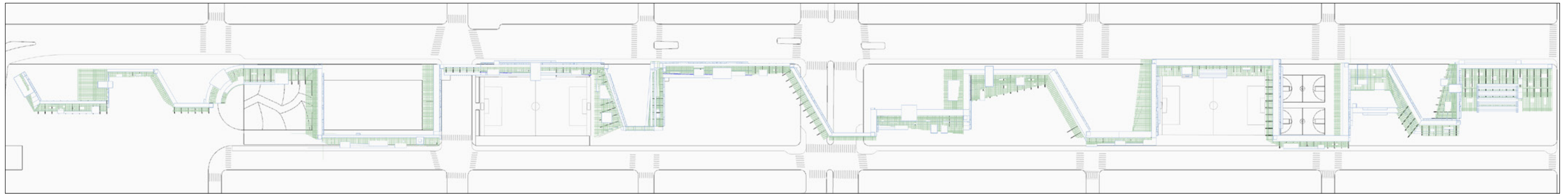
The datascape shows the temporal population in four segments of this park. The deep red color is the most northern one and the white is the most southern one. The lines rotating in the center point represent seven days of a week, and different sizes of circles represent the change of population in 24 hours. This datascape explains why we preserve more southern parts and introduce more new activities to northern parts. And the population changes correspond with the activity time table and shows us when is the blanks.





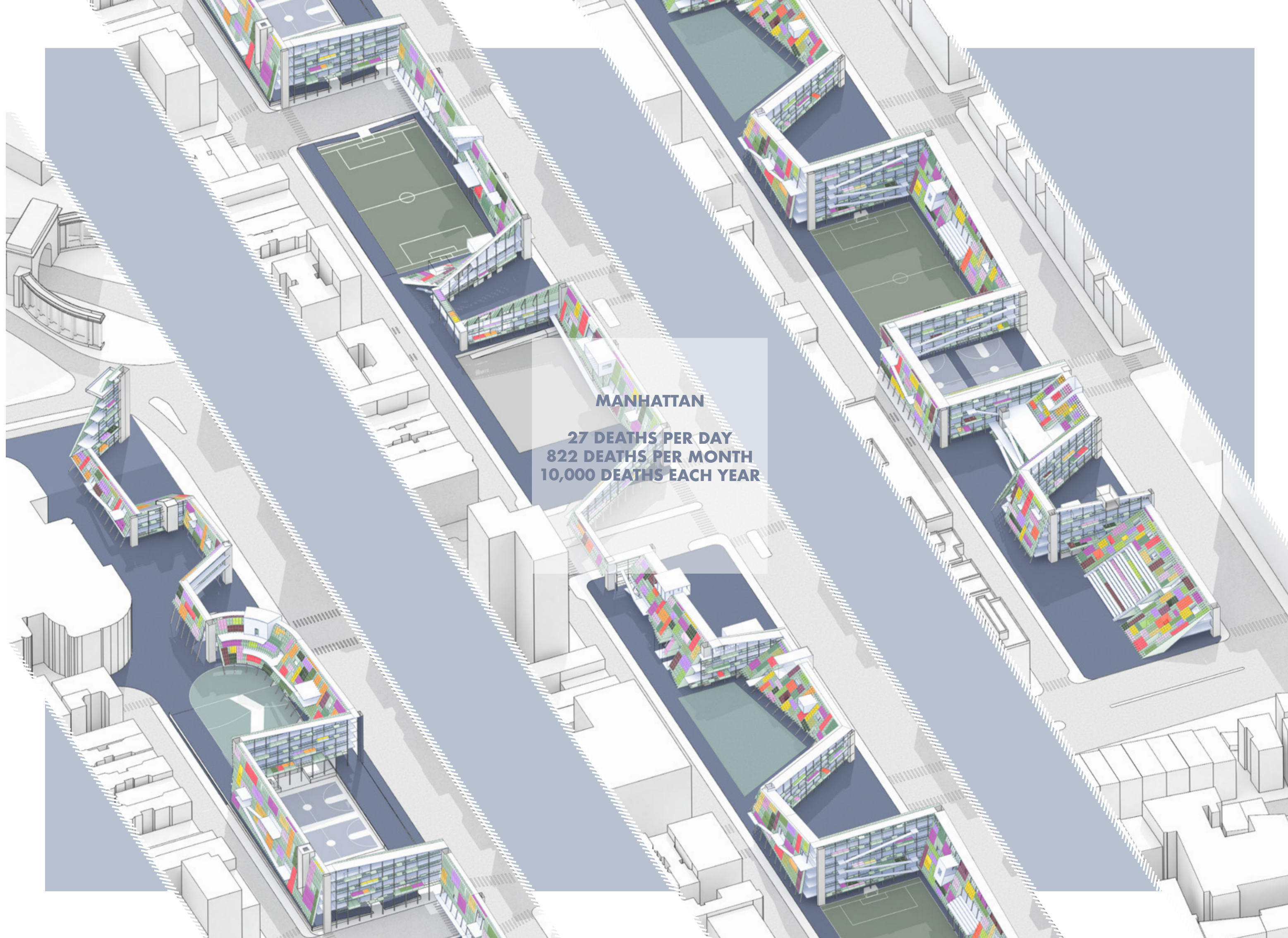






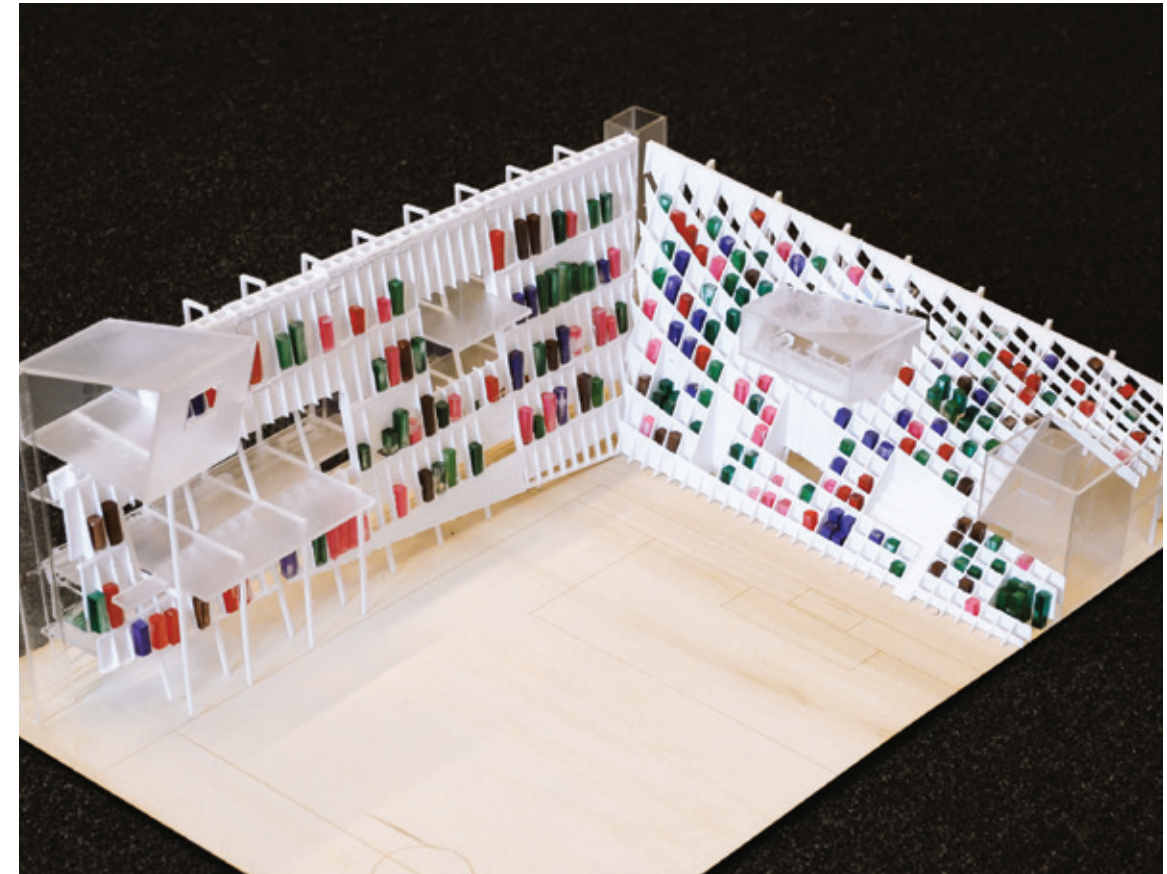
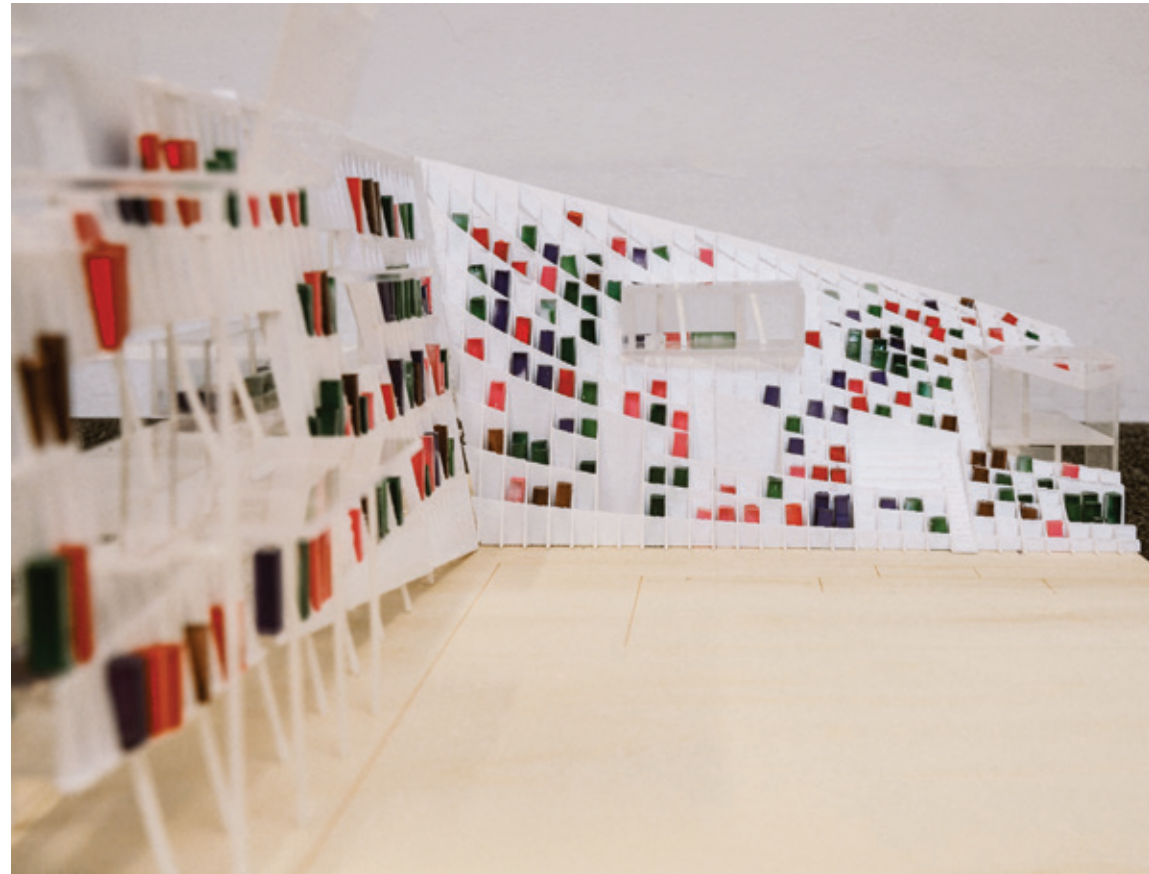
## URBAN INTERVENTION

This is our urban intervention. The form of this infrastructure mainly depends the programs on site, first is the parks and sport fields we critically preserve, our proposal is trying to responds to them build some connection, like audience area for the sports fields, sports clubs for basketball fields, and parking space for bike polo. the second one s new programs introduced into the park according to the site analysis. Like open galleries, performance center, classrooms and activity center. As they are in accordance with the urban context, we wish they can serve to link both sides. And the surface of the Greenland is mainly facing to the south direction in order to receive more sunlight.



**MANHATTAN**  
**27 DEATHS PER DAY**  
**822 DEATHS PER MONTH**  
**10,000 DEATHS EACH YEAR**

The form of this infrastructure mainly depends on the programs on site, first is the parks and sport fields we critically preserve, our proposal is trying to respond to them by building some connection, like audience area for the sports fields, sports clubs for basketball fields, and parking space for bike polo. The second one is new programs introduced into the park according to the site analysis. Like open galleries, performance center, classrooms and activity center. As they are in accordance with the urban context, we wish they can serve to link both sides. And the surface of the Greenland is mainly facing to the south direction in order to receive more sunlight.





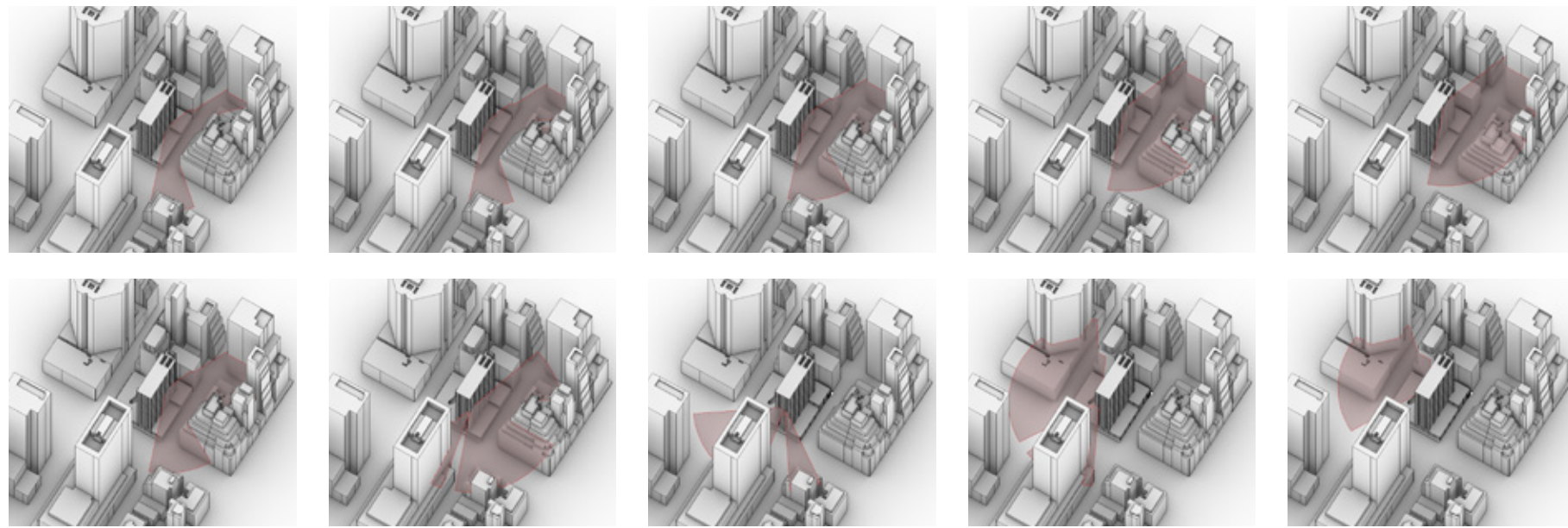
## 04

### COLOR AND THE CITY Facade Renovation of Lever House

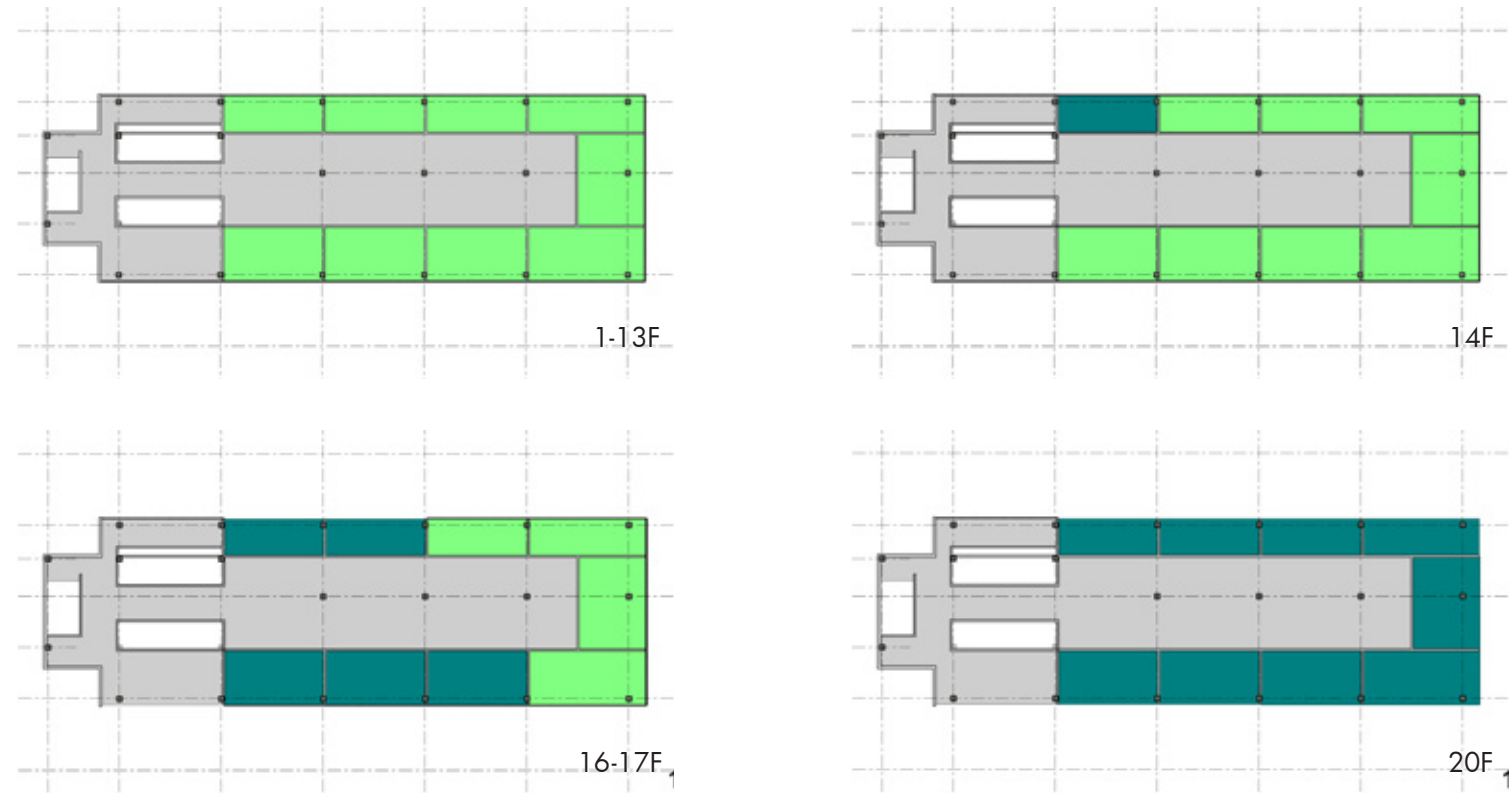
Based on the data we collect from view analysis and sunlight analysis, we design several facade systems. First is a layer of combination of the fins and the balconies to activate the facade of Lever House; second is the colored shading panels to introduce some color to the city.

Tech Studies: Rethinking BIM  
Instructor: Jared B. Friedman  
Teamwork with Xinyi Zhang  
Software: Revit (Plug-ins: Rhino Inside, Dynamo), Rhino, Grasshopper(Plug-ins: Ladybug, Lunchbox, Hummingbird)  
Spring 2020/ Manhattan, New York, New York, United States

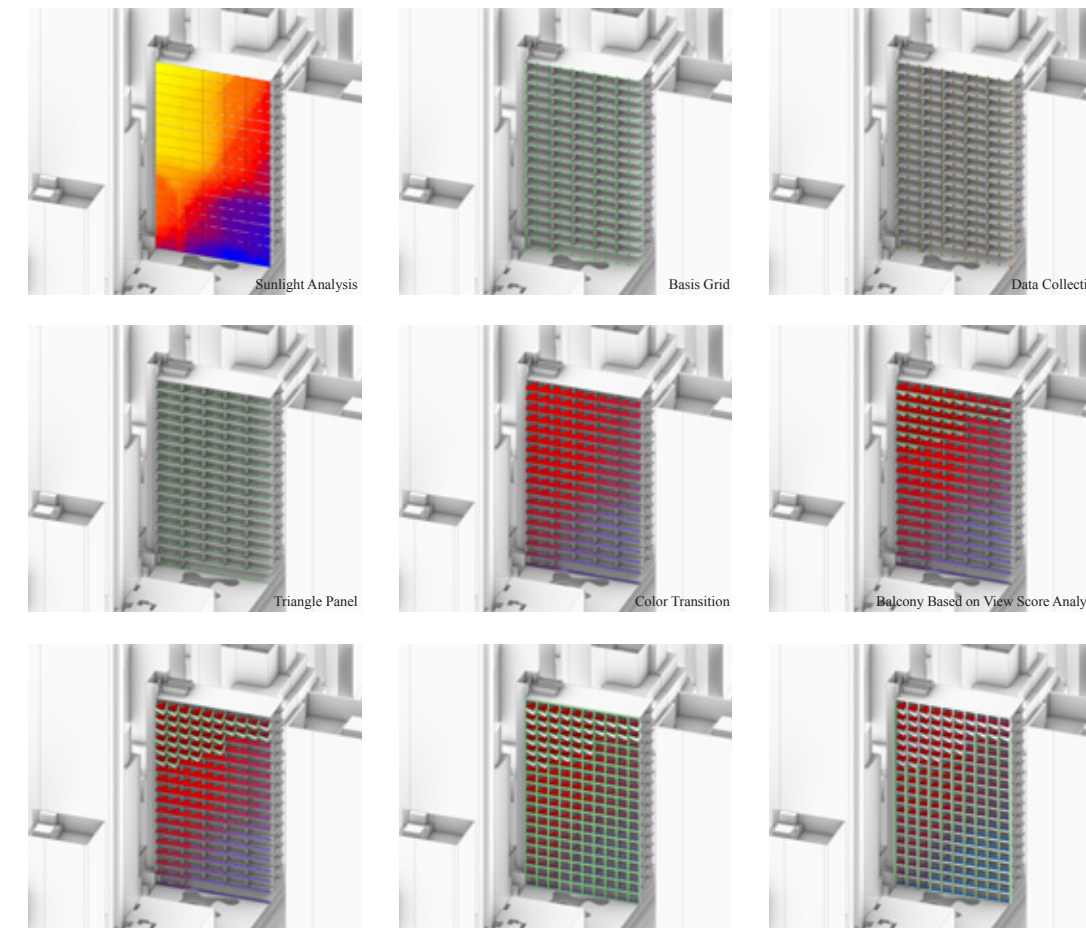
## VIEW ANALYSIS



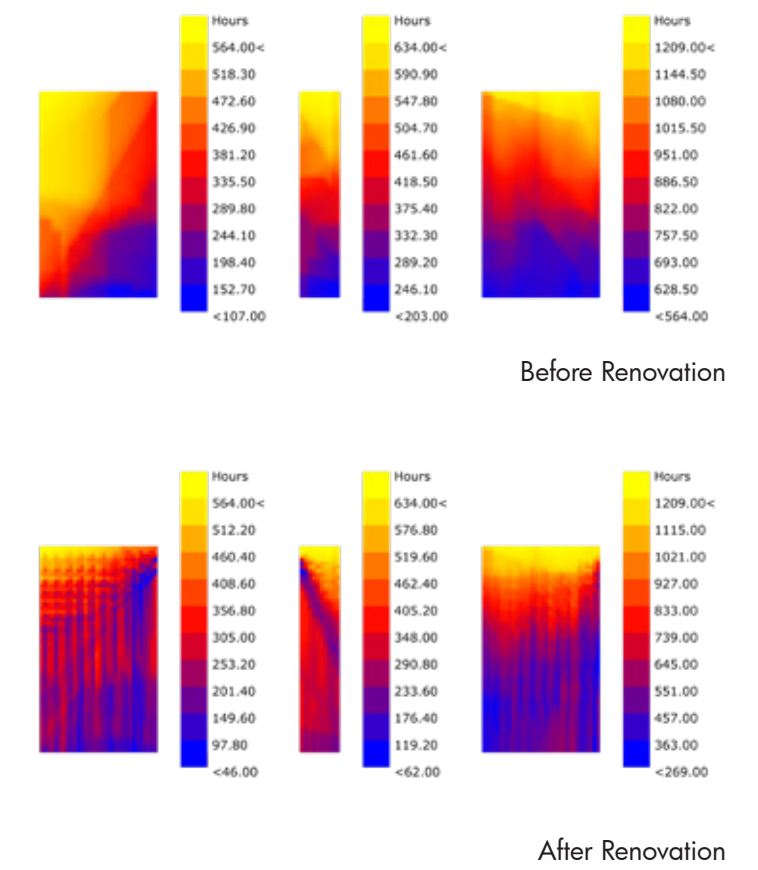
## VIEW SCORE RESULT



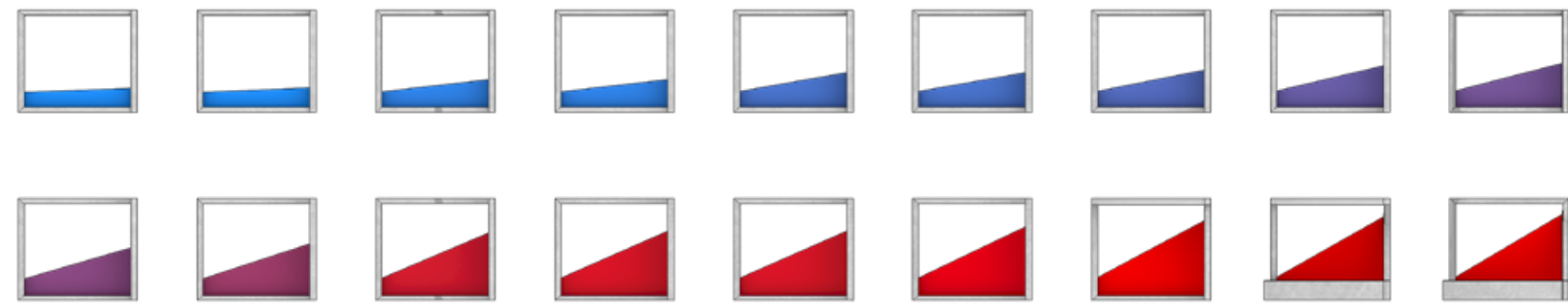
## DESIGN PROCESS



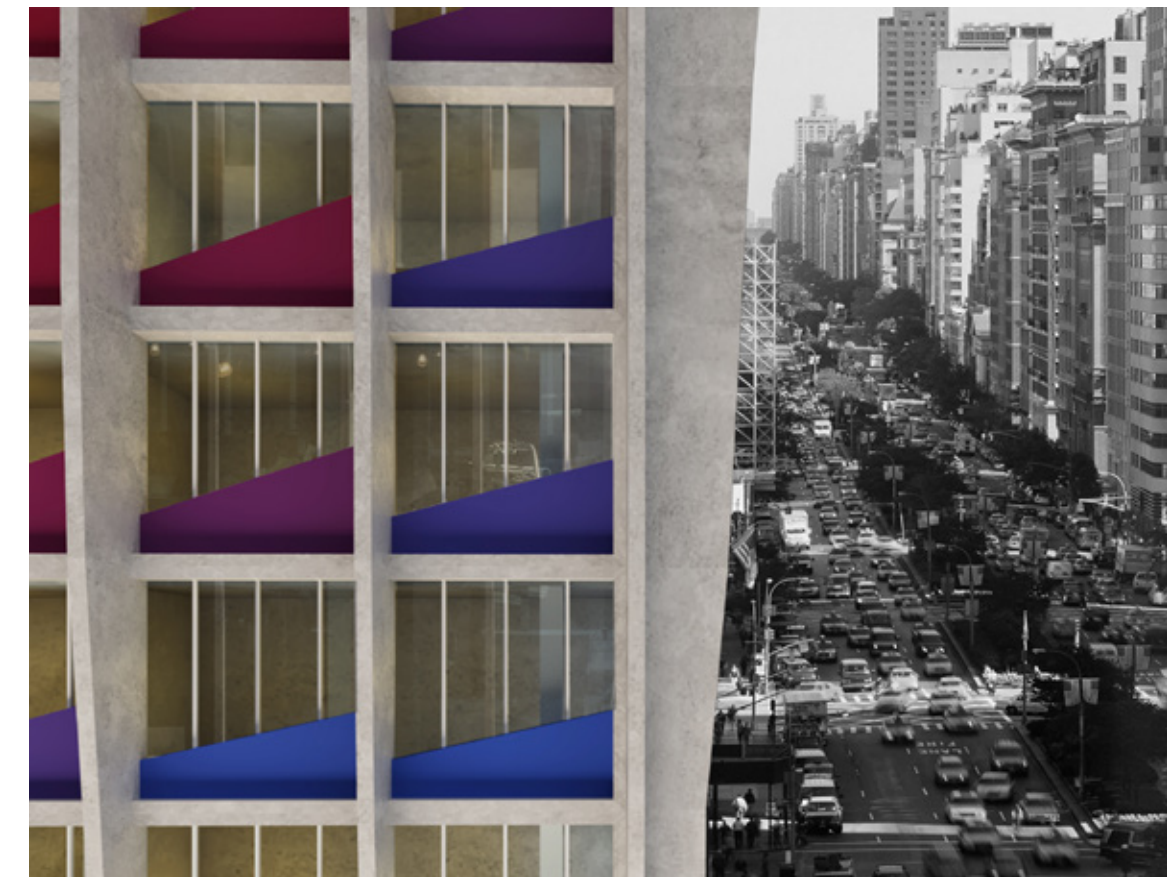
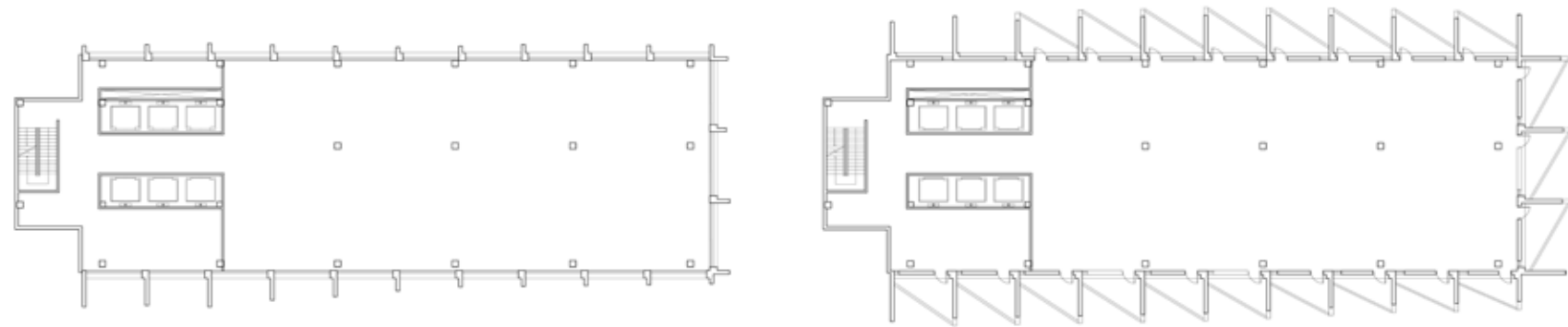
## SUNLIGHT ANALYSIS



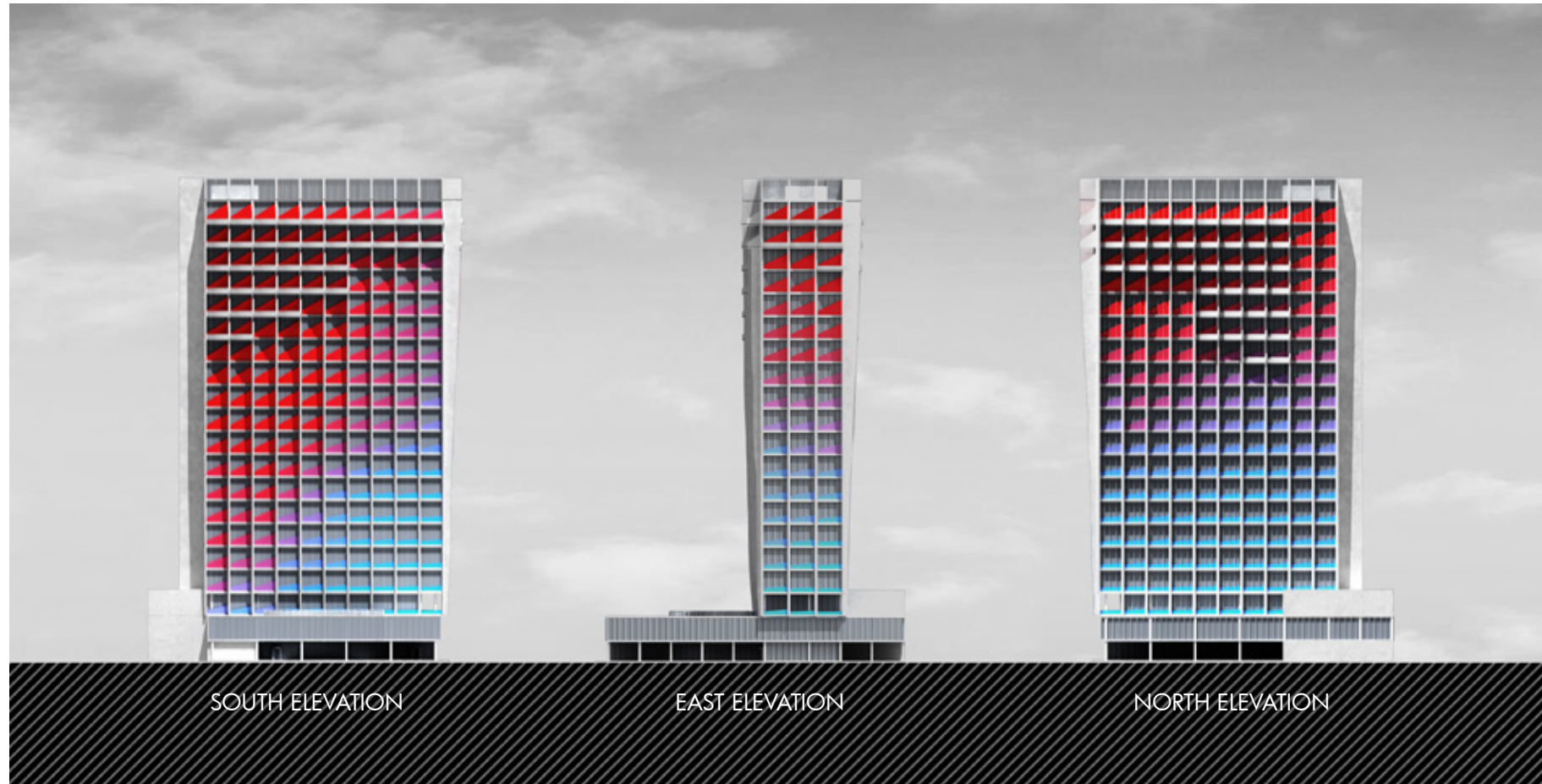
WINDOW SHADING PANEL



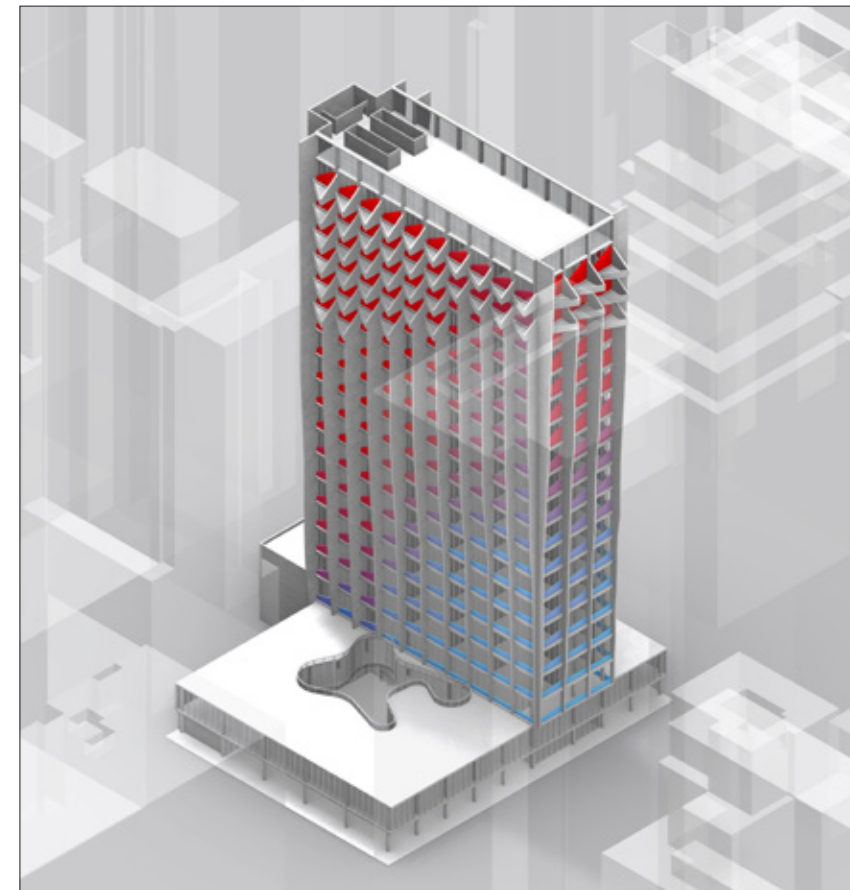
PLAN





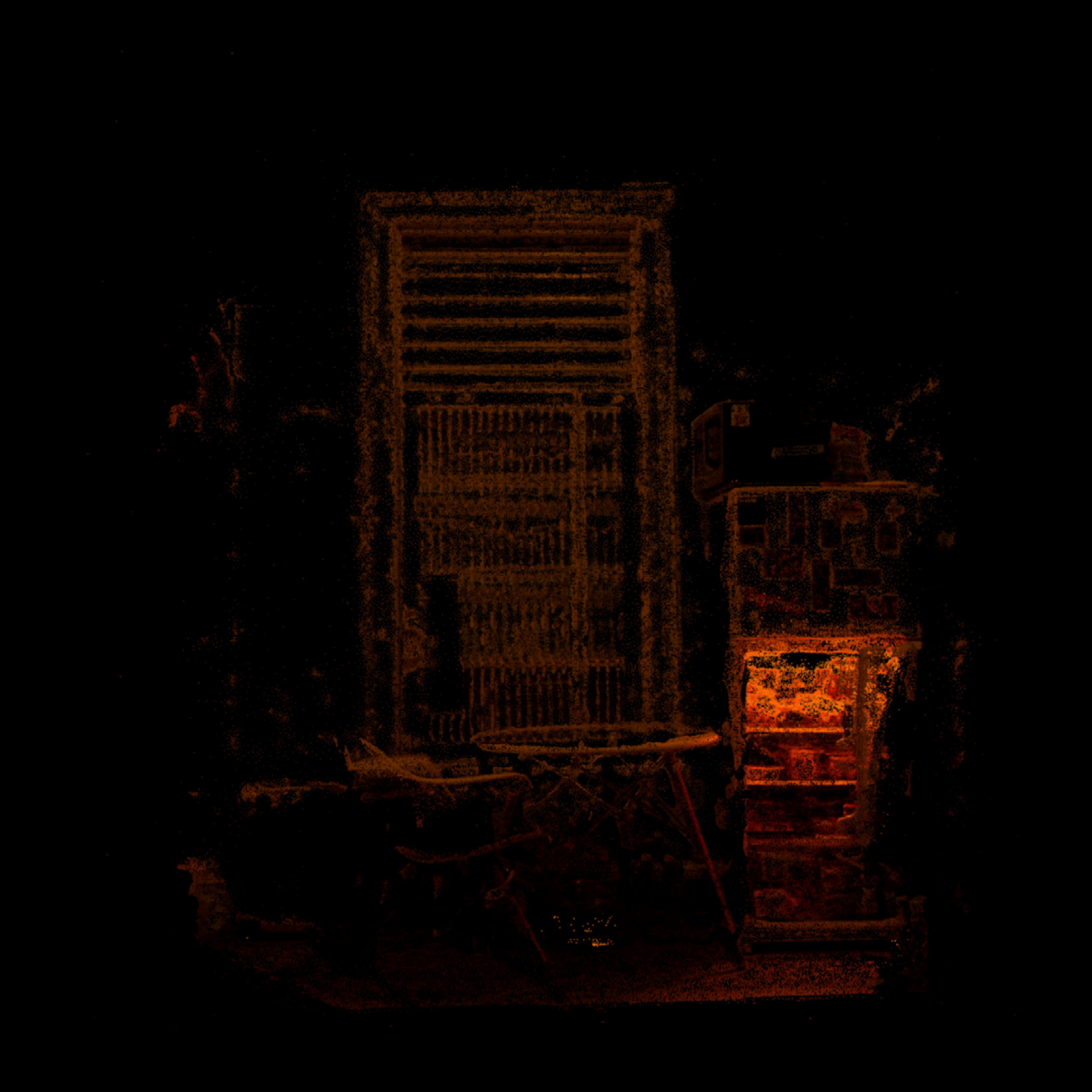


AXON



SECTION





05

## THREE SHEEP'S DAYDREAMING AND REAL LIFE

VIDEOS WITH 3D SCANNING AND AR TECHNOLOGY IN RESPONSE TO THE OUTBREAK OF COVID-19

Nowadays with the outbreak of COVID-19, we have to stay at home everyday and keep social distance with others. The three sheep become an embodiment of me, or us. We want to go outside, meet friends and have parties, but actually we can only "commute" between our bedroom and kitchen, wandering in our fridge repeatedly to decide which would be our food today.

Visual Studies: Tools for Show  
Instructor: Bika Sibila Rebek  
Individual

Software: Reality Capture, Spark AR, Sketchfab, 3D Max, Meshmixer  
Spring 2020/ Manhattan, New York, New York, United States



ORIGINAL OBJECT



3D SCANNING



3D PRINTING

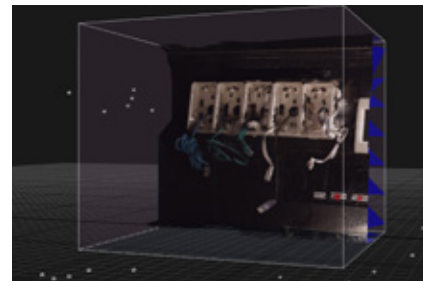
We first started from a small object, using to 3d scan the mini bag and then 3d print it.



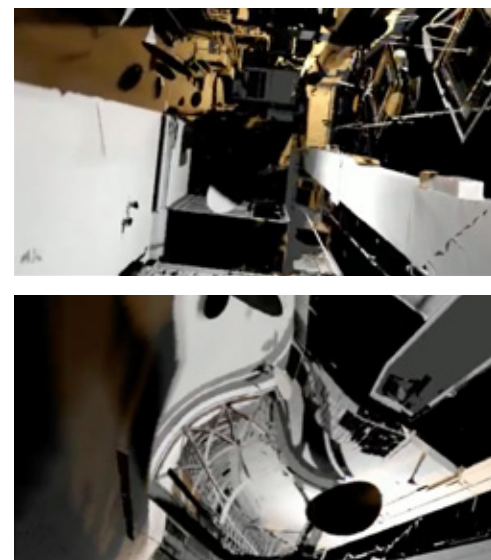
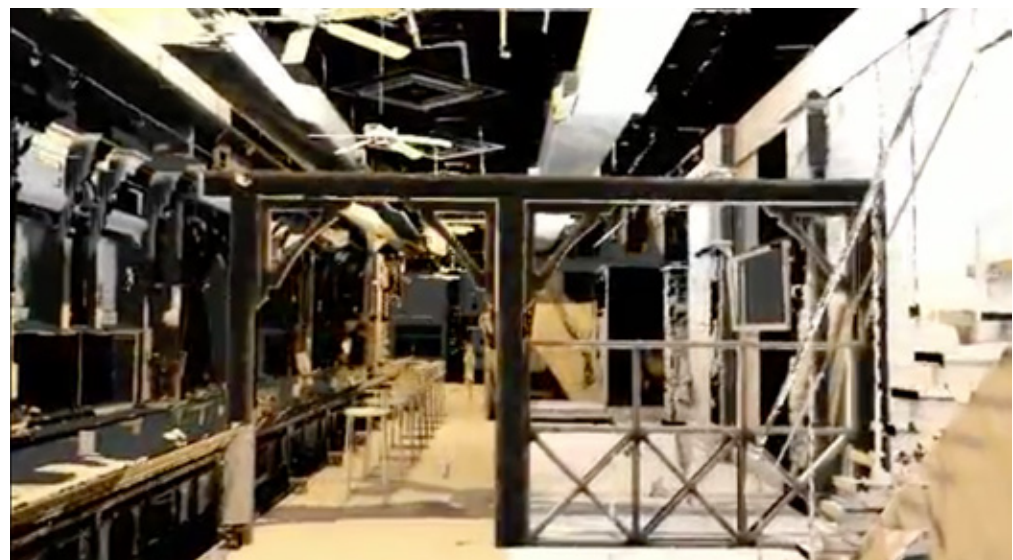
LION STATUE ON CAMPUS



WIRES IN THE PUB



Secondly, we photographed the objects from all the angles and then used RealityCapture to get the 3D model of them.



<https://www.youtube.com/watch?v=0CunbjPlrXI&feature=youtu.be>

We 3D scanned the whole pub and then we made the video based on the concept of surreal, composed of zero-gravity, twisting, fragmented world.

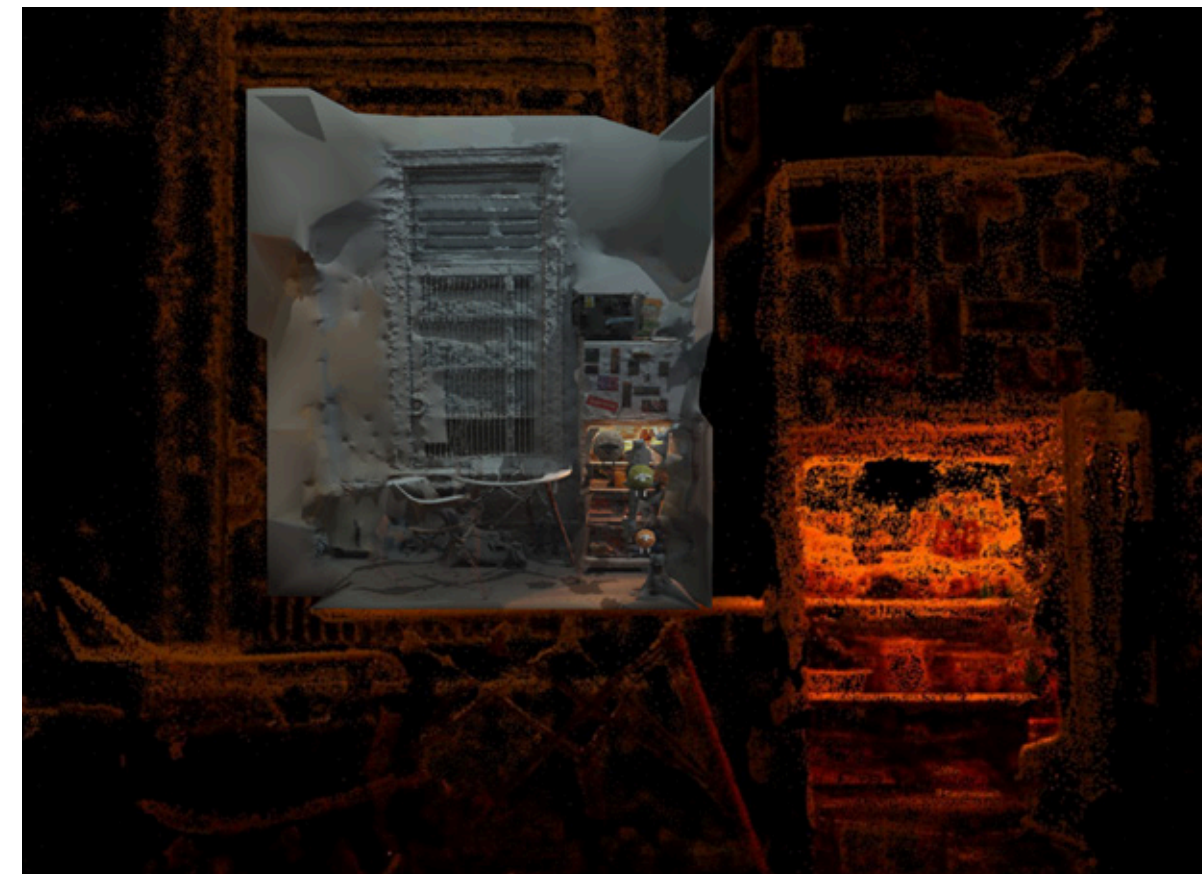
With the Outbreak of COVID-19, we could not have an exhibition any more, so we did these funny videos to memorize these days instead...



<https://www.youtube.com/watch?v=i6hX478Qknk>

### THREE SHEEP'S DAYDREAMING

We can no longer gather around with our friends and have parties during the outbreak. So in my AR video, I want to free my three sheep fridge magnets. Now my studio has become a big magnetic space. When every sheep is here, the party begins. They can dance together and jump to wherever they want, like inside the fridge for food, onto the dining table, or even on my bed and pillow. Being free to go wherever we want might also be our wish when NYC is safe again.

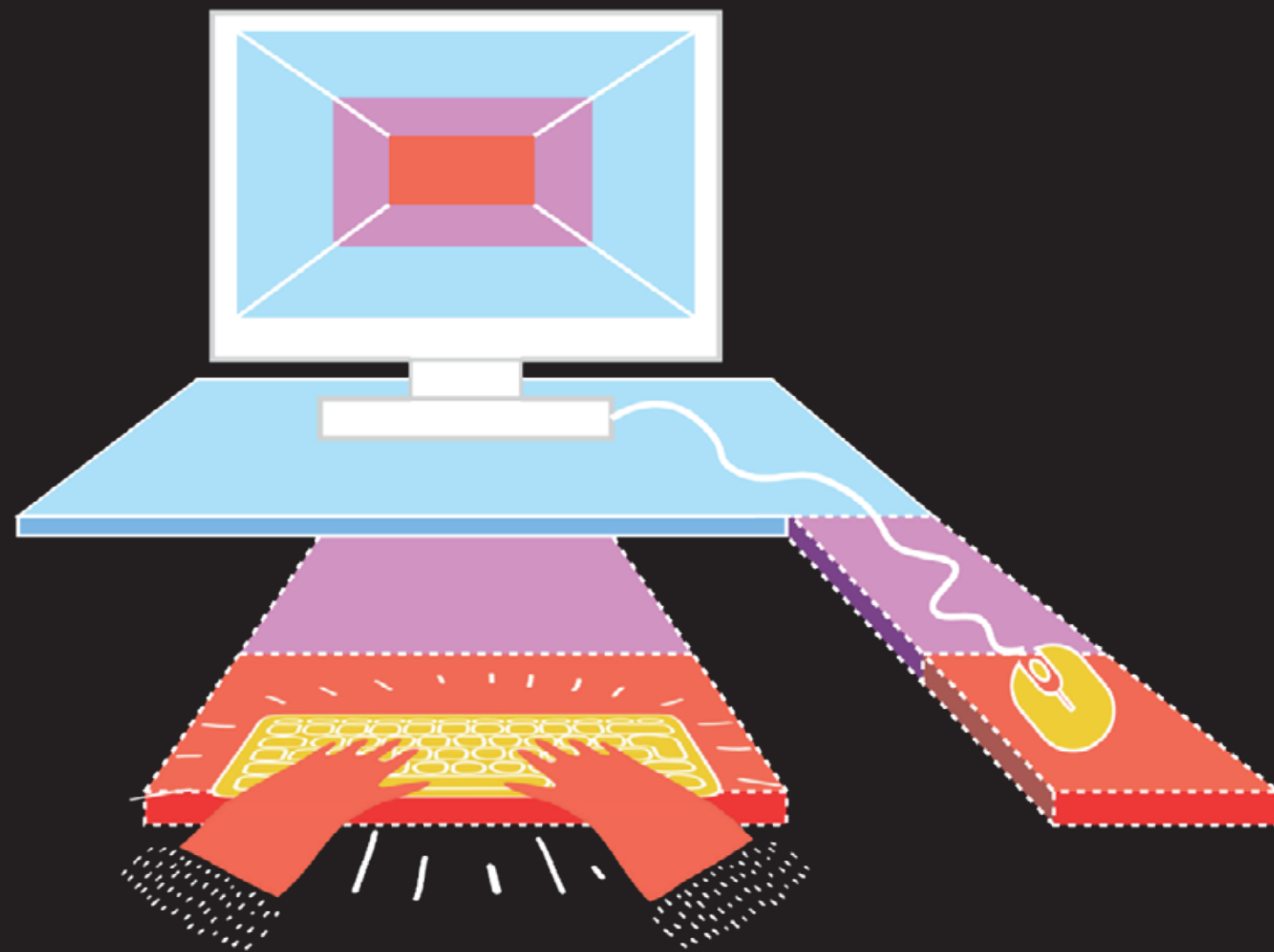


<https://skfb.ly/6RMYN>  
<https://skfb.ly/6SxPt>

### THREE SHEEP'S REAL LIFE

The point cloud of the fridge shows the luminous food in the fridge, which shows that with the outbreak, we have to stock food for few weeks each time, which makes my fridge colorful than ever.

Like the three sheep, my real life is that I can only 'commute' between my bedroom and kitchen these days, wondering in my fridge repeatedly to decide which would be my food, as there are too many choices with the diversified food I stock.



06

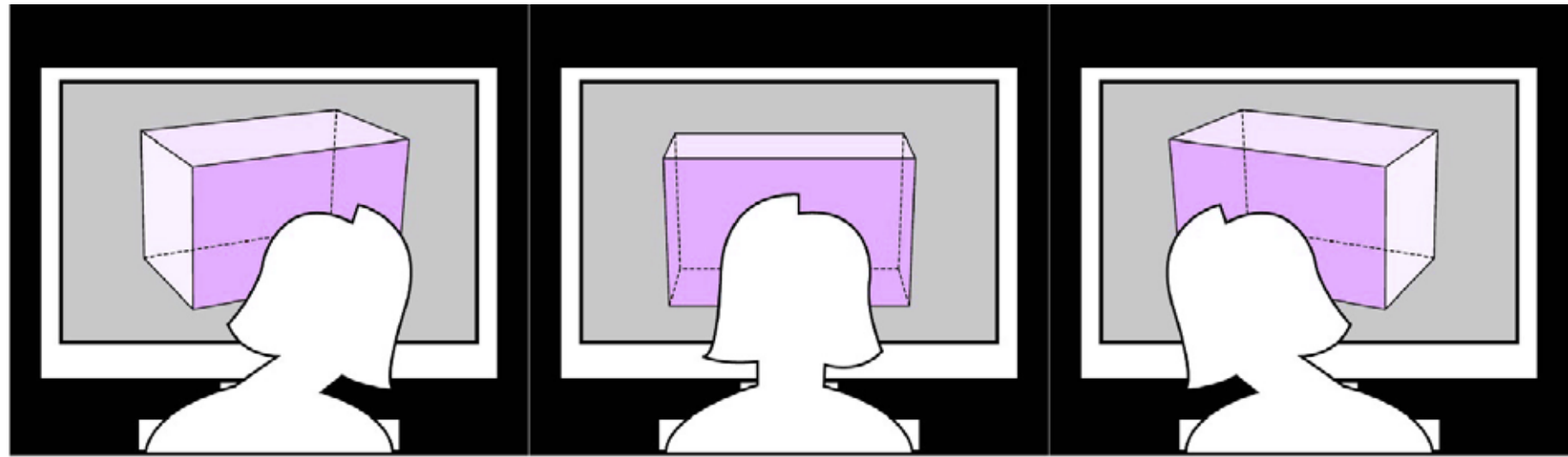
## CONTROL RHINO WITH BODY

INTERACTIVE DESIGN BETWEEN BODY AND RHINO

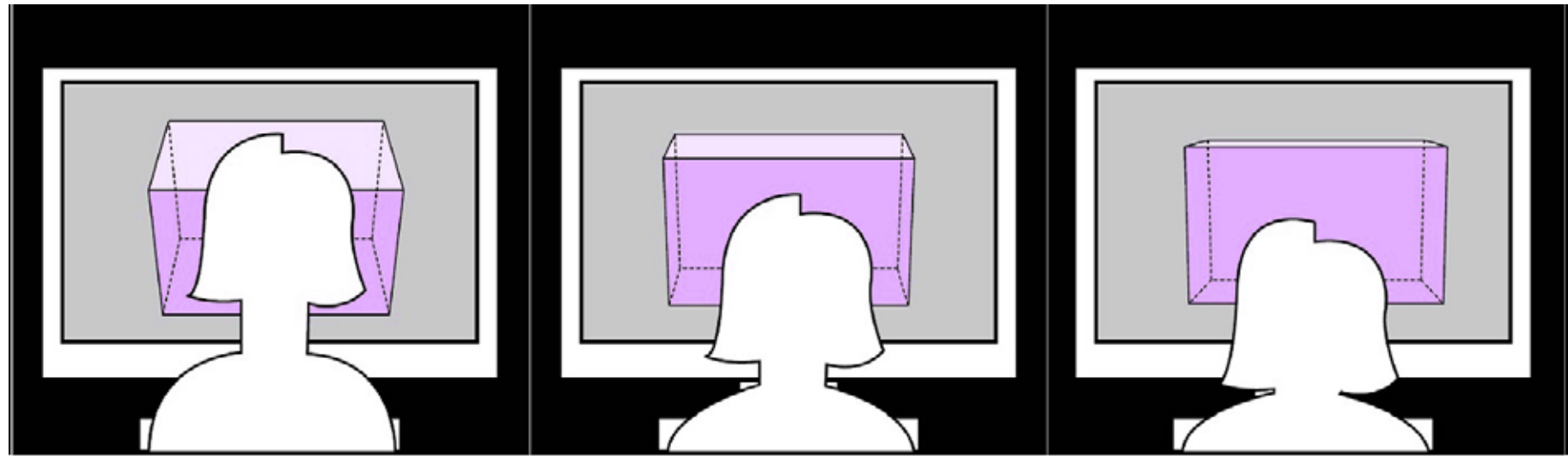
Our tool intend to introduce body movement to designing, modeling and presenting process, transforming architects' tedious workflow.

Hopefully, our tool will bring a brand new working environment to architects to embrace this interaction — larger individual working space for the body movements and innovation of flexible furniture for architects. Besides, our tool creates possibilities for a much more vivid presentation which can provide an immersed experience for the clients.

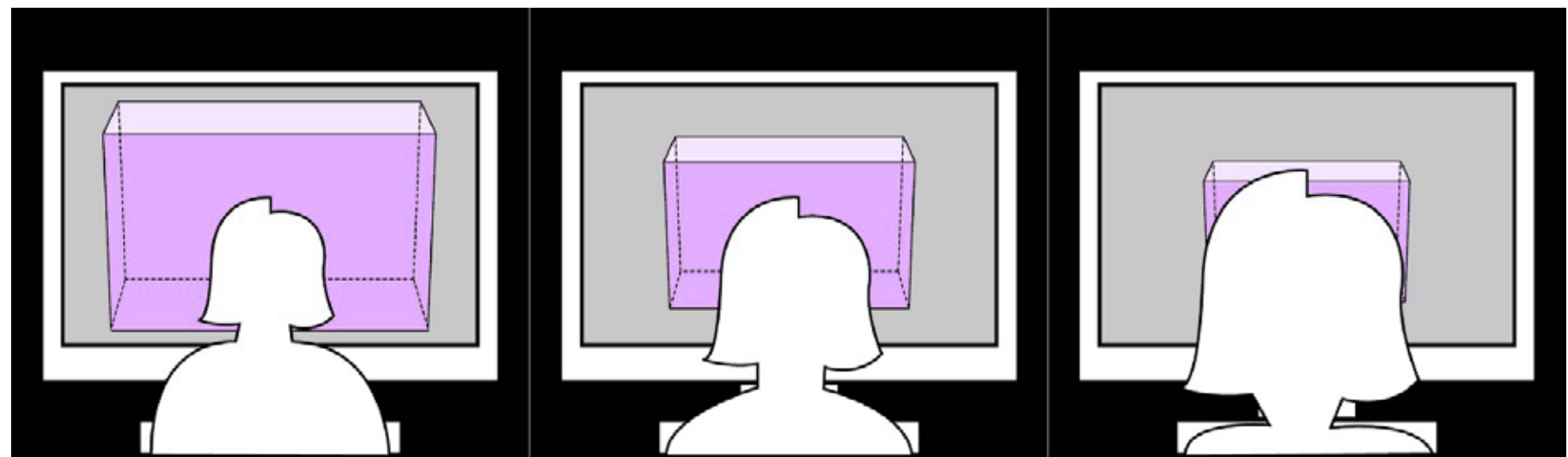
Visual Studies: Metatool  
Instructor: Dan Taeyoung  
Teamwork with Zifan Zhang, Han Zhang  
Software: Rhino, Grasshopper(Plug-ins: gHowl, Human, Flounder Camera Control, Interactool...), Allustrator, Indesign  
Fall 2019/ Manhattan, New York, New York, United States



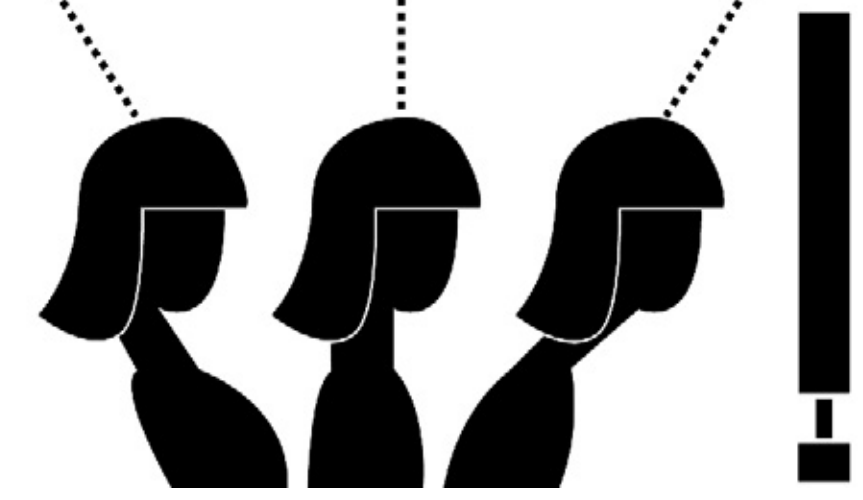
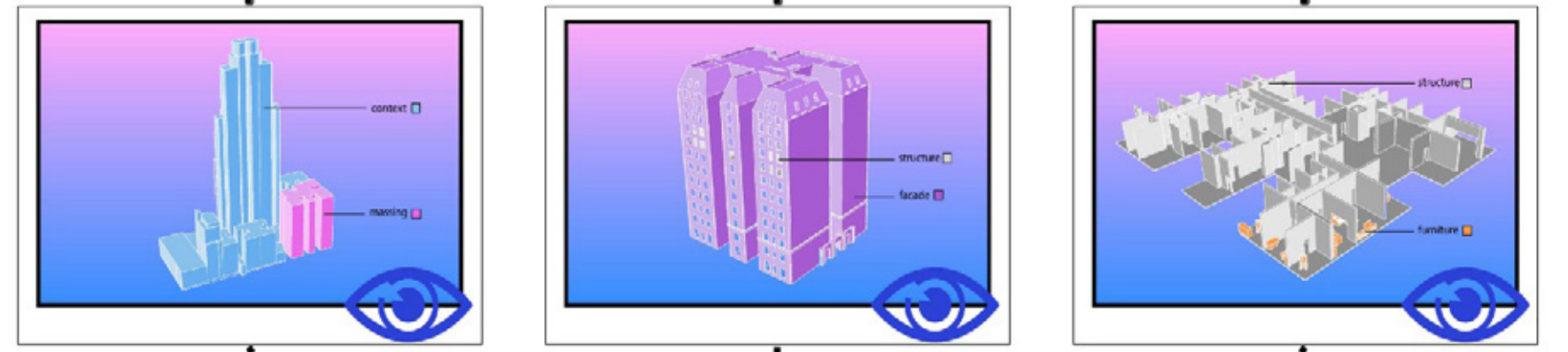
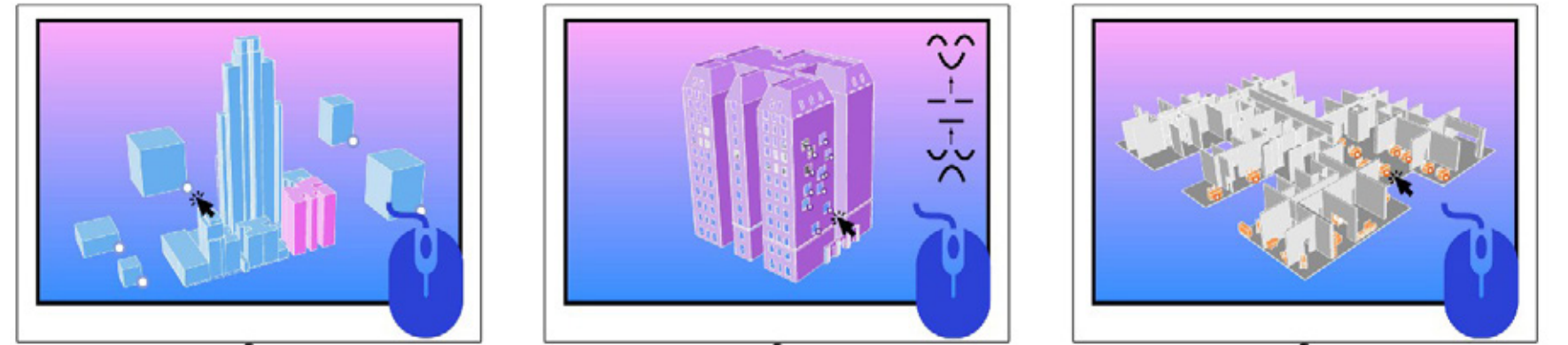
right ← → left



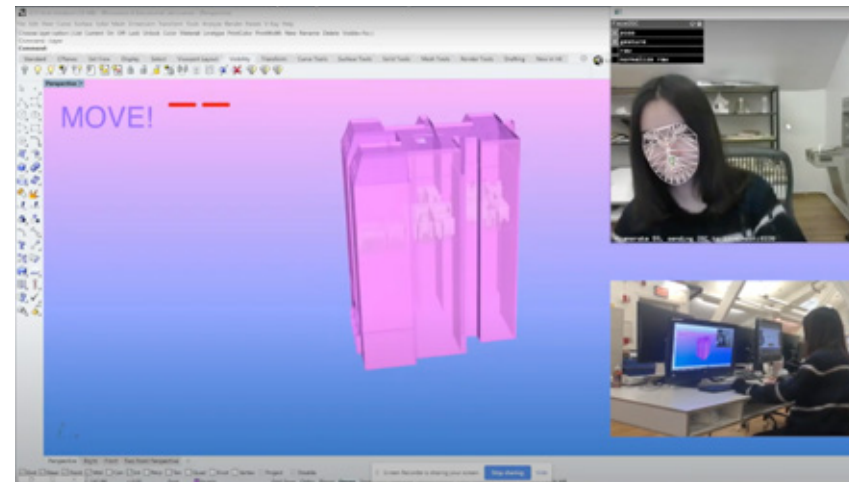
up ← → down



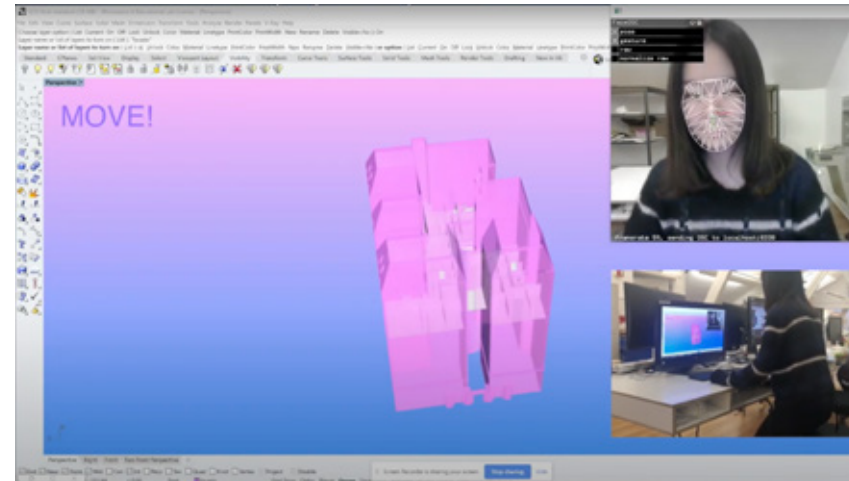
close ← → far



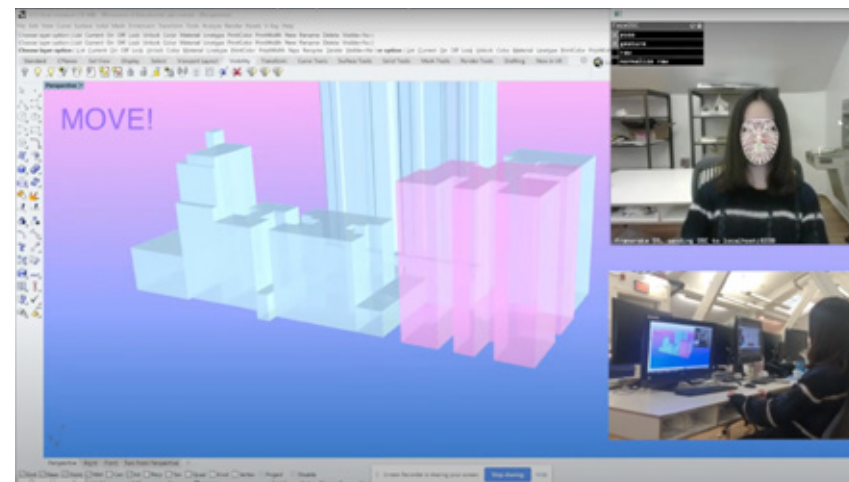
RIGHT! LEFT!



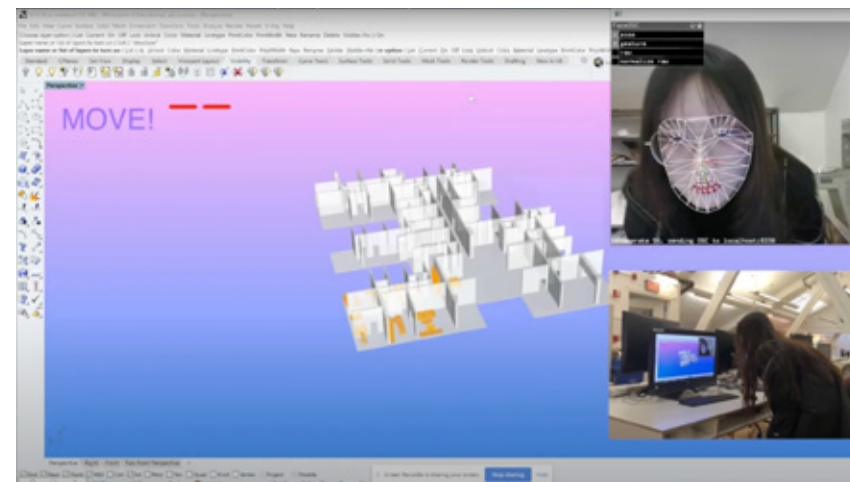
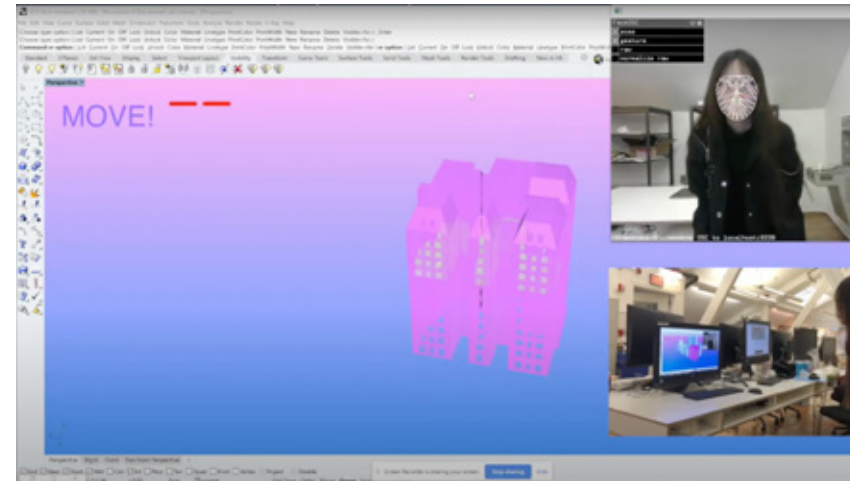
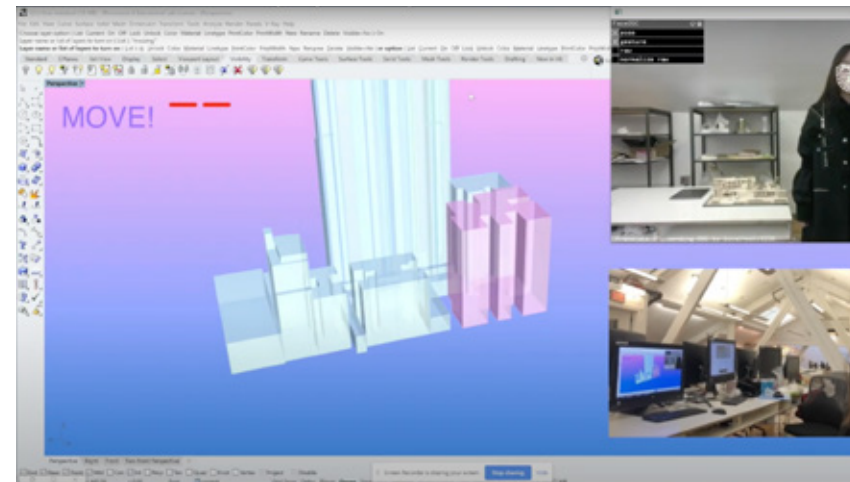
UP! DOWN!



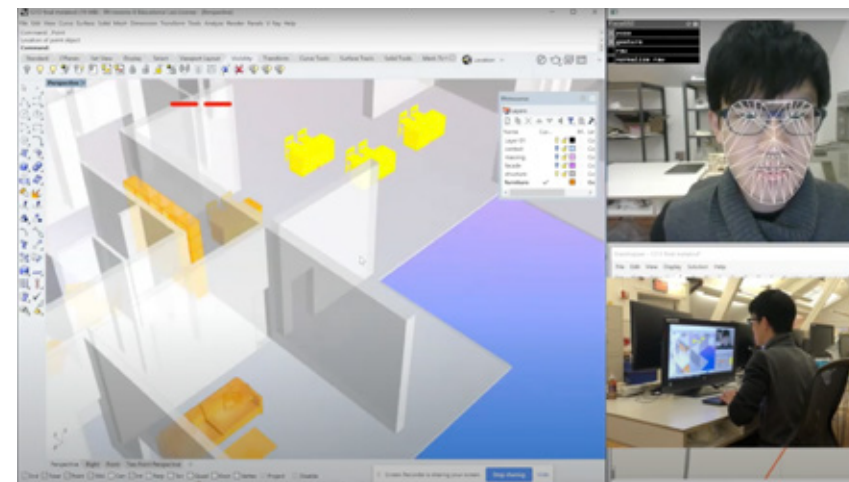
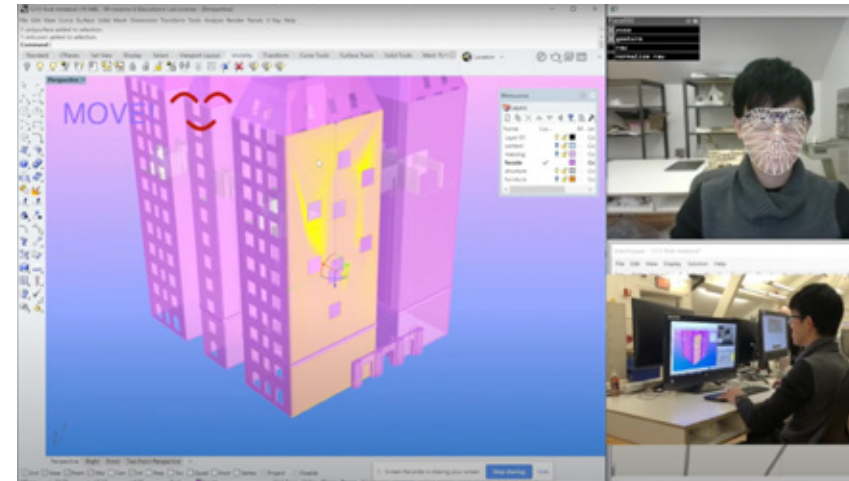
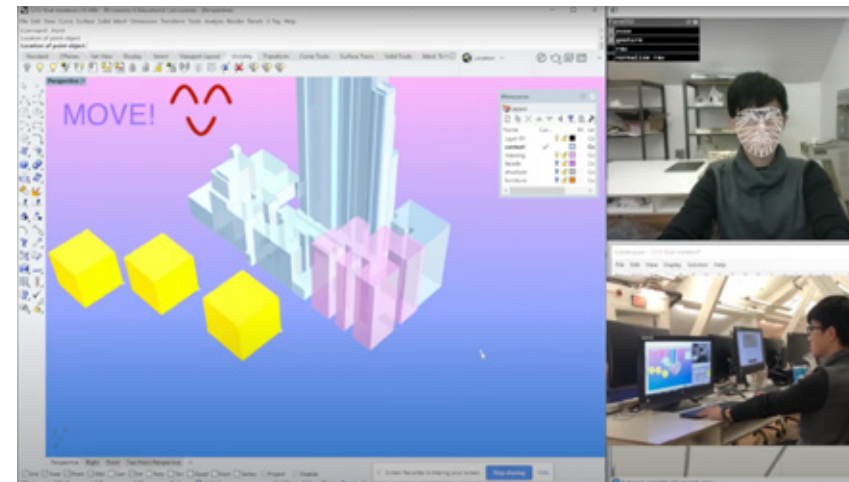
ZOOM IN! OUT!



FREESTYLE



MODELING AT DIFFERENT SCALES



Youtube Link:  
[https://www.youtube.com/watch?time\\_continue=5&v=cTKTwnJpHME&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=5&v=cTKTwnJpHME&feature=emb_logo)

Our tool is mainly composed of three types of body movements — moving right or left, moving up or down, moving close or far. Architects can use body movements to change perspectives, freeing them from mouse-addicted workflow. An innovative workflow with vigorous interaction between physical interfaces and computational design can be expected.

Based on the three prototype, we go further with the last one. The turning on and off of layers will be automatically triggered with the changing of the distance between face and computer to simplify workflow. To be specific, there will be three levels — urban level with layer 'context' and 'massing' turning on, building level with layer 'massing' and 'facade' turning on, interior level with layer 'structure' and 'furniture' turning on.

With same order of point, different elements can be created. In urban level, architects can create context massing ; in building level, architects can create windows on the walls; in interior level, architects can create furniture.

To make it more fun, we connect the window opening rate to the expression of the face on screen. When the rate is high, there will be a happy face; when the rate is low, you will see a sad face.



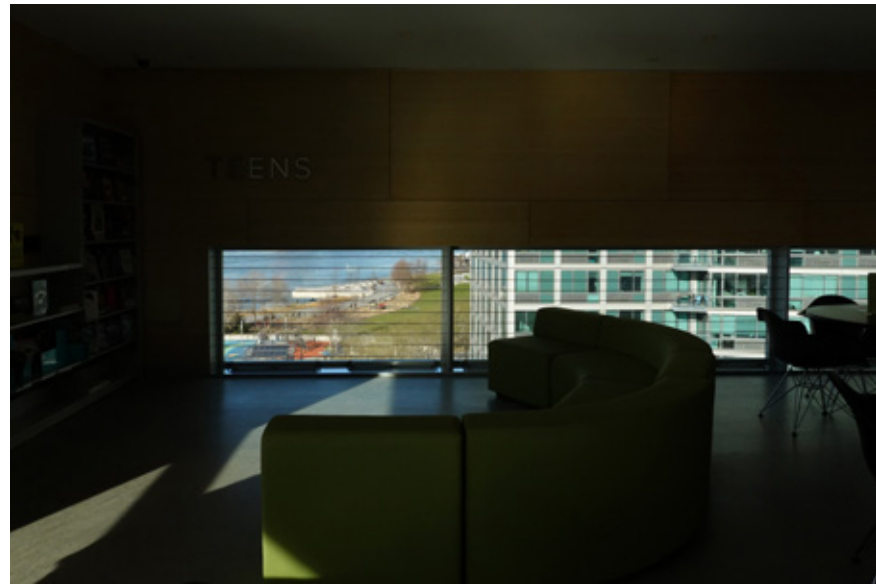
07

## THE MOMENT

THE CUTE MEMORIES WHEN TAKING THE PHOTOS

It is not only about the photos and photography, but also about all those shiny self-declared trips we took, about all those shiny memories and about all those shiny friends I made here.

Visual Studies: Architecture Photography  
Instructor: Michael J. Vahrenwald  
Individual Work  
Software: Photoshop, After Effect  
Fall 2019/ Manhattan, New York, New York, United States



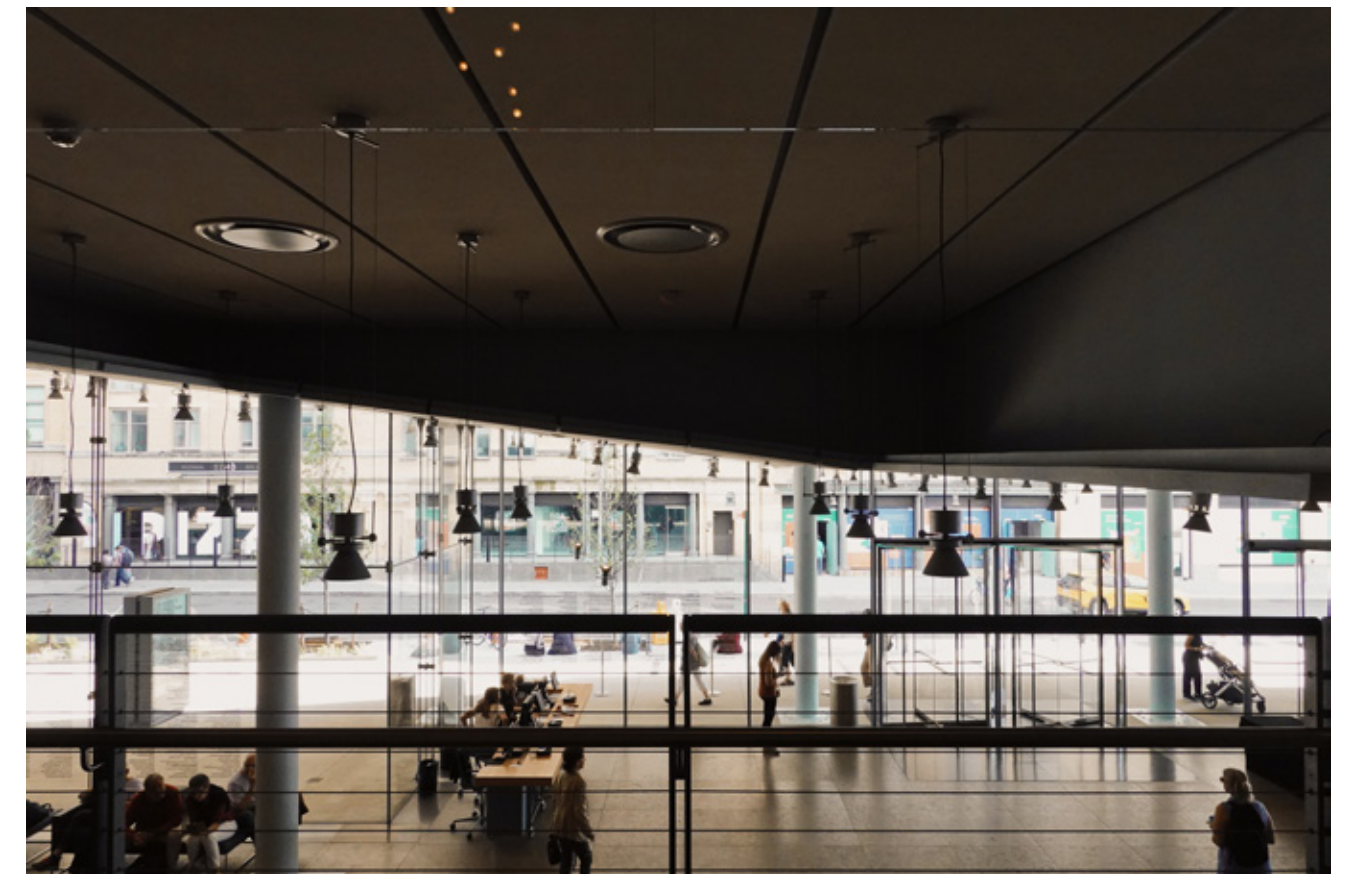
'FRAME'

Took in Hunters Point Library  
12/12/2019

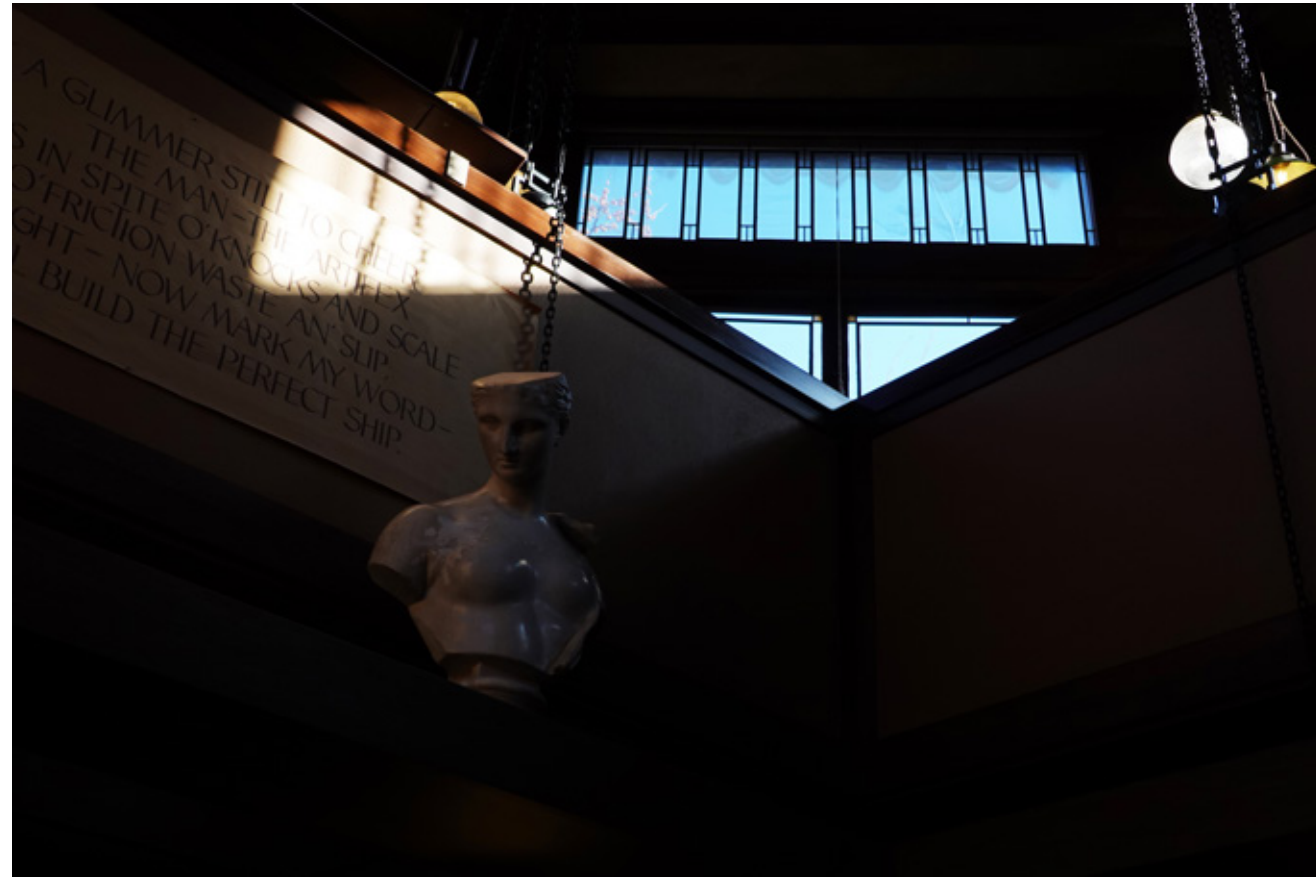


'HALF'

Took in Whitney Museum  
of American Art  
09/11/2019

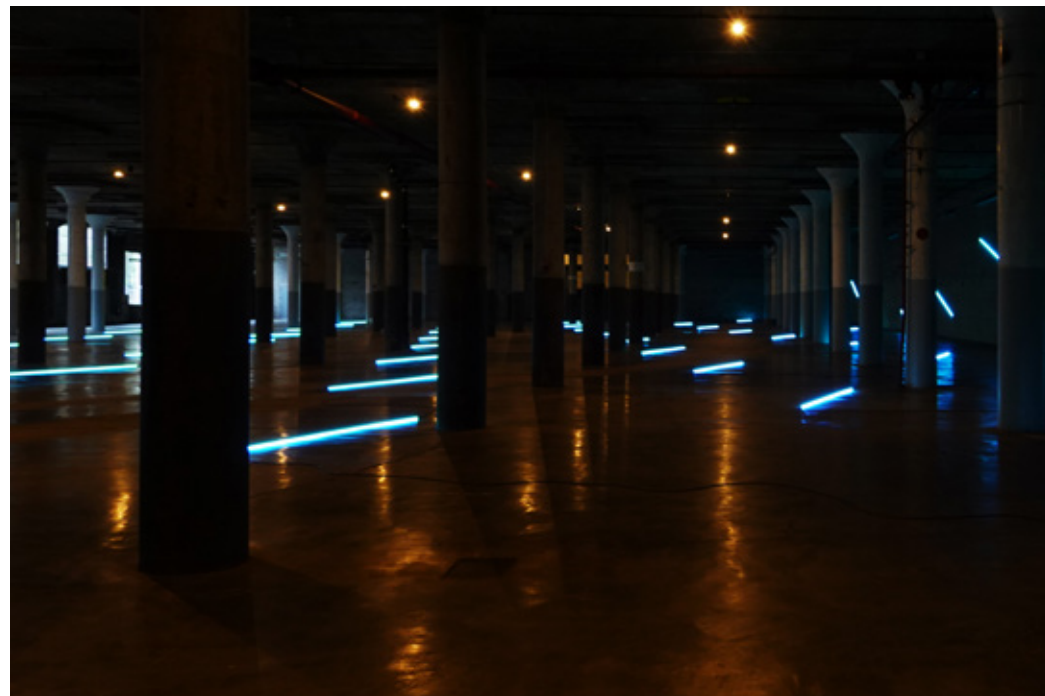






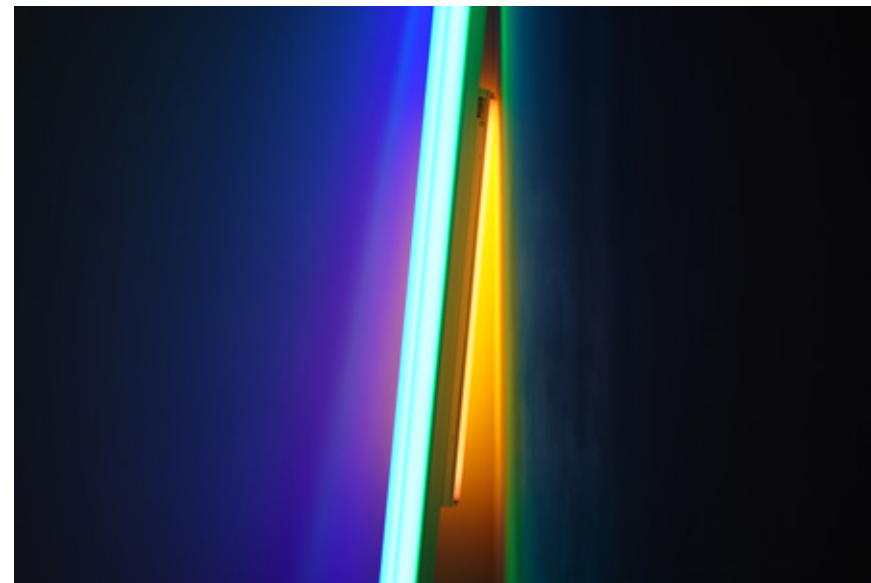
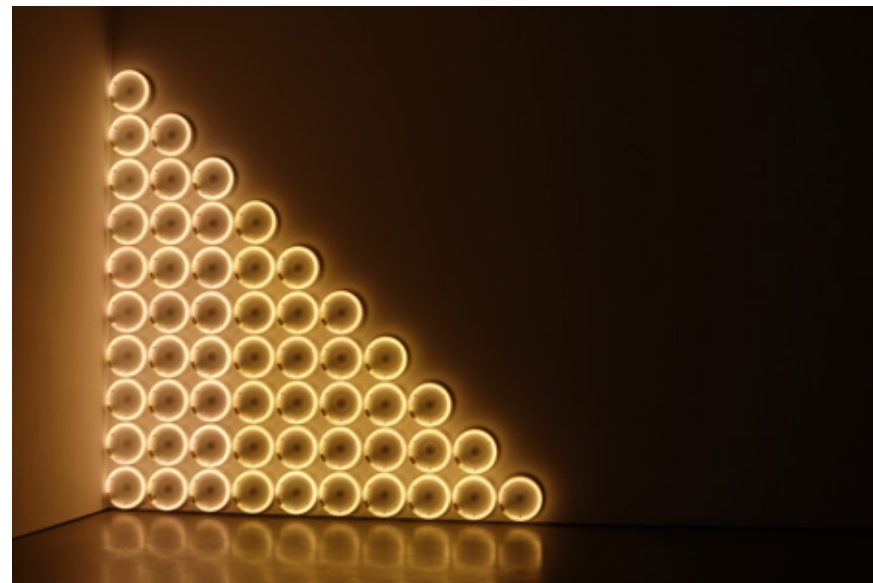
'PATTERN'

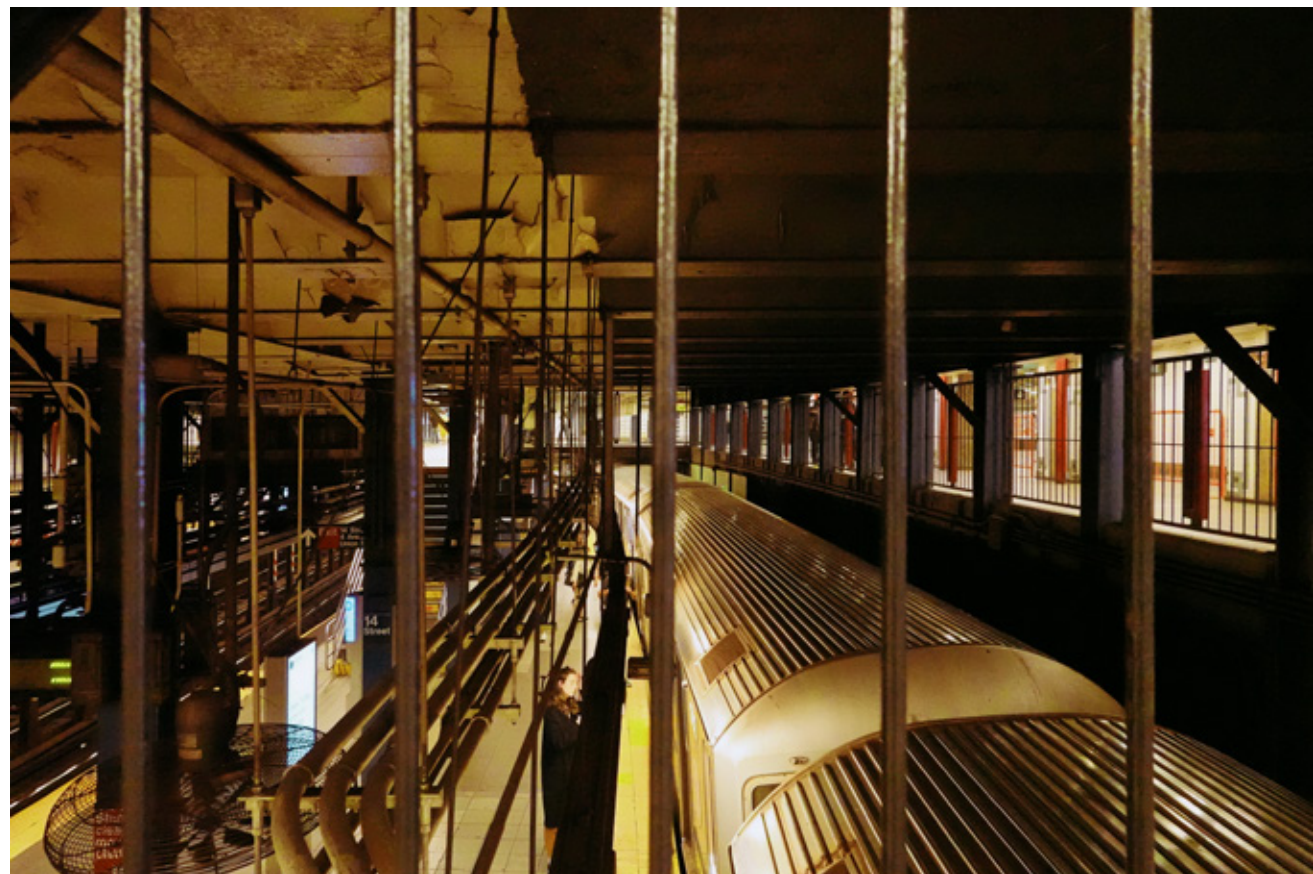
Took in Frank Lloyd Wright Home and Studio  
11/05/2019



'COLOR'

Took in  
Dia: Beacon  
10/06/2019



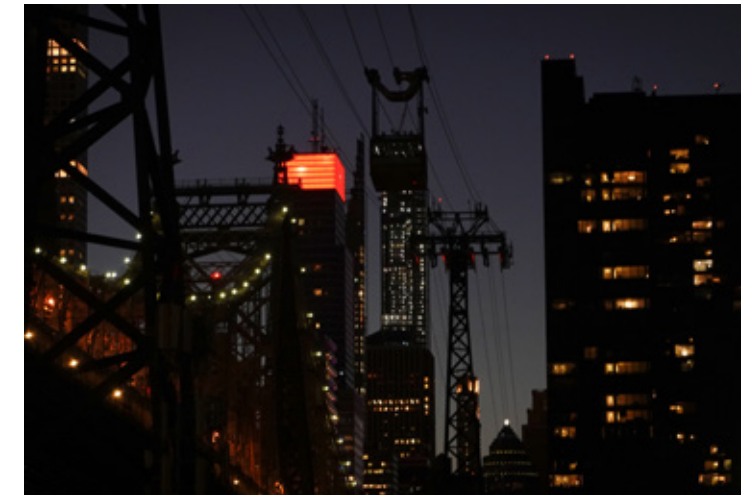


'YELLOW'

Took in 14 Street Subway Station

'RED'

Took in Random Street in Roosevelt Island, Manhattan and Brooklyn



'REFLECTIONS'

Took in Saks Fifth Avenue  
09/27/2019

'STUDIOS'

Took in Avery Hall  
2019 Summer - 2020 Spring



'SUMMER'



'SPRING'



TO BE CONTINUED...



'FALL'

