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# JOY L ZOU

architecture  
landscape  
portfolio 2022



This portfolio contains selected works from my Master of Architecture program at the University of Michigan, Bachelor's degree majored in Landscape Studies at the University of Hong Kong, and professional works at SWA.

World as kaleidoscope, architect as designer. I believe architecture cares the cohesiveness of every component on the earth — the environment, social issues, building, and most importantly, human beings. With a background in landscape, I perceive architecture from a broader context and down to furniture scale.

Arranged in the order of scale, my works present a series of design projects varied in topic, strategy, form, and media. Installations and personal works illustrate my interest in making artifacts through interaction with people.

鄒丹葉  
Joy L Zou

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01.

# Screen Courtyard

ACADEMIC . Architecture

3 People Group Work  
(with Jie Feng, Yuxin Ma)

M.Arch Taubman College  
University of Michigan

Fall 2021

Instructors  
Kit McCullough, Michael Kennedy

Detroit

Screen Courtyard respects the human need for different degrees of intimacy and explores the possible sequence of spatial settings that allows gradient activities for both public and private individual space, programs, patterns, and partitions, it tailors the transition of social experience from public streets, to inner courtyards, to buildings, to floors, and to units. This gradient of intimacy stitches diverse activities on the site and ensures everyone can choose a comfortable position on the gradient.

Screen courtyard also recognizes the changing needs for the living environment of the young professional generation. It investigates the prevalent work-life living conditions and the desire for flexible living space to accommodate the ever-shifting household size.

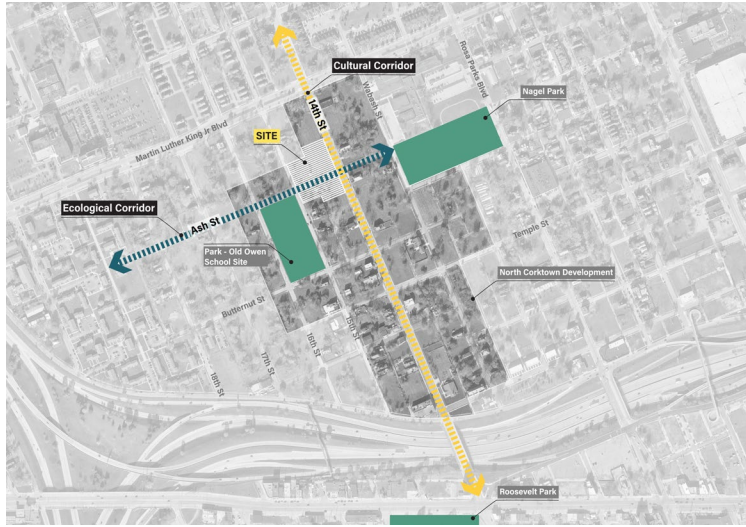
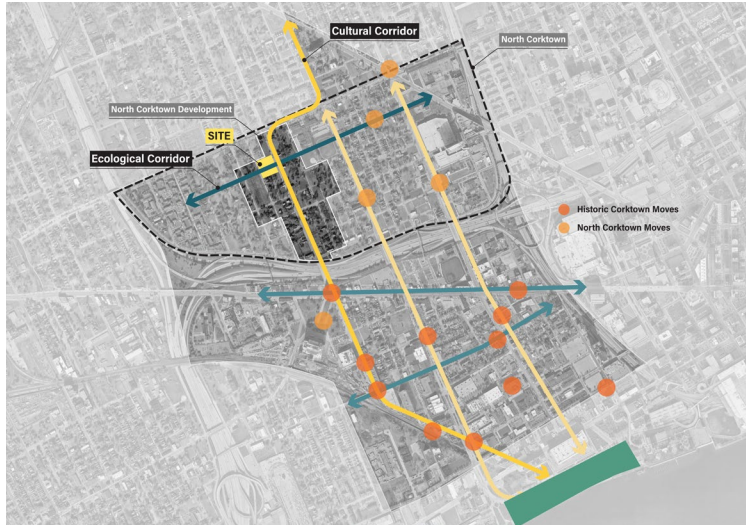


Model: Jay Zou ; Illustration: Jie Feng

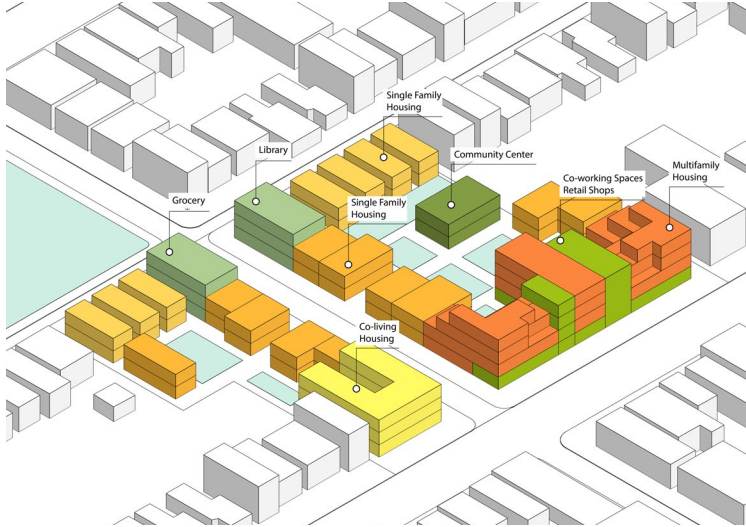
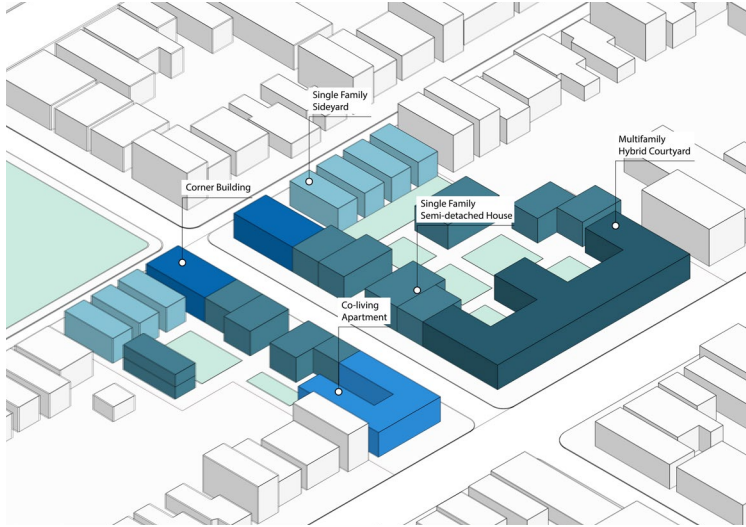




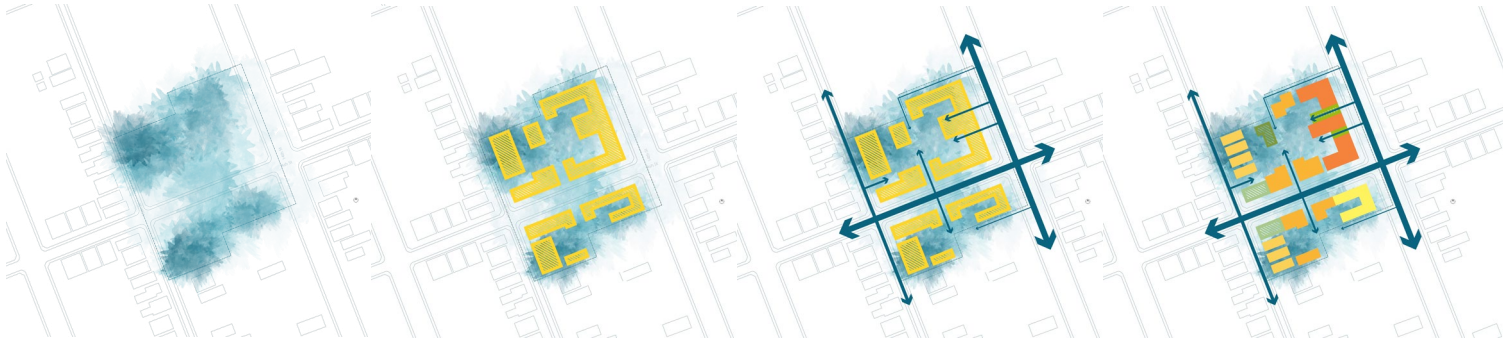




Site Analysis



Residential Building Types



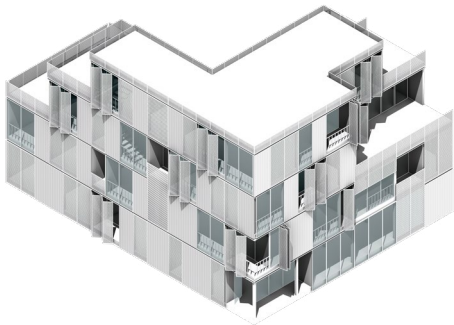
Intimacy Gradient Map



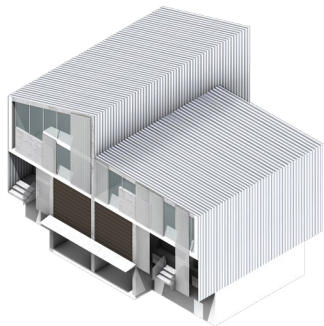
Screen Courtyard is located in North Corktown, a neighborhood in Detroit. North Corktown and Historic Corktown neighborhoods comprised the Greater Corktown Planning Framework, a plan launched in 2019. It is aiming at promoting the growth of Detroit's oldest neighborhood and preserving its culture and characteristics. By using the existing streets, blocks, shops, and parks as the structure for future development, the plan is looking to attract new and existing residents, businesses and visitors. The vision of Screen Courtyard is to provide long-term and short-term accommodations to a neighborhood with diverse generation groups, household types, and living conditions. These include the young blood attracted by the opportunities and their shifting household size and the existing residents.

Two significant axes come across the site of Screen Courtyard. 14th street is identified as the Cultural Corridor that connects the old Owen School Site and Roosevelt Park. Street improvements are proposed to upgrade the infrastructure. Ash Street is the Ecological Corridor that connects existing community-managed open spaces and prioritizes ecology, pedestrian safety, and active transportation.

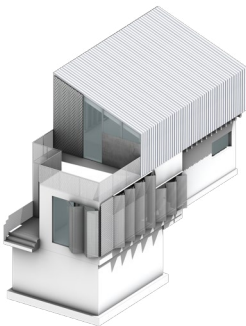
Based on the site analysis, intimacy gradient is mapped out within the site boundary. 14th Street interface is public-oriented, while Ash Street serves as a neighborhood interface, 15th Street has the highest need for intimacy. Building footprints are laid out on the edge of the site to form enclosed courtyards for residents.



Multifamily Hybrid Courtyard (rental)



Single Family Semi-detached House (ownership)



Single Family Sideyard (ownership)

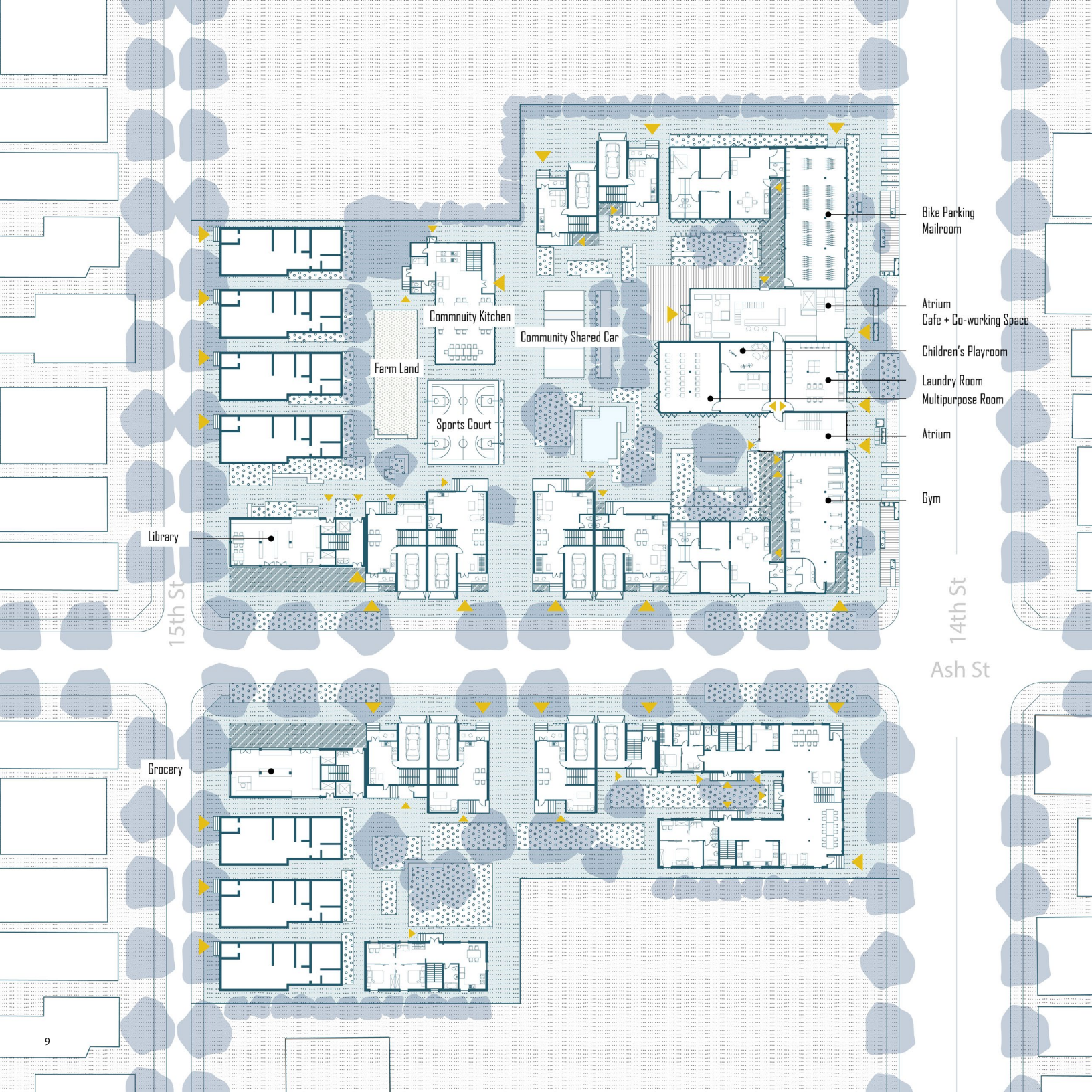
The entire site is comprised of 4 types of residential building - multifamily hybrid courtyard, single family semi-detached house, single family sideyard, co-living apartment - and 1 type of corner building. This project mainly focused on developing the north side of the whole site.

Multifamily Hybrid Courtyard is aimed at serving the younger professional generation with smaller household sizes. It accommodates 18 units with 6 floor plans (10 one-storey and 8 two-storey units) that range from 630 SF to 1250 SF. All units have movable partition walls for residents to redefine the space according to their needs. For instance, a 1-bedroom unit can be reorganized into a live-work studio, or a 3-bedroom unit can become a 4-bedroom or a 2-bedroom live-work unit.

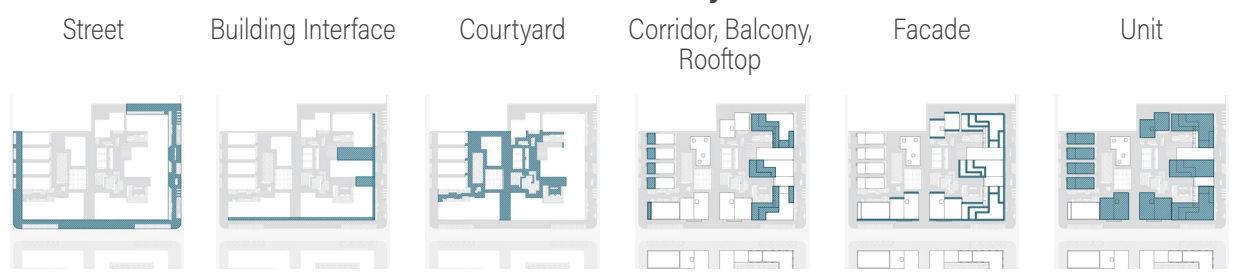
The ground floor of the Multifamily Hybrid Courtyard has functional spaces that support the domestic activities of the residents. Two glass atriums contain open floor retail stores and co-working spaces that distinguish them from residential buildings.

Semi-detached House and Sideyard offer affordable home ownership for households looking for permanent residency.





Six Shades of Intimacy Gradient







## Street

Different strategies are used to tackle the more public corner at 14th street, and the less public Ash and 15th street.

The shaded corridor at the 15th and Ash St corner provides outdoor seating for social activities related to the library.

Model: Joy Zou, Jie Feng ; Illustration: Jie Feng



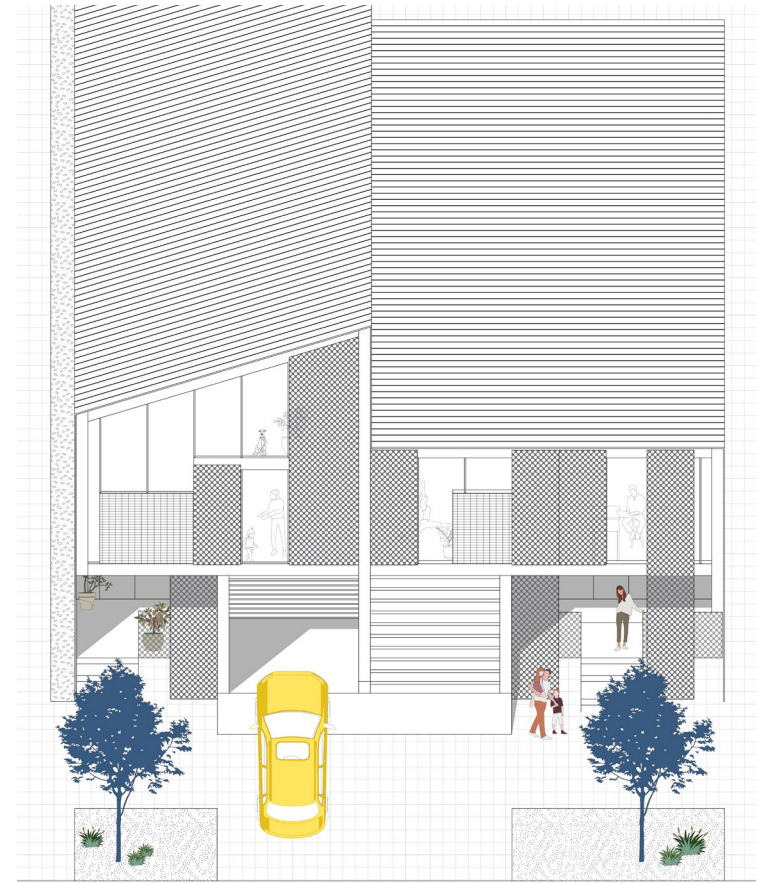
## Building Interface

Building interfaces are important transition from street to the inner neighborhood. Different edge conditions are designed for different streets. Two glass atriums connect street with the inner courtyard.

Model: Joy Zou, Yuxin Ma ; Illustration: Jie Feng



14th Street - Cultural Corridor



Ash Street - Ecological Corridor





### Courtyard

The inner courtyard breaks the boundary of the traditional individuated backyards of different residential buildings. The large courtyard provides different programs and activities that connects all residents.

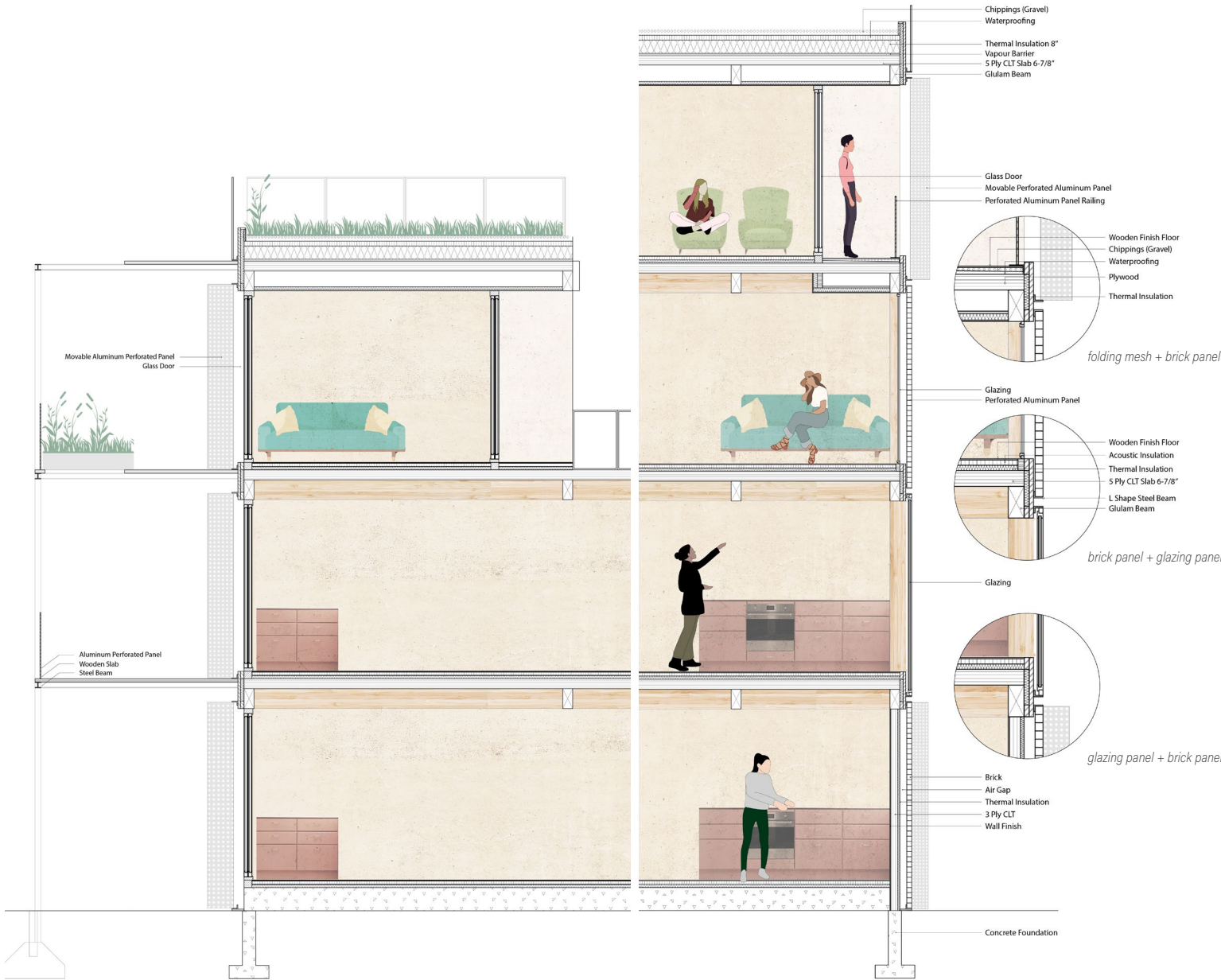
Model: Joy Zou, Jie Feng ; Illustration: Jie Feng



### Corridor, Rooftop, Balcony

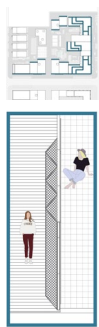
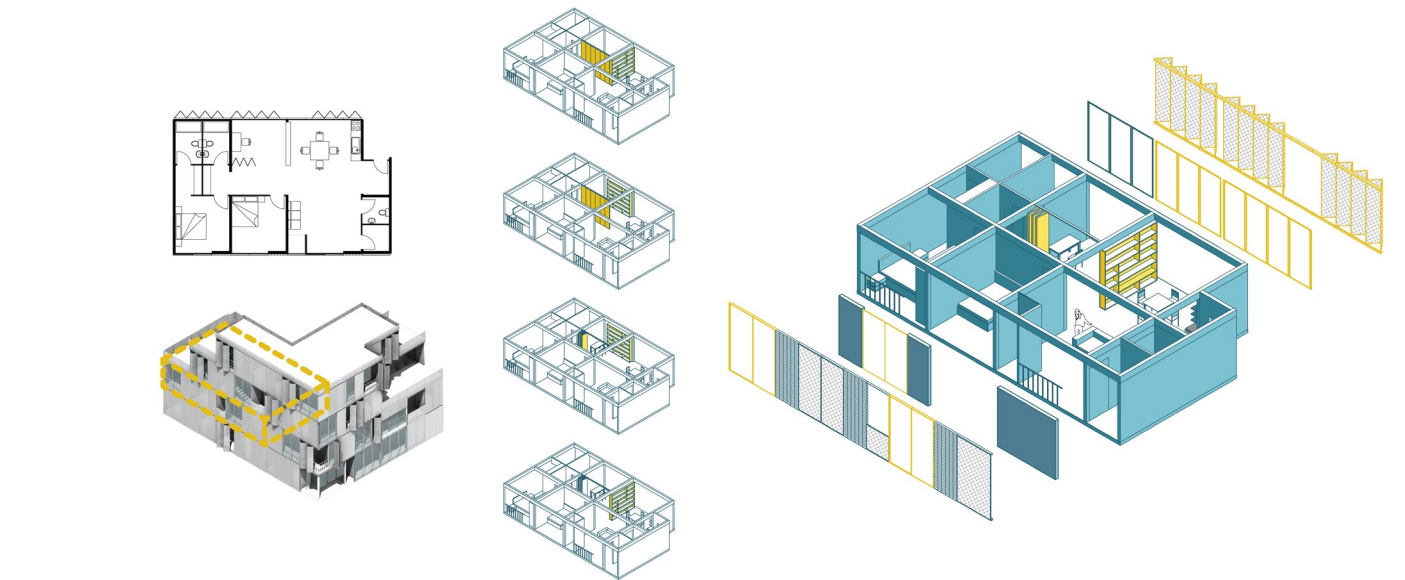
Levels of shared spaces provide vertical accessible green space for both communal and private use. The green screen and balcony can act as a visual filter which contributes to the intimacy gradient.

Model: Joy Zou ; Illustration: Jie Feng



Attached steel structure (corridor) + CLT structure (building)



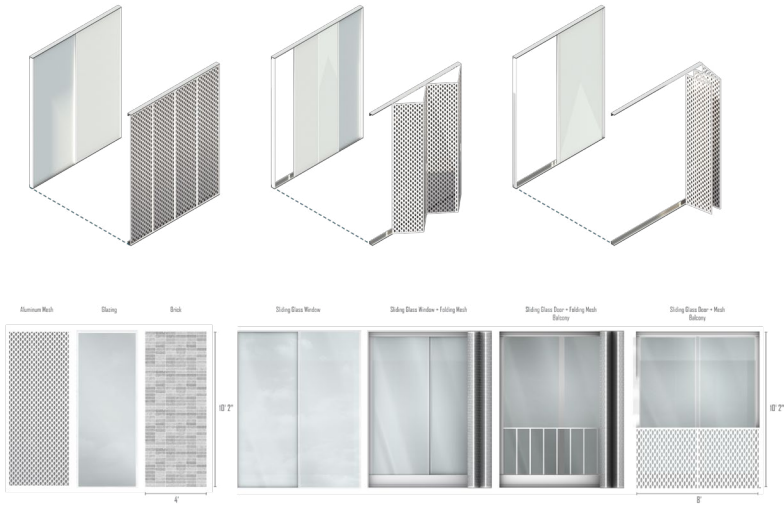


## Facade

Facade is the separation of privateness and the screen that blocks views from the outside.

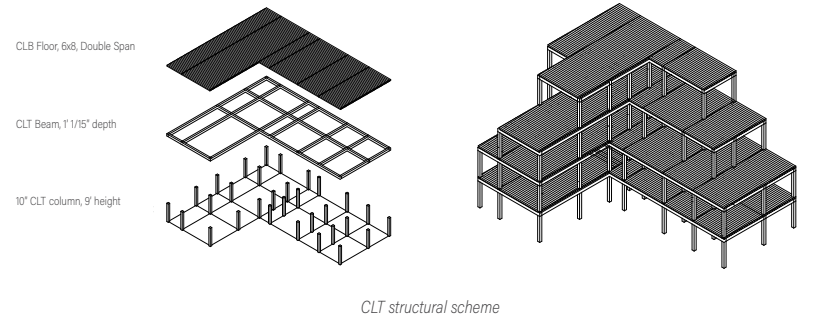
The facade system is developed based on the idea of layers, screens, and flexibility. Movable perforated panels could be layered with sliding glass panels for different degrees of translucency.

The movable panels made this facade an active system. The layered panels further elaborate our concept of intimacy gradient.



## Unit

As the smallest level in Intimacy Gradient, Unit is the most private segment on the site. To allow flexible definition of space, movable partition walls - panels and bookshelves - are designed to layer the intimacy within a unit. Residents could define their own private space and could accommodate future change in family household member size.





## 02. Staging Food

ACADEMIC . Architecture

Individual Thesis | M.Arch Taubman College  
University of Michigan | Winter 2022 | Instructor  
Anya Sirota

Access to the experience of restaurant dining is growing more challenging in contemporary times. Radical stratification in costs accentuate social division. Social media, the expansion of takeout, the gig economy, and digitally-enabled delivery services, all trends accelerated by the pandemic, are driving the culture of eating to ever more acute levels of individuation.

Satisfying a fundamental human need for food and collective desire for social interaction, restaurants as public institutions in the modern sense emerged from the place of leisure for the upper class in 17th century Paris. Since then, the transformation of global dining experience has evolved, inflected by the social, political, and technological development of human society. A series of democratic and social revolutions, mark transformative historical moments in the development of dining. The French Revolution, for example, marked a transition for the bourgeoisie and spurred advocacy for freedom, equality and catering for all. The invention of light bulbs and machines during the Industrial Revolution expanded the service hours and typologies of restaurants. The American Civil Rights Movement challenged segregation and access to dining for people of all races.

Staging Food collects a matrix of stories about different dining scenarios across time and geographic location. Divided into four categories for spatial and programmatic instigation - historic pivots, cultural affinities, social sanctuary, labor and distinction - their range configurations produces a methodology for the designing of intuitive performing installations. Each variation engages stories, scenographies, and props to create novel eating environments and social conditions. A series of alternative service systems for eating emerges, intentionally blending all social classes through collective participation. Restaurants, in this project, are reimagining as future staging grounds for social mixity and collective gastronomic pleasure.

stories of different dining scenarios across time and space





# Au-Ma Oyster

Au-Ma Oyster is a self-service automated oyster vending machine that can be installed at any construction site.

Au-Ma Oyster is a hybridized design that combined the Chinese lazy susan dining table with an automat vending machine. The temporary nature of construction sites allows Au-Ma Oyster to share on-site construction equipment to lower the operation cost as a pop-up store. Its self-service typology brings down the labor cost and proposes a new way of bringing luxury food to the public.

This design takes a construction site in New York City as a reference context for setting the stage. Au-Ma Oyster intends to serve oysters to everyone who needs a meal or appetizers, including business people in the world's largest financial hub, construction workers, city workers, tourists, and all passengers. Diners collaborate to use get sauce and wash hands in the dining system. It blends people from all social backgrounds together to interact with the turntable machine and collaborate to eat.



## Electricity

- . shared temporary on-site power supply
- . vending machine refrigeration
- . compressor cooling deck unit
- . lighting

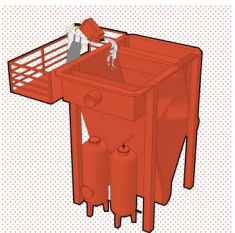
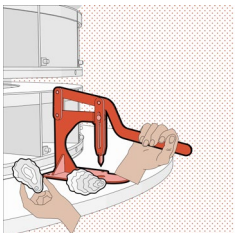
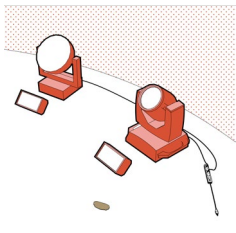
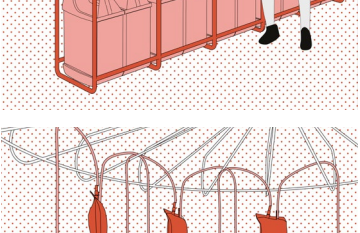
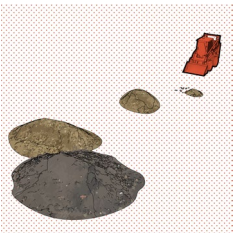
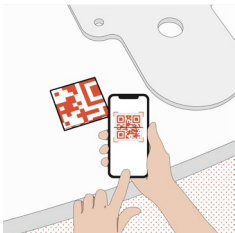
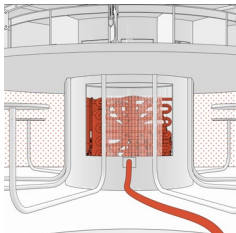
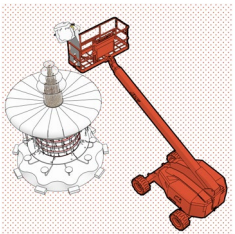
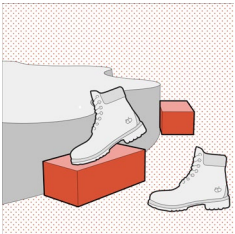
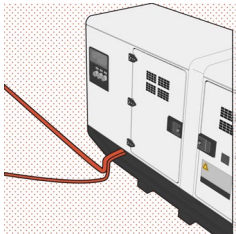
## Self-service Experience

- . ice-maker with side plate cabinets
- . qr code for payment
- . oyster shucker installed on table

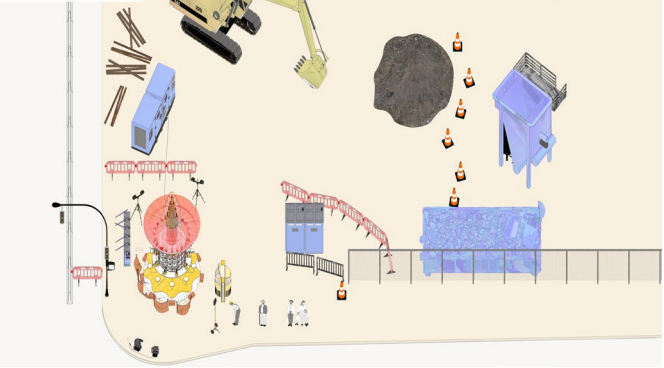
## Maintenance

- . before hours: oyster refill
- . after hours: clearing of oysters
- . after hours: wastewater treatment

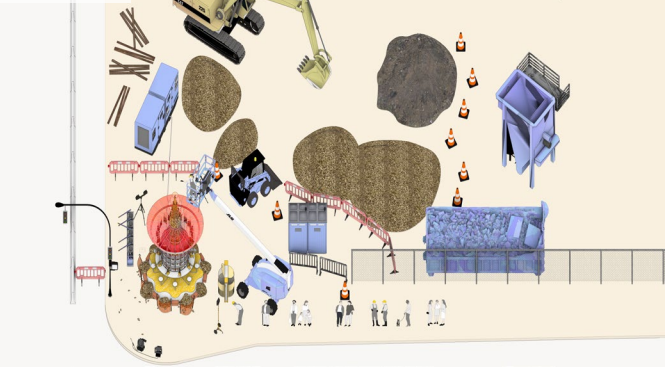
## Collaborative Handwash Station Collaborative Sauce Bag



## Before the mess



## After the mess





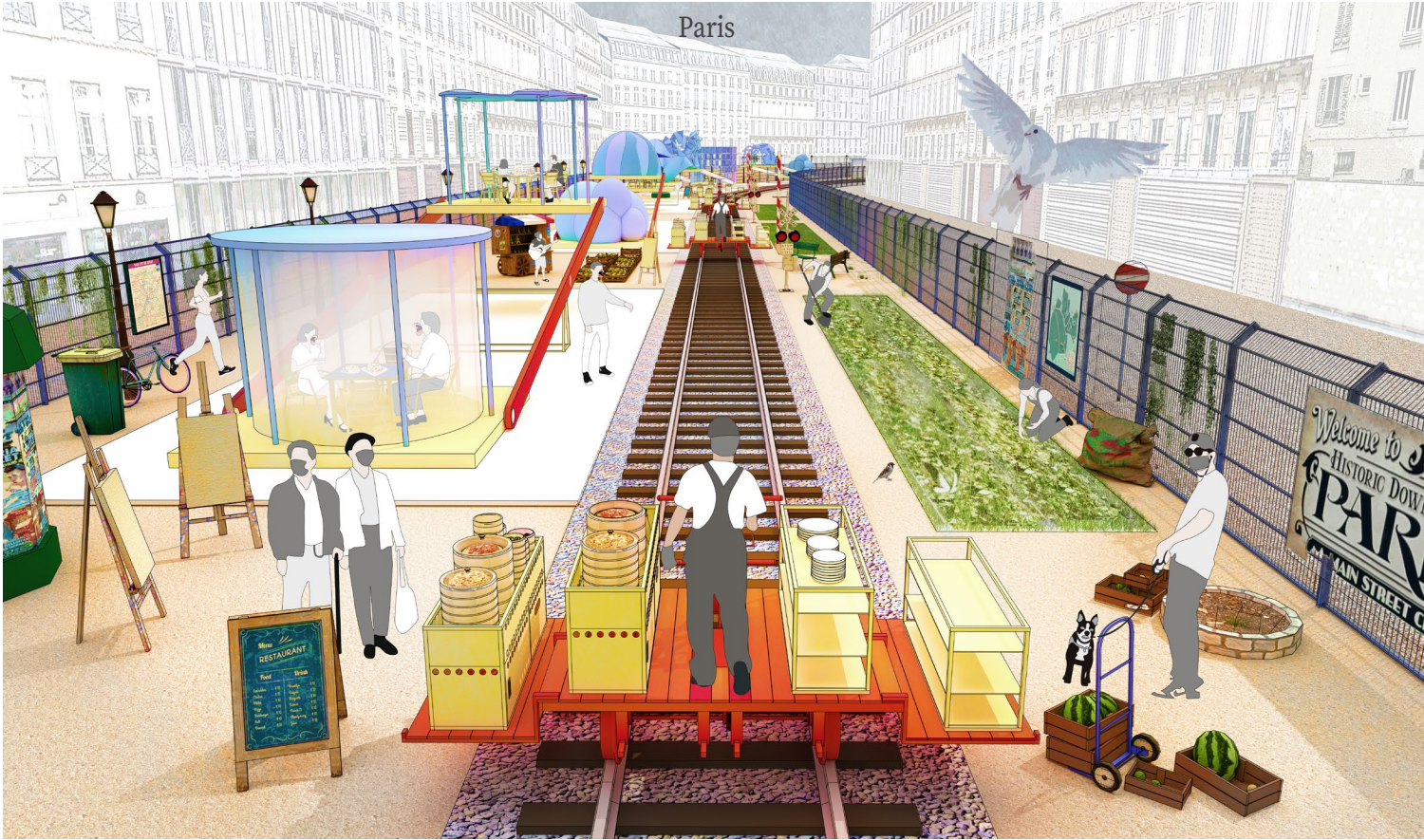
# Food Roller

Food Roller is a linear buffet-style restaurant system designed to provide dining service during any pandemic that requires social distancing.

Food Roller system is designed to install on any abandoned track. The linearity sets potentials for individuated outdoor dining cells to array with equal social distance spacing along tracks. Foods are placed on a dim sum cart-inspired handcar that travels to diners along tracks. Artists are encouraged to participate by designing outdoor dining structures on a seesaw platform. There is no menu as foods are served in buffet style with whatever raw material the chefs get from the farmlands.

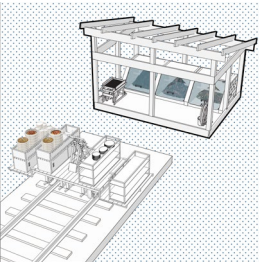
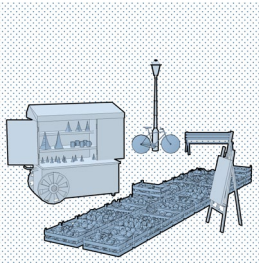
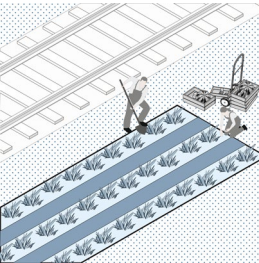
This design stages in the reference context of La Petite Ceinture, an over 30km segmented abandoned railway in Paris. Customers are invited to enter the system at any point. The seesaw structured dining cells connect individual groups of diners with the unspoken rules of accessing food. It intends to blend people from all social backgrounds together with open access to a collaborative eating system.

Food Roller proposes a cooperative restaurant model that involves local communities, artists, and government. This co-ownership invites partnerships from all disciplines to rethink the future of preserving railroads with significant historic value.



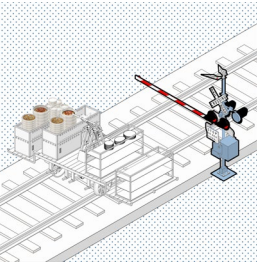
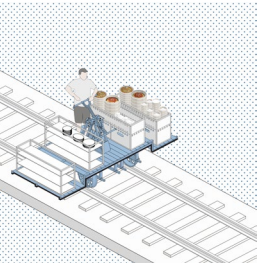
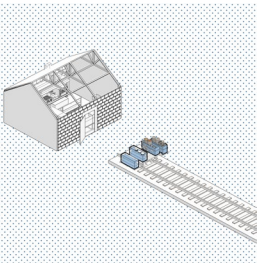
## Community Engagement

- . farmers' market
- . farming
- . compost station



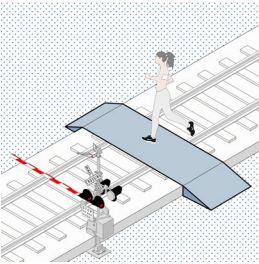
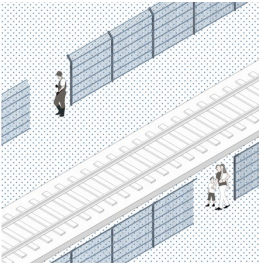
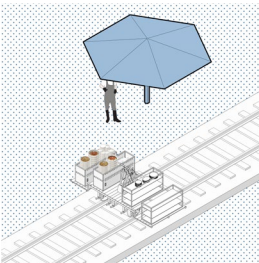
## Food Transportation

- . kitchen
- . foodcart
- . crossing light and barrier

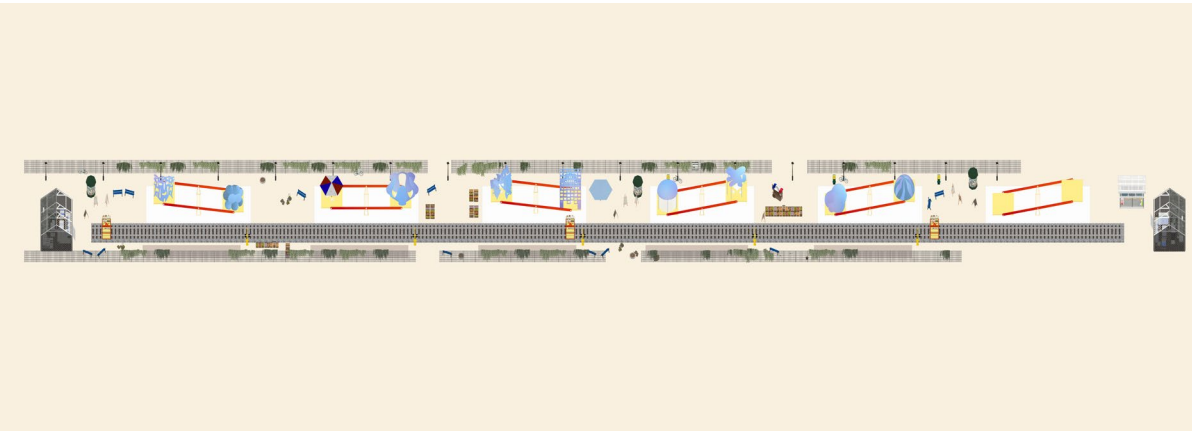
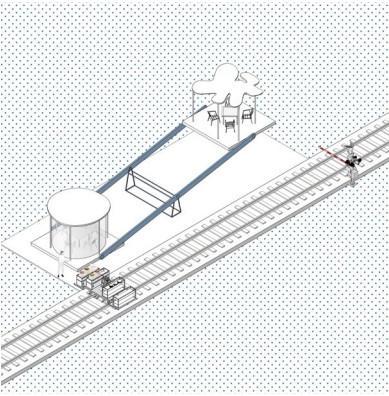
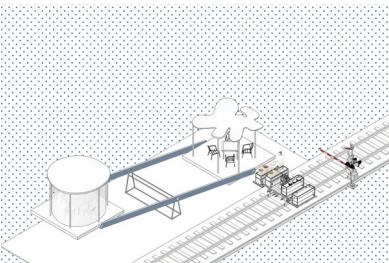


## Along The Track

- . rest tent
- . open access
- . bridge



## Collaborative Seesaw Platform for Individual Dining Set





# Free Range Fridge

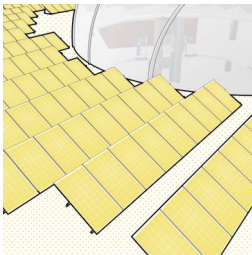
Free Range Fridge is an adventure restaurant that allows diners to build their own dishes by interacting with an immersive projection of the chef. It is designed to be installed in any abandoned buildings.

Inspired by the most expensive dining experience of Sublimotion and the Japanese restaurant culture of chef and customer interaction, Free Range Fridge hybridizes the two cultures by projecting the chef on the ceiling to interact with diners. Refrigerator, one of the most important inventions since the industrial revolution, is the center stage to store food. Diners are invited to step on the fridge set to pick raw food material and deliver it to the chef. Two sets of gears are provided to the diners at the reception: a helmet and a backpack with an extension arm of light, and a spoon and fork set that is designed to be used by the right hand only. Both sets of gears require collaboration to use for accessing food.

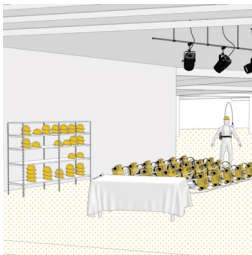
This design sets the stage in New World Mall, an abandoned shopping mall in Bangkok. Being flooded after a fire destroyed the roof, locals introduced fish to eat mosquitos attracted by water. With a rich history of being taken care of by the locals, Free Range Fridge re-invents the place and brings a high-end dining experience closer to the general public. It proposes an interim spatial typology for places waiting to be repurposed after destruction. This novel restaurant system intends to blend people from all social backgrounds together through collaborative eating adventures.



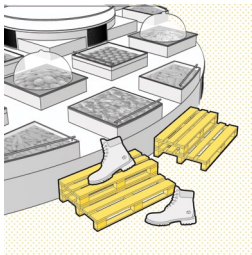
Electricity  
· photovoltaic  
· photovoltaic inverter connects to the fridge  
· fan



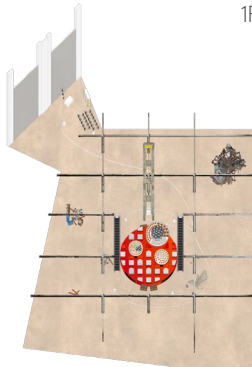
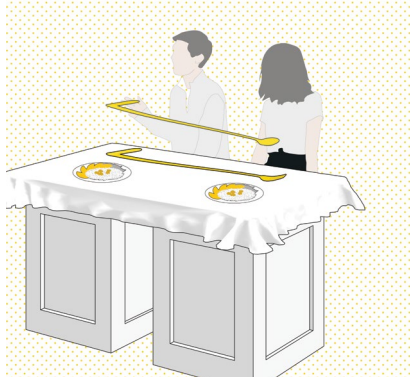
Self-explore Adventure  
· reception desk for picking up gears  
· projected chef on ceiling  
· dining set



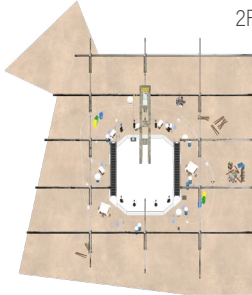
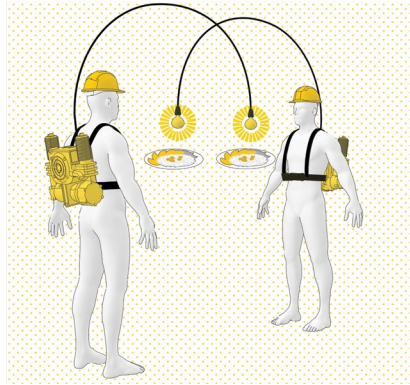
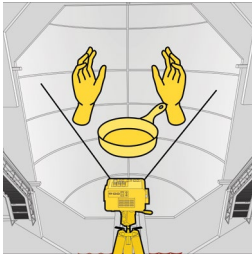
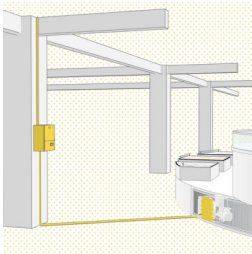
· wood pallets risers  
· fridge for selecting raw food materials  
· fridge cloche



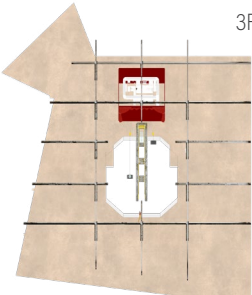
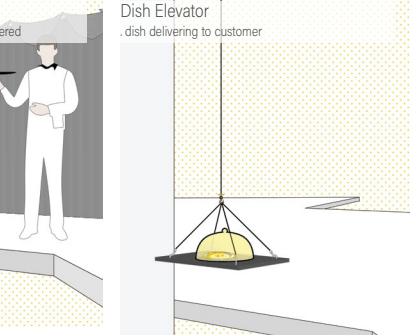
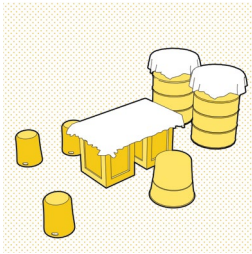
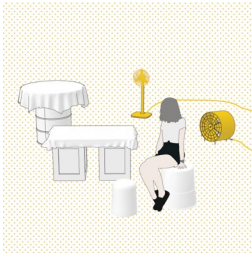
Utensil Set  
· spoons and forks for right hand only  
Helmet & Light Set  
· backpack for lighting up a partner's dish



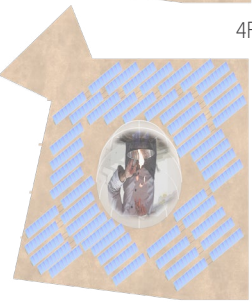
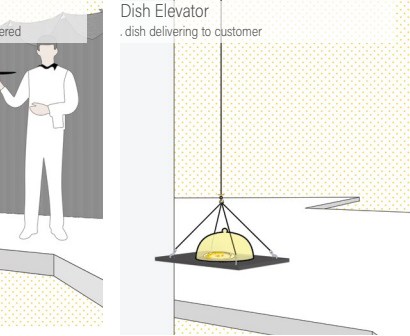
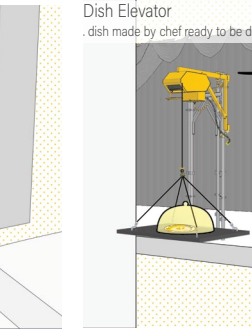
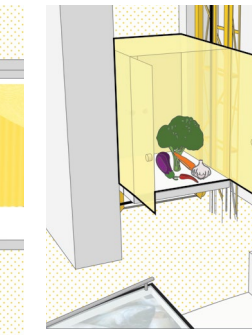
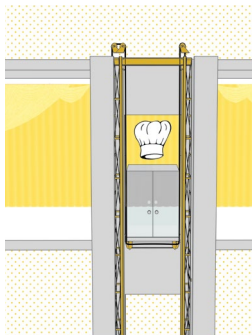
1F



2F



3F



4F



03.

# Original Supermarket

ACADEMIC . Architecture

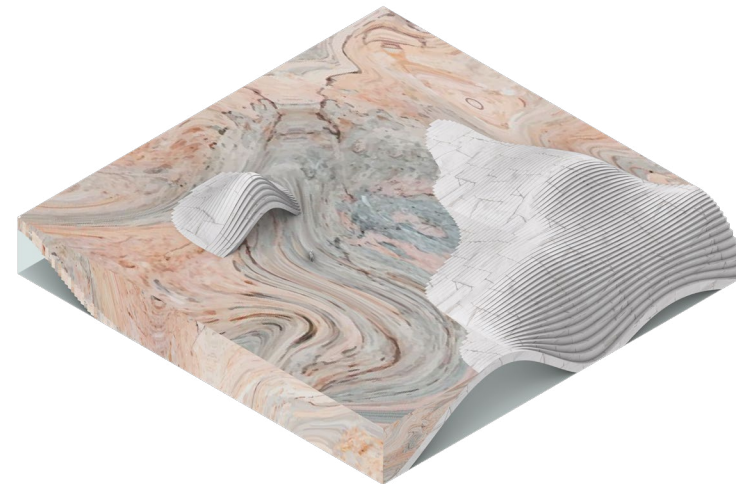
Individual Work | M.Arch Taubman College  
University of Michigan | Fall 2020 | Instructor  
Julia McMorrough

## *Forms, Faces, Functions*

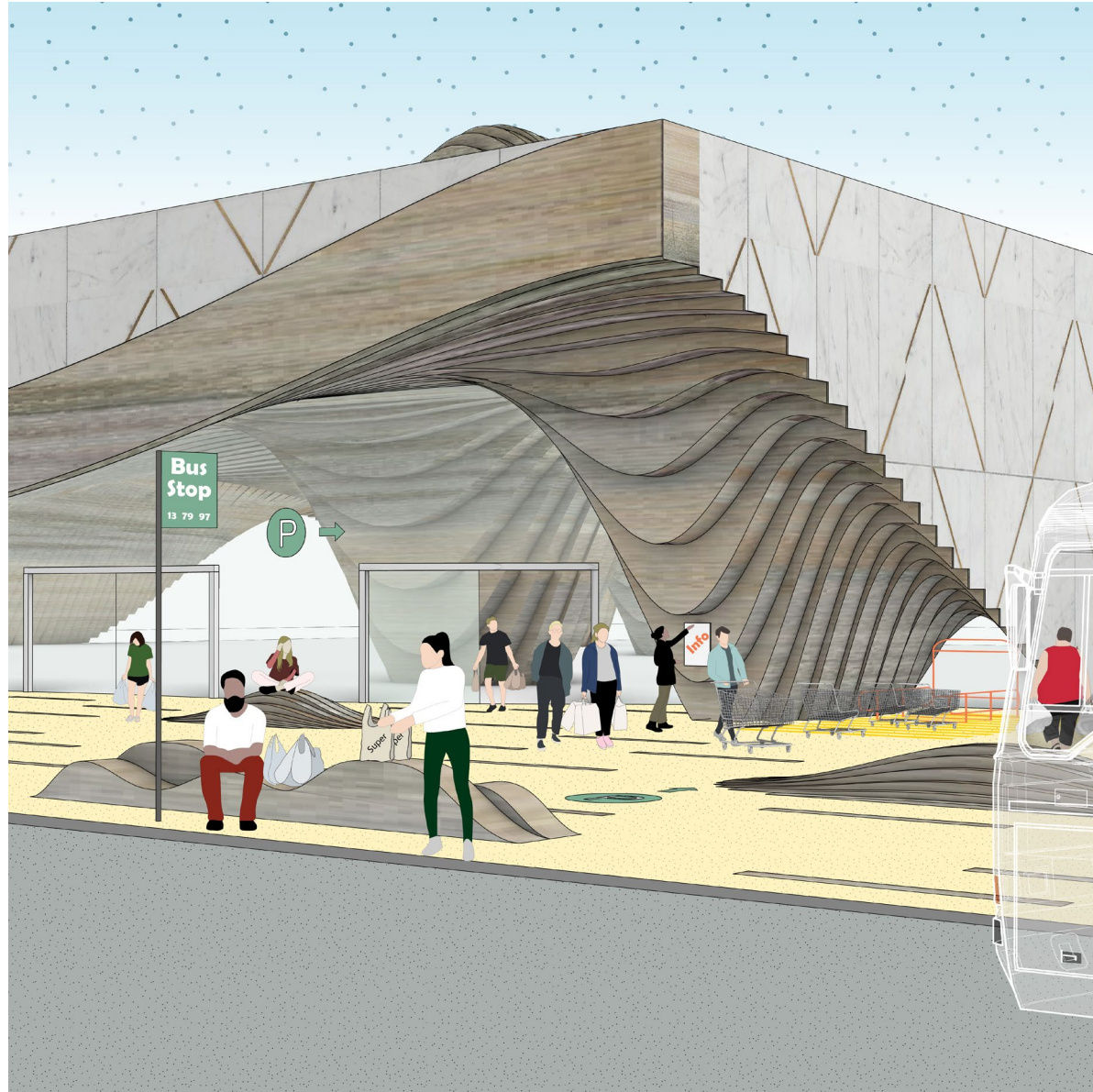
This project started by only thinking about the exterior form, facades and materials. Forms were developed as container; faces were applied as wraps. Potential functions were derived from the forms and faces as ideas to suggest novel relationship between the building and the site, its users.

## *Insides, Interiors, Innovations*

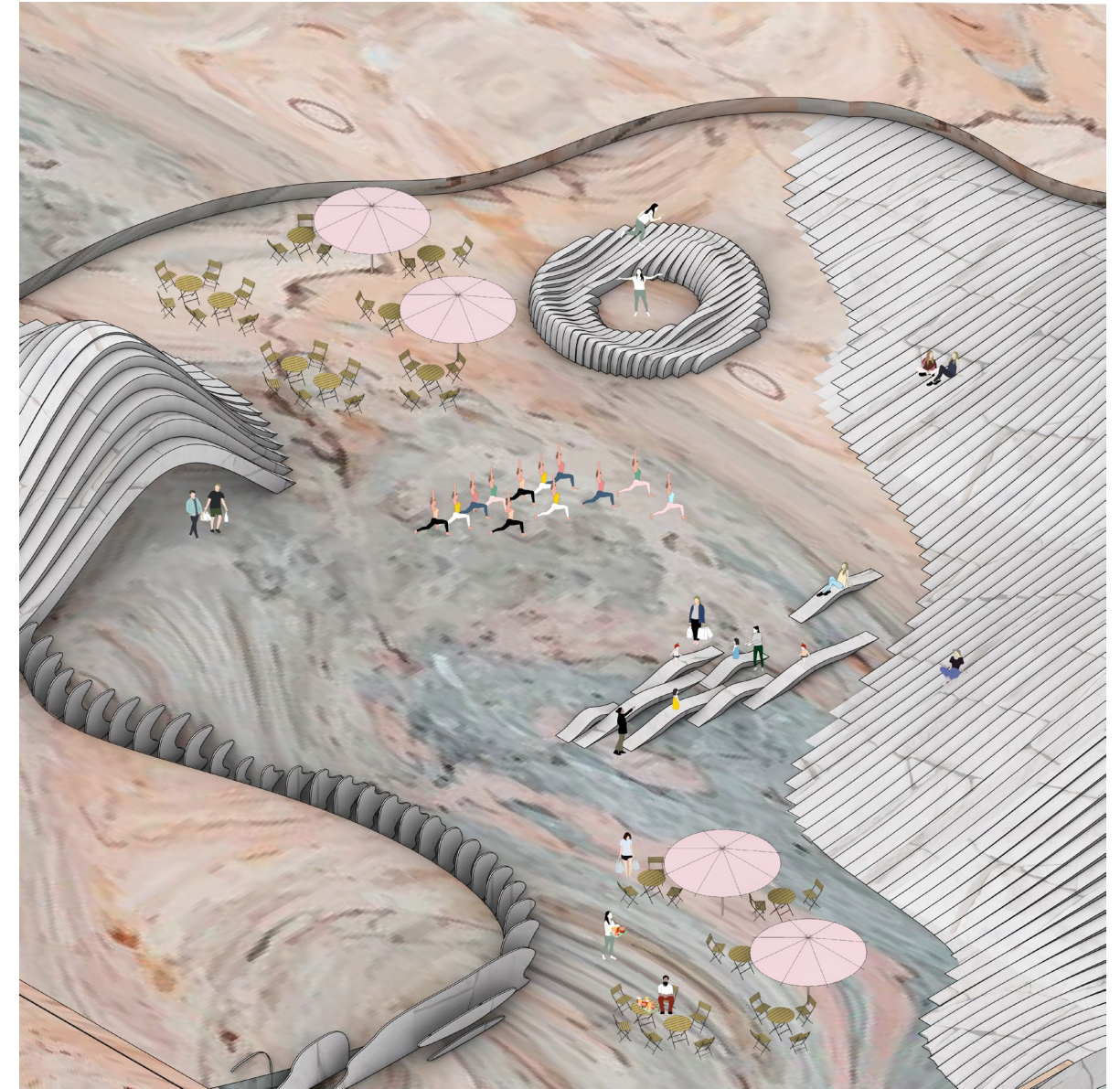
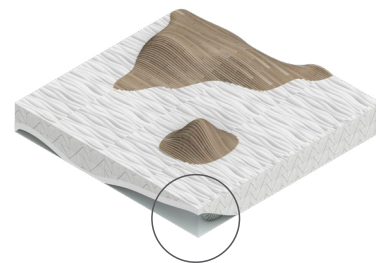
One Section, Big Story. A section is engaged as the key design and representation tool for the interior. The way people move, interact, access, and experience the space of grocery shopping are prioritized in the section.



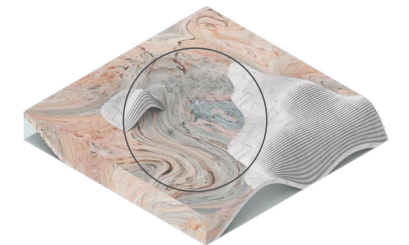




A cantilever created from the form is used as a shelter place for return of shopping carts and connects public transportation.

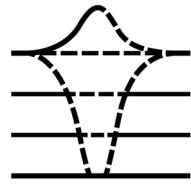


A multifunctional rooftop derived from the form is connected by an elevator. Contours are transformed into furniture scales.

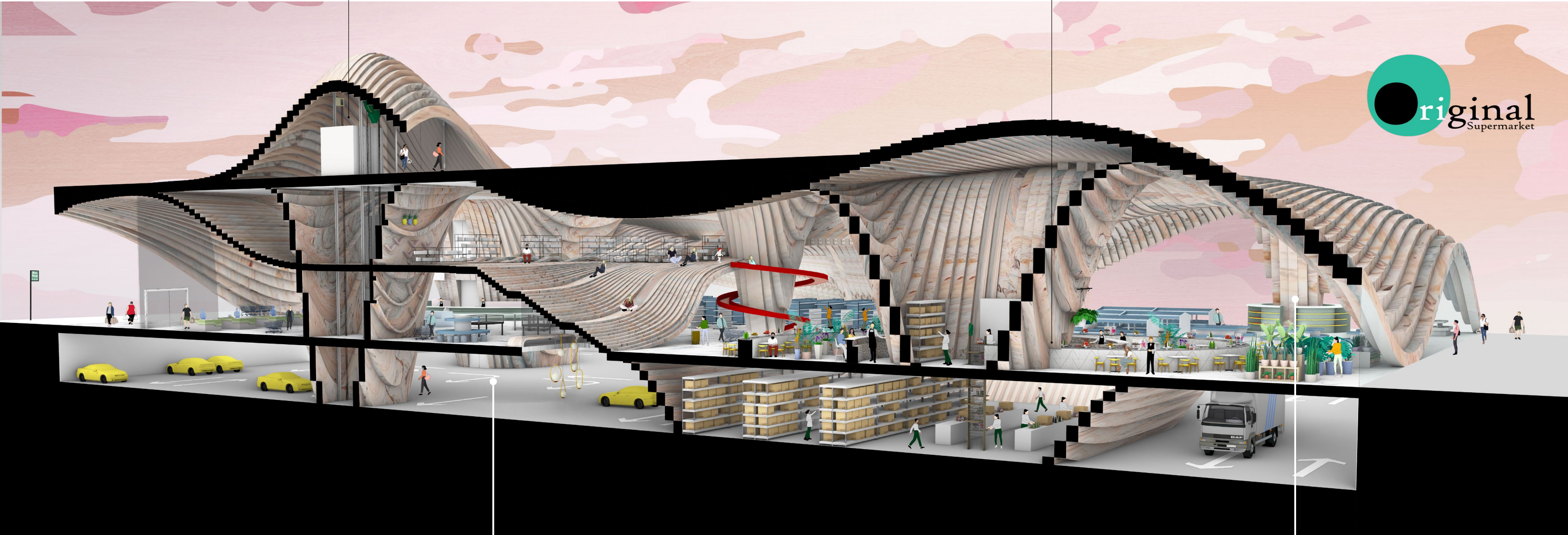
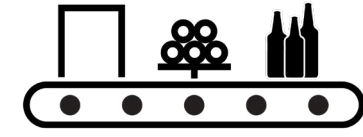




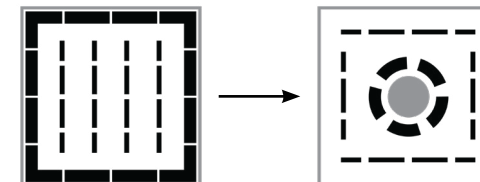
"Form" as vertical connection



Conveyor Product Belt  
+  
Canteen



Underground Parking + Storage



Peripherals open to the streets



# Project RRDC

ACADEMIC . Architecture

3 People Group Work  
(with Qian Li, Elyssa Baker)

M.Arch Taubman College  
University of Michigan

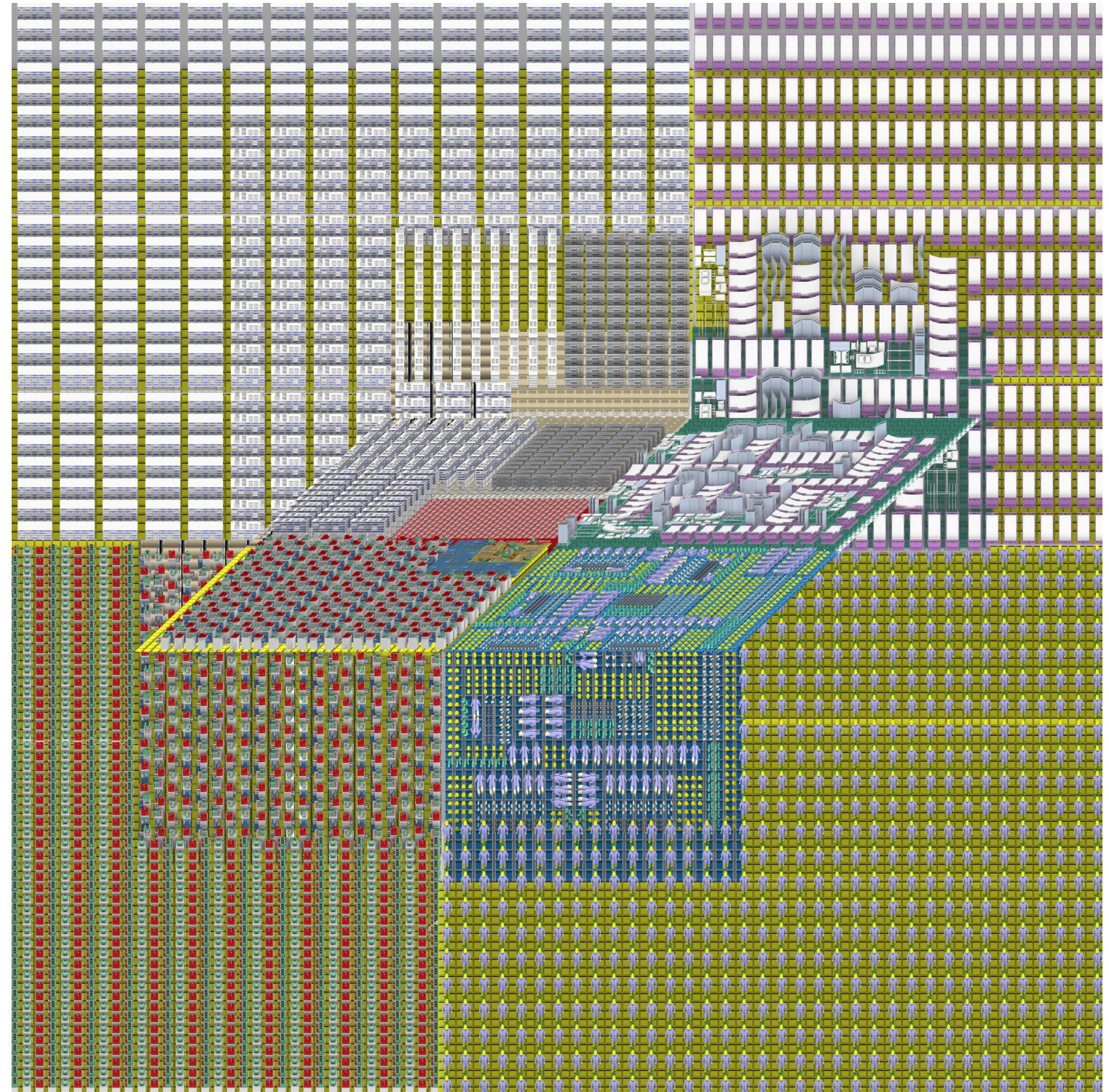
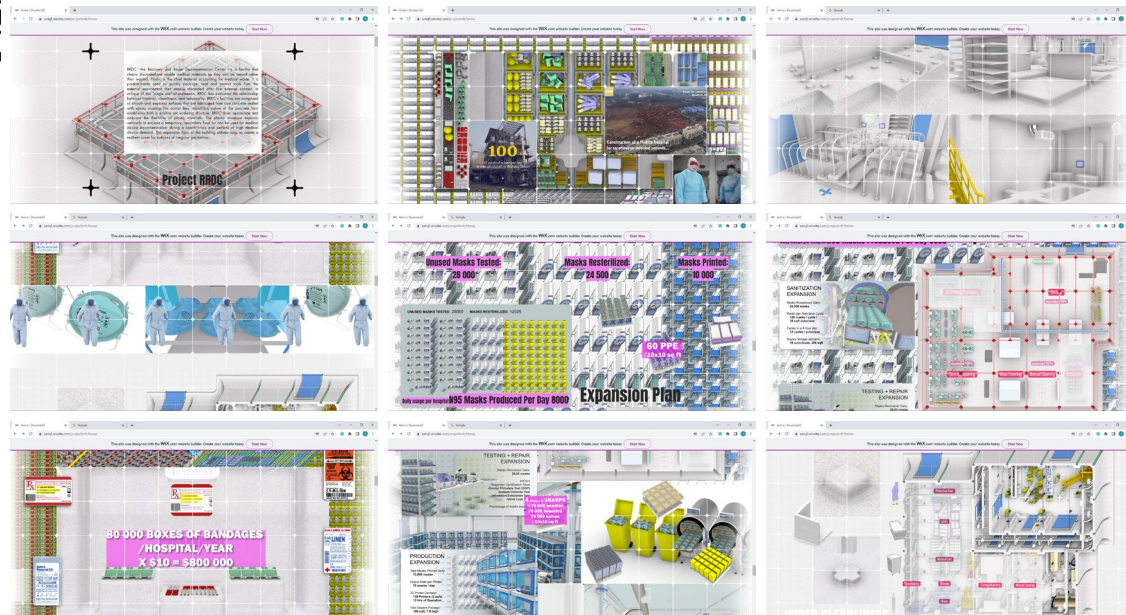
Winter 2020

Instructors  
Daniel Jacobs, Laida Aguirre, Steven Lauritano

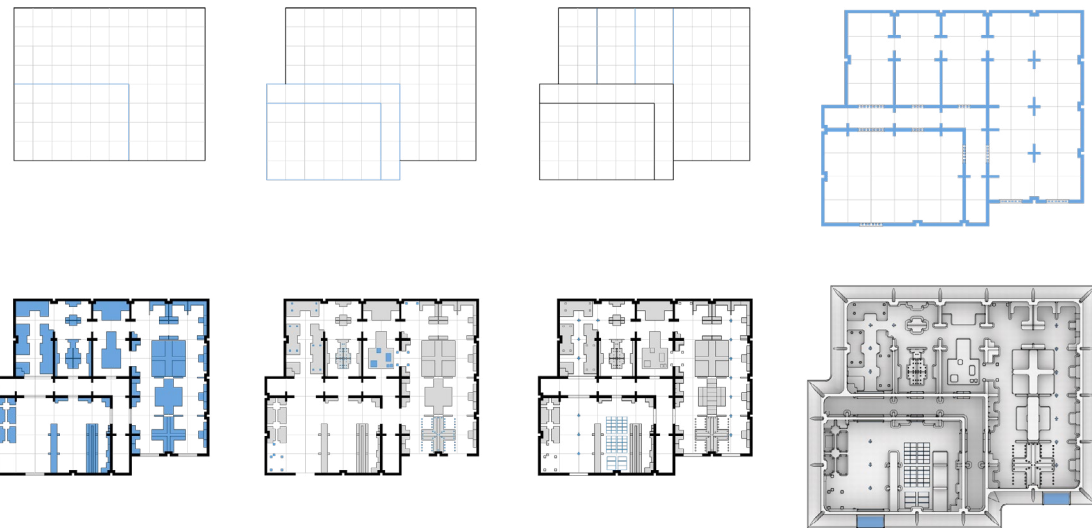
RRDC – the Recovery and Reuse Decontamination Center – is a facility that cleans discarded yet usable medical materials so they can be reused rather than wasted. Plastic is the chief material accounting for medical waste: it is predominantly used to quickly package, seal and protect tools from the external environment then readily discarded after first external contact. In critique of this “single use” phenomenon, RRDC has evaluated the relationship between material, cleanliness, and temporality. RRDC’s facilities are composed of smooth and seamless surfaces that are fabricated from cast concrete sealed with epoxy coatings. The corner less, monolithic nature of the concrete form establishes both a pristine yet enduring structure. RRDC does appreciate and embrace the flexibility of plastic materials. The plastic envelope expands vertically to enclose a temporary, secondary floor for can be used for medical device decontamination during a health crisis and periods of high medical device demand. The expansion floor of the building utilizes latex to create a resilient cover for surfaces of irregular geometries.



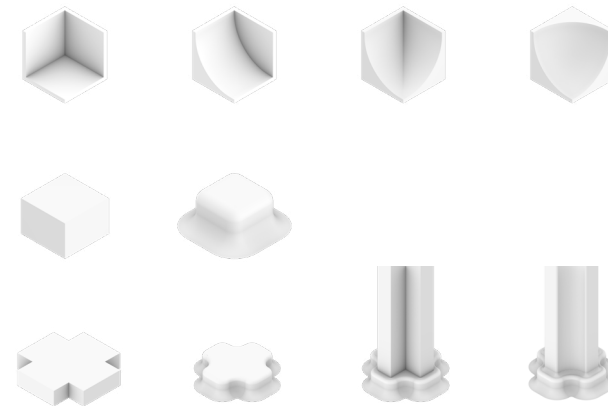
<https://uniqli.wixsite.com/projectrrdr/home>



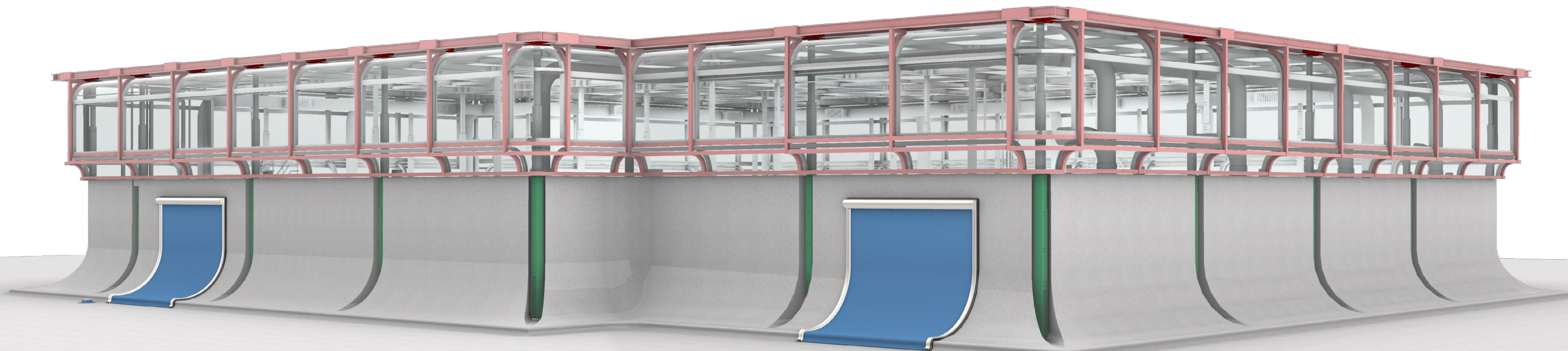
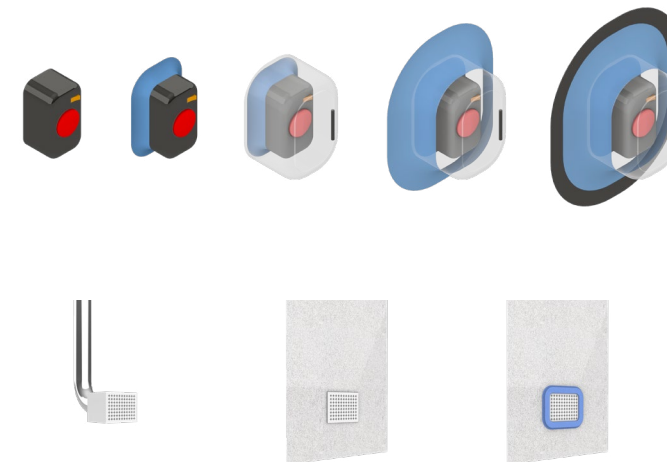




Cornerless Smooth Surfaces

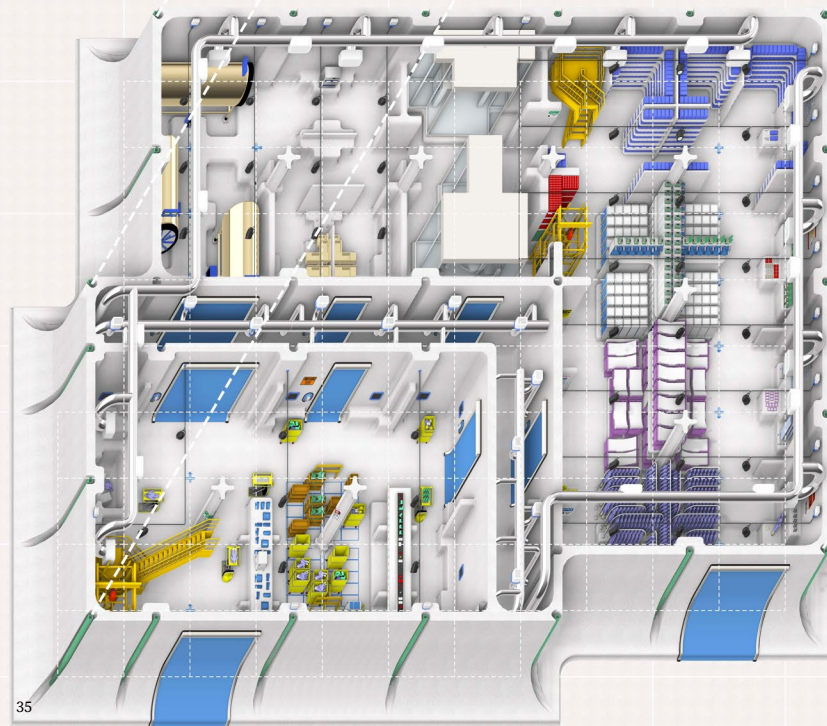
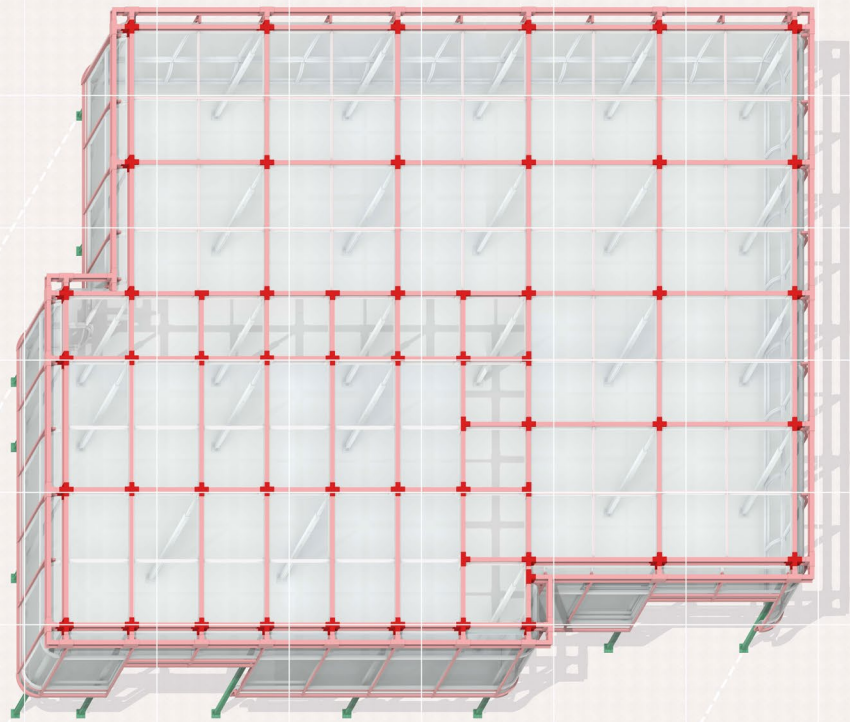


Advanced Sealing Design





## Situation 1: Normal HYPER CLEANINESS



As the covid 19 pandemic threaten the world health system, the project started by thinking about the making, storage, usage, recycling of medical supplies. The image depicts the optimization of medical supply storage and pays close attention to how coded systems, extreme categorization, and storage standards influence spatial relationships. Large quantities of repeated items serve two purposes: the first is to represent the loss of individuality that occurs at a large scale when objects are organized so efficiently; the second is to quantify the significant waste and disuse that occurs when materials do not meet sterilization standards (i.e. expiration dates, exposure to contaminants). In contrast, the inner knolled objects demonstrates the unpacking and interconnectedness of materials that occur as they are used, and the knolling of these kits further emphasizes the individuality and "purity" of isolated things.



## Situation 2: Pandemic Crisis EXPANDABLE ENVELOPE

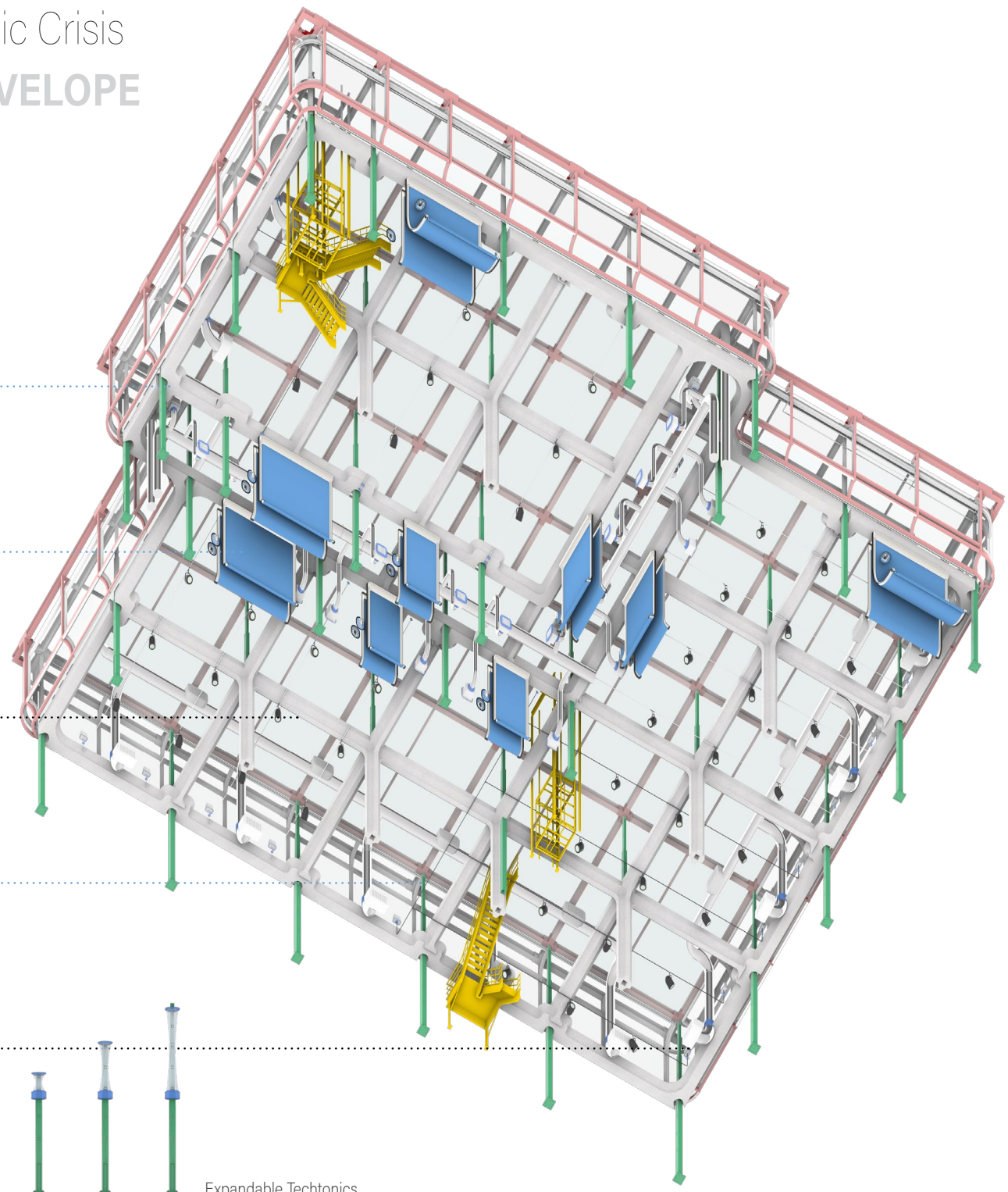
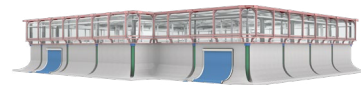
Facade

Telescoping  
Columns

Columns  
Beams

Vents

Lighting



Expandable Technics



# Critical Salvation Of History Cartagena, Columbia

ACADEMIC . Architecture

2 People Group Work  
(with Aya Chehadeh)

M.Arch Taubman College  
University of Michigan

Winter 2021

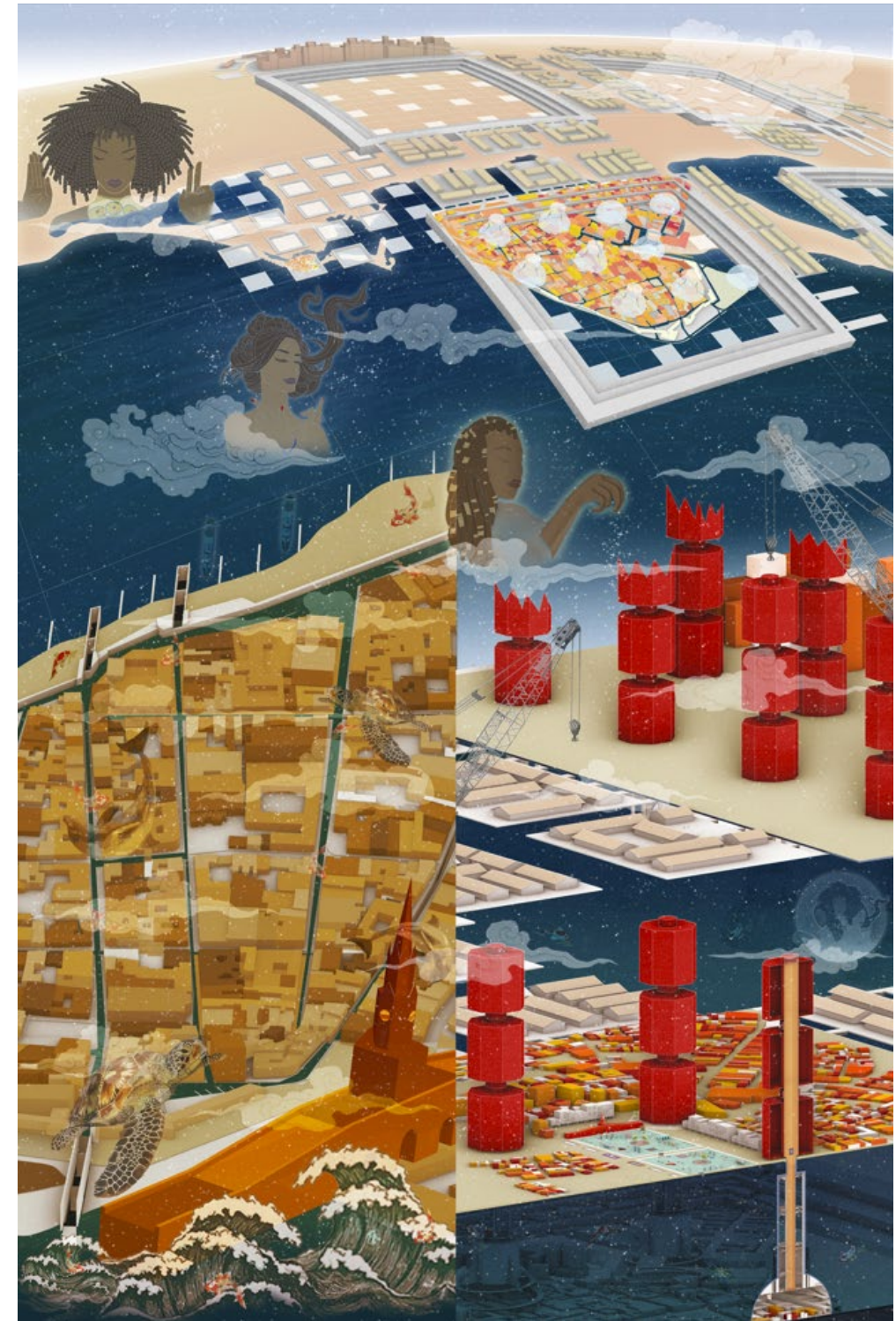
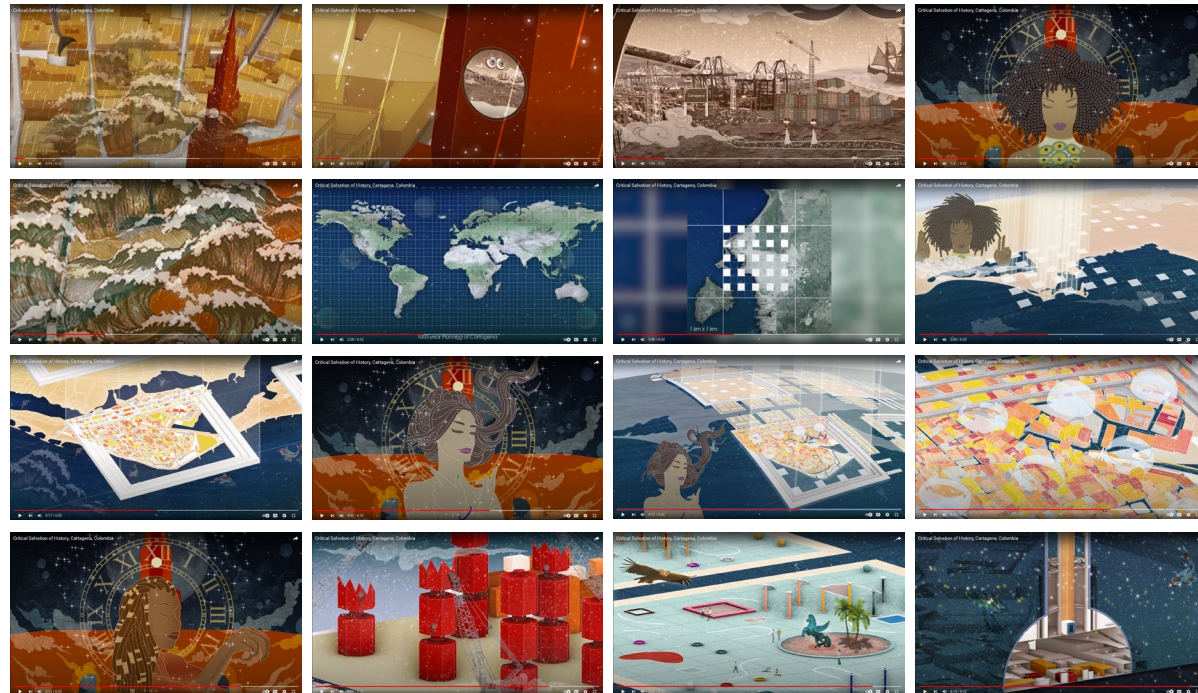
Instructor  
El Hadi Jazairy

By asking the question what is heritage, what to preserve and how to preserve through democratic decisions, Critical Salvation Of History propose a new urban timeline to investigate methodologies of preservation and adapt radical architectural solutions to salvage Cartagena under the threat of climate change.

Three phases of salvation plan. First phase is saving the existing city as much as possible by reinforcing its infrastructure. Second phase of construction prepares the foundation for the radical future in the third phase, that is a new city platform built after the floods and selected parts of the old city will be saved based on a grid system. Inspired by Rem Koolhaas, the grid system determines which part of the city will always be preserved and which parts will be sacrificed for development.



<https://www.youtube.com/watch?v=1askj3hbiVE>





06.

# Emptiness

ACADEMIC . Landscape

Individual Work | Division of Landscape Architecture | Fall 2016 | Instructor  
University of Hong Kong | Tiger Lin

Visitors are always considered the target consumers of a park and its reason for existence, especially in an urban context. People make the subject of a park while the remaining landscape elements are the object. Being a post-expo legacy located close to the city center, the periodical appearance and disappearance of people in Expo Park gives it an ambiguous status and meaning of existence. The subject is lost from the land, its status is "emptiness".

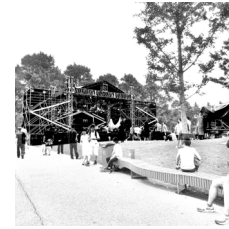
Through the observation of the "periodical emptiness" in Expo Park, I started to consider the meaning of "emptiness" and its influence on a space. There is no absolute theory to prove that "emptiness" is negative to a space. Only when the subject is "empty" from a space make a design lose its meaning. Expo Park loses its status because none of the existence inside makes the subject of the design.

This project breaks down the normal frame that people are the subject of an urban park. Dual subjects exist in the design. They are nature and people. The concept is to design a forest-like nursery by combining an urban forest with a nursery. The subject of a forest is the nature. The action of controlling plants makes people the subject of a nursery. Thus, nature is always the subject that makes the designed landscape exist, and people also become the subject when they come to select plants.

People disappear in weekdays  
People come in weekends  
Emptiness of Structure



Structures disappear when there is no event.  
Structures come when there is an event.  
Emptiness of People



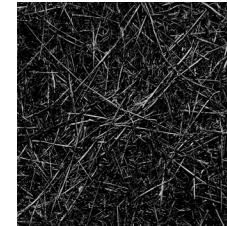
People and Nature



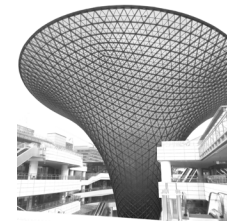
Boundaries



Textures



Infrastructures









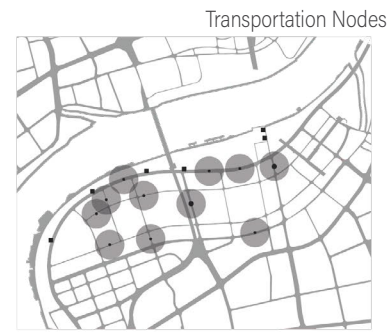
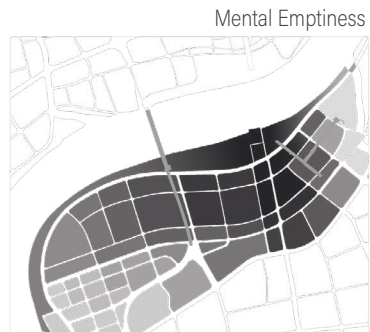
## MACRO OBSERVATION



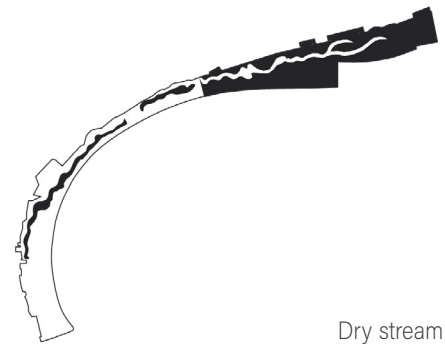
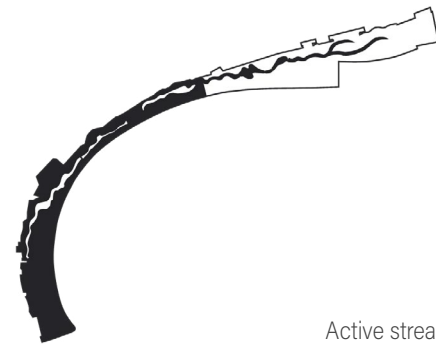
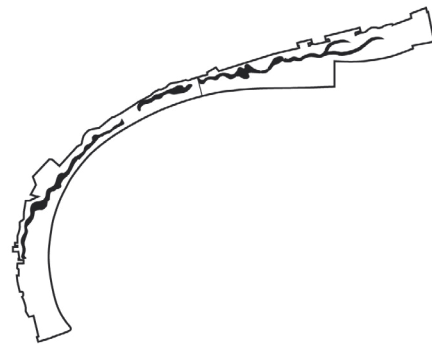
### EMPTINESS

After the 2010 Shanghai World Expo, most pavilions were removed and large empty sites were left to the government for development. Part of the land is constructed to be a financial center, while the other part has remained undefined. Temporary structures are occupying the undefined land. Fail to attract investments, the "financial center" turned into a ghost town.

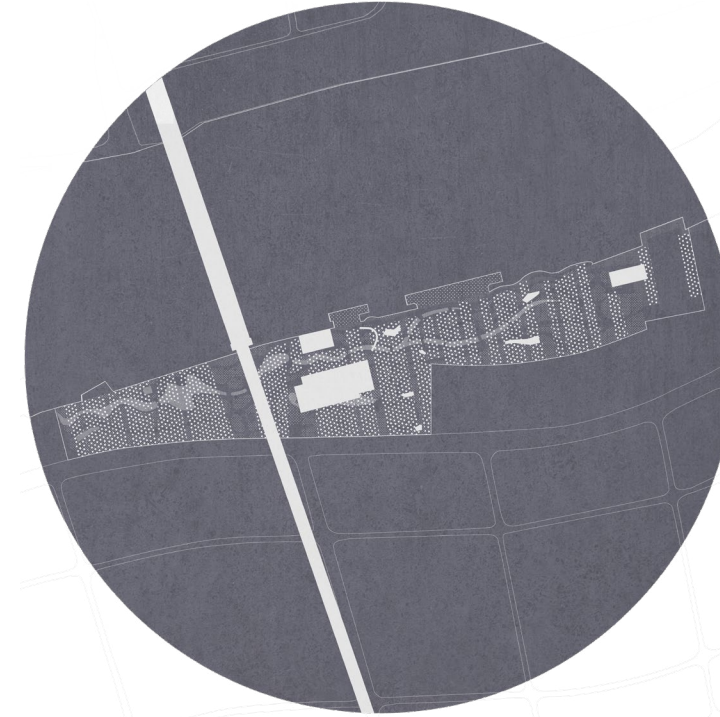
### MACRO EMPTINESS



### WATER PURIFYING STREAM



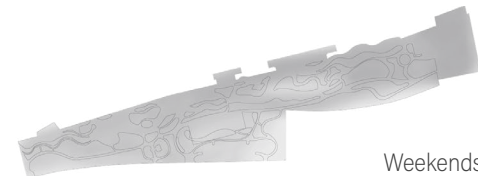
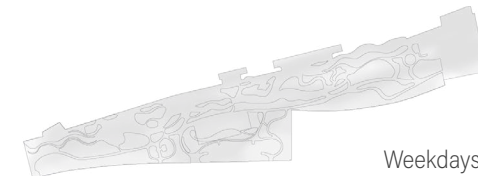
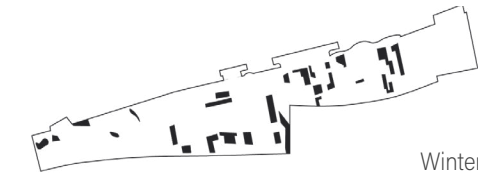
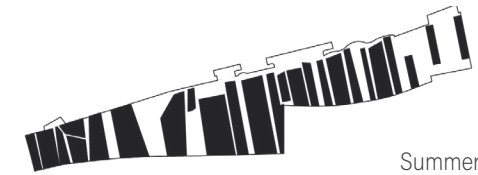
## MICRO OBSERVATION



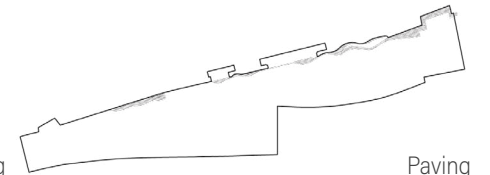
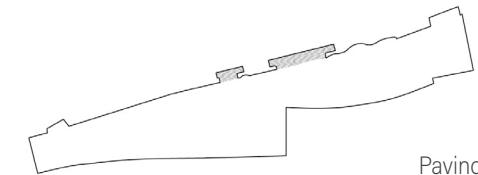
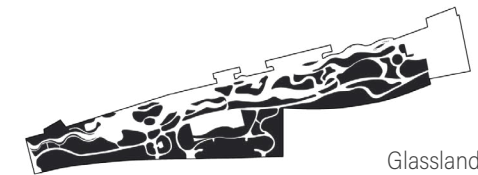
### EMPTINESS

Expo Park, which used to be a ship factory, was built for the 2010 Shanghai Expo. Riverside was cleaned up and citizens are now able to access the riverfront. After Expo, the park has gained less visitors compare to other park in the inner city of Shanghai. The impact from the surrounding emptiness reflect on the number of visitors. However, there is a huge difference on the number of visitors between weekdays and weekends, or when events are holding or not. People and structures appear and disappear under different conditions.

### TREE CANOPY

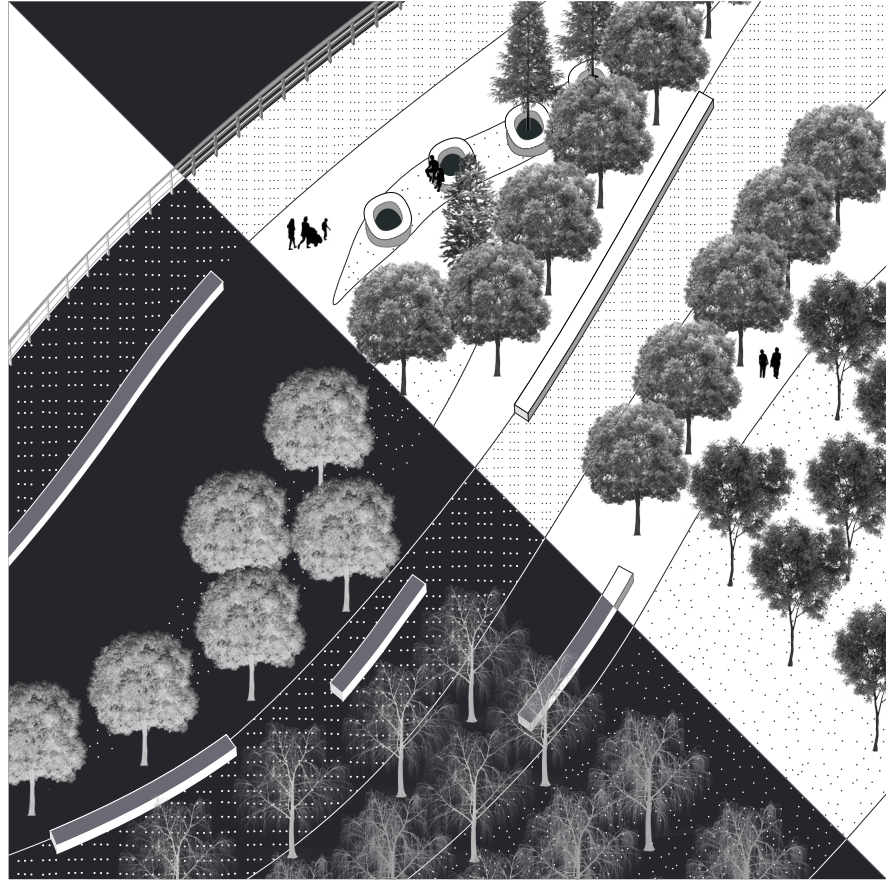


### EMPTINESS -- POPULATION DENSITY

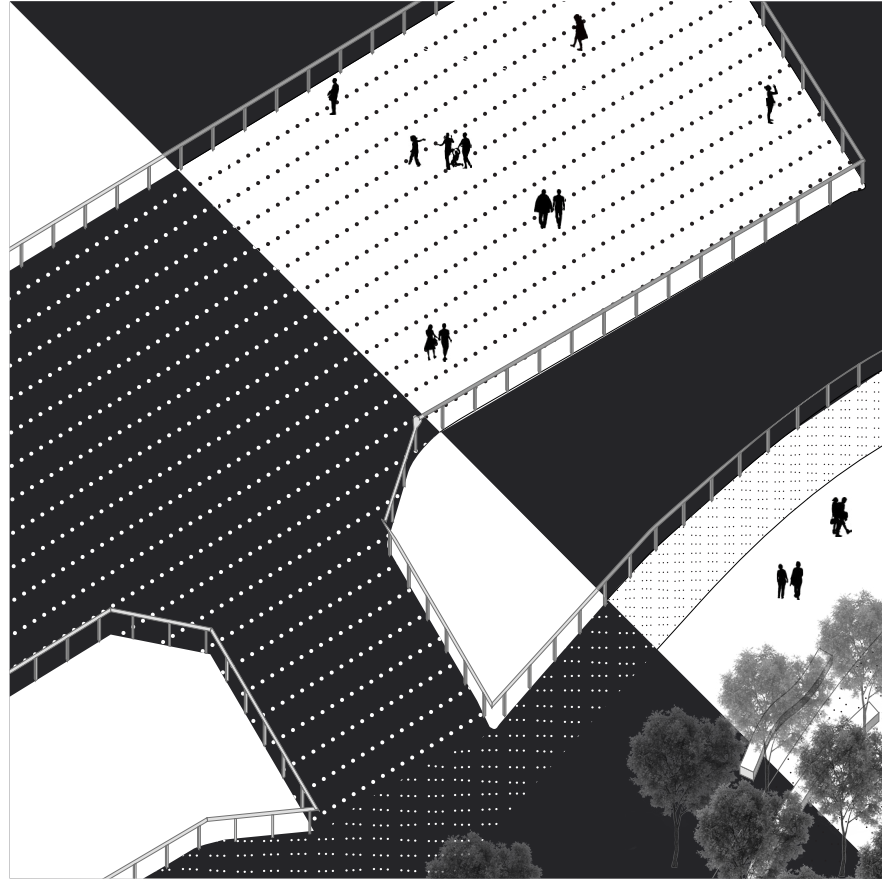


### TEXTURES

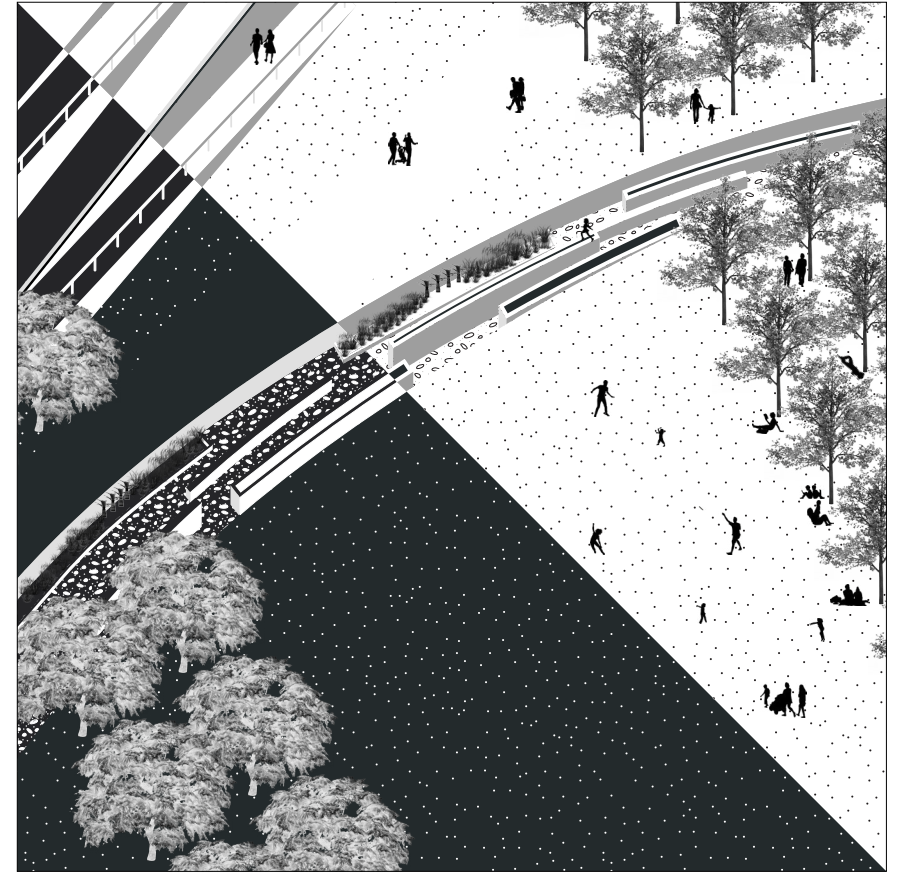




EMPTINESS AND TEXTURES



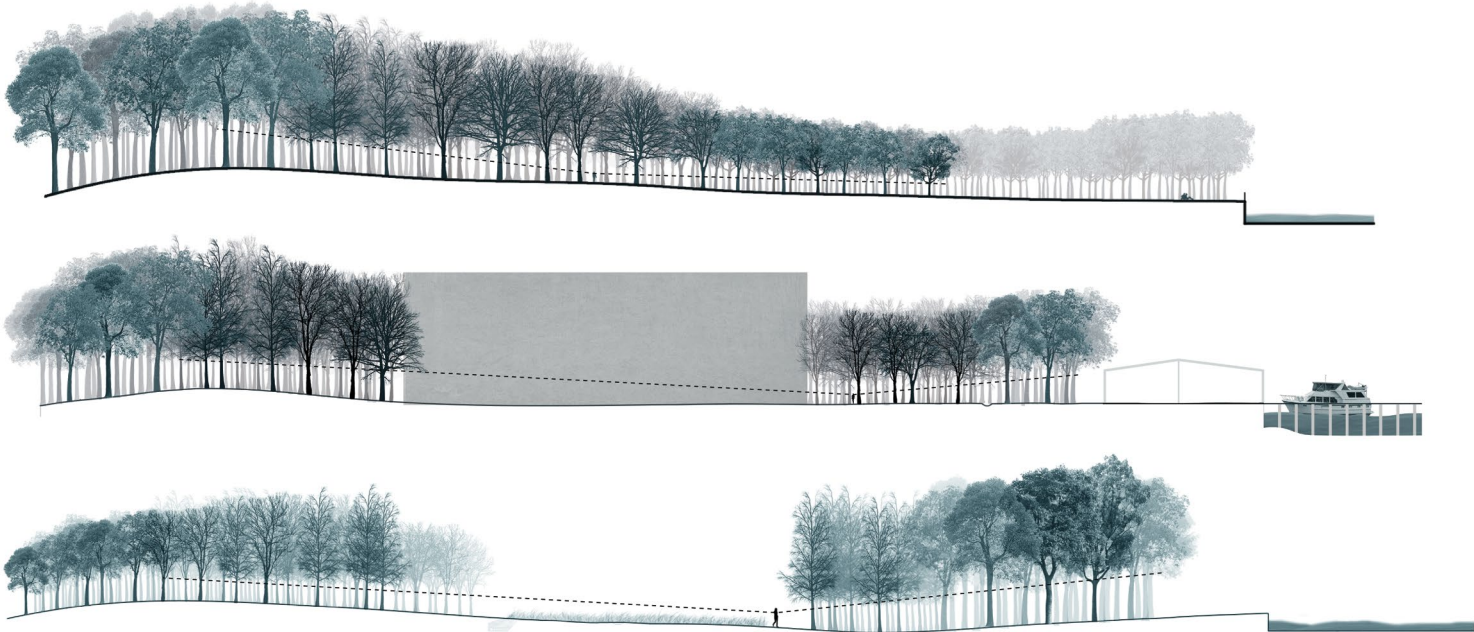
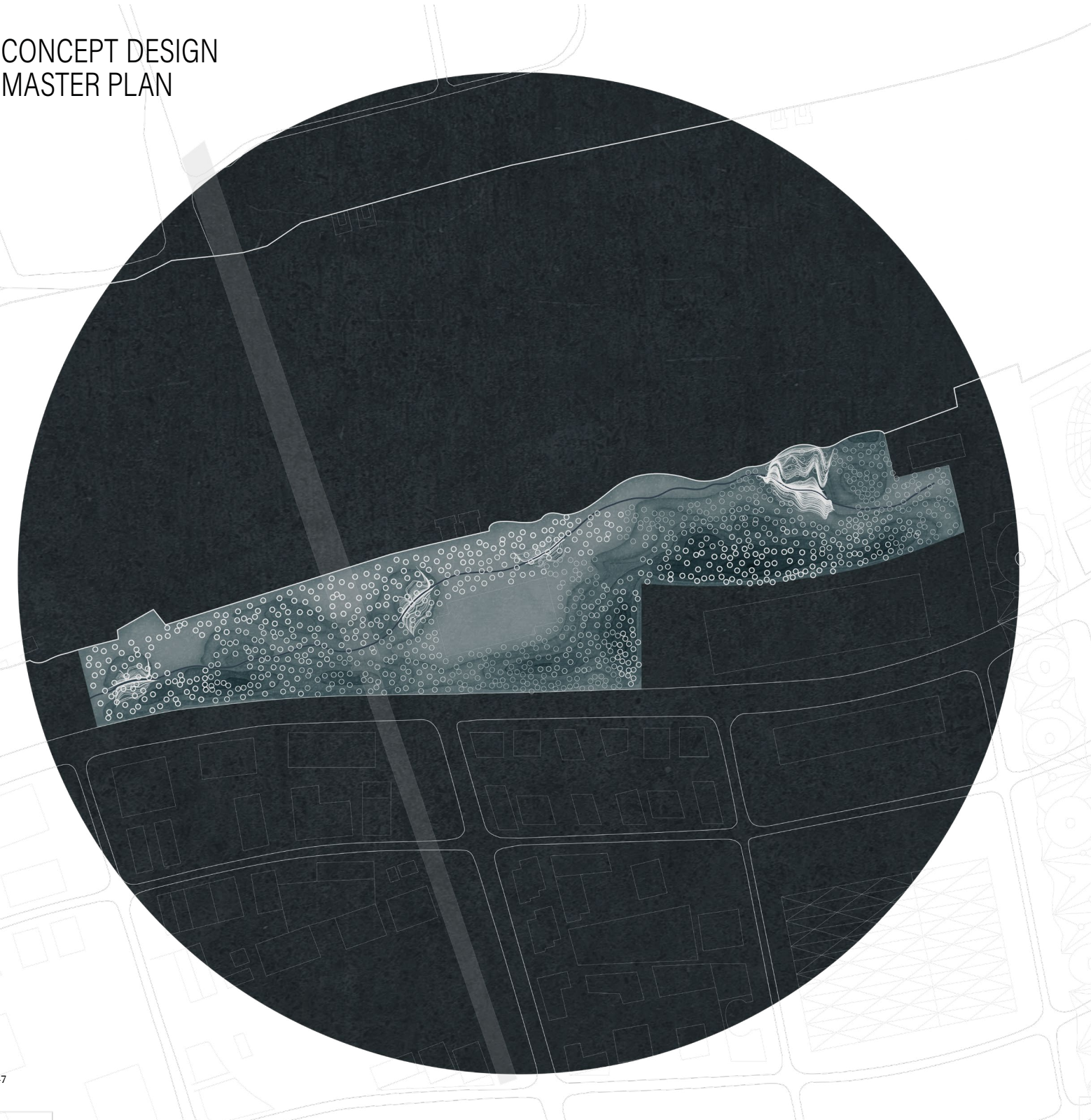
WINTER VS SUMMER



WEEKDAYS VS WEEKENDS



# CONCEPT DESIGN MASTER PLAN

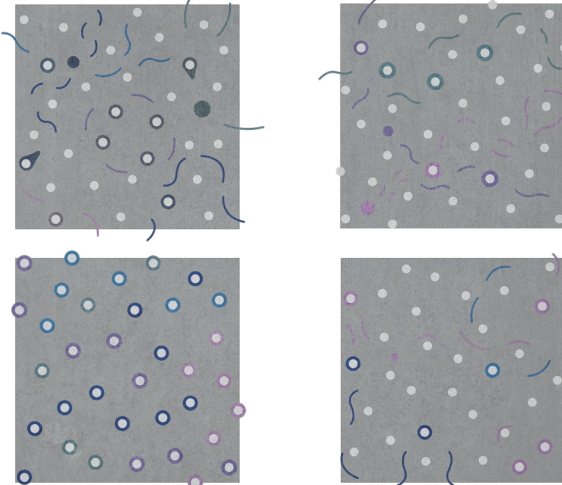


Minor change has been made to the existing topography to mimic an organic lanscape form. A very shallow water passage will be added to allow people to walk through. Purified water from the Houtan Park will be used as the source for the water. The original linear tree system is broken down into random pattern.

Tree Canopy  
Everygreen trees are planted on the outer ring while the inner ring has deciduous trees.



Proposed Design For Potted Plants







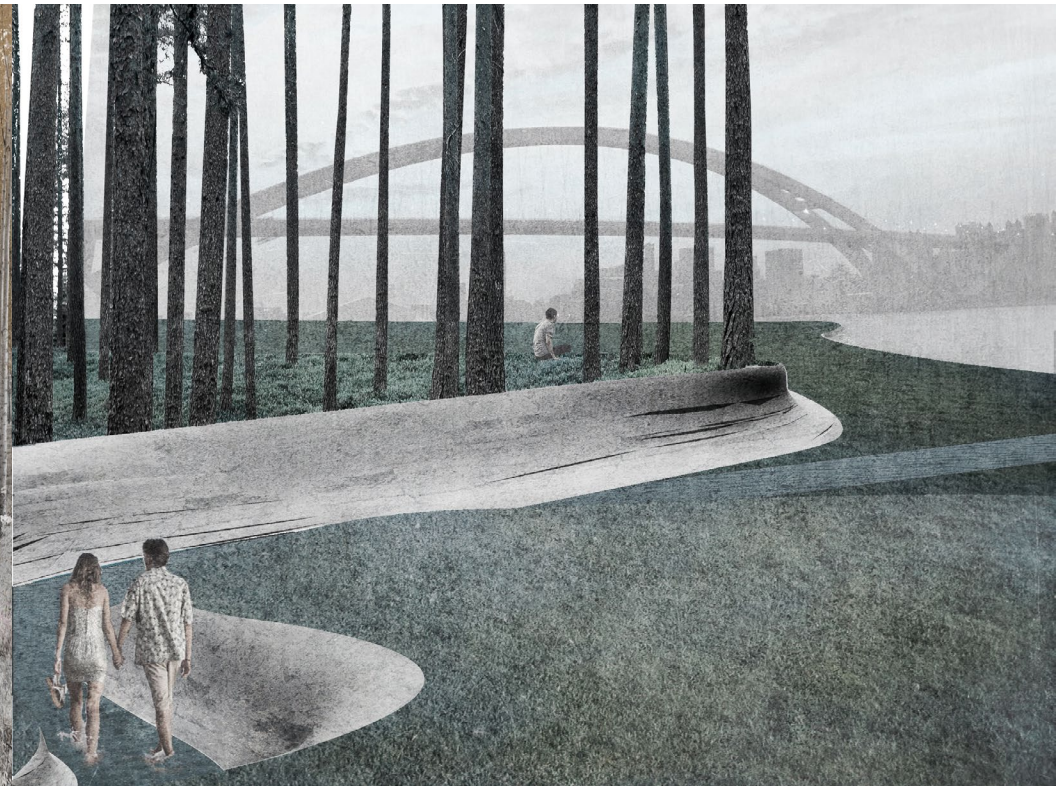
#### NURSERY PLANTS

To be placed on the ground. To form hidden path to guide people to observe different part of the park.



#### FLOWER BED

To occupy the open spaces.



#### WATER PASSAGE

To use the purified water from the Houtan Park. To allow visitors to walk through.



07.

# Huangpu Spectacle

PROFESSIONAL . Landscape

Project Manager, Designer	Research, Design, 3D Modeling, Rendering, Client Coordination	Concept Design Schematic Design Design Development	SWA Group Los Angeles	2018	Shanghai
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Huangpu Spectacle is a three-block corporate project located beside the Huangpu River in Shanghai, China. Being the second project leader, I mainly participated in the design of the middle block.

Being the last available land for development along the Huangpu riverside, we aimed at creating an iconic high-end corporate landscape. The Marine Vista, The Terrestrial Magnificence are the concept for the two other blocks. The middle block has the largest landscape space, giant architecture canopy, and towers. The Sky Spectacles is the concept for the design.

A series of sculptures are designed to balance the 3-dimensional space gap between landscape and architecture. Based on the study of site context, the location and function of the three sculptures are clearly identified. They should not be only sculptural, they should also be functional and interactive.





Central Fountain and  
Skylight  
*. the monumental focus*

Hedge  
*. the softscape to breathe*

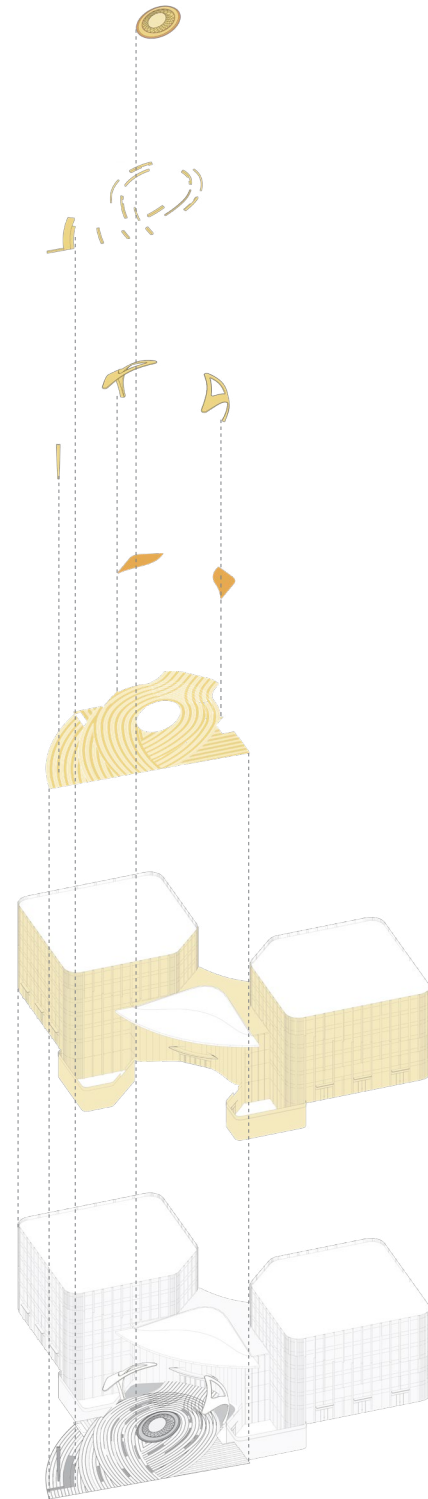
Spiritual Totem  
*. the icon*  
Borealis Canopy  
*. the space connector*

Borealis Canopy  
*. the space connector*

Paving  
*. the landscape base*

Architecture Towers  
*. the giant background*

Main Plaza



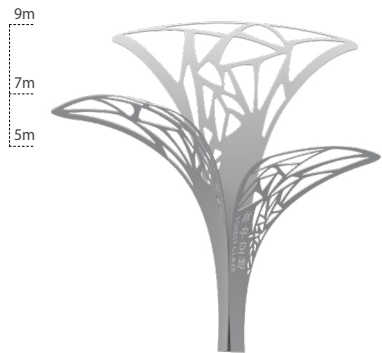
To create a grand and interactive Main Plaza, we used a variety of landscape elements, and materials, including paving, water features, hedges and large-scale sculptures, to keep the openness of space while creating more intimacy.

Layers of elements embrace the main plaza from the fringe to the center. Scale is the main factor controlling the spatial relationship between human and each component. Paving, hedge, water fountain, and sculptures gradually expand from a smaller scale to larger scale and finally reach the architecture. The rhythm of experience from the entrance to the architecture tells a rigorous system of transition from landscape to architecture.



*Borealis Canopy*





Entrance Sculpture

Spiritual Totem

Sunken Garden  
small space design

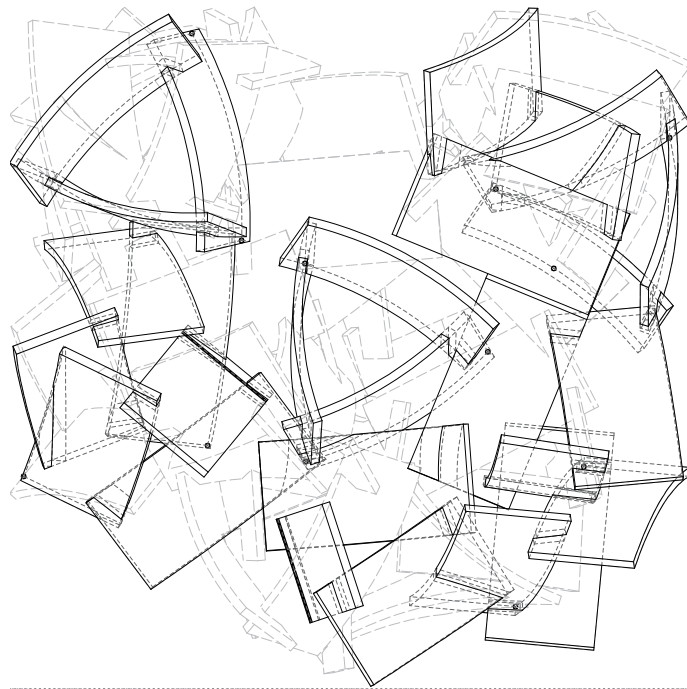


# Flip Pavilion

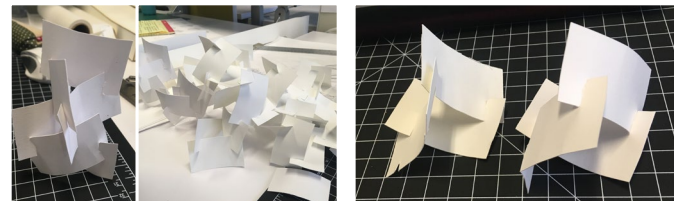
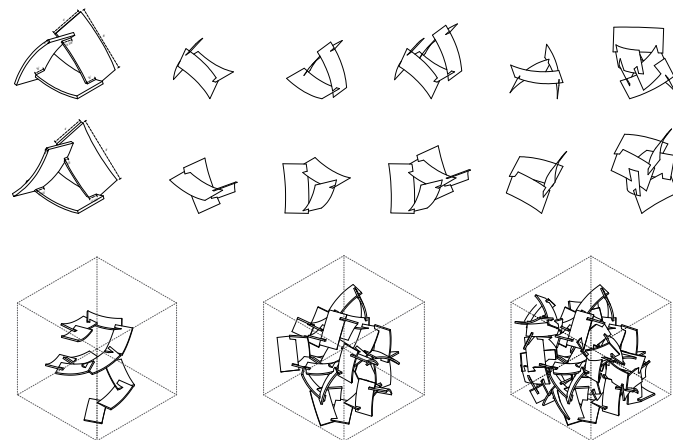
ACADEMIC . Architecture

Individual Work | M.Arch Taubman College  
University of Michigan | Summer 2019 | Instructors  
Jacob Comerçi, Brittany Utting, Jeff Halstead

This project uses the verb "Flip" as a metaphor to start design. Three sheets of rectangular paper were tested to form a "unit" that has potential to stack. The final model was first built in Rhino. All units are organized to support a continuous path from ground to top. Each unit is supported by other units or to be the support from the ground.



Ground Floor Plan



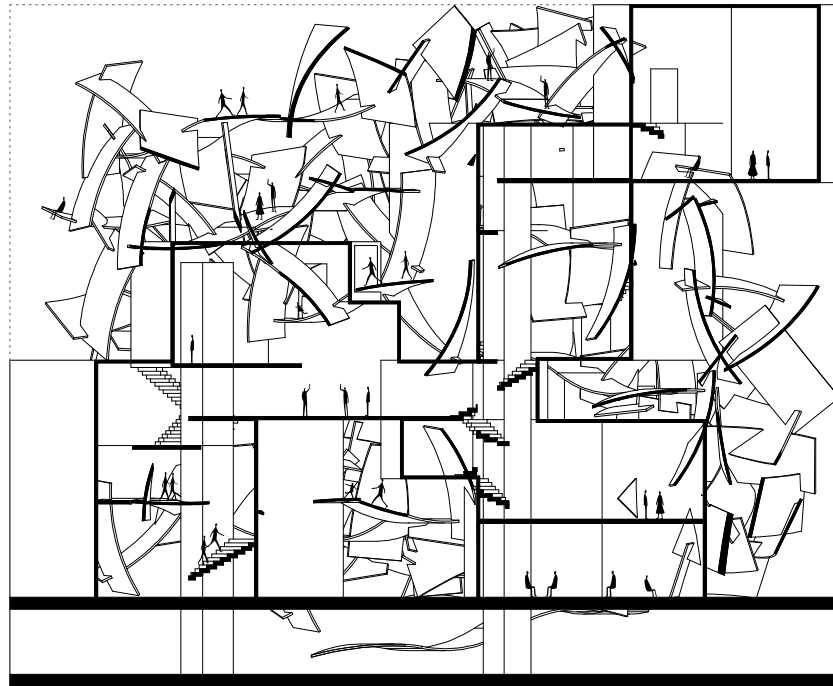


# Flip Museum

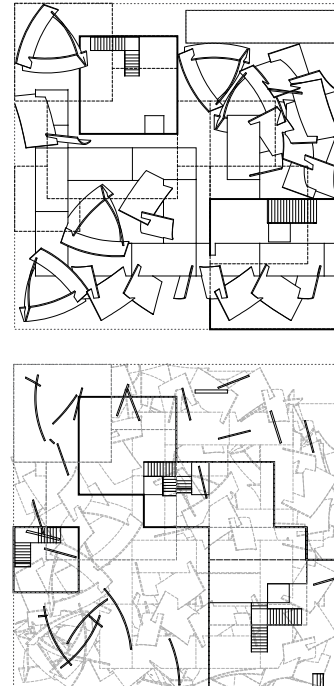
ACADEMIC . Architecture

Individual Work | M.Arch Taubman College  
University of Michigan | Summer 2019 | Instructors  
Jacob Comerçi, Brittany Utting, Jeff Halstead

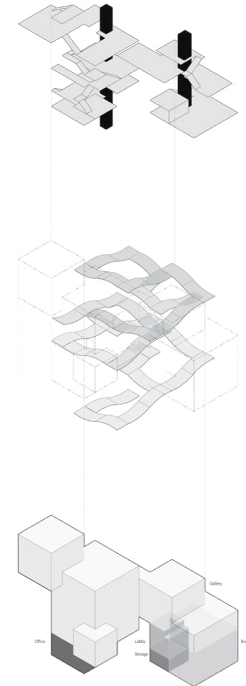
Flip Museum uses the same design concept as Flip Pavilion but provides indoor space for shelter. "Flip units" acted as both the supporting structure of the building and the path connecting interior and exterior space.



Diagonal Section



Ground Floor Plan (upper)  
2nd Floor Plan (lower)



Floors  
Flip Path  
Building





# Centrifuge House

ACADEMIC . Architecture

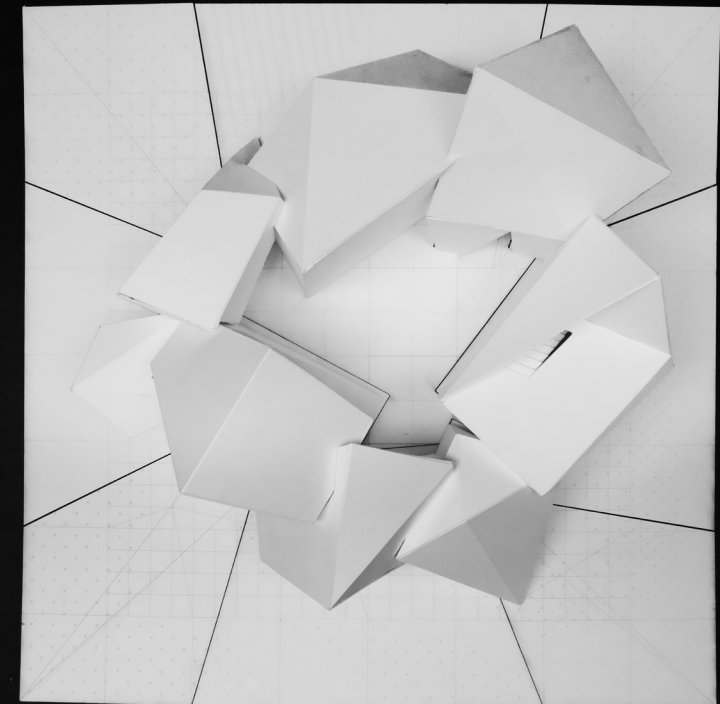
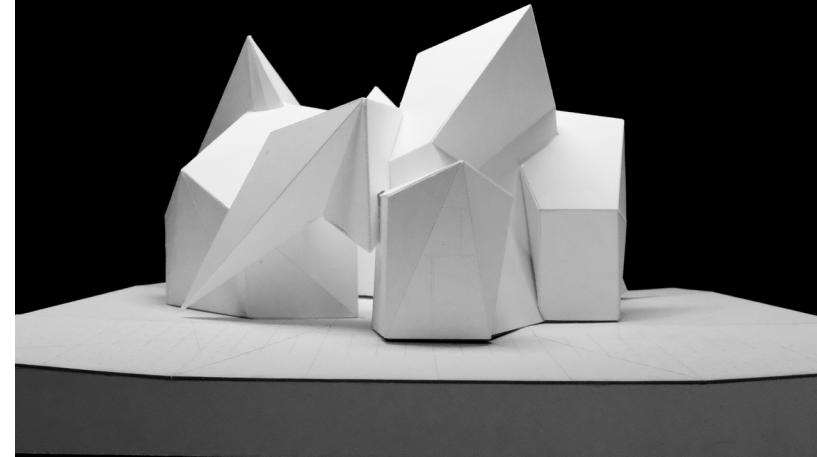
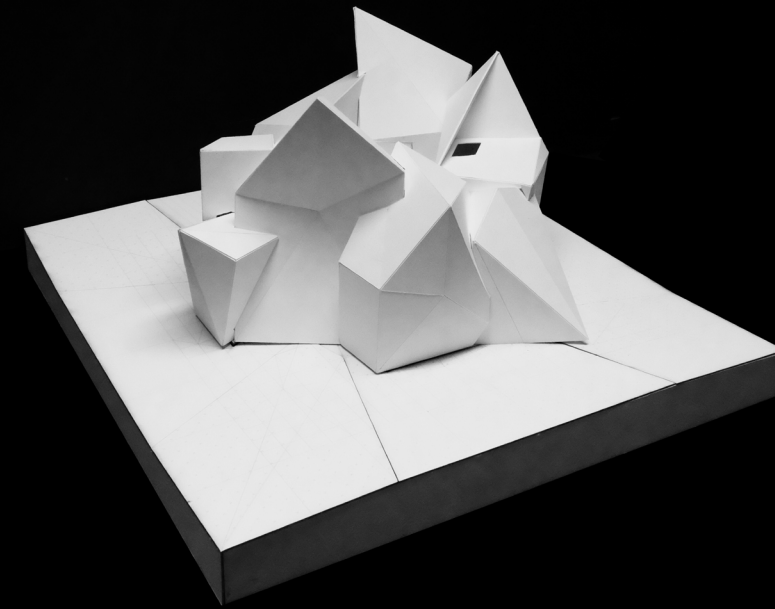
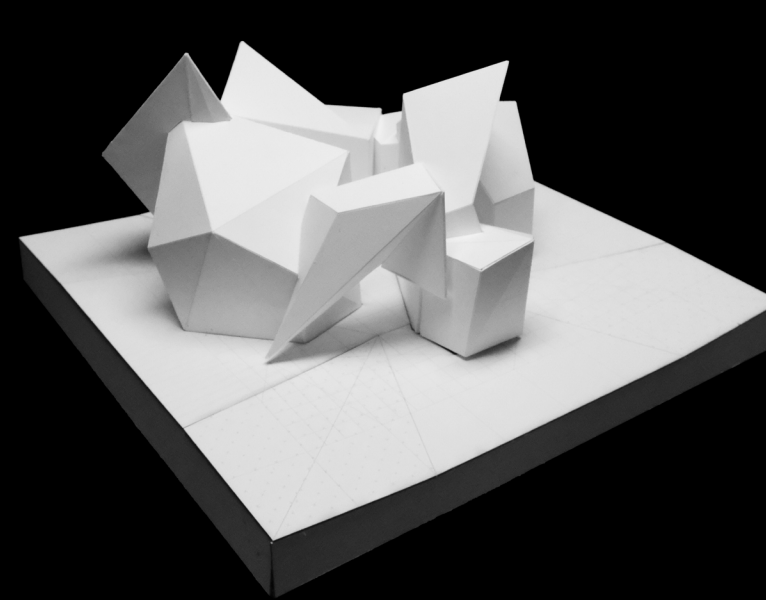
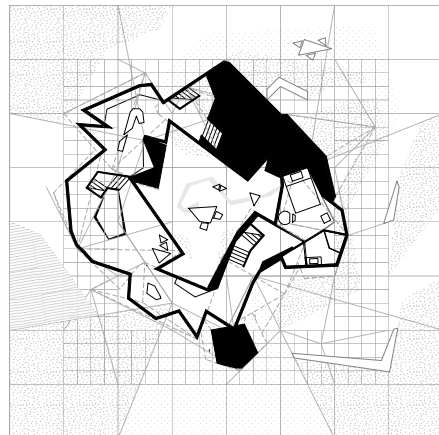
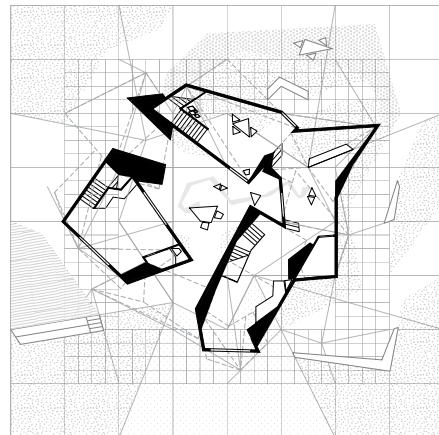
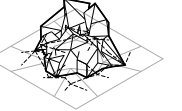
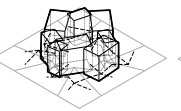
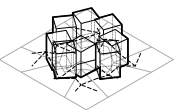
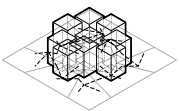
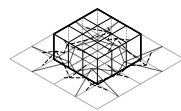
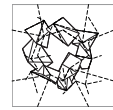
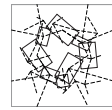
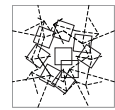
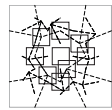
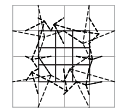
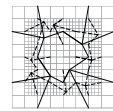
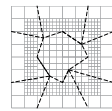
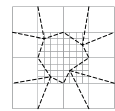
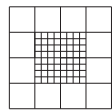
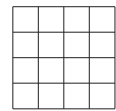
Individual Work

M.Arch Taubman College  
University of Michigan

Summer 2019

Instructors  
Jacob Comerçi, Brittany Utting, Jeff Halstead

Centrifuge investigates the design process of form making. The building was developed from a series of movements. "Regionalization", "Centralization", "Decentralization", "Move", "Rotate", and "Scale 1D" were used to determine the 2-dimensional base plan of the ring of buildings. In 3-dimensional space, the centroid of each facade and corners repeated the action of "Centralization", "Decentralization", "Move", "Elevation", and "Depress" by referencing the base plan.





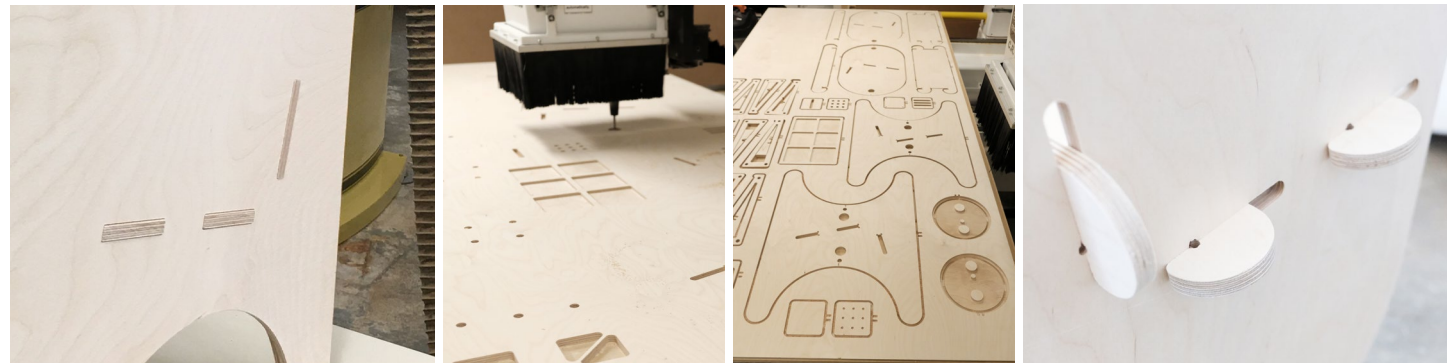
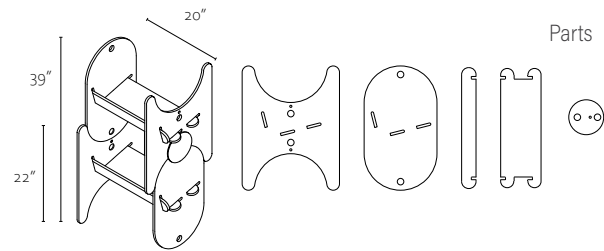
10.

# CNC Bookshelf

ACADEMIC . Architecture

Individual Work | M.Arch Taubman College  
University of Michigan | Winter 2021 | Instructor  
Gabrielle Clune

This bookshelf explored glue-free wood joinery by using 3-axis CNC machine. It was designed in unit set that could stack repetitively. Multiple trials were conducted to get the best machine tolerance for the joints to fit tight and minimize the post-production work.





11.

# Rocker Stools

ACADEMIC . Architecture

Individual Work | M.Arch Taubman College  
University of Michigan | Fall 2021 | Instructor  
Glenn Wilcox

This series of stools investigates different forms of rocker made from wood and rod. 3-axis CNC Machine and Robotic Rod Bending Machine were used.

Limitations were insufficient time to test the tolerance between rod and wood. Rods fit well in the wood pockets in their raw state. Paints and welds added extra thickness to both materials. As a result, some rod and wood joints failed to fit.



12.

# Truss Structure

ACADEMIC . Architecture

3 People Group Work | M.Arch Taubman College  
(with Nishita Vinodrai, Miranda Bibb) | University of Michigan | Fall 2021 | Instructor  
Wesley McGee

This project studied how rod could become the structural and aesthetic component of a staircase by taking the advantage of Robotic Rod Bending Machine.

The biggest challenge came from the robotic machine. The outputs were not accurate as the input model in Rhino. Machine should to overbend rods to get the desired final shape as the material tends to return backwards. Calibration of machine would be required if the project continued.





13.

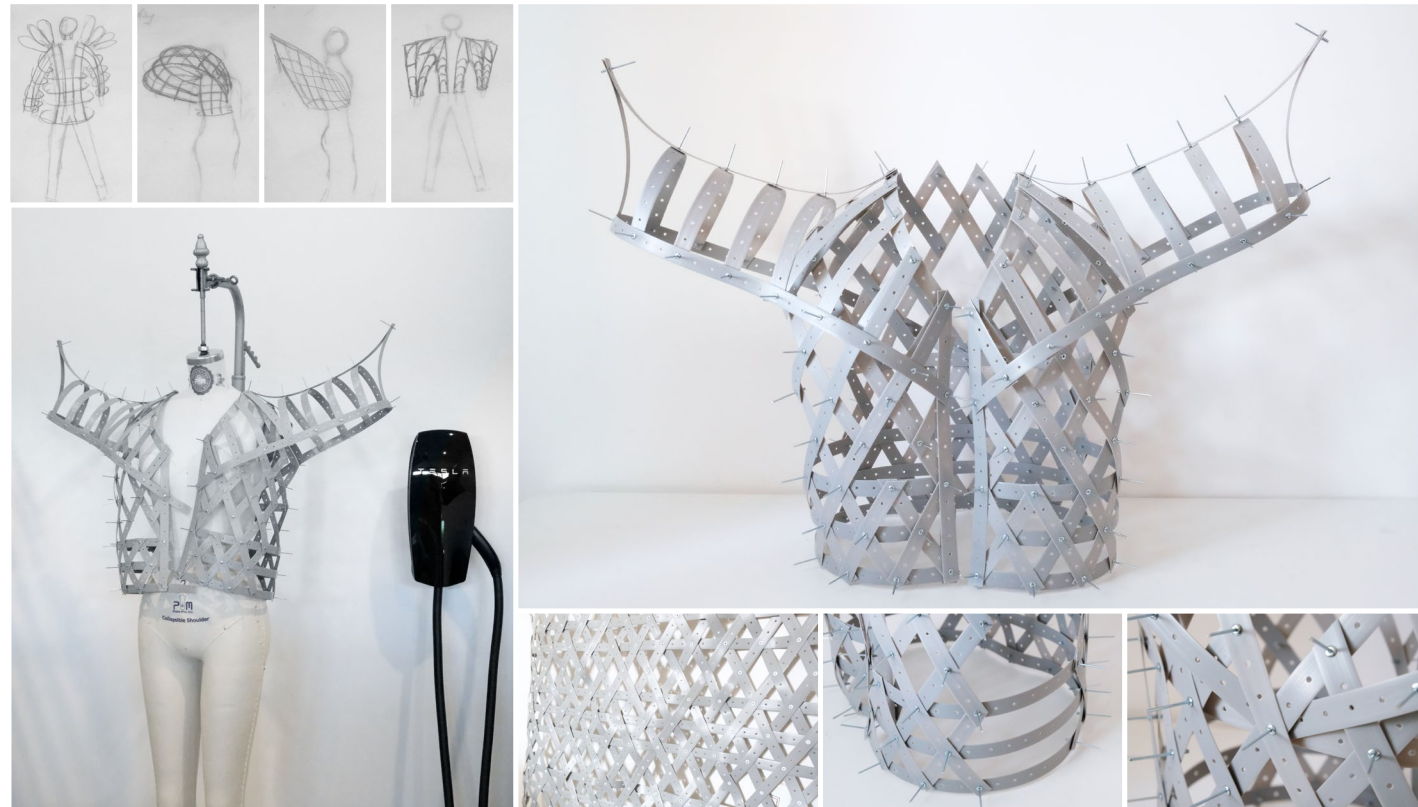
# Rivet Armor

ACADEMIC . Architecture

Individual Work | M.Arch Taubman College  
University of Michigan | Fall 2020 | Instructor  
Tzs Yan Ng

Armor Jacket transformed hardware material from raw to textile, and to a garment. It began with a linear construction material - plastic hanger straps - are weaved to make a sheet textile by using rivets to fasten the joints. The stiffness of the strap allows the jacket to hold its shape and structure. Its pliability makes a shell that can wrap around a body.

Armor Jacket developed a new textile typology through manipulation of unconventional fabric material and stitching method. It exams the cross-disciplinary inspiration between architecture and cloth, body and environment.



14.

# Recycled Curtain

PERSONAL . Installation

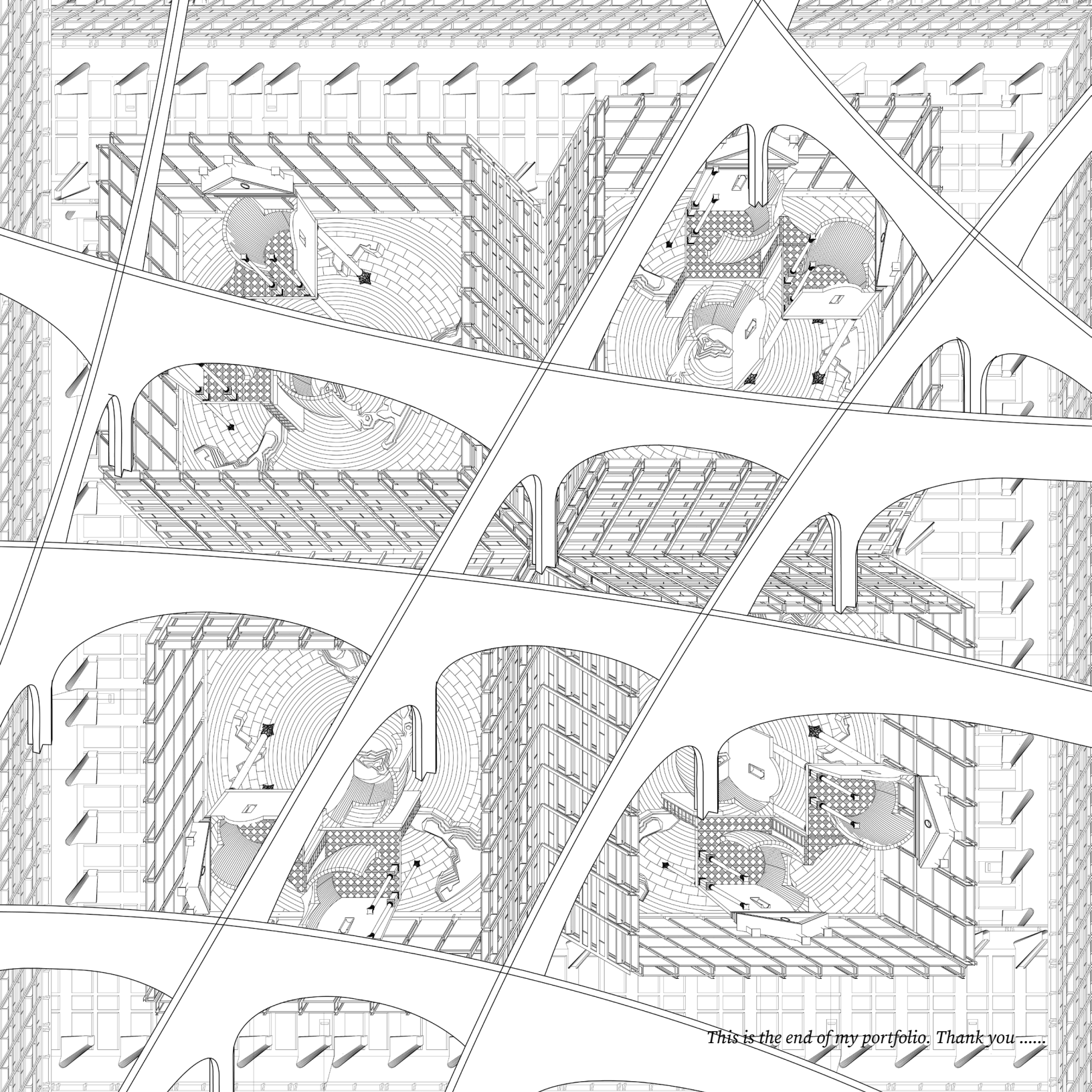
Individual Installation | Ann Arbor Art Center | 2020

Recycled Curtain was a project selected and supported by Ann Arbor Art Center to be presented during Youth Art Month 2020. It addressed the issue of sustainability and reminded the world the enormous amount of waste we are creating is leading to a trash crisis.

Students and teachers from the Ann Arbor Public Schools collected coffee paper cups, sanitized and unfolded to build this installation.







*This is the end of my portfolio. Thank you .....*