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Smolenskaya Street, Moscow, 2018

PROLOGUE

The city should be a place of collective spirituality. But it is always difficult for us to see where we will find the value of our existence in the future cities as a spiritual life during this huge urbanization and urban transformation.

Being in Moscow for years, as a person who had a minimal understanding of the land and the culture prior to arriving, I faced considerable challenges in studying and living here. These challenges came from many obstacles such as communication, differences in thought and behaviour. These difficulties provided me with a perspective to observe architecture and urban design differently, considering what kind of urban space can enhance the bond between members of society. I have explored how design can embrace this inclusion.

I hope to create urban accessible space that evokes a sense of place and culture. The space should be spiritual, since I believe that such a place can help citizens reshape the relationship between the individual and the city, where a human's inner world cannot be engulfed by urbanization.

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Lines not Splines

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THE LEAP

Model Fictions

The image is a detailed architectural rendering of a 'Rapidly Deployable Epidemiology Clinic'. It features a long, narrow corridor with a high ceiling. The structure is composed of several white, cylindrical units on tracks, connected by a complex network of dark metal beams and supports. The lighting is dramatic, with strong shadows cast across the floor and walls, suggesting a bright light source from the right. The overall aesthetic is clean, industrial, and futuristic.

01 ANOTHER BIRTH OF THE CLINIC

A Rapidly Deployable Epidemiology Clinic

Architectural design
Group work
Haoran Xu, Fan Liu
September - December, 2020

Program: The Clinic
Instructor: Michael Bell
Architecture, Advanced Studio 5 - Fall 2020
Columbia University, GSAPP
Recommended Site: Beirut, Lebanon.

This is a brief documentary about how a rapidly deployable clinic is applied to the world. In 2020, the world has experienced an unprecedented crisis. Standing at this moment, we can barely say that we were initially prepared. The temporary shortage of resources may be able to be reloaded in wealthy places, but what about the rest of the places?

What crisis we are facing?



Source: Mar. 31, 2020, Inside a Brooklyn hospital that is overwhelmed with Covid-19 patients and deaths, CNN

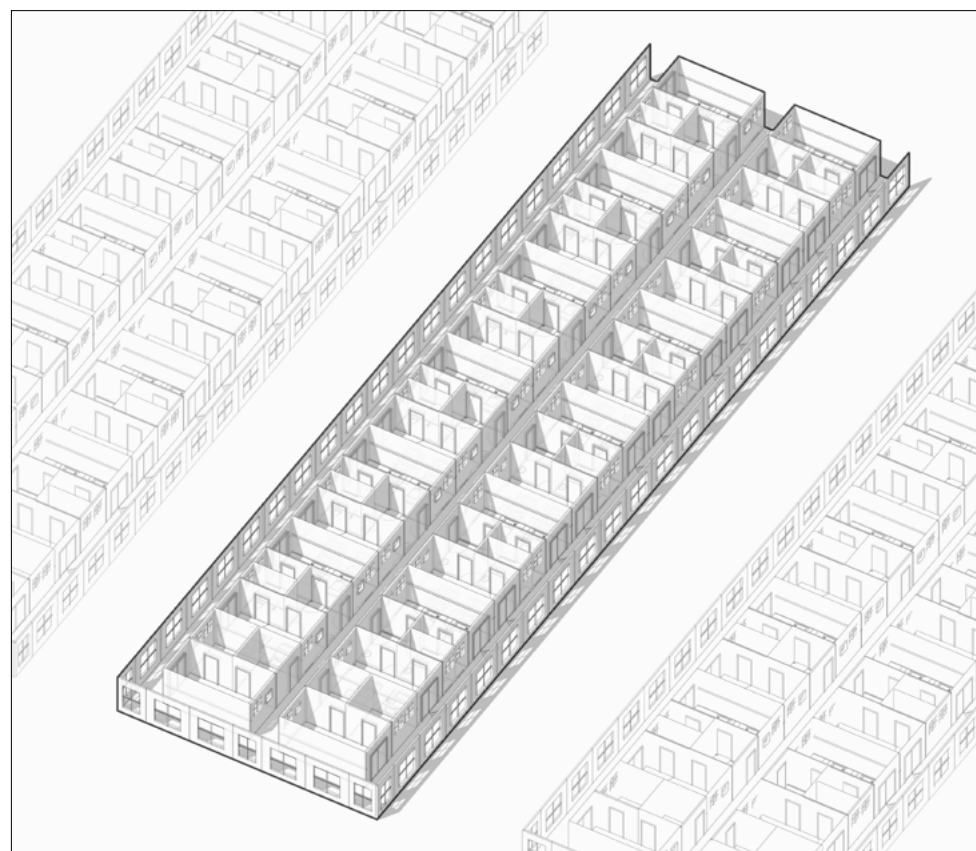


Nov. 17, 2020, drivers wait in long lines at a COVID-19 testing site in a parking lot at Dodger Stadium in Los Angeles. source: 'Tired to the bone': Hospitals overwhelmed with virus cases, AP News

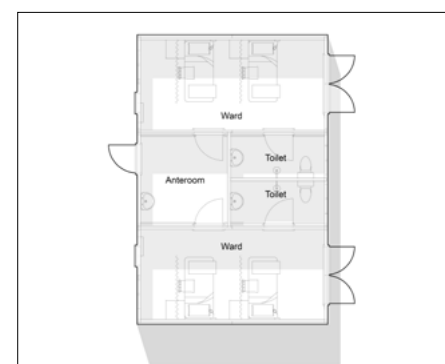
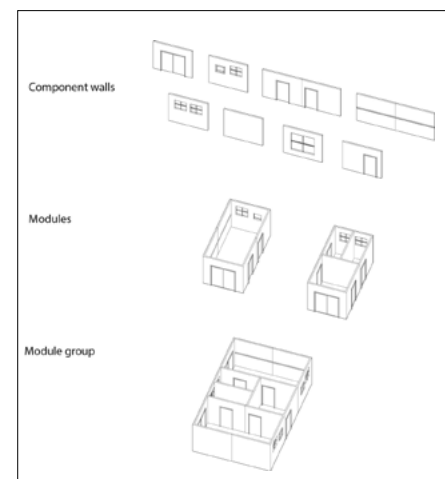
What have we already done in reaction to pandemic?



Source: World Health Organization

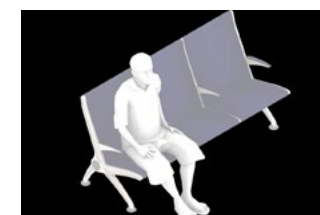


Wuhan Leishenshan Field hospital

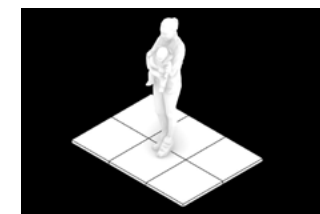


Who is the user?
What do we touch/need/feel in a clinic?

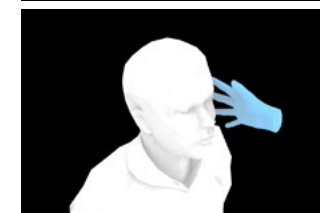
Sit on bench



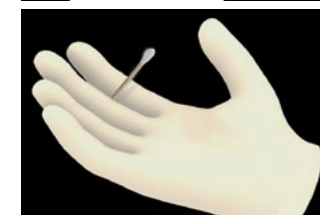
Stand on floor



Touched by doctor



Grab and hold a swab



Lie on bed



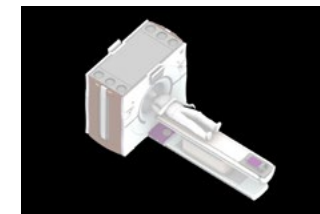
interact with devices



Use breathing machine



Lie on CT scanner



Cloth fabric



Ceramic tile



polyethylene



Bamboo wood



Lie on bed



ABS plastic

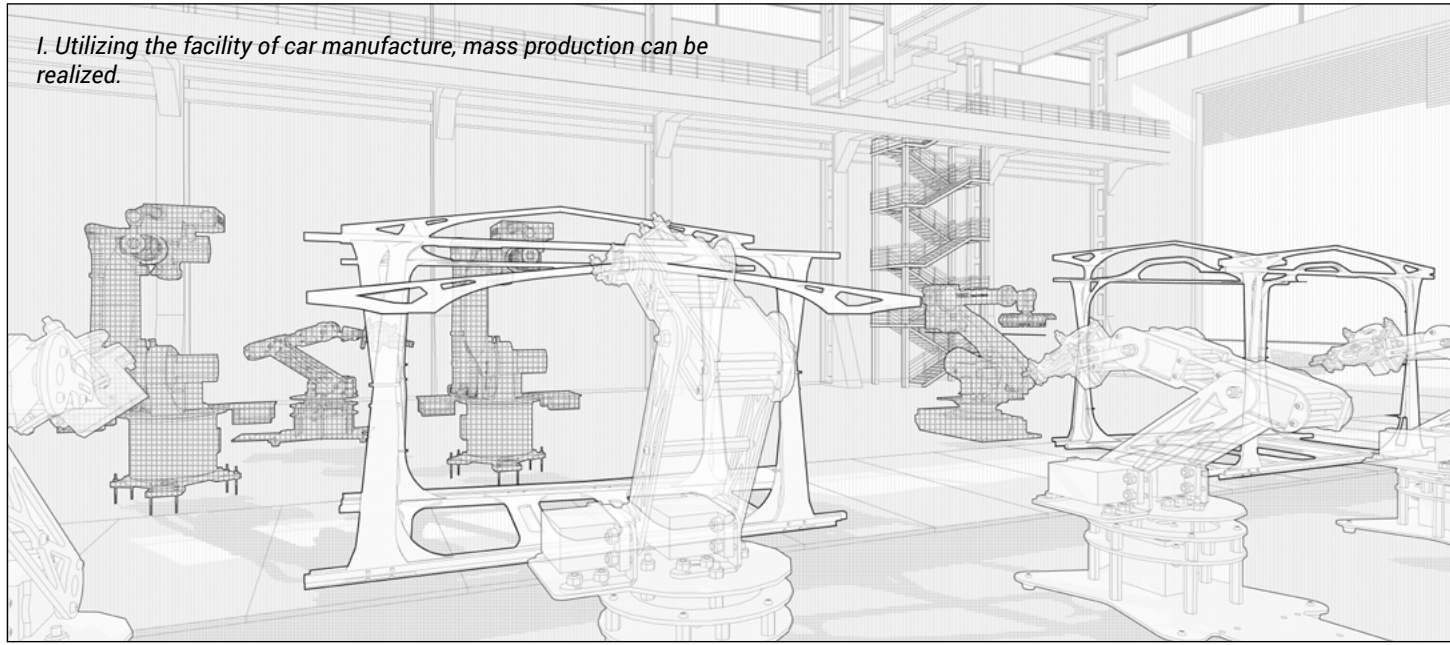


plexiglass

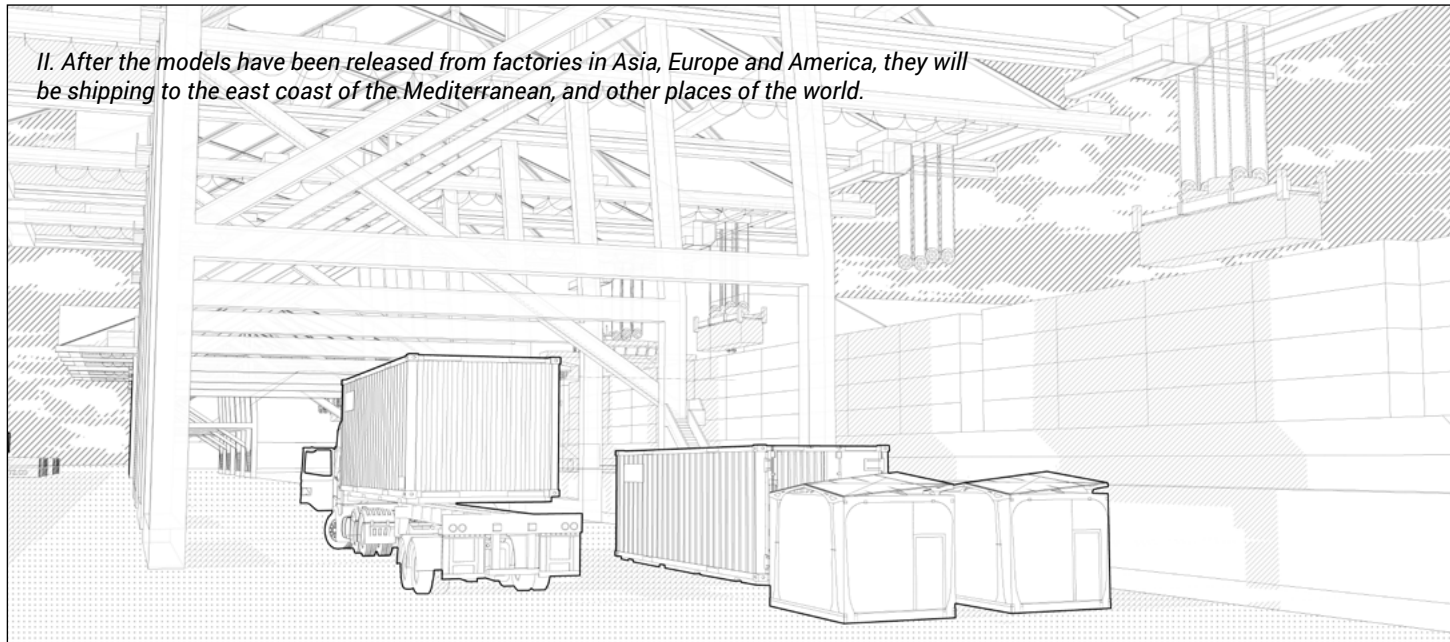


Vinyl/plastic

I. Utilizing the facility of car manufacture, mass production can be realized.



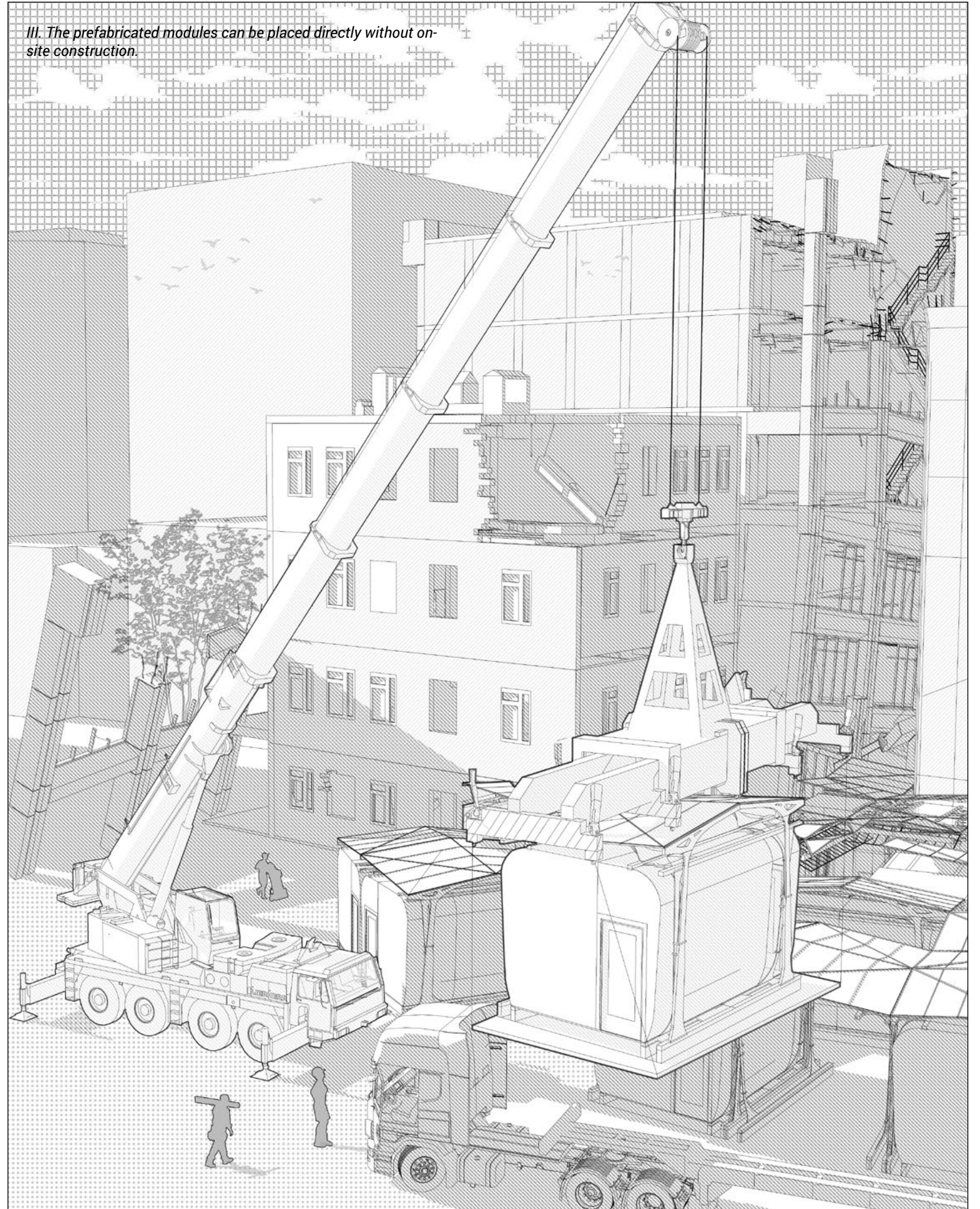
II. After the models have been released from factories in Asia, Europe and America, they will be shipping to the east coast of the Mediterranean, and other places of the world.



IV. The new clinic units can start the service once the staff is recruited.

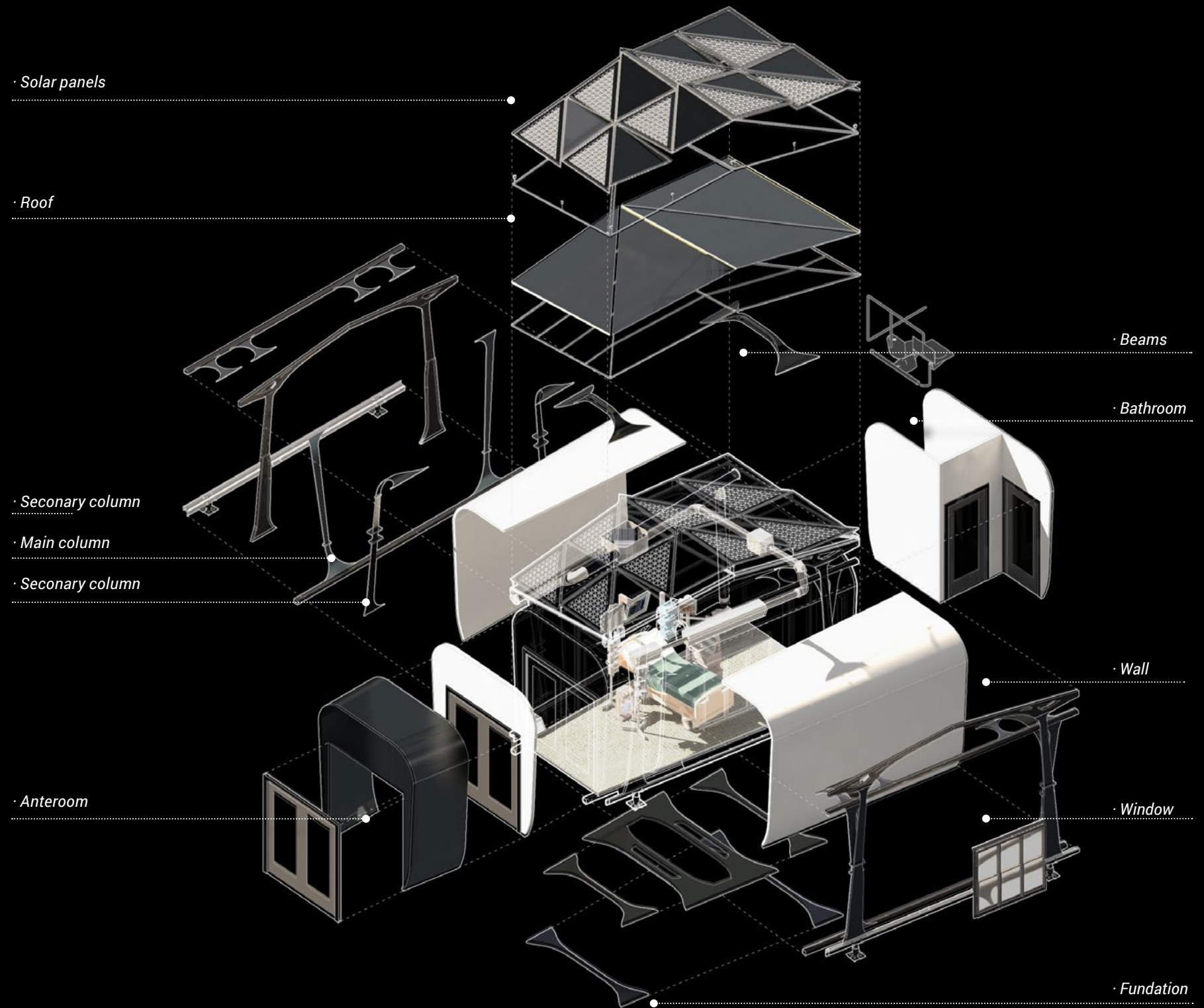


III. The prefabricated modules can be placed directly without on-site construction.



1. Treatment Module

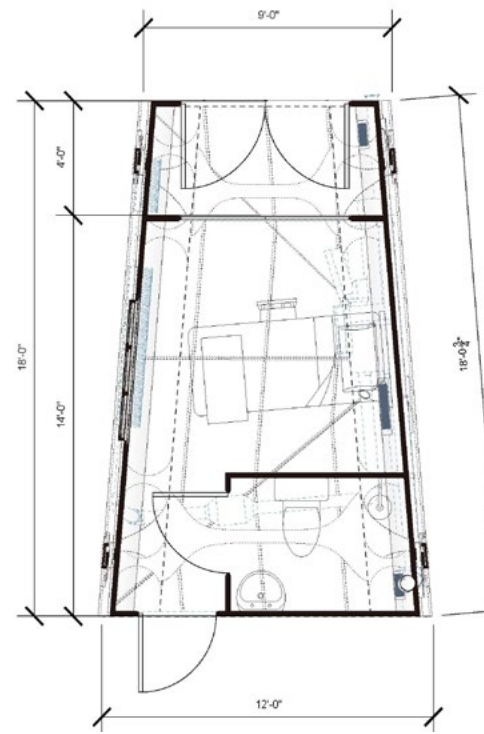
Exploded View



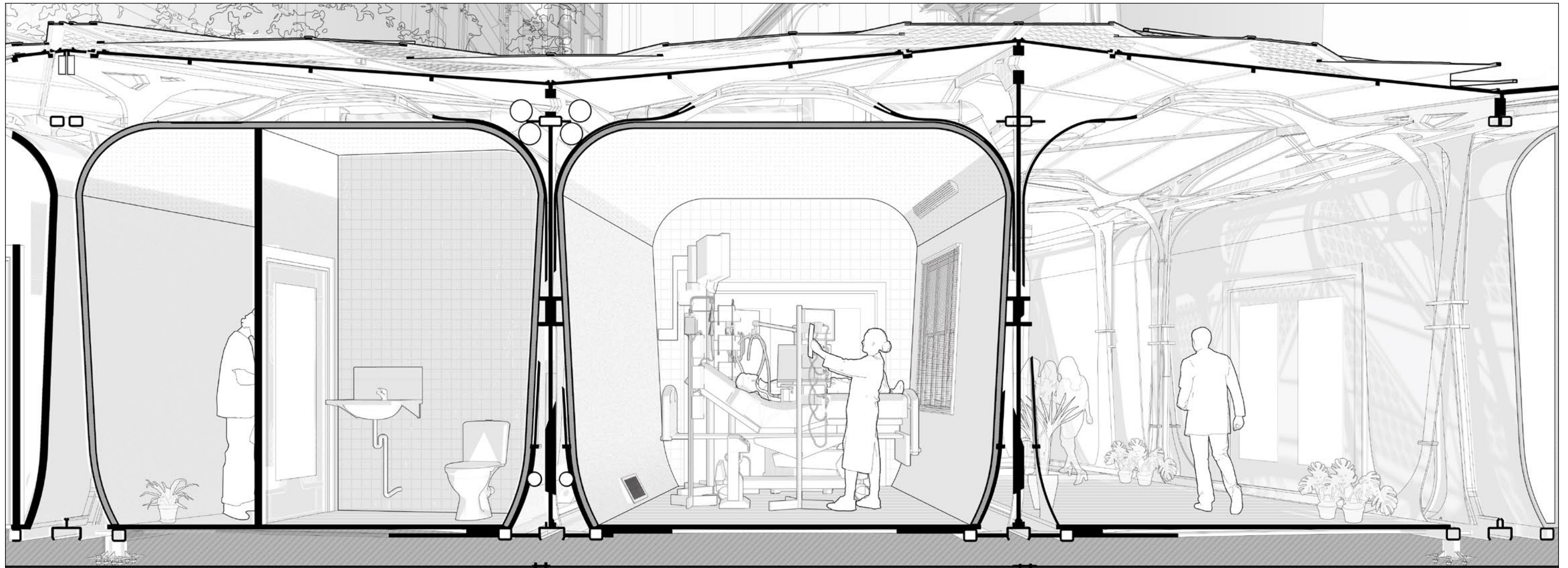
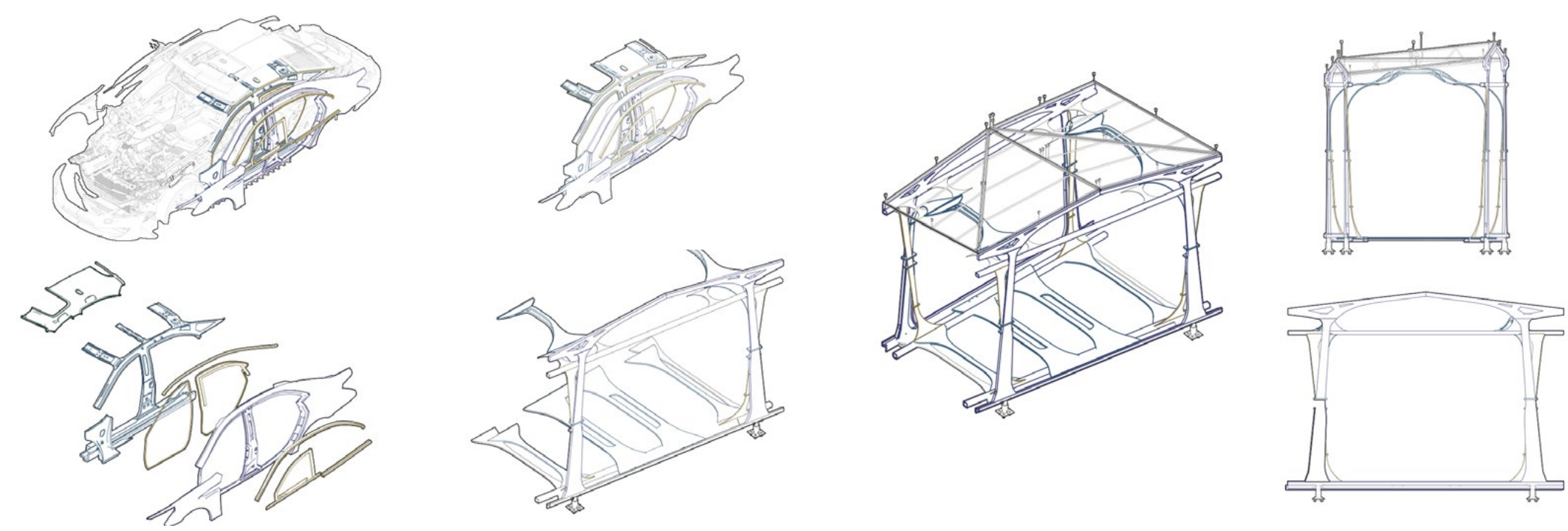
After identifying that to which extends do we rely on the facility and equipment, the design approach is to scale it down and maintain the minimal space we actually need in an emergency. This is an architecture consisting of chassis, pillar, steel, glass, and monocoque, which build up a negative-pressurized ward module with a toilet and anteroom. Different hierarchies of columns are welded together, providing support to different components.

Manufacture

Monocoque system makes the whole body weigh lighter and faster to assemble. loads are supported by an object's external skin, rather than attaching them to a frame. The pillars are united with the chassis and the other parts to hold the entirety. Without concrete or bricks, the structure becomes lighter and even stronger.

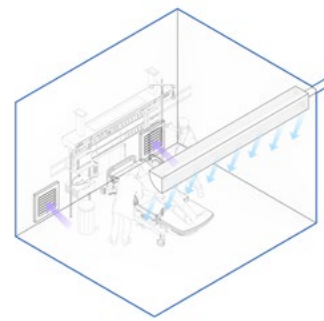


Doctor door
Anteroom
Ward
Toilet
Patient door

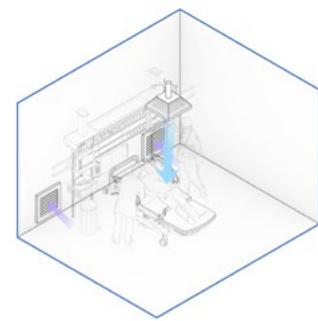


Ventilation and Airflow Design

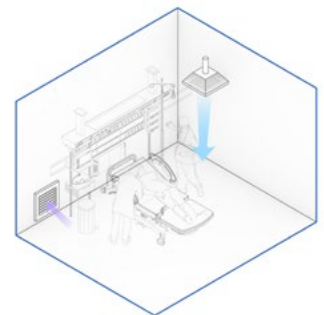
To function the ward unit with airborne infection isolation and negative pressure, it's necessary to choose the most efficient airflow design to protect the doctors, supported by research and lab reports. The vector-flow diffuser results in higher clean efficiency on the height of breathing, with lower air velocity, which creates a more comfortable environment for patients to recover.



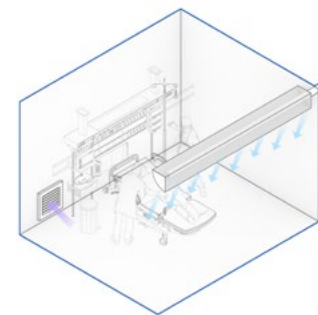
a. 1 vector-flow diffuser
2 air outlets on 2 sides of bed



b. 1 top diffuser in center
2 air outlets on 2 sides of bed



c. 1 top diffuser off-center
1 air outlet

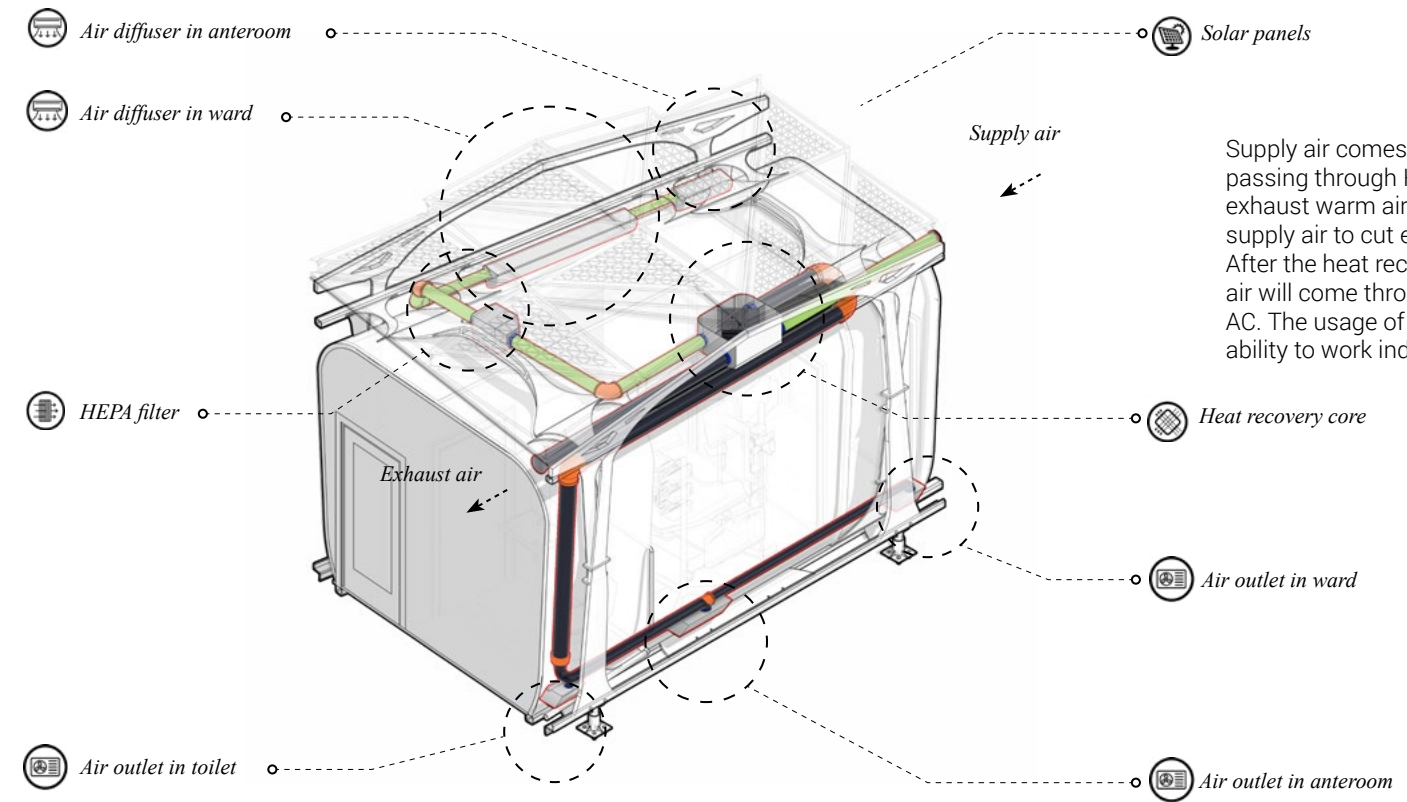


d. 1 vector-flow diffuser
1 air outlet

Comparison of the concentration of pollutants at a height of 1.5m*

	a	b	c	d
Concentration(PPM)	0.007	60	6.7	0.003

*Source of Lab report: M. Li, Research on Air Distribution and Air Changes in Airborne Infection Isolation Room, Tianjin University, 2010.



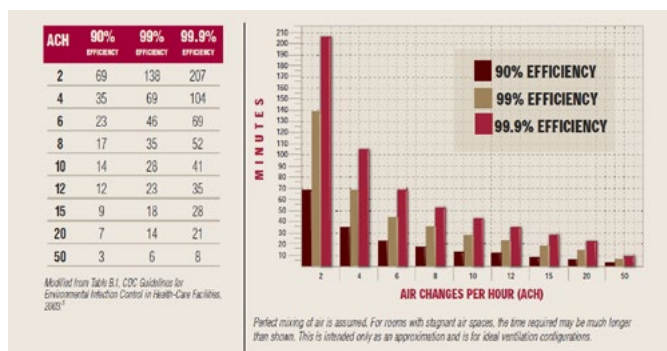
Supply air comes to the room after passing through HRV, in which the exhaust warm air will transmit heat to supply air to cut energy consumption. After the heat recovery core, the supply air will come through a HEPA filter and AC. The usage of solar energy keeps its ability to work independently.

Calculation of Duct Dimensions

According to the relation between air change time per hour and particle removal efficiency, they use 12 as the ACH in the ward, 10 in the anteroom, and 8 in the toilet. To limit the noise effect, set the appropriate duct air velocity.

Functions	Air pressure (negative to atmosphere) Pa	Area Sq ft	Height ft	ACH max	Exhaust volume cub ft
Ante-room	-15	51	10	10	5100
Ward	-25	104.6	10	12	12552
Toilet	-30	33.4	10	8	2672

Airflow Measurement	Measured Flow Rate, L/s (cfm)*	ACH	Pipe size diameter inch/feet	Air Velocity in duct ft/min NR level=35
Exhaust				
Ante-room Exhaust Fan	85	10	3.5/0.29	1280
Ward Exhaust Fan	209	12	5.5/0.46	1280
Bathroom Exhaust Fan	46	8	2.6/0.22	1280
Total Exhaust	340		6.5/0.54	1476
Supply				
Ante-room Supply Fan	68	8	3.2/0.27	1280
Ward Supply Fan	105	6	3.9/0.33	1280
Total Supply	173		5/0.42	1476



ACH and removal efficiency

source: Airborne Infectious Disease Management, Methods for Temporary Negative Pressure Isolation Minnesota Department of Health

Table 1 - Maximum duct velocities and noise effects					
Required NR level	Riser velocity (m/s)	Main supply duct velocity (m/s)	Branch duct velocity (m/s)	Run-out velocity (m/s)	Return duct velocity (m/s)
50	10.0	10.0	8.0	6.0	8.0
45	10.0	9.0	7.0	6.0	7.0
40	10.0	8.0	7.0	5.5	7.0
35	10.0	7.5	6.5	5.0	6.5
30	9.0	6.5	5.5	4.0	5.5

NC 35
Quiet office; satisfactory for conference at a 5m table; normal voice 3 to 10m; telephone use satisfactory.

Private offices, schools, hotel guestrooms, courtrooms, churches, hospital rooms.

Air velocity and noise control

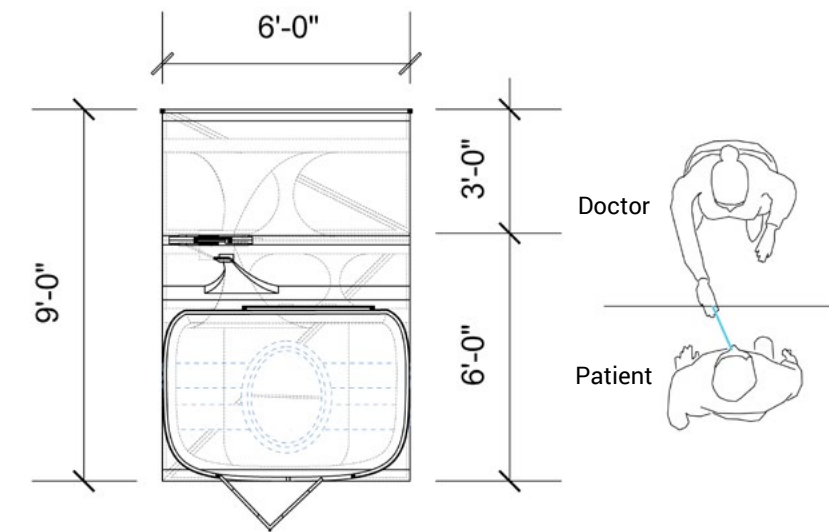
source: Managing noise in ductwork systems, www.airah.org.au/nation

2. Test Unit



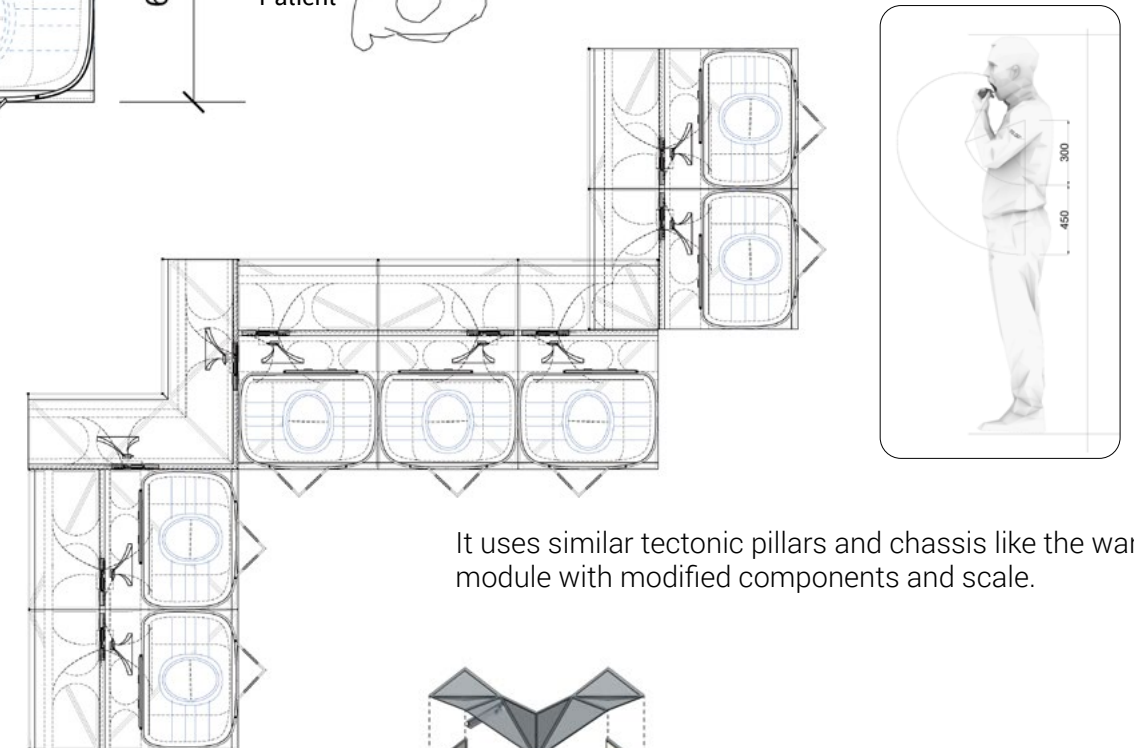
Apart from a room for treatment, it's a necessity to have a dedicated space to take tests more safely. This is one of the test units, each of them can receive 1 person to take the test. The doctors separated from test-takers will stand at the backside of the unit, having their arms wearing PPE cross the hole openings on the wall panel, and conduct a swab test.

Plan



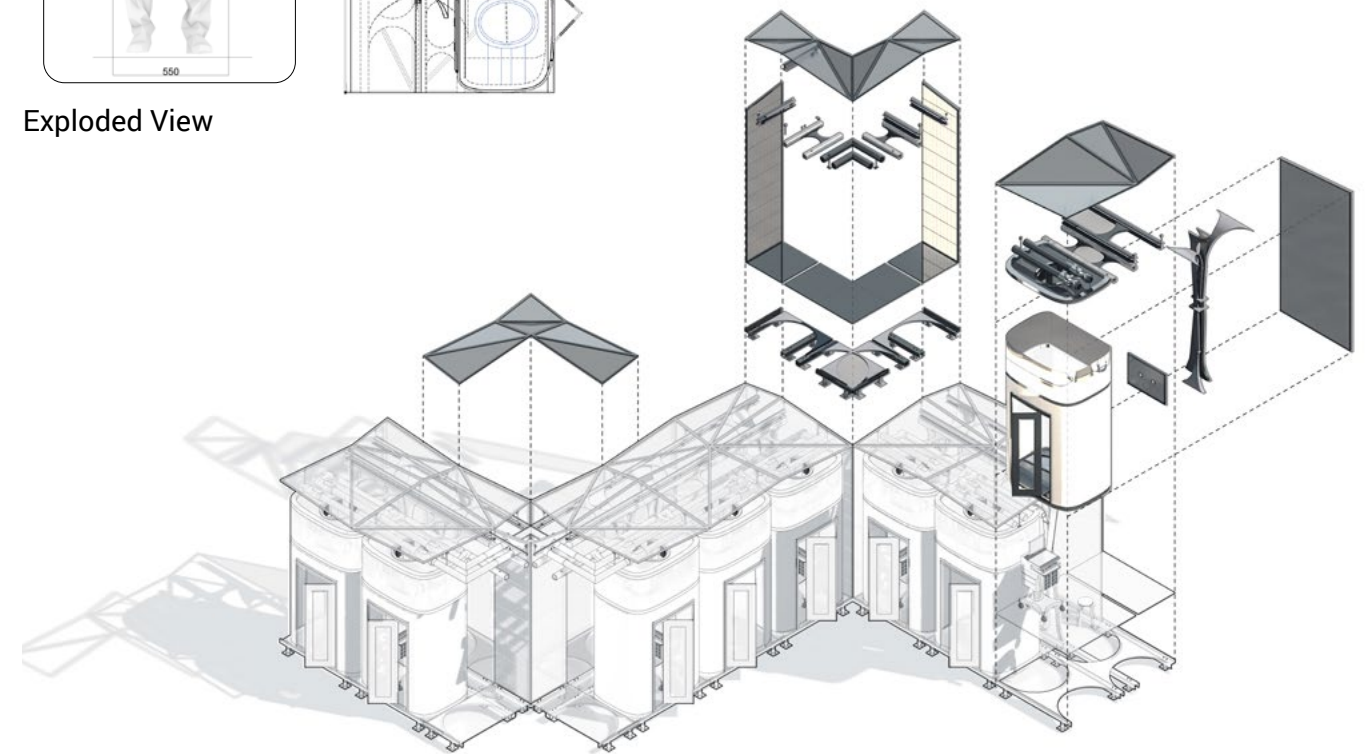
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Units in Group



It uses similar tectonic pillars and chassis like the ward module with modified components and scale.

Exploded View



EAST HARLEM PRESS

No.365

Friday, Dec. 10, 2021

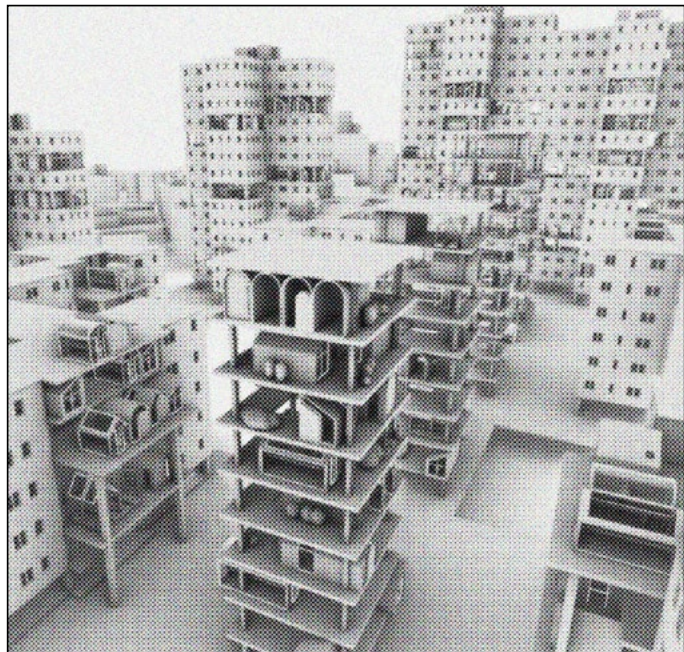
New York

A recent design of the East River Houses was released on social media by a student of Columbia University Graduate School of Architecture Planning and Preservation, and it was reposted by the residents of East River Houses. Hence it also brought up the attention of other people including the press, media and of course, architecture critics. The feedback of it was controversy.

According to the designer himself after his proposal was reposted widely, which was "out of his expectation", we had a short ZOOM interview with him. "Social house project was the effort of creating a single functioned area for dwelling, which was the representation of the initial

Debates on New Design of East River Houses

"We deserve this idea, I don't see why not."
*.....It's absurd"



intention of living together, building up a new order, a heterotopian place. However it turned out to be an illusion, the willing becomes a more or less utopia that is not real."

Our journalist also reached Aron Aronson, who is an associate professor and architecture critic teaching at Aronson State University. "It's quite absurd to me and the whole form is a cliché. It's a naive imitation of the idea of vernacular architecture and symbolism addressed by Scott Brown and Venturi."

While according to a resident, Pablo Thomphton, who has lived in East River Houses more than 25 years, said that he and his family would like to see this in real. "We need a better place to collabrate, I MEAN IT, you all see this crime alert happening on the site. Plus, I love to cook and show my skill of Peruvian dish. It's simple structure, I don't see why not"

Another critical comment demonstrated by a guest professor of Columbia comes more straightforward. "We all know James Wines, so what's the point of duplicating?"

The designer doesn't tend to defend too much. "I actually would like to see the debates around it. All I want is to bring a new mode of reconstruction, in a way of shifting and expanding the association of living, a montage of scenarios."

How this project will impact further, we will keep up delivering the following updates.

All we know is that the debates are still going on.



NYCHA Program to Streamline Maintenance Requests Leaves Pile of Trash

EAST HARLEM — Residents are blasting a pilot program designed to streamline repair requests in New York City Housing Authority buildings, despite the city's claims it's working.

In January 2015, NYCHA put property managers of 18 developments (five in East Harlem) in charge of maintenance and repairs at their own buildings by giving them their own budgets and authority to contract out the work.

Before the "OPMOM" program, everything went through NYCHA's centralized system. During the program's first year, maintenance response times at the Lincoln Houses dropped from a 40-day average last January to 13.5 days in November. At the Wagner Houses, they were cut down to 2.5 days, according to NYCHA.

East River Houses' trash problem is so bad that people across the street can smell it from the eighth floor, resident Willy Ford said.

"It stinks," he said. "Right before Christmas there was trash on the sidewalk. People had to walk in the street; they don't know what's going to pop out of there."

According to NYCHA, response times to emergency repairs at the East River Houses have decreased under the new program. The average time it takes to make those repairs has gone from 25 hours in October to 14 hours in November (annual figures were not available). The program's goal is to stay below 24 hours. Victor Bach, a Senior Housing Policy Analyst for Community Service Society, has spoken to a number of NYCHA residents and staff about the program over the last year. He has not heard glowing reviews.

"Over the past year the first impression I get is that people don't think it's really working," he said. "The decentralization is basically a good idea but hasn't been well implemented. The thing I kept hearing is managers have not been properly trained."

In terms of managing their money, three of the five East Harlem developments were over budget in October 2015, but were able to bring spending down the following month, according to NYCHA.

Wagner and East River were both under budget for both October and November. Budget figures for the entire year were not available.

SCOTT STRINGER: "WE ARE GOING TO RAISE THE ROOF ON NYCHA"

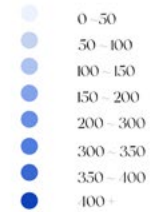
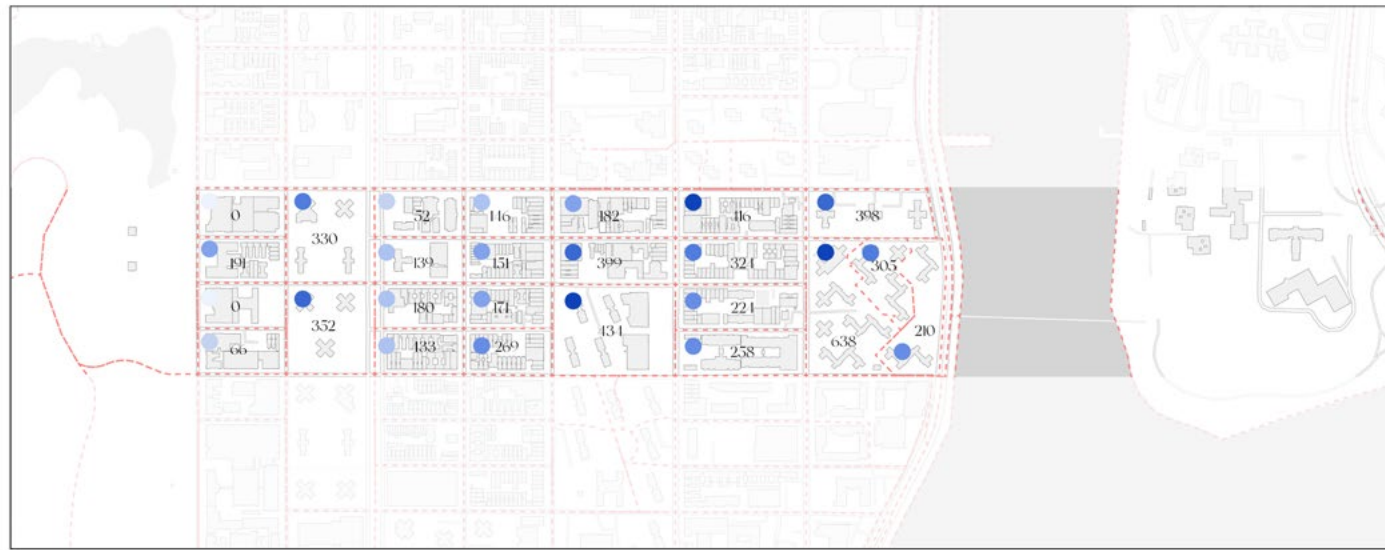
"Over 40 developments don't have gas service."

According to the reporter Monica Morales, a 6 times Emmy Award winner, who has been following the issues of NYCHA projects for multiple years, recently invited City Comptroller Scott Stringer to a protest of NYCHA residents.

"We will be fighting for families at the East River Houses", said Stringer.



East Harlem 2020s'



El Barrio, once upon a time

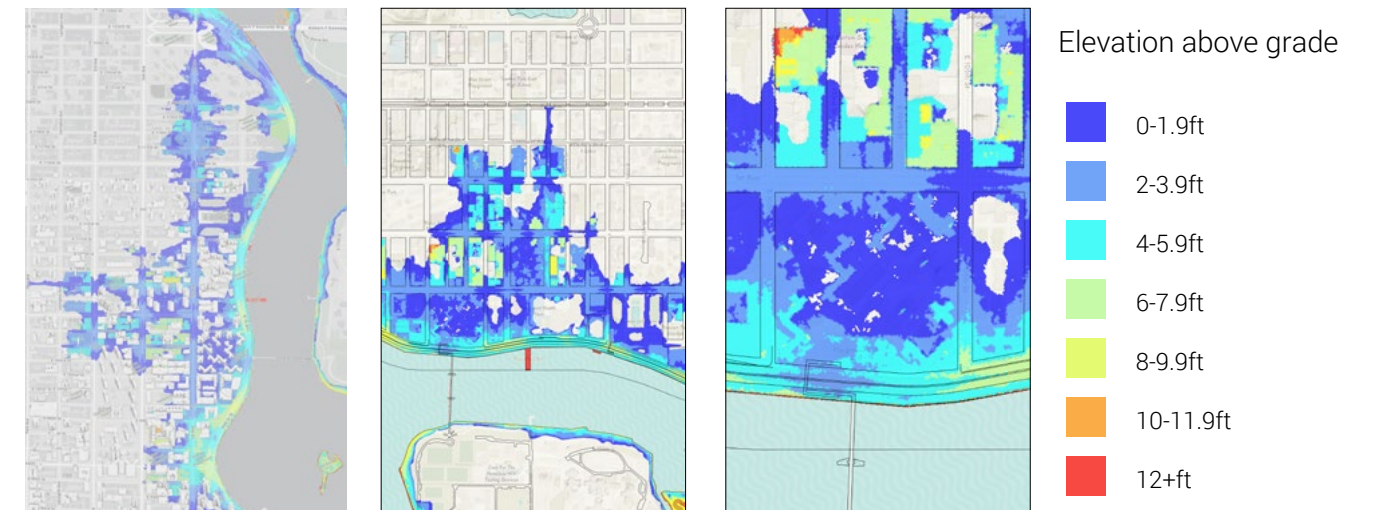
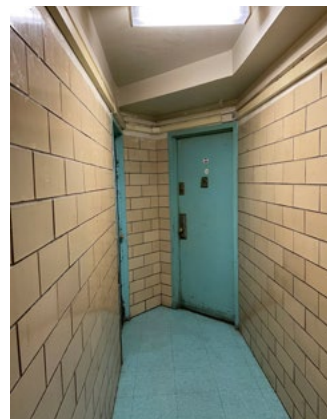


Flood Map of East Harlem

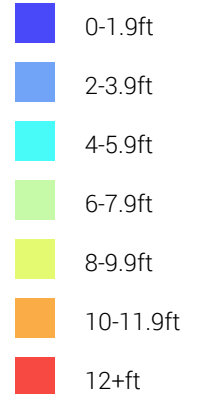
a structure must be elevated or floodproofed to meet code requirements for new construction or to receive reduced flood insurance premiums



East River Houses

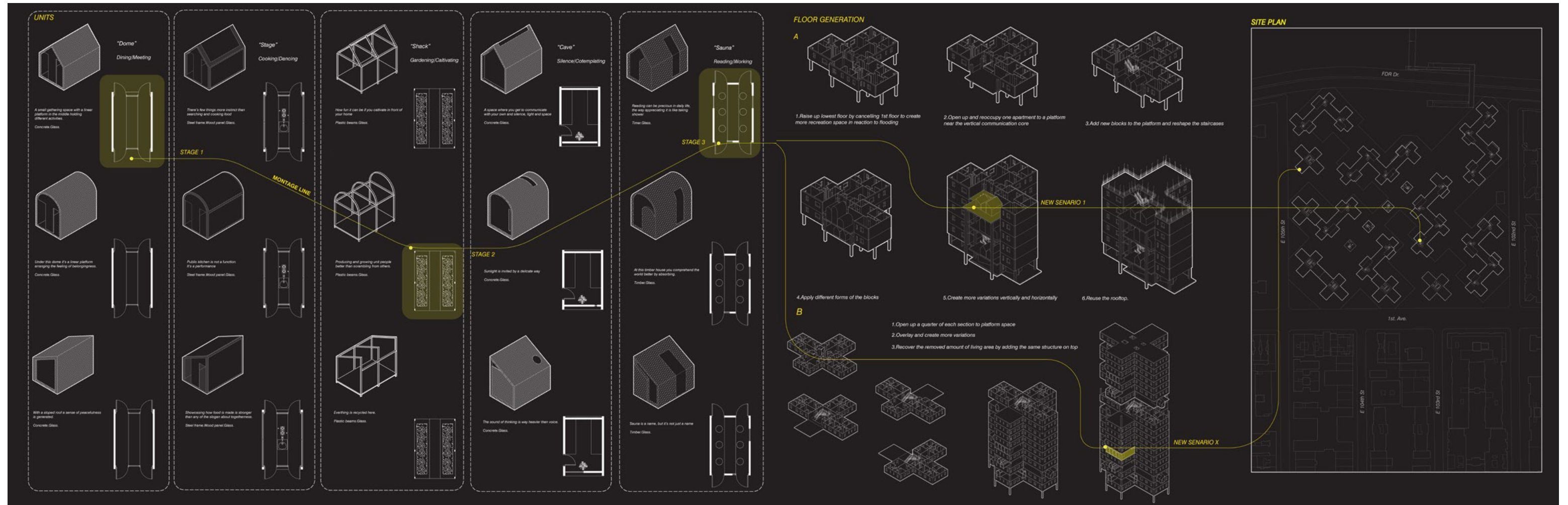


Elevation above grade



Insertion, Intervention, Integration

Gentrification is a colonialism to both the district and its residents. Social housing project was the effort of creating a single functioned area for dwelling, which was the representation of the initial intention of living together, building up a new order, a heterotopian place. Current image of buildings does not lead to the association of living and accommodation, it's more or less a frivolous overlap of modern style boxes. To add more explicit sense of uniting and living, the indication should deliver stronger by new symbols.



Axonometric View of the Site - East River Houses



Interior Views of the Modules



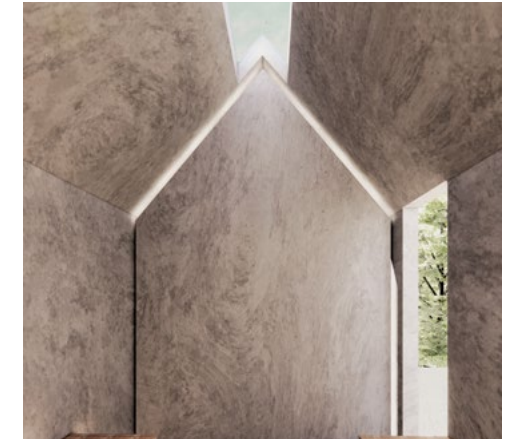
Grouped Modules



A Co-working Module



A Collective Farming Module



A Silence Module

The symbolic house modules evoke the sense of living together. Various types of modules function diversified programs, which will be shared by a group of the NYCHA residents. Several floors of the building will be reconstructed to platforms, on which groups of the houses will be inserted, by which a provocative mode of life can be activated. At the newly generated space, daily activities are provided with the implication and association of montage.

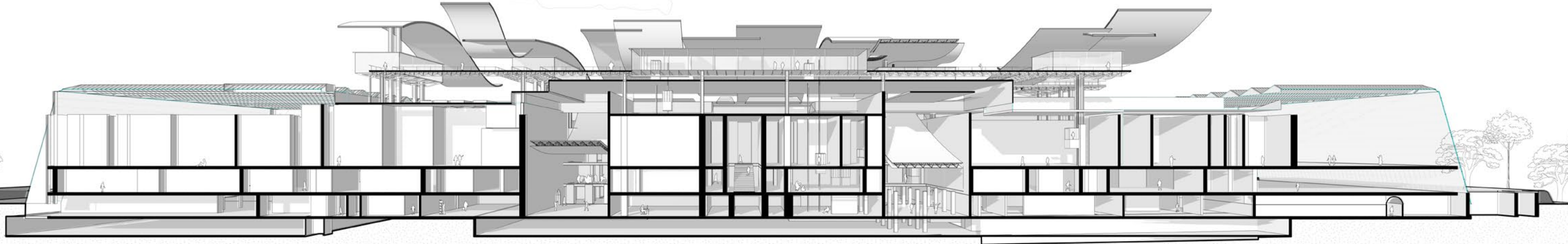


03 HERE WE REMET

Rethinking Metropolitan Museum of Art on Fifth Avenue

Architecture design
Individual work
January - April, 2022

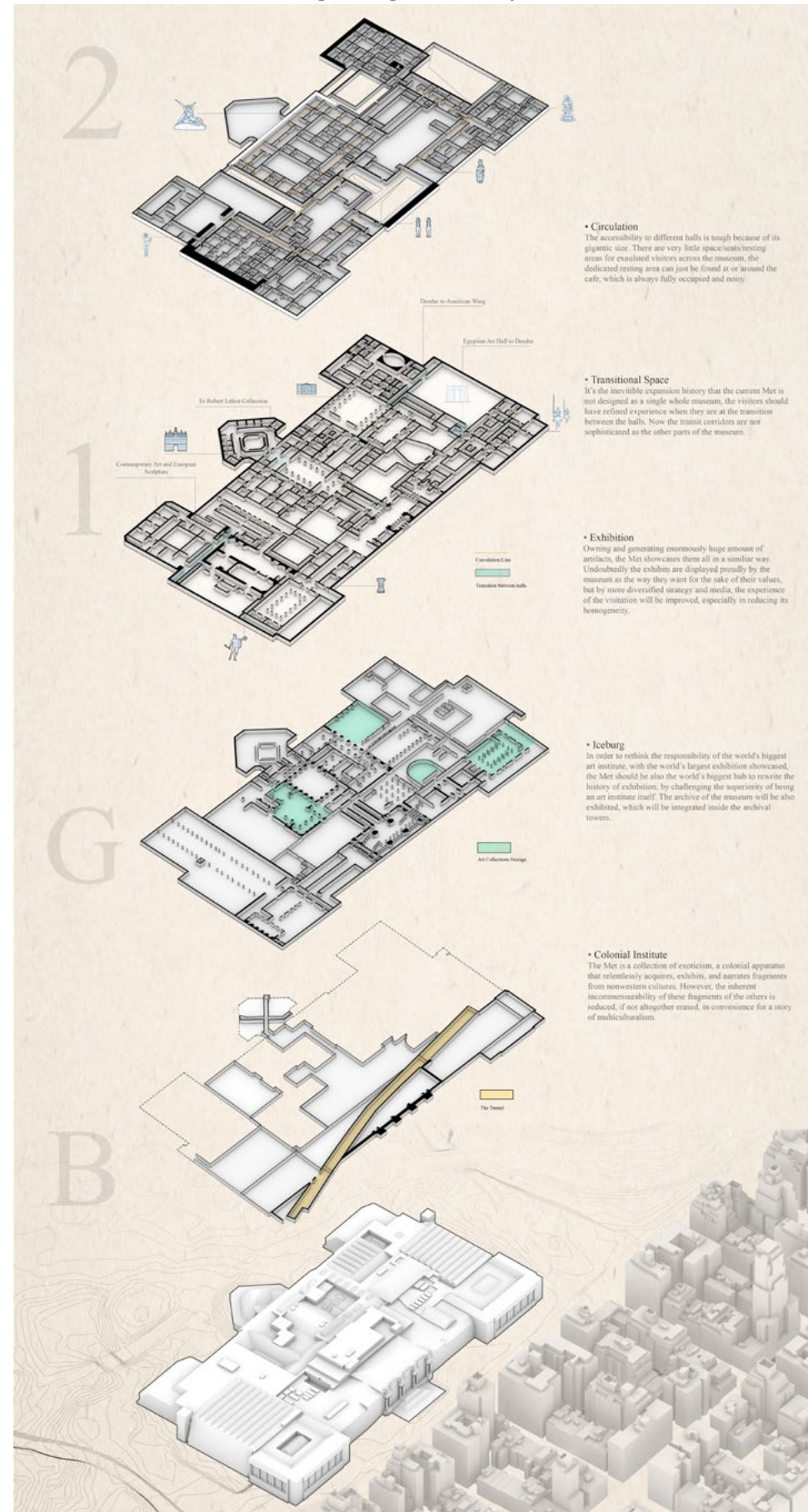
Program: Redesign Museum in New York
Instructor: Juan Herreros
Site: Manhattan, New York



The Metropolitan Museum of Art of New York City is the largest art museum in the Western Hemisphere. Its permanent collection contains over two million works, divided among 17 curatorial departments. The main building at 1000 Fifth Avenue, along the Museum Mile on the eastern edge of Central Park on Manhattan's Upper East Side, is by area one of the world's largest art museums.

The Met is a collection of exoticism, a colonial apparatus that relentlessly acquires, exhibits, and narrates fragments from nonwestern cultures. However, the inherent incommensurability of these fragments of the others is reduced, if not altogether erased, in convenience for a story of multiculturalism. To decolonize the MET in architectural terms is to discern the spatial syntax of the colonial institution that perpetually afford reductive story of historical differences.

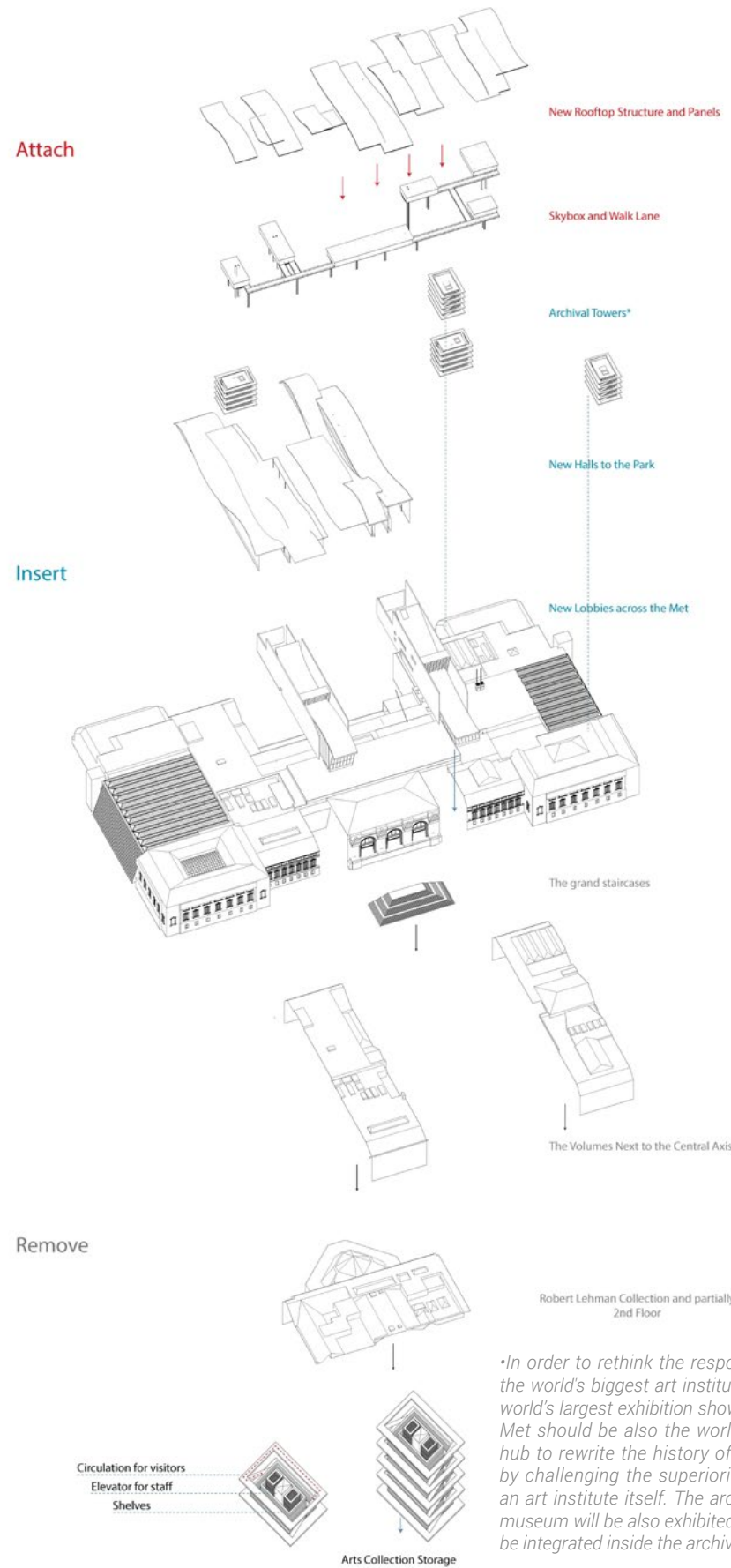
•The MET is never one building but an accretion of multiple buildings that have been annexed and extended within the history of the expansionist institution, while lacking the heterogeneity of architecture, the gigantic size and rigid circulative paths deliver a bad visitation experience. It aims to create an emerged atmosphere as an encyclopedia of artifacts, however, the notion of huge storage isn't friendly to its visitors.



•The main strategies of the project aim to generate the new circulation of visitation that overlays/ disrupts/penetrates the colonial institution and renew MET's interstitial relationship with the urban context and the park. Deconstruction is never a purpose but an approach.

•Followin accesses, t to the top the platfor sections of in-between dissolve tl museum o, the pain of layering a (transmissi park and t reintroduce

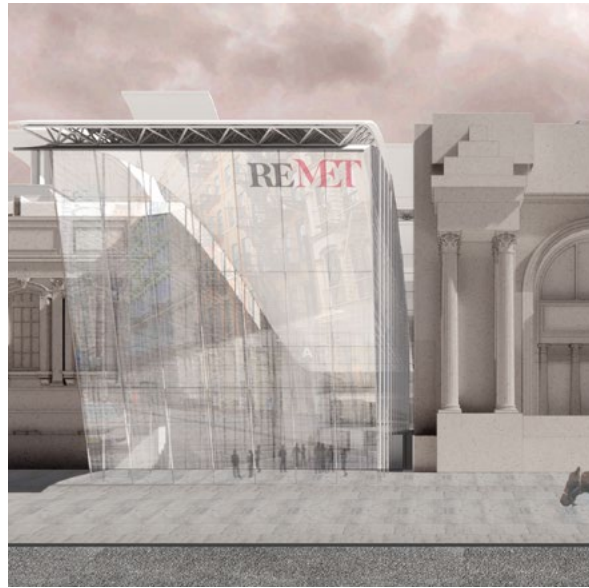
•The cha the conve of the m focuses space ins space. Th refocus. I, blurring th and the removed,



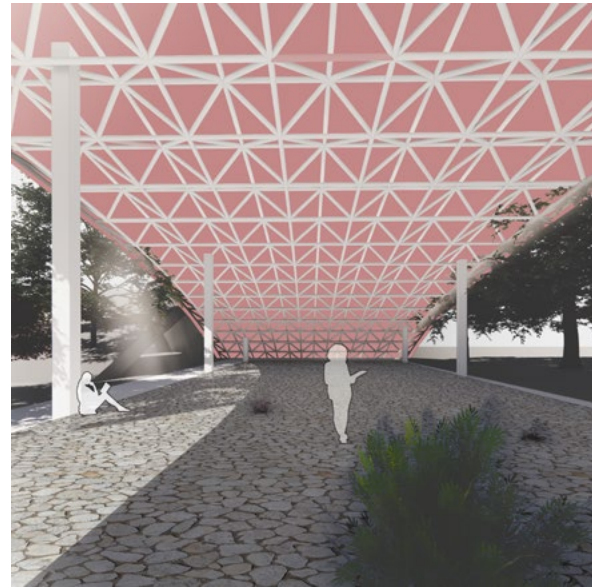
•The floor plans after the form generation and intervention. The new roof of the Met provides the rigid building with the variation of the space. It's the new landscape, which breaks the hard borders and connects to nature. It's also the tribune, that generates a new relationship between the museum and the park.



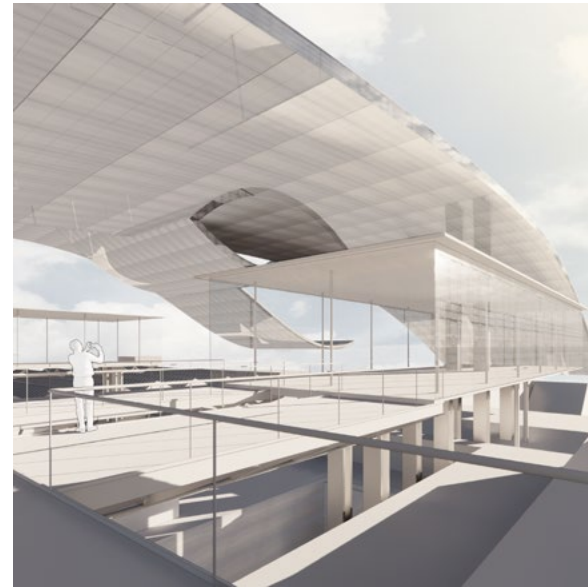
•In order to rethink the responsibility of the world's biggest art institute, with the world's largest exhibition showcased, the Met should be also the world's biggest hub to rewrite the history of exhibition, by challenging the superiority of being an art institute itself. The archive of the museum will be also exhibited, which will be integrated inside the archival towers



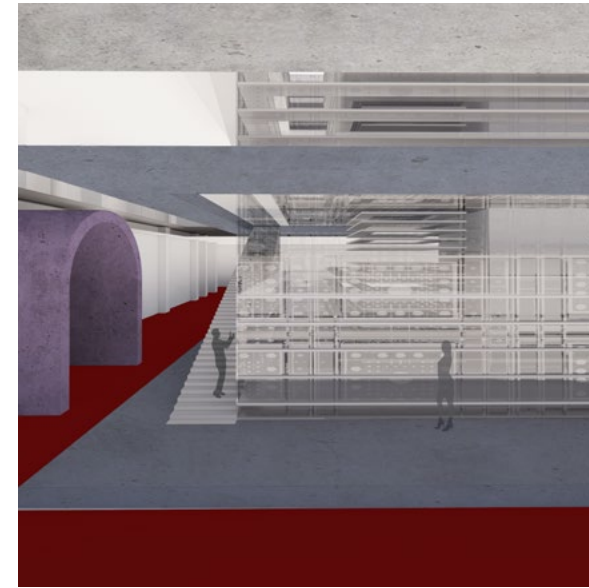
•The new lobbies offer the first impression, which interconnects the 5th avenue, the body of the museum, and the central park. The transmission of the view becomes the new lobby to each of them. The cross lobbies enter from the street level and lead the visitors directly to the originally half-opened ground floor of the Met.



•As the extension of the new lobbies, the events of visitation expand the footprints into the park, the landscape of the museum merges to the landscape of the park, which gradually turn the space to a botanical garden.



•The platforms can arrive at different sections of the museum, which dissolve the volume of the original museum of the museums. They ease the pain of walking a Met Marathon by layering a dramatic experience to the transmission between the halls. The park and the city are montaged and reintroduced inside.



•The towers stand on the very position from the Met's non-public arts collection storage on its ground floor. And showcase layers of artifacts, shelves, and art maintenance tools to the visitors. They can be unprepared, unpolished, but they are given new meanings in this bizarre space.

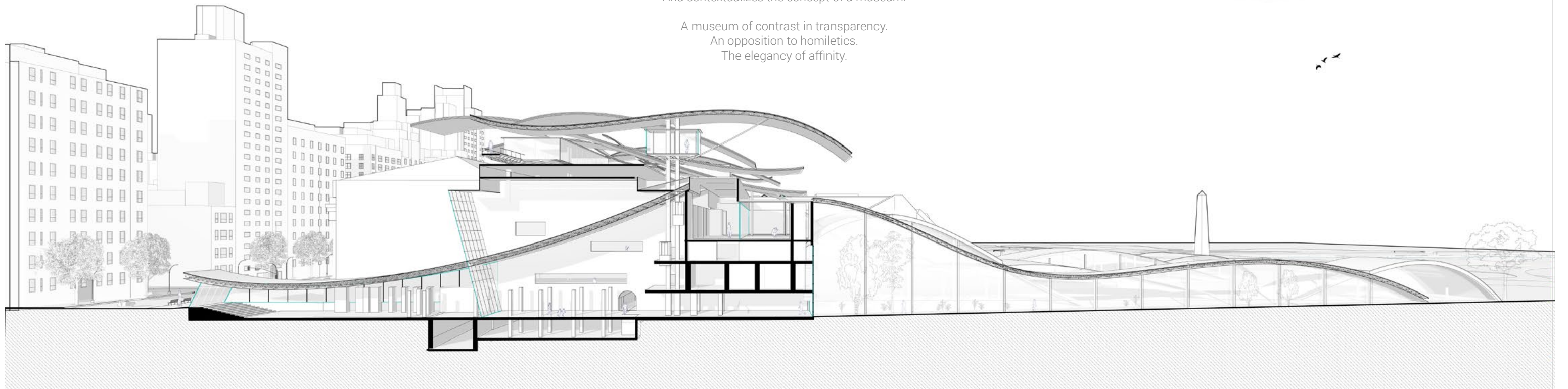


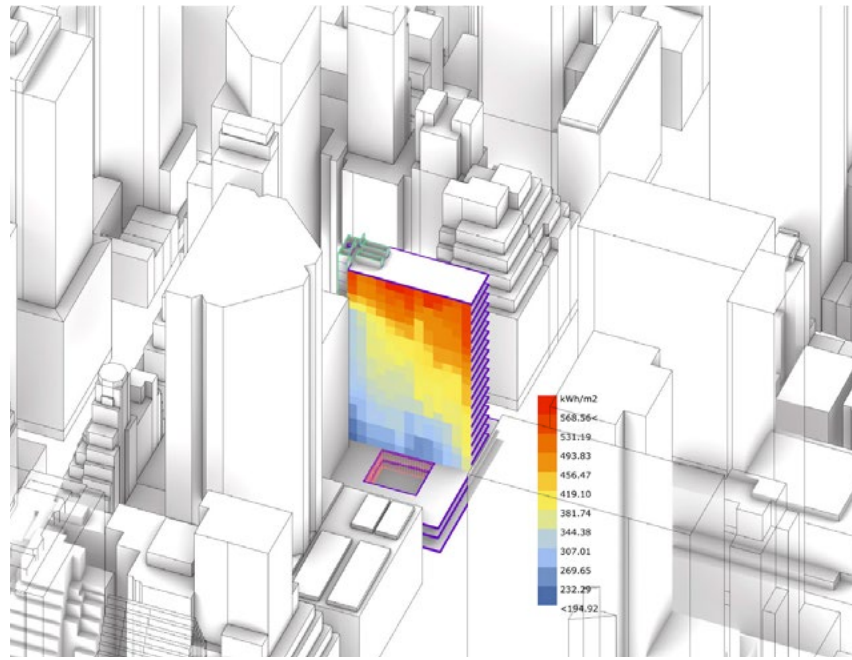
•Beneath the iceberg of the Met, an overflow tunnel for the reservoir was constructed in 19th century, which have already lost its function but remained its existence as a non perpendicular space in the Met building. It's the infrastructural archive of the Met, and it will be reused as an exhibition space to evoke the memory of the city.

The Re-Met is a reunion.
Between its visitor and their visitation.
Between the artifacts and their origin.

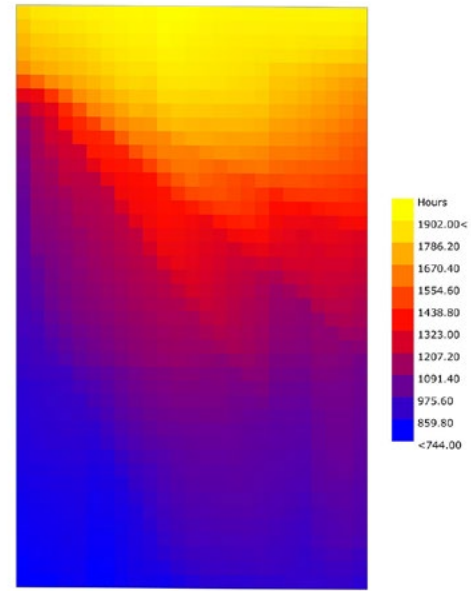
The Re-Met lands on the context.
And conceptualizes the new context.
And contextualizes the concept of a museum.

A museum of contrast in transparency.
An opposition to homiletics.
The elegancy of affinity.





Annual Radiation Analysis

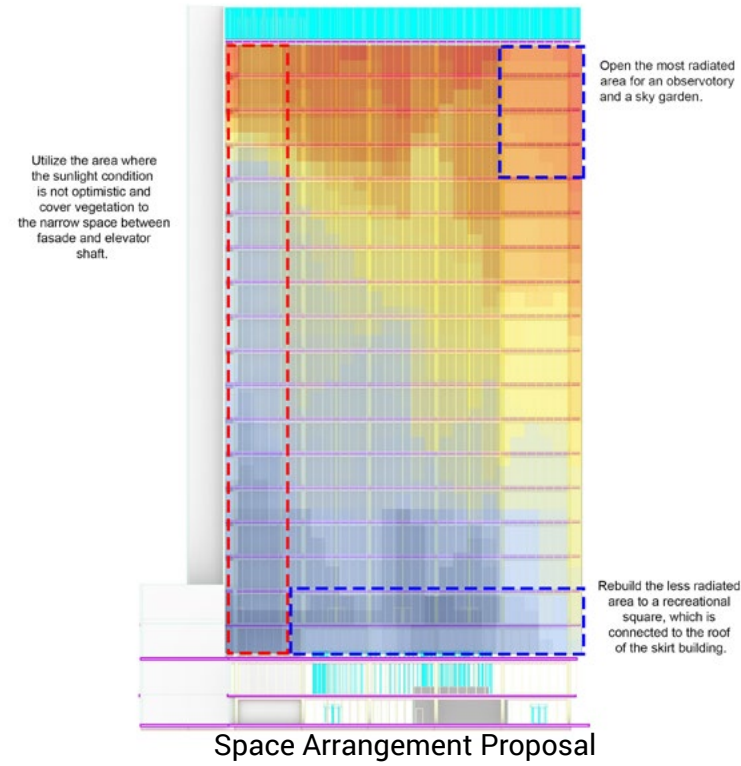


Annual Facade Sunlighthour Analysis

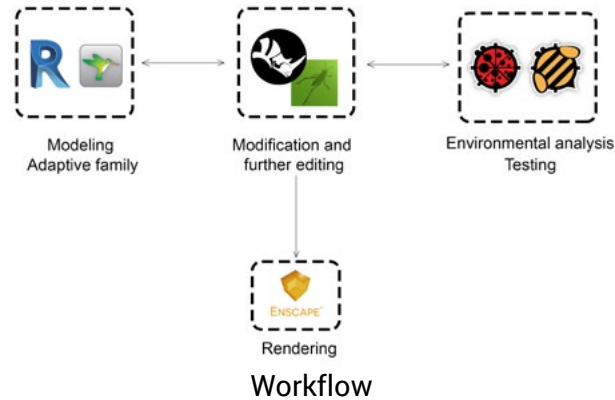
04 RENOVATION OF THE LEVERHOUSE

Architectural design
 Group work
 Haoran Xu, Ziyi Wang
 September - December, 2020

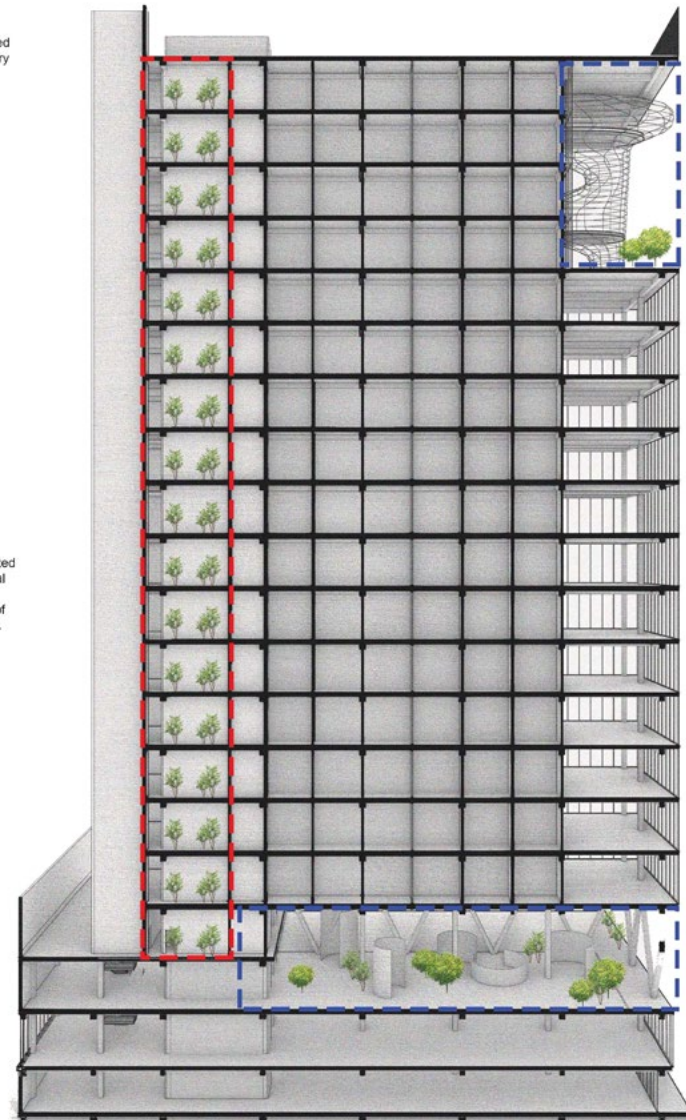
Program: Lever House Adaptation/Intervention
 Instructor: Jared Friedman
 Course: Rethinking BIM
 Columbia University, GSAPP
 Site: Lever House, Manhattan
 New York City



Space Arrangement Proposal



Workflow



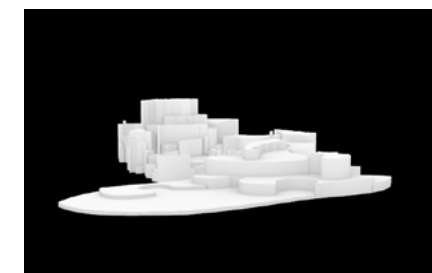
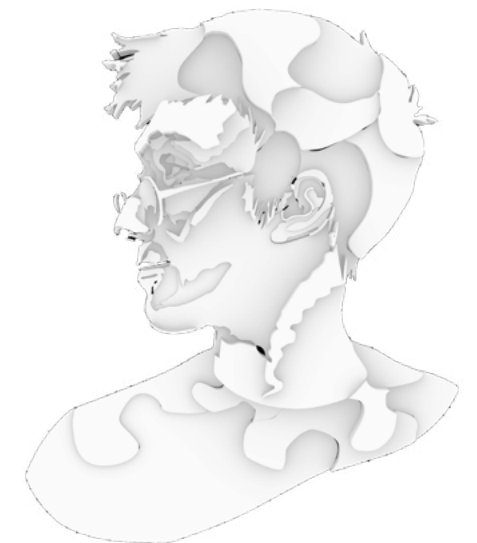
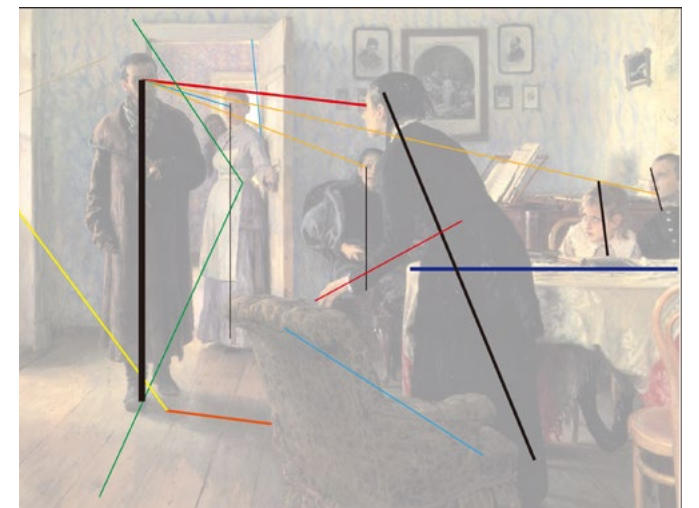
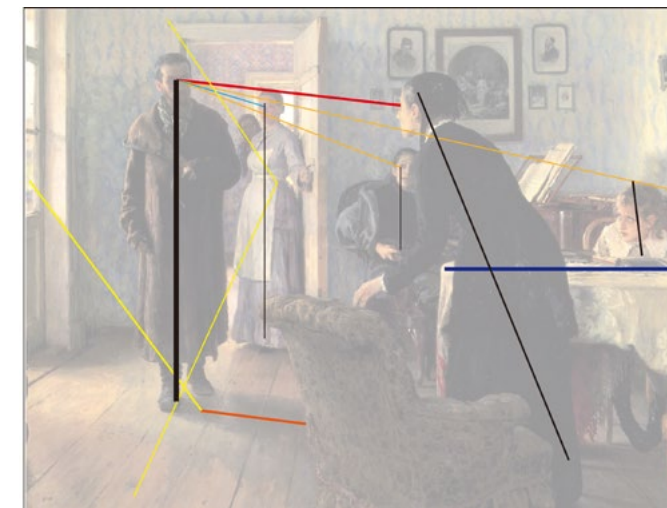
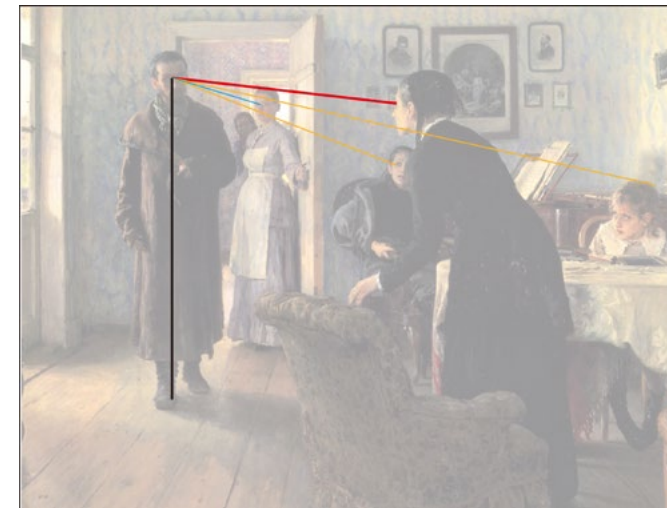
Section





05 LINES NOT SPLINES

Course Work
Haoran Xu
September - December, 2020
Instructor: Christoph Kumpusch
Course: Lines Not Splines
Columbia University, GSAPP

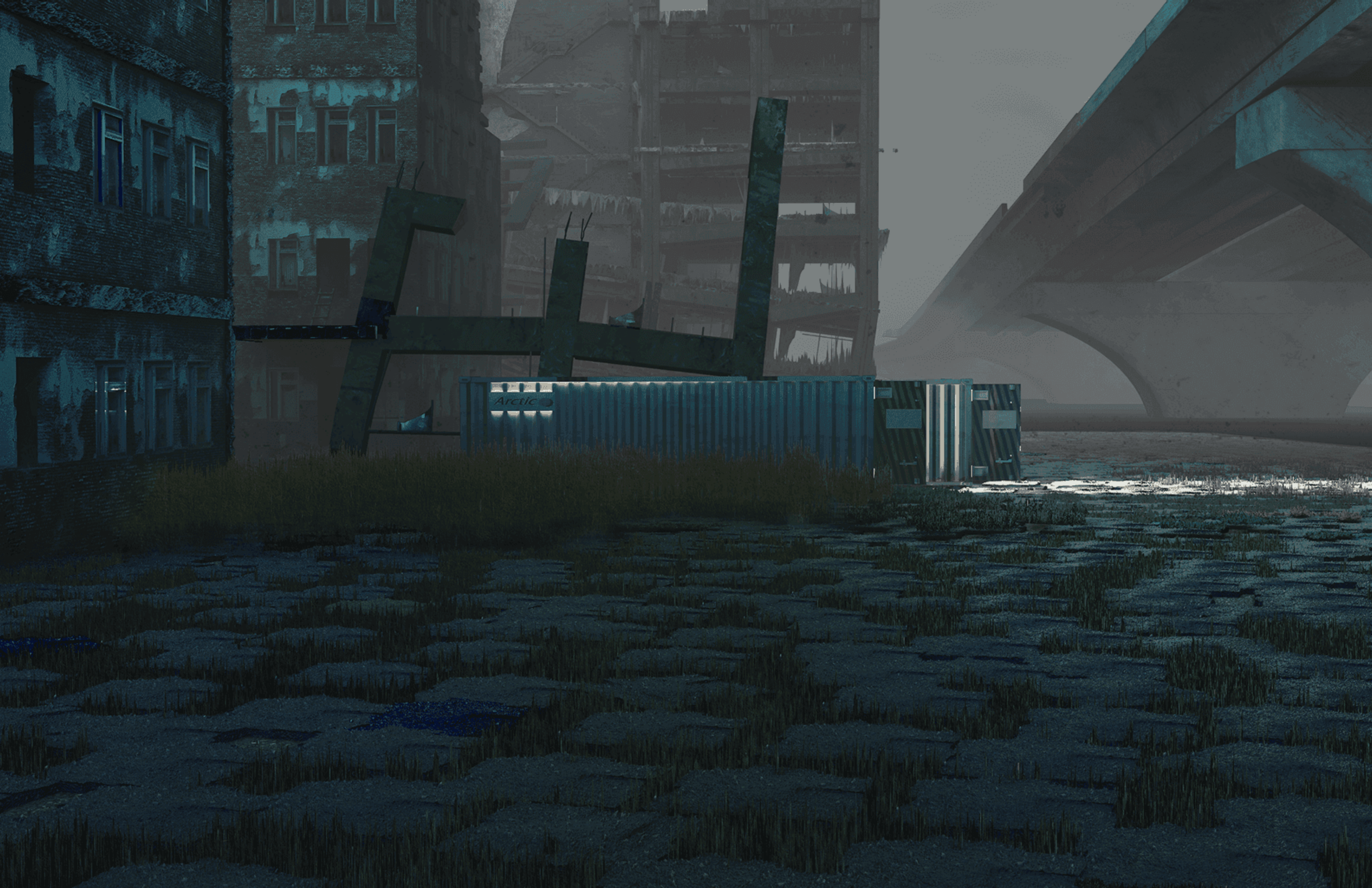


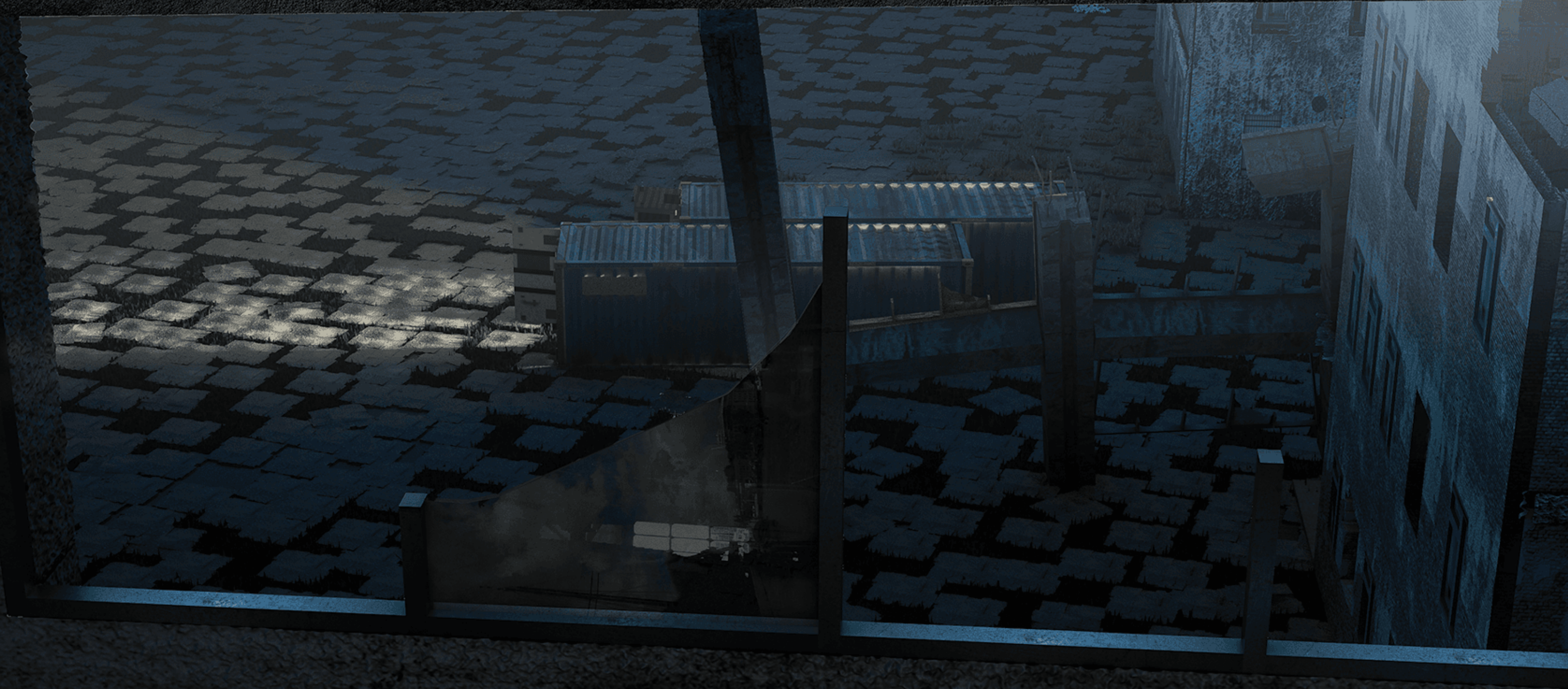
06 RANGER'S HOME

Visual Study
Group work
Haoran Xu, Qiwei Sun
2021 Fall

Instructor: Phillip Crupi
Course: Techniques of the UltraReal
Columbia University, GSAPP

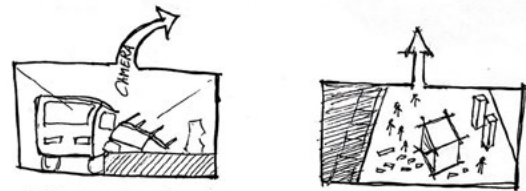






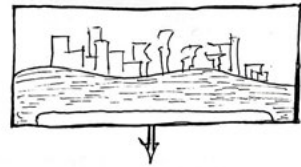
07 THE LEAP

Visual Study
 Group work
 Haoran Xu, Xueyin Lu, Steven Gan
 2022 Spring
 Instructor: Joshua Jordan
 Course: Model Fictions
 Columbia University, GSAPP



01. The scene starts from a close look to the metro level, to show the mass and the sense of a dystopia. And then camera swish higher, over the station.

02. The scene shows a rolling forward image of the platform. By using some stop motions, where frames people fight for supplements.



03. Then the scene montaged to the big model, and first to show the abandoned world on the ground, then the camera rolls down to show the beneath.

