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Portfolio 2021-2022

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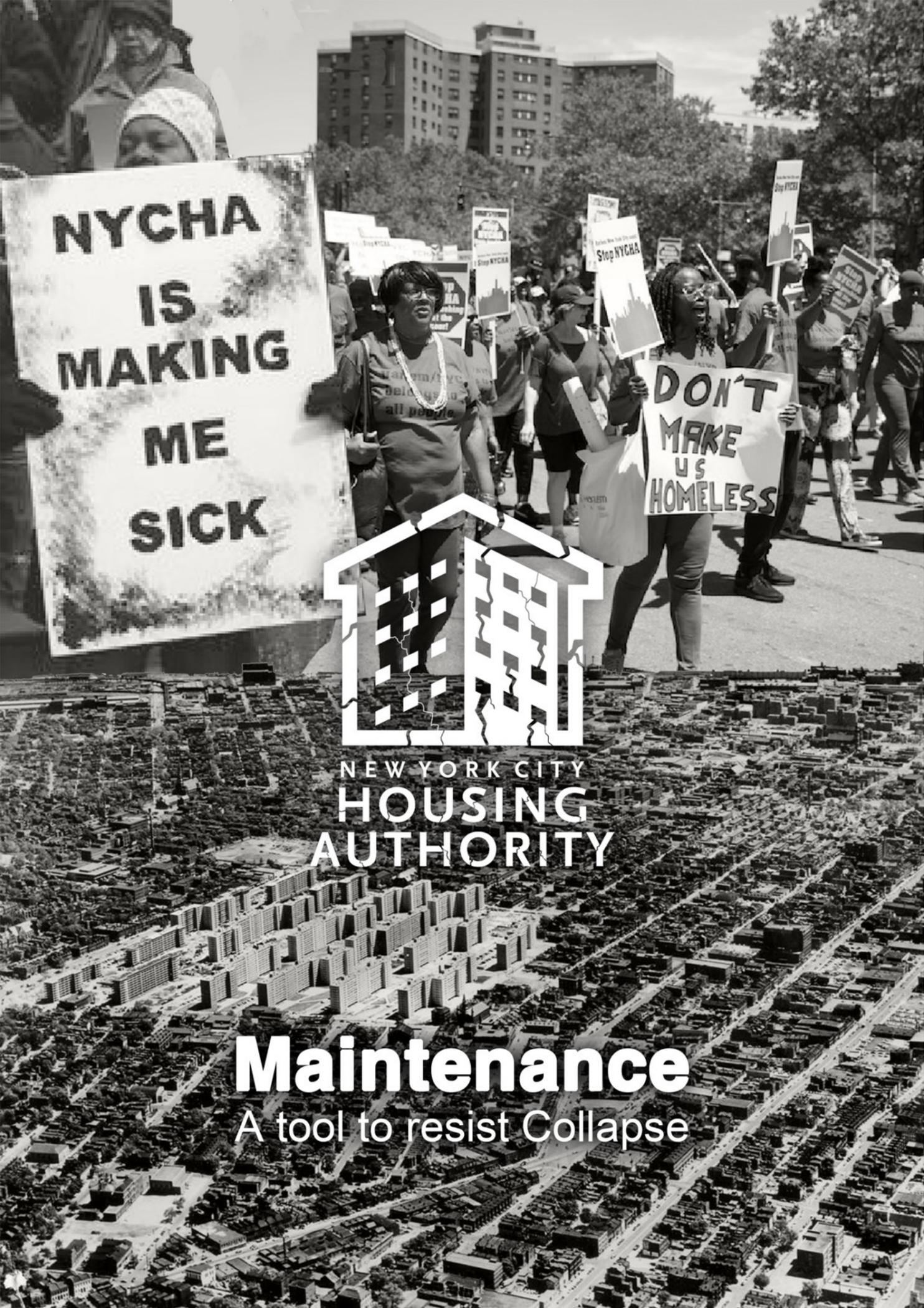
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NEW YORK CITY
HOUSING
AUTHORITY

Maintenance

A tool to resist Collapse

Maintenance

A tool to resist collapse

Public housing and, importantly, its MAINTENANCE, was at the core of the collapse of the welfare state. At some point, NYCHA was also the promise of a brighter future. But its current crisis was a planned operation. The politics of scarcity took on public housing as their main target. President Reagan frequently talked about the Taino Towers, a subsidized housing project in New York City: "If you are a slum dweller," he used to say, "you can get an apartment with 11-foot ceilings, with a 20-foot balcony, a swimming pool and gymnasium, laundry room and playroom, and the rent begins at \$113.20 and that includes utilities."

Location: New York
Time: 2021 Summer
Instructor: Ignacio G. Galan
Author: Xiangru Zhao, Xumin Chen, Zheng Yin

1956
1956-Completion



Mrs. Sarah Wallace and her son, Anthony, repair a toy in their apartment in the Pruitt-Igoe project.

Proud Residents Of Pruitt-Igoe

Many Show Ingenuity and Effort In Making Apartments Attractive

By Dorothy Gardner
Of the Post-Dispatch Staff



1966
1960s-Defund

Public Housing Troubles

26,000 Tenants May Have Rent Increased Again

Stalemate in Public Housing Crisis

- Continuing Rent Strike Cuts Upkeep Funds
- \$50 Million Needed to Restore Projects

\$50 Million

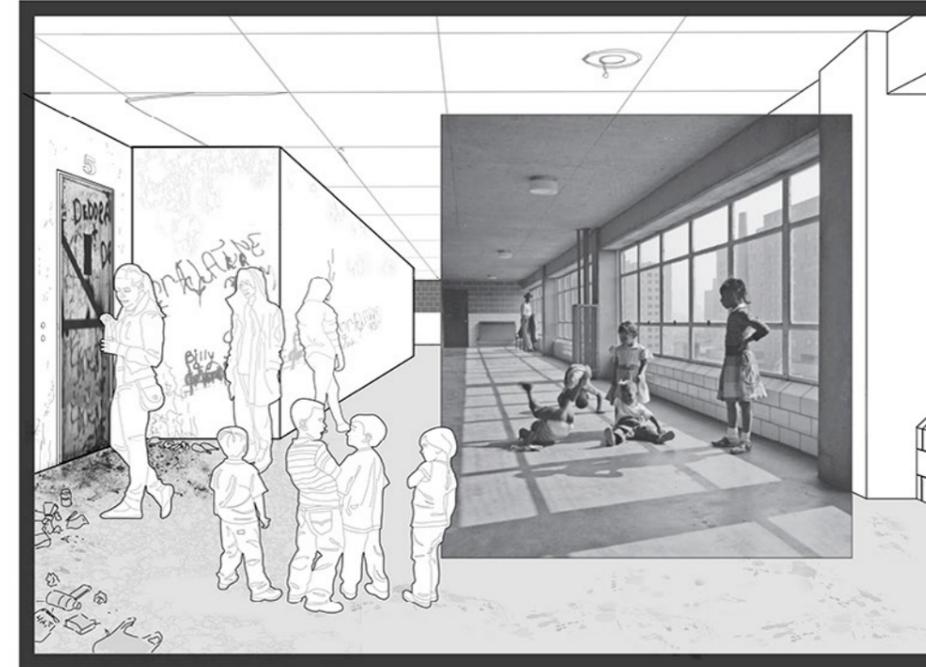


2021

The bad news is that in NYCHA today we find similar scenes.

Collpase of Pruitt-Igoe

You all know about Pruitt-Igoe, a project developed under the Housing Act of 1949 to finance 5,800 public housing units in Saint Louis. Pruitt-Igoe was intended for young middle-class tenants, which were racially segregated into different buildings. In the mid-1970s, this project concluded with the demolition of all the buildings. But there was a time before this collapse seemed inevitable.



1960
1960s-Decay

10,000 at Pruitt-Igoe Without Heat, Water

Broken Pipes Affect 2,000 at Cochran

ST. LOUIS POST-DISPATCH
A large block of small text providing details about the housing crisis, including mentions of broken pipes and affected tenants.

ST. LOUIS POST-DISPATCH
PROGRESS OR DECAY ?
ST. LOUIS MUST CHOOSE

1971
1971-Demolition

10-Second Demolition

LAZING of a second building in the Pruitt Igoe complex, 11-stories high and 200 feet long, presented a spectacular show for residents in the area. Some brought lawn to watch the demolition, and others used clubs over their heads to cheer out the dust.
Post-Dispatch photos by Mia Bridgman and Gene Poppehl.





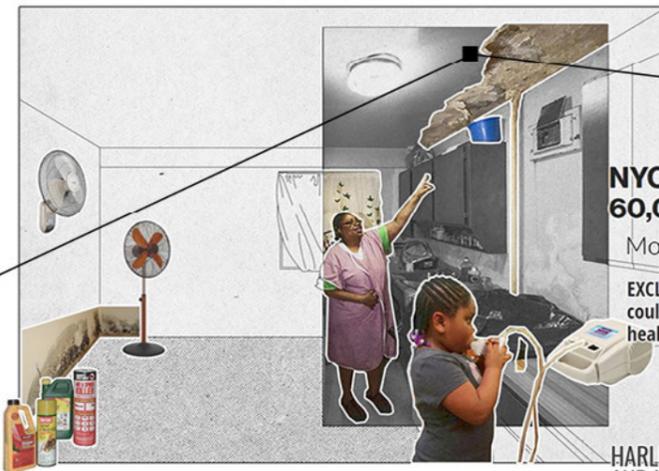
Disability Crisis.

Accessible Homes? Not Really, Say Disabled Residents

Nowhere to Go: The Housing Crisis Facing Americans With Disabilities

EXCLUSIVE: Staten Island woman sues NYCHA after waiting eight years for wheelchair-friendly apartment and never receiving it

Asthma.



NYCHA has failed to fix nearly 60,000 mold complaints

Mold: A Trigger for Asthma

EXCLUSIVE: Mold-ridden NYCHA buildings could trigger long-term asthma problems, health experts say

Mold Makes Everyone Sick

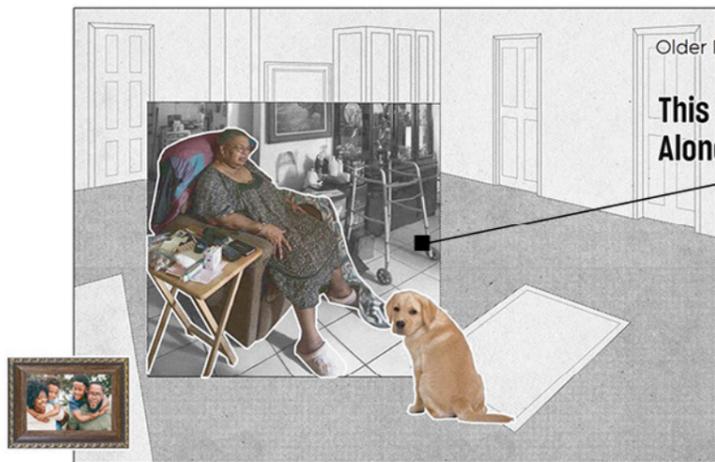
Mold exposure can cause headaches, sinus congestion, shortness of breath, skin irritation, permanent respiratory problems, chronic fatigue syndrome, and in rare cases, central nervous system problems (loss of balance and difficulty speaking).*

HARLEM WOMAN SUES NYCHA OVER LEAKS AND MOLD THAT FESTERED FOR MONTHS

East Harlem boy suffers severe asthma from mold in NYCHA apartment, family says city won't fix the problem

Older Renters are Increasingly Living Alone
Senior Housing Shortage is Getting Worse

This Bronx Grandmother Died Alone in Her NYCHA Apartment.



Solitude.

Without Service.

Behind the Elevator Doors: The Great Unknown

Public Housing Building Without Elevator Service For Two Weeks

A Bronx Grandmother Complained Repeatedly to NYCHA About Elevator Outages. Now She's in a Coma After Falling in the Stairwell



NYCHA: At a Crossroads

1934 founded	325 projects	180,000+ apartments	400,000+ tenants	1,800\$ one bedroom
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Poison

NYCHA'S Lead Paint Crisis Explodes as Known Number of Apartments Where Kids Risk Exposure Triples

Lead Poisoning is a Danger

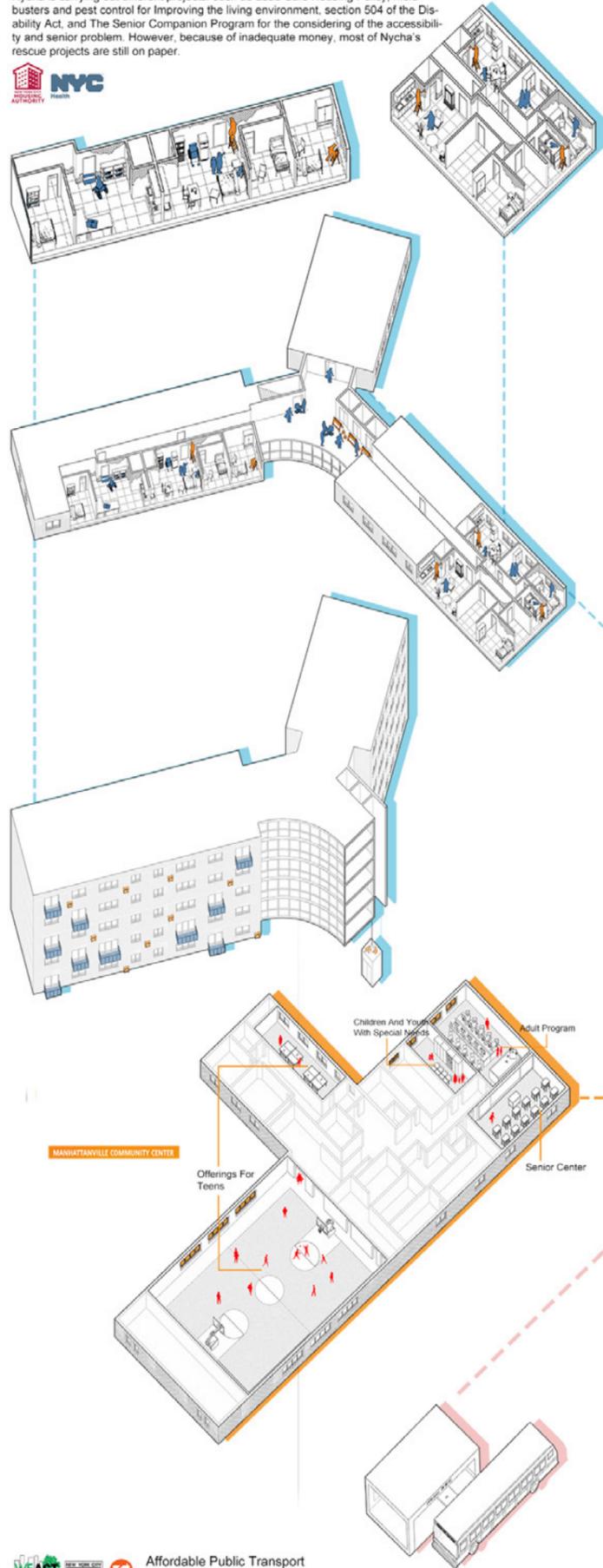
for every baby and child

HOW LEAD PAINT CHIPS & DUST CAUSE BRAIN DAMAGE AMONG CHILDREN

Report says NYCHA violated lead paint regulations since at least 2013



Nycha is carrying out different projects, such as Lead-Safe Housing Policy, mold busters and pest control for Improving the living environment, section 504 of the Disability Act, and The Senior Companion Program for the considering of the accessibility and senior problem. However, because of inadequate money, most of Nycha's rescue projects are still on paper.



WEACT
West Harlem Piers Park
In order to ensure that the Northern Manhattan community is able to fully benefit from the space at the waterfront near the 135th Marine Transfer Station, WE ACT led the creation of West Harlem Piers Park.



WE ACT for Environmental Justice is a Northern Manhattan community based organization whose mission is to build healthy communities by ensuring that people of color and/or low income participate meaningfully in the creation of environmental policies and practices.

Green energy promotion



Protest for Public Housing Crisis



Persistence of the Community

Ongoing Interventions

In order to avoid repeating the tragedy of Pruitt-Igoe, the population is not merely awaiting governmental intervention, but are taking action to address these multiple concerns.

We are taking as a case study the Manhattanville Houses, in which there are ongoing individual interventions, group action, collective organization, and some government projects being developed.

-A number of residents are dedicated to transforming the limiting living conditions in the building. A woman with impaired mobility, for example, has fixed the door sill with small ramps to reach a self-made barrier-free life. Instead of giving up, they are actively seeking help from outside in terms of living environment problems such as leaking, mold, and ventilation.

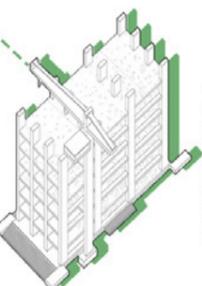
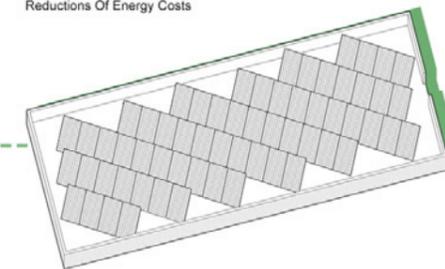
-Manhattanville Houses also has an active Community Center that is able to continue to serve the community by providing programs for teens, seniors, and services that enrich the lives of those residents.

-There are also a number of organizations, resulting from residents united to defend their rights. A massive protest by residents to address the odor from the wastewater treatment plant that plagued the area for years prompted stricter regulations. As the problem was solved, residents realized their power and formed WEACT, an organization that mainly works in climate justice, clean air, good jobs, healthy homes, sustainable and equitable land use in Harlem.

-Lastly, Nycha itself is also carrying out different projects, such as Lead-Safe Housing Policy, or the Cooling Assistance.



Reductions Of Energy Costs



Dust Reduction
Construction dust contributes to medical problems. WE ACT is supporting legislation to monitor levels of dust on construction sites, and partner with other healthy housing advocacy organizations to promote safe construction dust mitigation practices

Affordable Public Transport & Safe School Bus

In recent years, bicycle lanes, bus system facilities, and subway routes have been constructed in Northern Manhattan.



After School Program
Manhattanville Community Center that is able to continue to serve the community by providing programs for teens, seniors and services that enrich the lives of those residents. It also has an After School Program for children. Manhattanville is known for serving children and youths with special needs.

NEW MANHATTANVILLE

FLOURISHING

With a collective effort of all residents and organizations



Enactment

It's time to change

With such a well-organized community, we can't help to imagine the bright future if the federal government would invest more budget in the maintenance of public housing, building on the ongoing work of its residents.

[Community Center brochure]

The Manhattanville Community Center has long been funded by NYCHA to organize a variety of activities in the community. The community center will immediately inform residents of this exciting news.

Action I: Mobilization

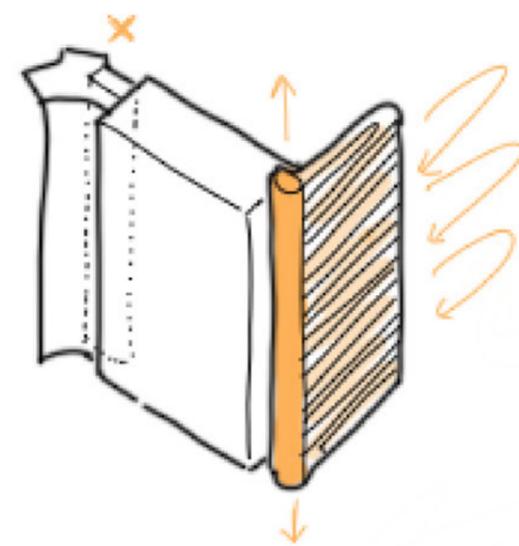


MANHATTANVILLE COMMUNITY CENTER

NEW MANHATTANVILLE

Through **OUR YEARS OF HARD WORK**, we have finally convinced NYCHA to renovate our community. Let's take a look at the specific **RENOVATION PLAN!**

1. New Circulation System

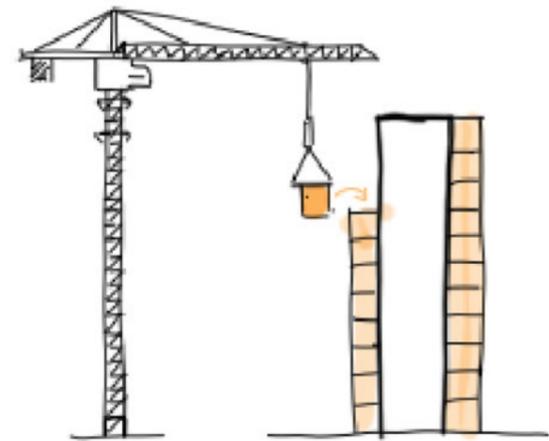
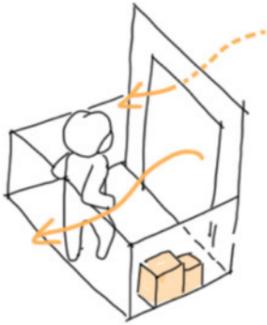


1. The original elevators are in disrepair, we will add new elevators at the end of each wing without disturbing the residents to use the old one.
2. A ramp system will connect each floor! Wheelchair users will now have another way to get around, even if the power goes out, without having to worry.



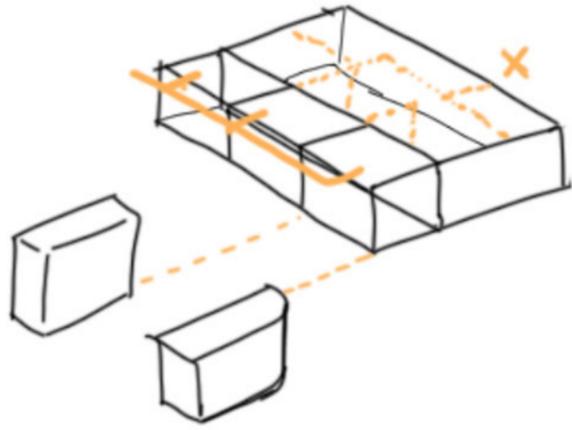
2. Balcony Program

To solve the problem of ventilation in summer, we will now add balconies for every home!



- Benefits
- Better ventilation
 - Increases the area of the house

3. Inside Pipe Out

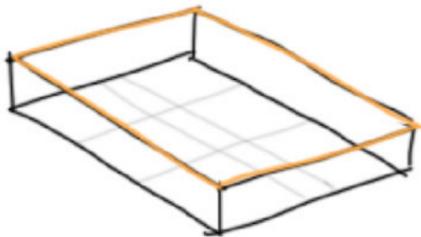


The water leakage problem of water pipes has plagued us for a long time and seriously affected our health. Now we replace the original ones with brand new pipes on the elevation. The bathroom and kitchen connected to the pipes will be arranged on the remodeled balcony.

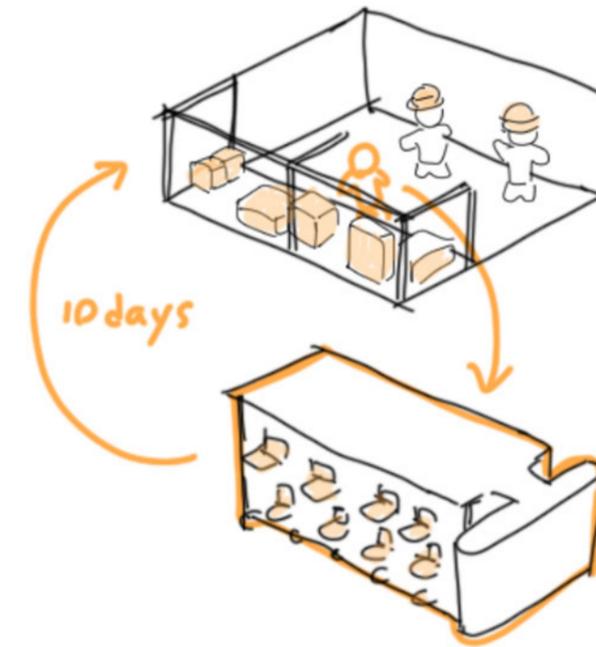
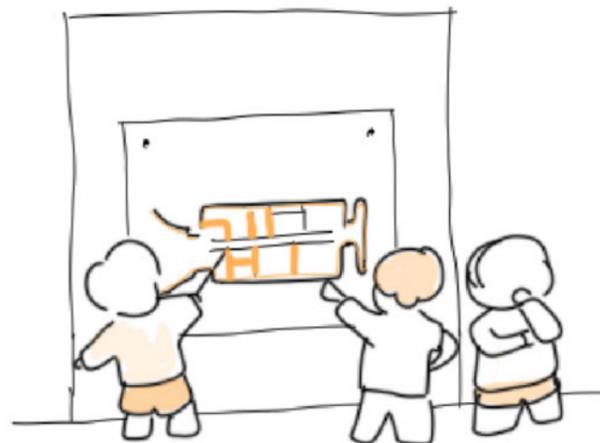
This project will follow the renovation of the balcony.

We will work together with **WEACT** for this project.

4. Interior Renovation



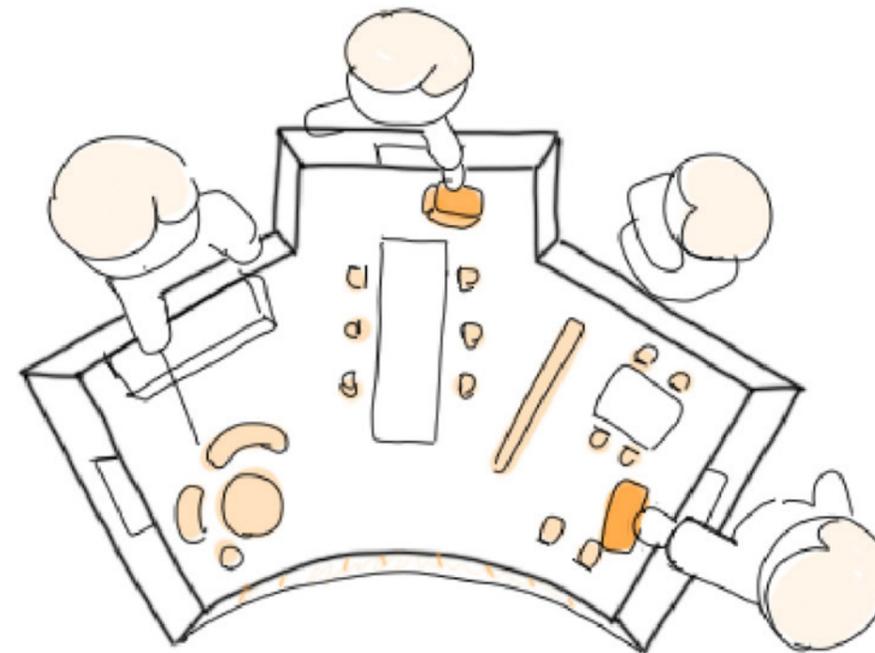
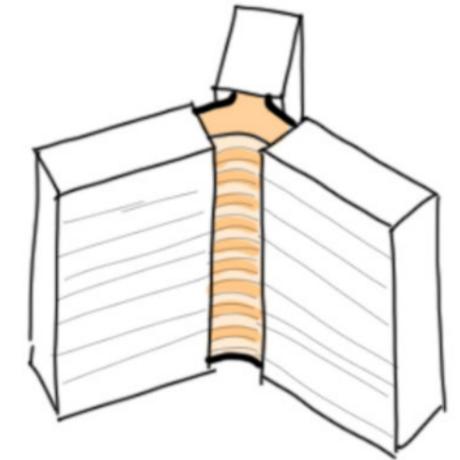
Interior adjustments require residents on the same floor to work together to choose an optimal floor plan.



The residents will be temporarily moved into a re-housed apartment, where they can secure their daily lives. They can store their belongings in the converted balcony, and will be able to move back to their new home in about ten days.

5. common space

In the original staircase location, this will become the new common room because of the new system. Residents of the same floor can still negotiate its layout and usage together.

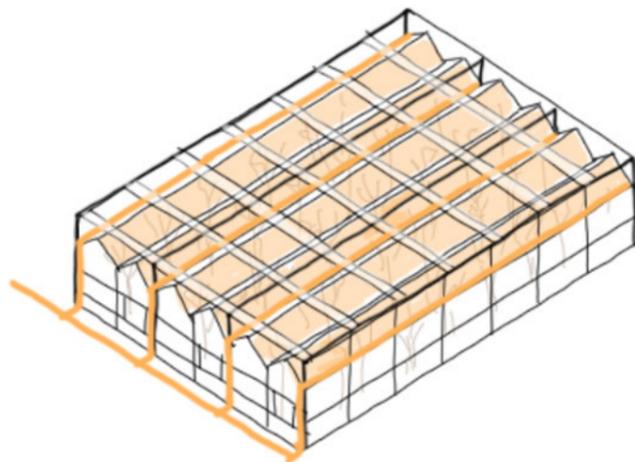
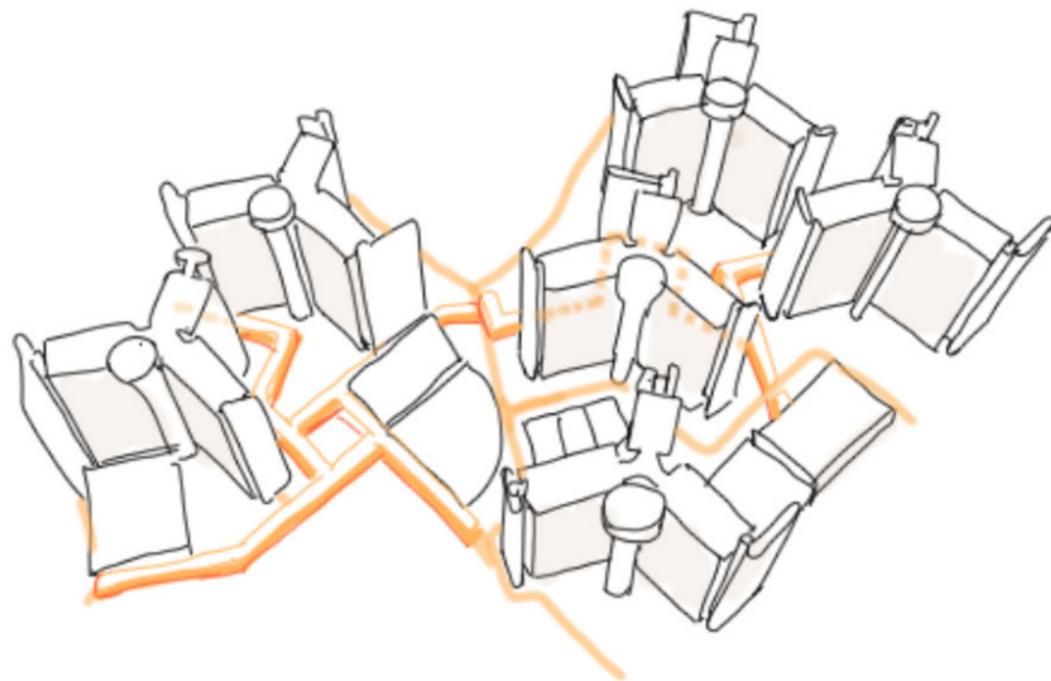


MANHATTANVILLE COMMUNITY CENTER

NEW MANHATTANVILLE

6. Green space adjustment

Because of the low use of green space, we are taking advantage of the large-scale renovation to redesign the entire neighborhood road system and green space.



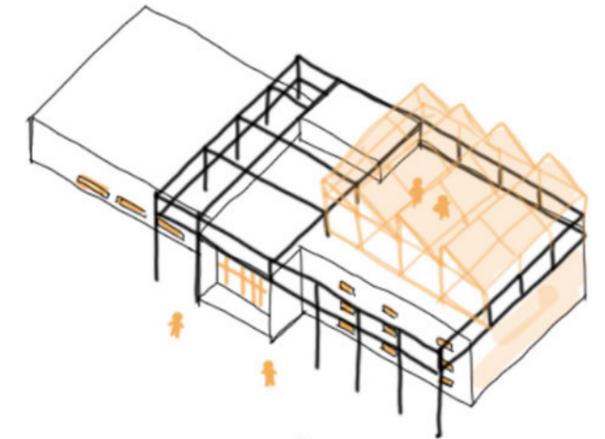
7. Urban Farm

We also planned a greenhouse and outdoor planting site for **Harlem Grown**. Harlem Grown works to inspire youth to lead healthy and ambitious lives through mentorship and hands-on education in urban farming, sustainability, and nutrition. We would accompany our community to introduce the planting industry in the outdoor public space.

8. New Facilities

New Community Center

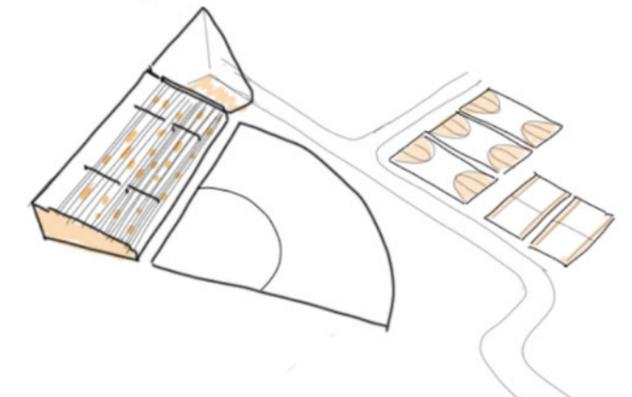
For a better and healthier future
of MANHATTANVILLE!



New outdoor event space and
landscaping facilities



New sports field



9. Job Opportunities

Another good news! All projects are looking for workers! If you want to get paid for a job or have time to contribute to the community, come join us! We will provide free professional training.



<https://www.nycservice.org/organizations/319>

Action II: NYCHA Enactment

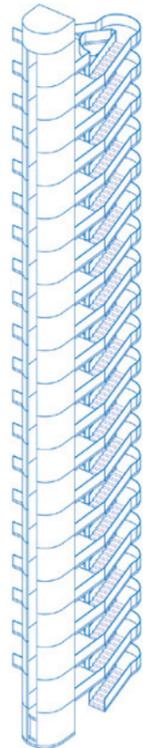


MANHATTANVILLE
COMMUNITY CENTER

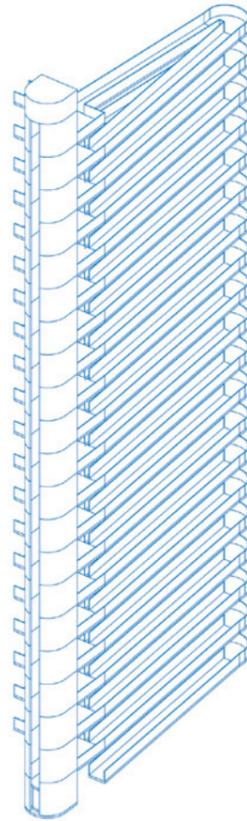
New Circulation System

Architects will work with the Community Center to implement the general transformations of the building with NYCHA funding. New elevators and new ramps will make the building accessible to all, including the elderly and disabled, even when the elevators are out of service. Their location outside the building will make any problem visible and will additionally make maintenance easier.

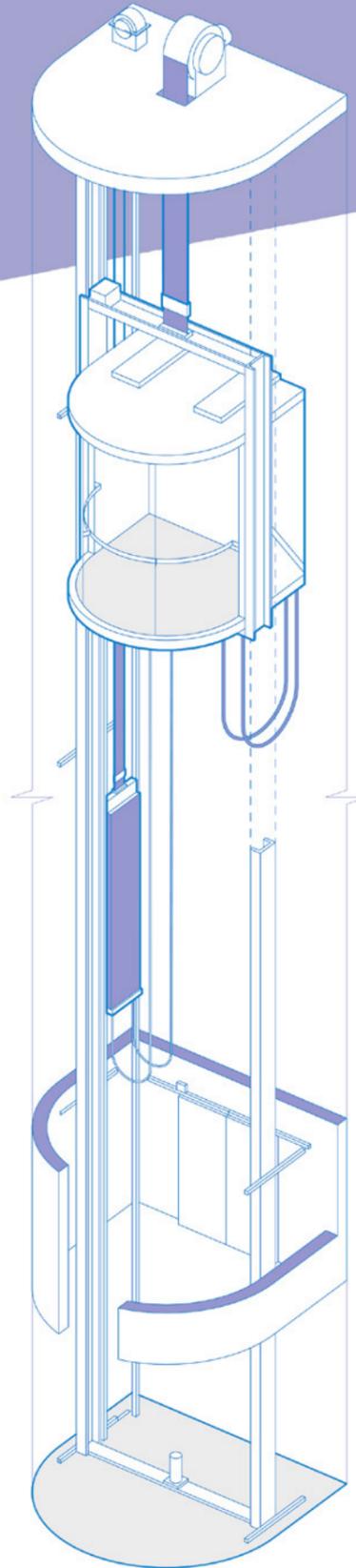
There are two types of traffic towers, one is composed of elevators and stairs, and the other is composed of elevators and ramps. While the dispersion affects the efficiency of the system, it makes its redundancies evident.



Stairs Type



Ramps Type



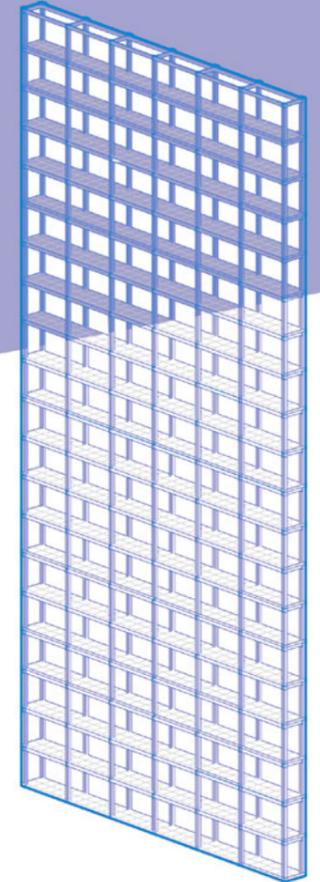
Elevator



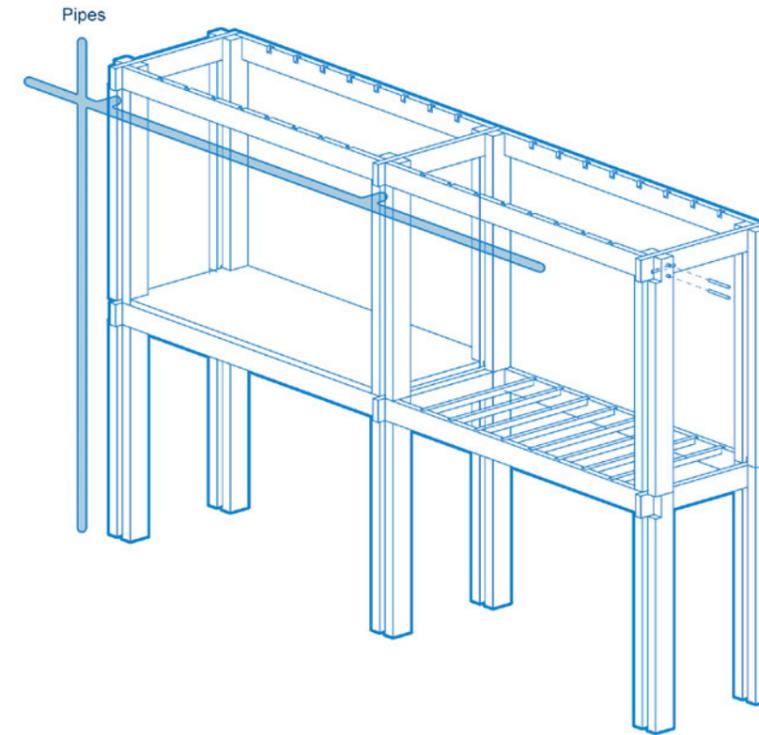
MANHATTANVILLE
COMMUNITY CENTER

Balcony Program

Balconies will be implemented as prefabricated wooden structures, thus shortening the construction time and reducing the noise impact on the residents living in the building. The original exterior walls will be opened up and these demolished bricks will be reused as one of the materials for the construction of the new community center.



New façade



Prefabricated wooden structures



Each home's balcony will form a new façade for the building, which will also incorporate pipes for building equipment. The new pipes will be placed outside to facilitate inspection and maintenance, which will solve the problem of leaks in the original pipes thoroughly.

Action III: WEACT Equipment Enactment

Architects will work in solidarity with WEACT's ongoing work to transform the technical systems of buildings and warranty their environmental sustainability. WE ACT's Solar Farm on Rivers Island program and the Green Roofs and Solar Requirements program has already been in place for years, and has trained residents in solar panel installation.

Water Supply

In order to minimize the impact of water pipes on indoor life, WEACT design an outdoor system to collect rain water and provide water supply for every family.

A water tower will be constructed in front of the building.

And water is pumped into the water tank on the top and then goes down to each floor.

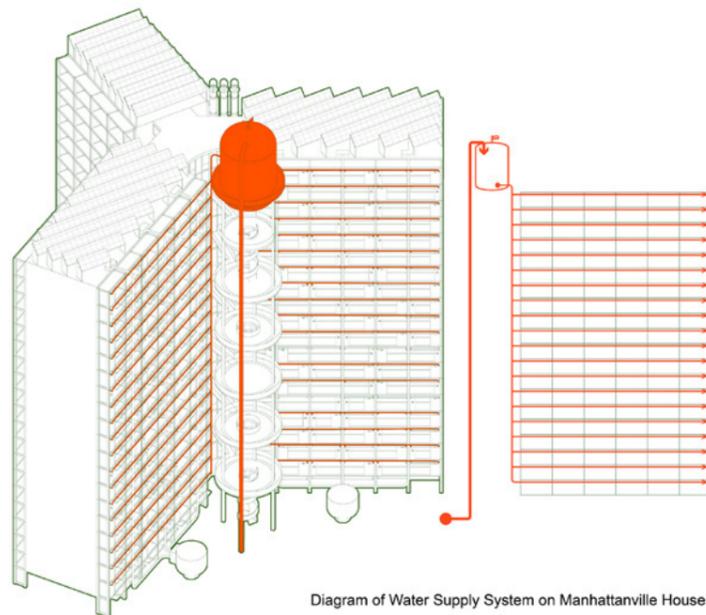
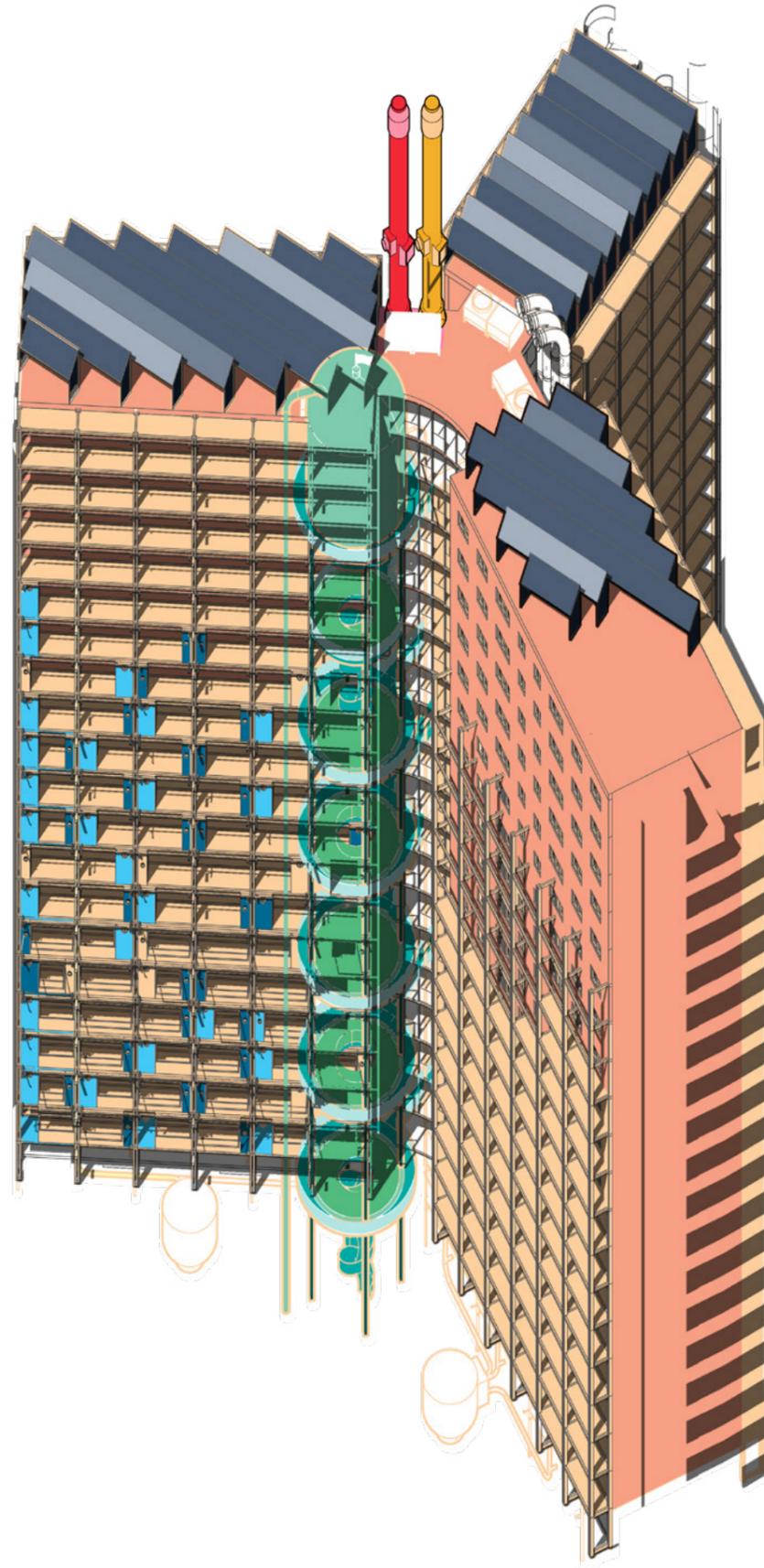


Diagram of Water Supply System on Manhattanville Houses

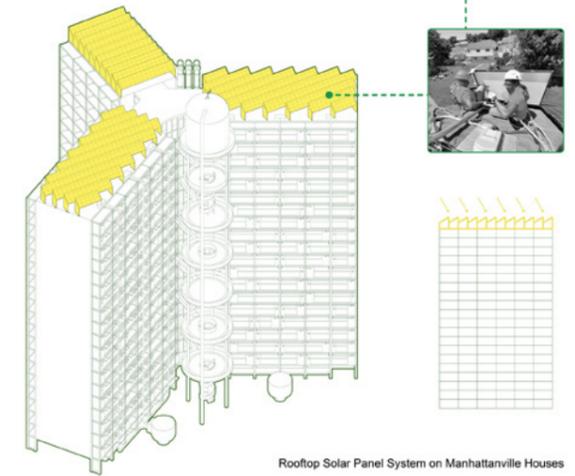


Solar Panels

Our Solar Farm on Rivers Island program and the Green Roofs and Solar Requirements program has already been in place for years, and has trained residents in solar panel installation.

Partnered with Solar One and the Urban Homesteading Assistance Board, WE ACT continues to install solar panels for Manhattanville Houses.

"Since relaunching and expanding its free Worker Training program in 2012, WE ACT for Environmental Justice has trained more than 2,000 Northern Manhattan residents for careers in the construction industry. And with the creation of our Solar Uptown Now program in 2016, we added solar installation to our list of free training programs."



Rooftop Solar Panel System on Manhattanville Houses

Gray Water Treatment

WEACT will equip onsite gray water collect and purify system for each building. The purified water will be used to support Harlem Grown's urban farm in Manhattanville Houses.

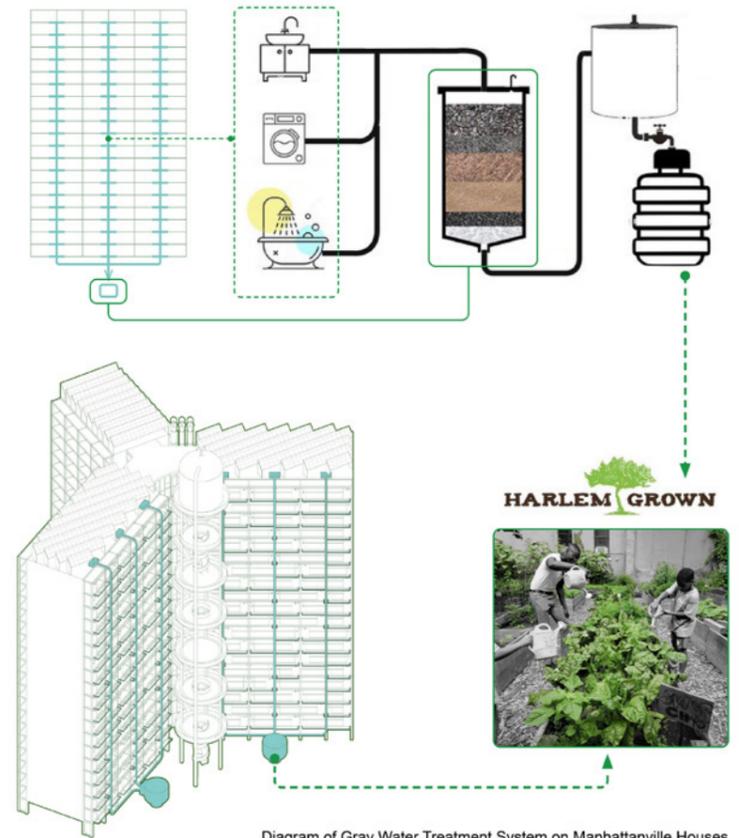
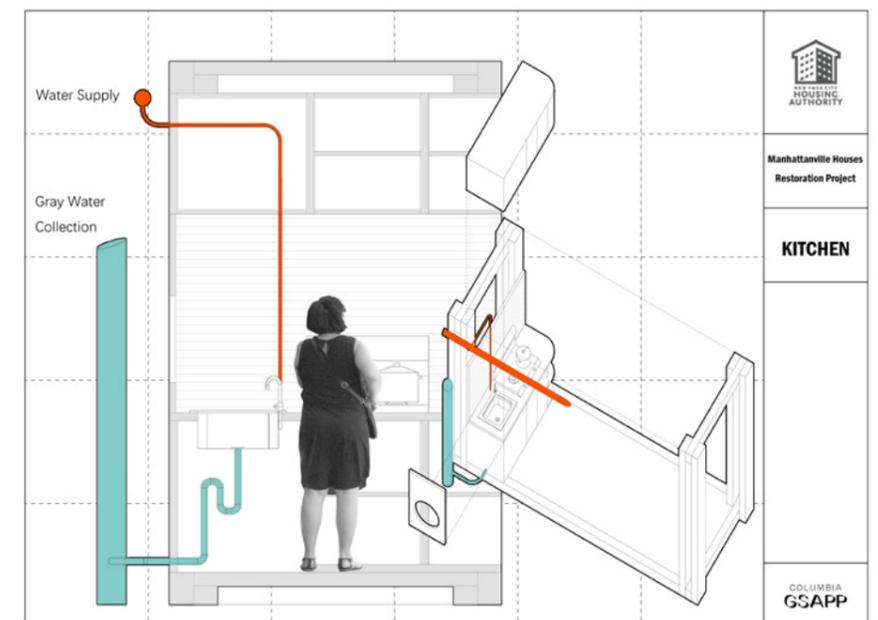
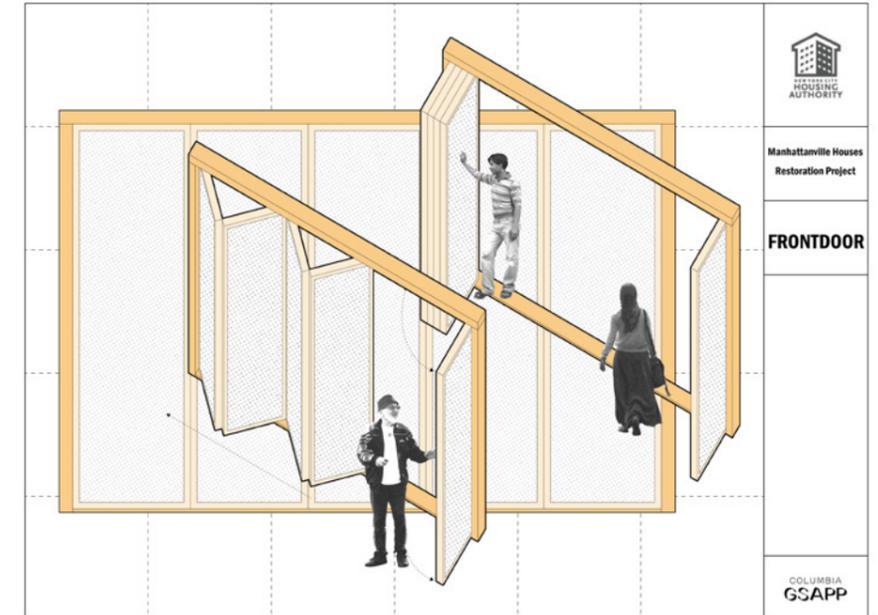
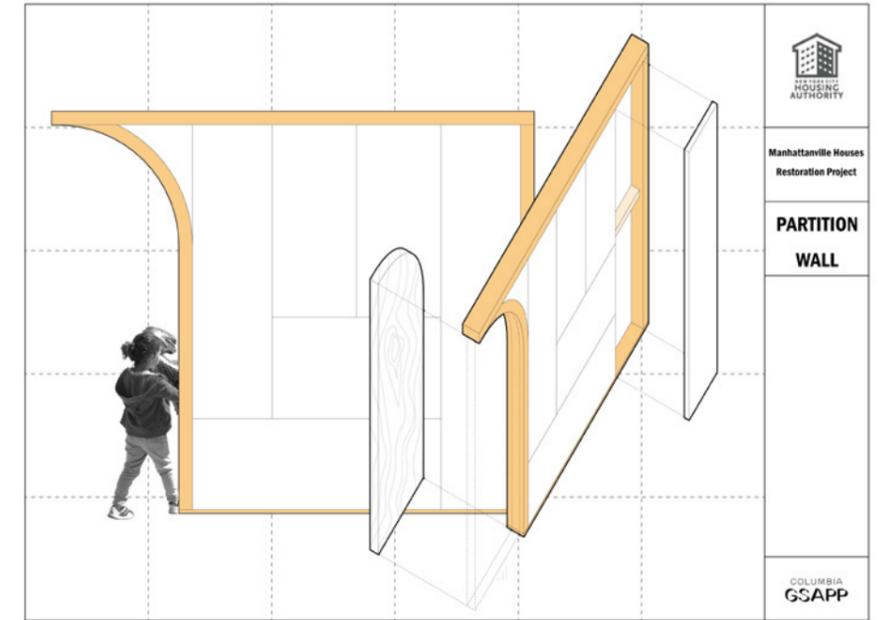
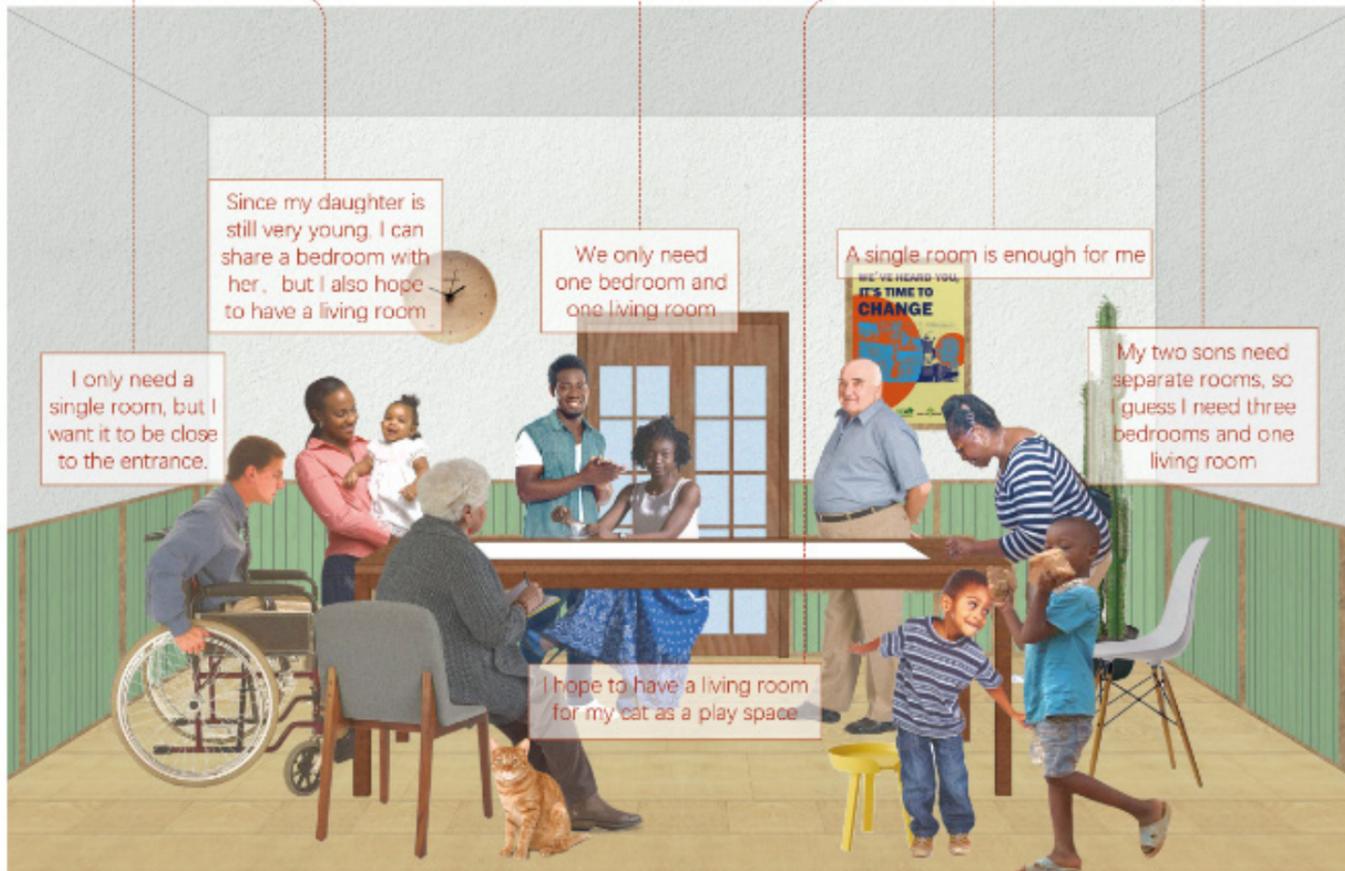
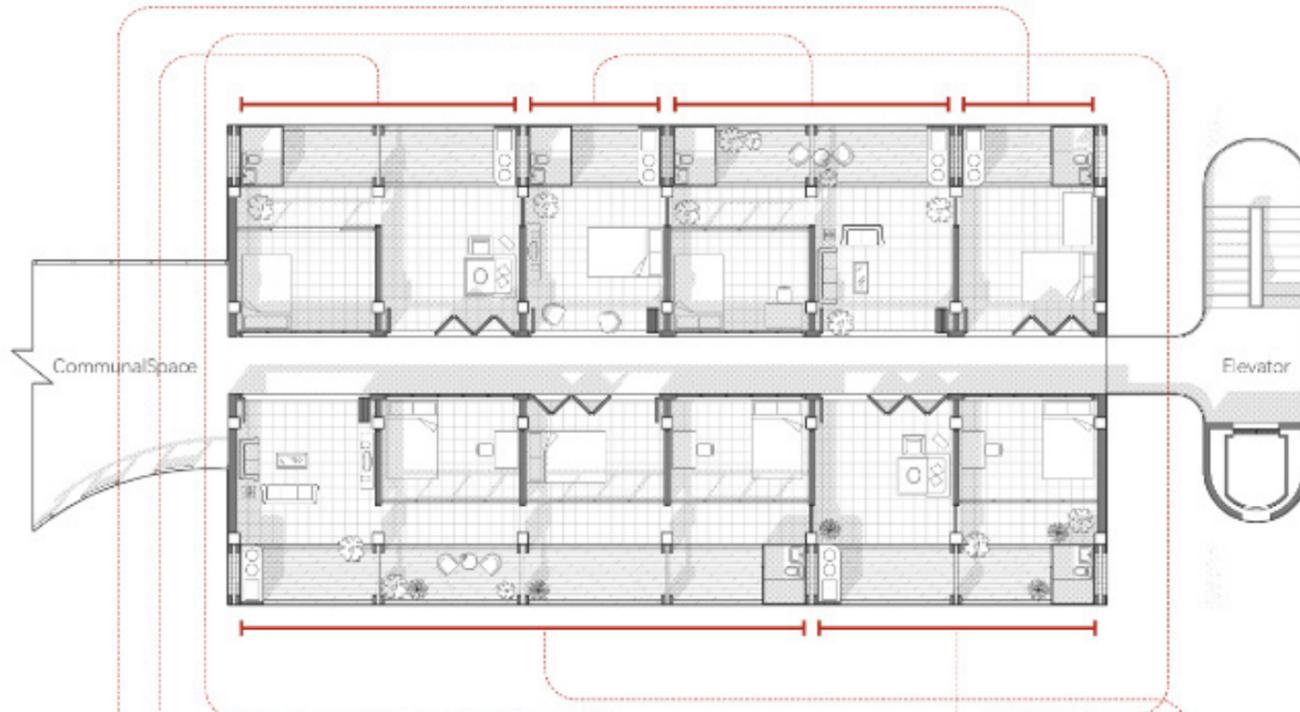


Diagram of Gray Water Treatment System on Manhattanville Houses

Action IV: Interior Renovation



Construction Statement

Site Adjustments



Safety Guarantee

Dear Residents,
We are in the process of repairing and renovating the roads in our community, we guarantee that our construction is safe and reliable.



New Entrance

Residents, please note that after renovation, our community will have new entrances and exits!
Our Construction Time:
9:00-12:00, 14:00-18:00



Dust Legislation

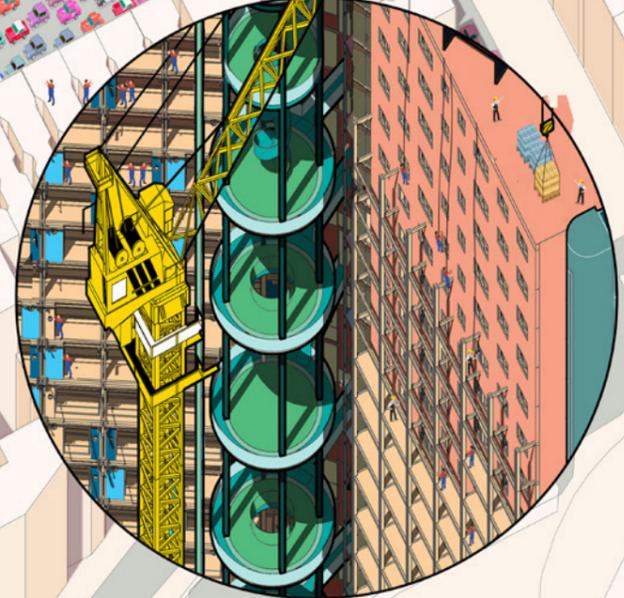
Construction will be developed following paradigms that WE ACT has already been rehearsing to avoid health damage to residents.



With your Help

We also welcome you to join us in building our community.

NEW MANHATTANVILLE
FLOURISHING
With a collective effort of all residents and organizations





USA TODAY
08.02.20



Brie Larson flexes muscle on set of 'Captain Marvel'

It's back to 1995 in a movie where a woman may be the most powerful hero in the galaxy. *In Life*
DICK ZLOFFICK

NEWSLINE

IN NEWS

Biden family supports a presidential bid

Former vice president says he is close to deciding on a White House run

IN MONEY

Cannabis is going upscale, mainstream

Smoking accessories and hemp-based products coming to a mall near you

Target website adds third-party sellers

Target marketplace is by invite only, differing from Walmart, Amazon sites

IN SPORTS



TRICK ENIGMANA / TODAY SPORTS
Defending Harden is

New dynamics in NYC public housing

NYCHA residents request home ownership

Bart Jansen, Kevin Johnson and Brad Heath
USA TODAY

Manhattanville is currently completing an ongoing community led transformation project funded by the city with federal funds. The government has made a commitment to maintain

funding for the project's maintenance. And yet, residents of the NYCHA Manhattanville Houses are asking for more: They want shared ownership of the building. They argue that these will help respond to years of disenfranchisement resulting from legislation that made access to

home ownership extremely difficult for communities of color, which constitute the majority of public housing residents. They consider that it has been their demands and work that has helped valorize the buildings--from their near collapse.

See COHEN, Page 2A



THE VIETNAM SUMMIT

Flourishing New Manhattanville

Best Wishes

Manhattanville is currently completing an ongoing community led transformation project funded by the city with federal funds. The government has made a commitment to maintain funding for the project's maintenance. And yet, residents of the NYCHA Manhattanville Houses are asking for more: They want shared ownership of the building. They argue that these will help respond to years of disenfranchisement resulting from legislation that made access to home ownership extremely difficult for communities of color, which constitute the majority of public housing residents. They consider that it has been their demands and work that has helped valorize the buildings--from their near collapse at the end of the 2020s to their current state. If accepted, this would help their communities address the ownership gap with white americans.

Future Current

Envisioning Emergent Ecologies For Jamaica

Climate change unquestionably represents the biggest challenge to the continued presence of humankind — or any other species — on this planet.

Managing and attempting to limit the effects of global warming should be our biggest project, prompting us to marshal our collective will, energy, and creativity to design a livable solution to the inevitable shifts in weather and habitat.



2001-2020 Hurricane Attacked Jamaica

Location: East End, Jamaica

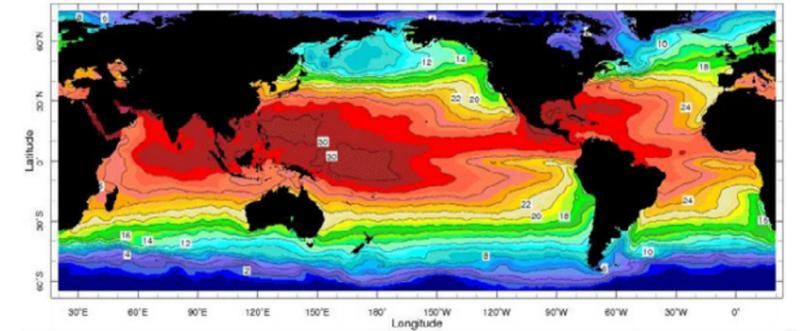
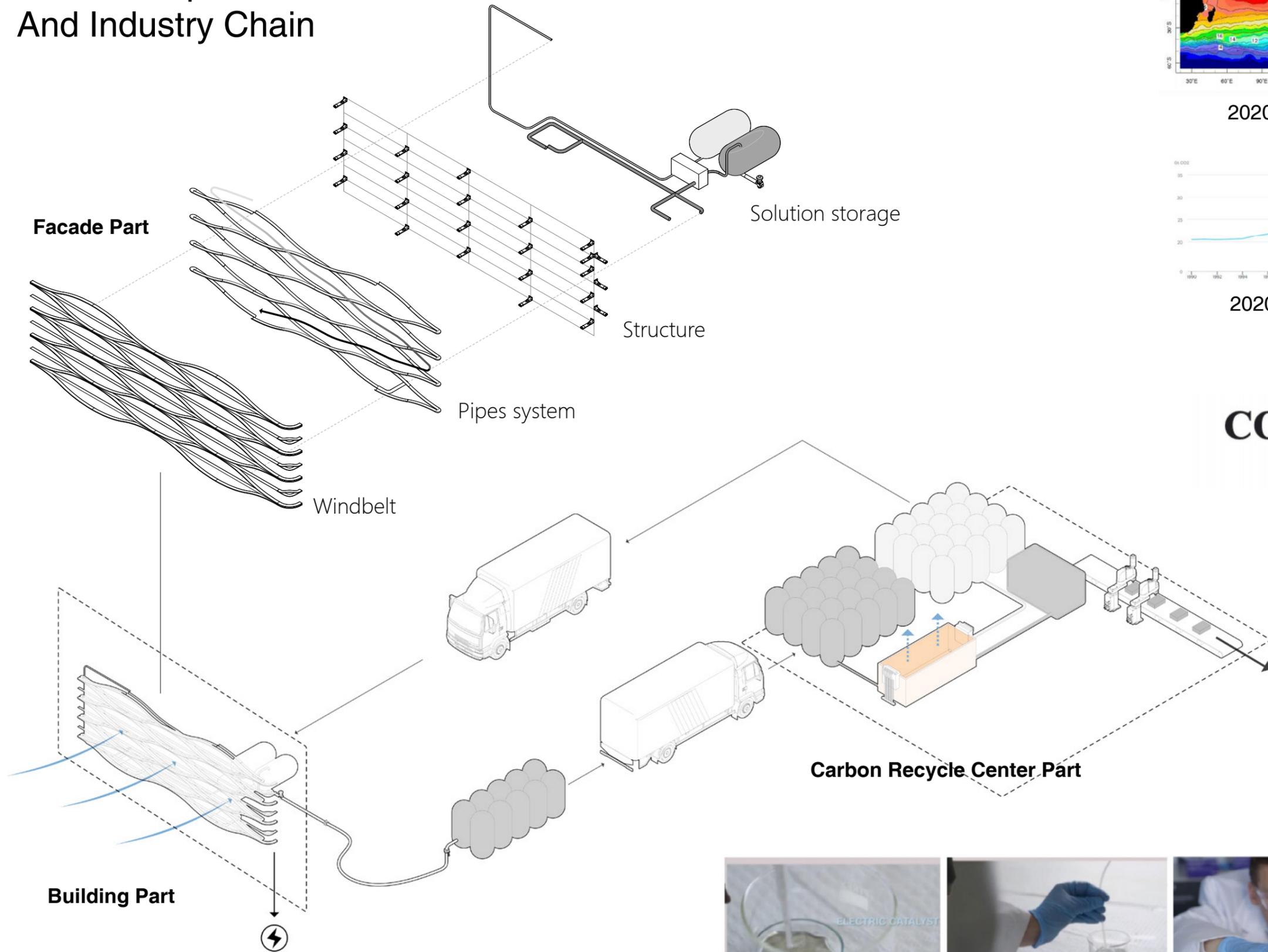
Time: 2021 Fall

Instructor: Vanessa Keith

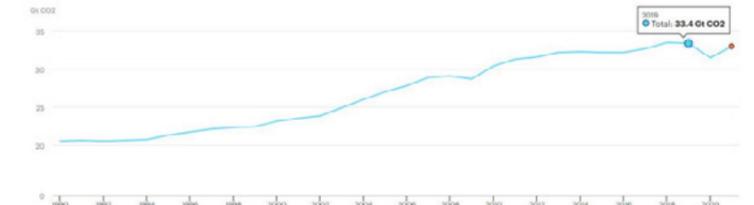
Author: Xiangru Zhao

Carbon. Future

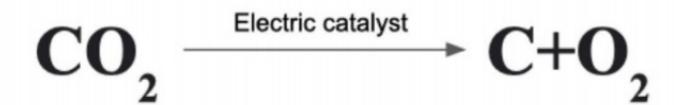
Carbon Capture Device And Industry Chain



2020 July Sea Surface Temperature



2020 total CO2 Emission 33.4GT



Carbon capture

v / m / m
0.00003925 / 0,003 / 0.008

1L solution + electricity
76.4g C 203.8 02 279.4gCO2



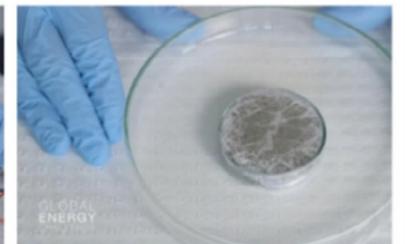
1.The liquid metal catalyst



2.Absorption of CO2 in solution

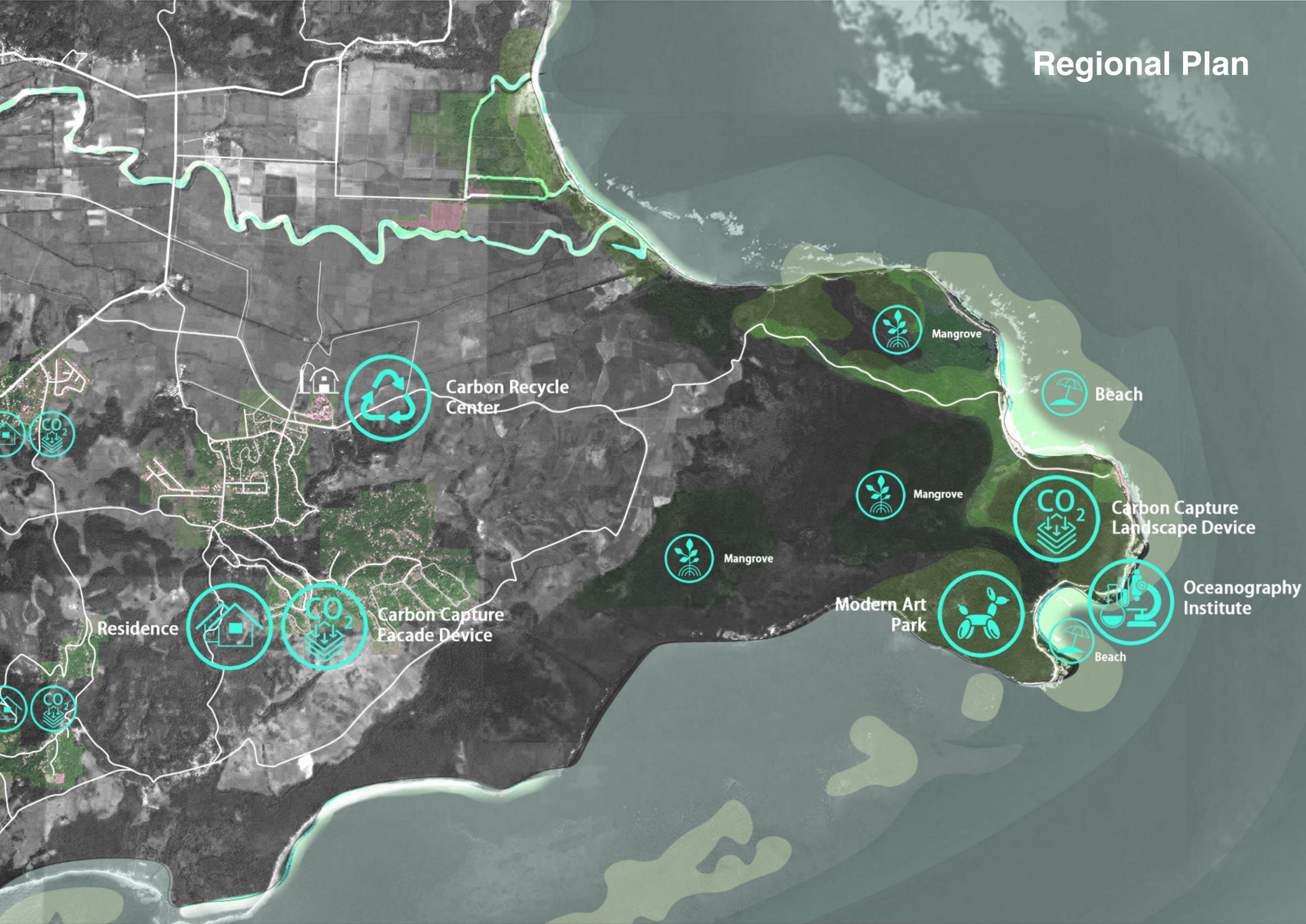


3.Electricity input



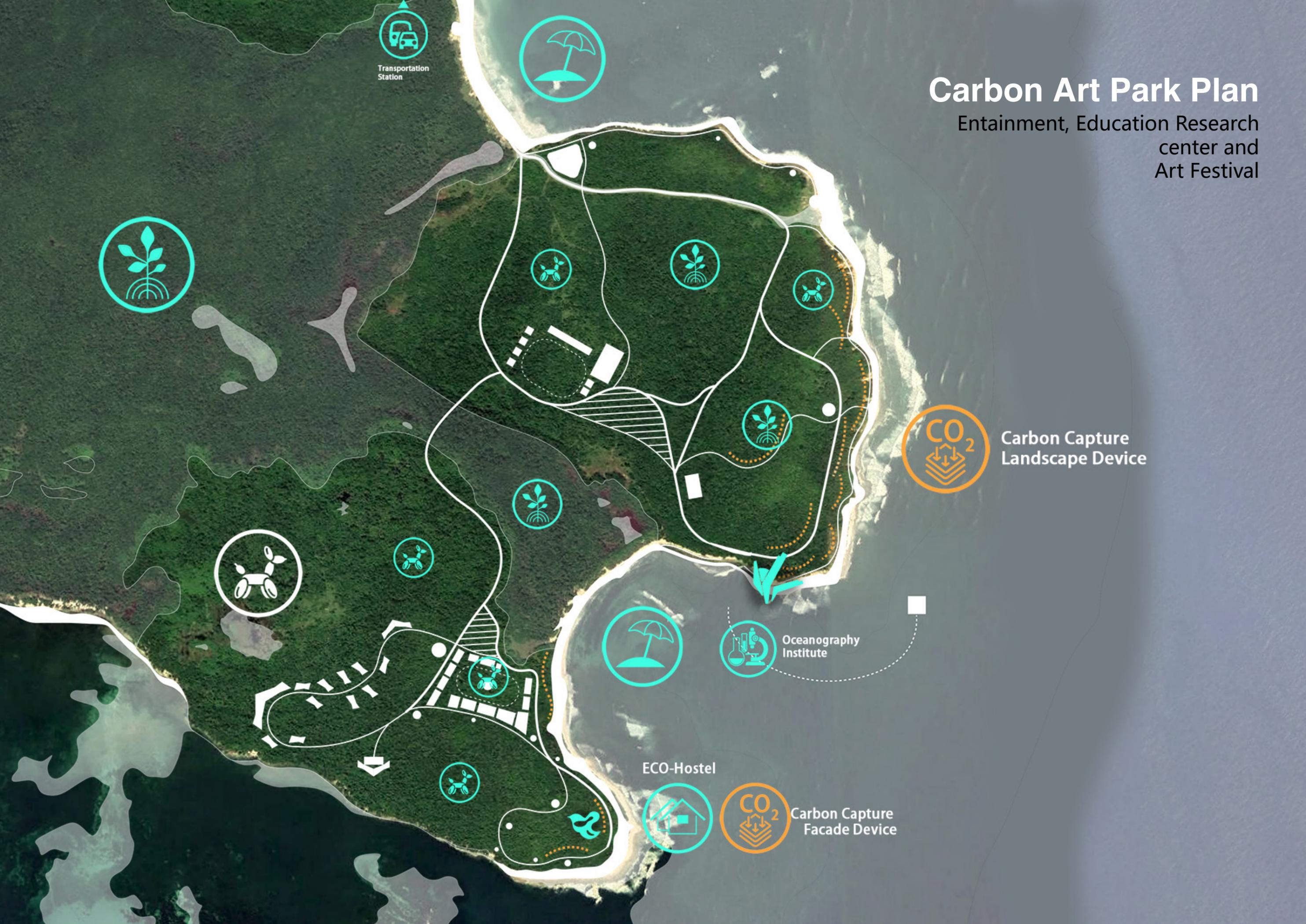
4. Carbon naturally detached from the liquid metal surface

Regional Plan



Carbon Art Park Plan

Entertainment, Education Research center and Art Festival



Transportation Station



Oceanography Institute



ECO-Hostel



Carbon Capture Facade Device

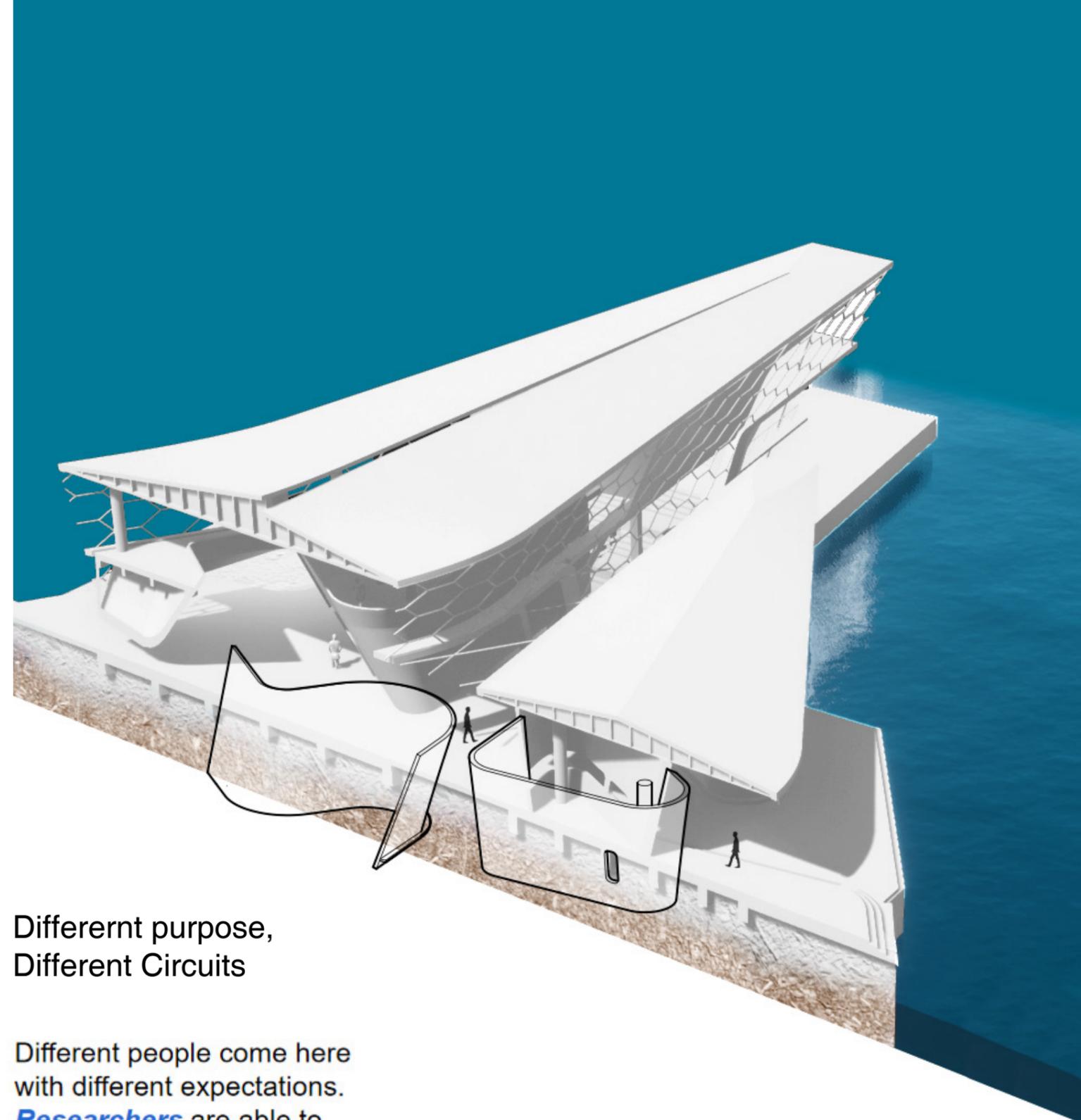
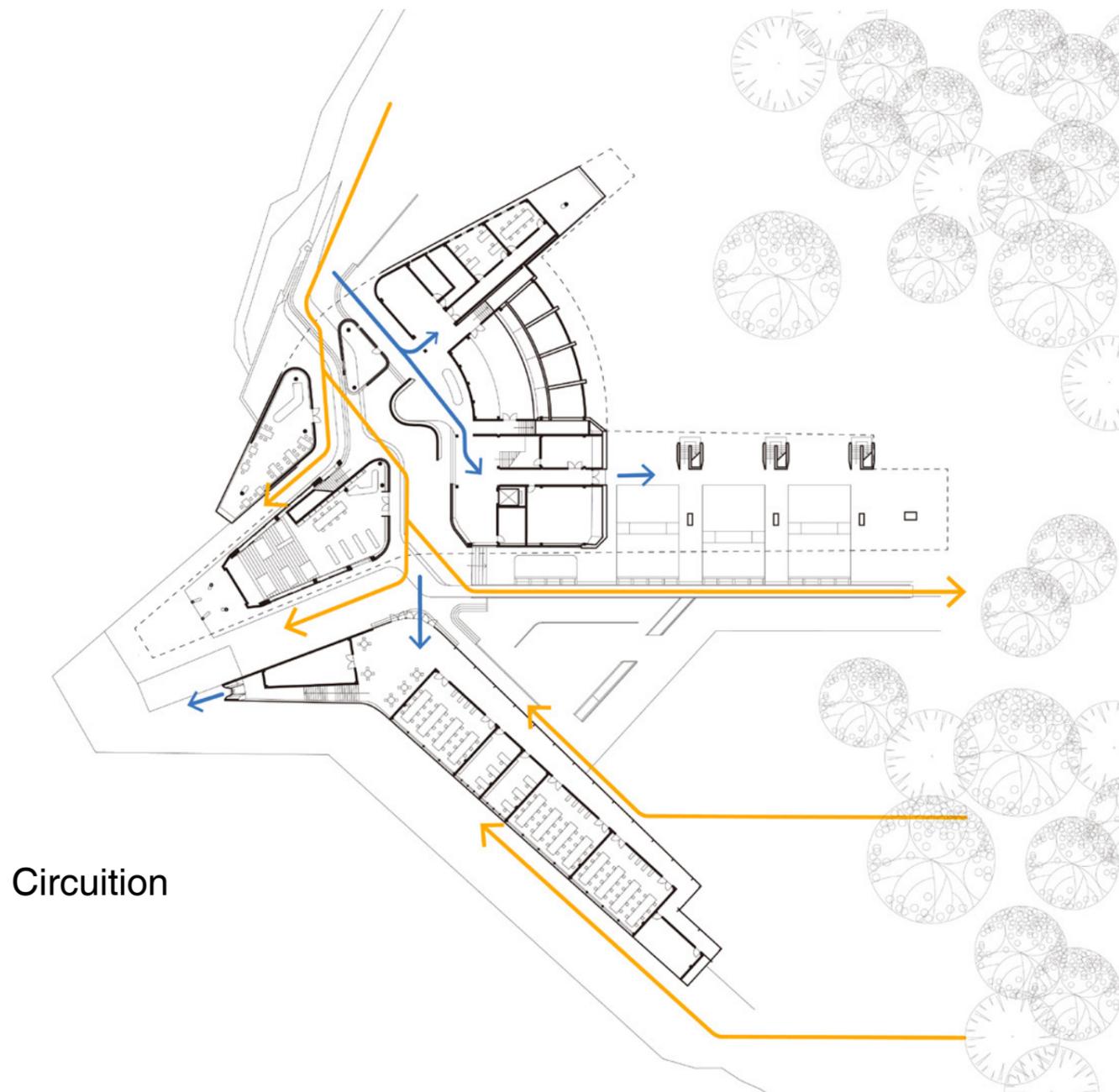
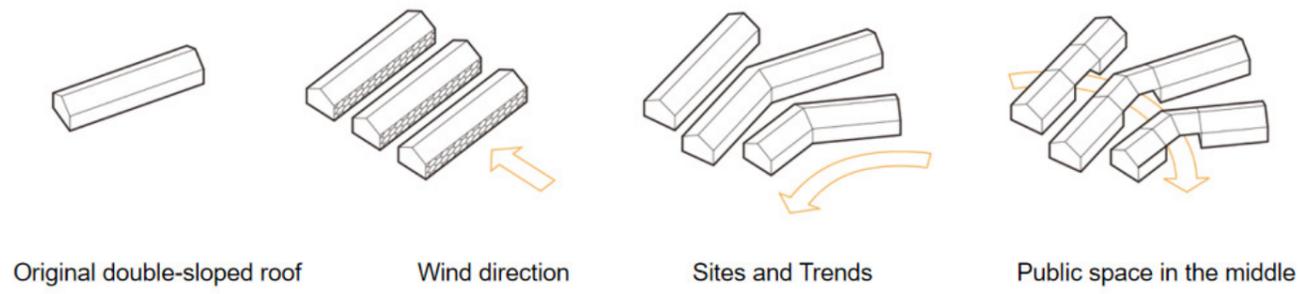


Carbon Capture Landscape Device

Oceanographic & Climate Research Center

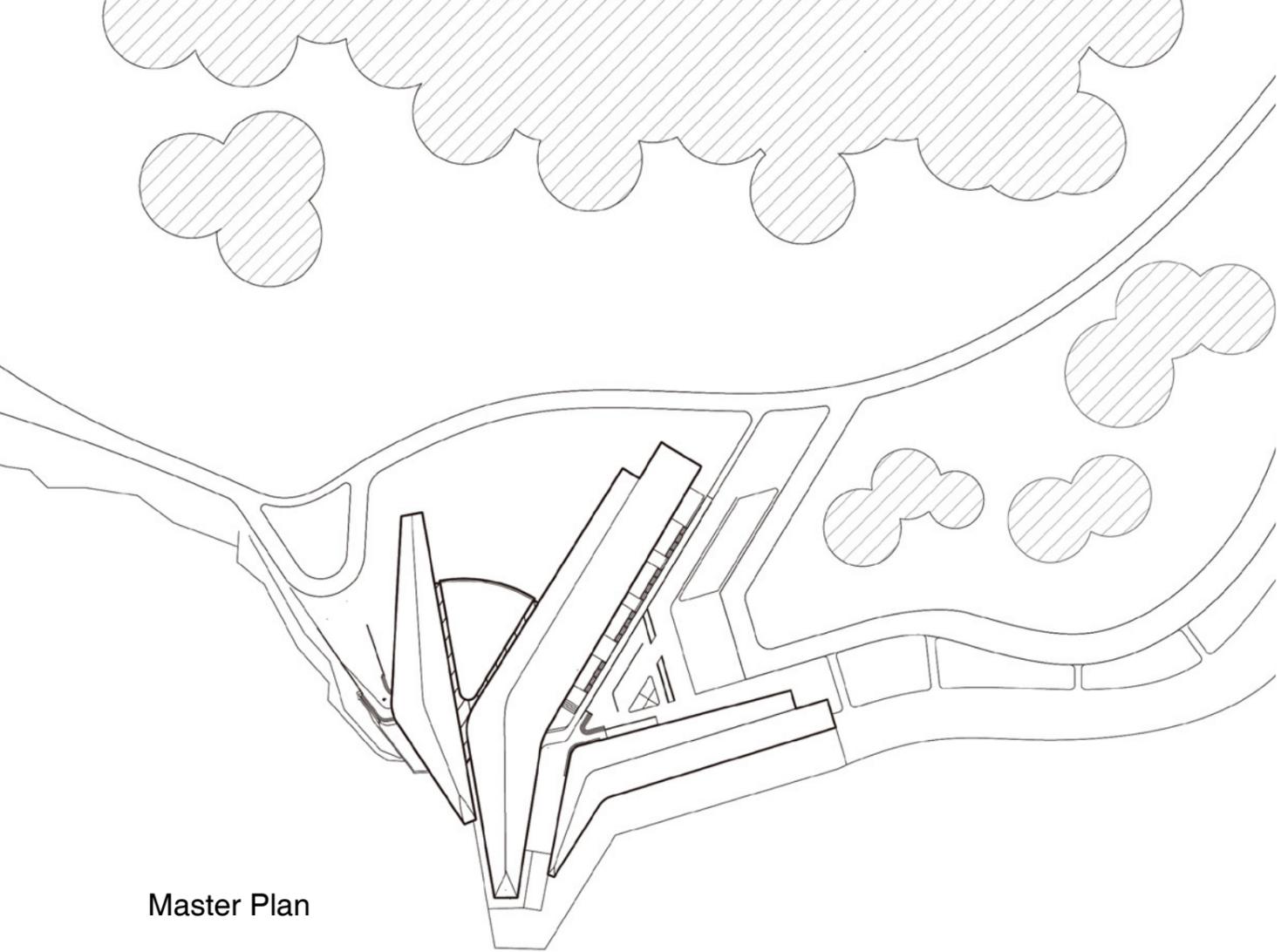


Generation Process



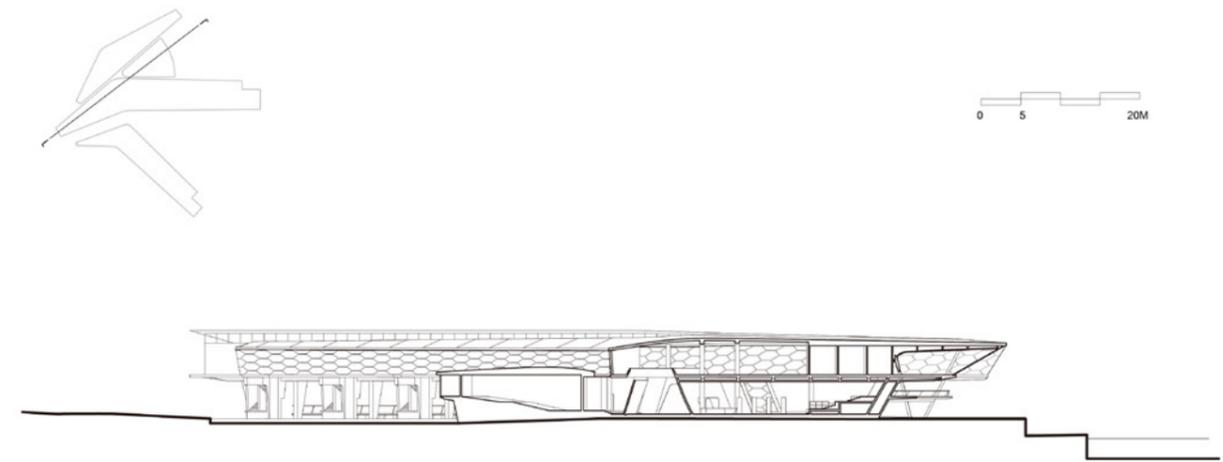
Different purpose, Different Circuits

Different people come here with different expectations. **Researchers** are able to have easy access to facilities and surveillance of the sea. **Visitors** can explore the place but not interfere with the work here. Different routes will not interfere with people enjoying the beauty of the sea.

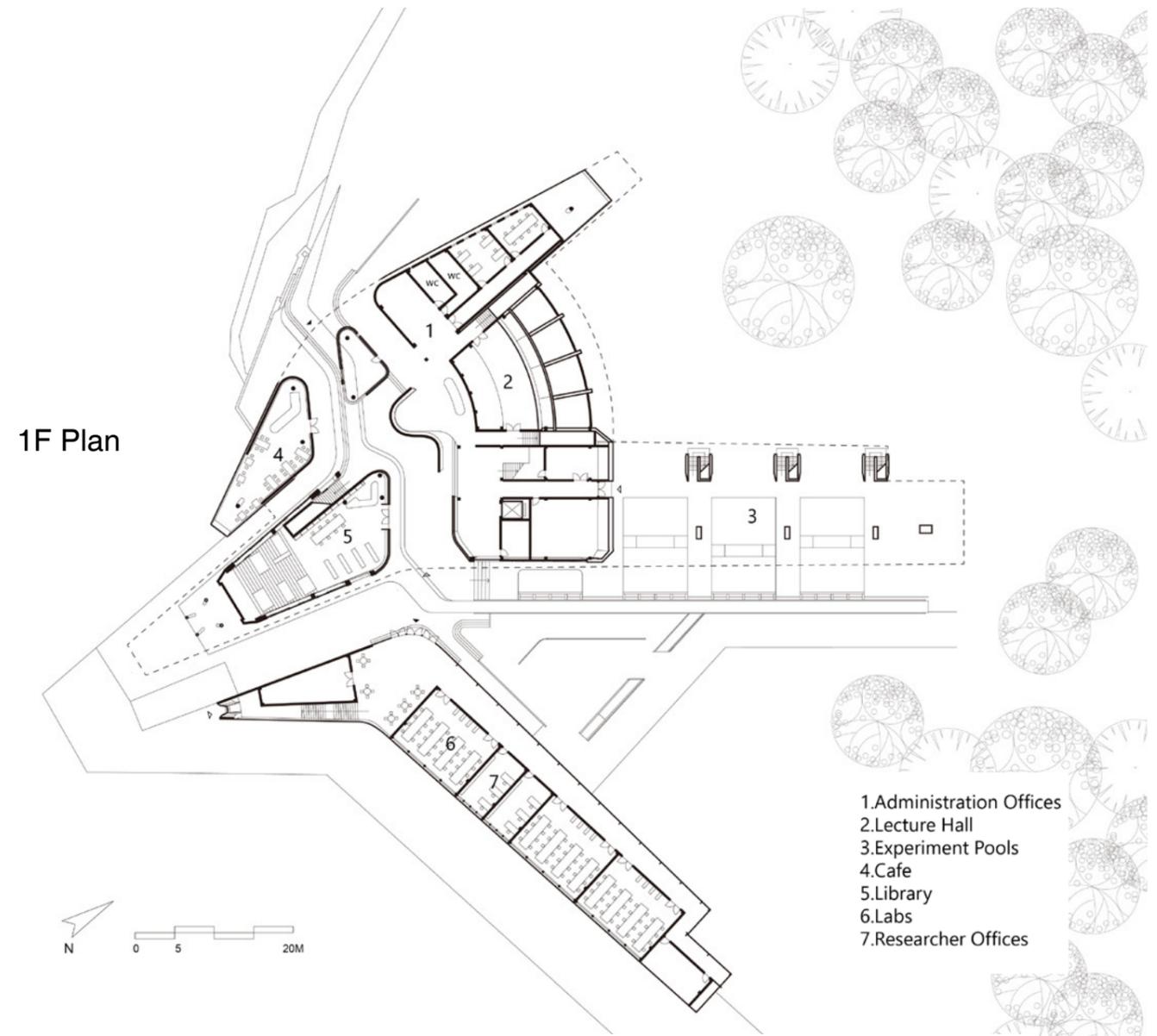


Master Plan

Oceanographic & Climate Research Center

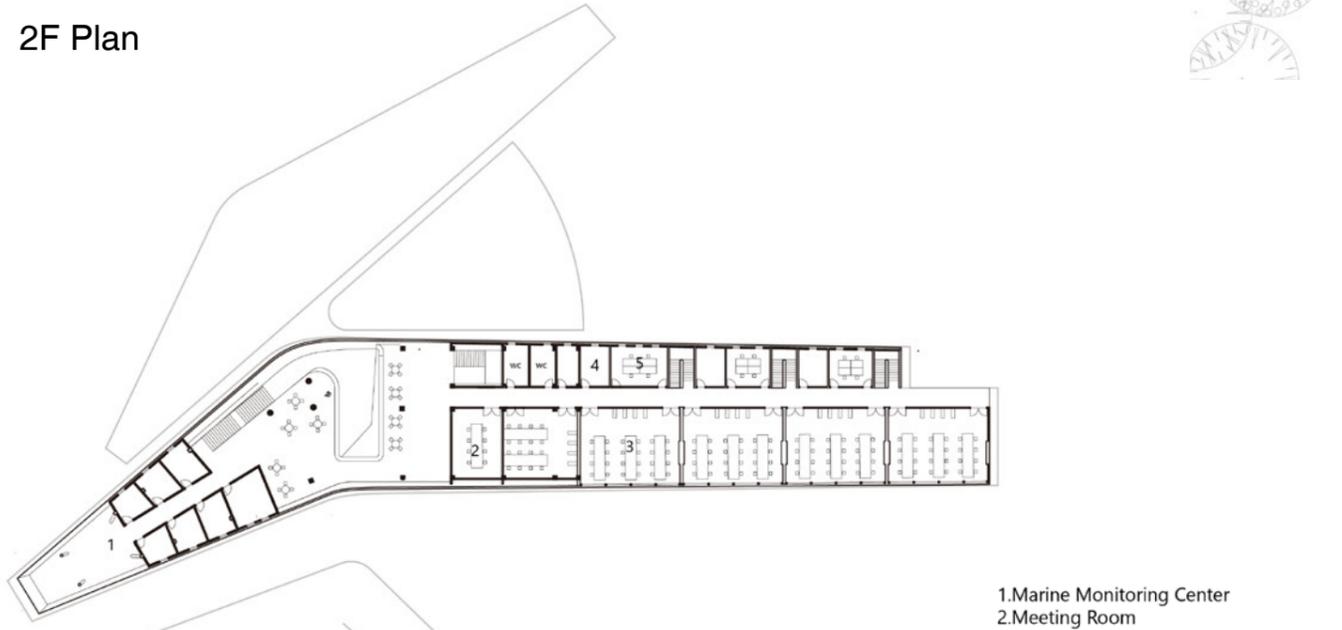


Section 1-1



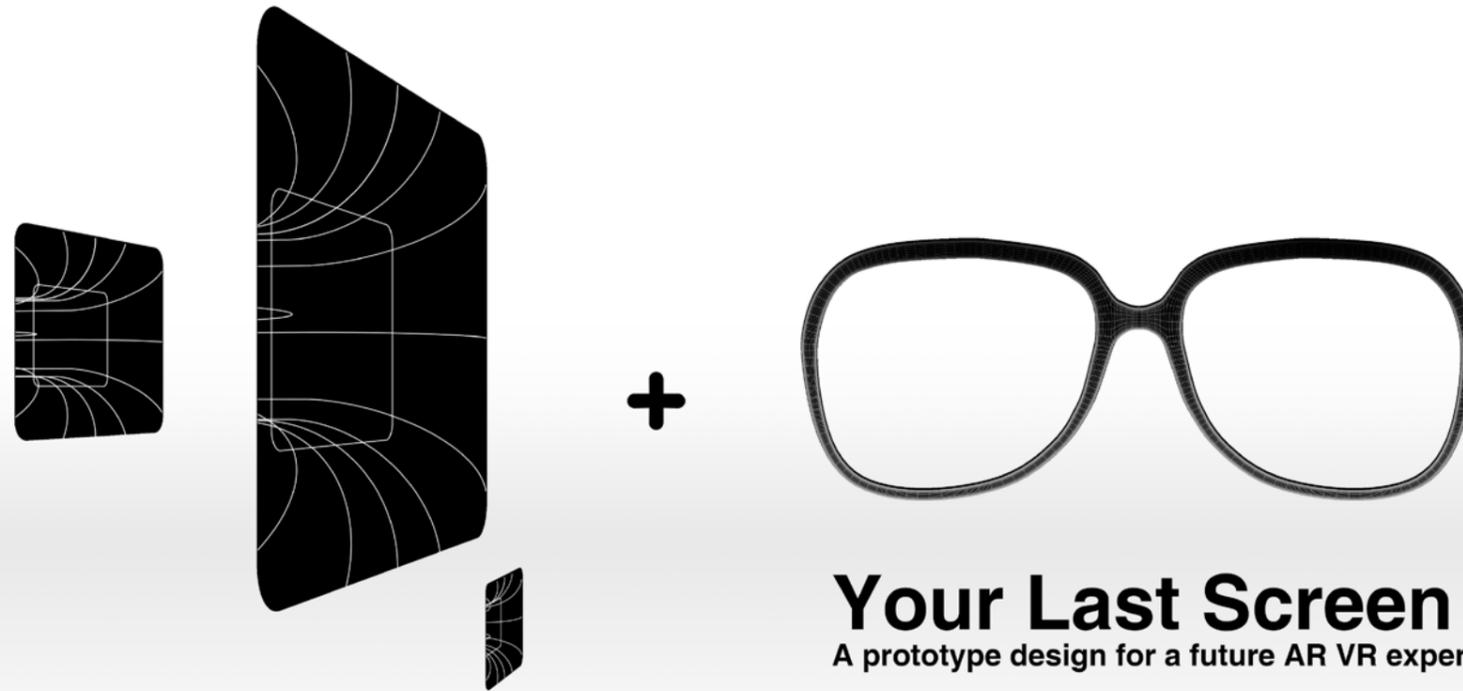
1F Plan

- 1. Administration Offices
- 2. Lecture Hall
- 3. Experiment Pools
- 4. Cafe
- 5. Library
- 6. Labs
- 7. Researcher Offices



2F Plan

- 1. Marine Monitoring Center
- 2. Meeting Room
- 3. Labs
- 4. Preparation Room & Storage Room
- 5. Researcher's Office



Your Last Screen

A prototype design for a future AR VR experience

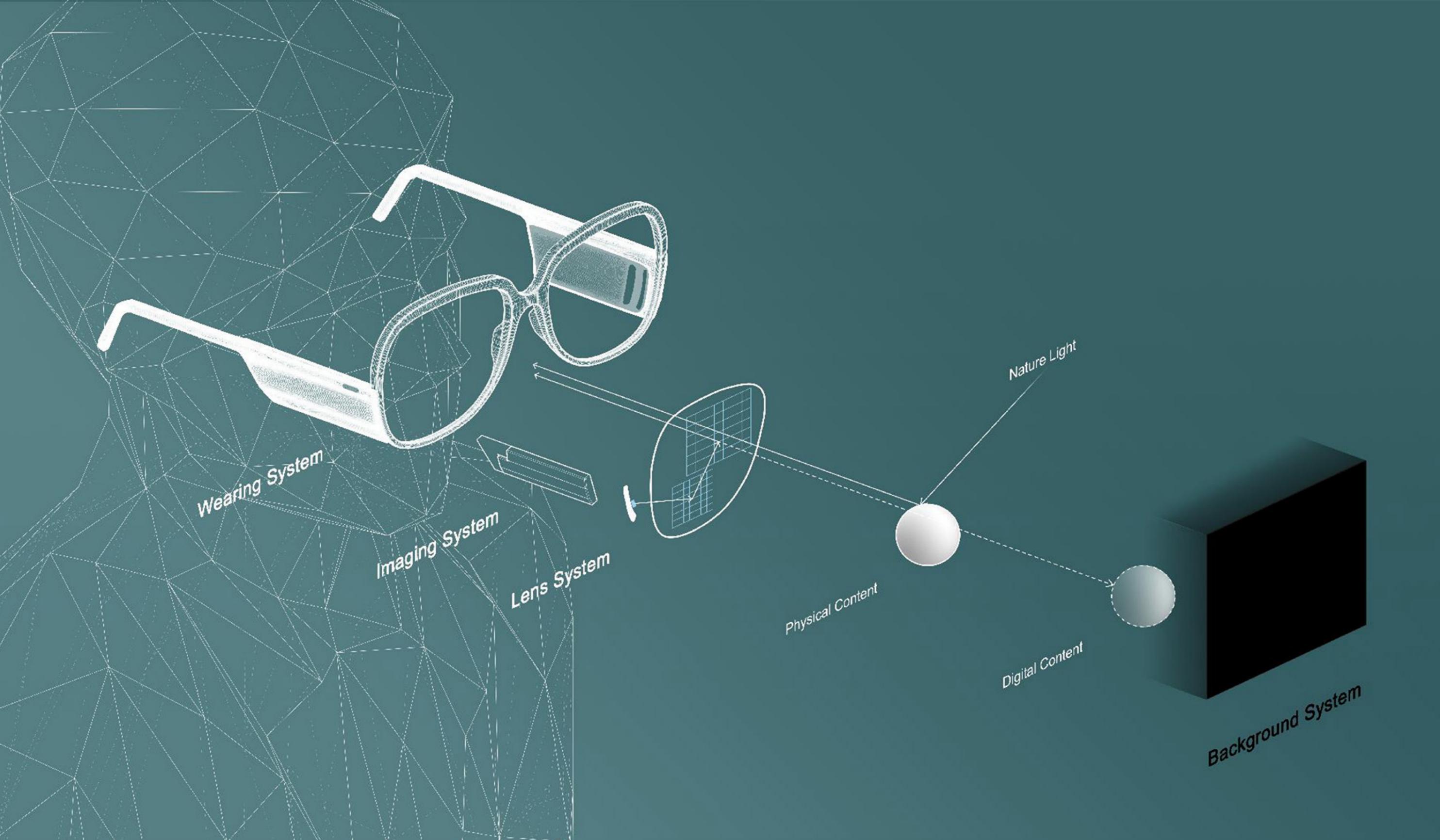
Author: Xiangru Zhao
Instructor: Michael Bell

COLUMBIA
GSAPP

ZR

Time: 2022 Spring
Instructor: Michael Bell
Author: Xiangru Zhao

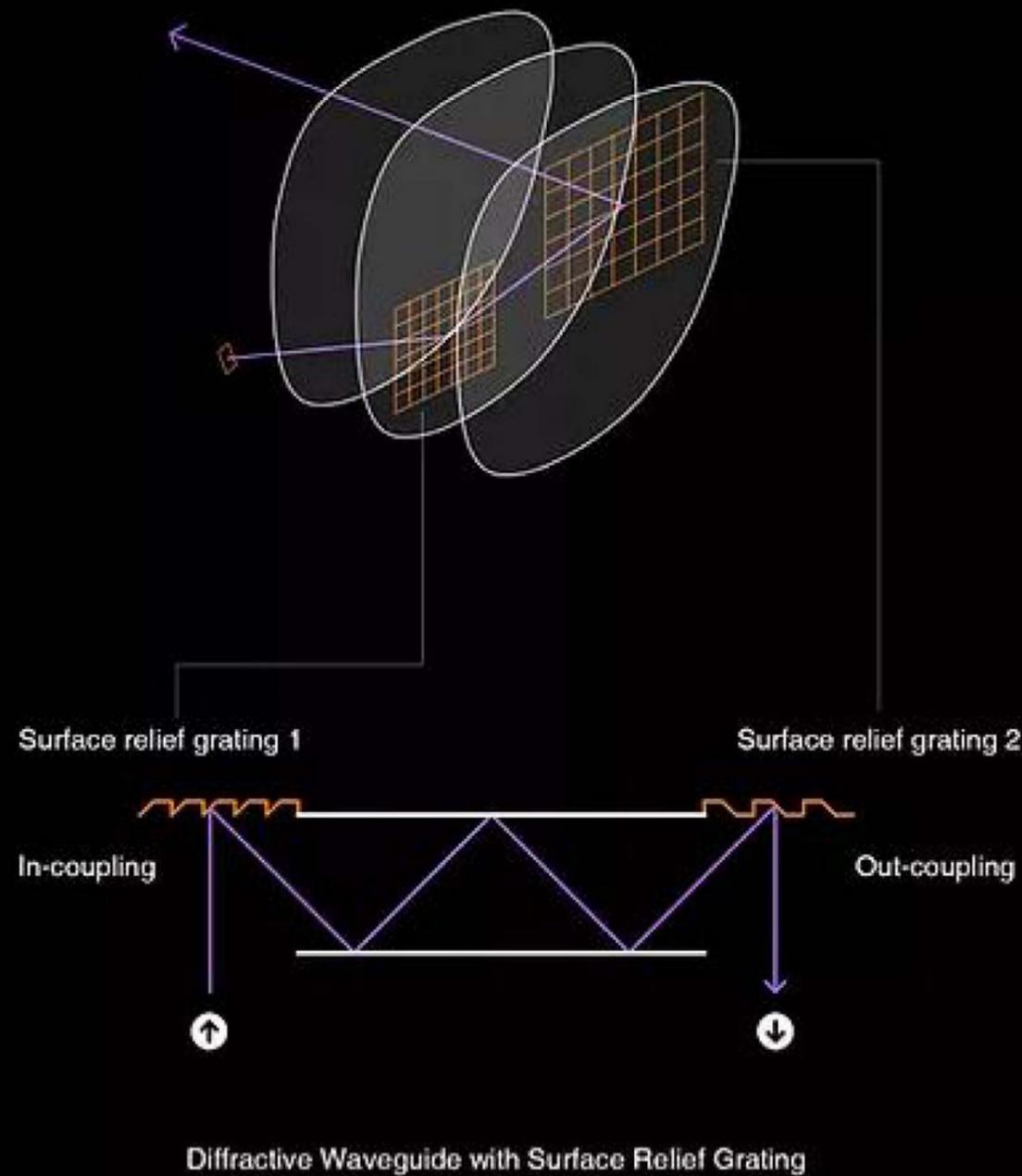
More about this project <https://www.xiangru-creative.com>



System Composition

This is a new AR, vr device. It is different from the devices that are already available now. The current glasses will use a mask or sunglasses to enhance the display. This is a new AR, vr device. It is different from the devices that are already available now. The current glasses will use a mask or sunglasses to enhance the display. But this design removes the mask from the glasses. The digital content is presented in real space using the properties of super black material.

Intricate engraved lens



Darkest material on earth



Super-black Coating
Total hemispherical reflectances (THR)
below 1.5% in the visible spectrum



Normal black Coating



The super black background can significantly improve the visibility of AR glasses. Enables the glasses to display precise images.

The liberation of the screen

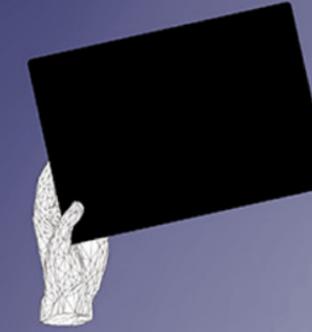
The use of ultra-black materials instead of light-emitting screens will bring many enhancements. The first is a lower unit cost. Light-emitting OLEDs sell for much more than the price of paint for ultra-black materials. This means that consumers can choose more freely. At the same time different textures of materials can make these black planes folded and very portable.

Usage Scenarios



Because the digital content is presented directly on the wearer's retina, those without permission to join will not see any content at all. To onlookers, it appears that people are pointing at a blackboard with nothing on it.

1.The liberation of **Size**



6"-7"
≈ \$ 4.2 / cm²

UNLIMITED ∞
≈ \$ 0.0125 / cm²

2.The liberation of **Weight**

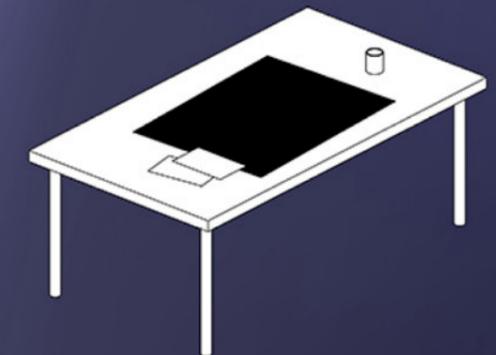
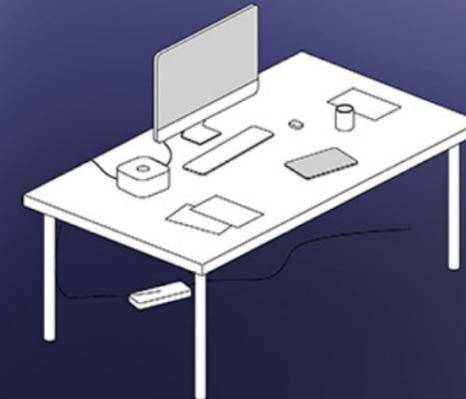


7.6-9mm

1-2mm
Aluminum alloy / Plastic / Fabric

≥ 0 **Foldable**

3.The liberation of **Desk**



Smaller size, More flexible arrangement

⚡ Phone: 4-5.25W
Pad: 20-50W
Computer: 200-350W

⚡ Glasses: 2-8W

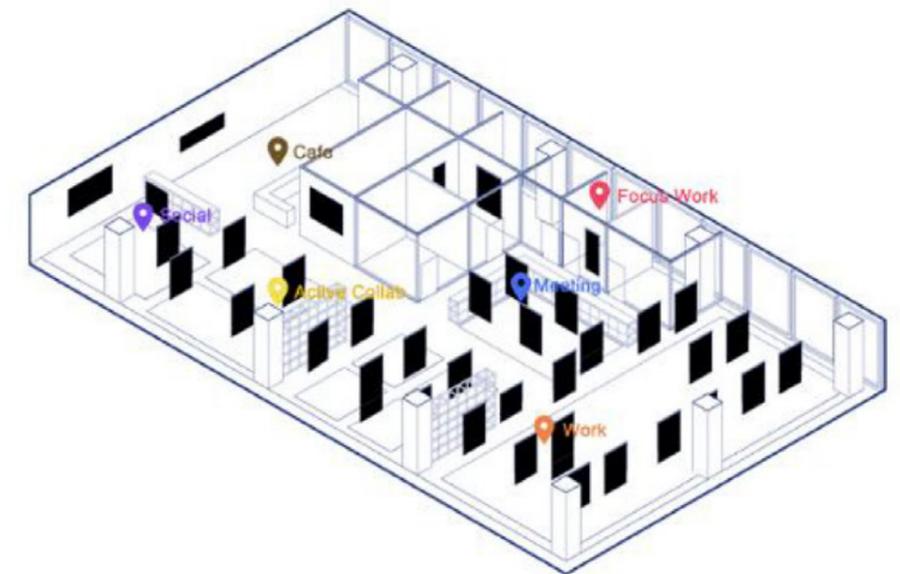
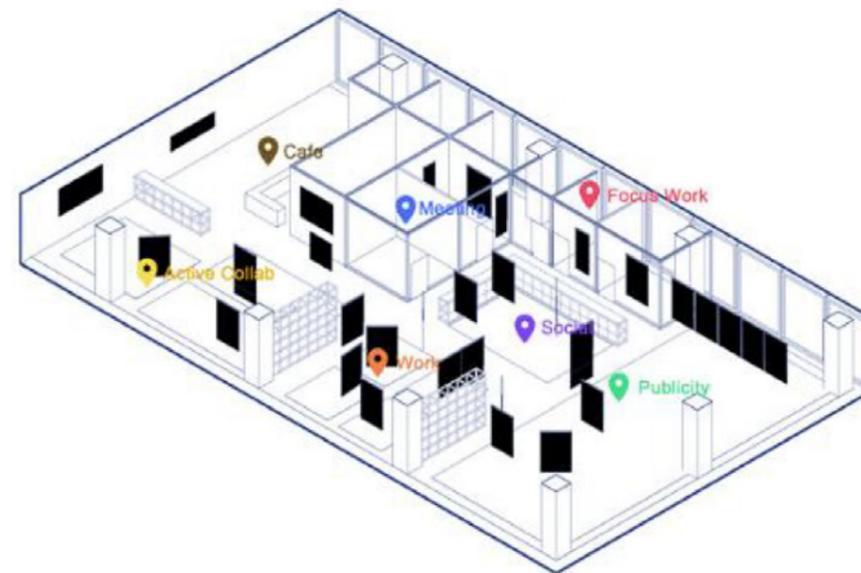
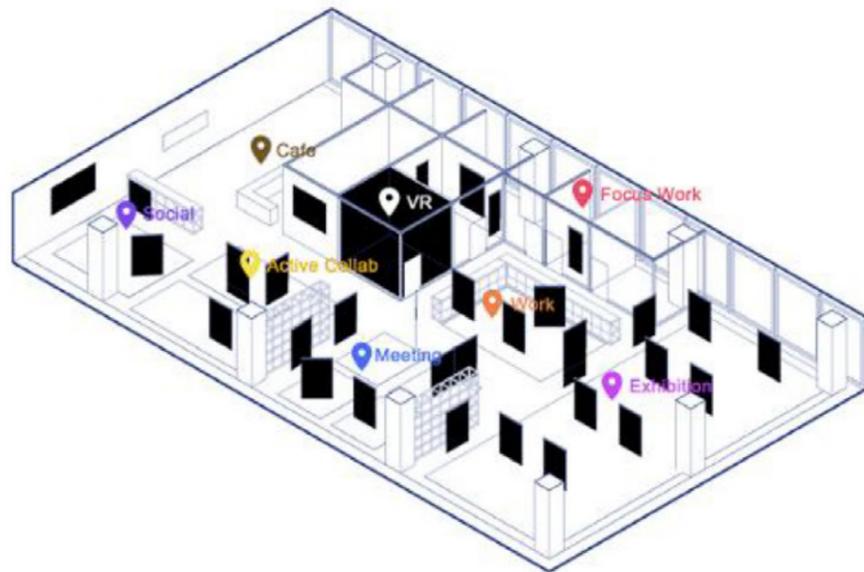
New Model For The Future Office



What is the necessary value of a centralized office
versus a remote office?

Future office, Universal Business Space.

The office after the remote work.

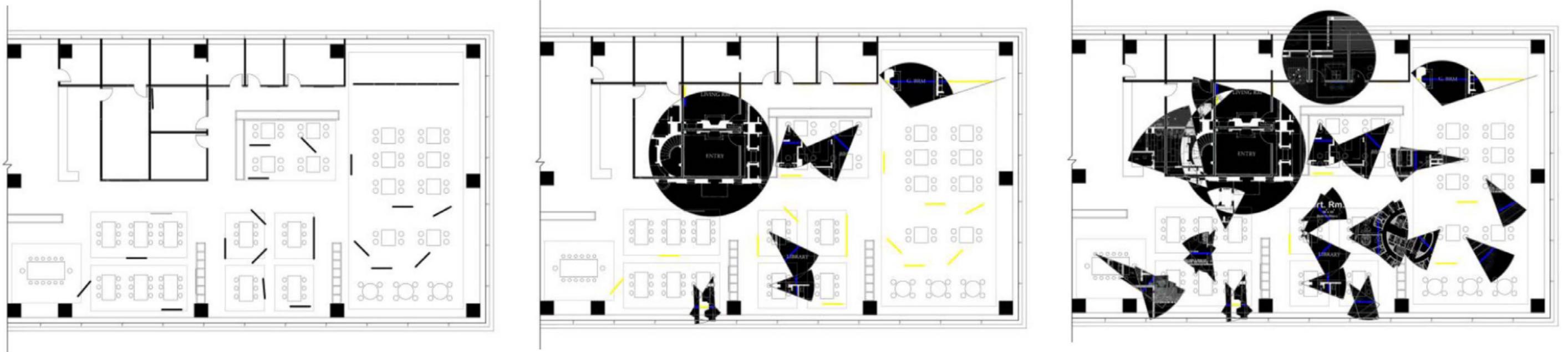


A new way to use space, a new office rental model.

Employers only need to rent a common space to solve most of their needs. Different companies can lease together. For the employer it means **lower flat rents**.
Higher gross rental income for renters.

Overlaid Space.

Changing spaces while using spaces.



You don't have to take the time and effort to move monitors and devices, these black flat surfaces can replace them. These black planes can be dragged by **tracks on the ceiling** (just like pulling curtains) you can easily change their position. Not only will these planes **change the physical space**, the content projected on the black planes will greatly **expand the spatial experience**.

Walking Into Malevich

Game Design / Virtual Architecture

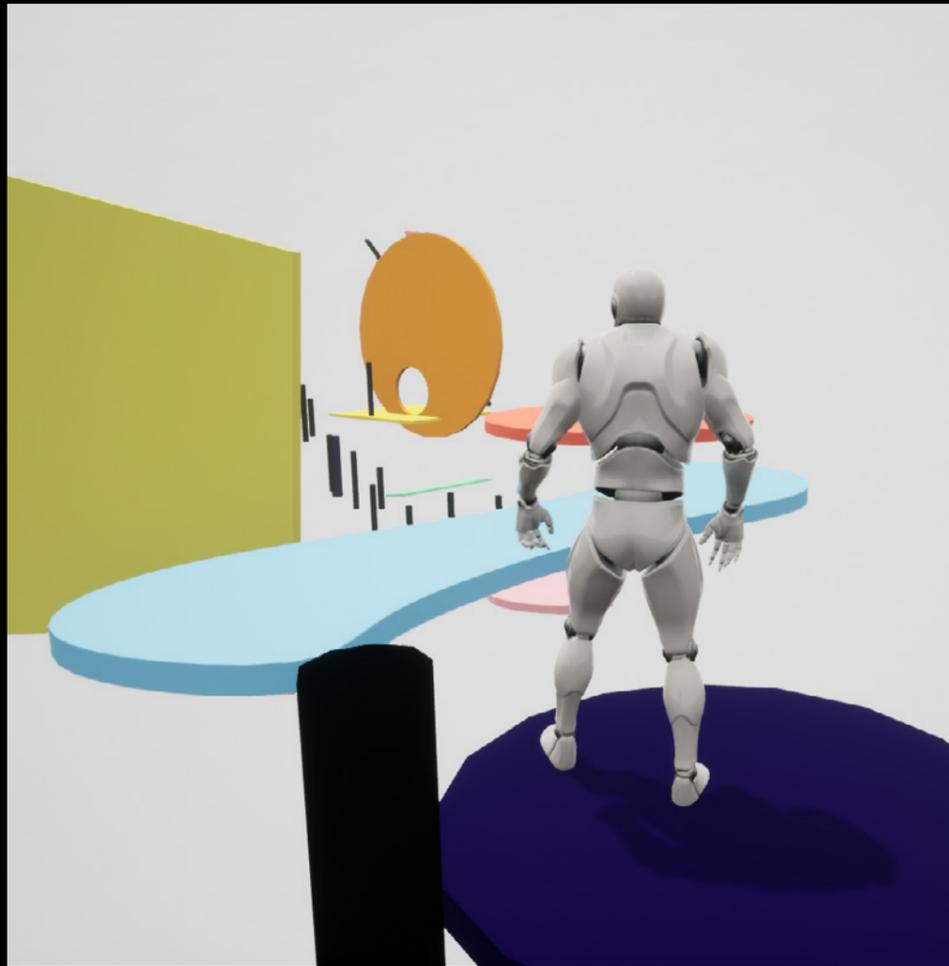
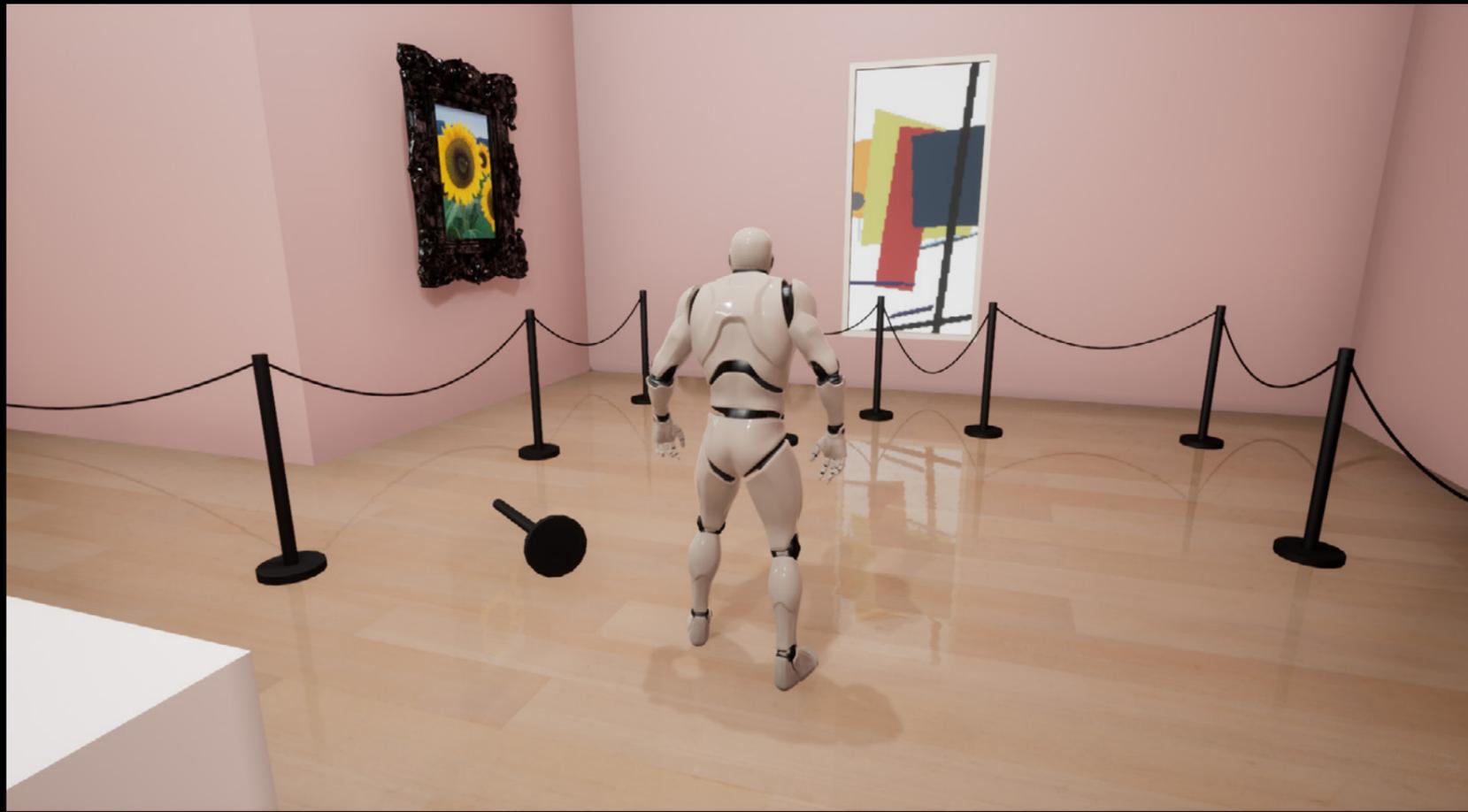


Location: New York

Time: 2022 Spring

Instructor: Nitzan Bartov

Author: Xiangru Zhao, Erxiao Chu, Enfeng Xie



The Future Of The Past, The Failure Of Immortality

Xiangru Zhao

“Metabolism is the name of the group, in which each member proposes future designs of our coming world through his concrete designs and illustrations. We regard human society as a vital process, a continuous development from atom to nebula. The reason why we use such a biological word, the metabolism, is that, we believe, design and technology should be a denotation of human vitality.”

Metabolism 1960: Proposals for a New Urbanism

Abstract

This article explains why the metabolism movement took off after the war, but continued for a while before rapidly declining. The metabolism school of thought, with its focus on the future, was obsessed with technology, bringing infrastructure and industrial production into its fold, but was in fact a peculiar product of history, with misguided expectations of technology leading to what was ultimately a fantasy. The historical background of the rise of the metabolism movement will first be presented, while the influence of Western architecture on them will also be covered. Then the focus will be back on Japan, with the architect Kenzo Tange, who will talk about the development of the Metabolism school, and how the Eastern Metabolism differs from the Western mega-architecture, and some of its achievements at its peak. The reasons for its decline will then be analyzed.

The Metabolic Movement, which has been called the only modern architectural movement in the modern East, was at its peak and its influence lasted for a long time throughout East Asia, with traces of its influence on design and planning found in post-war Japan and open China. The Metabolic Movement was founded in 1960. With

the strong support of Takashi Asada, the original members of the Metabolism --

Noboru Kawazoe, Kisho Kurokawa, Kiyonori Kikutake, Masato Ōtaka, and Fumihiko Kawazoe, completed a small book, *Metabolism 1960: Proposals for a New Urbanism*, which was promoted by Kisho and graphic designer Kiyoshi Awazu to the international avant-garde delegates at the World Design Congress. This marks the official rise of this group. This article describes the historical background of the metabolism, the factors that influenced it, and the reasons for its demise.

Petri Dishes¹: The background of the rise of the metabolism

In the 1960s, the world was under the cold War, the United States kept increasing its military intervention in Vietnam, missile crisis, the assassination of the president, one political event after another like a bomb shook the society, shocking people. The rise of the counterculture movement and the civil rights movement formed an anti-authority trend of thought in western society. Under this trend of thought, modern art combined with political trend of thought has triggered people's reflection on the status quo and pursuit of reform in all aspects of the society. In the West, movements like Archigram, Groupe d'Etudes d'Architecture Mobile, Superstudio and Situationist International are a combination of avant-garde architects and artists, It is a forward-looking urban conception based on the criticism of urban and social status quo. It is hoped that changes in environmental structure will lead to fundamental

¹ A Petri dish is a shallow transparent lidded dish that biologists use to hold growth medium in which cells can be cultured, originally, cells of bacteria, fungi and small mosses. Here is used to describe the various forming conditions and influencing factors of metabolism movement.

changes in social structure. They were heavily influenced by political ideas such as pop art and anarchism. Looking forward to a more mobile urban and social structure.

As a bridgehead against Soviet influence, Japan received great economic assistance from the United States. The Administration believed that economic development would prevent not only the return of Japanese militarism, but also communism. In 1950, with the outbreak of the Korean War, Japan became a base for us military munitions production and maintenance, with the US government paying huge sums for special purchases. The United States also helped Japan join the General Agreement on Tariffs and Trade (GATT), and Japan's postwar reconstruction and renewal requirements revived heavy industry, opening the door to the economic miracle.

With cities waiting to be rebuilt and a booming economy, Japanese architects have a fertile field. The architects also had a special historical task: to re-establish a national identity for Japan, a defeated nation, while coping with the urban sprawl that economic growth brought.

Therefore, the metabolism movement has the ambition of integrating eastern and western architectural cultures and the political task of establishing the national image. After Japan was forced to open its doors to the world in 1853, it became clear to the Japanese that to achieve political and economic balance, cultural equivalence must

first be established. Thus, since the second half of the 19th century, under the guidance of the first batch of British and German architects who came to Japan, The Japanese, who regarded architecture as an important carrier of national culture, began to learn and try to design and build their own buildings in western ways, and they were once completely Westernized (Rokumeikan). After long-term contact with western architectural culture, Japanese architecture has gone through a process from steadfastly learning from European and American architecture to absorbing western architectural culture and trying to dig internal data from its own architectural culture. In the more than 150 years of communication with the West, Japanese architects have been anxious to find their own cultural identity all the time. Although Japanese architecture has always been absorbed in learning from the West, it has never given up its own Oriental stand and values. They have always insisted on the use and refinement of traditional architecture, whether ethnic or foreign.

The Utopia of New Technology: Western Thinking on Megastructures

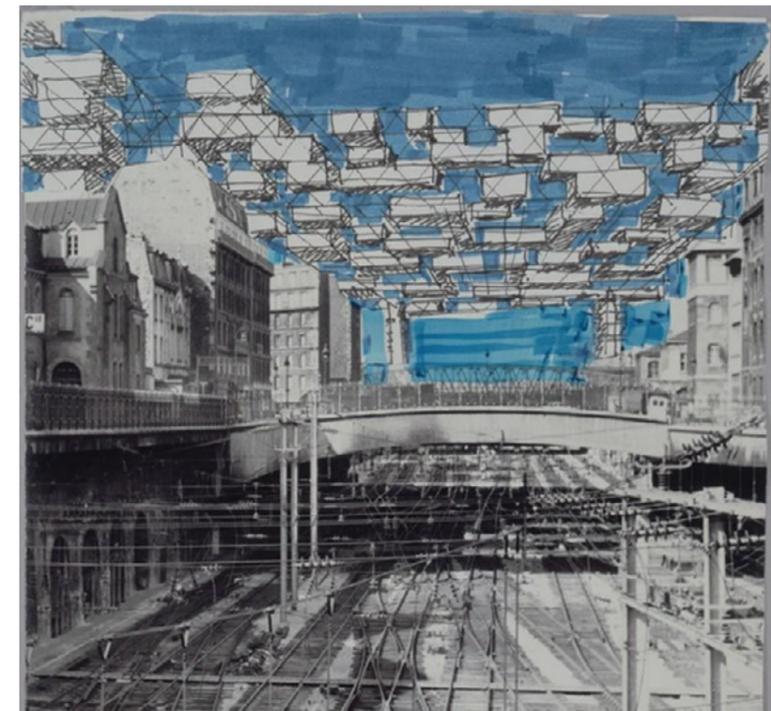
Let us turn our attention for a moment to the West, where the rapid advances in construction technology at the beginning of the 20th century made large-span structures and high-rise buildings a reality, and buildings expanded both horizontally and vertically. The rise of the megastructures was a response to the need to develop large, dense cities, a phase that modern cities were bound to go through. The demand for urban housing in Europe after World War I stimulated the imagination of architects. It was suggested that "we need a large framework that contains all the functions of a

city or part of a city. The concept of "megastructure" quickly took hold. Faced with post-war reconstruction efforts, the architects encompassed infrastructure, monumental forms and mass production all within the scope of their work. It must be said that this was indeed exciting, and its scale transcended modernist principles of urban planning to create a building that was a city in miniature. Or the city could even be developed from a single building.

In *Megastructure: Urban future of the recent past*, Banham systematically describes the various products of this trend of thought and provides an inside view of the academic, idealistic school of planning and building. The first generation of modernist architects, such as Corbusier, envisioned mega-scale architecture. Post-World War II mega-architecture built on this foundation, incorporating more thinking about technology and social institutions into its design, and gradually began to subvert traditional architectural and urban spaces with more daring ideas. In 1957, the Situationists, represented by Guy-Ernest Debord and Constant Nieuwenbuys, founded Situationist International. Together with the French sociologist Henri Lefebvre, they introduced the Marxist sociological framework into the "critique of everyday life", which was a way to break away from the everydayness constructed by capitalism and to destroy the apparent urban landscape in the form of games and festivals. Constant created a number of model sketches and collages from 1956 to 1974 in an attempt to transform the urban spatial dimension of everyday life through the New Babylon project. I think this contextualist utopia was also a response to

Fourier's idealistic socialist "Francoist", Constant's commitment to the construction of contextual space and his attempt to create a continuous free-floating urban space.

Although the contextualists' definition and practice of "context" is ambiguous, at least the free continuous space and large-span structural forms of the Dutch architect and artist's "New Babylon" had a profound influence on Koolhaas, the Dutch architect's successor. The idea of technical utopia also led to the emergence of a number of "high tech" architectural visions of megastructures. French architect Yona Friedman's *Ville Spatiale*, which elevated megastructures above the city and countryside, was a large-span floating city that demonstrated the possibility of extending the city into the sky.



Yona Friedman's "Spatial Urbanism" (1960)

During the same period, the British Archigram experimental architecture group proposed a more science fictional mega-architecture, Peter Cook's Plug-in City, which

uses disassembled metal pod houses as the basic building blocks, with robotic arms forming mobile communities of different scales according to the size of the population, and then inserting them into superframes to form a freely assembleable mega-city. This proposal embodies Cook's emphasis on architectural mobility and a break with the traditional political framework of territorial rights, giving urban architecture a nomadic freedom and non-permanence. The Italian radical architectural group Super Studio, on the other hand, occupies the city and nature with giant white cubes, an anti-utopian vision of space domination with an almost authoritarian gesture of authority.



Super Studio : Squeeze New York Project 1969

The Japanese architect community was also attracted to these concepts, and architects such as Kenzo Tange and Kisho Kurokawa were influenced by these international movements and emerging ideas, which were the breeding ground for the rise of the New City Metabolism movement in the East.

Catalyst: Kenzo Tange

Let's go back to Japan. After World War II, the main source of Western influence on Japanese architecture came from Corbusier, for which Japanese architects including Kunio Maekawa, Junzo Sakaura, and Takamas Yoshizaka had worked in succession. Until the 1960s, The International Congresses of Modern Architecture (CIAM) was the dominant architectural organization, and its influence remained strong until the late 1950s. But there was no absolute unity within CIAM, and the decline of Corbusier's position in CIAM (Corbusier withdrew from CIAM in 1955) and widespread dissatisfaction with the modernist 3 principle of mechanical design led to the outbreak of conflicts at the tenth CIAM conference. Functionalism was challenged by structuralism, semiotics, sociology and other theories. And Team 10's call to address the "human condition" - had a huge impact on Kenzo Tange and other members of the Metabolism at the urban design level. In 1959, the CIAM, whose main purpose was to spread the modernist architectural movement, was disbanded. The architects of the 1960s began to explore new styles based on new science and technology, and their pursuit showed a series of personal tendencies and an urgent need for a more democratic internal order. One of them, Kenzo Tange, is a figure that must be mentioned as a pioneer and promoter of metabolism.

Kenzo Tange was a key figure in the creation and promotion of the metabolism movement. On the one hand, early in his career, Kenzo Tange was heavily influenced

by the mentorship "Corbusier - Kunio Maekawa - Hideto Kishida". On the other hand, later in his career, as a professor at the University of Tokyo, he directly influenced the younger generation of Japanese architects such as Kisho Kurokawa, Arata Isozaki and Fumihiko Maki. He himself was deeply influenced by western architecture while working tirelessly to connect Japanese modern architecture with the global trends of modernism. The expansion of his international network of contacts has allowed his students to interact with global developments and the Western modern architecture movement, thus providing them with new perspectives and making the metabolism movement a theory of world influence.

The idea of "incorporating international methods based on our own traditions", proposed by Noboru Kawazoe, can be said to be an accurate summary of a series of proposals at that time. The Metabolism saw the Japanese city as an organic organism with a vivid sense of life. It is important to note here that the re-examination of national traditions provided the theoretical basis for metabolism. Kenzo Tange (architect) and Noboru Kawazoe (critic), for example, worked together on the Ise Shrine and published a monograph on it *Ise: Prototype of Japanese Architecture*. Since then, Ise Shrine has become the Parthenon of Japan, and its 20-year cycle based on the concept of evolution and regeneration has become a classic prototype of the metabolism city concept. What is remarkable about Kenzo Tange and Noboru Kawazoe's interpretation of traditional Japanese architecture is that they have truly tapped into the essence of Japanese culture, the spiritual core of Japanese culture.

Their research and subsequent practice not only transcended the rigidity feeling of modernism, but Noboru also mentioned that the significance of Japan's post-war architectural work was not only to establish a link between modern architecture and traditional Japanese architecture, but more importantly to provide a platform for architects to find a new cultural identity in the field of architectural design. After several generations of efforts, the Japanese architectural field, which has been fully studied and settled, finally burst forth the important historical thought of metabolism movement, and the architects and theorists of metabolism school finally achieved an avant-garde architectural movement that could convey the culture and thoughts of eastern countries to the West.

Divergence: the shift from mechanocentrism to vitalocentrism

It is undeniable that the advancement of technology has made human beings more and more capable of transforming the world, and these utopian cities and mega-construction mania have made an indelible contribution to the development of modern architecture. But if the fervor for technology grows to the point of no return, it can easily fall into the cult of power capital, which in turn can dominate technological change in a utilitarian manner. Mega-architecture does have the potential to become a propaganda machine for power capital. A communist symbol such as Tatlin's Third International Tower, which aspires to surpass the Eiffel Tower as a symbol of capitalism with a height of 303 meters, is still essentially a political monument and an ideological confrontation.

The metabolic movement stands firmly outside the context of mega-architecture because of the combination of mobility and life-centrism, evolving from a mere technical imaginary to an abstraction. Unlike the dualistic separation of matter and thought in dualism, metabolism exhibits a kind of interplay of life on the material world that originates from Eastern philosophy. For example, Kisho Kurokawa and others not only absorbed the Western imagination of mega-architecture, but they also concentrated on traditional architecture such as Katsura-no-miya and I-style shrines, and were inspired by their periodic reconstruction to envision a dynamic city.

Spotlight effect²: Glories and Fading after inflation

After World War II, Japan had to change its political system from ultra-nationalism to democracy, which led to huge social and ideological changes. In the process, the conservative Liberal Democratic Government clashed with progressive intellectuals. Conservative governments tended to learn from American political frameworks, however, intellectuals wanted to compete for political sovereignty and wanted to rebuild a new Japanese national identity. It was important for them to invent or rebuild a new national identity that could overcome the overwhelming influence of Americanism and the inferiority complex of being a defeated nation.

² Spotlight effect, also known as the social spotlight effect, is when people overestimate how much attention others are paying to their appearance or behavior. The focus effect means that humans tend to see themselves as the center of everything and intuitively overestimate how much attention others pay to us. Focus effect is a universal experience in which we focus too much on ourselves and how much attention we get from people around us at parties or work gatherings.

Post-war architects also tried to establish their identity as social agents in order to contribute to building a better society. They see their role as "social architects" to recreate, construct and explain Japan's national identity as significant. By emphasizing "Japanness" and reestablishing national identity, the Metabolites developed new architectural concepts. They are enthusiastic about human progress and technology, and believe that a future in which people will have the freedom to choose their own way of life is their default consensus. With that came the soaring ambitions of architects. They regard architects as the most important people in the urban system. Architects not only design the physical layout of cities, but also control the way people live. A few elite architects might as well be considered "urban architects". When cities reach super-size, a group of professionals, such as architects as urban planners, will hold the power in the planning of mega-structures, because their designs include the systematic forms of physical layout and environment that shape people's daily lives and the societies in which they live. This is consistent with the views of some Western architects, such as Le Corbusier and Frank Lloyd Wright. They are trying to create a new order for the whole world. Metabolists think they can design "a whole plan" for the entire cities. As a result, they can also become very important social agents and powerful creators of the new Japan who have the ability to deploy national resources.

In the 1960s, Tange proposed his "Tokyo Plan 1960". It's an urban plan on a

grand scale, "balancing two contrasting approaches; One is the pragmatism of the industrialist, the other is the idealism of the utopian architect ". [SEP] The metabolism architecture movement reached its heyday in the early 1970s, however, it began to decline as the economic environment changed in the mid-1970s. Due to the increasingly fierce commercial competition, the expansion of national economic strength, and the development of modern consumer culture, the engineering projects of the metabolism school are more entangled with commercial interests. Take the 1970 Osaka World Expo as an example. It was seen as a great opportunity for metabolism to showcase architecture, especially the image of the future city. In that age of immature information technology, all expression needs to be expressed through material. These huge buildings, loaded with the most sophisticated technology of the age, the most radical imagination, with the architectural entity to show people what the city of the future looks like.



Tower of the Sun Truss, Expo 1970 Osaka



Expo 1970 Osaka

After the climax of the Osaka World Expo, the metabolism school entered the process of gradual decline. Here are three reasons:

First, these architects who wish to become social agents clearly ignore many considerations and overestimate their own social mobility. Although the buildings of the Metabolites were associated with utopian idealist notions of the city, built on modern architectural techniques and the drive to represent a new image of Japan, their designs were reduced to architectural advertising driven by the commercial interests of their sponsors. The metabolists lost their autonomy to express a unique era and became puppets of commercialism. Architecture can no longer evoke the deep

meaning of Japanese character and aesthetics.

Second is, the premise of economic and technological development that they believe in is unrealistic. The recession that followed the 1973 "oil crisis" because the Japanese economy was largely dependent on imported oil. Falling growth and rising instability in construction have led to a "reassessment" of all aspects of the Japanese economy, and the sheer scale of urban development has sparked controversy. More importantly, they have fundamental methodological and theoretical problems. Metabolism urban theory relies on large-scale urban planning and technological progress, as well as hyper-utopian optimism about the organic system of the future city. But it remains to be seen whether mega-structures can be achieved with limited technological advances. Even if it is not a giant structure, the maintenance problem in reality is not as simple as it seems. Owners need long-term investment for this, which is very difficult to implement. Although Isozaki is sympathetic to some metabolist theories such as "the city as a process," he has always suspected that metabolists take an overly optimistic view of the city's sustainable development. For metabolists, urban development is synonymous with an organic system that is more or less predictable and controllable. This is not consistent with the reality of development, and also contradictory to the development of freedom.

Thirdly, the Metabolism movement shows the appearance of the future city, but it lacks the active life of people in the future, that is, it ignores the people everywhere in

movement belonged only to its own particular era, he provided an abundance of talent for the subsequent development of Japanese architecture.

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TRANSSCALARITIES

Instructor: Andres Jaque Ovejero, Javairia Shahid

Oyster-tecture
Student: Xiangru Zhao
Instructor: Javairia Shahid

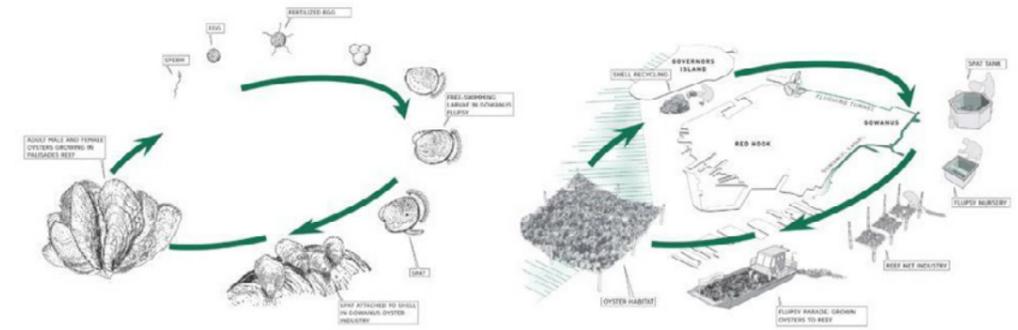
The Power of Gathering

Over the past millennia, humans have built and transformed the Earth on a massive scale by gathering power and wisdom, and they have long since replaced nature as the shapers of the landscape, a period geographically referred to as the Anthropocene. However, humans have also adversely affected nature, and many challenges such as climate are now challenging humans themselves. In this paper, we analyze the Oyster-tecture to illustrate the power of gathering, not only as a means to exploit biological properties, but also to gather a common desire and resonance at the social level to design an urban-scale plan that brings citizens together to promote.



Figure 1. SCAPE, *Rendering of activities on the landscape*, <https://www.scapestudio.com/projects/oyster-tecture/>

Gathering as a means of intervention. In the 21st century, New York was threatened by flooding and the coastline was in danger of being inundated by waves. Kate Orff proposed oyster-tecture program as a rescue measure. The oyster's purifying power is used to cleanse the canal. At the same time, the oyster shells are used to build up islands to slow down the waves while providing a new urban landscape. A watery regional park emerges that prefigures the city's return to the waterfront as a sustainable strategy for the next century. Oyster-tecture aims to improve habitat and water quality, restore biodiversity to tidal marshes and encourage new relationships between New Yorkers and their harbor. The involvement of oysters makes this design unique. Without the oysters, we can built a breakwater with concrete, it would have used purification equipment, it would have had enough area to be an urban park, and it would have met the current needs of New York. But the oysters are the most exciting. The oyster's involvement both addresses the different issues in a unified and harmonious way. The oysters' entire life cycle is involved in the project. They grow as they evolve water, and when they die, they can pile up to form attenuators and new habitats. Thus, by gathering biological and human forces, a dozen centimeters of oysters will accumulate over time to form a dozen kilometers of islands, which are a breakwater for humans and a habitat for oysters at the same time.



LIFE CYCLE AS STRATEGY

Figure 2. SCAPE, *Life cycle as strategy*, <https://www.scapestudio.com/projects/oyster-tecture/>

Gathering people's empathy and collective consciousness. Through a quick glance at *The Big Oyster: New York on the half shell*^[1] and related materials, we can learn about the unique importance of the oyster to New York. On an economic level, oysters once had an irreplaceable position, and Kurlansky spins oyster stories with New York as the home port while also telling the city's story. At one point in the 19th century, New York was the largest source of oysters, and oysters were everywhere, with about six million oysters harvested daily. Predatory consumption and subsequent pollution problems turned it from a common food to an expensive one, and New York no longer produced oysters in abundance. Along with its disappearance came the social and cultural impact of the oyster. Originally, oyster stands were as commonplace on the streets as ice cream trucks are today. The oyster dinner, a communal oyster stew, a local way of socializing, also disappeared.



Figure 3. Endorphin Films, *New York's Forgotten Oyster History*, <https://www.youtube.com/watch?v=5Koi5BSdfcA>

Because the unique importance of oysters to New York, the historical connection of oysters to New York resonated with the public. The strong sense of identification has triggered a very high level of participation. Volunteers now continue to collect oyster shells from restaurants, gather them in cages, and use the cages to build wild oyster habitats. Thus, people's approval and participation further strengthens people's relationship with Oyster, which further expands the impact and appeal, and more people become involved in the program as a result. This positive cycle will be a strong driving force for the program.



Figure 4. Al Jazeera English, *Bringing a billion oysters back to New York harbor*, <https://www.youtube.com/watch?v=3TusPWssvhc>

It is not only a human landscape and attenuators, not only a habitat for oysters, but will be a collective cultural monument built by New Yorkers and oysters together. Tiny oysters multiplying to one billion can purify rivers; thousands of oyster shells are piled up into attenuators and islands; many citizens and volunteers work together to realize this magnificent project. This gathering power stems from the public's collective memory of oysters and from a collective concern about the shoreline crisis. By harnessing this power, the project is moving forward. And this gathering brings people closer to nature and people closer to people, thus creating a larger cross-species "gathering". This power is enough to change the space, the landscape, the environment and the way of life.

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TRANSSCALARITIES

Instructor: Andres Jaque Ovejero, Javairia Shahid

Plug-in-city
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Rekindle the anticipation of the city

During the 1960s, many changes reshaped the economy, the society and the arts. The Cold War, the Space Race, the construction of a new middle class in most western societies led by the postwar economic prosperity with unprecedented urban growth followed by severe environmental problems fostered the design of spectacular urban utopian cities and mega-architectures. Archigram was an avant-garde architectural group formed in the 1960s that was neofuturistic, anti-heroic and pro-consumerist, drawing inspiration from technology in order to create a new reality that was solely expressed through hypothetical projects. This paper provides a concise review of some of archigram's designs around the plug-in principle, their aesthetics from technology and their expectations for the urban in the 1960s.

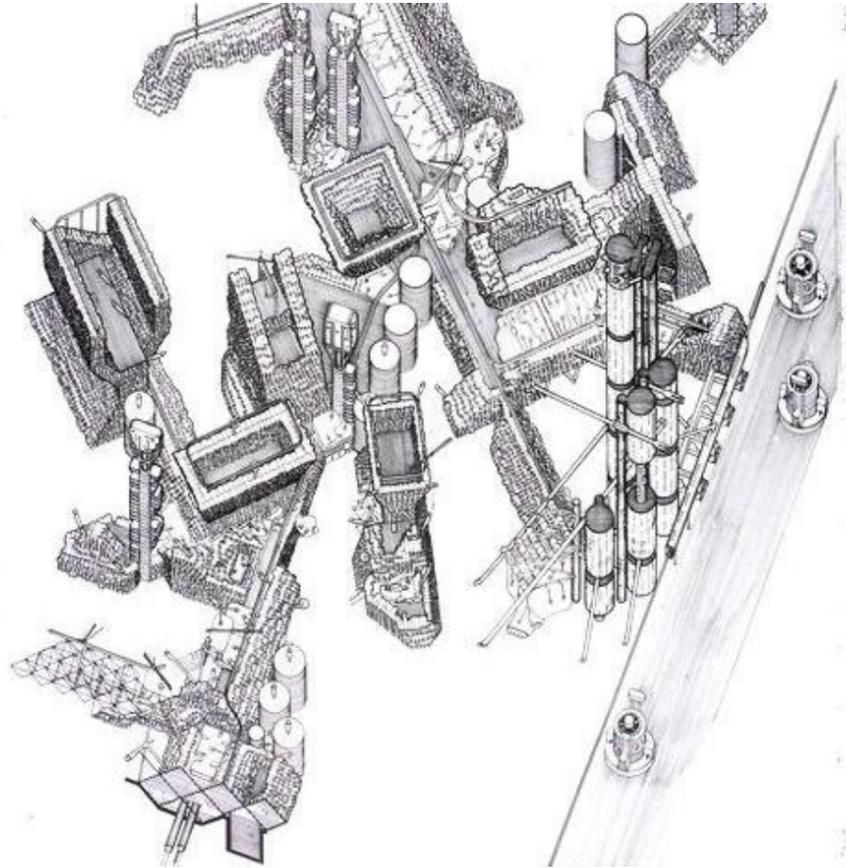


Figure 1. Archigram, *Plug-in-city*, axonometric overhead view of local district in medium-pressure area, 1964.

“Plug-In reinstated the avant-garde impulse that had inspired the first generation of modernists and had been put out to seed by the second generation.”
-Simon Sadler

Let's back to 1960s first. New buildings in Britain were generally modern enough, and their settings landscaped enough, to signify a break with the past, but radicalism was eschewed. At that time, for modernism, which had flourished in the postwar period, the official sanction of modernism deprived it of its inherent avant-garde quality. A kind of dullness and passivity spread among British architects, and there were many designers who had grown tired of the modernist dogma pursued by whom were called the New Brutalists. The Archigram group was a reaction against the generic, glass-and-concrete grids of early sixties “modern architecture”. Then in 1962-1964, architect called Peter Cook brought his project, plug-in-city, which is nothing small and cliché.

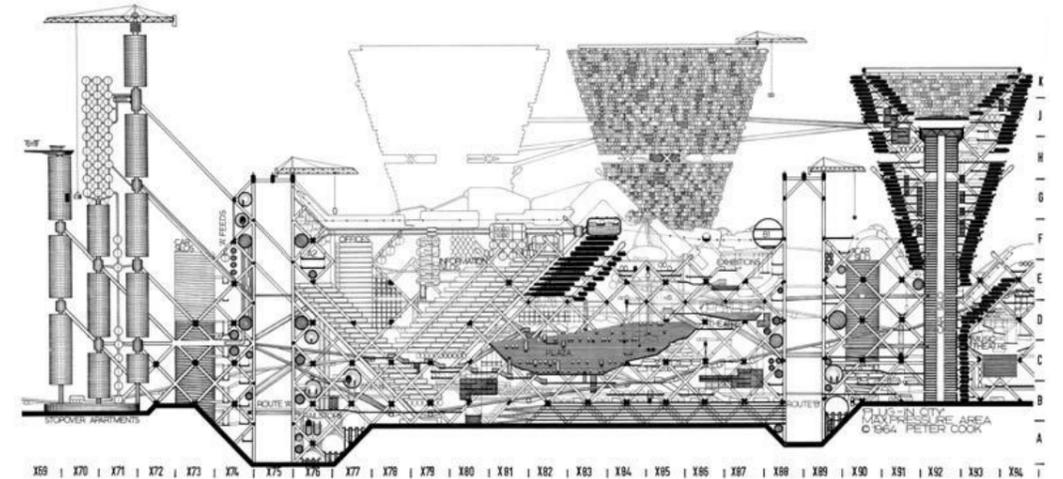


Figure 2, Peter Cook, *Plug-In City: Maximum Pressure Area*, section, 1964.

His plan in the plug in city was to incorporate a megastructure which connected residences, access routes, transportation and all essential services by the use of cranes to reorganize their city. He planned to create replaceable houses, walking cities which were not fixed and impermanent to create a more flexible society to suite the living at that certain time. In fact, Peter was also influenced by previous attempts at plug-ins, for example, Le Corbusier's Algiers project; and in the Soviet linear city projects of the 1920s; and Le Corbusier's unit in Marseilles. He inherited many characteristics of his predecessors, such as the principle of collectivity, of interchangeable apartment units, and the incorporation of rapid transport links.

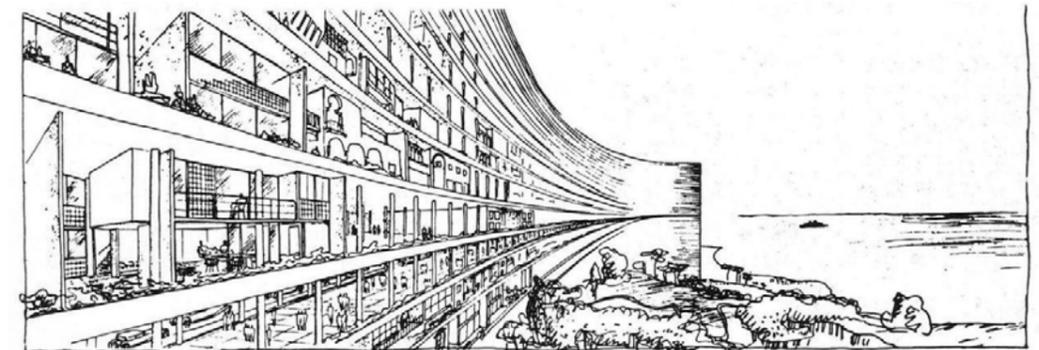


Figure 3, Le Corbusier, *Algiers project*, 1931

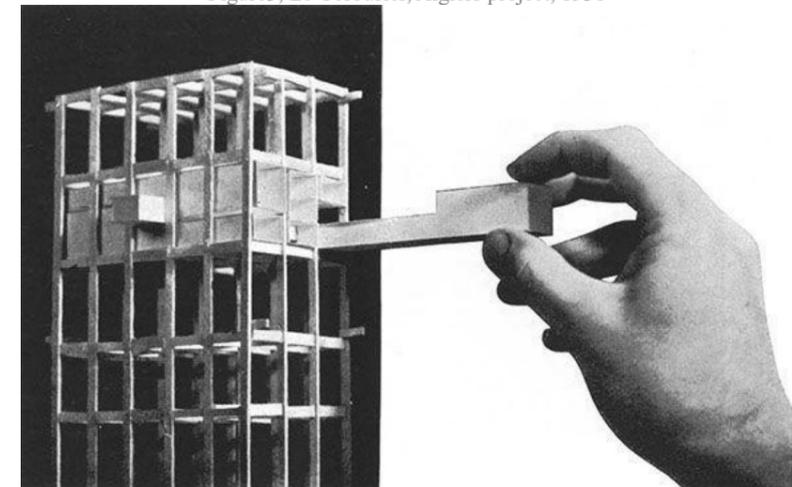


Figure 4, Le Corbusier, *Unité d'Habitation in Marseilles*, 1947-1953

Differently, Peter exploits the fascinating expressive power of technology to create a new aesthetic. Contemporaneous metabolic architects claimed that their design was the only solution to rebuilding the Japanese

economy in rapid development. But it's not just because economically judicious that Cook favors plug-in principle so much. The incomplete beauty of the building in the construction process, the machinery on the construction site and the movement of the building, these elements have appeared in Cook's early projects. In his Shopping Centre project, he wanted to transform Victoriana from a grimy place into a future of stacked geodesic and inverted-U-shaped units. The units were inched into place by all-surveying cranes on a circular rail above, which also fed supplies down chutes to the shops. We have seen the process of building, maintenance and use of buildings dynamically displayed before us.

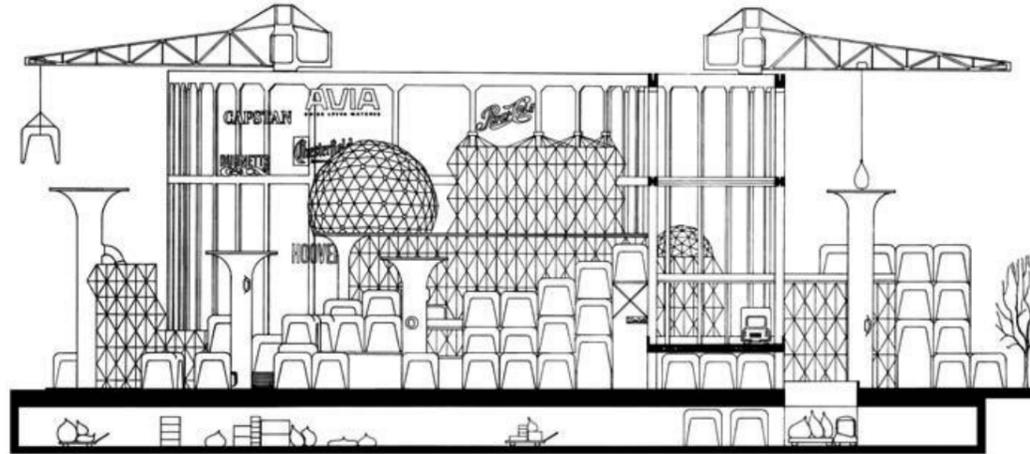


Figure5, Peter Cook and David Greene, Nottingham Craneway (Shopping Viaduct) project, section, 1962.

Plug-in City is a very legible design, even though it makes use of a lot of technology. And this clear construction logic demonstrates the vitality of urban development. Plug-In City was devised to prompt circulation and accelerate the city-in-flux. Plug-In City turned architecture inside-out to make its interior life anterior; expendable apartments were slung happily down the outside of the huge A-frame substructures, rearranged by the cranes sliding back and forth above. The effect can be pictured in the mind's eye.

People still love their work today, even though the schemes are still a long way from being built. Still, these works reflect some of the expectations and enthusiasm for the city, and the recognition of aesthetic of technology. Nowadays, when we do urban design, we tend to use commercial businesses to create vibrant places. Plug-in-city offers us a new perspective from the architecture itself to show the dynamism. Perhaps in future, perhaps as we rely more and more on technology to face the climate challenge, this combination of technology and architecture can inspire us.

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ARGUMENTS

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Countryside: The Future

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Countryside: On Radar

In 2007 the United Nations officially announced that 50% of the world's population already live in cities, while the other 50% live in rural areas – a topic which Samir Bantal discussed. He gave a very good presentation. He mentioned that *“today, the countryside is largely off (our) radar, an ignored realm”*. In reality, the countryside is not entirely so in the Chinese context, and has always been a highly visible object, both personally and from the government's point of view. This essay focuses on the development of the Chinese countryside and how it might be reshaped by technology and culture in the future.

In politics and economics, the countryside has always been an important issue. Historically speaking, after the liberation of the new China, there was a time when the economy of the cities, and the functioning of the cities, suffered certain crises just after the Communist Party of China completed its revolution. During these difficult economic times, the countryside played a large role in supporting the functioning of the cities, because citizens could not afford the high costs of urban functioning. Not only did countryside areas provide the urban population with some basic necessities of life, such as food, labor, etc., but for a period of time the countryside also took over the population from the big cities, offsetting the current unrecyclable urban economy with a self-sufficient rural economy. This was one of the reasons why the Cultural Revolution happened on an economic level, which prevented the collapse of the cities at the time. The countryside has since been the backbone of China's social stability, and has a high political status in China.

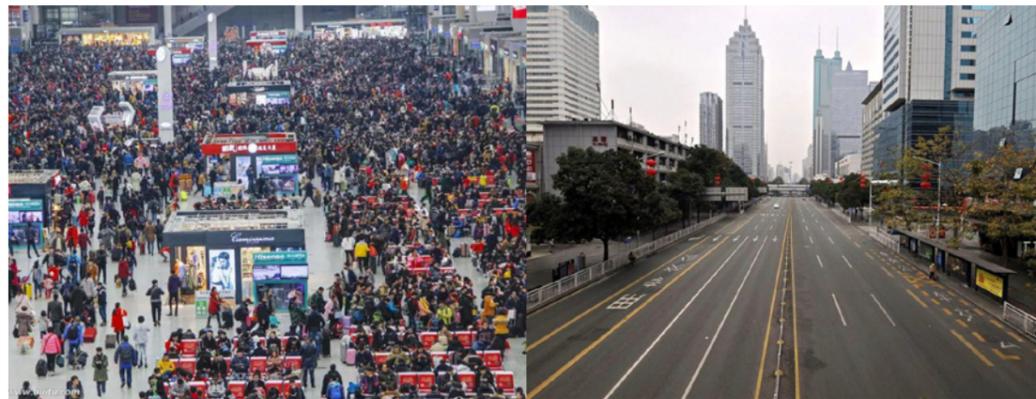


Figure1. Huge traffic before the Spring Festival ; Figure2. During the Spring Festival, people return home(most in countryside), leaving behind an empty Shenzhen.

The countryside was also inextricably linked to China during the development of the cities that later began to take off economically. For example, every year in China, a large number of people return from China's cities to the countryside during the Spring Festival, in the order of billions –

arguably the largest animal migration on the planet (Figure1,2). This migration is actually a connection between the countryside and the city, and the vast majority of people (or their parents) own a piece of property (a home base) in the countryside. This property is part of China's social security system. Generally speaking, it is the elderly elders who live in the countryside, and the retired people who use the countryside as a place to retire; by contrast, not everyone in the city owns their own home in terms of property rights. Thus, the connection between urban and rural areas in China is an unavoidable one, with the population moving inevitably between urban and rural areas. In the Guggenheim exhibition we saw a number of projects which revolved around transforming the Chinese countryside. In fact, before the Koolhaas exhibition was opened, Chinese architects had already presented many of their practical projects for the revitalization of the countryside at the Venice Biennale (Figure3). The countryside has always existed within our vision.



Figure3. In the 2018 Venice Biennale, the Chinese pavilion was themed on “Building a future countryside”.

At the same time, in China, the countryside is actually a very important existence in the psychological sense. It is the existence of home in most people's hearts. The reunion with family members, the reverence for ancestors, and the gradually improving rural infrastructure and more convenient transportation are all reasons why people will not give up the countryside and live in the city permanently. In addition, people are now more willing to accept the countryside in the face of growing urban problems. Going to the more comfortable countryside has become a way for people to relieve themselves. The countryside is quite important for a country that developed out of an agrarian civilization.

China has officially implemented the national strategy of revitalizing the countryside since 2017. It is a positive move to improve people's livelihood. In developing countries, the countryside largely means an underdeveloped area. However, the current direction of development is heading towards urbanization. Many rural areas have been economically enriched through their conversion into resorts. The life of the inhabitants in the countryside is actually similar to that of

the people in the city, or rather, it has become a continuation of urban life. The combined systems of airline hubs, highways, fast trains, (self-driving) cars, the internet, and mobile phones hold us in a self-imposed urban prison. In my opinion, the countryside can be the gateway to this prison.

In light of the above, I feel that, in the future of China, the countryside and the city will be a blurred state. There is no precisely defined border. Even the newly-developed cities will have some of the characteristics that the countryside has, and the countryside will be more modern. What may change is that part of the countryside will no longer correspond to agricultural production.

The future agriculture industry will provide food to people in a more precise and efficient way. Robots, big data and artificial intelligence will replace human care. The land where plants are grown may no longer be exposed fields, but more three-dimensional and centralized "food factories". This is something worth discussing in China, where a large part of the arable land is in hilly areas and not in flat plains. If the food problem can be solved on a large scale in future food factories, many fields that are not easy to cultivate may be replaced. It is not known what the state of these displaced farmers and the countryside will be when crops are no longer grown here.



Figure4. The future of the countryside does not have to be one of absolute rationality and mechanical conquest.

At this point I want to present another possibility. The high-tech indoor farming of the Netherlands and the large-scale precision farming of the United States are very cool. However, in many rural areas in China, "Cartesianism" is not a sensible choice. Irregularly cultivated land and villages constitute a different aesthetic from the orthogonal grid, but they also demonstrate human ingenuity (Figure4). The countryside is not necessarily moving toward a unified end.

There are many people who love the countryside and who are committed to improving it. Perhaps they can use technology in a romanticized way to create a different future.

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