

ARCHITECTURAL PORTFOLIO

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Master of Architecture
Columbia University, GSAPP

"I like a view but I like to sit with my back turned to it."

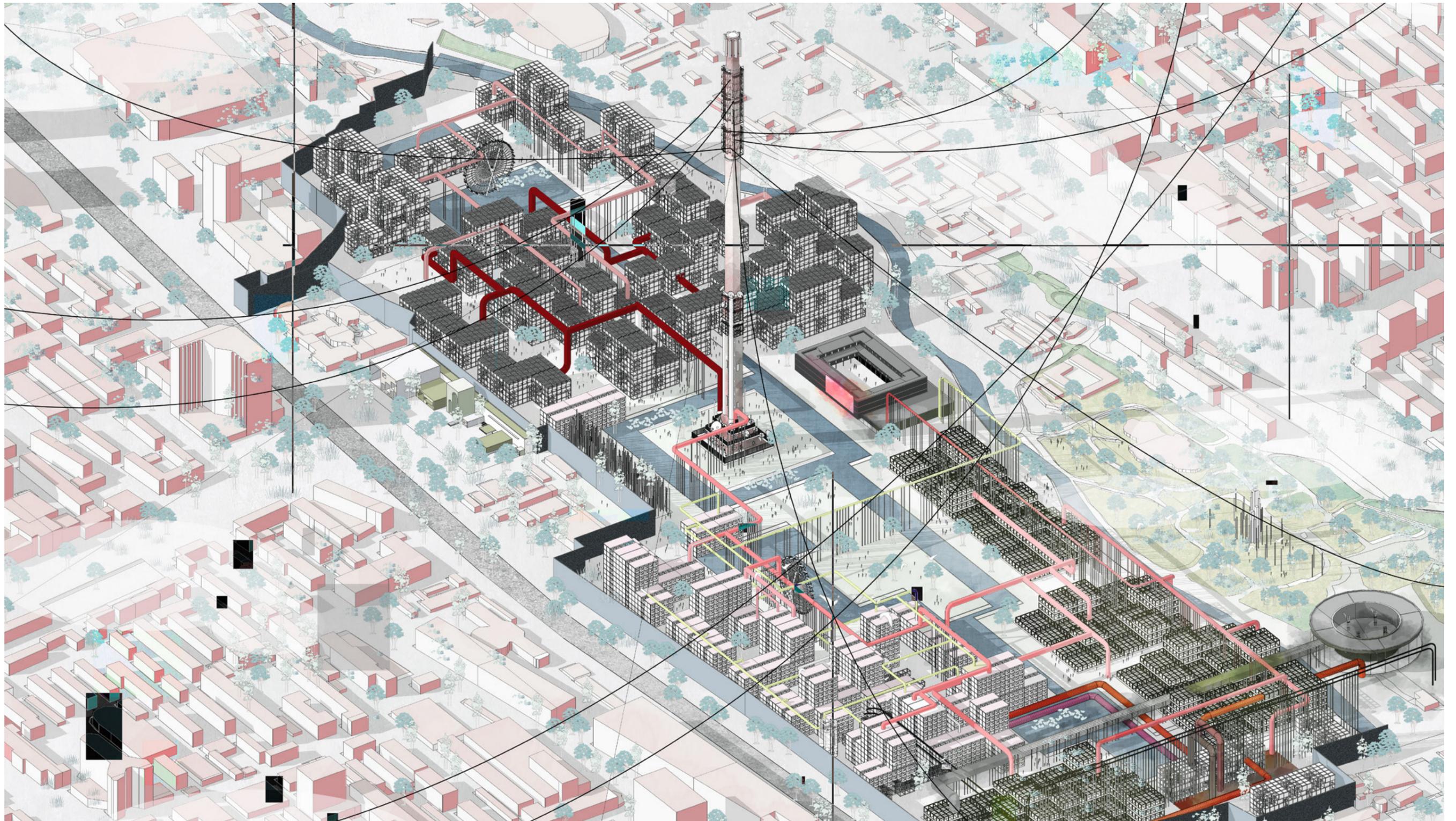
— Gertrude Stein

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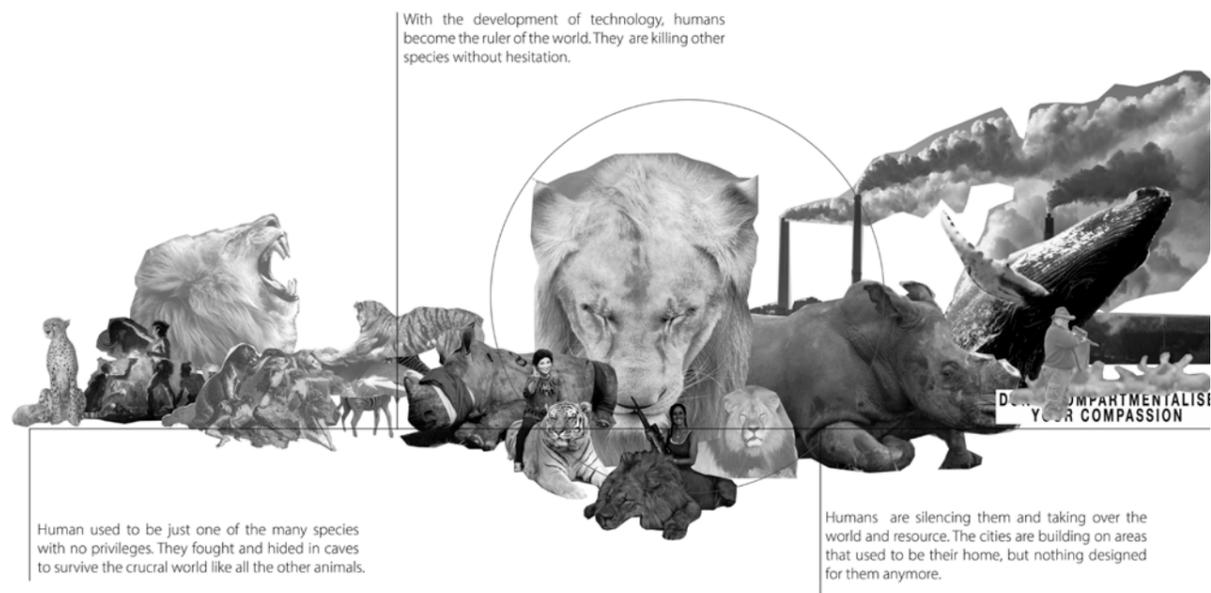
NON-HUMAN CITY

Speculative Design

Site: Xicheng District, Beijing, China
Time: Summer 2021
Tutor: Yussef Olaniyi Individual Work

Humans are taking over the world and changing it into a place that only suitable for themselves. Cities are built over homes of wild animals. Even though some people are trying to make some difference about the living condition of wild animals and other species, and trying to slow down the damage of human activities to the climate and environment, the result is still minimal facing the severe pollution and extinction of species. Therefore, to call on equality from other species perspective, I am creating this fictional city to for people to feel what animals may be feeling.

Background Collage



Silence, <v.>

Humans are silencing other species and therefore cause the decay of other species' power.

Art Work by Babara Daniels



Artist Babara uses an exaggerated form of artistic expression to reflect the extreme relationship between humans and animals by imagining a reversal of the relationship between them. After the roles are reversed, all actions, both good and bad, no longer make sense.



Air Pollution



Ocean



City

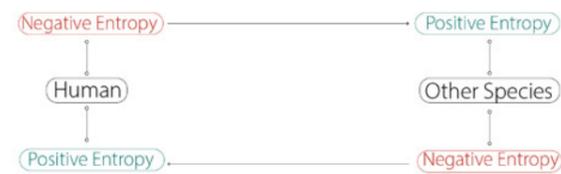
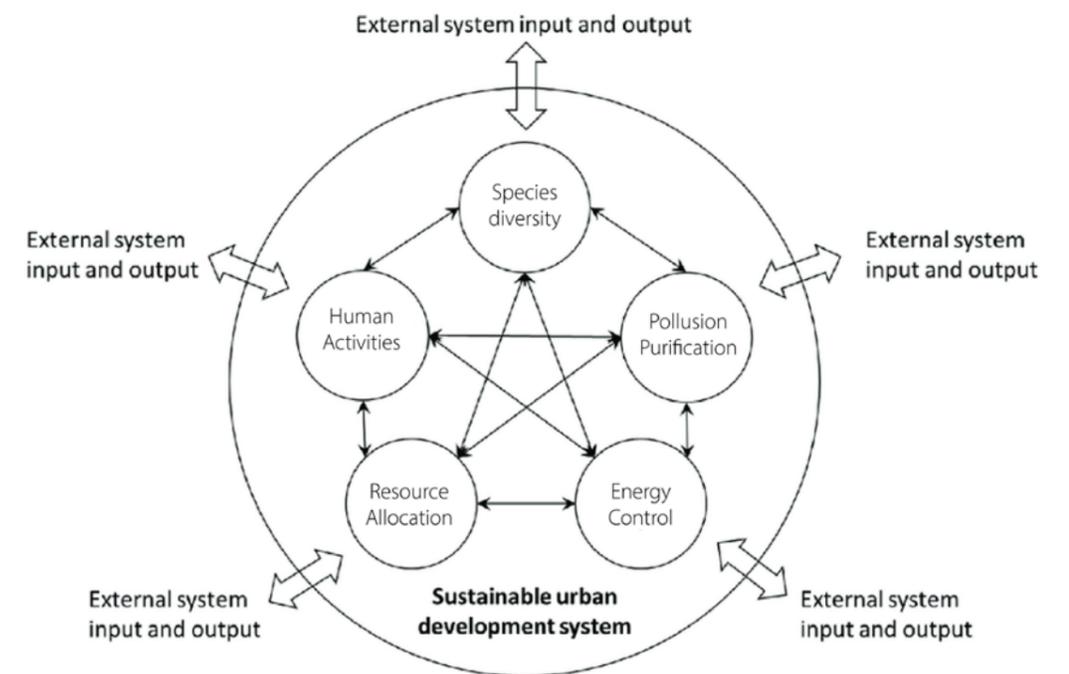
Speculative Experiment

What would the world be like without people? During COVID-19, humans first began a massive quarantine on a worldwide scale, which provides evidence for this hypothesis. In just a few months after people disappeared, the earth's ecology is recovering dramatically.



Philosophy Theory

Schrodinger : Life feeds on **NEGATIVE ENTROPY**.
Dissipative System is the only way to prevent the Entropy Death.



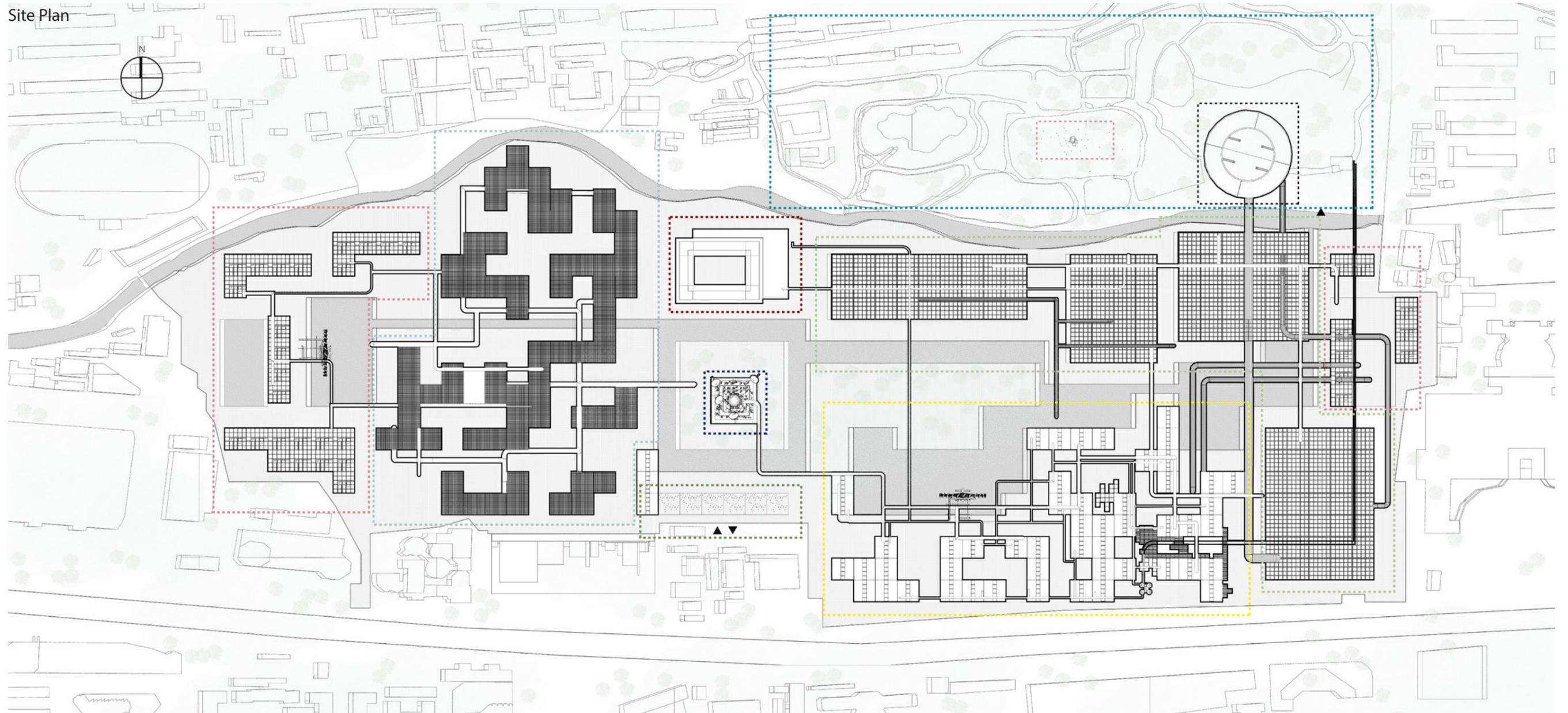
According to the laws of physics, at the top of an increase in entropy is an entropy dead state. In entropy death, all living activity ceases. In the human world, there is a complete set of dissipation system to prevent the entropy death state of the human world. However, an increase in entropy is inevitable, so a decrease in the entropy of the human world may be causing an increase in the entropy of the whole world.

Midterm Collage

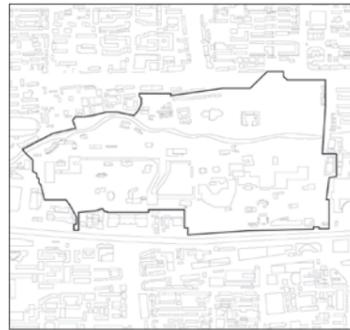


The world is dying because of pollutions, human have no choice but to quarantine themselves, this time not to save human from virus, but to save nature from human.

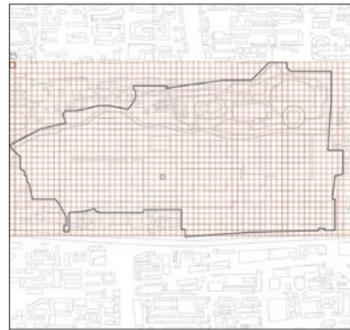
Site Plan



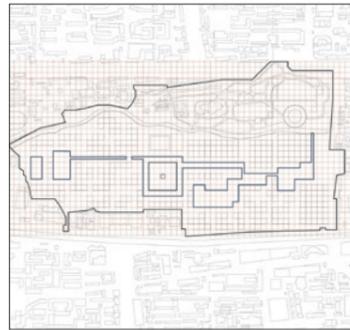
Typology



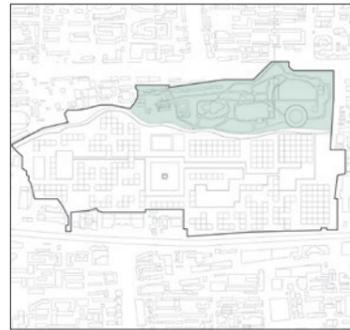
The Beijing Zoo was selected as the experimental site.



Divide the site in to small units that are easy to manage.

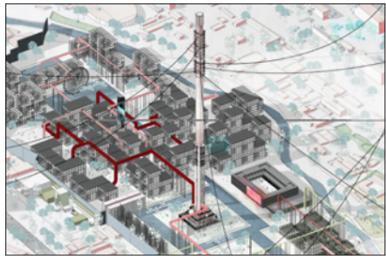


Replan the water area along the original river conditions and modules.



Cut off a part of the green space across the river as a park, which will be used for communication.

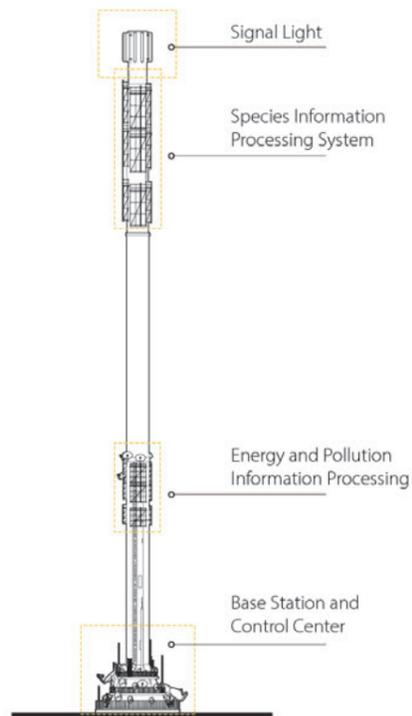
- Sewage Center
- Central Tower
- Residence
- Park
- Farm
- Trash Factory
- Energy Factory
- Entrance/Monument
- Prison



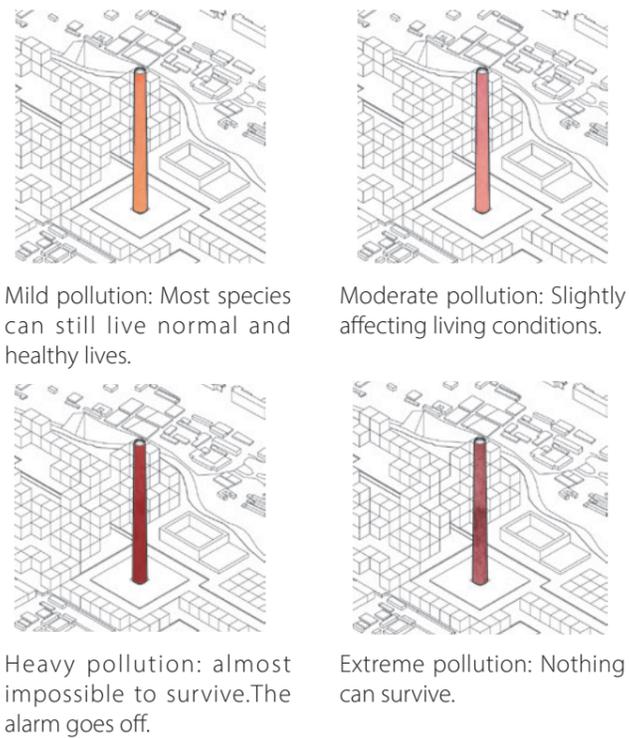
CENTRAL TOWER

The central tower is located in the very center of the site and monitors the diversity of species and pollution throughout the city. Through comprehensive analysis of various kinds of data, it provides hints of basic environmental conditions for humans and animals and plants in the site. An alarm will be issued when the lighthouse determines the level of pollution in the environment is no longer suitable for life.

Structural Analysis Diagram



Pollution Level



Within cities, there are walls that capture information from the wind. These walls take animal cells, hair, plant seeds, leaves and other elements from the air stream, analyze them and transmit the data to the central tower.

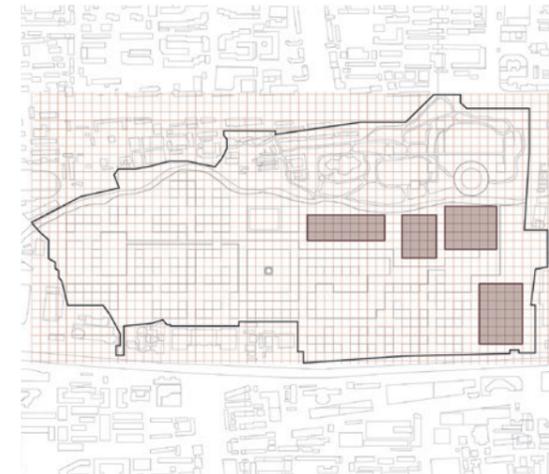
In addition to serving as an information center, the central tower is also a lighthouse for the entire city. Residents of the interior are constantly informed by the central tower and are informed of the next phase of the work.



THE VERTICAL FARM

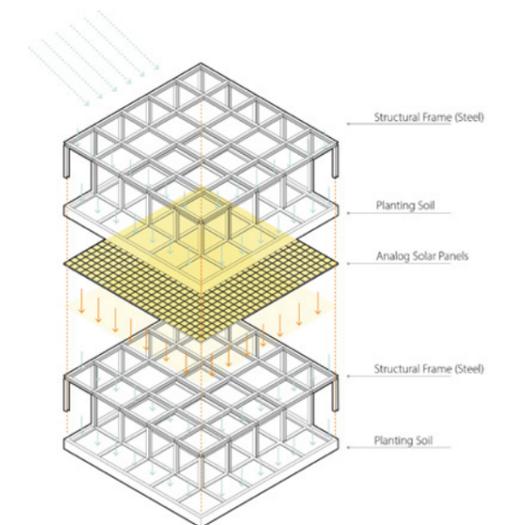
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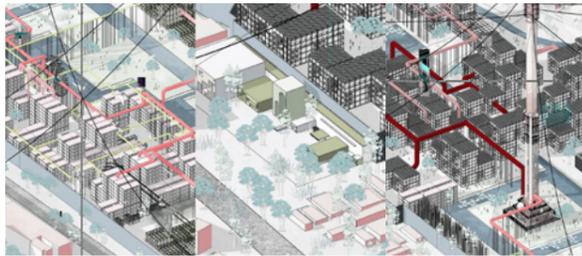
Planar Location



Planting sites are close to water and residential areas, making it easier to manage and access basic water.

Structural Analysis Diagram

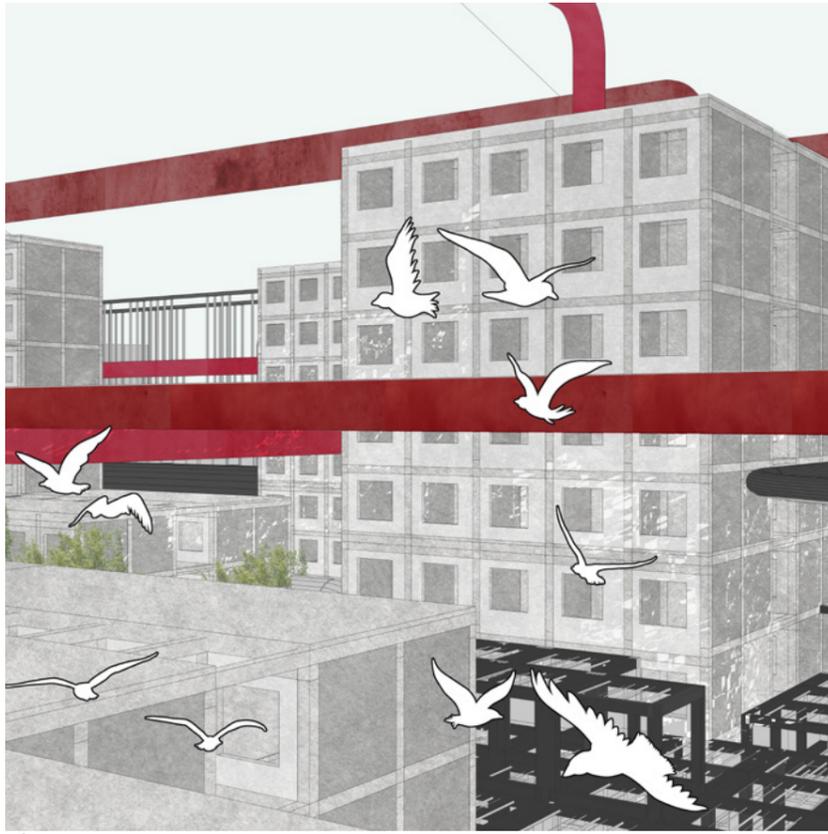




THE RESIDENCE/ THE MUSEUM/ THE ENERGY FACTORY

The residential area will accommodate the maximum number of people in the most efficient way possible, and there will be derivative shelving for wild animals to crawl around and communicate with humans.
 The Energy Factory contains units that each has a complete system to generate solar and water power in to heat.

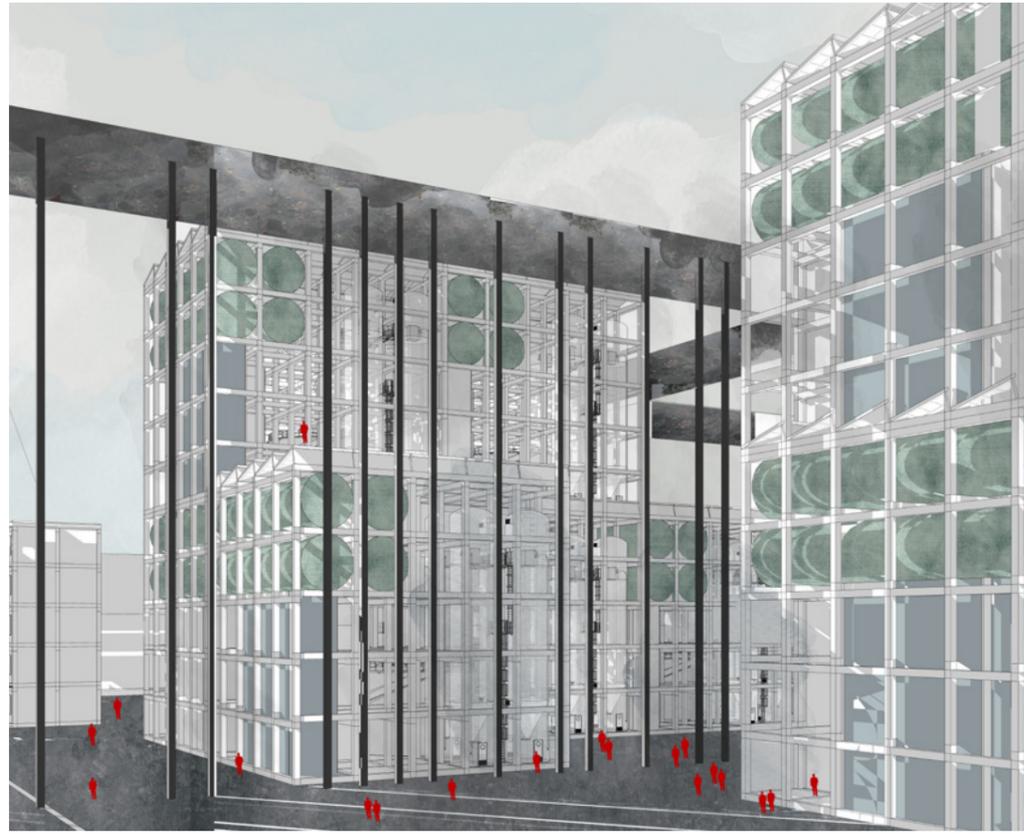
The Residence



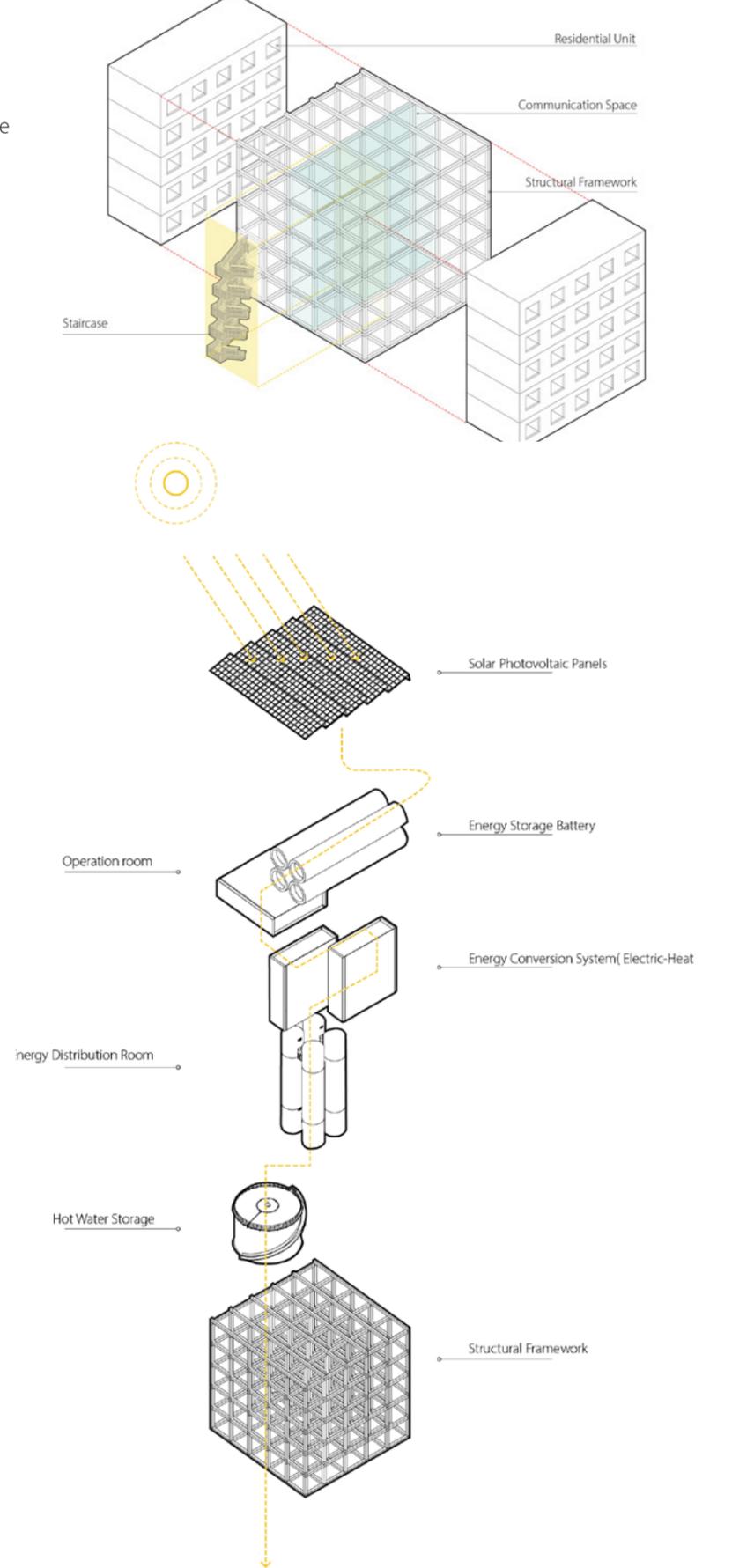
The Museum



The Energy Factory



Structural Analysis Diagram



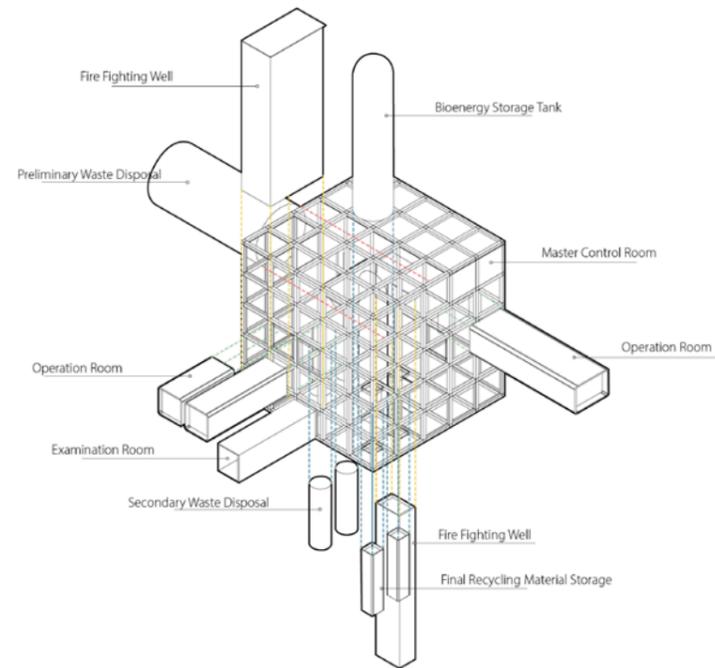
The museum will be a complete reversal of modern museums. It will be a place where animals watch people, not people watch animals. It is made up of large and small pavilions so that creatures of different sizes can enter and stay safely.



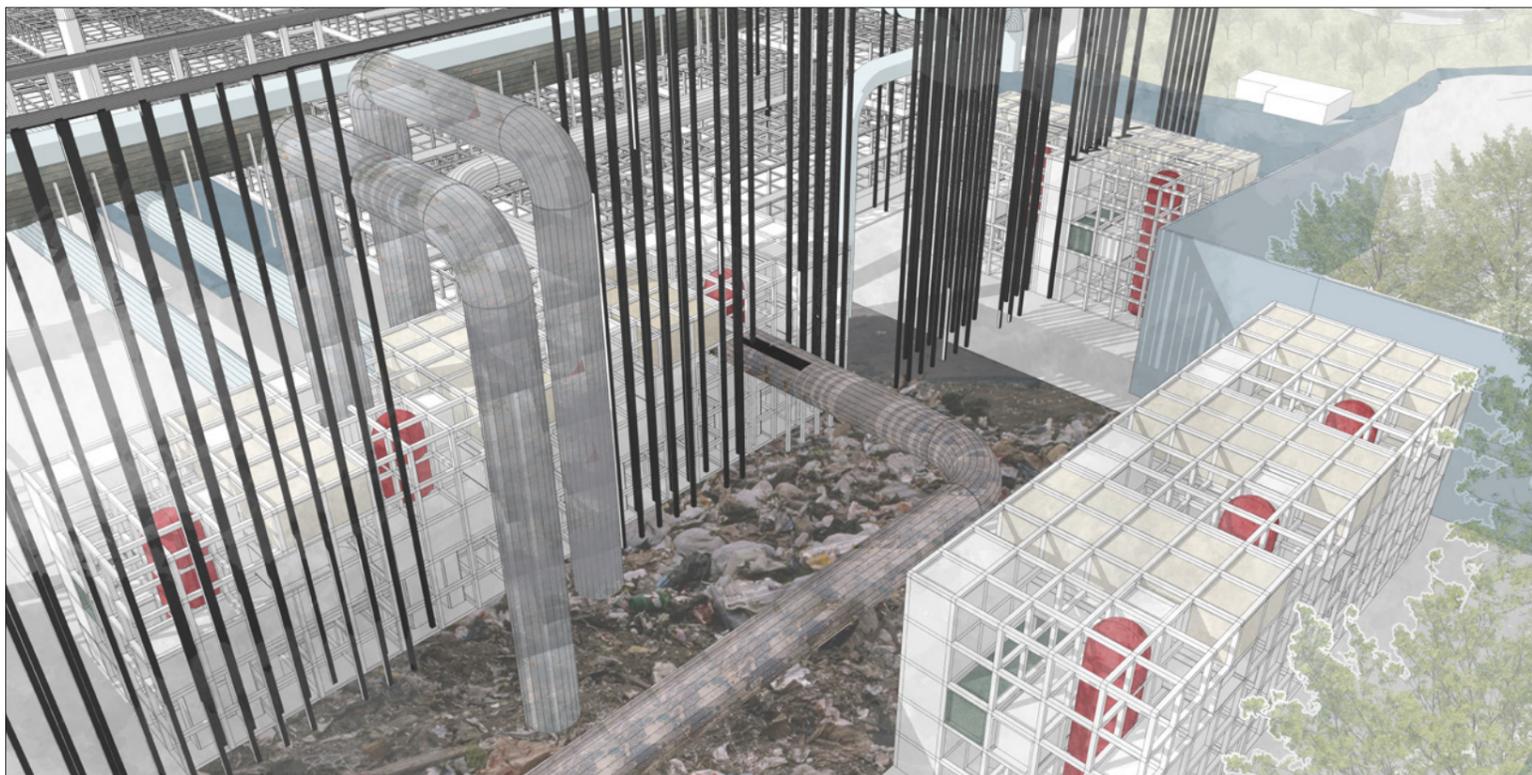
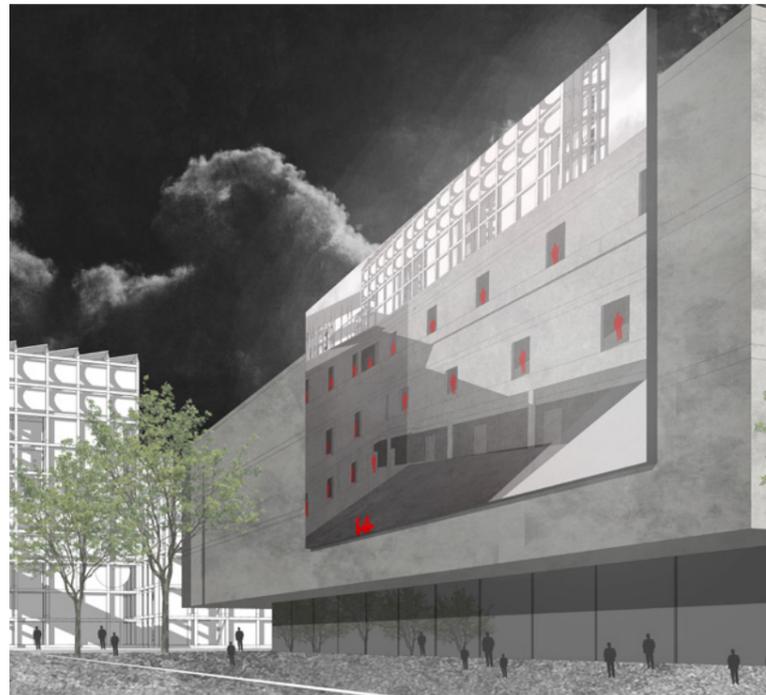
THE TRASH FACTORY/THE PRISON

The basic work of the waste factory is to combine the garbage collected from the outside of the zoo with the garbage generated inside and reclassify it into building materials and energy that can be reused.

Structural Analysis Diagram



The Prison



Laws of the Non-Human City

BY

JOHN EMERICH EDWARD DALBERG-ACTON

FIRST BARON ACTON

D.C.L., LL.D., ETC. ETC.

REGIUS PROFESSOR OF MODERN HISTORY IN THE UNIVERSITY OF CAMBRIDGE

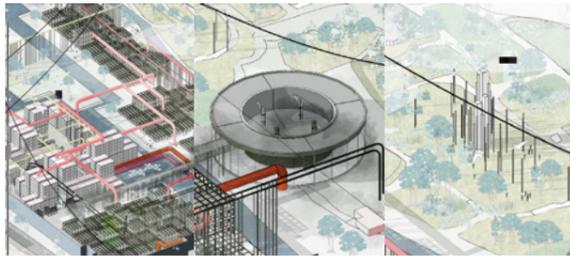
- Human Activities should achieve a dynamic balance with the cycles and process inherent in Earth.
- Neither Living Systems nor processes the sustain them may be commercialized, nor serve anyone's private property.
- All food must be self-supplied from inside "zoo".
- All human must carry 3 missions:
Control environmental pollution;
Preserving species diversity;
Limiting energy consumption.
- Each person's time out of the zoo is no longer 8 hours/week.

MACMILLAN AND CO., LIMITED

ST. MARTIN'S STREET, LONDON

2050

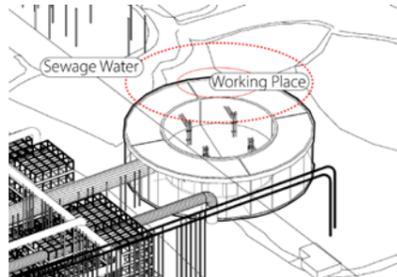
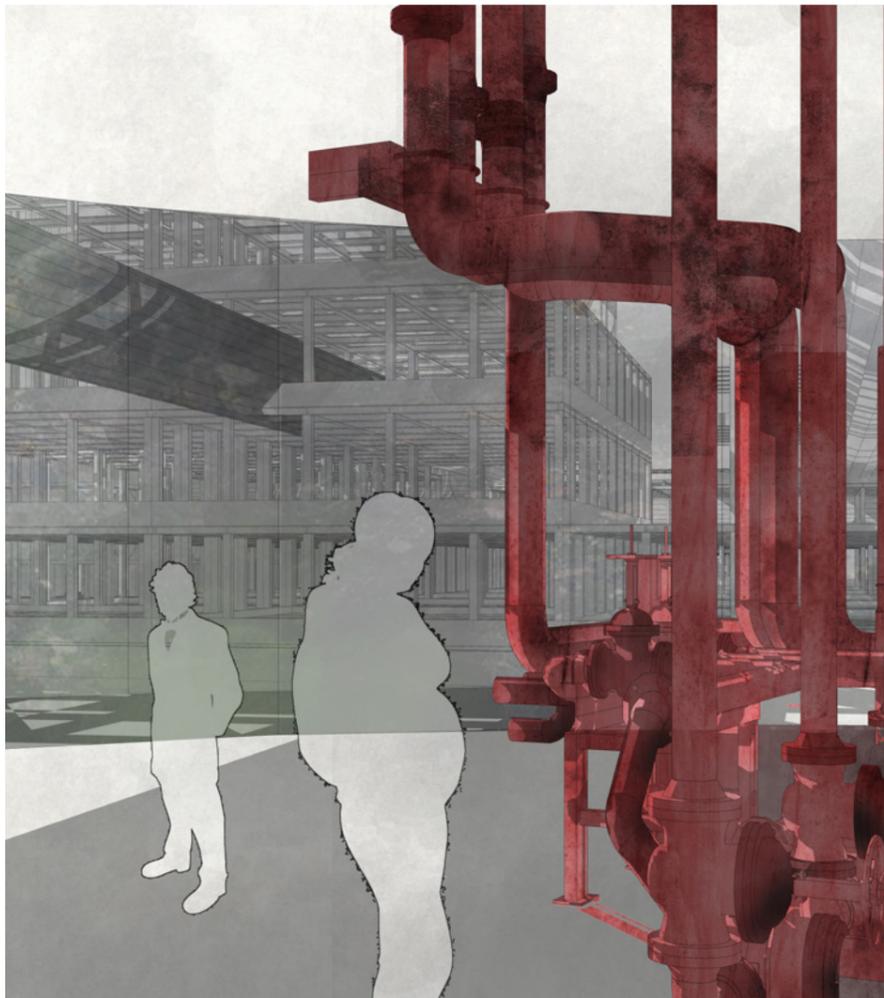
In this zoo, basic laws are followed. In prison, people would behave like animals in the Colosseum, and their punishment was to fight until they died. Meanwhile, outside the prison, a large screen will show the details of the inside, warning people while recreating the cruelty of the Colosseum's use of life as a performance.



THE SWEAGE CENTER/THE PIPE SYSTEM/THE CHURCH

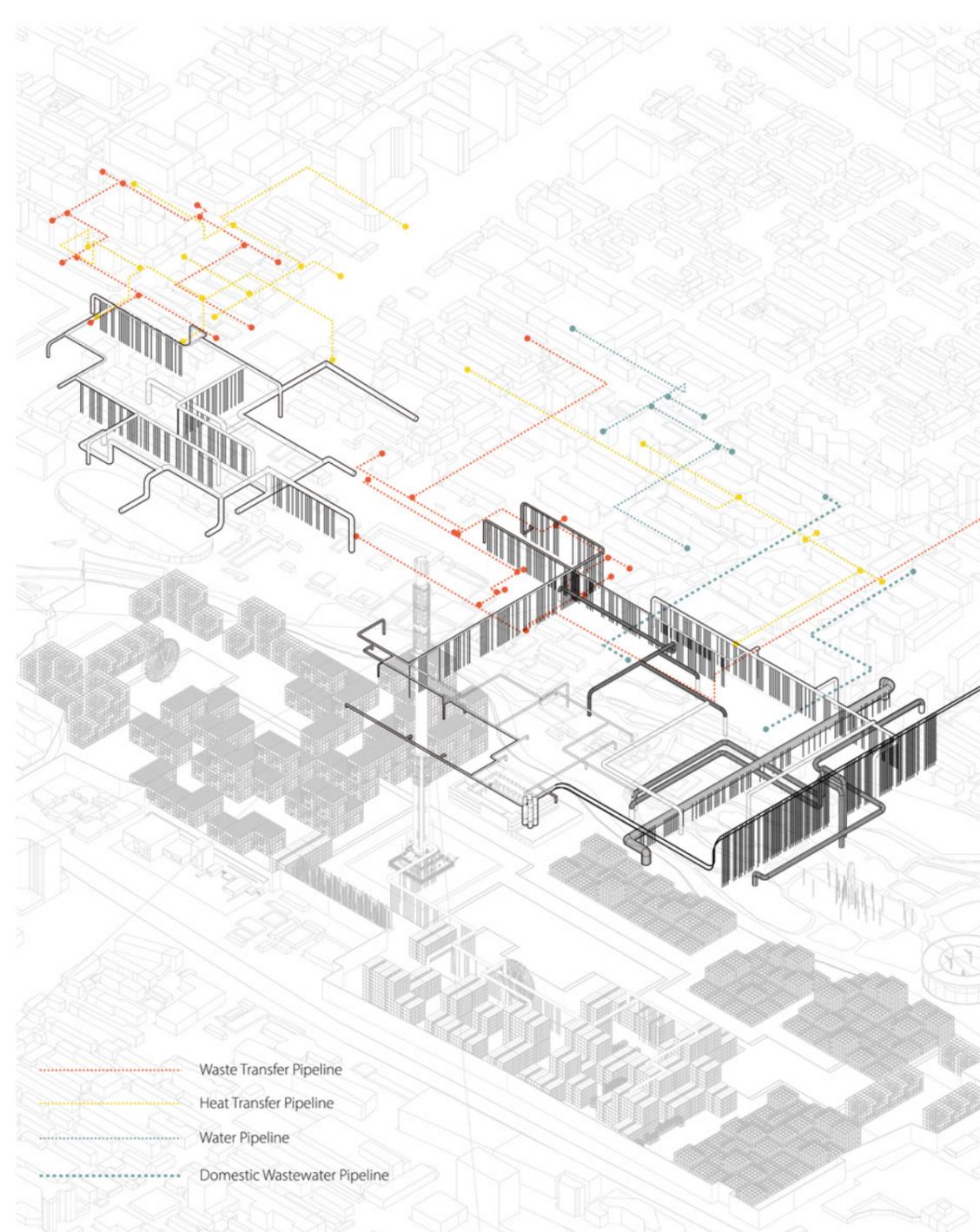
In modern buildings, sewage pipes are often hidden underground, in the walls. In the zoo, all the pipes are directly exposed and people can see all the sewage that life produces moving over their heads. At the same time, the columns supporting the pipeline are also monuments to species that have been wiped out by human activities. The monument will be carved with the names of extinct species, scattered around the corners. On the north side is a park, which, like modern parks, is an area of interaction between humans and wildlife. But on the contrary, humans cannot move in complete safety and freedom, while animals can. There will be a church in the park to honor the extinct species.

The Sewage Center

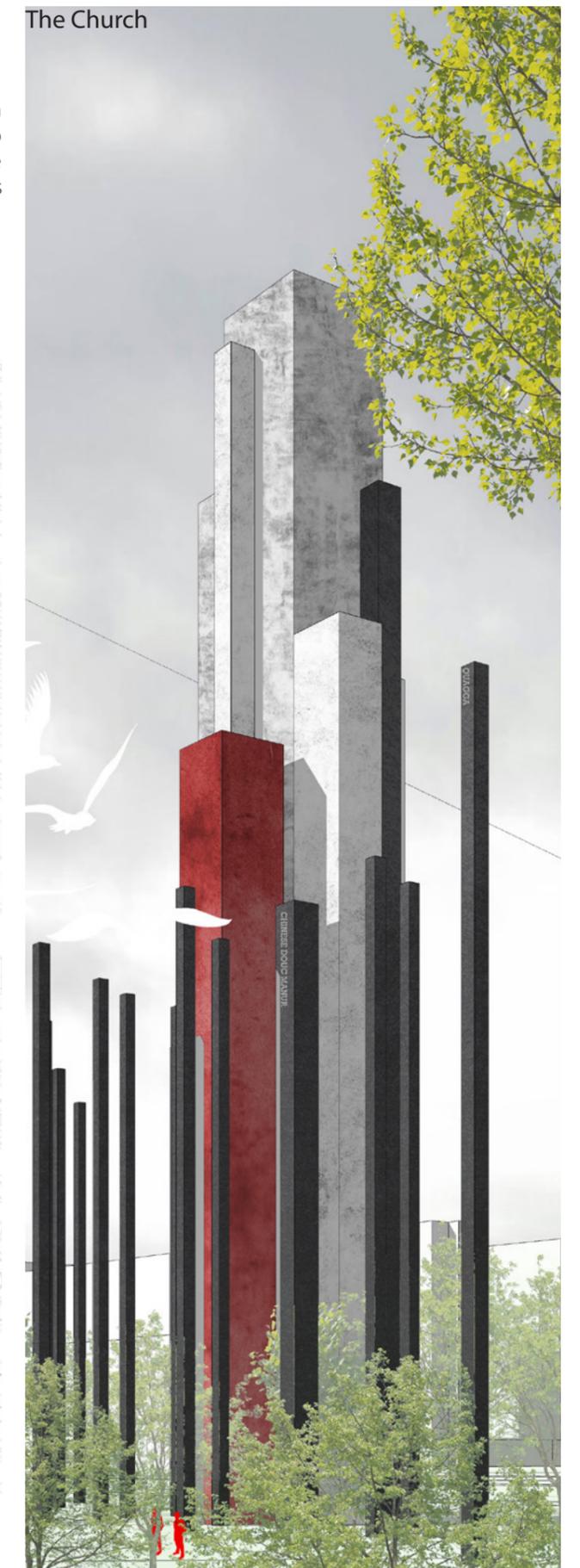


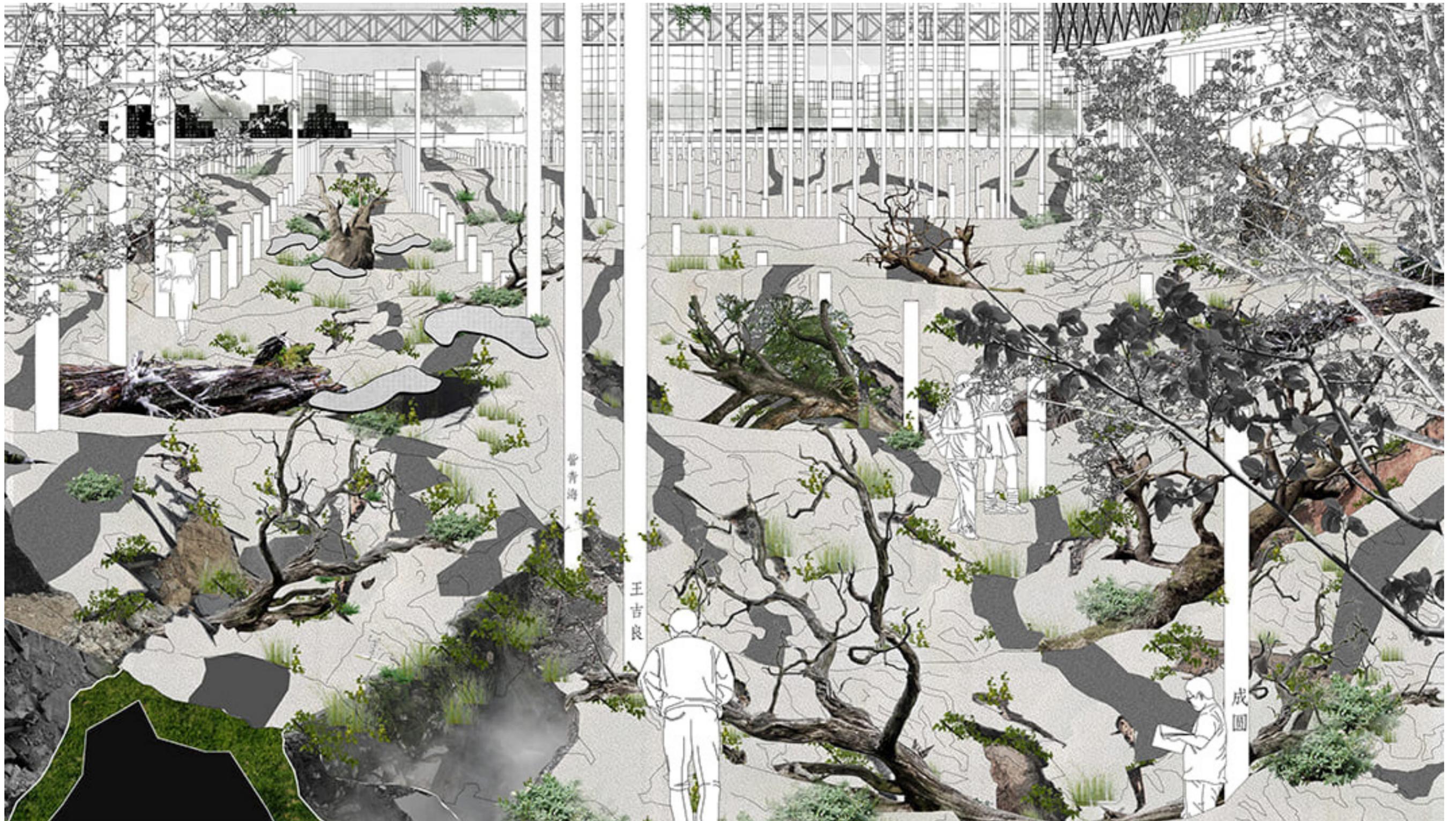
Sewage Center is a place which reverse the situation that animals are forced to live in an environment that surrounded with trash. So in the sewage center, people will work in a place that is surrounded by waste water and nasty smells.

The Pipe System



The Church





PLEIN AIR Memorial Landscape

Site: Tanggu District, Tianjin, China

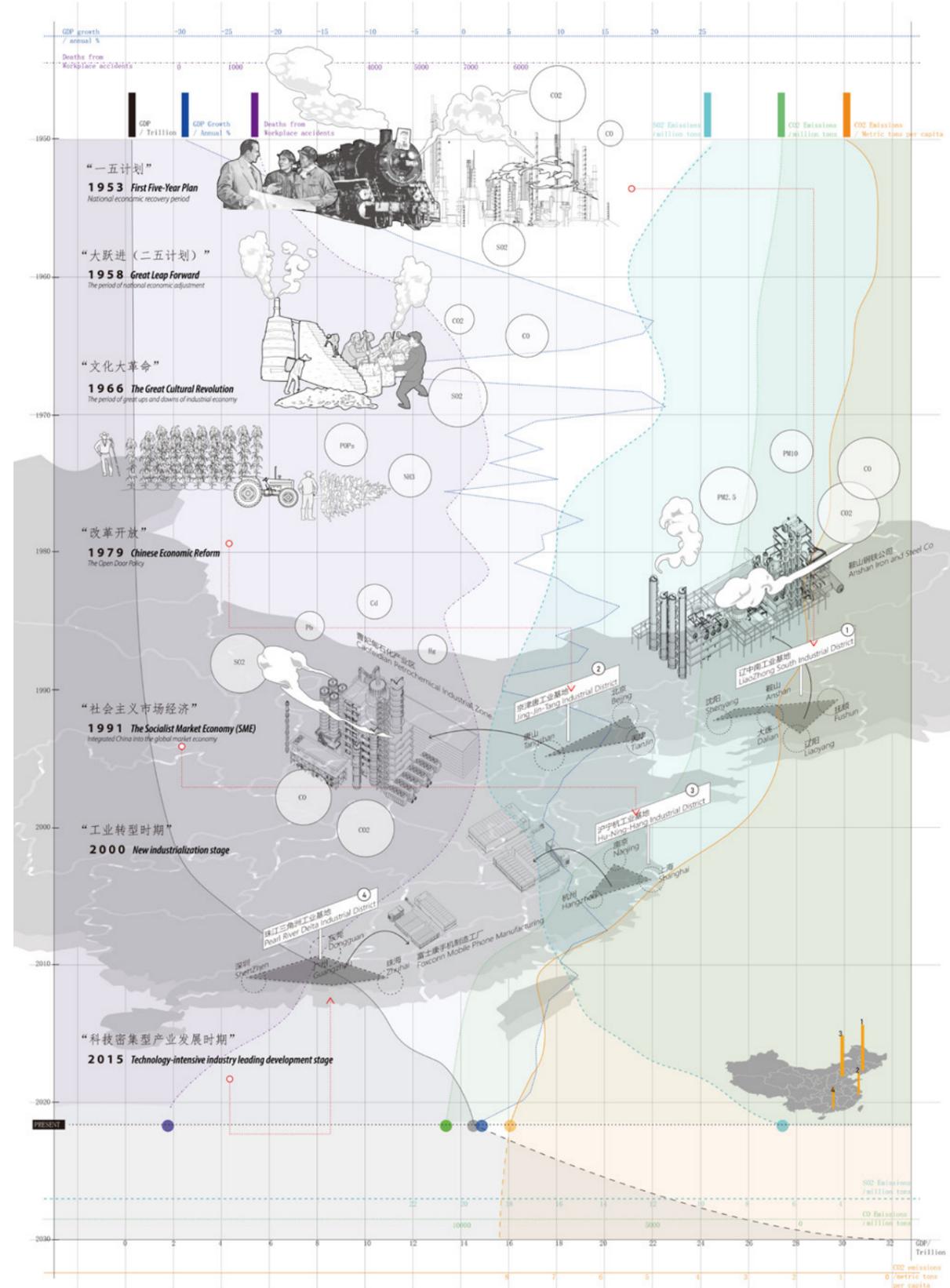
Time: Autumn 2021

Tutor: Nahyun Hwang Team Work: Yefei Guo

Pre-stage Research: 60% ; Overall Planning: 40% ; Stage Strategy: 50% ; Node Deeping: 50% ; Graph Drawing: 50%

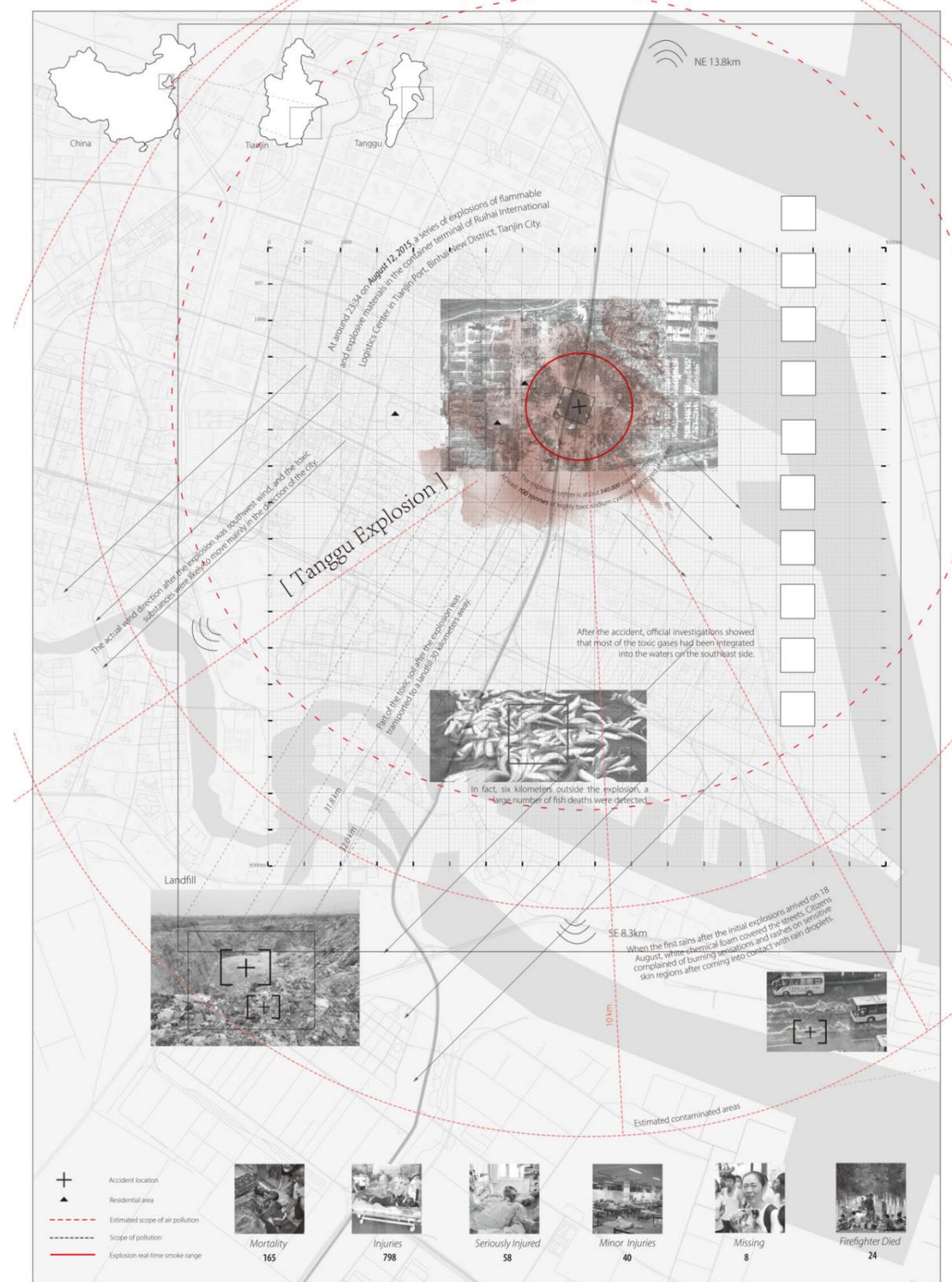
The term "En Plein Air," often associated with 19th-century Impressionist painters, describes a mode of investigation and production that occurs in the open air. Prioritizing the exploration of in-situ realities over the examination of controlled and interiorized "still lives," and embracing the constant changes in the environment and its inhabitants as critical subject matters, the practice at its inception, while not without its own inherent limitations, was a radical proposition that challenged the established epistemologies and accepted institutions and conventions. As Mallarmé asserted, air was the medium, and the open air was a realm of new truth.

Diagram of the Development of Chinese Industry

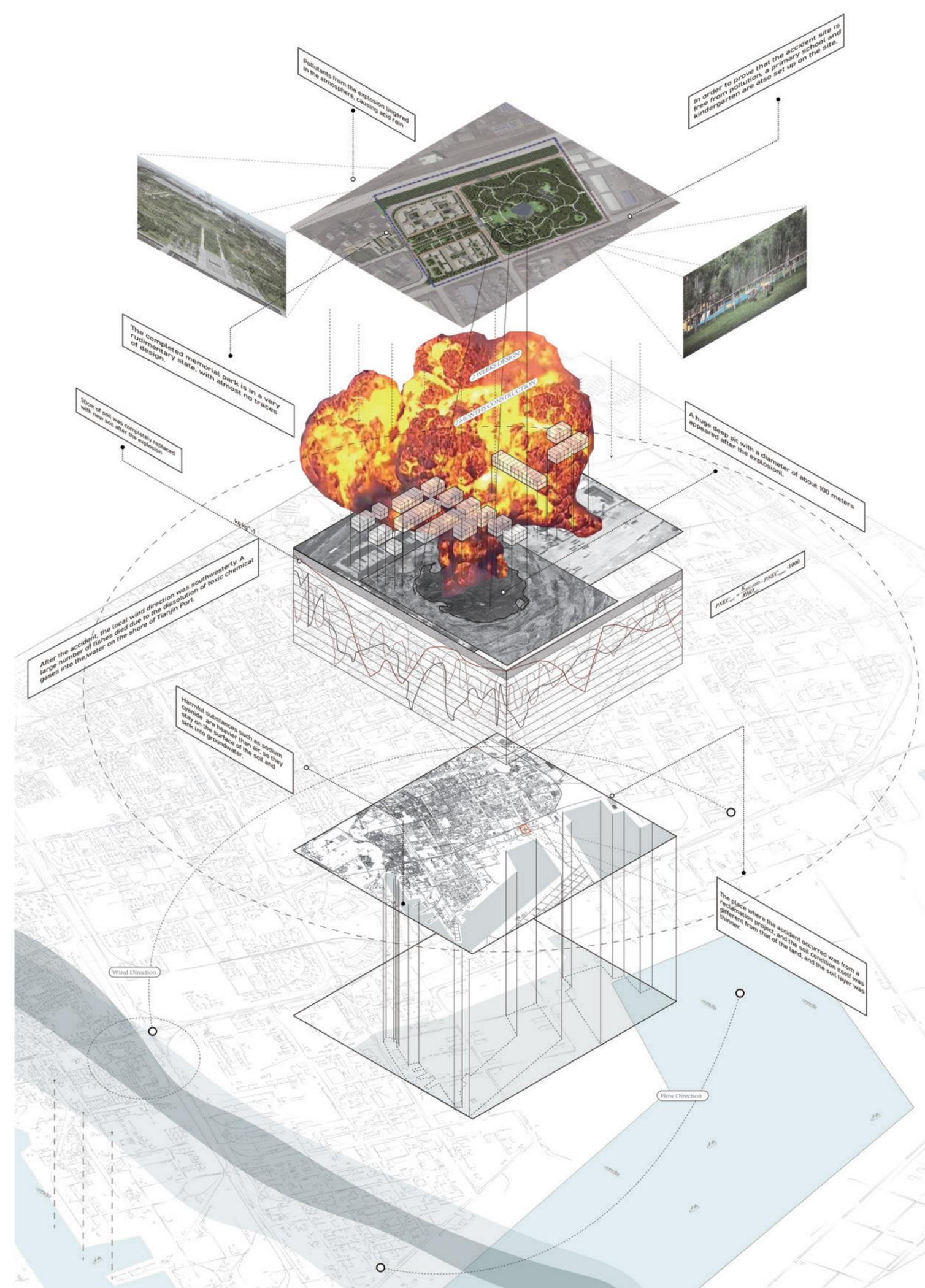


We mainly investigated the process of China's industrial development and learned that China's industrial development has several different phases, each phase has particular policies to guide the direction of development. These policies selectively produce certain types of air in certain areas.

Site Mapping



On 2015, a terrific explosion occurred at a container storage station at the Port of Tianjin, which have killed more than 100 people and sent toxic fumes into the air. In addition to vast quantities of sodium cyanide and calcium carbide, paperwork was discovered showing that 800 tonnes of ammonium nitrate and 500 tonnes of potassium nitrate were at the blast site. Lax of safety procedures and oversight have been blamed for the blasts. The blast in Tianjin follows a litany of industrial accidents that have left scores dead and raised accusations that China has traded safety for cheap and rapid economic growth.



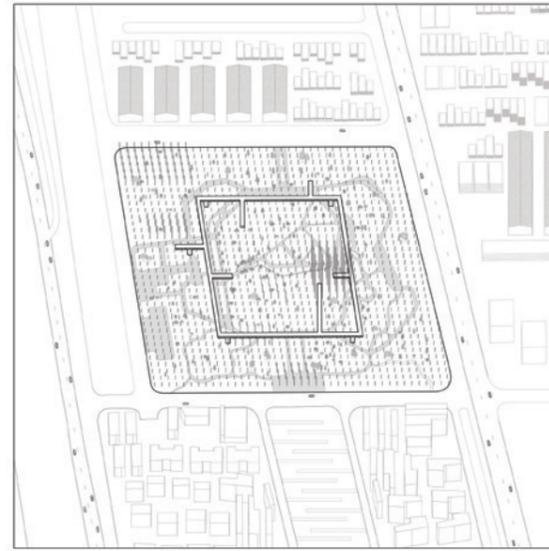
Diagrams

Concept Collage



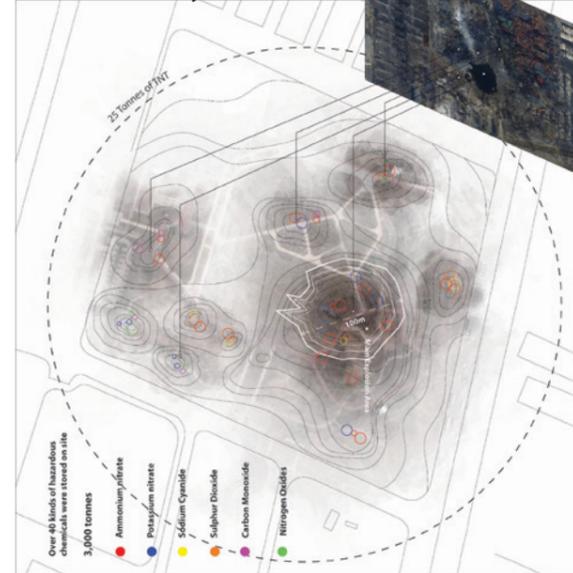
In the process of industrialization and technological development of the world, air is used as a medium of violence in major accidents. Cities and economies have grown rapidly under such violent political goals and sacrifices.

Axio Plan



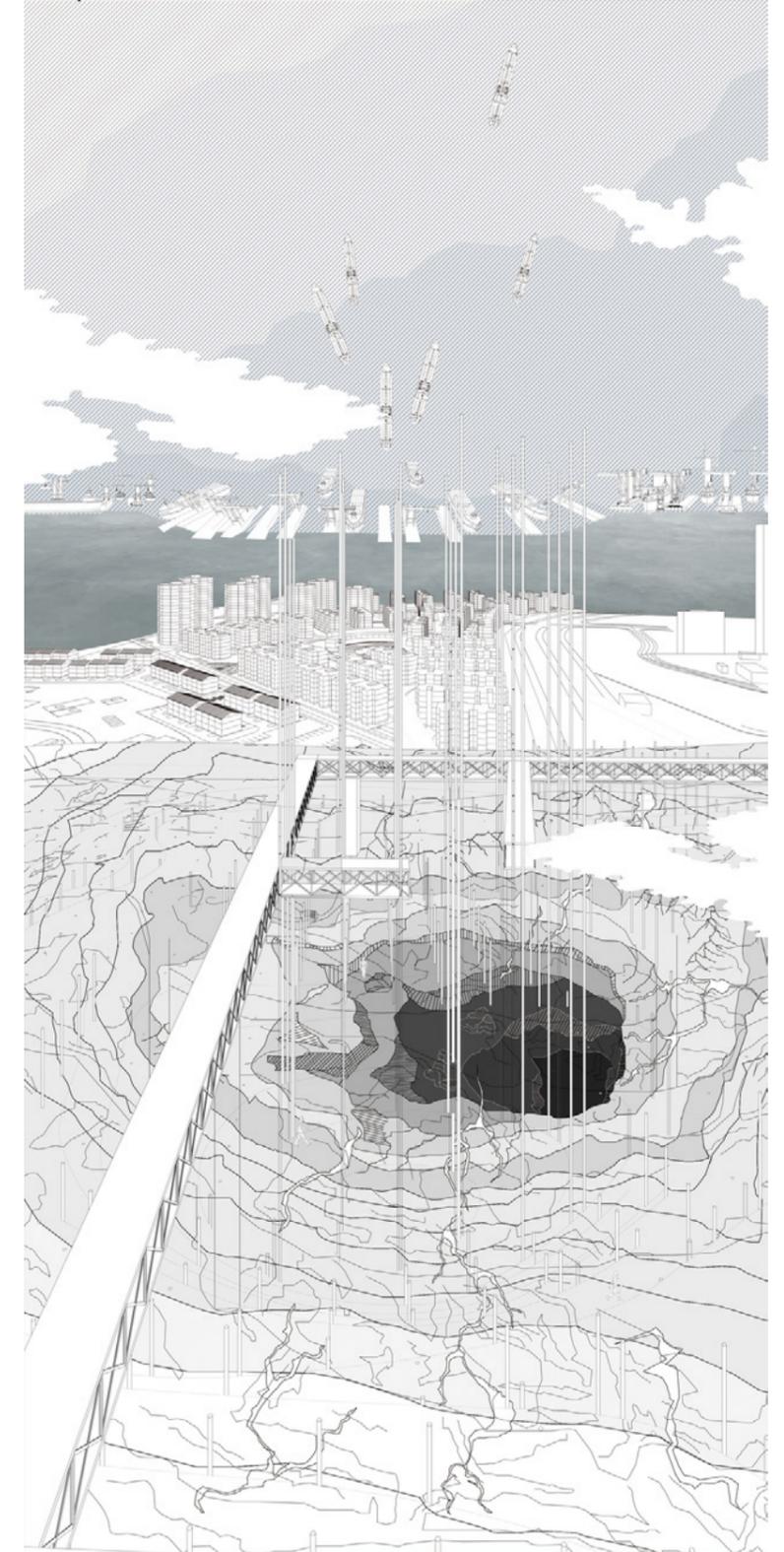
We will introduce a pollution purification system that can be observed in real time in this covered accident site, and build a series of pedestrian promenades above it. Visually show the truth that is revealed as pollution is purified.

Pollutant Analysis



According to the accident scene and the data obtained from the investigation, we have analyzed that the most polluted areas are mainly concentrated around the huge crater produced by the explosion center.

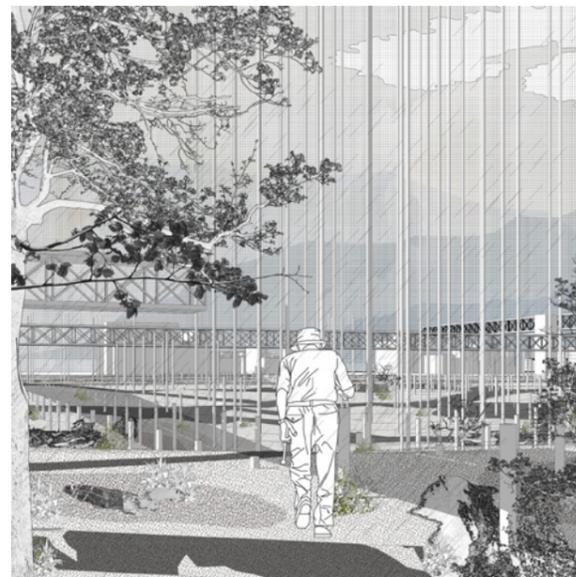
Perspective View



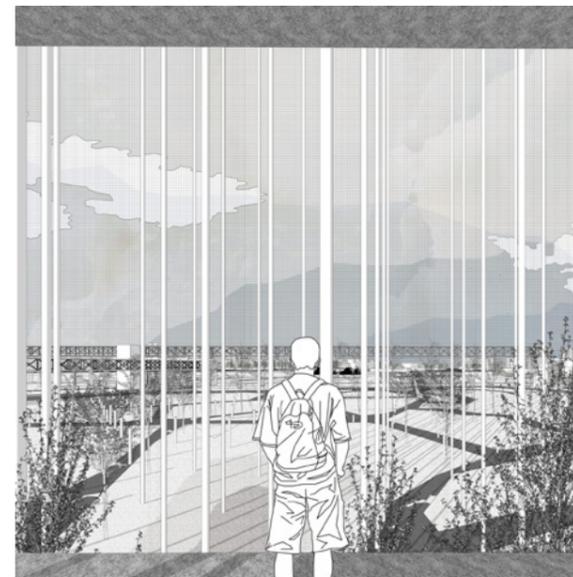
Phasing Collage



Phase 1: We regularly implant air sparging equipment in the venue. They are mainly in the form of pipes that go deep into the ground, so in order to insert them into the site, it may be necessary to remove some of the existing paving and green space in the park.

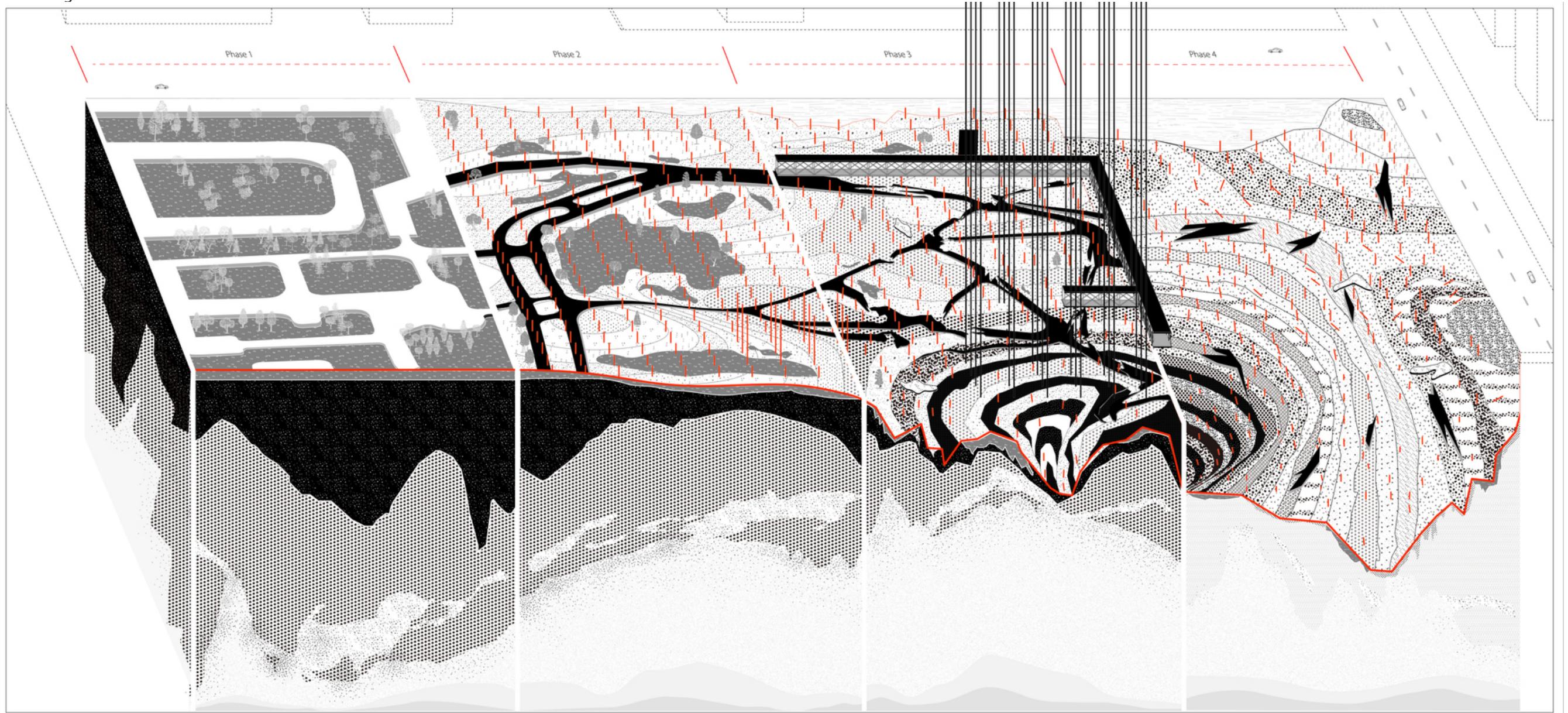


Phase 2: With the progress of remediation, the pollutants in the unpurified part of the soil will be gradually discharged, so the thickness of the interior of the soil will decrease, and this part of the soil will gradually sink.

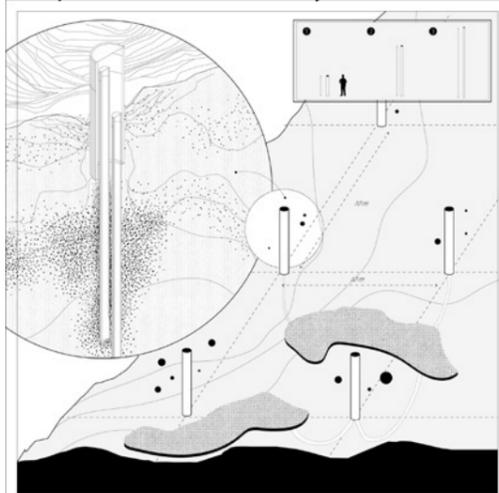


Stage 3: When the soil is fully remediated and no longer subsides. We made the entire purification system and the landscape created a memorial place. There are a total of 116 pipes in the venue, which is the same as the number of deaths in the accident. Each pipe will be engraved with the name of a deceased as a tribute.

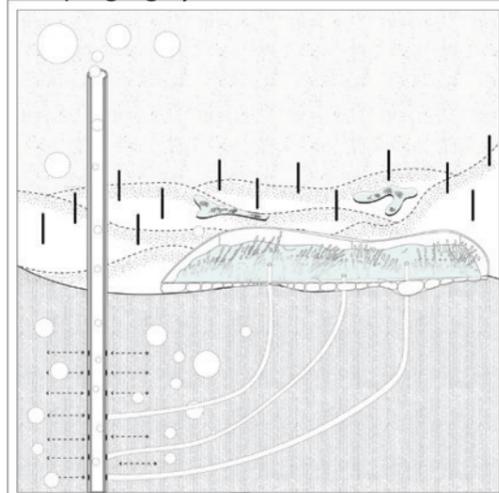
Phase Diagram



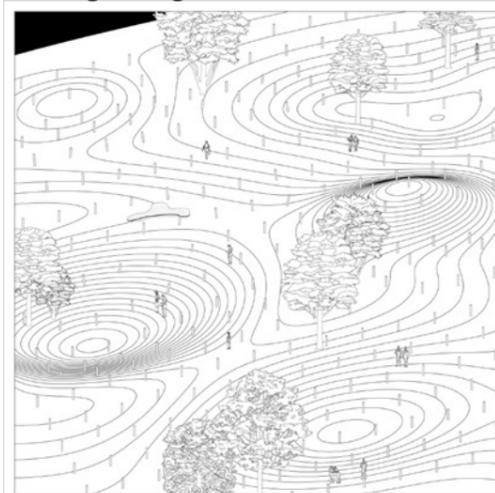
Biosphere Remediation System



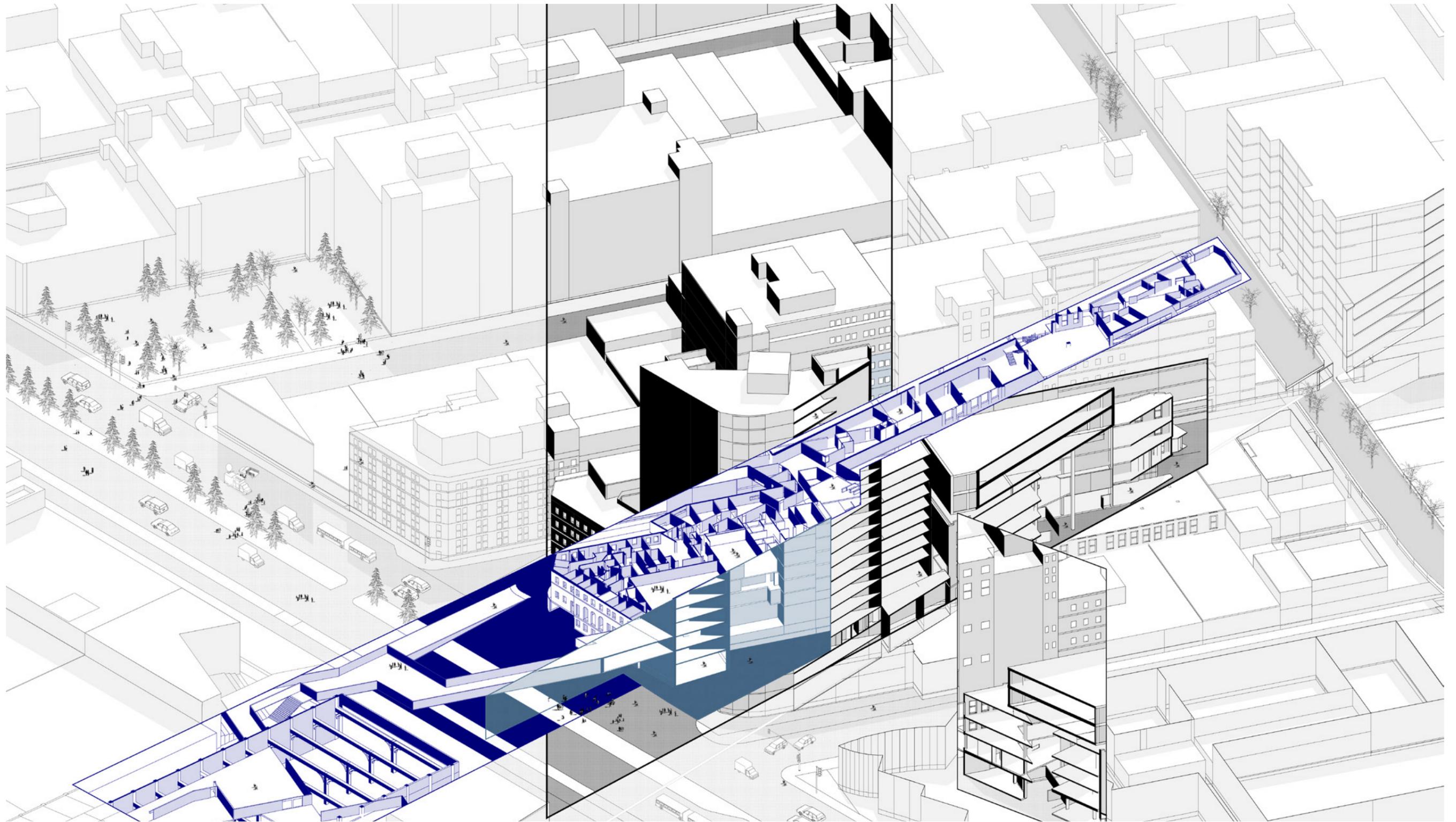
Air Sparging System



Phasing Collage



Air sparging is done by injecting large volumes of pressurized air into contaminated soil, removing toxic by tuning them in to vapor. And then the system will expel the air from the ground and send them to the biofiltration system to further purify the air.
 It's most commonly used for removing hydrocarbon contaminants.
 We will apply this to the whole park and we will put it every 10 meters depending on its' capacity we believe that the soil in the area with lots of pollutants will sink after purification, and eventually form a new landscape
 It is not only the park that has been dissolved, but we also want to dissolve the right or the power to cover the information and to reveal the violence that remains in the air but we are not able to see.
 We use air to remediate the violent incidents that used air as a medium in the first place.



Pier Escaping

Renovation of Manhattan Blocks

Site: Manhattan, NY, US

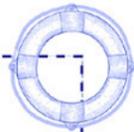
Time: Spring 2022

Tutor: Anna Puigjaner Team Work: Meichen Wan

Pre-stage Research: 40% ; Overall Planning: 60% ; Stage Strategy: 50% ; Node Deeping: 50% ; Graph Drawing: 50%

The conflictive and outdated distinction between productive and reproductive labor, its spaces and the bodies that carry them out, have perpetuated social asymmetries based on gender, class, race, age, and body conformity. Space -and by extension architecture and the city- are not neutral and have been extensively used to empower gender binaries and heteropatriarchal behaviors, neglecting wider realities. In a moment of systemic change, this studio will analyze how society defines and regulates bodies through the built environment. Architecture has played a big role within heteropatriarchal societies, in establishing social norms and behaviors, and defining, under the umbrella of an alleged "normality", a disciplinary system deeply biased and unequal.

Timeline of Chelsea Pier Development



In 1750, Chelsea was only a "ten-square-block span" (8th Avenue to the Hudson River and 21st and 24th streets.) Today, the total area of Chelsea is approximately 0.774 square miles, five to six times the original size. But the expansion has not really radiated and served more groups in any meaningful way, and both the pier, which was an important contributor to New York's port trade, and the queers of color, who brought a rich culture to Chelsea, have been expelled in the process.

Marine

1830

1847

1869

1900

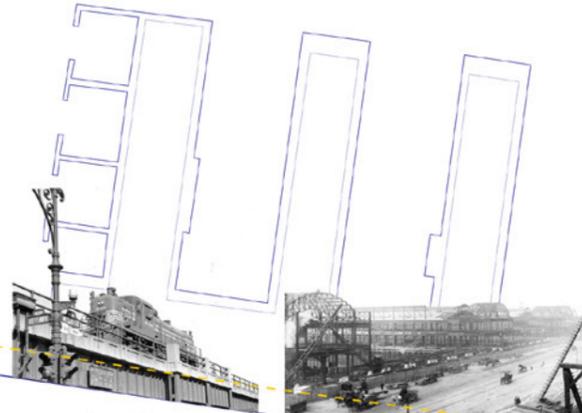
1930

1970

1980

2009

Buildings



Chelsea has undergone a number of significant changes and regional expansions over the past two hundred years.

The laying of the Hudson River Railroad tracks along 10th Avenue in 1847 had a major impact on the community. The neighborhood was filled with warehouses, lumberyards and industry.

The industrialization of western Chelsea allowed immigrant populations from many countries to work in the factories, including a large number of Irish immigrants who worked on the waterfront near the Hudson River terminal and at the truck terminals integrated with the freight rail spur. The Chelsea industrial area also included lumberyards and breweries, as well as apartments built for workers.

Industrial advances brought more leisure time, and West 23rd Street became the center of American theater, led by the Pike Opera House on the northwest corner of Eighth Avenue (demolished in 1960). Drag queens made attempts at gender issues.

In 1869, the world's first elevated train was erected, running from Battery Park to Ninth Avenue.

In 1884, the Chelsea hotel opened. It was envisioned as a socialist commune whose residents would share in the costs and services of the artists represented by Andy Warhol, who lived here and expressed the social gaze of the LGBT through body performance.

Chelsea Piers, built in 1907 handled much of Trans-Atlantic luxury passenger lines up until 1935, when the ships moved to newer and larger berths further uptown. Chelsea's fortunes might have been different had the RMS Titanic not sunk. Pier 60 was to be NY's berth for the Titanic. It's survivors arrived on the Chelsea Piers by way of the RMS Carpathia.

From 1869 to 1969, Chelsea was the site of industrialization and affordable housing. It explored housing with single working women's apartments, congregating housing, and other housing models to accommodate a wide range of people.

Storage and warehouses are the main types

St Vincent Hospital served as an AIDS treatment center previously.

Gathering in restrooms

Rowy-ballroom

The rapid upscaling of the Chelsea community has squeezed out the cool kids of color, previously the most vibrant group, who have been forced to move to other parts of New York. Today, the gallery-lined, luxury residential neighborhood of Chelsea is virtually exclusive to white male queers.

The pier was an important engine of New York's maritime trade, but with the transfer of New York's maritime traffic to New Jersey, the pier no longer plays a transportation role and only sightseeing cruises travel daily.

The evicted queer community has made the abandoned docks their utopia, using any corner they can find to run naked, have sex, protest, entertain or assert their gender identity. Their bodies became their weapons.

Open holes are everywhere, and cool kids create a freer living space by tearing down parts of it. They gather in bathrooms, dance halls, bathrooms, warehouses, abandoned railroad tracks and docks to socialize.



Population

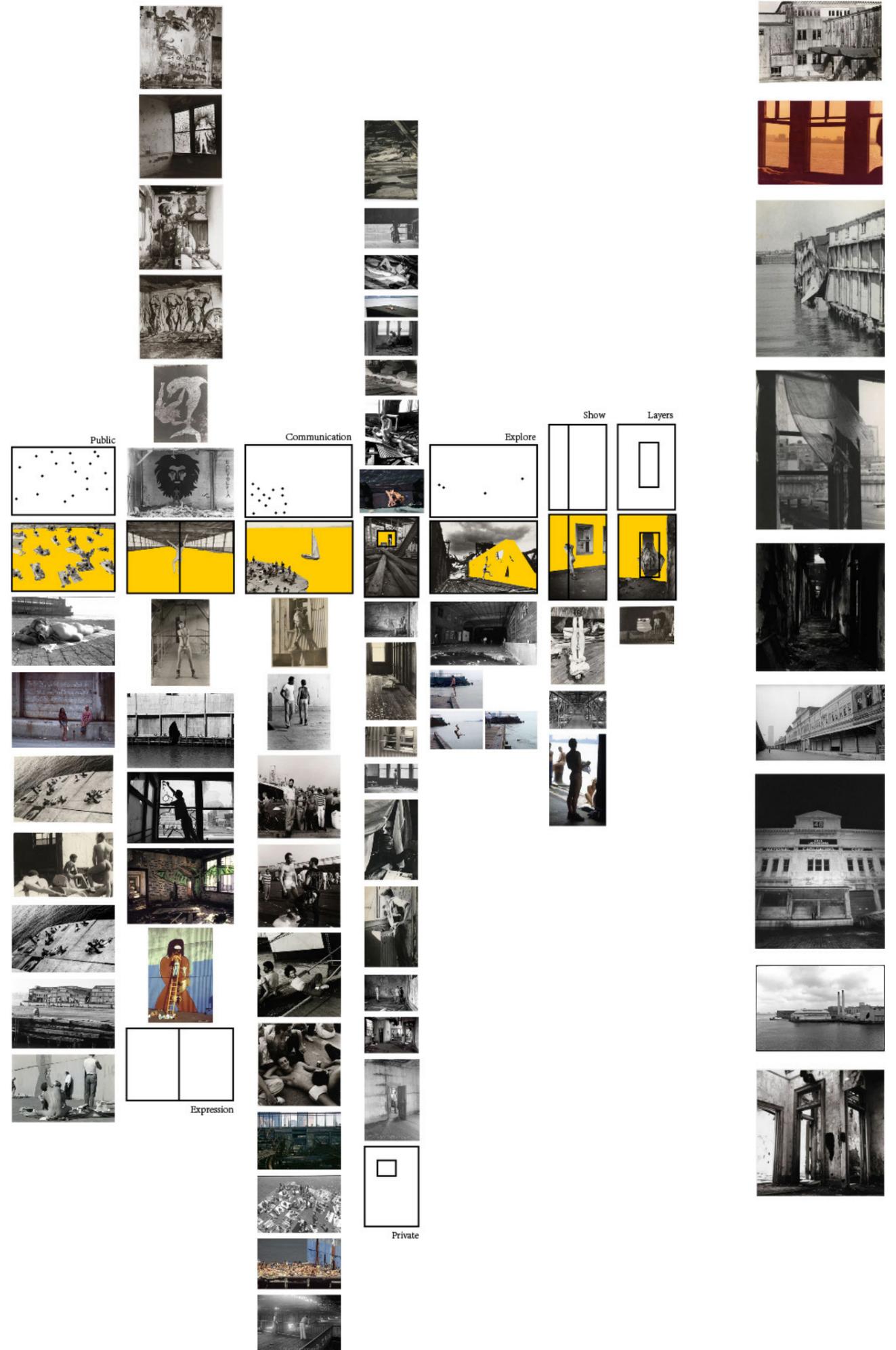
After the 1969 raid on the Stonewall Inn in Greenwich Village, gay men were excluded from the West Village and began to move increasingly to Chelsea, opening stores along Eighth Avenue that were essential to making Chelsea the vibrant and exciting community it is today.



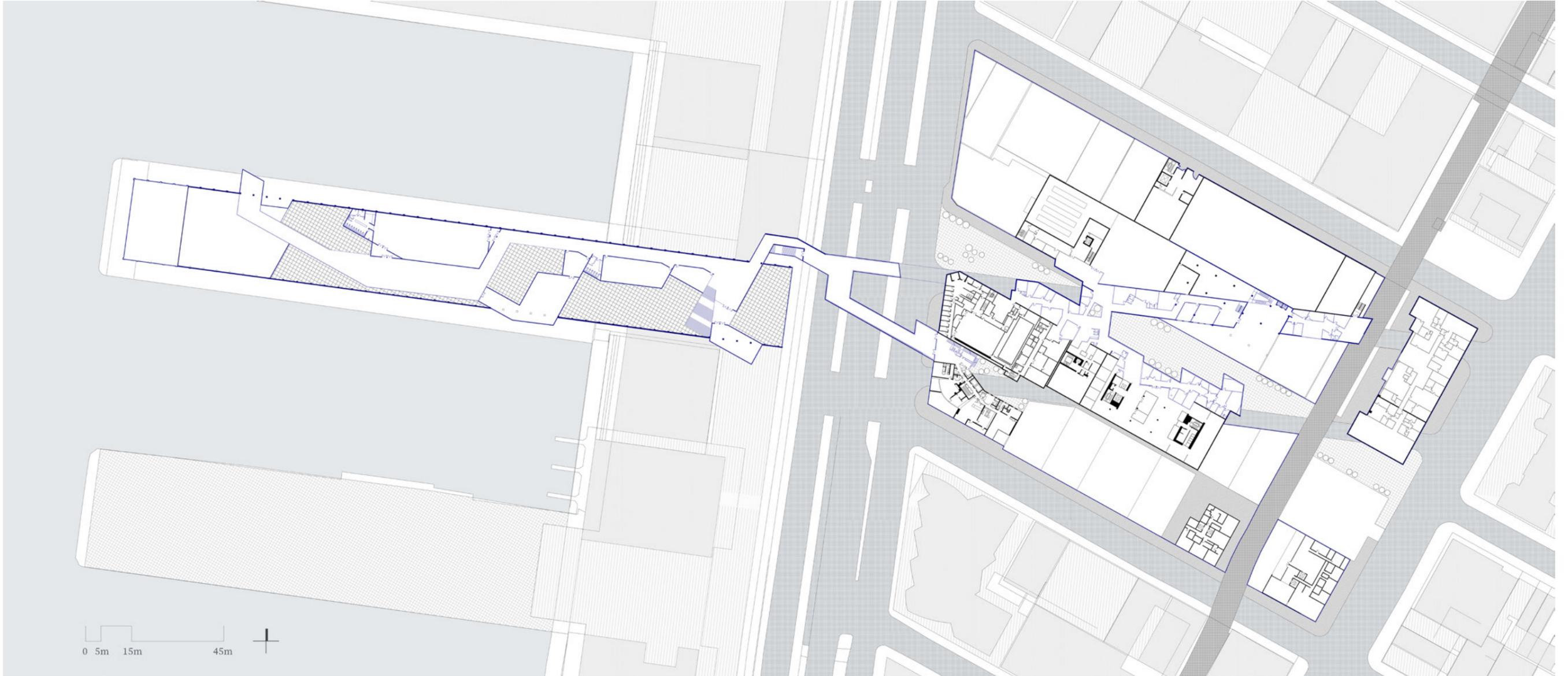


The pier was the initial engine of New York's development, and the maritime trade brought the city's initial prosperity. However, grid of the riverfront has long been excluded from the urban fabric of Manhattan.

Similarly, after the transfer of pier functions from Manhattan to New Jersey, queer groups occupied the abandoned site in the 1970s. These excluded people and sites from Manhattan actually contributed significantly to cultural and social development and economic prosperity and should be part of the Manhattan grid order. Past fifty years have witnessed huge changes taken place in Chelsea. Its gentrification expelled the dynamic indigenous population and turned it into an upscale residential area with a very high rate of vacancy.



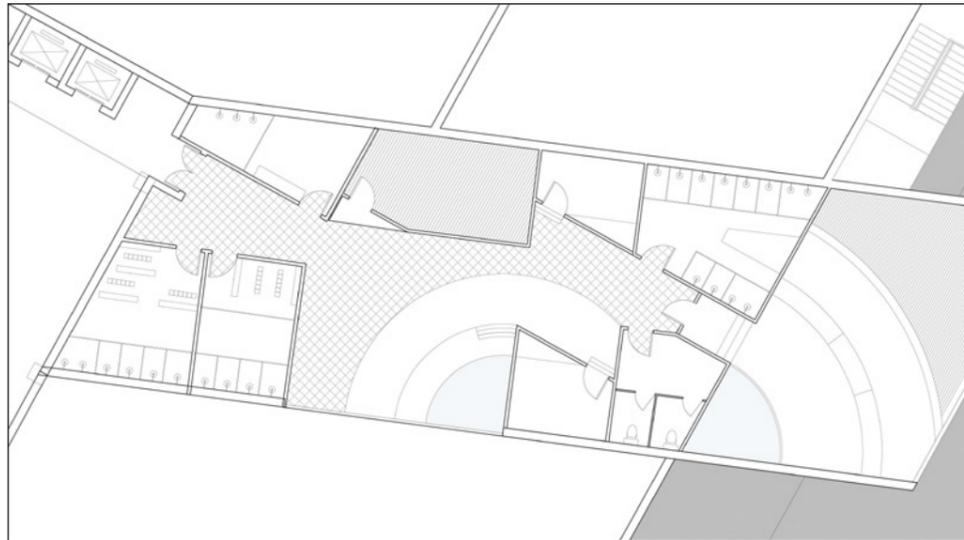
Third Floor Plan



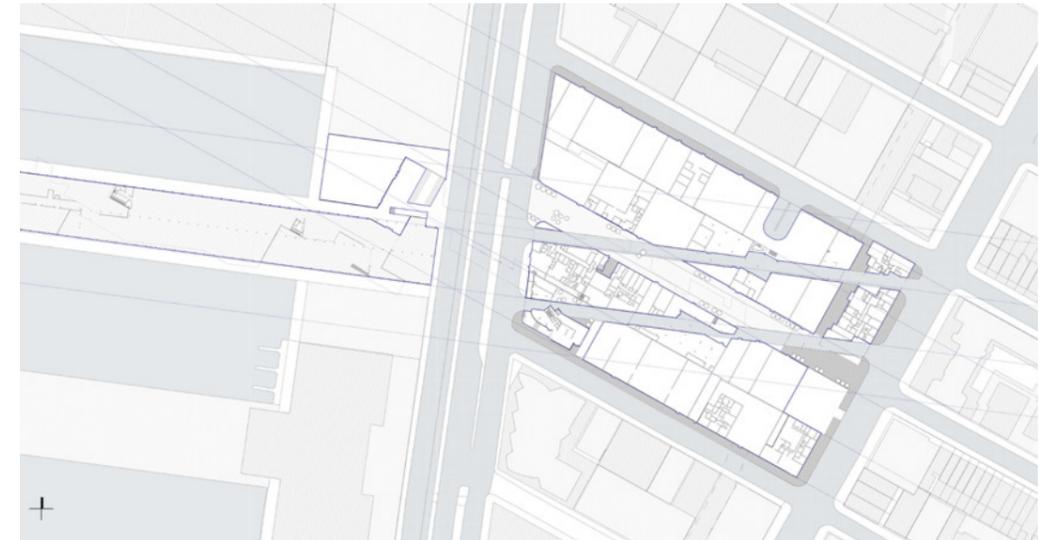
Unit Plan-Esthetics



Unit Plan-Sauna

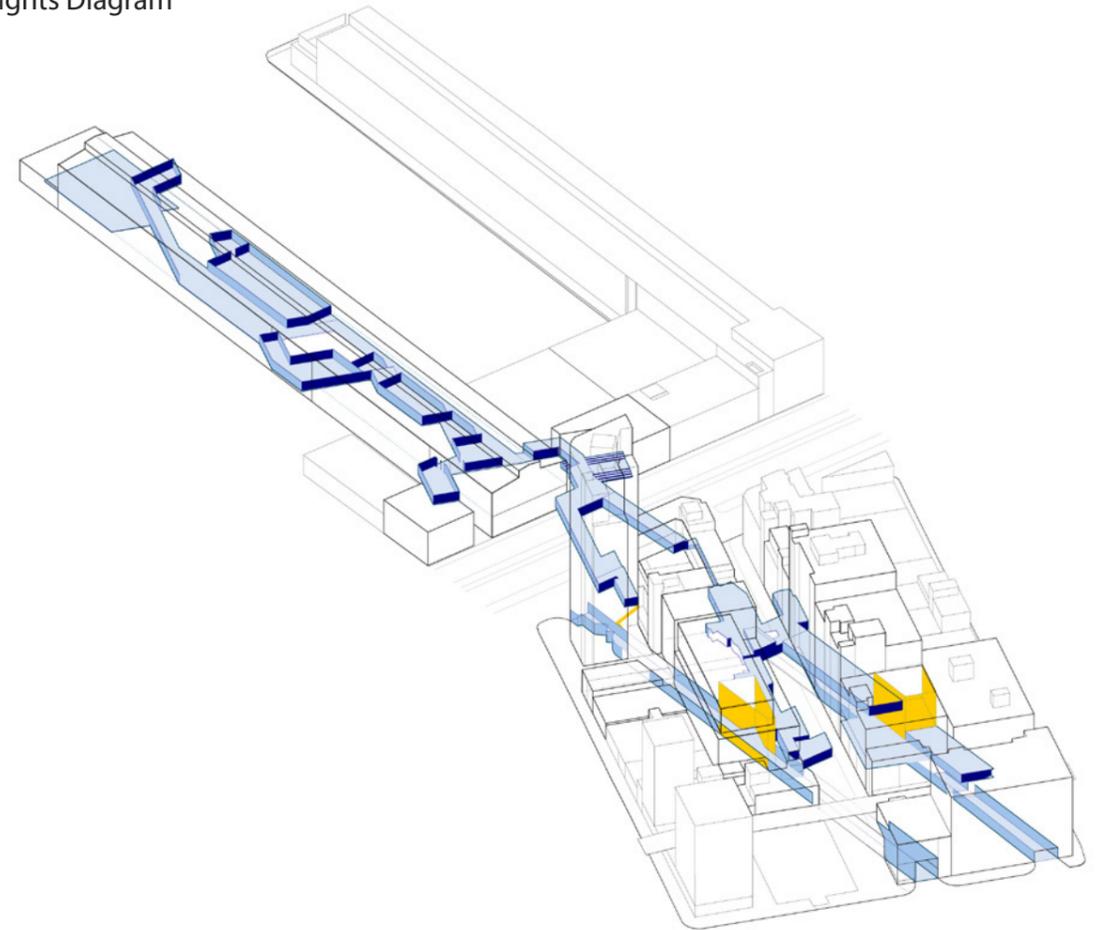


Ground Floor Plan

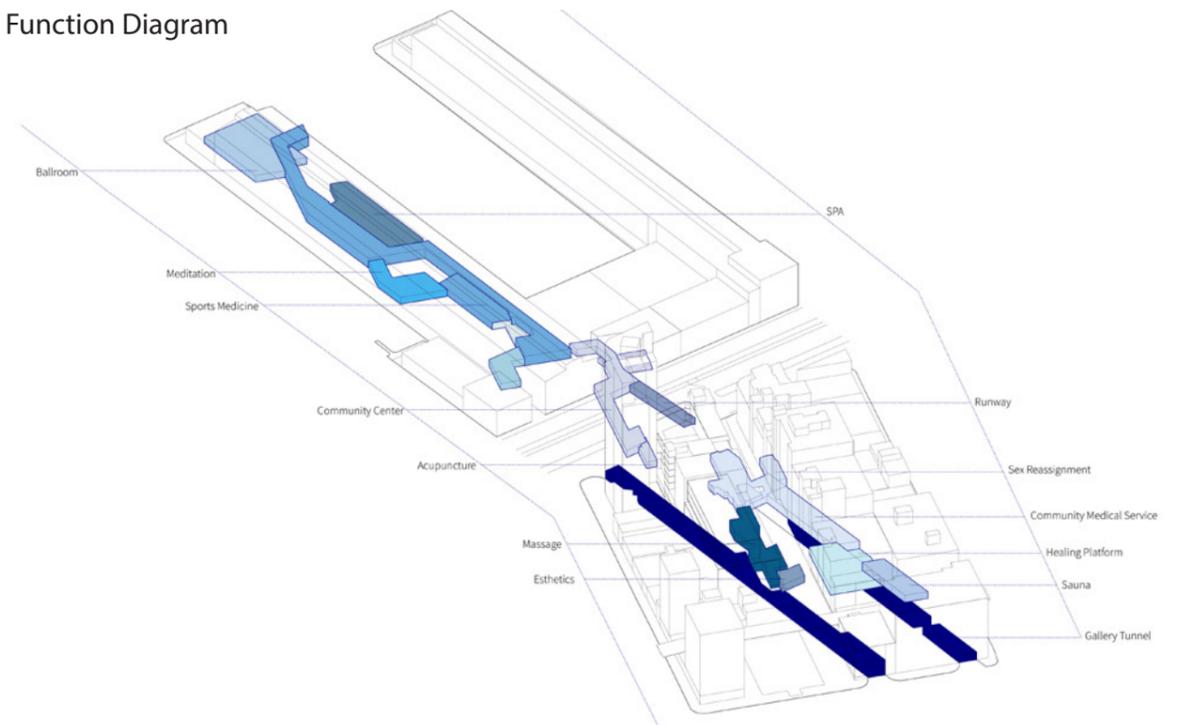




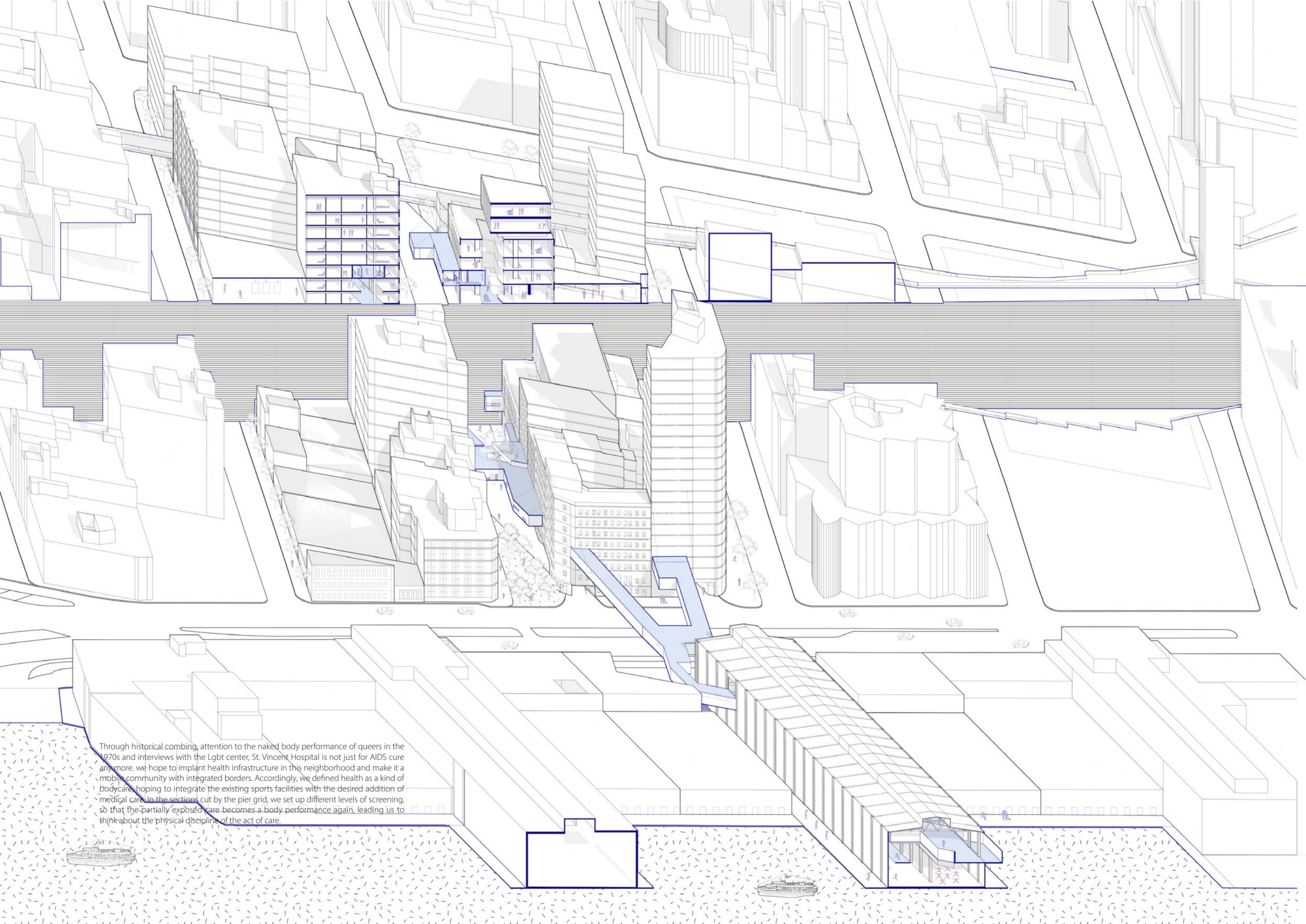
Heights Diagram



Function Diagram



this design extend the pier grid to chelsea neighborhood and thus create a ground floor tunnel through existing building, exposing a space like a stage of daily body performance, allowing us to revisit the boundaries and transformation of public and private. This pattern will gradually radiate to other neighborhoods.



Through historical combing, attention to the naked body performance of queers in the 1970s and interviews with the LGBT center, St. Vincent Hospital is not just for AIDS cure anymore. We hope to implant health infrastructure in this neighborhood and make it a mobile community with integrated borders. Accordingly, we defined health as a kind of body care, hoping to integrate the existing sports facilities with the desired addition of medical care. In the sections cut by the pier grid, we set up different levels of screening, so that the partially exposed care becomes a body performance again, leading us to think about the physical discipline of the act of care.



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