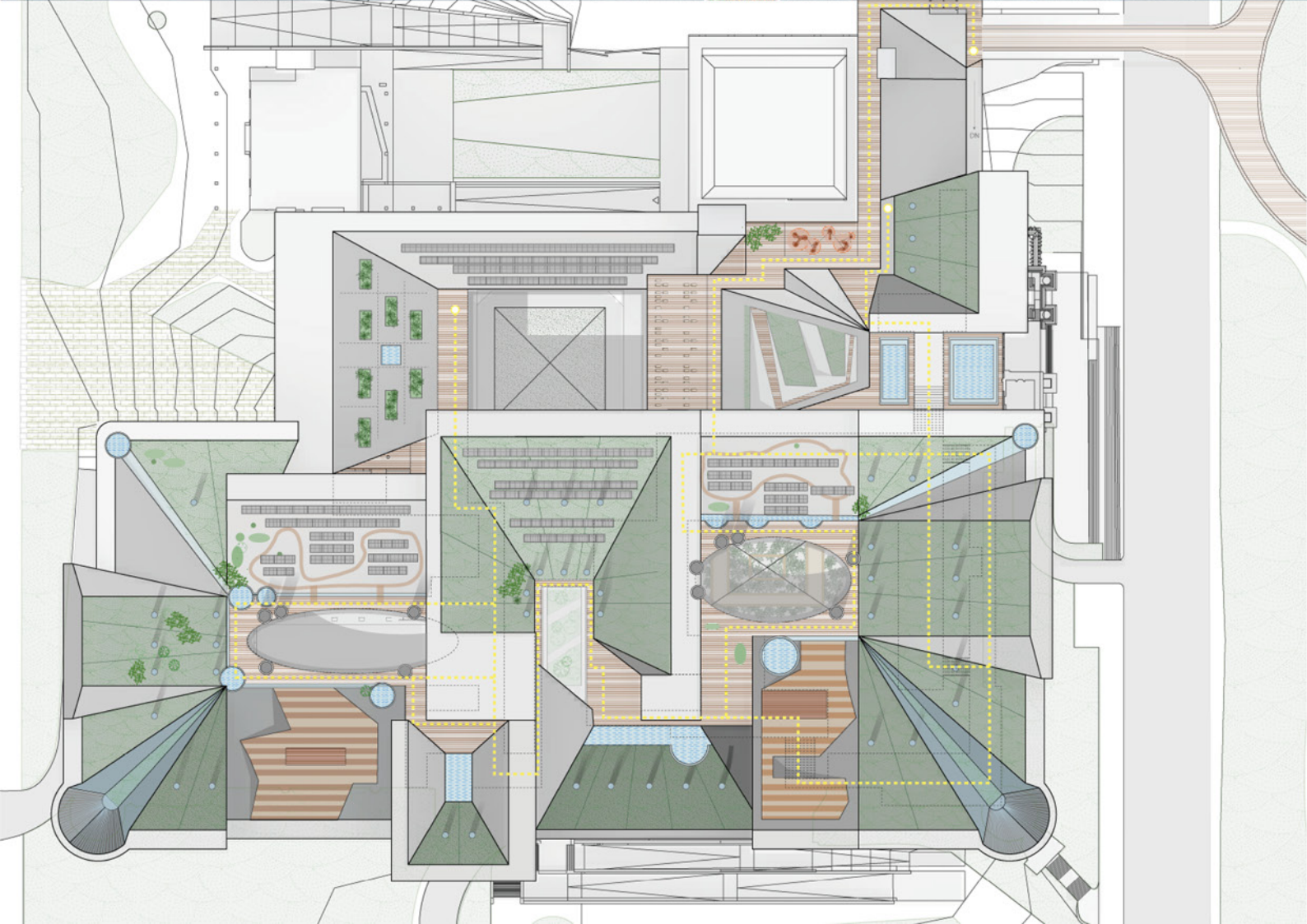
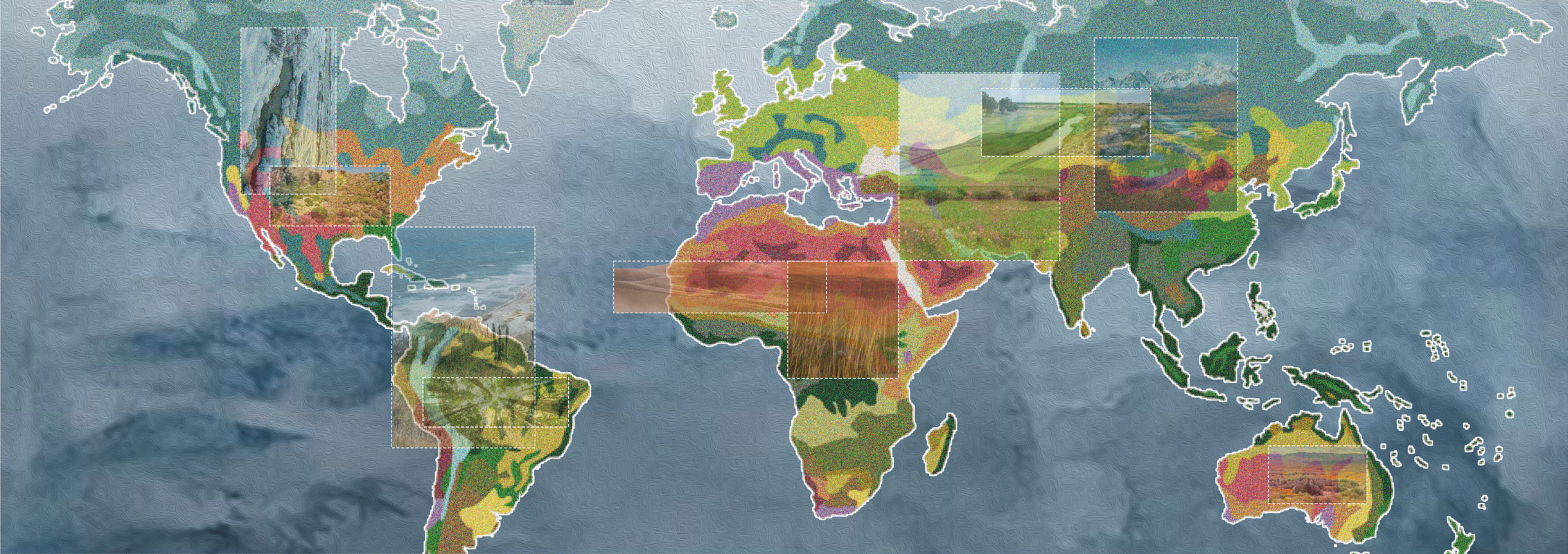


GSAPP PORTFOLIO

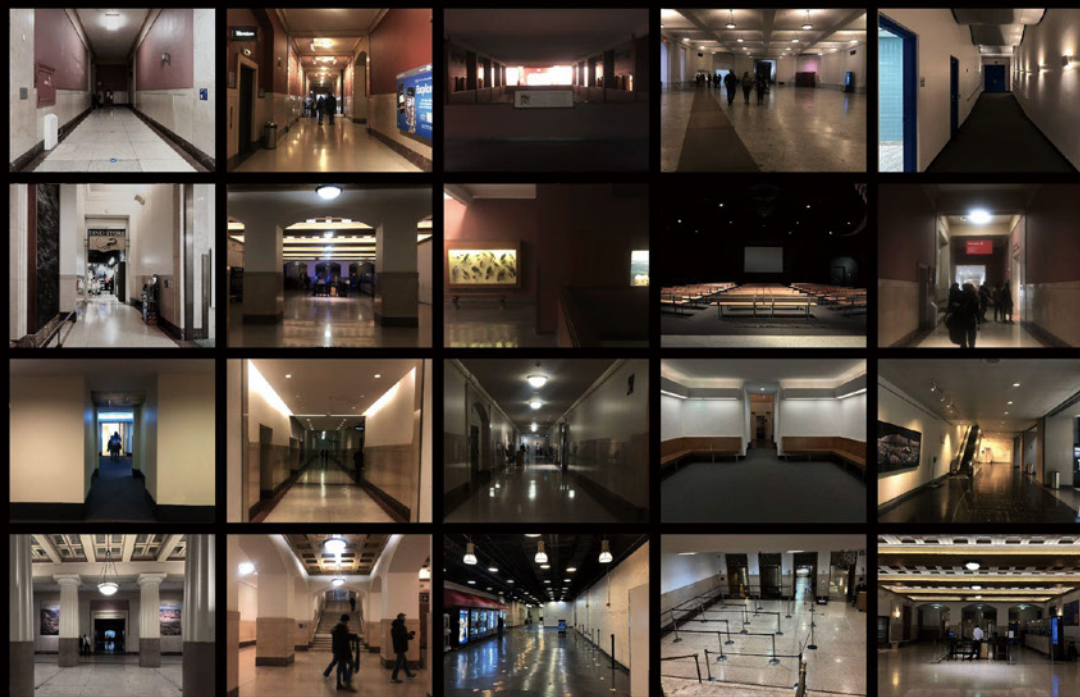
Brent Huifeng Zhang



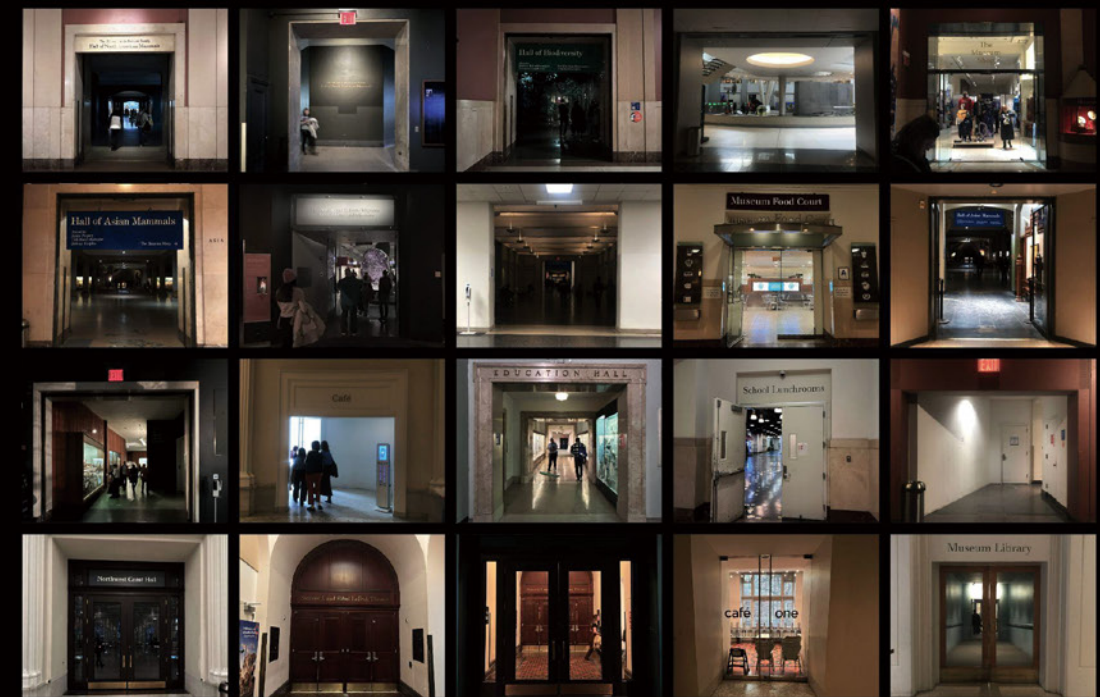
Center For Common Earth

*Decolonized American Natural History Museum
As A Monument Of **Ecosystem***

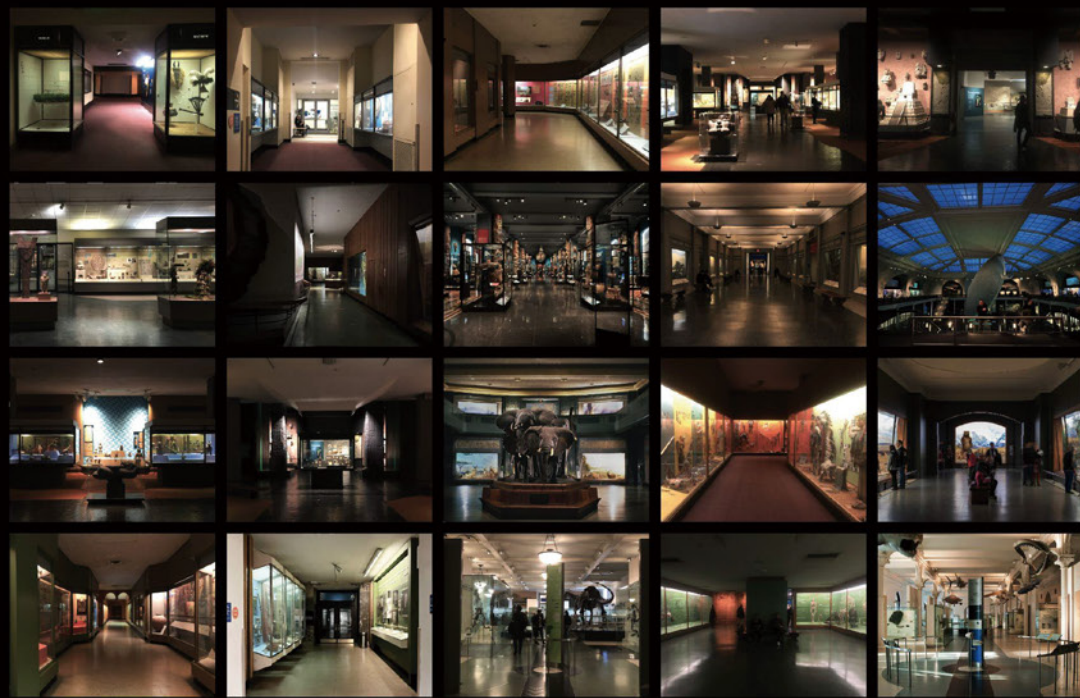
Spring 2023 - Advanced Studio VI
Instructor: Juan Herreros
Collaborators: Layna Chen, Yufei Huang



CONFUSING COMPRESSIVE NARROW ENDLESS DIZZY



REPRESSIVE MULTIPLE ENDLESS FOREBODING DARK



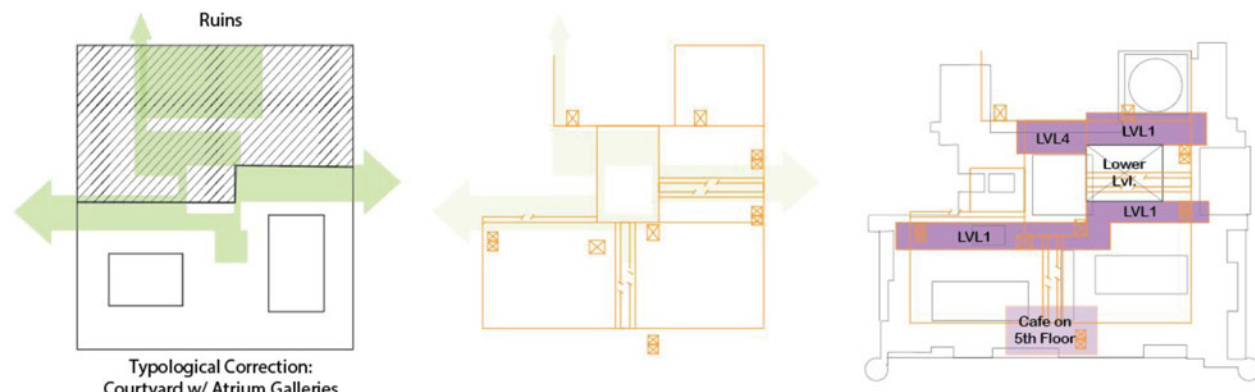
ARTIFICIAL IDENTICAL CONFUSING FOREBODING DARK



RACIST ARTIFICIAL ENDLESS ARCHAIC BORING

AMNH is an institution that closes itself off from nature.

These photos of endless corridors, identical hallways, lack of natural views, and dizzying fluorescent lights are not the offices of tax collectors, but the American Museum of Natural History. Multiple doors aim for dividing space, creating zones. But the actual effect doesn't work well. On the contrary, the transition space is compressed by the enclosure of the doors. The galleries are similar to the hallways, dizzy and repetitive. Most of the time, it's hard to tell whether you are in a hallway or the gallery space, which enhances the sense of endless wandering. In this situation, it is easy for visitors to feel fatigue both of the brain and the body. The dioramas around the galleries are outdated. They display the outdated original intention of the museum: an institution that was designed to show man's power over nature. Other cultures such as Asian, African, and Native Americans are turned into exhibits, yet Euro-American cultures are excluded. Considering specimens, animals that are considered large and exotic are given a central display. The mode of exposing nature is the same as AMNH first constructed. Time changes but AMNH is still teaching nature in an old, colonized way.

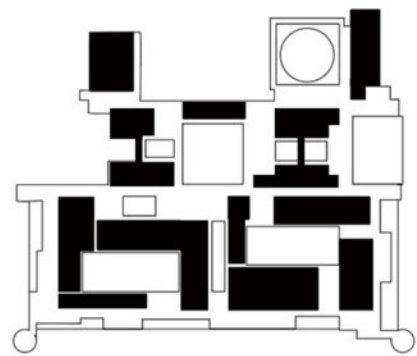


Typological Correction:
Courtyard w/ Atrium Galleries

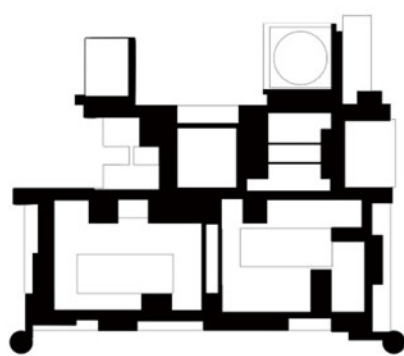
Green: Level 1

Circulation

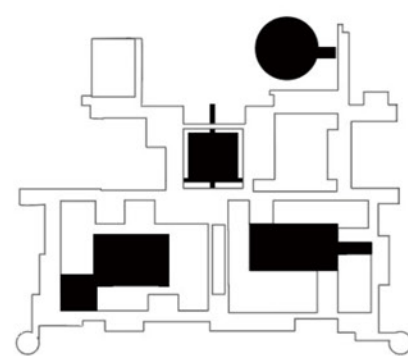
Cafes + Giftshops



Laboratories + Offices

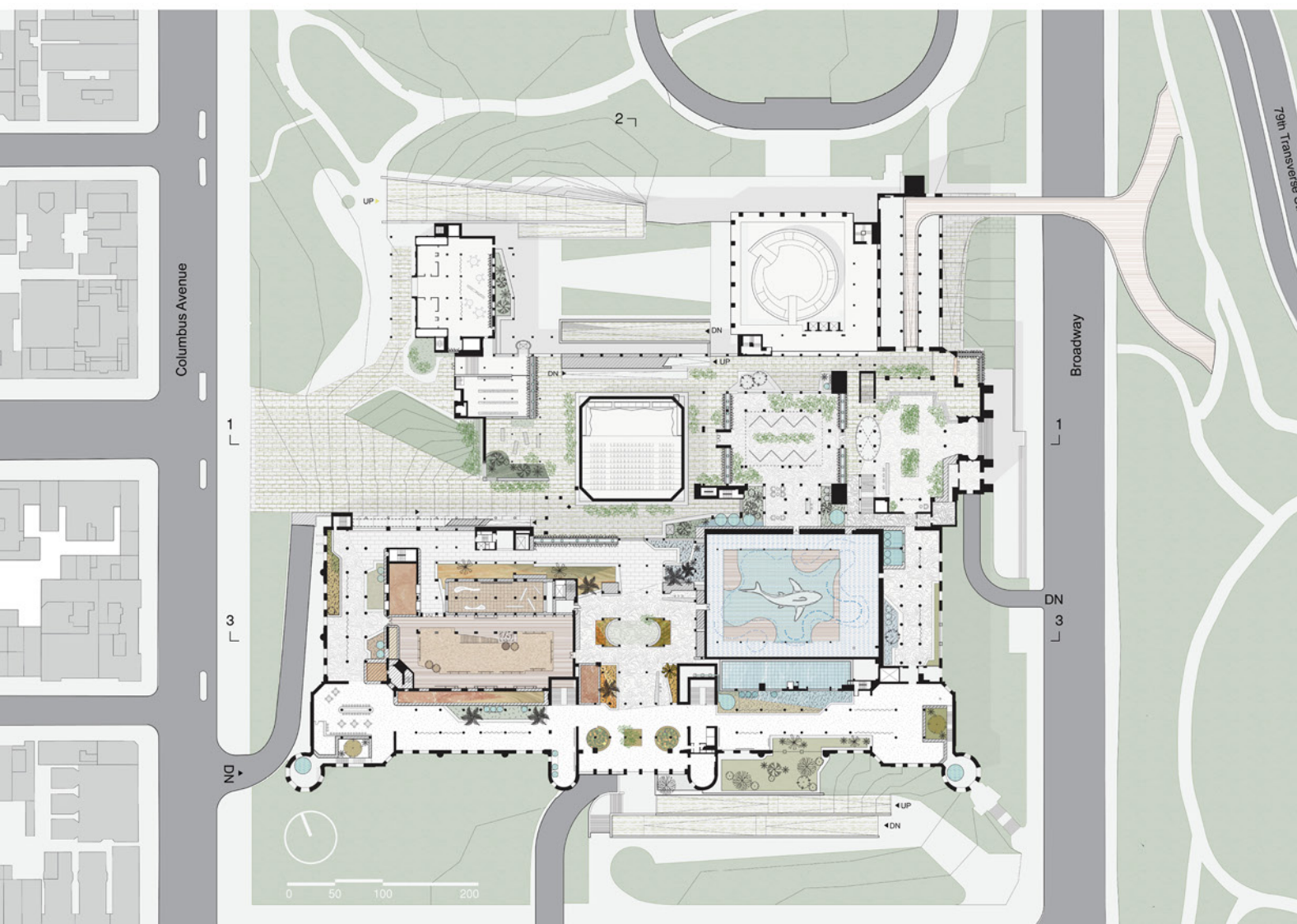


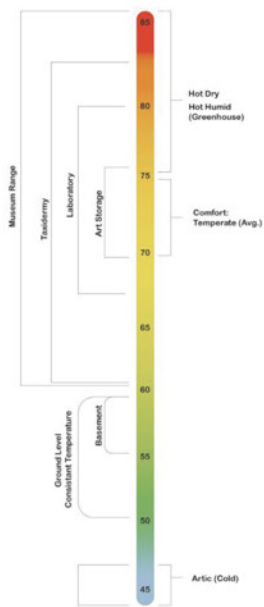
Galleries



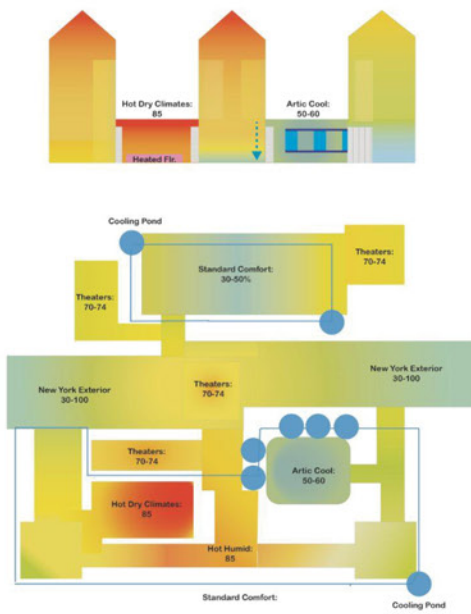
Biomes + Theater

We propose that this problematic museum be torn down and given back to nature the city. The new space will act as an educational tool that informs how we should live together in the natural world today. These are some diagrams showing how we propose to do this. We will create an exterior connection to the park through the space, continuous circulation using existing vertical circulation, and rearrange urban programs along the main path.

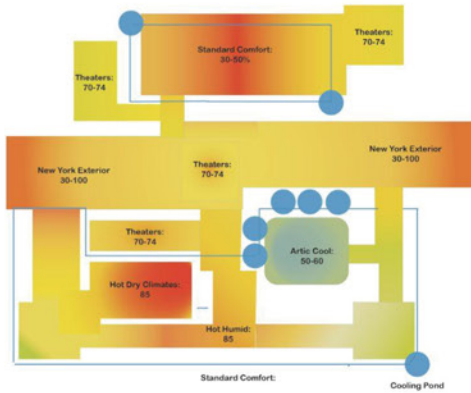




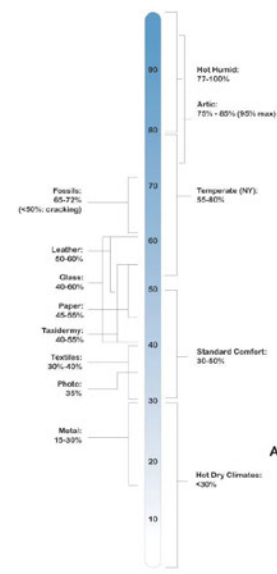
Temperature Flows



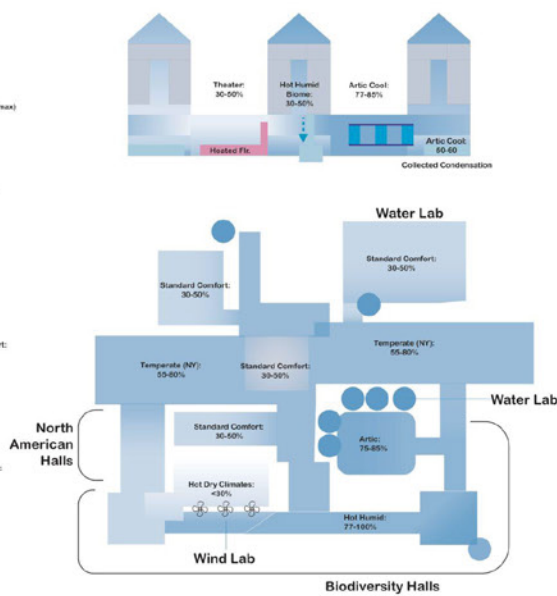
Temperature Flows: Winter



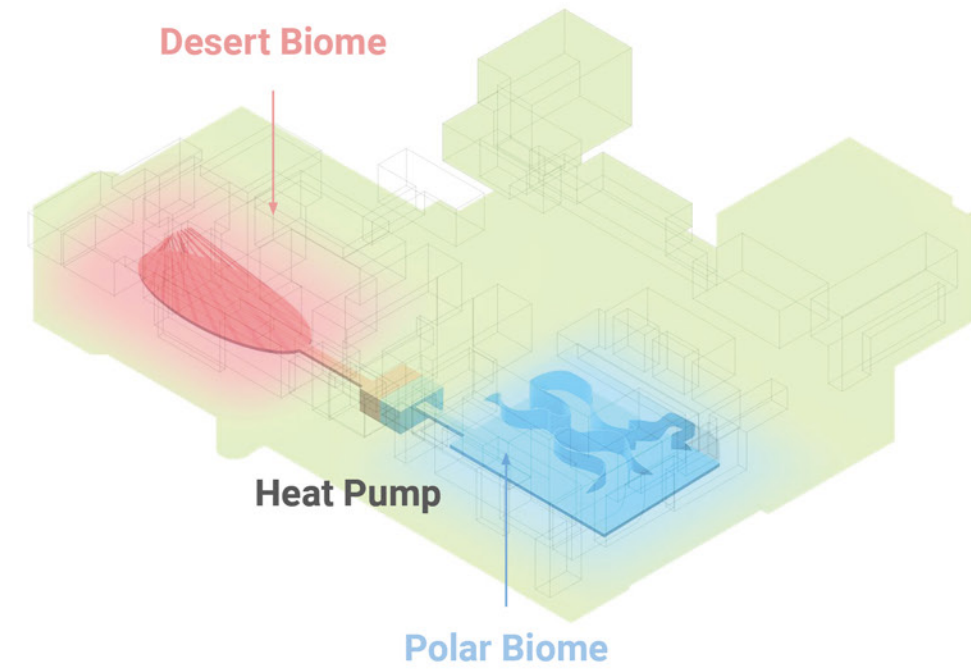
Temperature Flows: Summer



Humidity Flows



Humidity Flows



One evitable question should be asked: What does it mean to be a museum of natural history today?

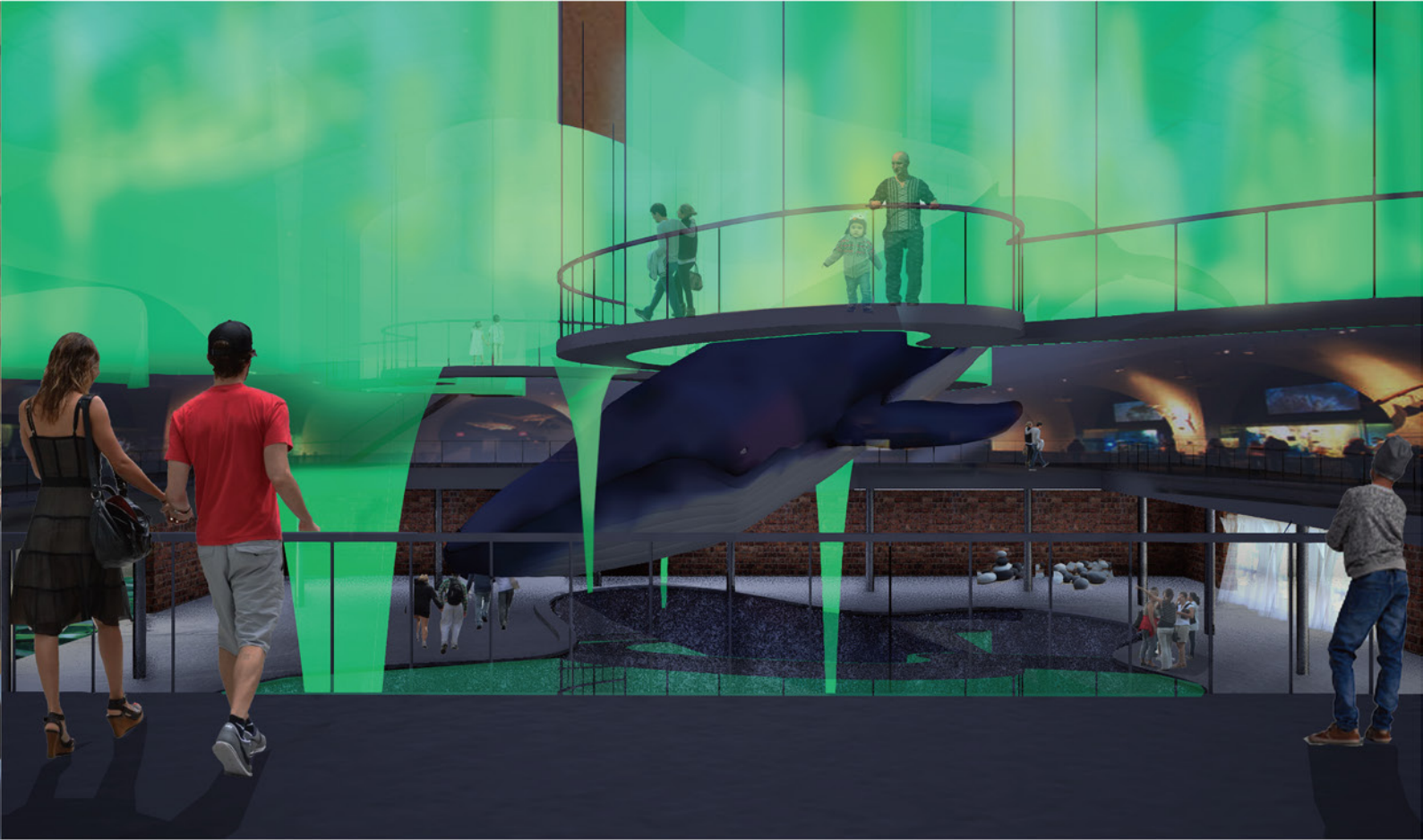
As our inspiration, instead of seeing nature as something that can be observed and studied through dioramas, nature is a part of the space people can see themselves in through the experience of climate. Now we view nature is not categorized by humans, nonhuman, plants or animals, but by different biomes that are caused by different climates.

Instead of a museum that closes itself off from nature, it brings nature into the museum. We rebuild the museum using temperature and humidity, and in doing so, dissolving the building itself.

Temperature is a key element that we experience the change of nature. And also for human activities, the comfortable temperature is different. So, a building with reasonable distribution of heat level not only can save energy, but can also satisfy different needs for temperatures.

Same as temperatures, humidity is another sense that tells us what kind of nature that we are in. By cooperating with temperature, a whole environment for different biomes can be sustained.

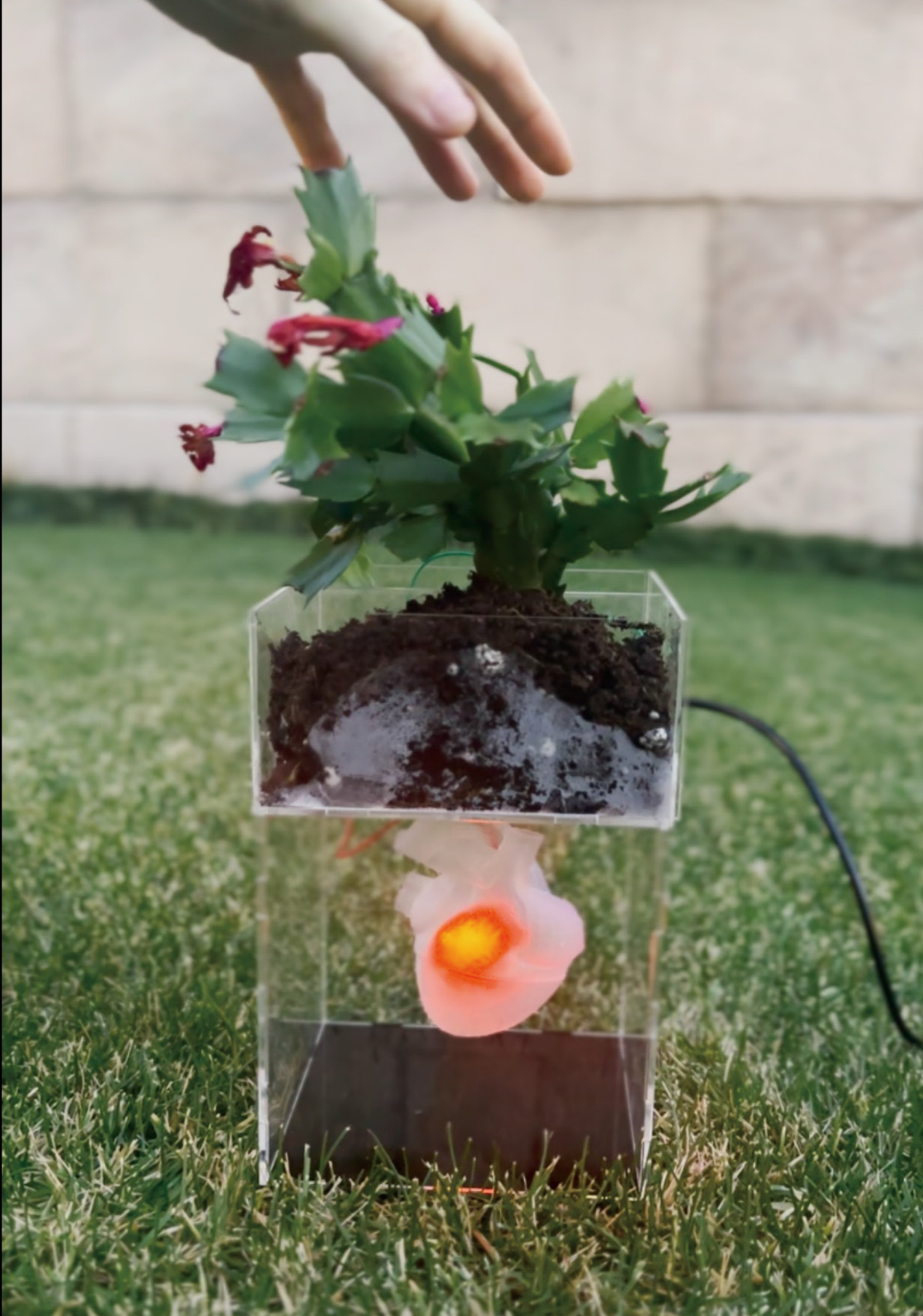
So we want to realize the concept of biomes in the existing buildings. And we designed two core biomes to drive all other biomes: one is the hot desert biome, and the other is the cold polar biome. When air flows from polar to desert, temperature in between will increase gradually, forming different biomes.



Our spaces combine industry and nature. Nonhumans and humans exist in a space where they must live together. In these spaces, nature is recognized as something fragile, and easily affected by people. Future museums should not serve as centers of display, but as a tool that changes the fundamental way people experience nature. Nature is not limited to visual displays of nature but is something that is experienced through sight, sound, temperature, humidity, wind, and more. In this way, our new museum of natural history creates a new relationship to nature that realizes the damage that humans have created within the environment. Future museums should show how we human are connected to nature, and imagine a new future that stems from this original relationship with nature.



SECTION THROUGH DESERT AND POLAR BIOMES



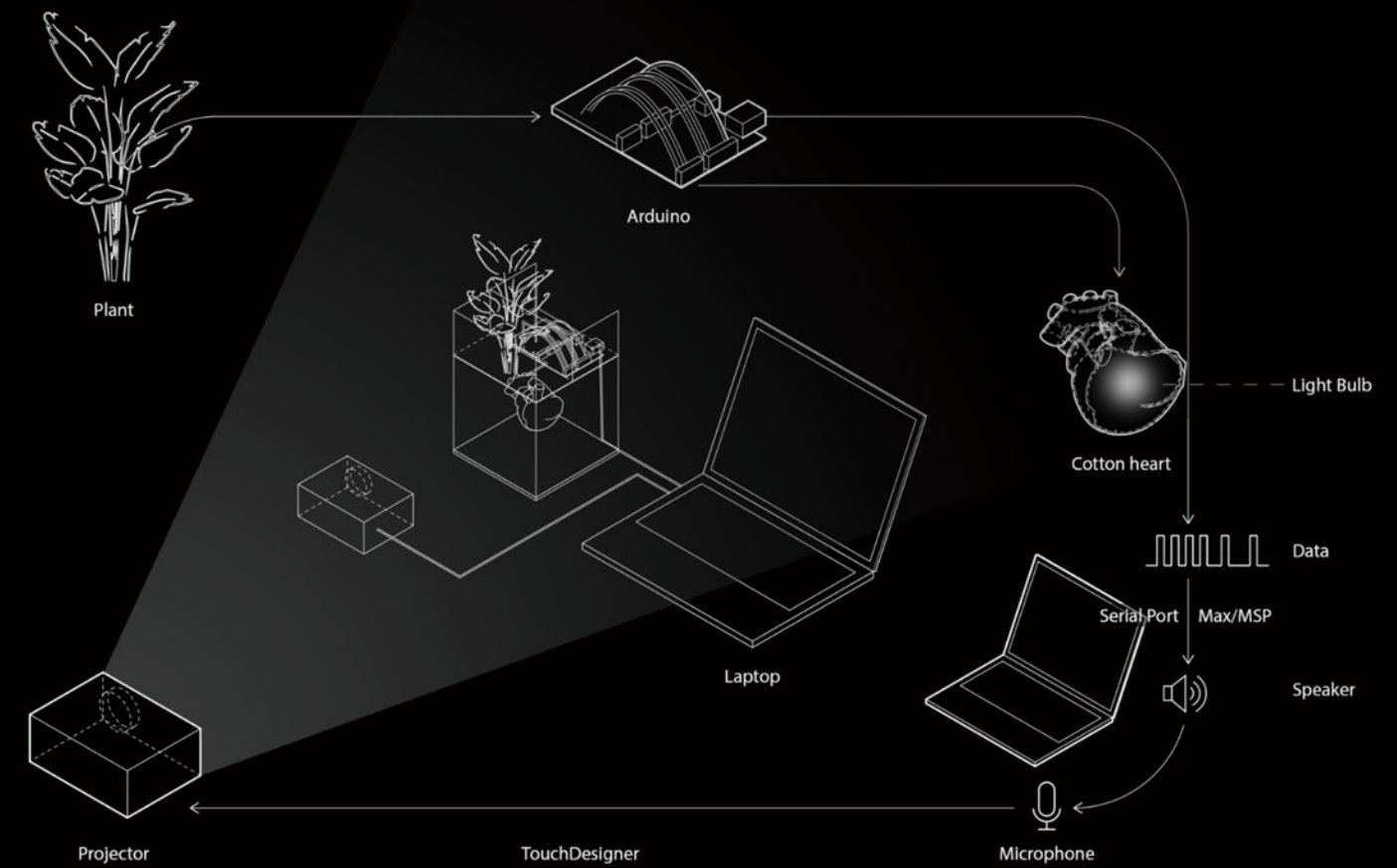
Resonance

Fall 2022 - Environments Animals Technologies

Instructor: Gal Nissim

Collaborator: Junling Zhuang

PROBLEM&RESEARCH | Methodology



Abstract

During the English rule, real estate development in Manhattan not only went north but also expanded the waterfront (see fig. 1). Based on the study of real estate development and the policy during the English Period between 1664 and 1763, this article analyses the means and extent to which the British colonial government influenced real estate development and summarizes the characteristics of these influences.

Study on the influence of English colonial government on real estate development in Lower Manhattan during the English Period (1664-1763)

Fall 2022 - New York Rising: How Real Estate Shapes The City
Instructor: Thomas Mellins, Kate Ascher
Solo Work



Figure 1. Comparison of the development of Manhattan before and after English colonization.

Left: The Duke's Plan of New York, 1664 (British Library)

Right: The Ratzer map of New York City, 1767 (Durst Collection)

This article limits the scope of the study to the period from 1664 to 1763. After 1664, the British replaced the Dutch as the colonizer of Manhattan, which began to influence Manhattan real estate. In 1763, Manhattan entered the revolutionary period, and the government's energy shifted to the war, so the discussion in this article does not include this period.

In the early days of English colonization, Manhattan's development was still in a very early stage. Not only the large tract of land north of Wall Street has not been developed, but even the interior of the wall has not been fully developed, there is still much vacant land with development value. After research, I summarize that the English colonial government controlled the development of real estate through a Three-Step Process, namely: 1. "Survey the land", 2. "Plan the streets and divide the lots", 3. "Sell, lease, or transfer the land in a planned way". Land surveying is the basis for the next two steps. "Planned sale, lease, or transfer of land" in most cases refers to the conditional sale, lease, or transfer of land, and in a small number of cases, it refers to the sale, lease, or transfer of land to a specific person or group.

Through the Three-Step Process, the colonial government influenced real estate development in lower Manhattan from six aspects. First, the colonial government developed real estate in the city of Manhattan more thoroughly. This refers to the creation of many new properties using vacant land that the Dutch government had not developed within the walls of the Dutch period. For example, in 1686, for the vacant land within the city near the dock, from the weigh-house to the City Hall, the colonial government first ordered surveyors to survey the area (Phelps 1915, 177). After the survey, the government planned a new road, Dock Street, and laid out the area in lots of eighty feet deep by twenty-

four broad. In the end, 14 lots were developed. Originally, the Dutch colonial government was loose on the development of real estate in the city, but the English government made more thorough use of the land in the city, which made more efficient use of the land and created more real estate for the city.

Second, the colonial government promoted the development of real estate outside the city. During the Dutch period, real estate development was confined within the city walls. However, during the English colonial period, the city walls were dismantled, and under the impetus of the government, the real estate developed not only to the north, but also to the waters beyond the waterfront. For example, for the lots between high and low water on the North River (present Hudson River), from the fort to Trinity Church, as a first step, the government assigned a committee to survey the land outside the city in 1723 (Phelps 1915, 191). Although estate development did not begin immediately after the survey, in 1751 the government pushed for expansion beyond the city boundaries by conditionally granting the land to Trinity Church (197). The condition for the Trinity Church to acquire the land is to build three roads: one at the high-water mark, the second at the low water, and the third at 200 feet beyond low water (see fig. 2). This is equivalent to extending the boundaries of real estate development beyond the waterfront by at least 200 feet. In this series of processes, the planning of these 3 roads must have happened before the government gave the land to Trinity Church. Therefore, the whole process can be summed up as follows: the government carried out the first step of surveying the land in 1723, the second step of planning the road between 1723 and 1751, and finally realized the development of the real estate by granting land to Trinity Church in 1751. The end result is that real estate is developed outside the city under the impetus of the government.

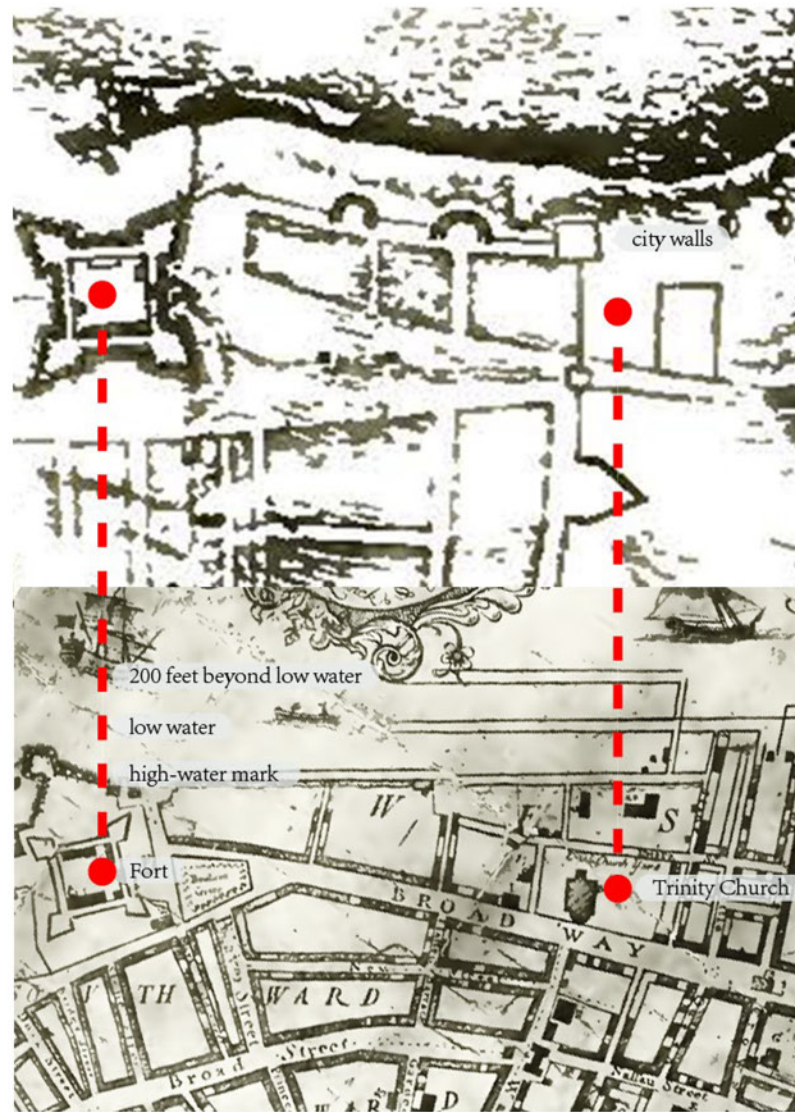


Figure 2. Real estate development beyond the waterfront

Top: *Plan de la nouvelle york, 1692* (Phelps 1915, 332)

Bottom: *A plan of the city of New York from an actual survey, 1754*

(Library of Congress)

Third, when the colonial government developed new real estate, it also affected the renewal of existing real estate. In 1744, contamination problems at Montgomerie Ward were severe and infectious diseases were prevalent (Phelps 1915, 197). Factories dumped waste into street gutters. The environment

in the whole area was very poor. So the government first arranged for Francis Maerschallck to do survey work. Then based on the survey work, the government arranged a committee to design new streets. Coupled with the promulgation of relevant laws, Montgomerie Ward had been improved. Because it was urban renewal, the government did not carry out the third step of the Three-Step Process, "Sell, lease, or transfer the land in a planned way". Instead, it issued laws to regulate the operation of the area, so that the real estate can be healthily developed after improvement. Parts of the city sometimes have many problems under the condition of laissez-faire development. At this time, government intervention is very important to solve urban problems. The English government did not ignore the problems of existing real estate while developing new real estate, and actively influenced the renewal of existing real estate.

Fourth, the government can control the type of real estate. In 1691, the colonial government sold a lot in Garden Street to Samuel Bayard on the condition that he could only use the lot as a church building (Phelps 1915, 182). In 1696, the government sold a small parcel of land outside the city's North Gate to managers of the Church of England after learning that they needed to build a church in Manhattan (183). Although the government did not ask them to build a church on the land, the government knew they were the specific group that wanted to build a church. As a result, the government still controls the real estate type of the land outside the North Gate. In 1733, the government leased the land in front of the fort to John Chambers, Peter Bayard, and Peter Jay at an annual rental of a pepper-corn, on the condition that they make the land a park (present Bowling Green) (195). It can be seen that the government mainly controls the type of real estate through the third step of the Three-Step Process "Sell, lease, or transfer the land in a planned way".

Fifth, the government can also control the scale of real estate. In 1691, the government sold 13 lots lying between the Burger's Path (Old Slip) and the block-house, on the condition that buyers fill up the front of each lot entirely with one house, two full stories high (Phelps 1915, 182). The government can control the scale of the real estate through the last two steps of the Three-Step Process. In this case, corresponding to the second step "Plan the streets and divide the lots", the government has actually limited the real estate scale of each lot when dividing the 13 lots. And corresponding to the third step "Sell, lease, or transfer the land in a planned way", the land purchase conditions finally made the entire row of buildings along that street controlled to be 2 stories high. Combining these two steps, the scale of real estate has been controlled by the government in three dimensions.

Sixth, the government also controls the relationship between real estate and the city. As mentioned in the third point above, in 1751, Trinity Church acquired the land on the condition that it needed to develop the land according to the government's plan for the city, by building three north-south roads (Phelps 1915, 197). These three roads now correspond to Greenwich Street, Washington Street and West Street from east to west, and they all extend to Midtown (Washington Street and West Street were later interrupted by various buildings, and they were basically continuous at first) (see fig. 3). These three important north-south roads not only determine that the main circulation of the real estate is north-south, but also make the land as the starting point of these three roads in lower Manhattan an important part of the city's north-south traffic. The government also uses the last two steps of the Three-Step Process to control the relationship between real estate and city. In this case, corresponding to the second step "Plan the streets and divide the lots", the government has already planned the relationship between

the new real estate and the surrounding cities when planning the three roads. And corresponding to the third step "Sell, lease, or transfer the land in a planned way", the government finally used Trinity Church to realize his plan for the land.

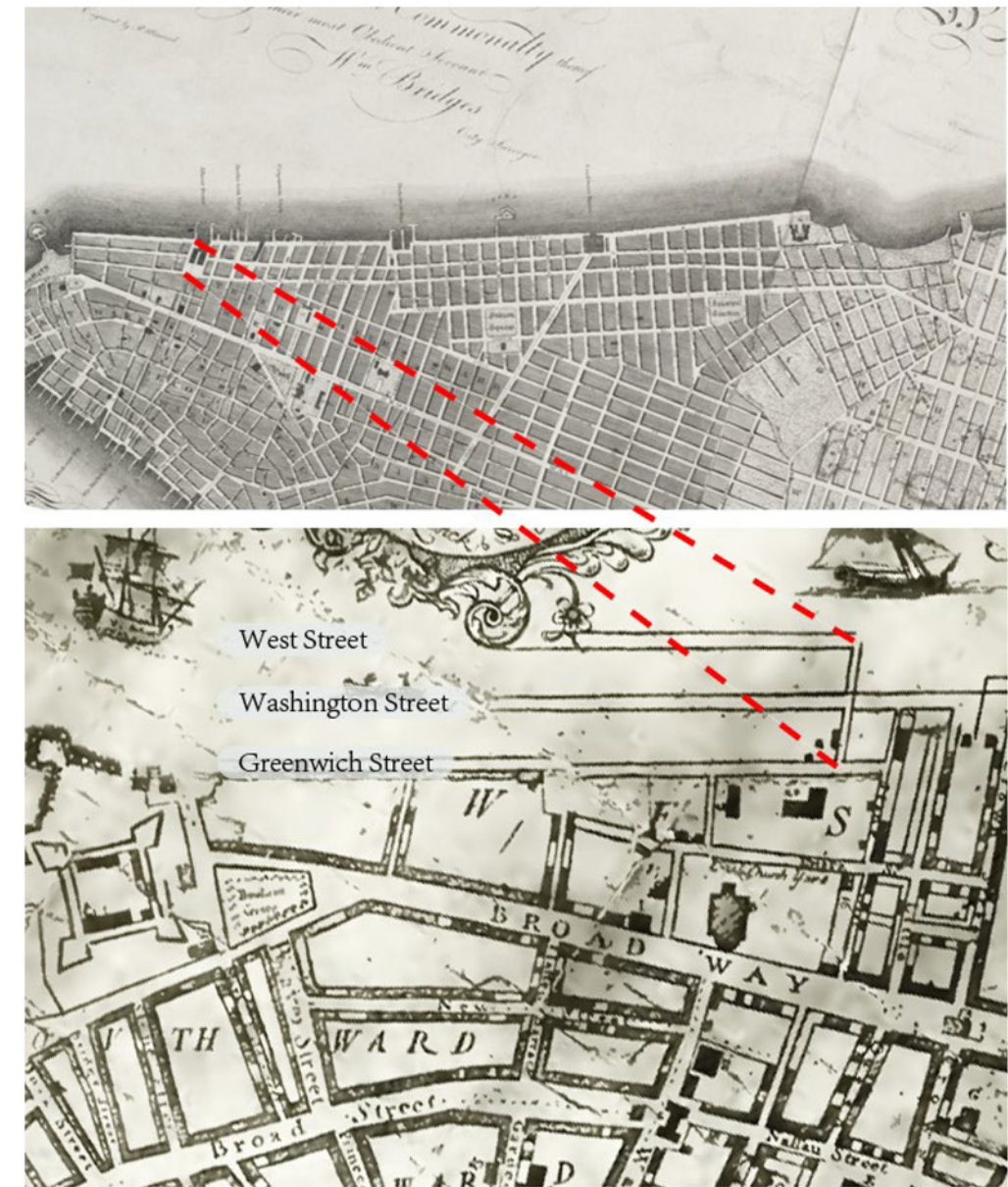


Figure 3. The relationship between real estate and urban planning

Top: *The Bridges Map, 1811 (NYPL)*

Bottom: *A plan of the city of New York from an actual survey, 1754*

(Library of Congress)

Through the above analysis, we can find that the influence of the colonial government on the development of lower Manhattan real estate is various, and these influences have two characteristics.

First, the influence of colonial governments on real estate development was unsystematic and random. It's not as systematic as the 1811 plan, which was so large that it covered almost the entire Manhattan. Colonial governments always conduct surveys and planning work on a small scale before selling, leasing, or transferring the land. The table below (see fig. 4) contains some real estate developments during the English colonial period and their scale is limited to the scale of a short street, usually including a dozen lots. Moreover, the motivation for each real estate development is very random. For example, the reason for the two real estate developments in 1686 was that the government sold the land in a hurry to pay off the debts (Phelps 1915, 177). If there is no debt, the government may not be in a hurry to develop real estate. This also makes some real estate development actually passive. Unlike the 1811 plan, which was very proactive, the government planned almost the entire island up to Upper Manhattan when the city's development was still concentrated in Lower Manhattan. Although the real estate development in the two periods essentially followed the principle of planning streets and dividing lots after survey, it can be seen from the difference between the grid in Lower Manhattan and Midtown that the unsystematic development of real estate in the English colonial period made the grid relative to 1811. The grid shape of the year is very irregular.

Time	Motivation	Location	Scale
1686	Paying debts	The dock - the City Hall (177)	14 lots
1686	Paying debts	Gansevoort Street (177)	16 acres
1691	-	Burger's Path - Beekman Street (182)	13 lots
1723	-	The fort - Trinity Church (191)	-
1759	-	Bloomingdall Road, Great George Street (200)	-
1761	-	Vesey, Division, and Franckfort Street (200)	-

Figure 4. Table of Motivation and Scale of English Colonial Real Estate Development

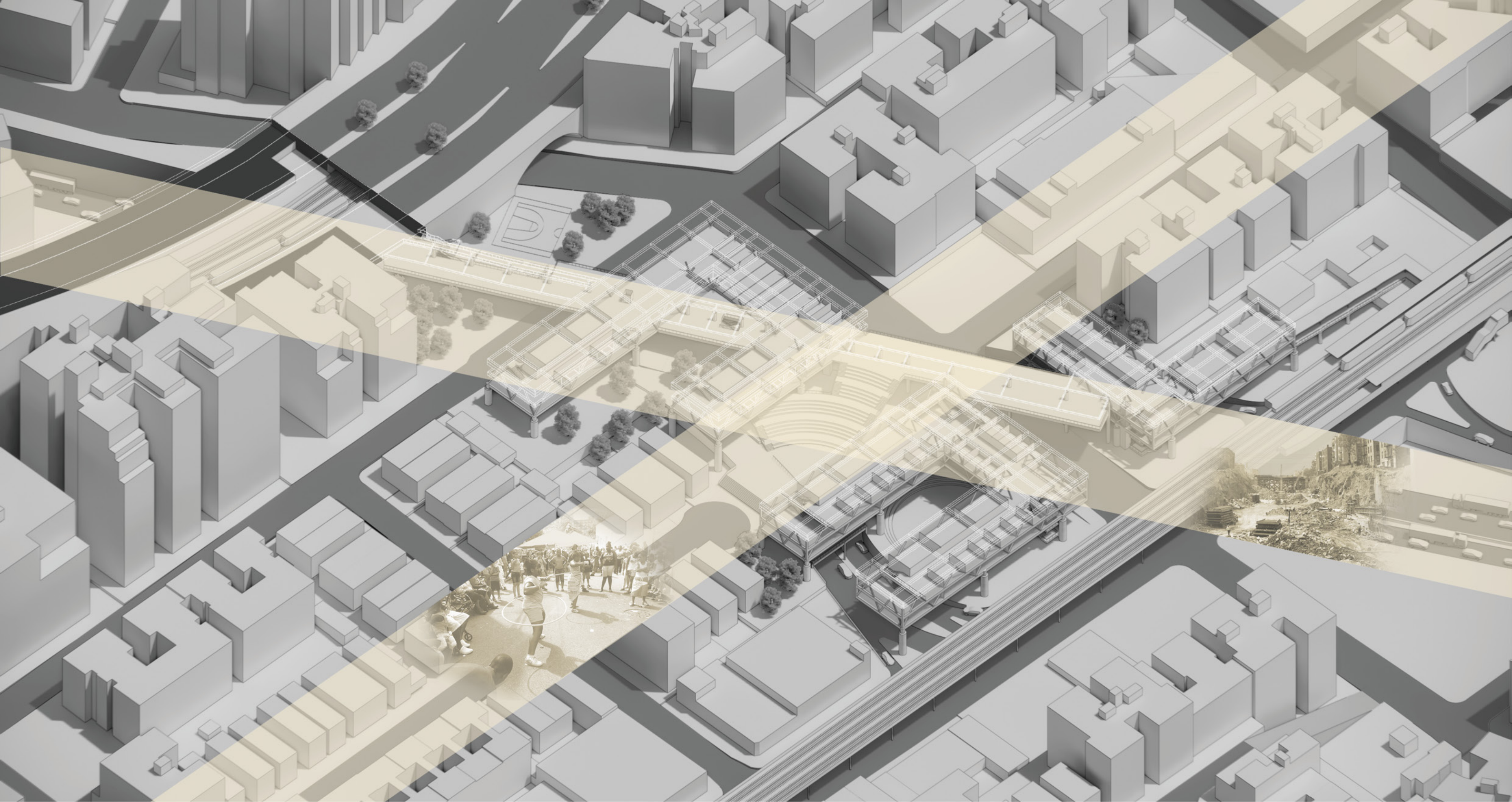
Second, I think the colonial government's high degree of control over real estate development largely restricted the free development of the real estate. Because the undeveloped land is actually owned by the government, people other than the government need to buy land from the government before they want to develop new real estate in Lower Manhattan. The government's strategy for selling land is "Sell, lease, or transfer the land in a planned way". Ultimately, individuals or groups must develop real estate in accordance with the government's requirements. This makes the type, size, etc. of the final real estate under the control of the government. In addition, some policies also greatly restricted the free development of the real estate. For example, in 1725, the government made the Wall Street market near East River the only place in the city where corn, grain, and flour could be sold (Phelps 1915, 191), which actually restricted the development of commercial real estate elsewhere.

To sum up, the colonial government, as the owner and policy maker of undeveloped land, used

these rights to make the real estate of Lower Manhattan develop according to its own wishes, and controlled the development of the real estate from all aspects, one of the main means It is the Three-Step Process summarized in this paper. Although compared with the Dutch colonial period, the English colonial government greatly promoted the development of the real estate, compared with the 1811 Plan after the independence of the United States, the colonial government greatly restricted the development of Manhattan.

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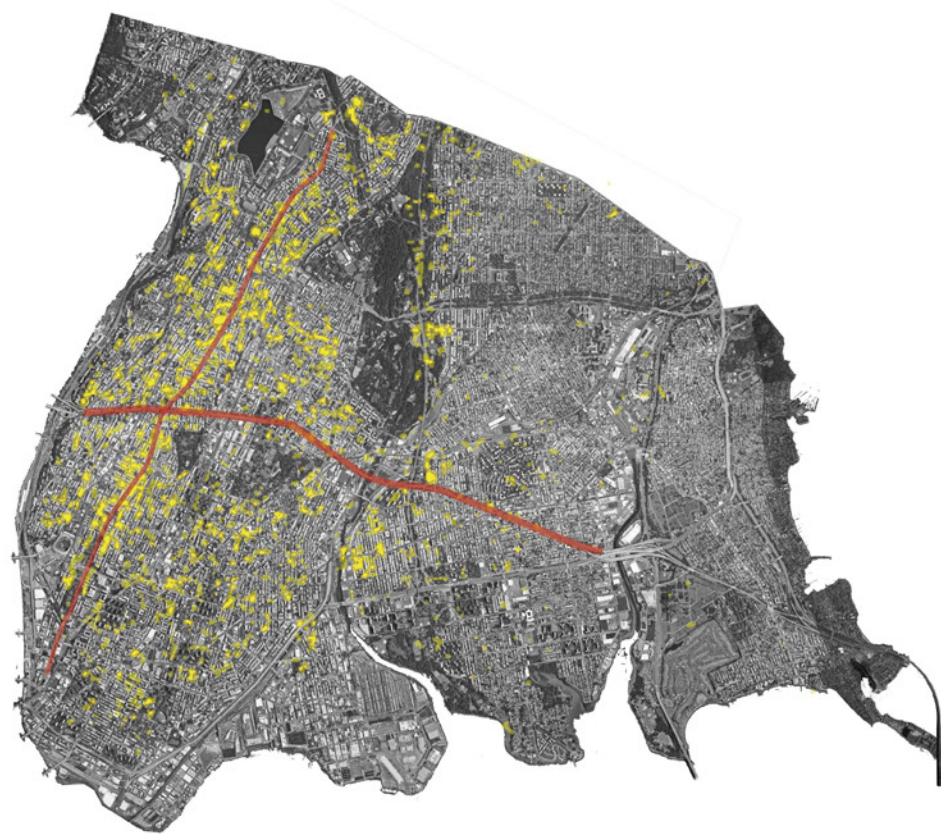
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Capping, From Conflict To Coexistence

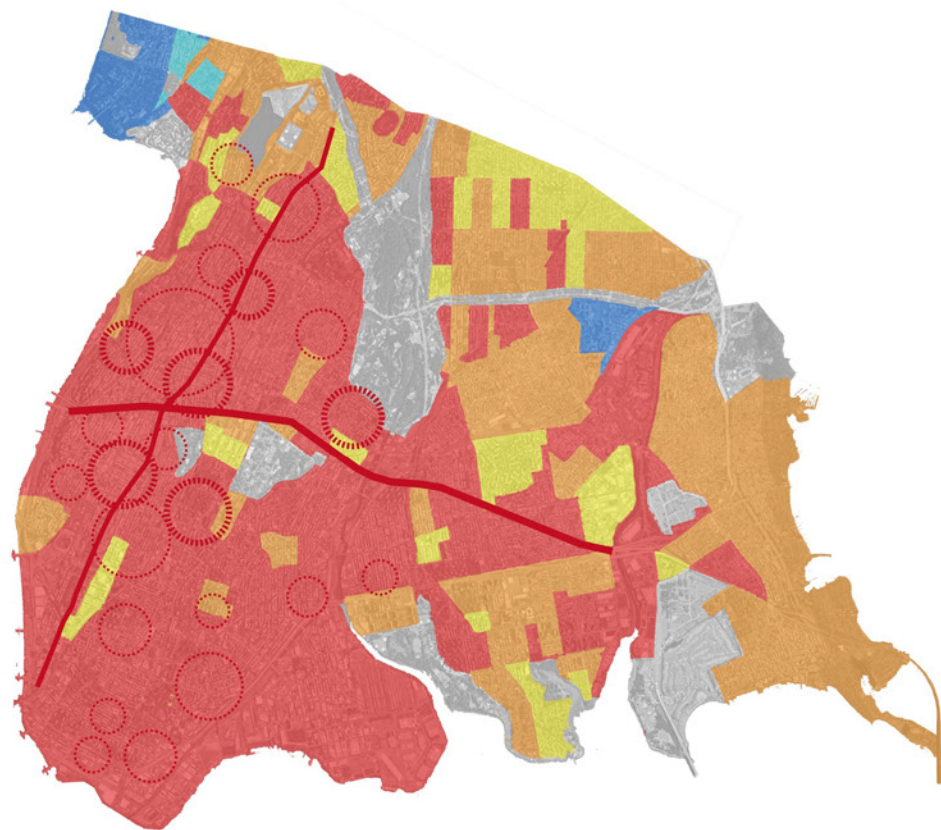
*Adult Education School As A Monument Of **Bronx Community and Cross**
Bronx Expressway*

Fall 2022 - Advanced Studio V
Instructor: Michael Bell
Solo work



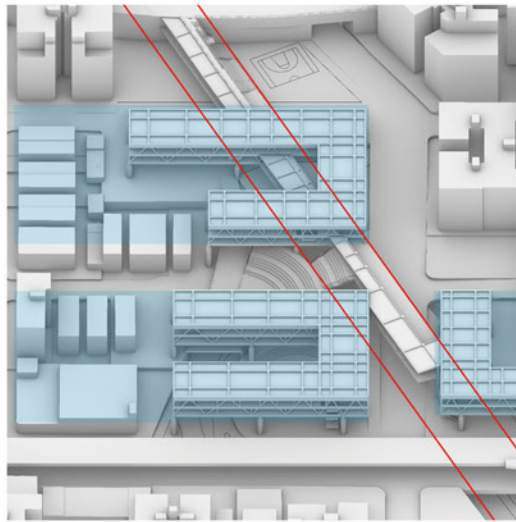
Raise a question

Capping the CBE is a kind of urban renewal, but renewal will bring gentrification. The residents will be faced with eviction and cannot benefit from the renewal. So I raise a question that how to both cap the CBE and benefit the residents? This illustration shows the eviction in the Bronx. The north-south road in the picture Grand Concourse has already under renewal, which leads to the apparent eviction along it.



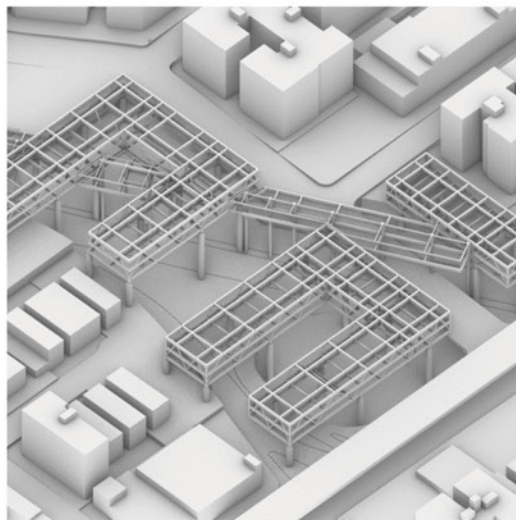
Solution

I think building school and affordable housing on the basis of capping CBE can solve the eviction problem. Although affordable housing is a top priority. But the key is school, because eviction can be fundamentally solved only by improving education and thus increasing income. This illustration combines the education attainment and poverty issue in the Bronx. The color blocks represent the education level, and the circle represents where the poor concentrate. The red region represents that the region's most common education level among adults (25 years and over) is less than high school. The intersection of Grand Concourse and CBE is a center of low education and poverty, and a center of transit. So I choose this place as the site to design the school

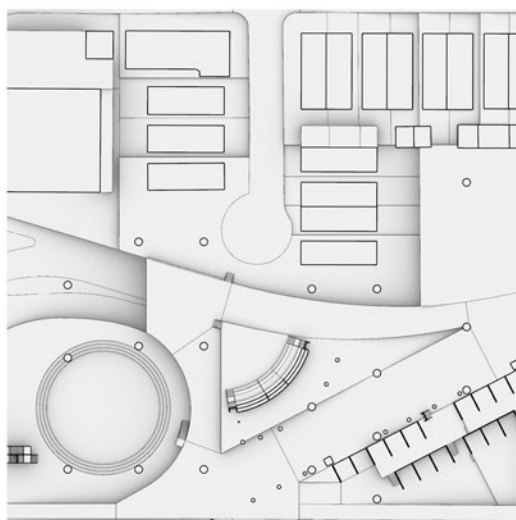


Conflict In The Past

I. The architecture consists of a corridor connecting two subway stations and a school continuing the community mechanism. Conflict is expressed through the contrast between the corridor and the school. The corridor continuing the direction of the CBE (as the initiator of the conflict) is inserted obliquely into the school.



II. Second, conflict is also expressed through the stillness of the school and the movement of the corridor. The conflict between movement and stillness has 2 sides. The first side comes from the people in the two spaces, the fluidity of the corridor as a traffic space itself and the quiet learning atmosphere of the school. The second side comes from the structure. The structure of the school and the corridor are separated. The school are supported by anti-seismic structures, while the corridor is supported by ordinary structures. This keeps the interior of the school stable without being affected by the CBE vibration, while the corridor will be affected by the CBE.



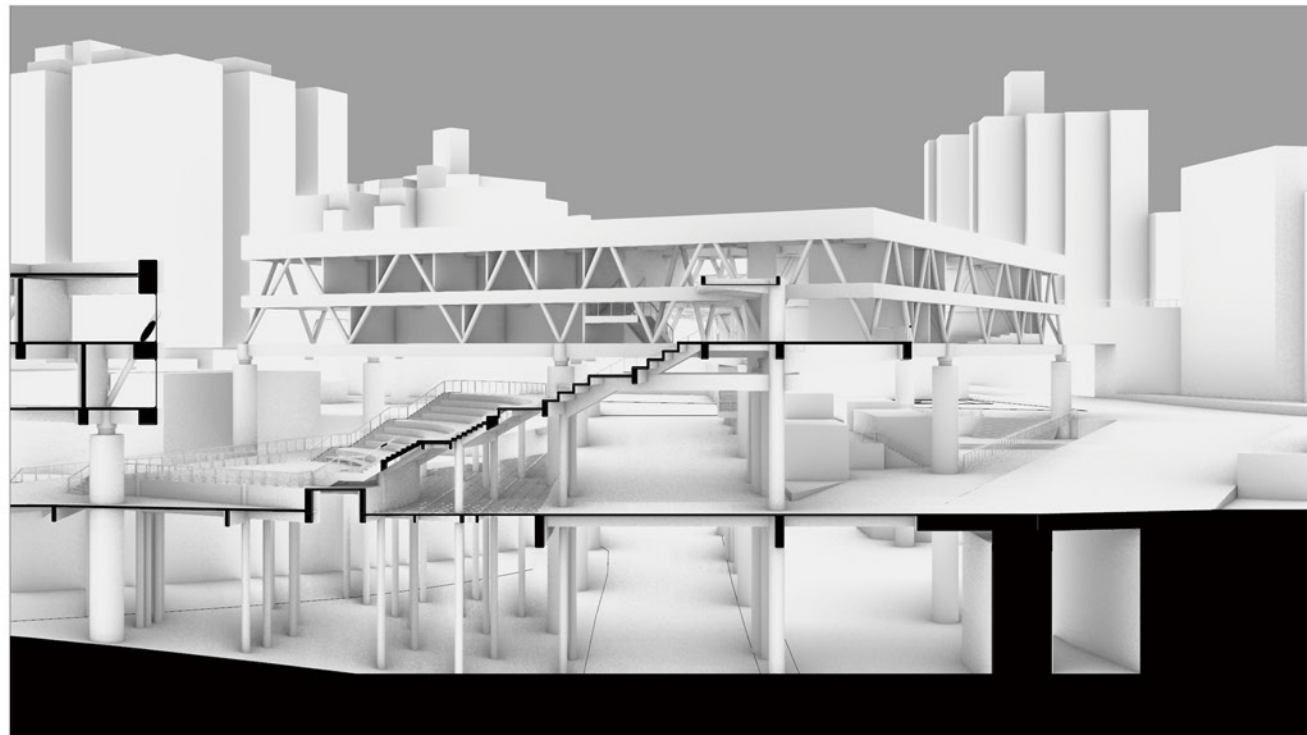
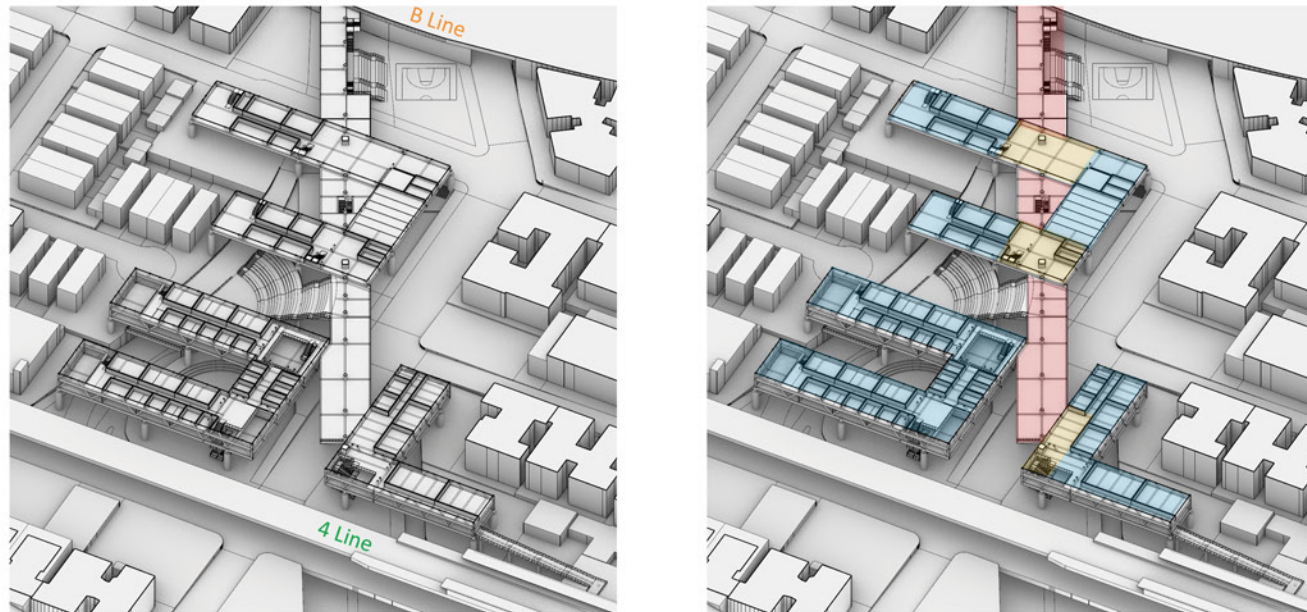
III. Third, the conflict is expressed through the contrast between the layouts of the elevated ground floor of the school and the community. The public space on the first floor is arranged according to CBE, which is in stark contrast to the layout of the community grid.

Coexistence In The Future

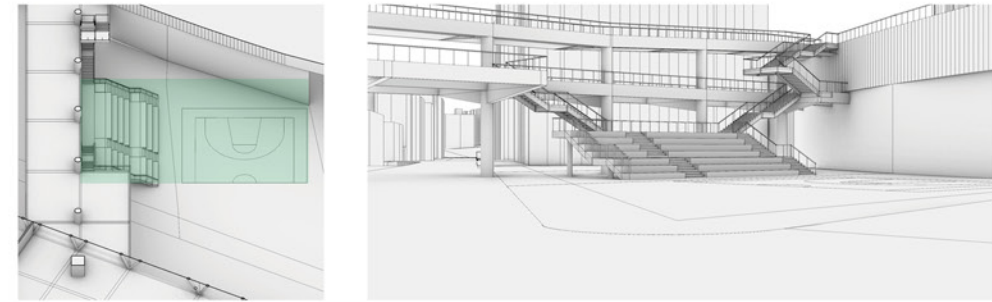
I. On one hand, the coexistence of CBE and the community is expressed through the combination of corridors and schools. The corridor connects two subway lines with the school as the center, becoming the main access for Bronx residents to reach the adult school

Architecture is divided into three types according to whether the structure is seismic-resistant or not and the characteristics of the people.

1. Corridor: With ordinary structures, will vibrate with the CBE, and as a traffic space, people have strong mobility.
2. School: stable because of the seismic-resistant structure, and the mobility of people is weak.
3. The intersection areas between the corridor and the school: stable because of the structure, but as traffic spaces, the mobility of people is strong. The intersection areas act as buffers and transition to connect the corridor and the school as the architecture acts as a monument to connect the history and future of CBE and Bronx.



II. On the other hand, the future coexistence of CBE and Bronx is expressed through the underlying service space that serves schools and surrounding communities based on the CBE grid.



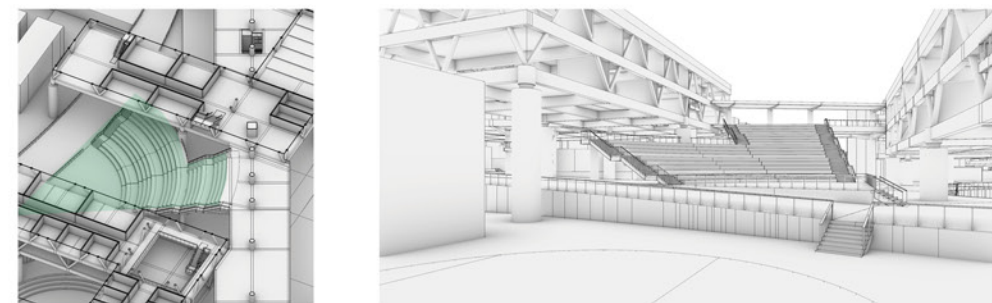
1. The basketball court promotes residents' sports and improves the health of the community



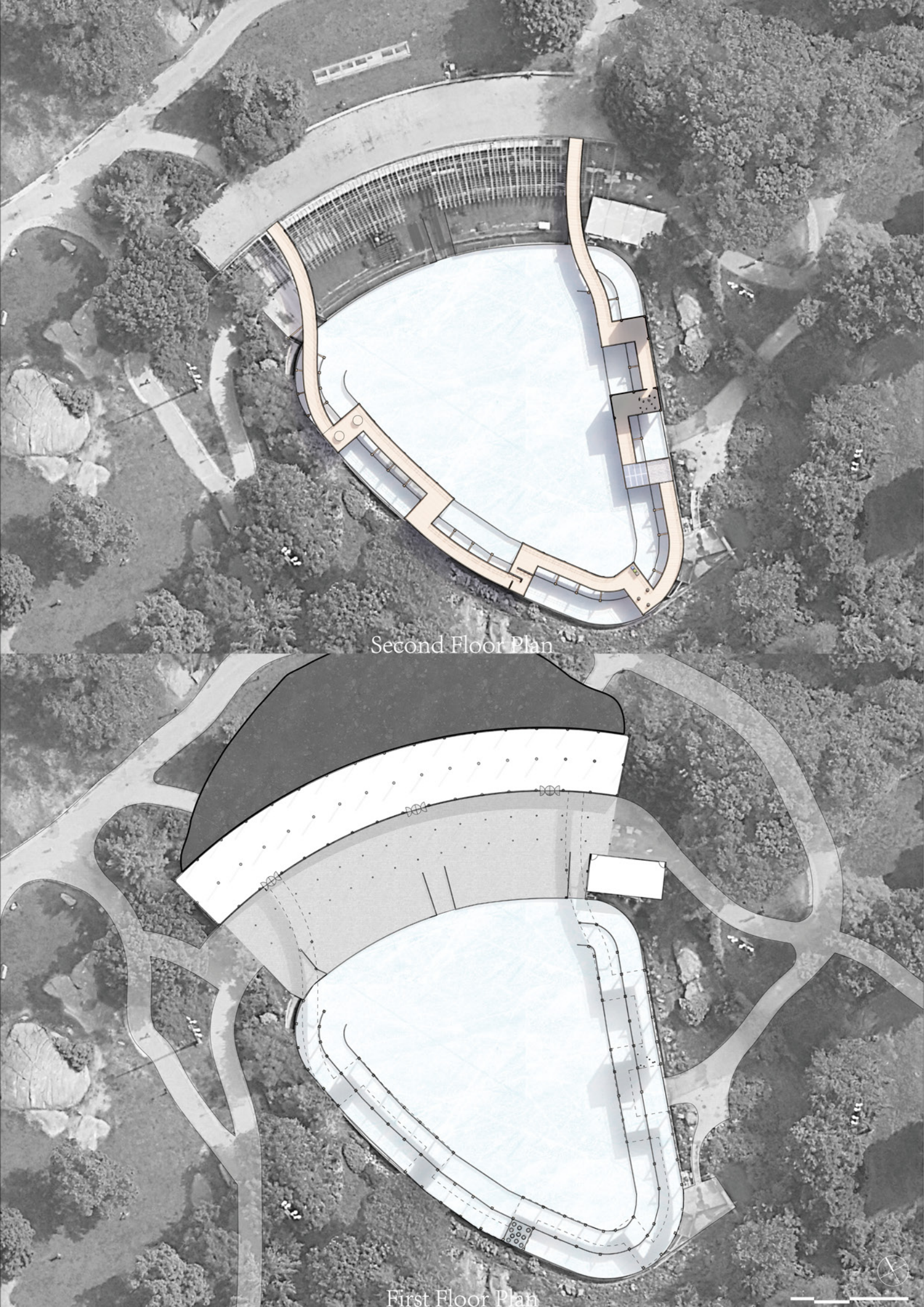
2. Shopping Street attracts people and enhance neighborhood vibranc



3. Children's Park provides child care services for mothers who are in school, which is also a new playground for children in the surrounding community



4. The Amphitheater serves as a venue for community gatherings and events.



Second Floor Plan

First Floor Plan

Wollman Loops

Gallery in Central Park As A Monument Of Anthropocene

The Wollman Rink in Central Park serves as the site for a project that aims to raise awareness about climate change in the Anthropocene era among tourists. By creating obstacles in the skating experience, the project seeks to demonstrate that human carbon emissions could render the rink unusable in the future.

A circle of air corridors surrounds the Wollman Rink, with two loops on the first floor: the red Anthropocene loop and the blue low-carbon loop. The Anthropocene loop features a series of obstacles, while the low-carbon loop offers an unobstructed skating experience. In addition, an orange loop on the second floor, the air corridor, takes people through seven themed spaces that explain the seven causes of climate change as identified by the United Nations.

Summer 2022 - Advanced Architecture Tutorial
Instructor: Kabage Karanja, Stella Mutegi
Solo Work



As soon as humans mastered the technology of cultivation and animal husbandry to obtain food, we began emitting large amounts of greenhouse gases into the atmosphere. Meat production, in particular, emits more carbon than vegetable production. To encourage people to eat less meat and more vegetables, the first space features models of meat and vegetable dishes on separate tables, with some meat models hanging on the lower layer of the meat table, interfering with skaters in the Anthropocene loop.

Moving to the second space, deforestation for farming and grazing releases greenhouse gases. However, by utilizing timber from tree farms instead of cutting down natural forests, we can reduce the greenhouse effect. Moreover, this architecture is made mostly of cross-laminated timber produced by tree farms, which embodies the low-carbon concept itself.

In the third space, transportation has become the main source of greenhouse gases since the industrial revolution. This space promotes walking and cycling more and taking less transportation.

The fourth space addresses the large carbon emissions resulting from the manufacturing industry during the industrial revolution. While it may be unrealistic to prevent people from using new products, recycling goods after use can reduce the production of new materials and thereby carbon emissions. In this space, sorted recycling bins prevent garbage from affecting the low-carbon loop on the first floor, while unsorted bins pass through the floor and fall into garbage bags on the first floor, blocking skaters in the Anthropocene loop.

The fifth space addresses the carbon emissions associated with power generation, which increased during the electrical age. Renewable energy sources such as solar power emit almost no greenhouse gases and pollutants. The floors on both sides of this space represent two types of power generation methods: solar panels and coal piles.

In the sixth space, electricity usage in residential and commercial buildings results in a significant amount of carbon emissions. The density of lamps and lanterns in the space reflects the comparison of electricity usage habits.

Finally, in today's world, there is a disparity between the rich and the poor, with the richest 1% of the global population emitting more greenhouse gas emissions than the poorest 50%. To address overconsumption, a wall of shopping bags on one side of the last space represents the problem.