



The portfolio of Ralph Cheng



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Individual work Studio Mario Gooden 2022

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01

Wai: water in Hawai'i

Individual work Studio Mario Gooden 2022

[Hawaii/ water/ military/ colonialism/ alienation/ height/ reveal/ reconnection]

In Hawaiian, wai means water.

Life, society, and culture, everything on the islands, rely on the precious freshwater resource in the middle of the pacific. Ancient Hawaiian, Kanaka, coexisted with this hydro-system and built their culture around it. They defined their society system, Ahupua'a, with watersheds, cultivated the crops, and located themselves with water. Water has become the knowledge system that stores every story of Kanaka.

However, this knowledge system was alienated, incarcerated, and shattered by the colonizer. The concrete canal restrained the water and dried up the wetland growing rice and taro. The asphalt road that replaced the waterway system not only sealed Aina, the land, but also cut the sharing society into segments. Eventually, freshwater no longer met the sea in Hawaiian fish ponds. No more fish is raised, no more taro are grown. Since then, many stories have been forgotten. Only remembered by the water when it is flooding.

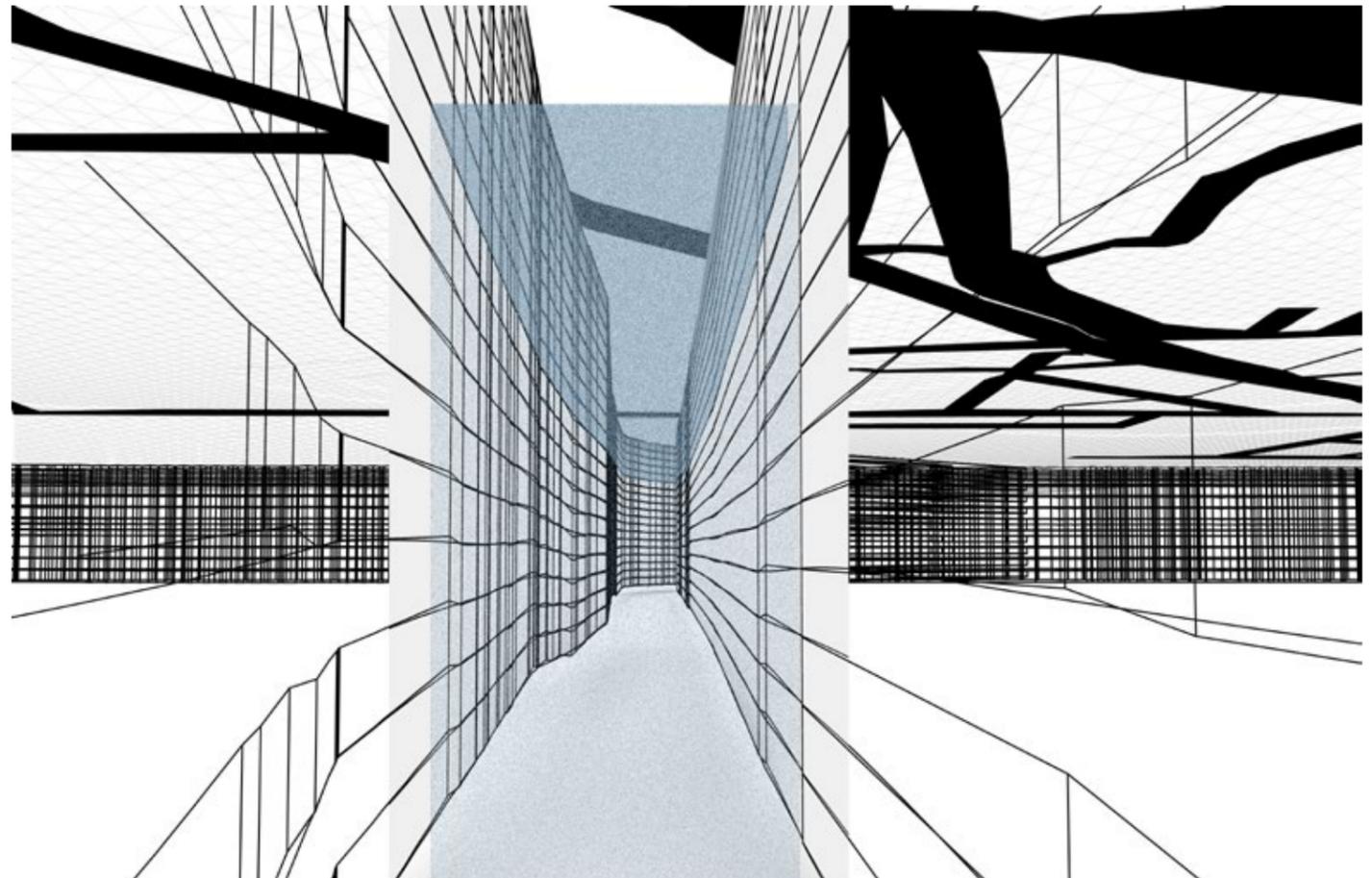
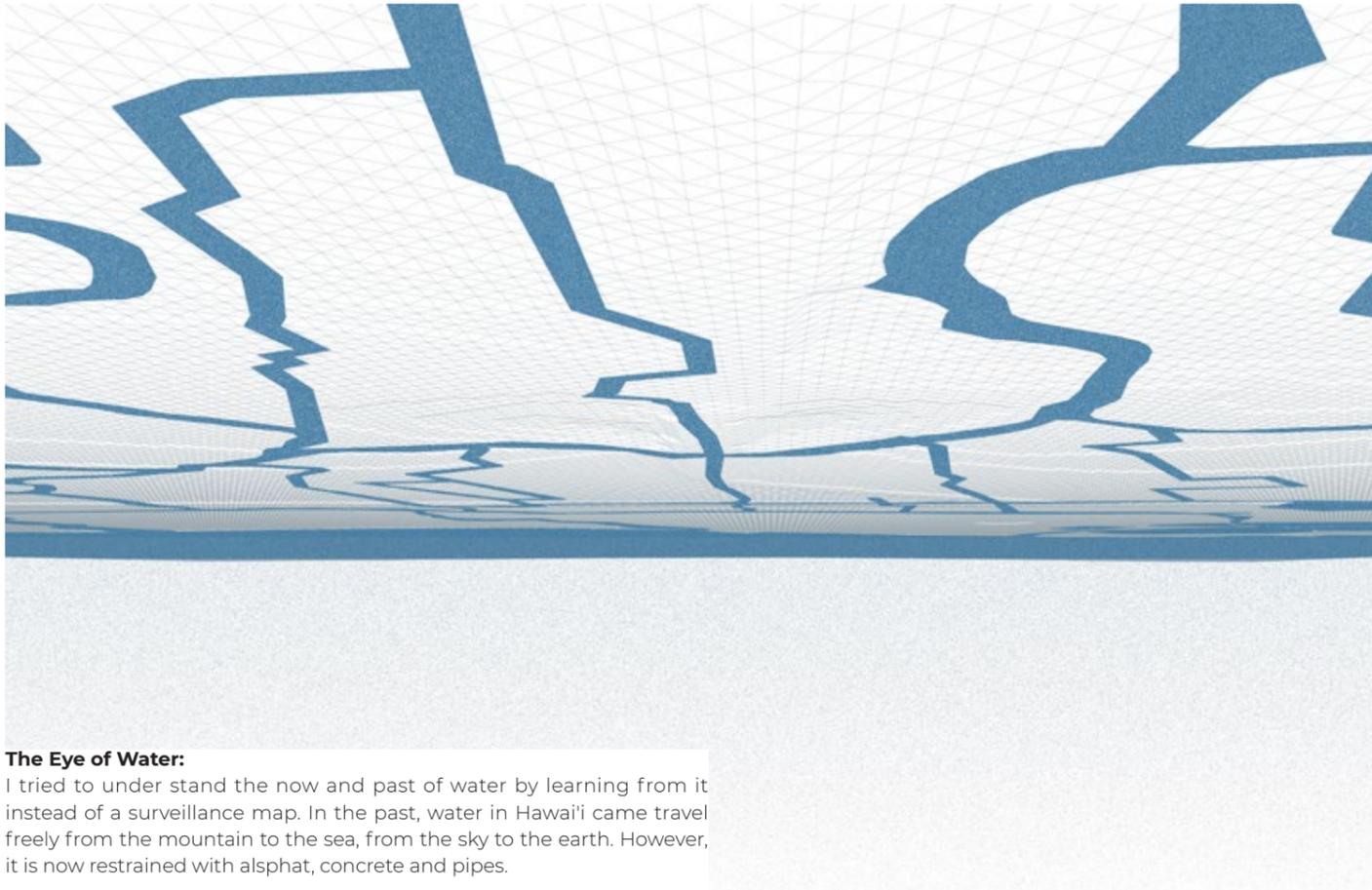
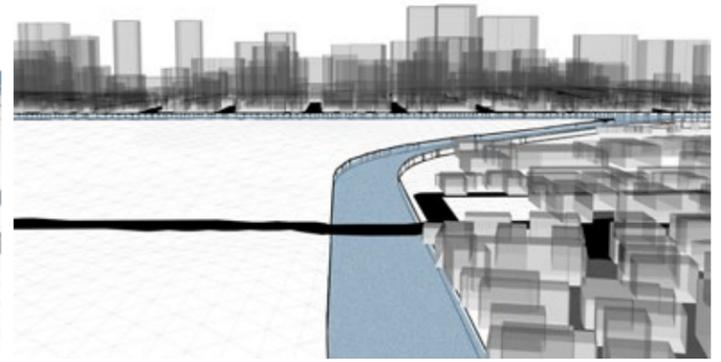
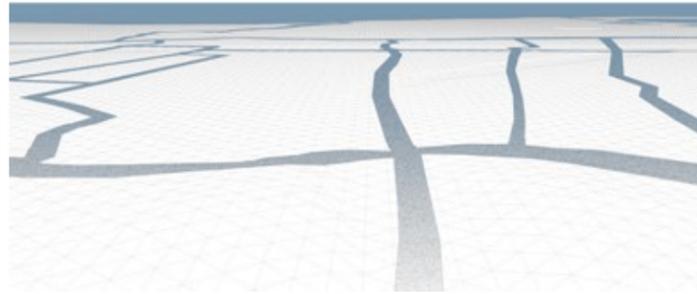
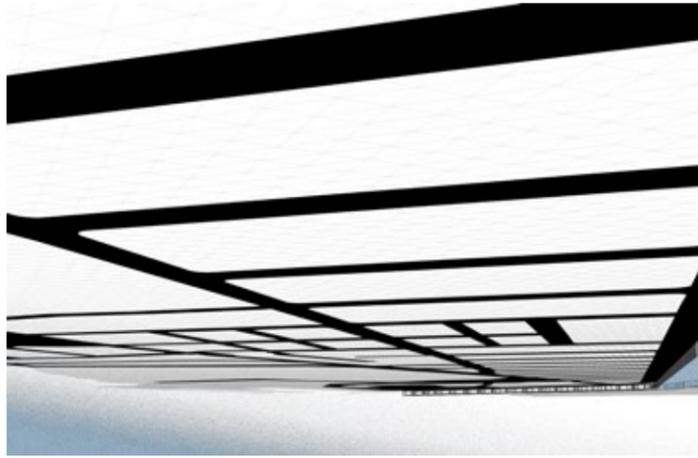




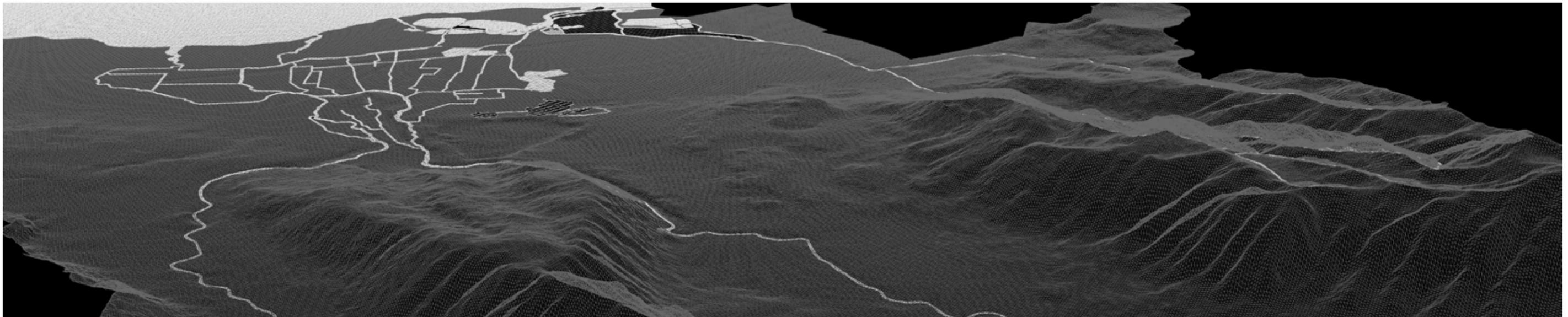
The Story of Water:

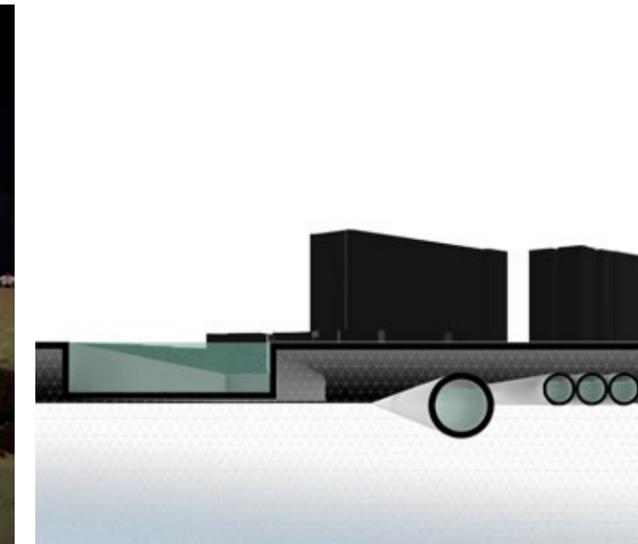
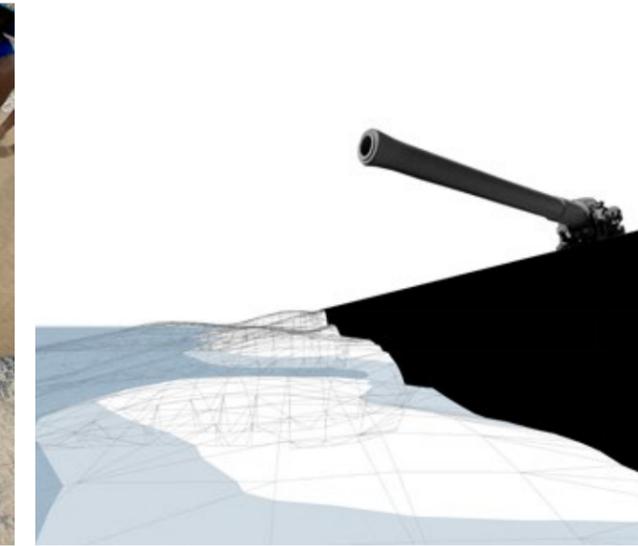
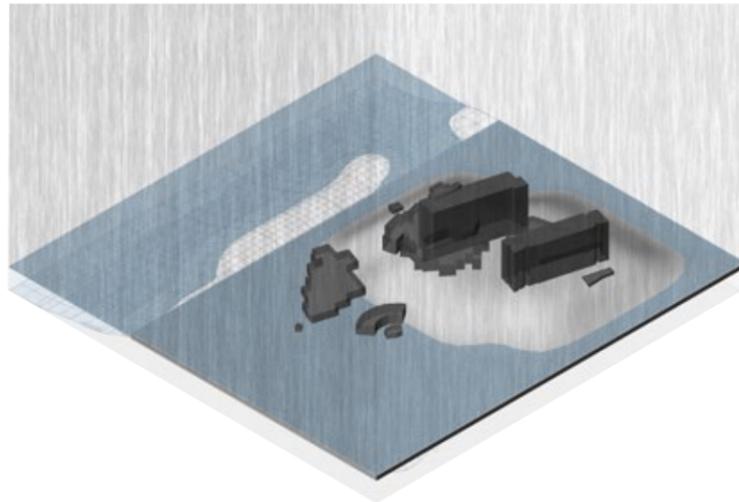
According to the development of language, it is believed that all the ancestors of Oceanian people started their journey from Taiwan. Therefore, at the very beginning of this project, I compared their myth of water. In Taiwan, these stories of water is always connected with damage and reborn because Taiwan is both relying on and threatened by the amount of water bring by typhoon.

However, in the version of Hawaii, water is always about food and life. Everytime Kanaloa feel hungry on their journey, Kane poked his rod into the earth. The water then gushed out from the ground and the two gods enjoy the food around it. If the stories about water were always so positive in the past, why do Hawaiian people have to face with flooding now? What happened? Who caused this modern sadness?



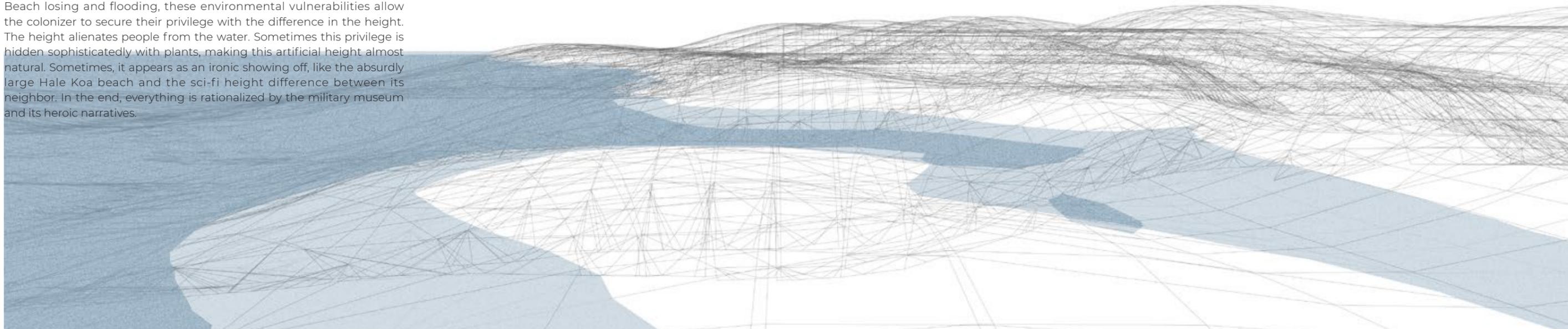
The Eye of Water:
I tried to understand the now and past of water by learning from it instead of a surveillance map. In the past, water in Hawai'i came travel freely from the mountain to the sea, from the sky to the earth. However, it is now restrained with asphalt, concrete and pipes.





The canal, the seawall, and the battery, all of these interventions led to the opposite effect. The Ala Wai canal becomes the reason for flooding. The existence of the battery and the seawall results in land loss of Waikiki beach before they secure the territory. Unsurprisingly, as the strongest force changing this island, the US military has already perceived the flooding future they caused. Therefore, when the military base was transformed into a recreational facility, Hale Koa, the foundation of the buildings was lifted 22 feet.

Beach losing and flooding, these environmental vulnerabilities allow the colonizer to secure their privilege with the difference in the height. The height alienates people from the water. Sometimes this privilege is hidden sophisticatedly with plants, making this artificial height almost natural. Sometimes, it appears as an ironic showing off, like the absurdly large Hale Koa beach and the sci-fi height difference between its neighbor. In the end, everything is rationalized by the military museum and its heroic narratives.





WAI

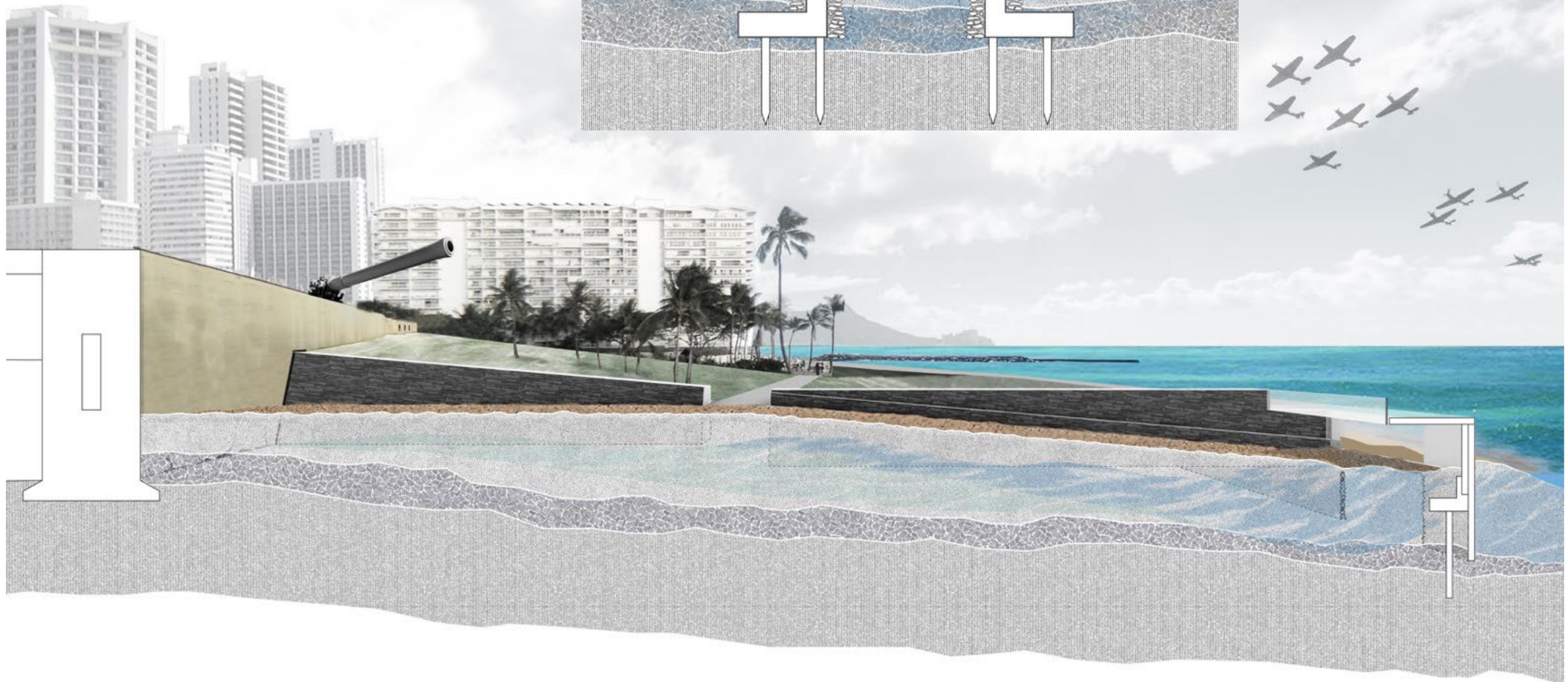
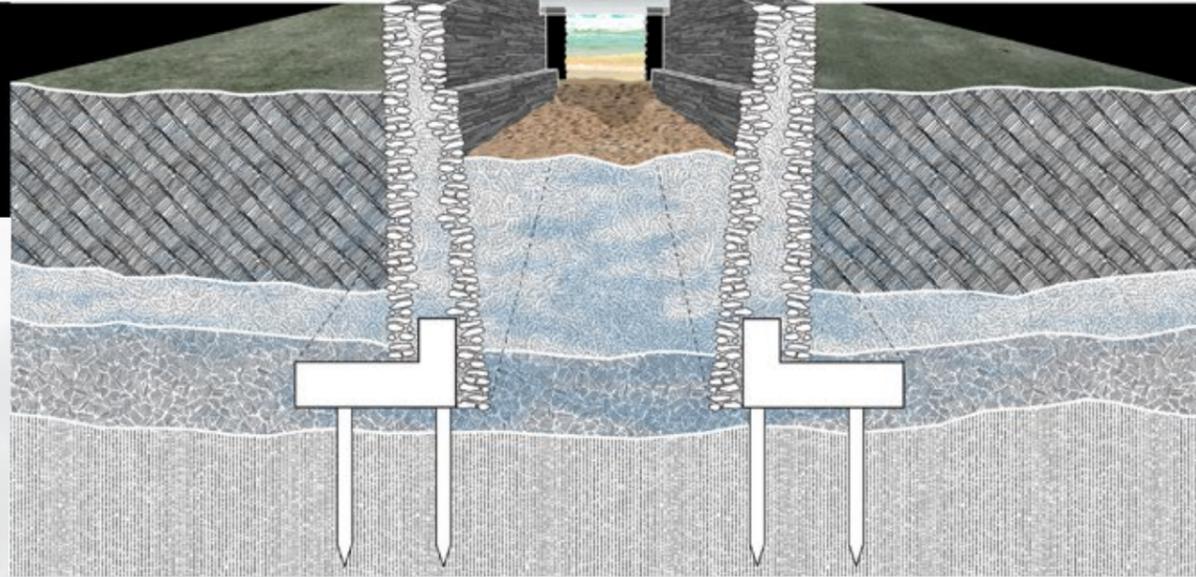
- reveal_THE HALE KOA HILL 1
- reveal_SEAWALL 2
- reconnection_MULLET 3
- reconnection_KANAKA DISH 4
- reconnection_POST-NURSERY 5
- reconnection_PUNAWAI 6
- reconnection_MULIWAI KAWHEHEWEHE 7

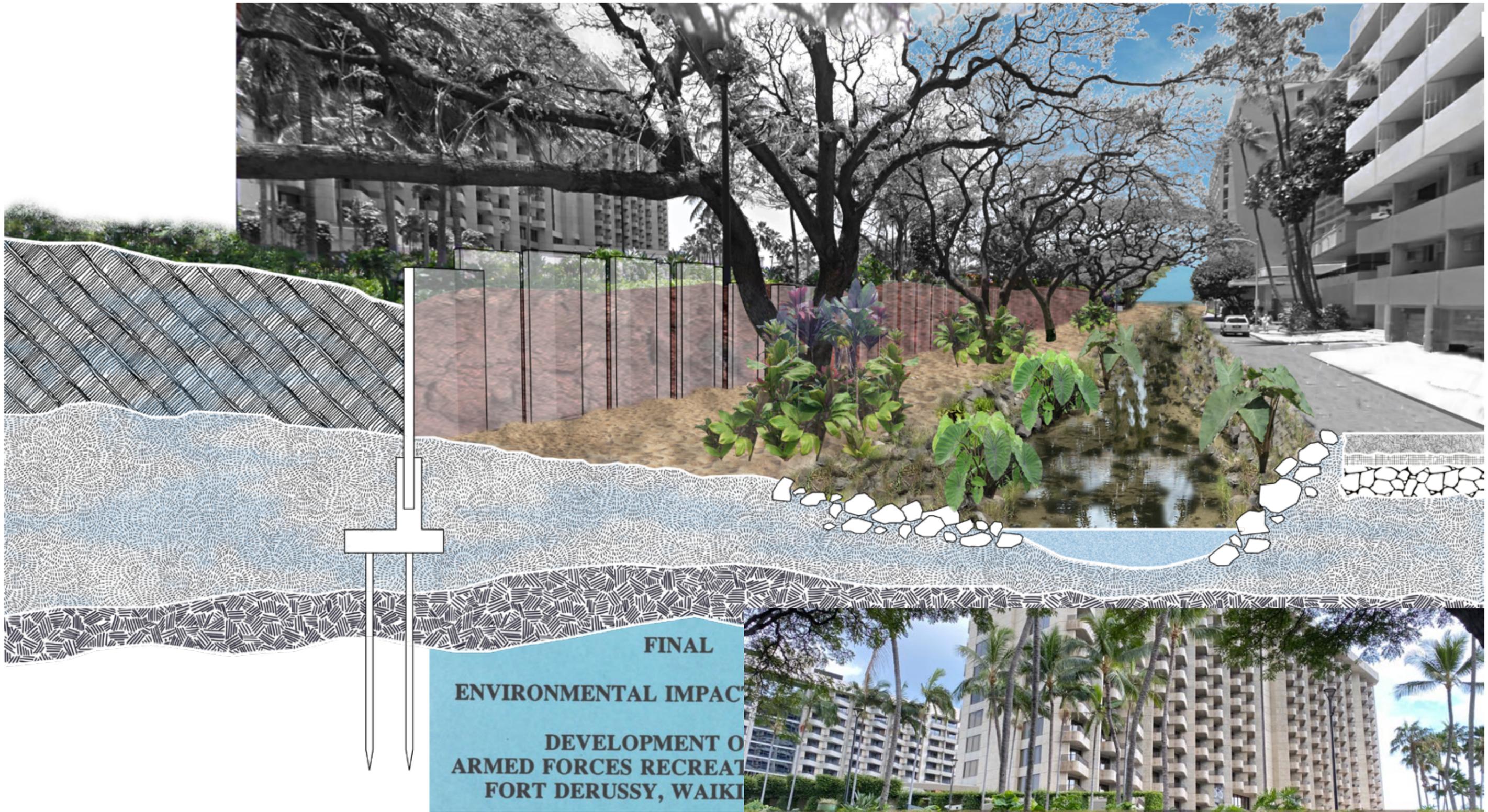
Post-colonial Hawaii is a world constrained by a petro-base transportation system with roads emptily named after the Hawaiian royalties, another camouflage of cultural deprivation. Only if the water can once again travel freely through these islands, the Hawaiian souls can be liberated. Thus, based on the fishponds recovery in the fort DeRussy area, the interventions of this project can be divided into two categories: Reveal and Reconnection. By setting up a series of intimate confrontations with water, we might hear the whispering from the droplets telling us the story they preserve. The story of the US invasion, Wai, Aina, Kanaka, and Ea.

reveal_SEAWALL:

If the military museum has to be there, I think this museum should also display how the military change and exploit this land. This cut of reveal will expose two major intervention of landscape done by the military. First, the man-made hill in front of the battery as a privilege or exclusion of height. Second, the sea wall that try to secure the land but eventually cause the land loss and block the connection between under ground water and the sea.

At the both ends of the cut, visitors will encounter the height of the military, and the loss of the sand. The cut will be constructed with lava rock to maintain the permeability of the land. Even though the seaside end is covered by glass wall, the tide can still reach inside the cut from the ground. Once again, sea water and fresh water meet at the coastline.





**FINAL
ENVIRONMENTAL IMPACT
DEVELOPMENT OF
ARMED FORCES RECREATION
FORT DERUSSY, WAIKIKI**

reveal_THE HALE KOA HILL:

The fact of this artificial hill and the privilege comes after it is hidden, harmonized and rationalized with the growing plants. Although the area is relieved from the real armed force, its military mindset has never gone, covered under the military camouflage.

Therefore, this intervention will cut through the hill and reveal the impact of the height. The difference of the earth, the pipe lines and the height itself will let us know how powerful and harmful this alienation is.

2. PHYSICAL ENVIRONMENT

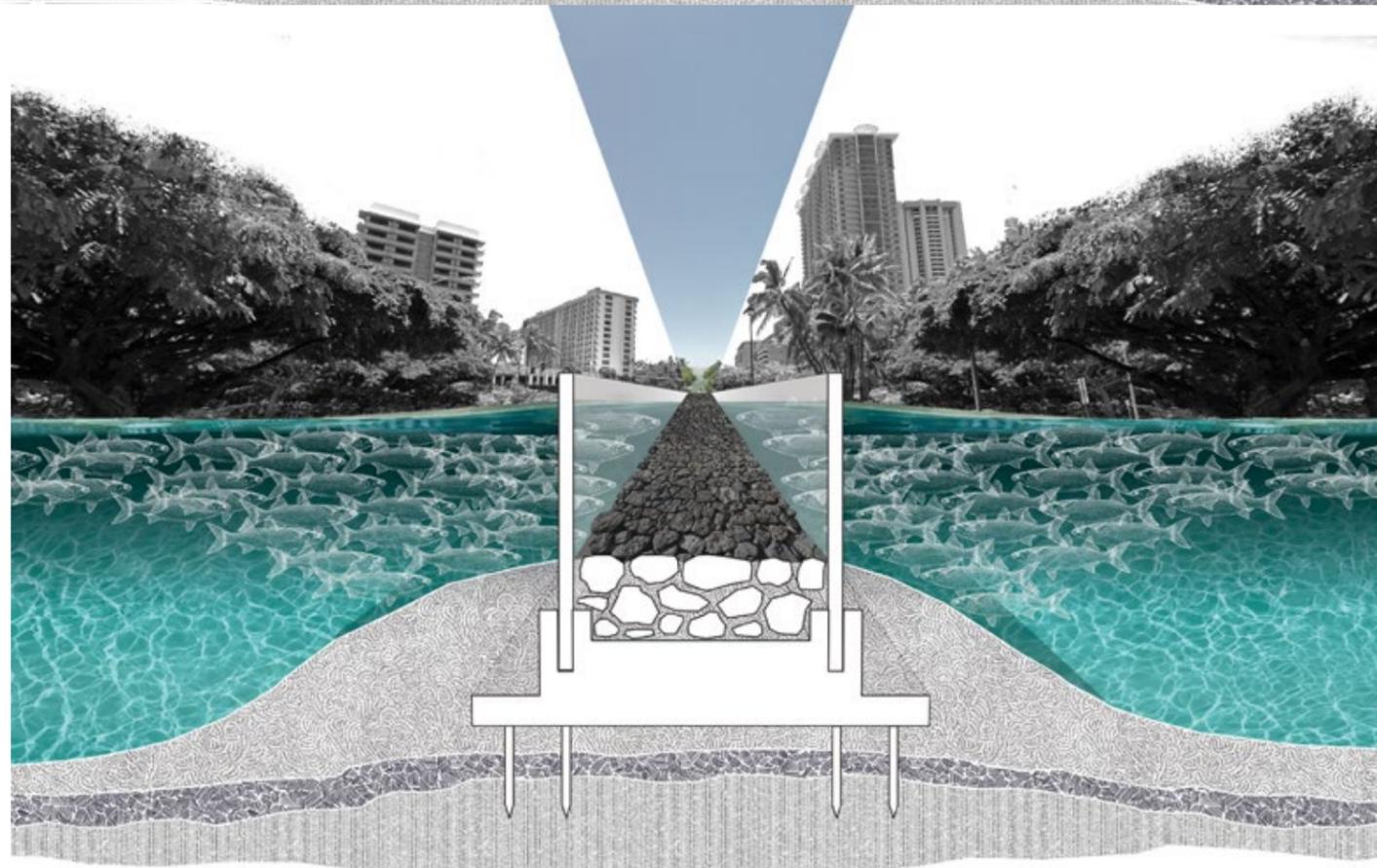
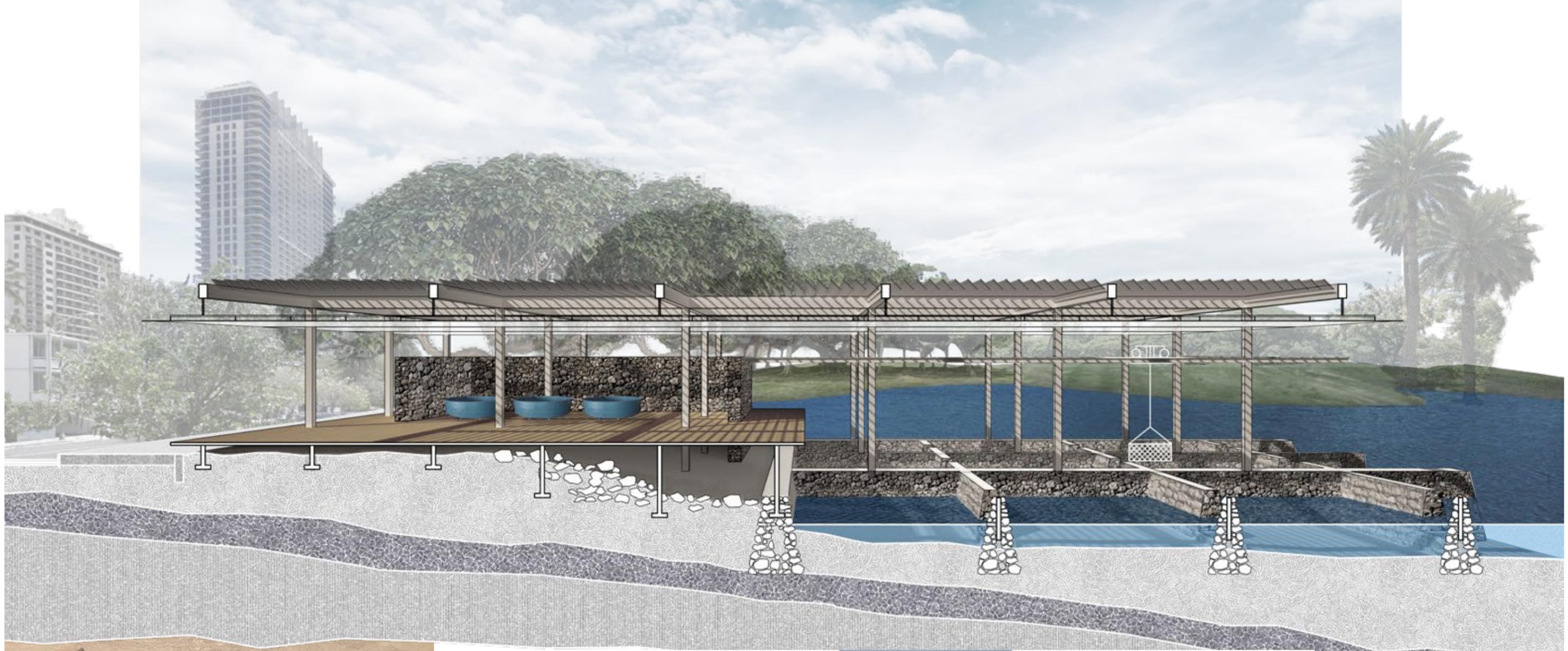
2.1 GEOLOGY, PHYSIOGRAPHY AND SOILS

2.1.1 Existing Conditions

2.1.1.1 Physiographic Character

Fort DeRussy is situated on a flat coastal area known as the physiographic land division is composed of weathered alluvium overlying wave-eroded basalt. Most of the reservation was constructed on marshland and sandy soils. The site terrain is relatively flat with elevation level to 6 feet; a man-made slope of 22 feet surrounds the Hale Koa Hill.

22 ft.

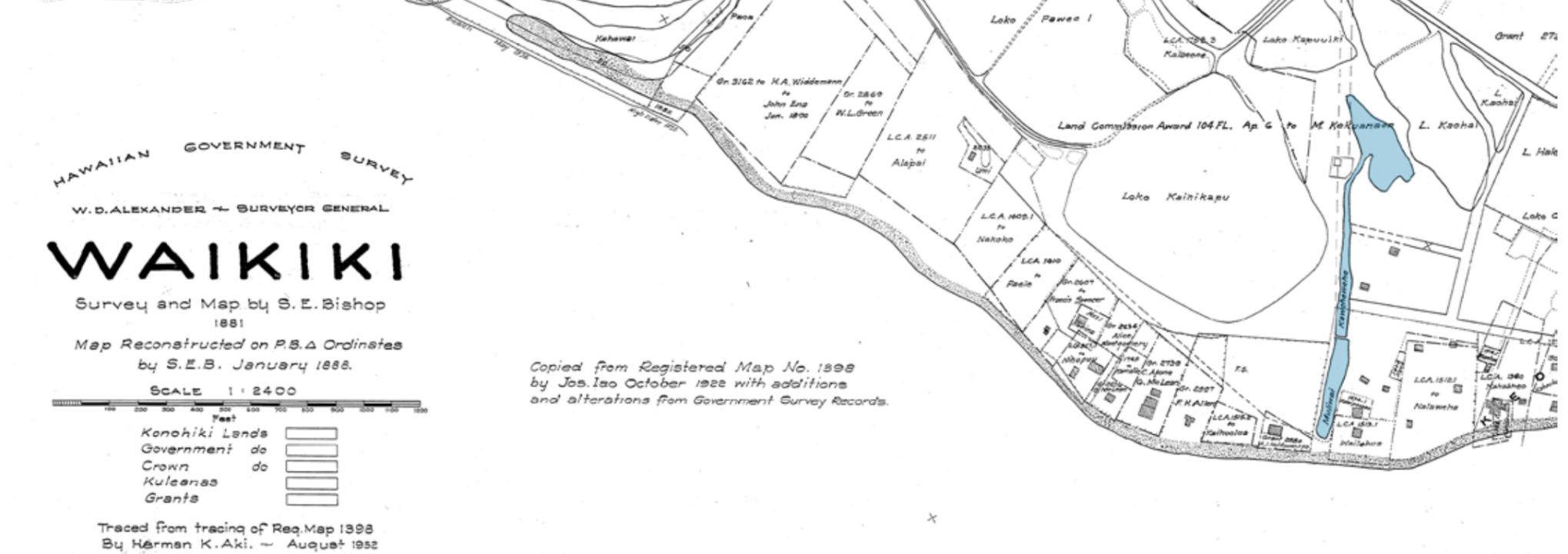
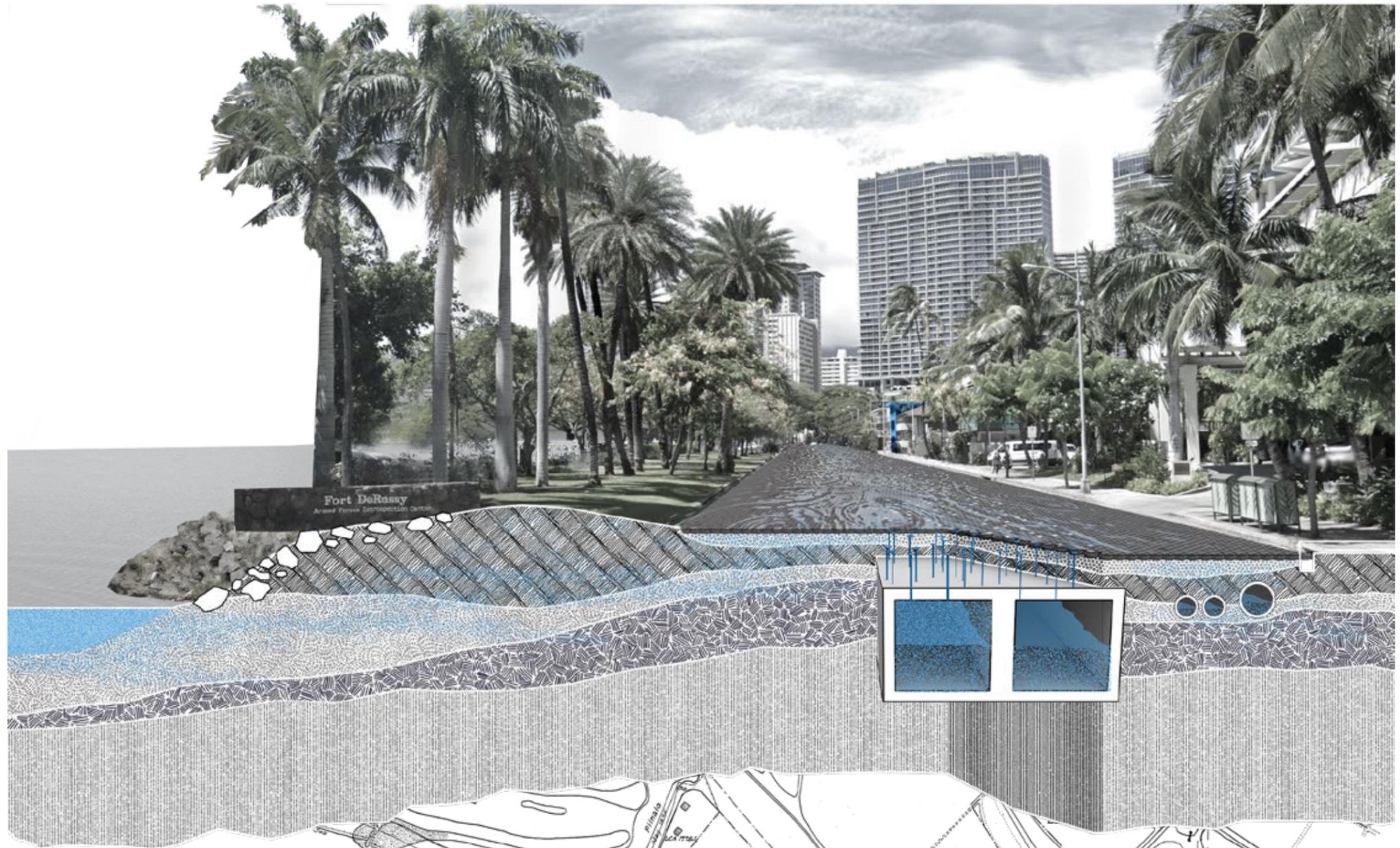
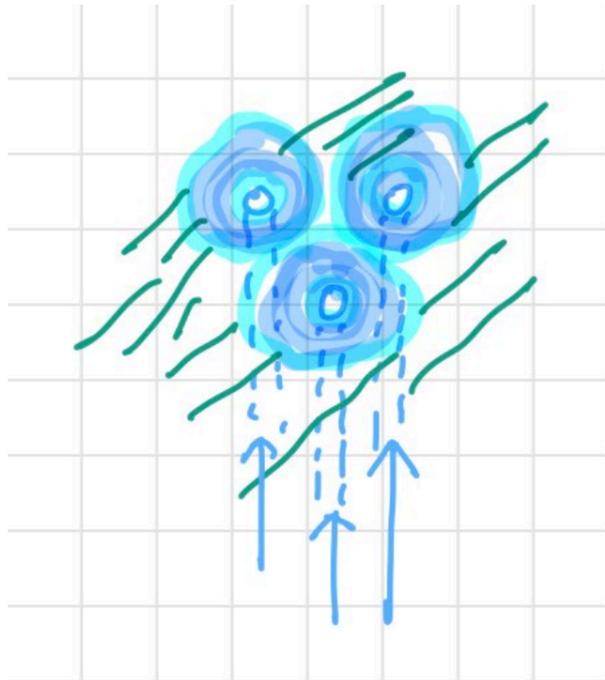


reconnection_POST NURSERY:

If the Waikiki post office has brought messages and hope to the military base before, it should start to bring hope to this island and its community. Before the recovery of fish pond, we have to rebuild the population of mullet and milkfish. These animal used to come into the fishpond themselves from the sea. However, because of the invasive tilapia, the fishlets are hard to survive before growing big enough. Following the spatial logice of the Hawaiian fish pond, the existing sturcture of the post office will be transformed into a submersive aquaculture base, providing extra food and hiding space for the fishlets.

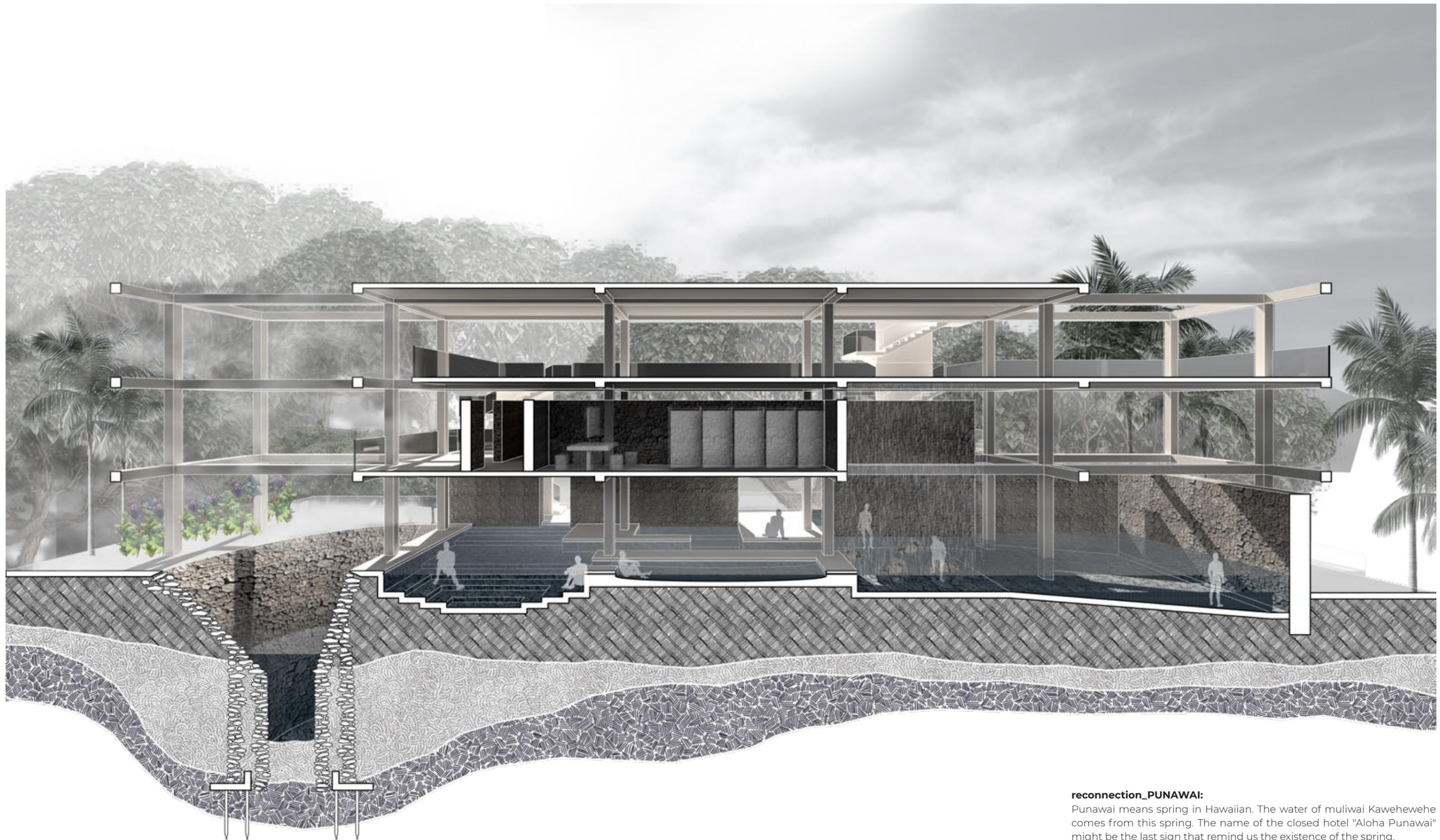
reconnection_MULLET:

A ancient path in the middle of the fish pond will be rebuit into a submersive bridge. Visitors will confront with the mullet and history of Hawai'i when walking through.



reconnection_MULIWAI KAWEHWEHE:
Muliwai Kawehewehe was a seasonal stream that against the force of the sea. In winter, the estuary of the stream will be blocked with sand piled up by the wave. In summer, the stream will turn strong and flow out to the sea. Ancient Hawaiian believe in this power of healing, so they bath in the stream. Now the stream is hided under the ground. However, in the summer, the water still gush out from every manhole and gutter cover above the stream.

Instead of full exposition of the stream, this intervention will plant a lot of pipes penetrating the under ground culvert. When the season comes, the stream will remind people its existence. Moreover, the alspat road will be changed into grassblocks made from lava rock. The water that comes to the surface can get back to the earth and nurish Aina.

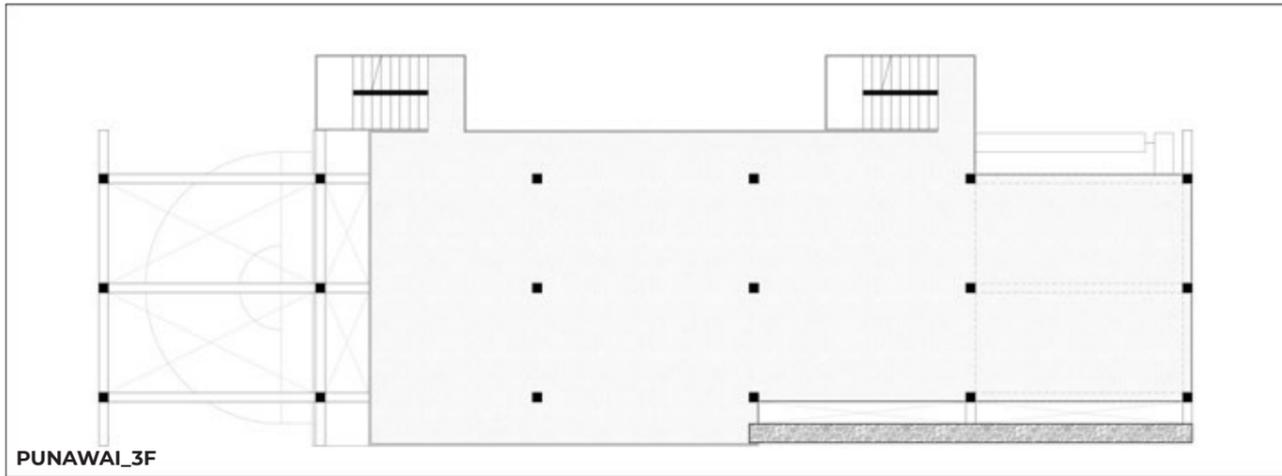


reconnection_PUNAWAI:

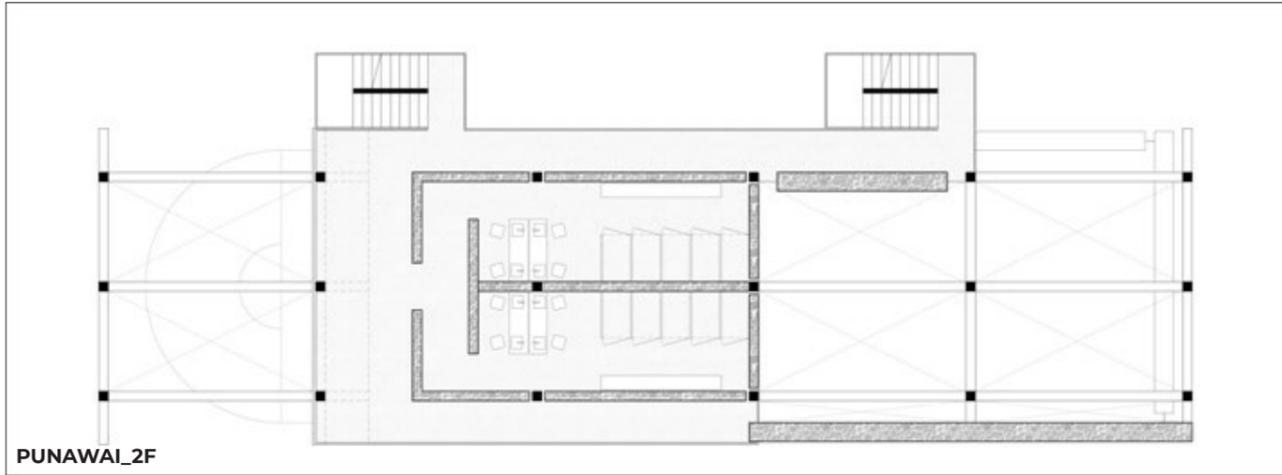
Punawai means spring in Hawaiian. The water of muliwai Kawehewehe comes from this spring. The name of the closed hotel "Aloha Punawai" might be the last sign that remind us the existence of the spring.

The intervention here is to expose the spring, and bring back bathing as a sacred and healing activity. The funnel of the spring is design to show its deepness. When its dry, people will face with the endless depth; when the season comes, the water will flow out to the surface.

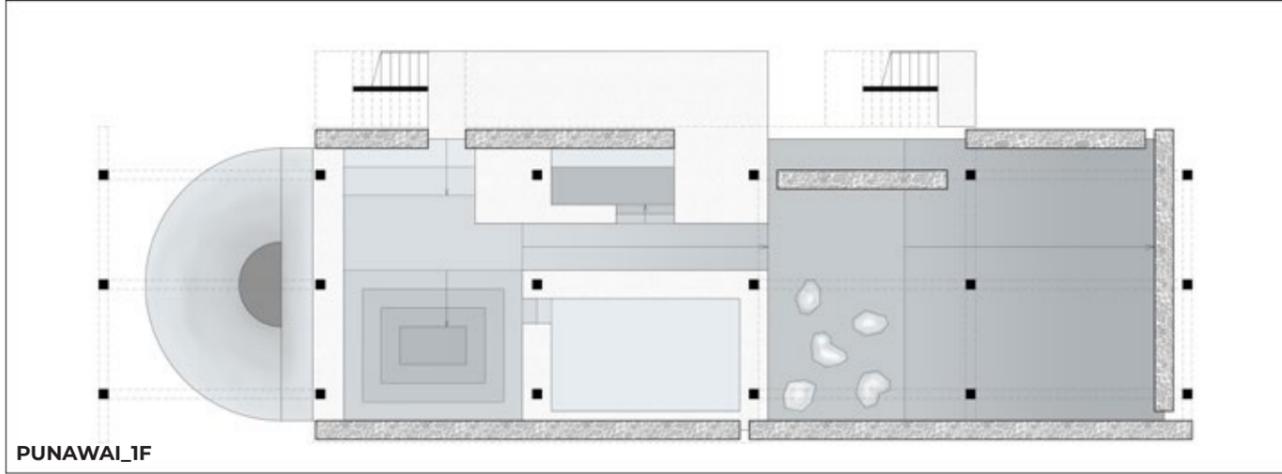
On the other hand, the bath will consist of many different sensations of water that you might have experienced around the island: spring, bubble, rain, wave, and waterfall. People who visit the place will not only take a tourism bath, but deeply soak and reconnect with the history and culture of Hawai'i.



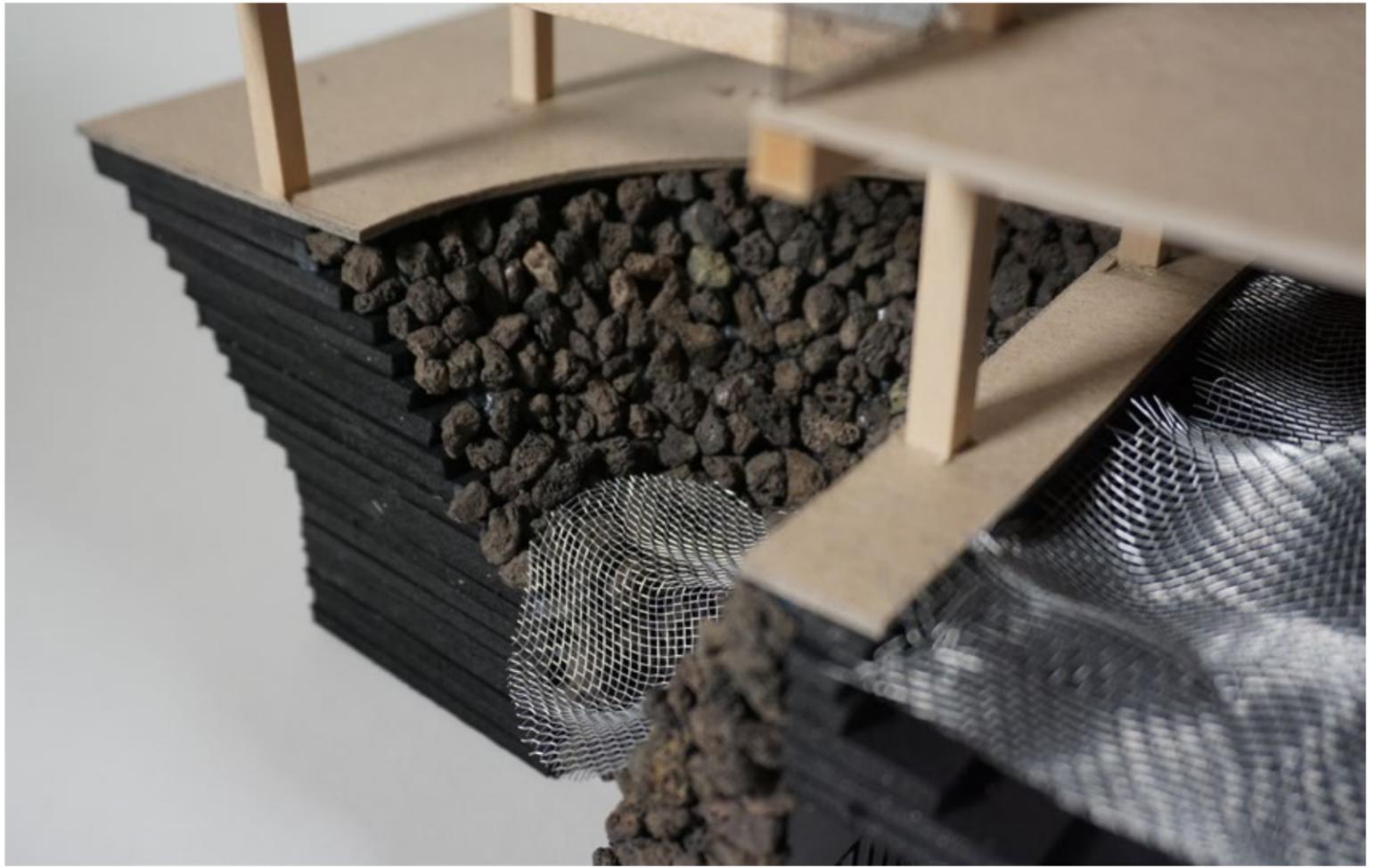
PUNAWAI_3F

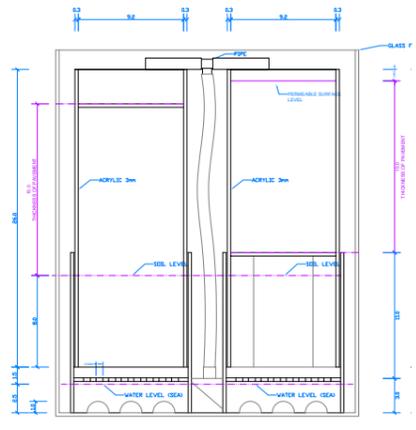
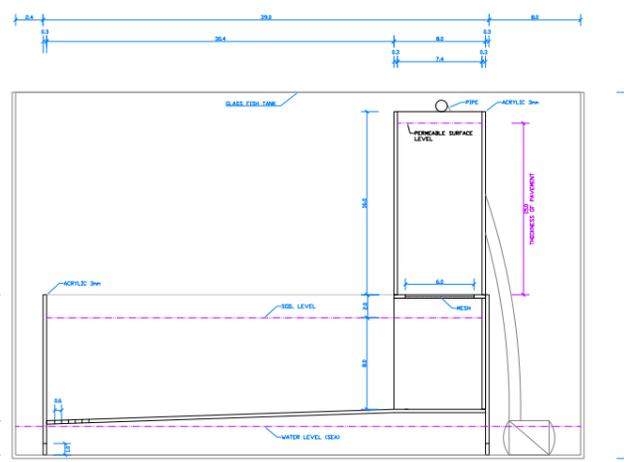
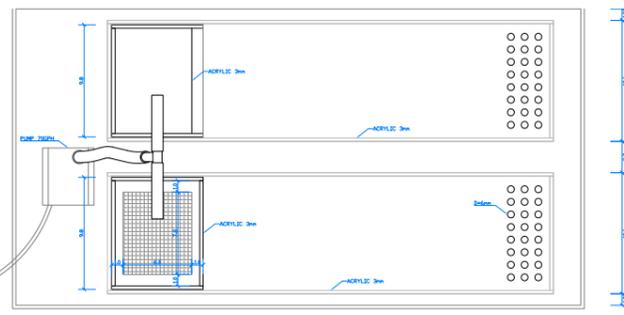
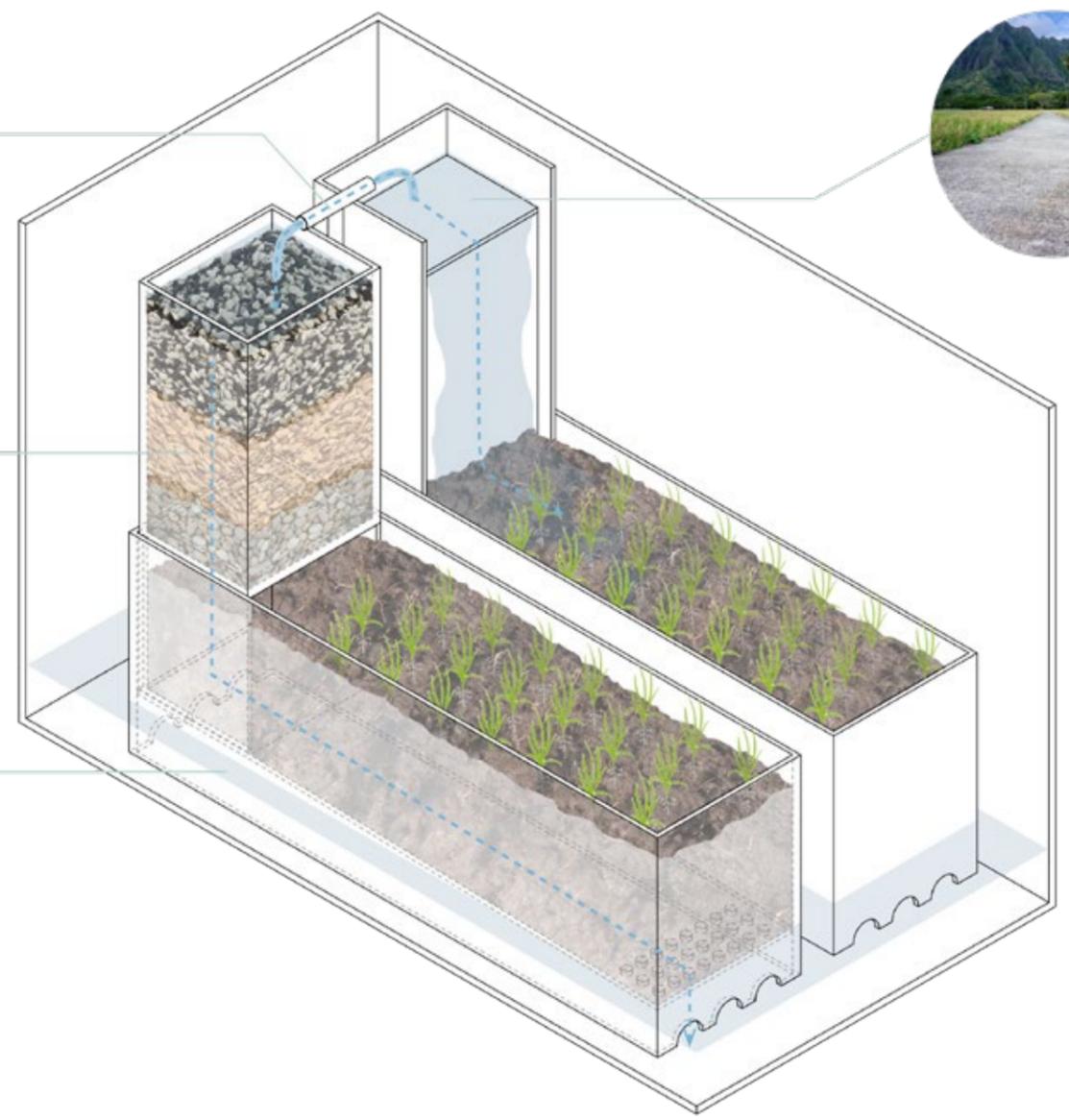
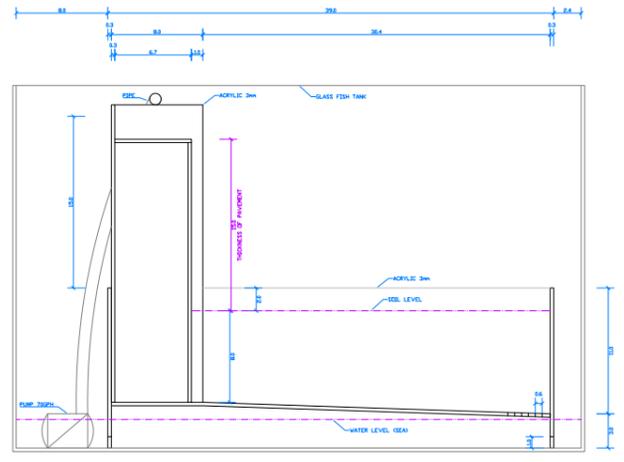


PUNAWAI_2F



PUNAWAI_1F





Apparatus: Before the main project, an apparatus was designed to demonstrate the impact of the surface runoff. Based on the record rainfall that caused the flood, which is 200 mm-hr, I calculated and found out the ideal pump to set up this condition. One side of the apparatus is mimicking the asphalt road and the other side is the pervious surface.

The result of the experiment was clearly shown by the rice plant which is also grown in the field of Hawai'i. The runoff created by the modern road is not strong, but strong enough to hurt the crop and the self-sufficiency of food in Hawai'i.

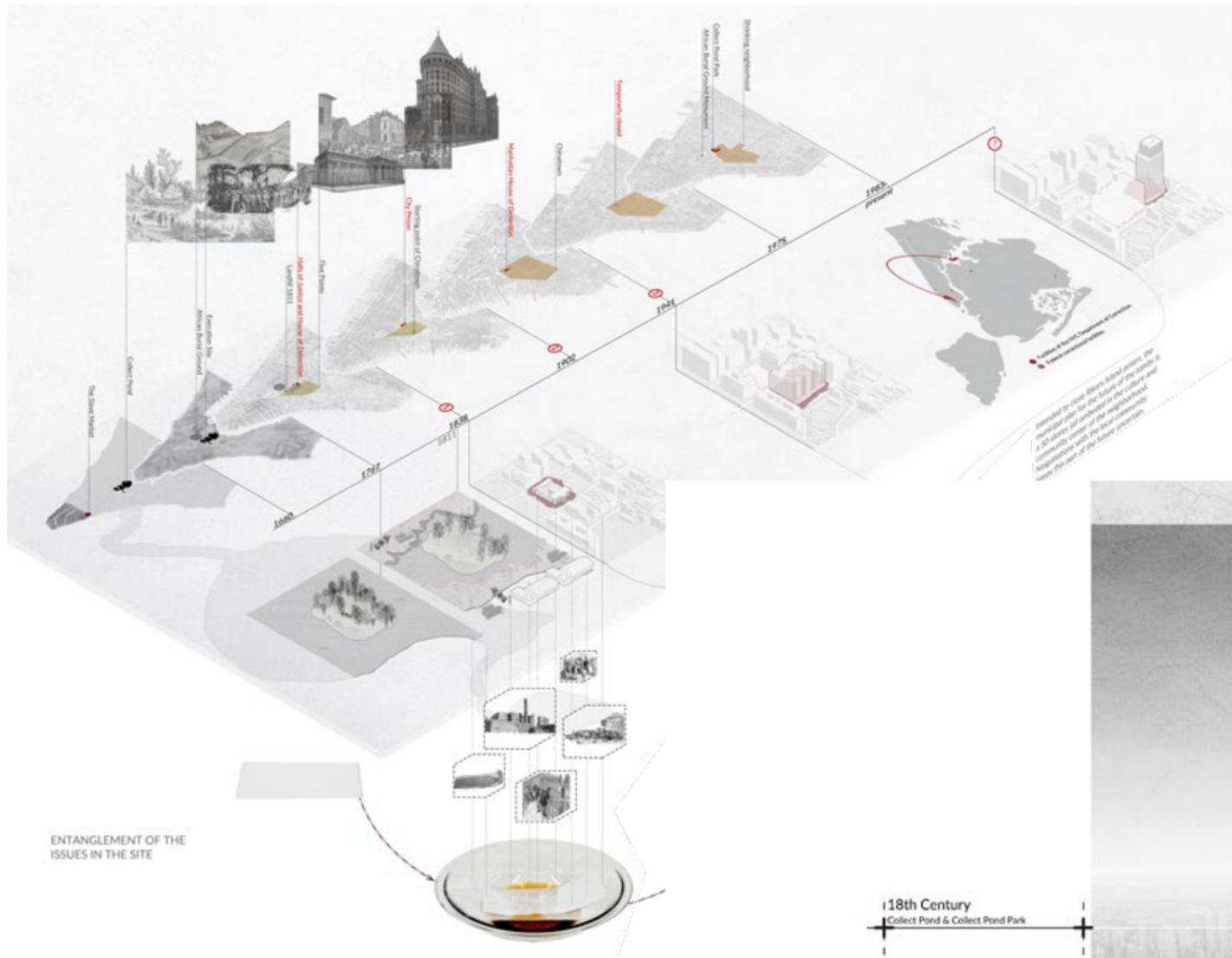
02 Arsonists: Light up the tombs!

Ralph Cheng + Siyu Xiao Studio Mabel Wilson 2021
[plantation/ enclosure/ incarceration/ abolition/ chinatown/ arson]

Unlike other colonial plantations that extract and collect fortune, the history that created the Manhattan detention complex is an accumulation of side effects. Before the first colonial settlement, this place was a huge pond later exploited as an essential water resource and named Collect Pond. Since then, people started to dumb the side-effect of extraction and exploitation to this site, from toxic chemicals to unfit people. The authorities also have figured out many ways to redact the hazardous side effects, like the landfill covering the polluted pond, the facades hiding the cells behind, and the skyscraper jails compressing more people at the same place. Moreover, this leviathan array of jails, courthouses, and governmental buildings themselves are the wall that segregates the unfit community, Five Points slum, and Chinatown from the city.

The enclosure logic of the tombs is not only about the incarceration of human bodies but also about the repression and exclusion of specific social communities, as collective bodies, of Chinatown. The resistance of Asian communities against the jail started as early as the 1980s. Although the rebellious attitude lies firmly behind their slogans, activities, and even their business near the jail, the community's voice and power stayed low and unperceivable. A skyscraper jail project was recently released to hold inmates moved from Riker's Island. Before constructing the new jail, the previous one must be demolished. We found this period is the last chance for the community's voice to be heard, so we will try to intervene with a carefully designed process of demolishing the previous jail. By revealing the redacted fact through the deconstruction of the jails, vertically and horizontally, more public sectors will participate in the decision of building a new jail. In addition, the project would shed light on new visions, spaces, and plans for the both ultimate abolition of incarceration and a fair spatial relationship between the city and Chinatown.



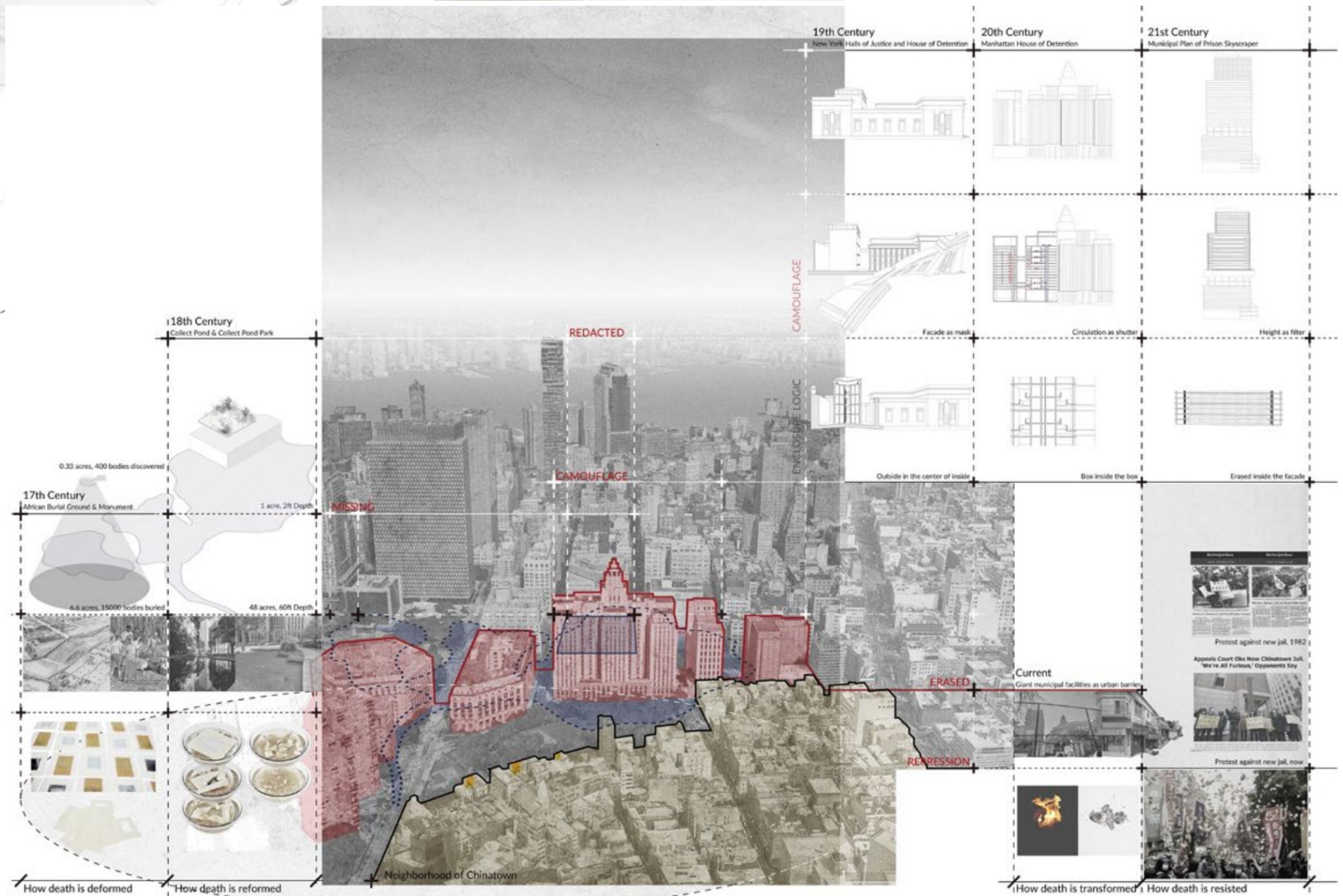


Residents of Chinatown sensed this enclosure and reacted to it. Many funeral services firms nearby Columbus Park reveal the perception of this Asian community towards the jail. They place another form of death next to it. When we visit these shops, spirit money which Asian people use as a media to commemorate their deceased relatives catches our eyes.

When we visit these shops, spirit money which Asian people use as a media to commemorate their deceased relatives catches our eyes. The stamp or a piece of foil in the middle of paper is the only identity of spirit money. Just like every remains in the cemetery, we recognize them with their names on the tombstones. This reminds us of another story of this place.

While the residents of Chinatown are dealing with death sophisticatedly, the other side of the previous Collect pond is the African Burial Ground, where people were buried without names just like a piece of spirit paper without that foil. On the other hand, the jail itself dissolves a part of the souls which belong to the people who were incarcerated. Around the Tombs, is the metamorphosis of death.

The traditional way of using the spirit paper is burning. Asians believe the fire and the ephemeral transformation to ashes and fumes bring the memories and wishes to the world beyond.



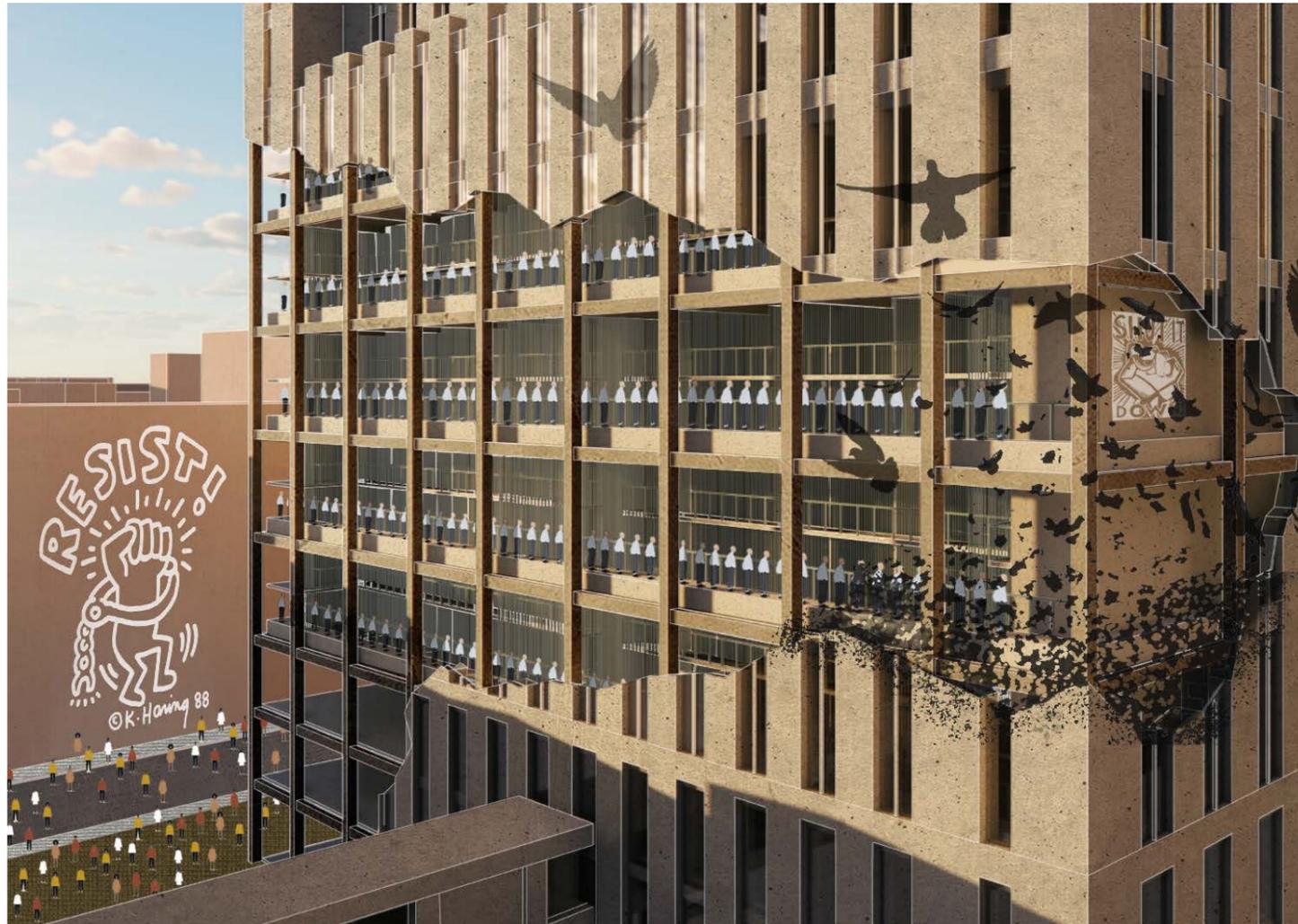
How death is deformed

How death is reformed

Neighborhood of Chinatown

How death is transformed

How death is resisted



The first step is tearing down the jail's facade. Usually, a building will start losing its identity when it starts losing its façade, just like a man losing his face. However, for the tombs, this situation will be surprisingly reversed. The identity of this building as a jail will reach its peak when the façade, the mask, is torn off. The cells and the notorious but mysterious condition of this facility will finally be exposed. At this stage, people can walk through and visit the cells freely. The visitors will not only visit and understand the fact of the jail, but also penetrate the enclosure with their own movement.

"All the News
That's Fit to Print"

The New York Times

VOL. CLXIX ... No. © 2020 The New York Times Company NEW YORK, SUNDAY, MAY 24, 2023 \$6.00

LOWER MANHATTAN, THE TOMBS IS ON FIRE

The Community of Chinatown in a Ritual Ceremony.

Unlike other colonial plantations that extract and collect fortune, the history that created the Manhattan detention complex is an accumulation of side effects. Before the first colonial settlement, this place was a huge pond later exploited as an essential water resource and named Collect Pond. Since then, people started to dumb the side-effect of extraction and exploitation to this site, from toxic chemicals to unfit people. The authorities also have figured out many ways to redact the hazardous side effects, like the landfill covering the polluted pond, the facades hiding the cells behind, and the skyscraper jails compressing more people at the same place. Moreover, this leviathan array of jails, courthouses, and governmental buildings themselves are the wall that segregates the unfit community, Five Points slum, and Chinatown from the city.

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Advanced studio Y, Post-Plantation Futures, Prof. Mable O. Wilson, Work by Siyu Xiao, Ralph Cheng.



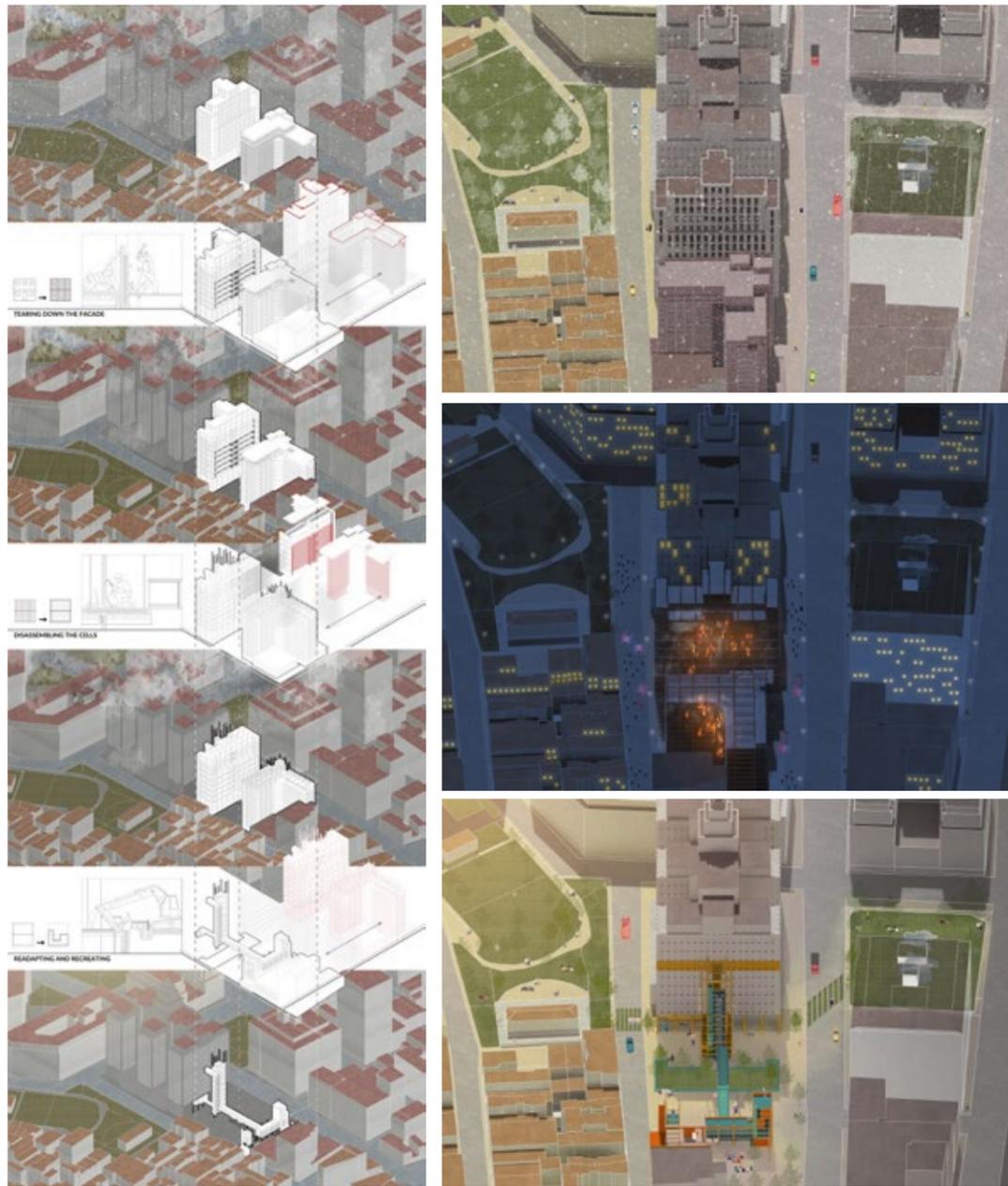
In the next stage, the cells of the jail will be demolished, transforming this building into a neutral structure. By using the former surveillance corridor as the visiting path, and the void left by the vanished cells as the display space, the tomb will be transformed into an exhibition hall for the collective work created by the residents of Chinatown.

Enlightened by the crocheted protest board in Chinatown and the pattern of spirit money, these fabric installations will carry the spirit money's ritual meaning of death and afterlife in the eye of the local Asian community. When the visitors wandering in the exhibition and viewing it as an usual art event, the community is actually protesting the tomb for the very last time.



Suddenly, without any indication, the whole event is on fire. Catching the attention of everyone in New York City, the newspaper reports the arson as the ultimate protest of Chinatown.

However, if anyone is familiar with the culture of the spirit paper, he or she will understand burning as a ceremony commemorating the deceased livessacrificed on this land. The tomb, the african burial ground, the Lenape, the land, and the water. The protest will have already ended in the previous event. The fire of furiousness is actually and the fire of condolences. And maybe, the light of the future without incarceration.



After the ceremony, the demolition will go on. Some parts of the structure will be kept for further use. The bridges used to connect the justice hall and jail will be kept. These bridges which were the only place that the inmates could reach the outside world, will become the new entrance for jurors of the jury trial. Before they get into the courthouse, they will cross this former jail, experience the shadow of incarceration and see the promising future without incarceration.

Programs of improvement replacing the incarceration will be introduced to the site, such as Young New Yorkers. This organization will tutor the young people with misbehavior to work together and create a collaborative art work. Through the process of expressing, exhibiting, collaborating and bounding, these young people will have a chance to be reconnected with society. The new open space will connect the existing Columbus Park and Collect Pond Park, creating a continuous public space for the communities nearby. Next to the courthouse buildings and the Civic center, social campaigns might be held here and the opinions will be heard.

Finally, the city enclosure formed by those gigantic governmental buildings will be opened. The space between Chinatown and Tribeca will be reconnected. There will be no more areas unfit in New York City. This physical success of abolition, the changing value of the society and the constructive programs, might eventually boost the future without incarceration.

03 Alice: A backup plan for NYC in 2100

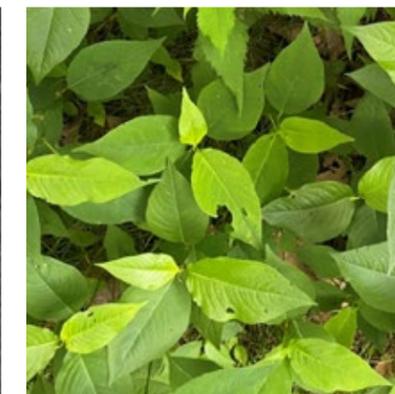
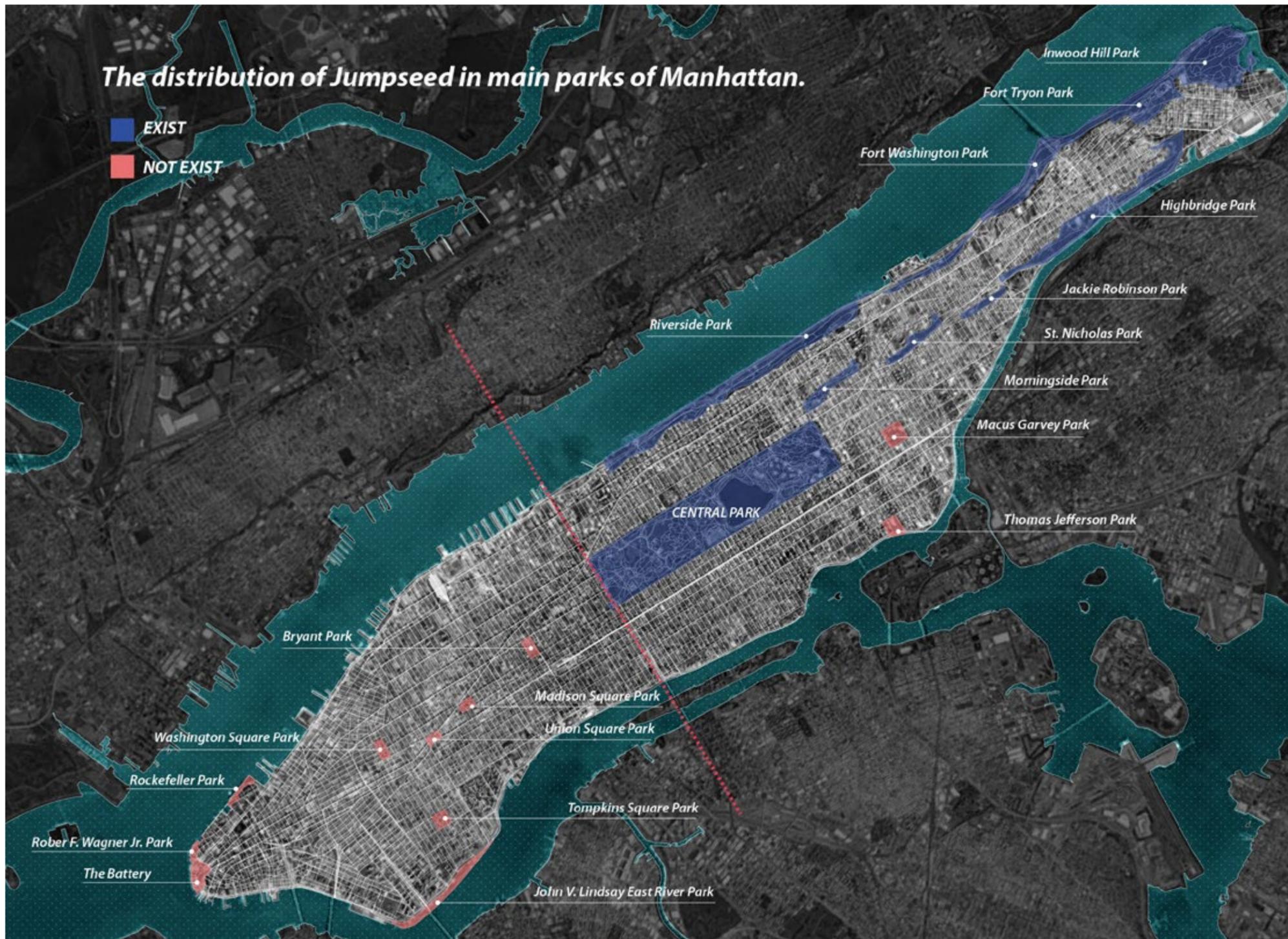
Ralph Cheng + Sunghyun Kim + Sujin Shim Studio Nerea Cavillo 2021
[plant/ central park/ global warming/ invasive species/ flood/ con edison]

What is an invasive species? Who defined the invasiveness? By surveying almost every park in Manhattan, we found this plant: Jumpseeds, *Persicaria virginiana*, is an example or victim of defined invasiveness. People believed this invasiveness of a native species because of a taxonomic misunderstanding. And this mistake resulted in the genocide of this plant. Although many other plant species might eventually reclaim their habitat, this one didn't. The way Jumpseeds spread their seeds, jumping, impede them from spreading in the city. However, this plant with several unique abilities might be a potential helper for us to reclaim our living space in the upcoming future.

This is Alice the jumpseed, a backup plan for NYC in 2100. Alice has an ordinary appearance: simple leaves, unbranched stems, unremarkable flowers. She is native to the east side of North America, from Canada to Florida. Despite being native, she has suffered from her previous name that humans gave her. Alice the jumpseeds were once named "Virginia Knotweed" and categorized in the same genus as the notorious Japanese knotweed which is considered an invasive species. People started to misunderstand her as an invasive species because of the name. This taxonomic mistake has made Alice eradicated from south Manhattan, her native habitat.

In fact, Alice is an acclimatizer plant: her rhizome and roots secure soil, The shadow and humidity created by her leaves provides the perfect habitat for tiny plants, sprouts, even animals. Her spreading trail is followed by many others. She is the pioneer! Alice's blooming season is in Summer and Autumn. She will produce nectar to exchange the help of pollinators like bees and flies. Alice's most unique quality is the tension stored in the seeds pocket which can forcefully throw her seeds to at least 3-4m, as her name indicates. But she always needs the help of animals, like squirrels and raccoons, to shake her stems to pop out her seeds several feet away.





JUMPSEED VIRGINIA ~~KNOTWEED~~

[*Persicaria virginiana*]

Synonyms:
Antenoron virginianum,
Polygonum virginianum,
Tovara virginiana,

Native american species,
pervasive in the continent.



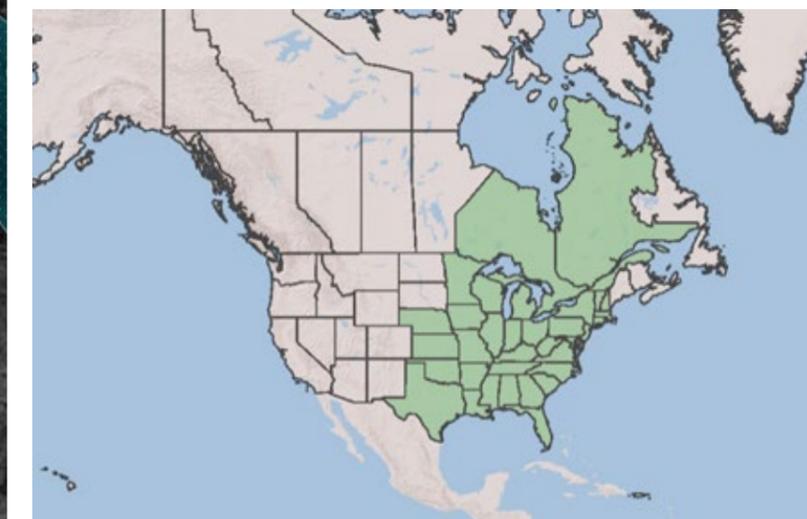
JAPANESE ~~KNOTWEED~~

[*Polygonum cuspidatum*]

Synonyms:
Fallopia japonica,
Polygonum compactum,
Reynoutria japonica, etc

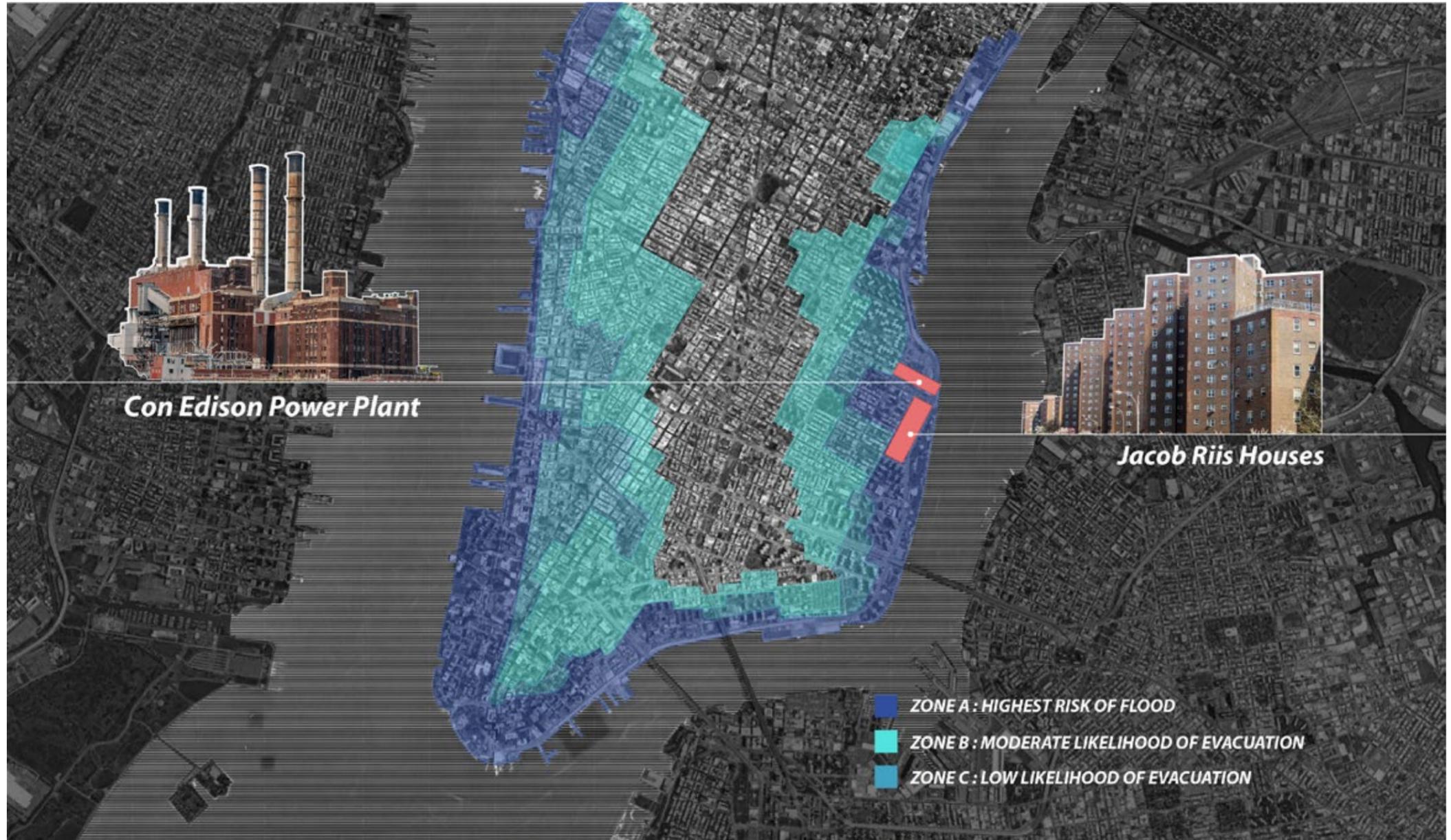
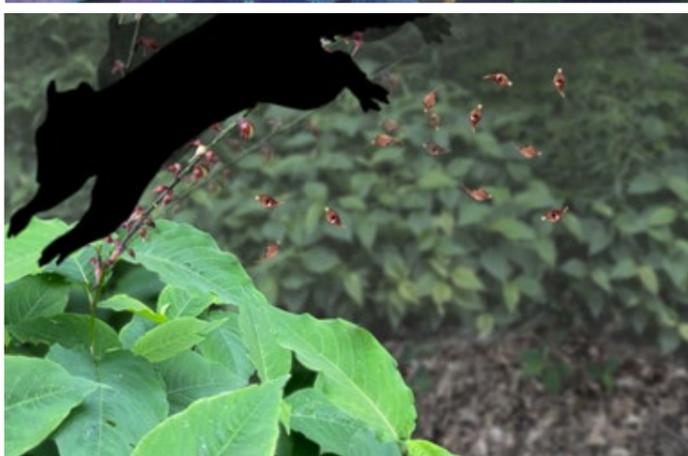
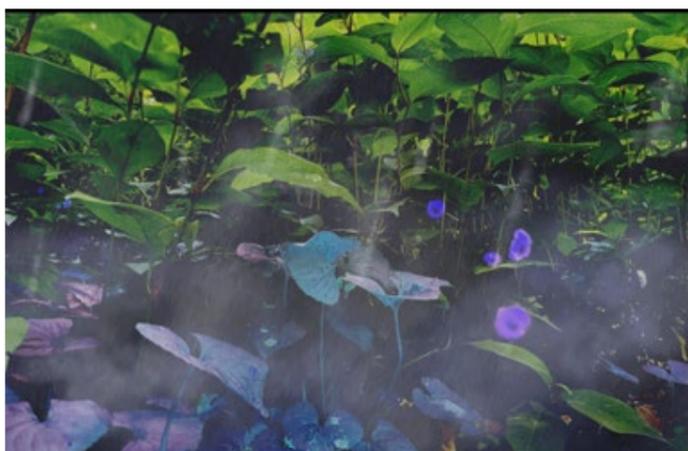
Highly hazardous to man-made
structure. introduce to US in late
18th.

THE INVASIVENESS FROM A NAME.



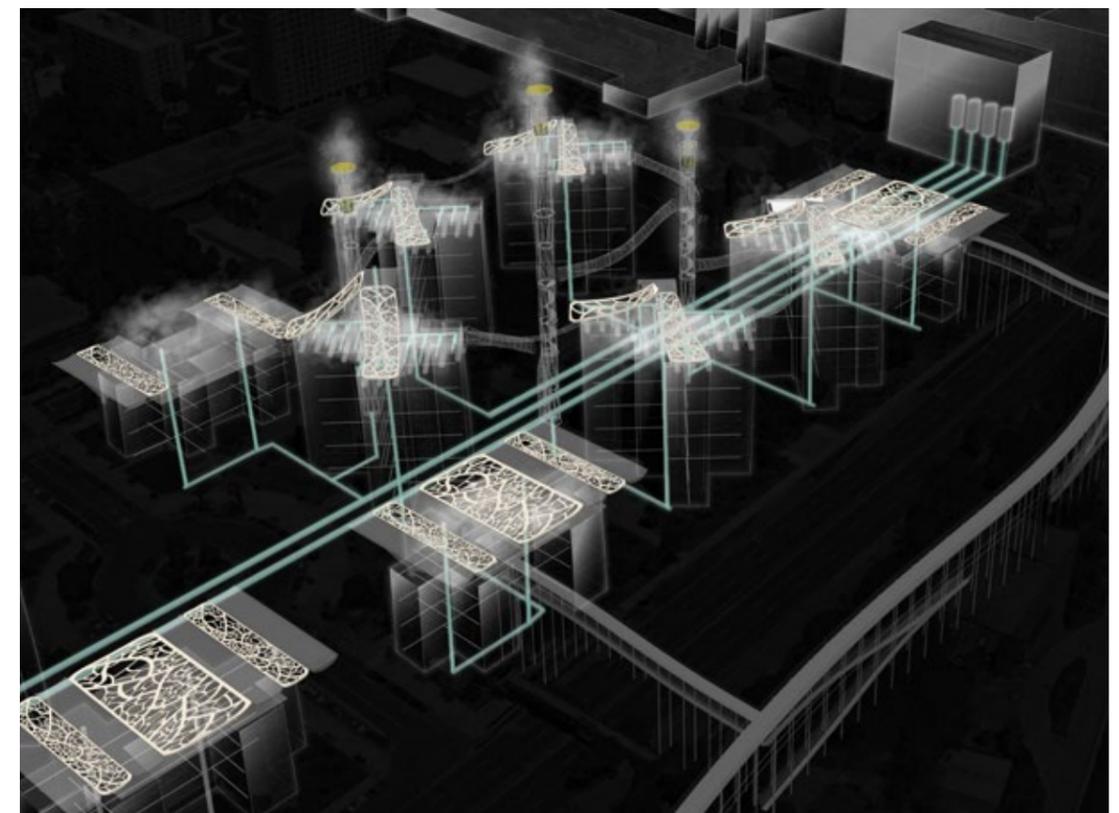
On the other hand, Global Warming is turning "extreme weather events" into normality. Recently in Manhattan, there have been many massive floods. Do you remember the Serious flood in 2012? Brought by hurricane Sandy, the flood caused enormous losses and triggered the design of the anti-flooding project called the BIG U. Which highlights that, the most important power source of the city, Con-Edison, is in the riskiest flooding zone. In fact, solely a tropical storm caused a serious black out in the New York Metropolitan area last year. We are losing our habitat because of flooding. Especially for those residents in the Riis House, a public housing community next to the Con-Edison, which might host some of the most impoverished citizens. They will be at the frontline of disasters.

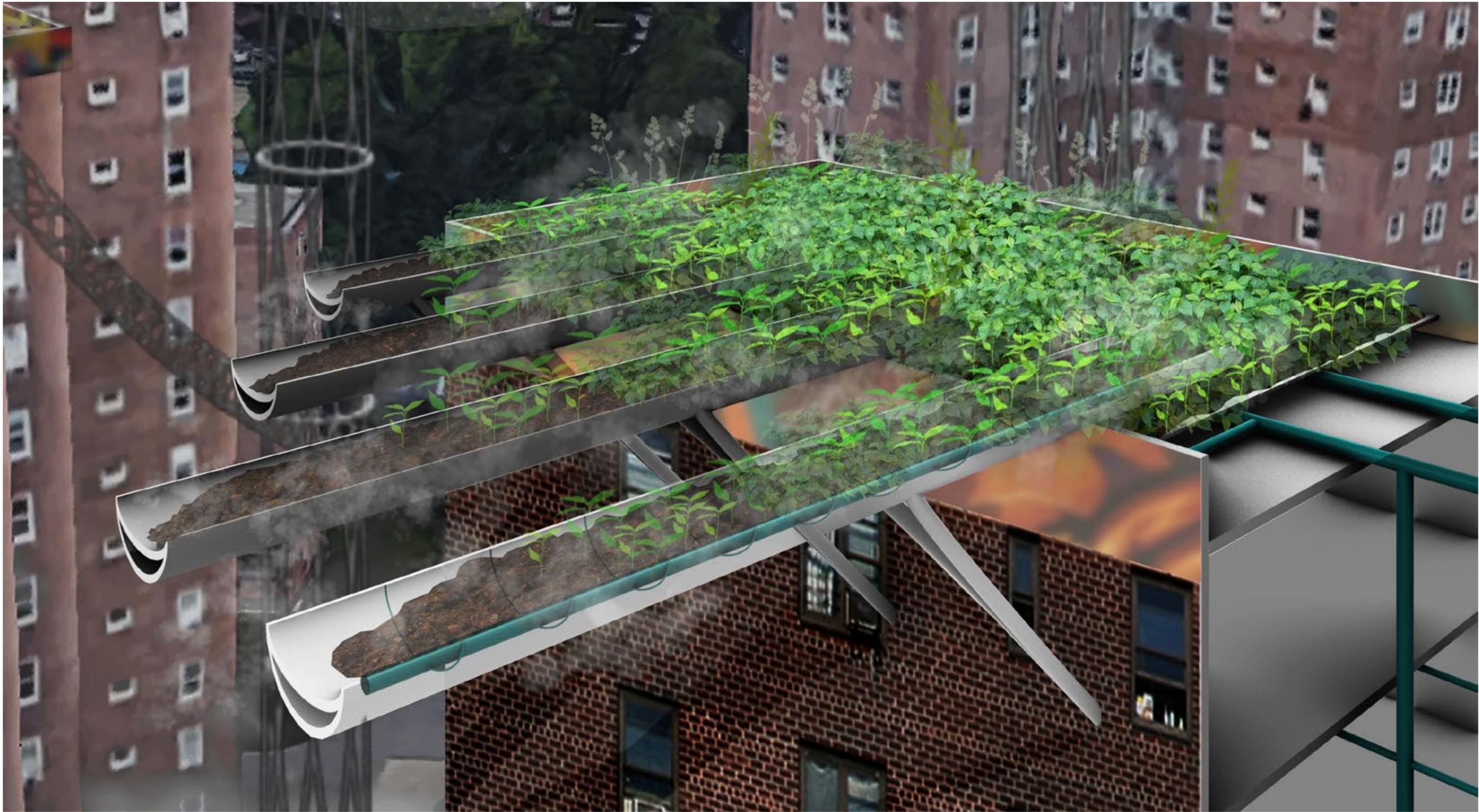
The BiG U project, in fact, is a 10-mile wall on the riverbank. Although it might solve imminent flooding issues, sacrificing the riverside park for a large wall, the big U project causes another loss of habitat where these residents rely on for sports, gardening or recreational areas. Moreover, there is no further plan after the BIG U. If the project loses its function, these residents will have no place to go. Simply speaking, they receive the least benefit but they have to face the worst consequence. For non-human lives, this will be a more serious issue. The riverside park is all they have. Therefore, we propose a backup plan for these vulnerable entities. By adopting the power of Alice, a new habitat will be developed on the roof tops, to adapt to the flooding future.

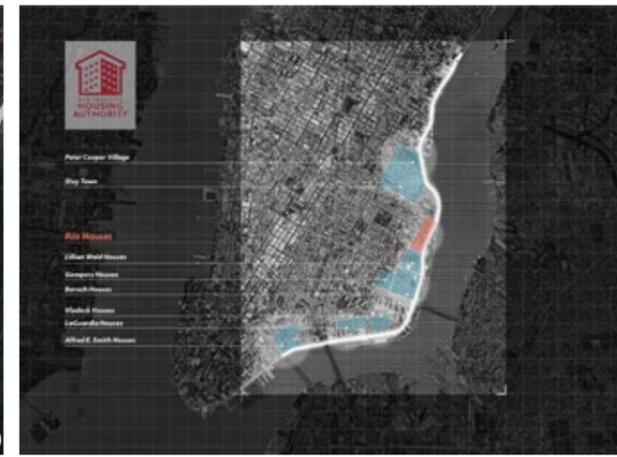
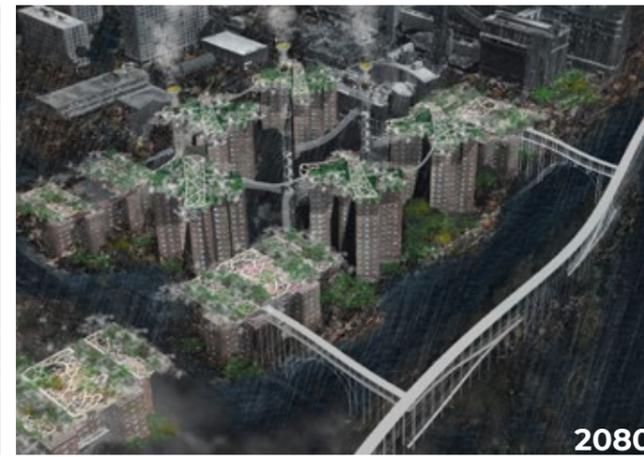
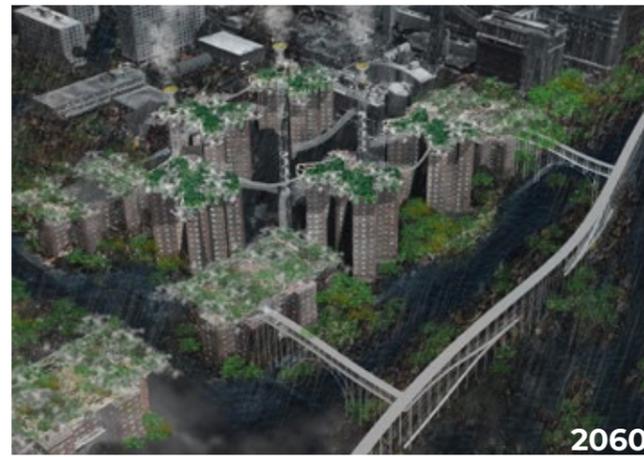
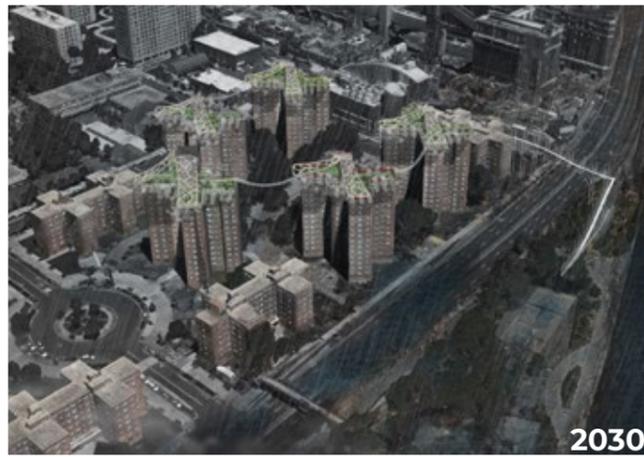


The first phase will be in a few years. We will ask Con-Edison, who has been polluting the Riis neighborhood with CO₂ and undesirable heat for over 100 years, to take its responsibility and provide them with free steam energy, which is a secondary product of the power plant. The steam will also be taken through the pipe from the underground to the rooftop. Through the meshes installed, the steam will provide humidity and condense into water to support Alice. The meshes will also accommodate the bee hives and bird nests to provide shadows underneath. The steampipe inside the Steamboards will not only support the growth of Alice. When Alice's seeds are ripe, the pressure of the steam will pop the seed further. Therefore, a small number of seeds will start to sprout under the meshes, fall to the ground, and end up being exuberant in the neighborhood.

By providing a cooler environment and some profits from honey bees, we hope that residents will embrace this project. In fact, the city council has just approved this project. The Climate Mobilization Act, which requests new buildings to decline the energy consumption by growing a rooftop garden.



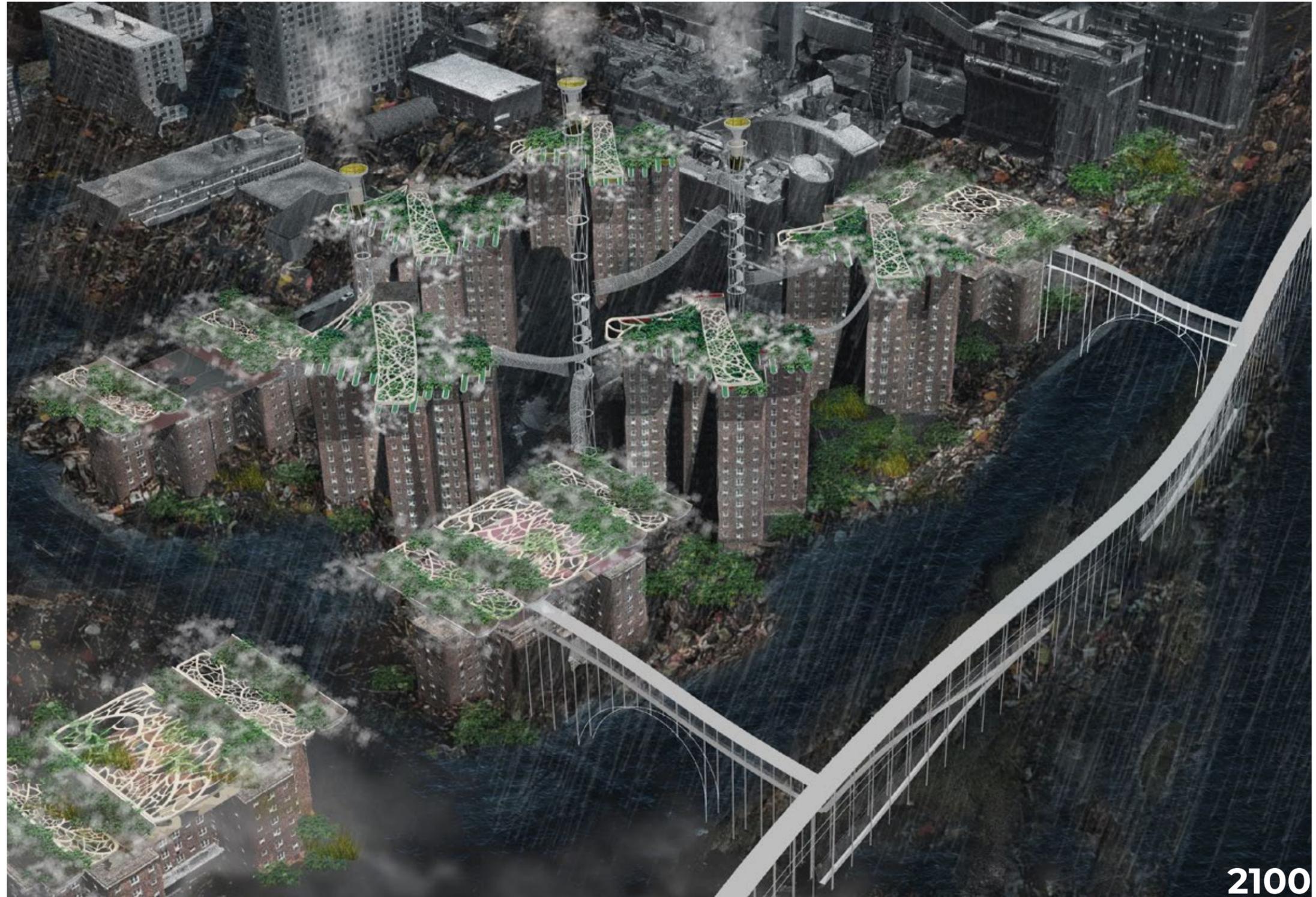




In 2060, the project will move on to the second phase, considering that the frequency of flooding will have become higher, the infrastructure on the roof top will be expanded. Those connections from the park will bring more small animals like pigeons, squirrels, chipmunks, and raccoons to this new home. Furthermore, activities existing in this park will also be brought to this new habitat. We expect this habitat will be built similarly at other communities along the east river. The nearby highway will eventually be eroded by floods and it will be replaced by a running track that connects all these habitats.

Around 2080, the roof-habitat will be flourished with multiple species. The continual flood will pile up sediments and trash around the buildings. If the seeds fall down from the rooftop, they will sprout and secure the sediments. Therefore, the sediments will be accumulated and transformed into new lands.

Eventually, in 2100, Alice will have created many islands around the Riis House by securing the soil. Islands consisting of trash, sediments, rhizomes, and roots, will create a new "ground level", after the backup habitat on the rooftop. Despite her unremarkable appearance, Alice will help both human and non-human lives to build up new habitats and keep the hope for the post-flooding future.



04 Weaving: a wall

Individual work, Course Zachary Mulitauaoepele 2021
[1:1 crafting & fabrication of detail / CNC/ Wood/ metal]

The idea of the design is to weave the wood with thread rod, to make the "wall" able to be disassemble when necessary. The most challenging part of this project might be working with CNC. It is not just about learning to use the machine, but also working with it. That means I have to carefully schedule my time of using CNC in order to finish it on time. Moreover, the size of the project makes it important to control the budget. And the budget will directly impact the available material size. All of these elements eventually affect the design. The process is pretty much similar to the situation that I have to deal with when I am working with real person.



