

MORE THAN HUMANS

ARCHITECTURAL PORTFOLIO | COLUMBIA GSAPP

M.S. ADVANCED ARCHITECTURAL DESIGN 2023-2024

MANFEI SHI

01

DUST MEMORIAL

Othered natures, Recompositions and Geographies of breath

Keywords: Dust, Suffering, no human, memorial, living ecology

Site: Freshkills Park, Staten Island, NY

Program: Memorial Monument

Semester: Summer 2022

Collaborator: Aimee Yang

Professor: Nerea Calvillo

Teaching Associate: Simran Raswant

The debris from 9/11 is buried under Freshkill Park. It is in the West Mound, the largest and the last mound to be capped. How can 9/11 being memorialized, not only for the victims, but for all the people that suffered?

What else can a memorial be?

9/11 was one event within one of US histories of neo-imperialism that can be described through 4 different forms of dust: explosion dust, dust clouds, suspended dust and war dusts. Those bring together matter, destruction and suffering.

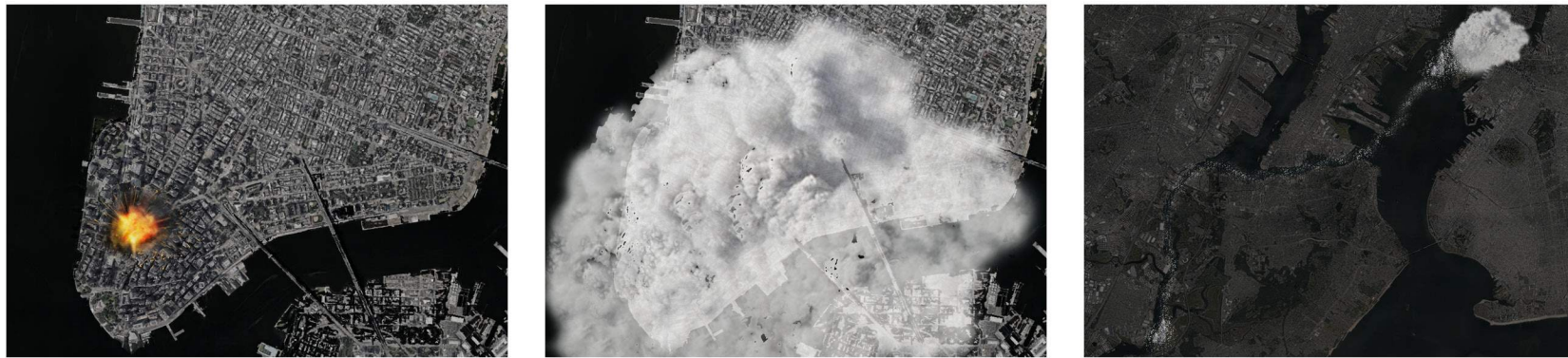
Instead of silencing the past of 9/11, we suggest a living ecology that keeps the multiple forms of suffering created by its history of neo-imperialism present. Through Debris, birds, fireflies and soya's breath.



HOW COULD WE HONOR THE SUFFERING OF ALL THE BODIES INVOLVED IN THIS HISTORY OF U.S. NEO-IMPERIALISM?

9/11 suffering never end till now. Victim families suffered for their lost beloved ones; The firefighters, rescuers, and emergency workers who responded for 9/11 victims have suffered losing their jobs, being sick and dying, whilst being constantly ignored by the government. Sorting experts in DSNY worked 24/7 after the incident suffered the toxic dust particles that settled in their lungs, causing health diseases like cancer for decades. Suffering also took place outside the US. Through the “War on Terror”, Bush initiated bombing campaign in Afghanistan, which has lasted more than 20 years.

How is 9/11 being memorialized now? Is a shrine the only way to remember? What else can a memorial be?



9/11 20 years later: Victims' families still struggle with anger
By Mariel Adair

Families Protest Burying Remains At 9/11 Memorial
NATIONAL

As the Taliban secure a strategic takeover, will Washington D.C. pay reparations to Afghanistan?
Opinion

A History of the Long Fight to Secure Funding for 9/11 First Responders
By Matt Stieb, Health Care Staff Writer

Reckoning and Reparations in Afghanistan
The U.S. government owes reparations to the civilians of war and brutal impoverishment.
By KATY KELLY

Anyone who's lost a loved one knows the pressure to visit shrines to the past. But it doesn't always help
Kat Lister

9/11 first responders on brink of losing jobs despite law
By Reuven Fenton and Gabriele Fiori
July 31, 2022 | 11:43am | Updated

9/11's Second Wave: Cancer and Other Diseases Linked to the 2001 Attacks Are Surging
By LEAH MCGRATH GOODMAN

The Toll of 9/11: 20 Years Later, First Responders Still Struggle with Health Effects
Twenty years after the attacks, the toll they've taken on the FBI is evident—both in the grief over those we've lost and the vigilance required by all who were there that day to monitor

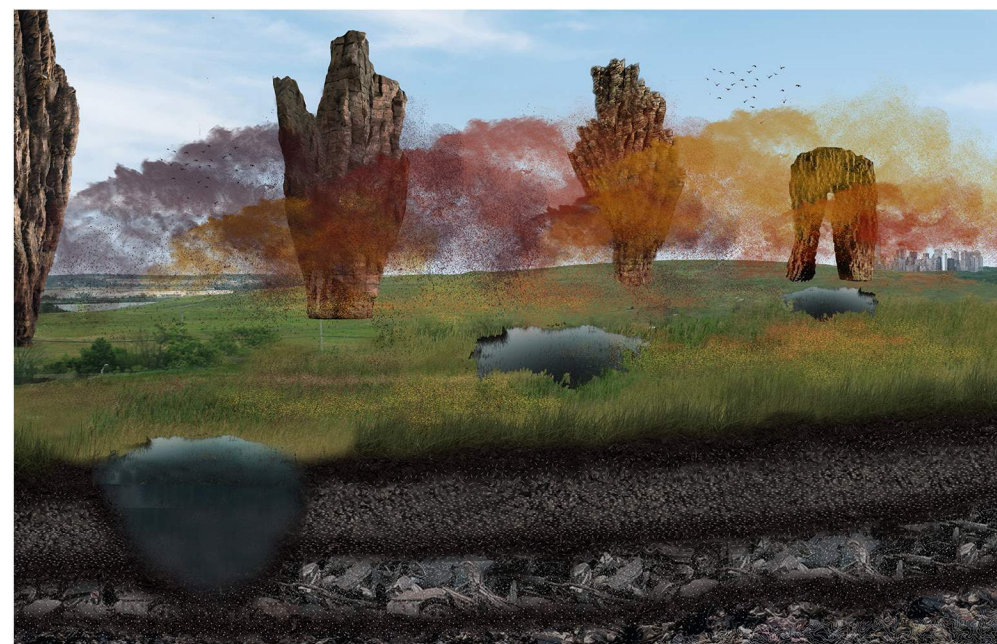
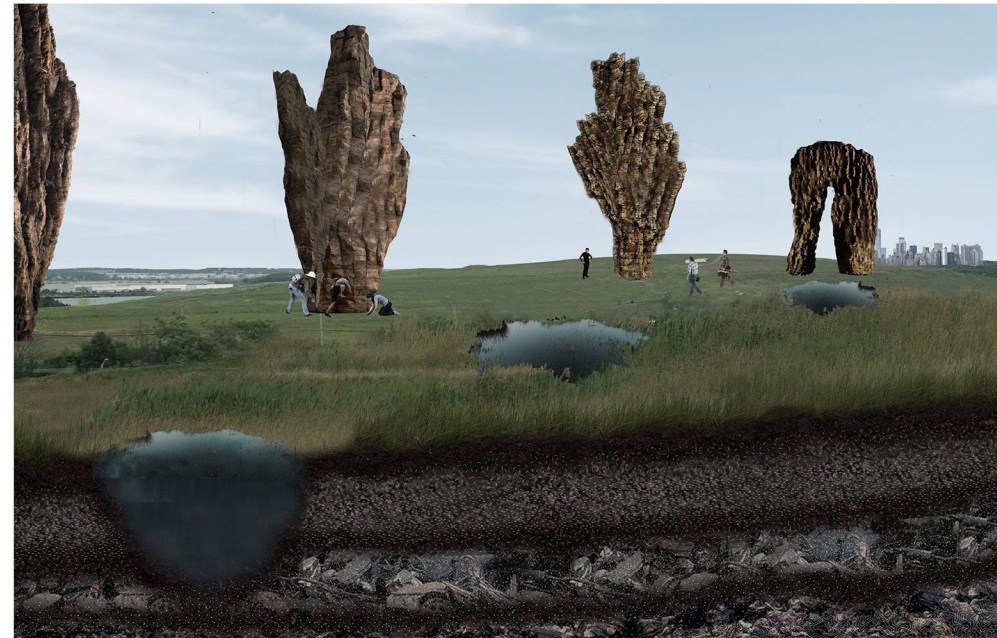
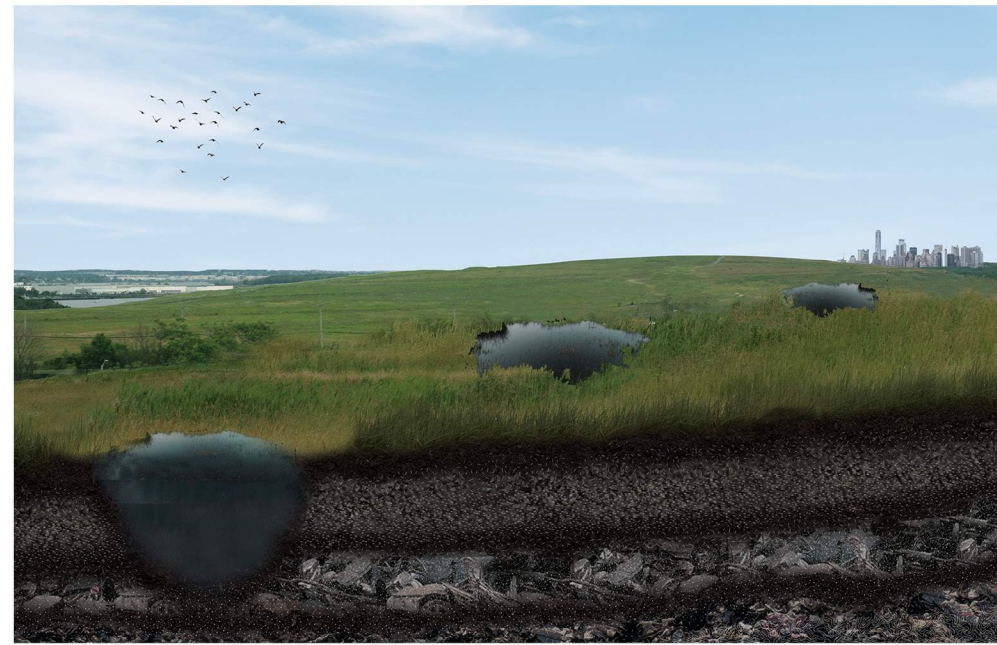




Freshkill West Mound: In memorial of the sufferings: **uncovering the layers of history** through an explosion, and **creating new layers of living ecology** through **four new forms of “dust”**.

WINTER

An one-off explosion reaches the 9/11 debris underneath, and releases it into the surface, reshaping the landscape of West Mound on its hilltop. The debris is then uncovered to the public through explosion, transformed into a living ecology, reborn as a monumental landscape. After explosions, the remaining craters are gradually transformed into ponds. Seeds are dispersed in two ways.



SPRING

Every year, clouds of colorful seeds are released. carried by wind, these seeds create a living habitat on West Mound. Seeds are also carried by local birds. As an invitation, nesting wooden sculptures that are built along the hilltop. It is aligned with the migration route of birds, built in different heights. Eventually, the seeds are spread out to the entire Freshkills. The weeds will be collected for medicinal use to clean the residues in the lung for the sorting people who are suffering from diseases.



SUMMER

2 years later, the ponds grow larger with diverse weeds growing around, gradually becoming an attractive habitat for fireflies. West Mound is a restricted accessible area to the public, but this can be even more preferable for fireflies to stay. The fireflies, only visible during the summer nighttime, are a re-enact of the invisible suspended dust. The light dust of fireflies in memory of the 9/11 events, viewed from a distance and advocated public donation activities.



FALL

The fund will be given to Codepink, an active organization working to demilitarize the US. The crop seed that dispersed in the spring, are harvested by volunteers in the fall. In the meantime, Red-wing blackbird, red tail hawk, green herons, creating their own temporary nests around the site. Flocks of birds, who change across seasons, are formed on the west mound and remind us of the war dust in Afghanistan. The soybean, as one of the profitable crops in New York, grows and harvested on the site, will be sold for profit and given to those first responders that suffered for their loss of jobs after 9/11.

02

SALT MARSH RESILIENCE

Impermanence, Biomaterials, and Regeneration

Keywords: Habitat Restoration; More than Human; Salt Marsh; Ecosystem; Entropy; Decay; Time

Site: Jamaica Bay, Queens, NY

Program: Recreation + Research

Semester: Fall 2023

Collaborator: Ziyi Zhu

Professor: Marc Tsurumaki

Teaching Associate: Daniel Chang

Salt marsh is a productive ecosystem that provides habitats for a variety of species. It is used to be seen on every coast in the United States including Jamaica Bay where has the largest and richest coastal wetland ecosystems, but continuously lost due to the sea-level rise in the past decades.

The project aims at studying entropy, associated with deterioration and decay is anathema to architecture. Yet, buildings and cities are not static objects, but dynamic and evolving systems: temporary accretions of matter, energy and human activity that shift over time. How can a building both serve as architectural spaces and salt marsh restoration, extended and transformed through time to constantly serve all the species here at Jamaica Bay?



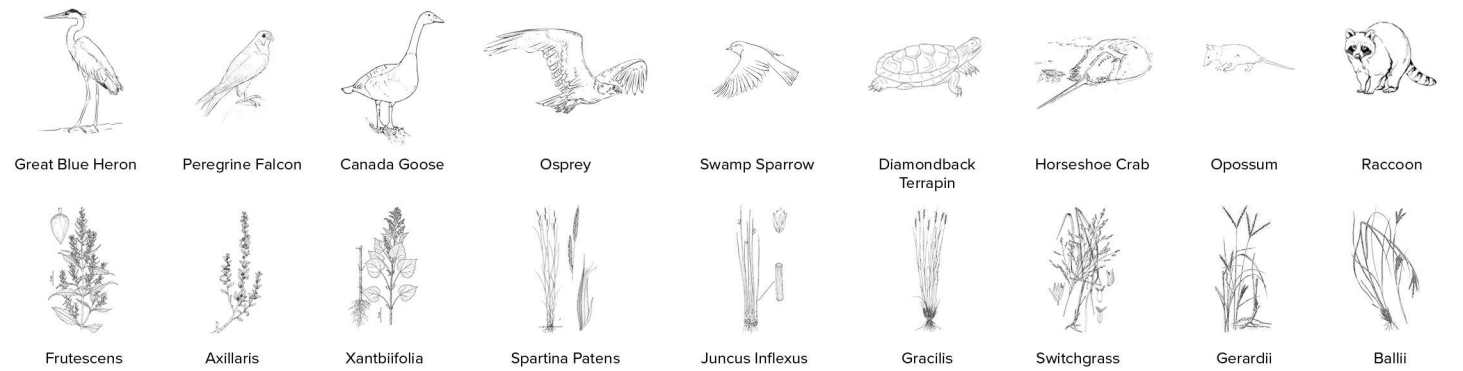
JAMAICA BAY WILDLIFE REFUGE: 2020s



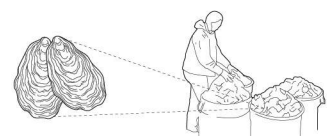
ONGOING ACTIVITIES AT JAMAICA BAY

The Wildlife Refuge area, highlight with the only freshwater resource at Jamaica Bay, is activated with the maximum amount of wildlife, recreation, and research activities at Jamaica Bay. The rich resource attracts people to develop many recreation and research activities on site. In 2012, when hurricane Sandy attacked New York City, the saltwater from the shore breached into the west pond and mixed with the freshwater through flooding. Since then, many programs and projects have been focused on repairing and restoring the salt marsh and shoreline to create coast resilience.

WILDLIFES & PLANTS



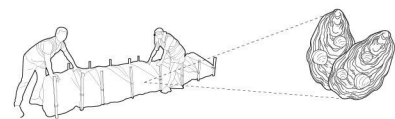
OYSTER REEFS



Recycle oyster shells

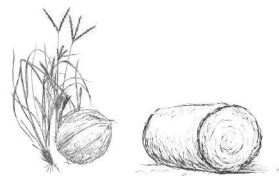


Transport to shoreline



Oyster larvae settle onto the shell to form oyster reefs

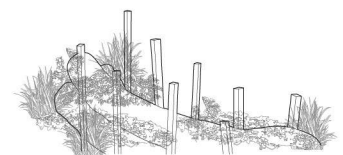
EROSION CONTROL



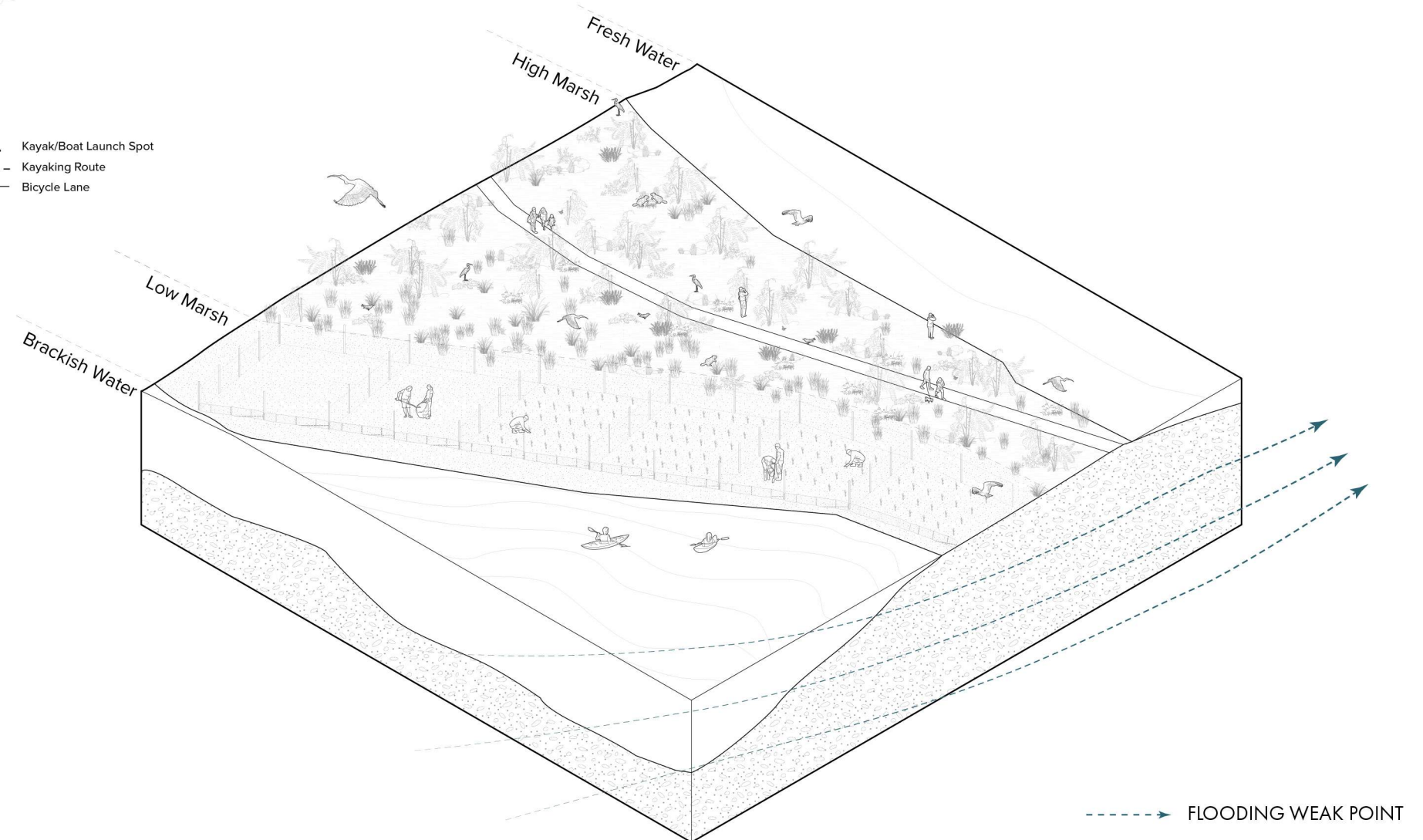
Collect straws and coconut coirs and roll into stabled 'coir logs'



Install to restore habitat across salt marsh landscape



Reduce land erosion and add up height for salt marsh flora to habitat



-----> FLOODING WEAK POINT



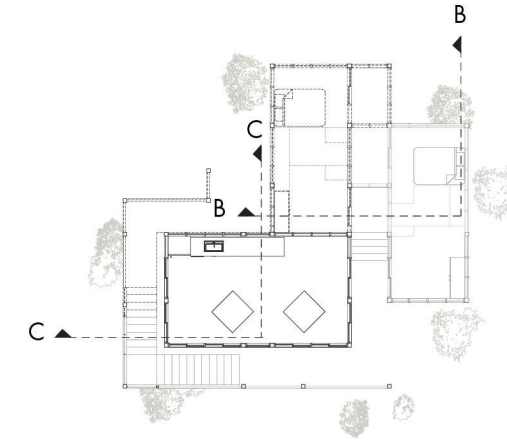
LONG-TERM VS SHORT TERM; HUMAN VS MORE THAN HUMAN

Inspired by structural-infill system, stable pile construction was proposed for permanent use, while all the other walls and floors were seen as infill, can be adjusted and replaced for any changing proposes later years. The pile columns have three main functions: a long-term structure for building, the holding structure for stabilizing salt marsh sausages below, and poles for birds to stand and nest above.

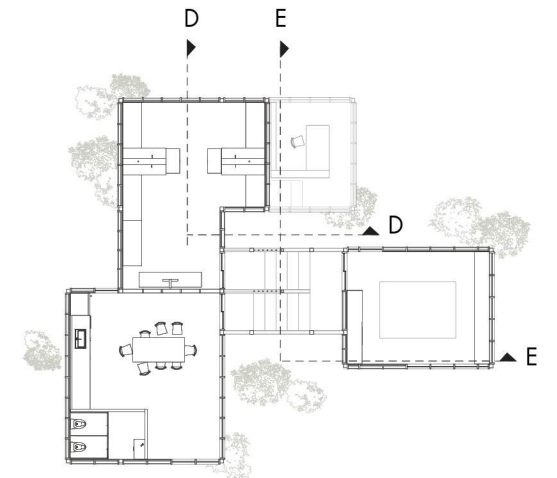
Considering the existing interrelationship between visitors, researchers, and wildlife, the buildings were constructed for ongoing recreation and research activities, and would be able to evolve over time to form habitats for wildlife and other species.



SITE MAP



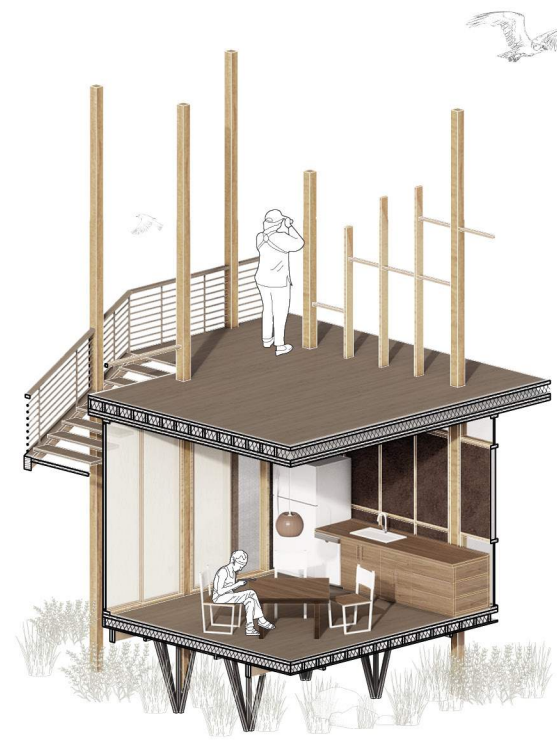
RECREATION: GETAWAY



RESEARCH LAB



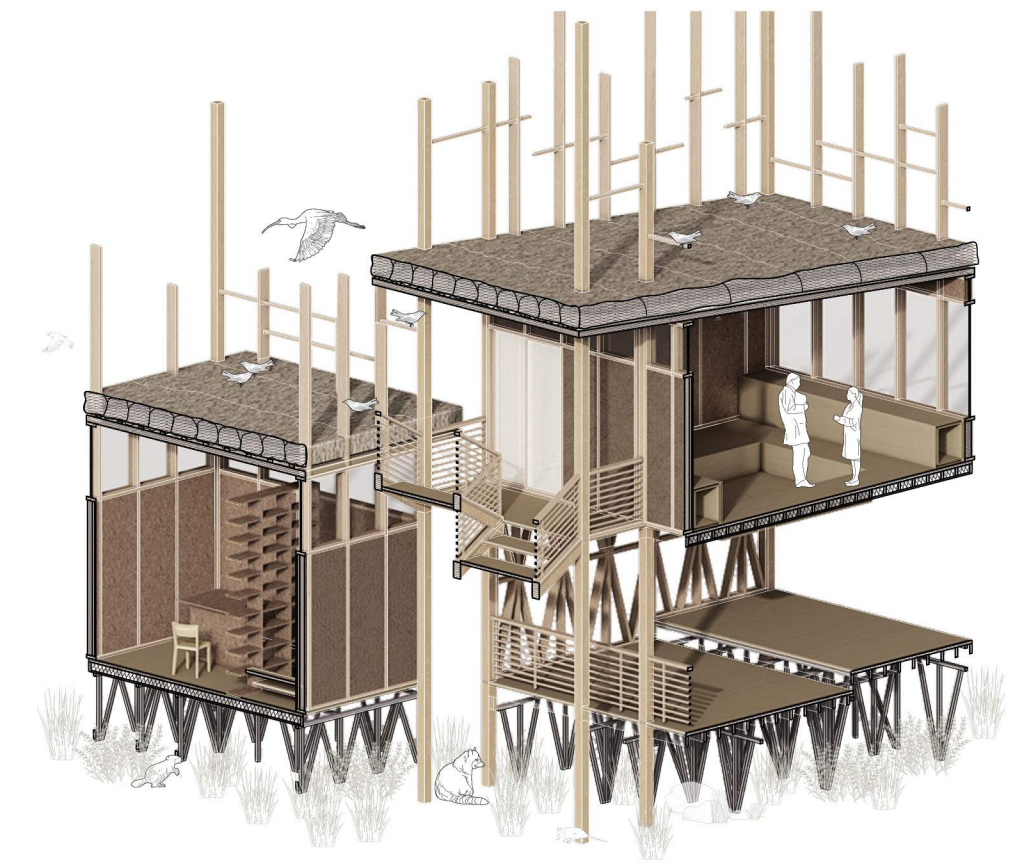
SECTION B



SECTION C

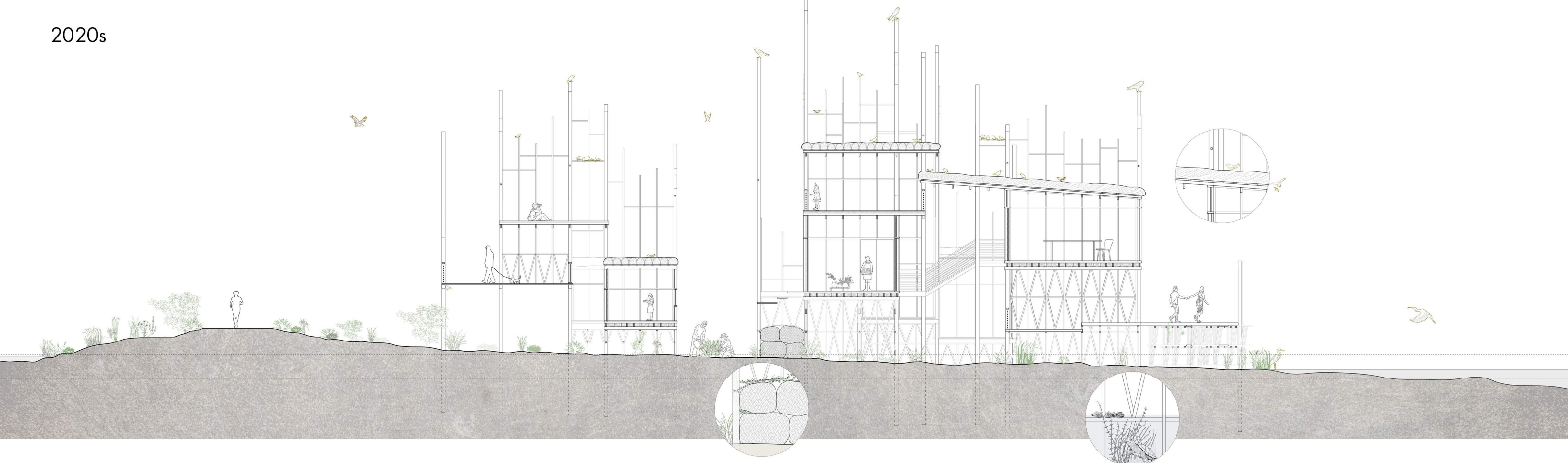


SECTION D

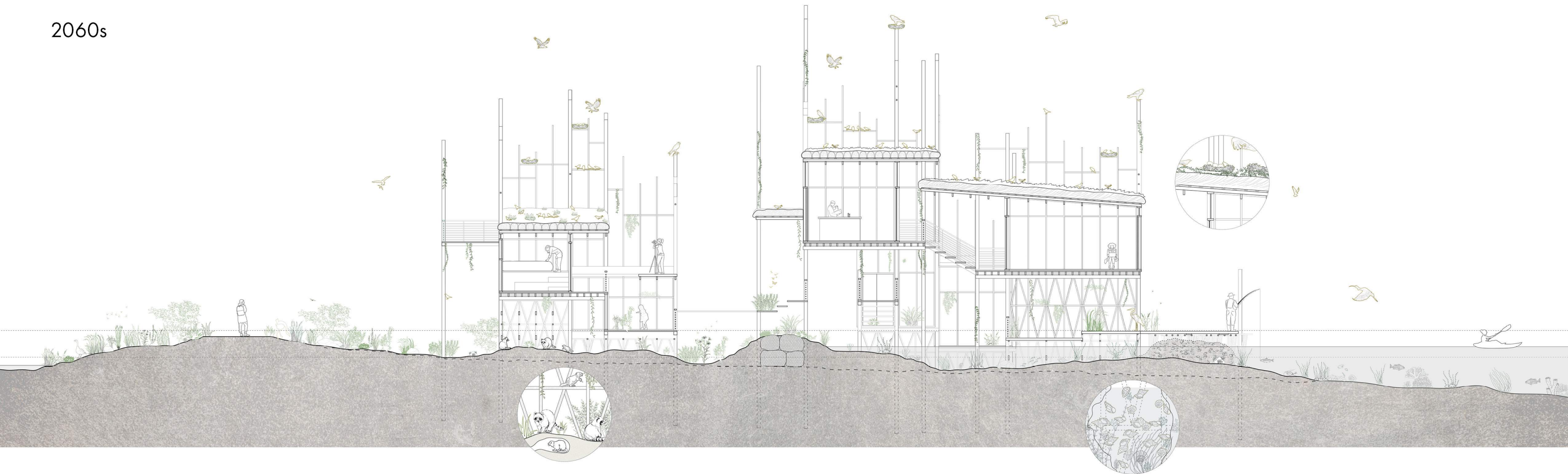


SECTION E

2020s



2060s



2090s



03

FLOATING AQUACULTURE

Floating NY: Expanding an over-expanded city

Keywords: Floating, Aquaculture, East River, Flood, Shelf-Framing Structure

Site: South Brooklyn Marine

Terminal (SBMT), BK, NY

Program: Recreation + Research

Semester: Spring 2024

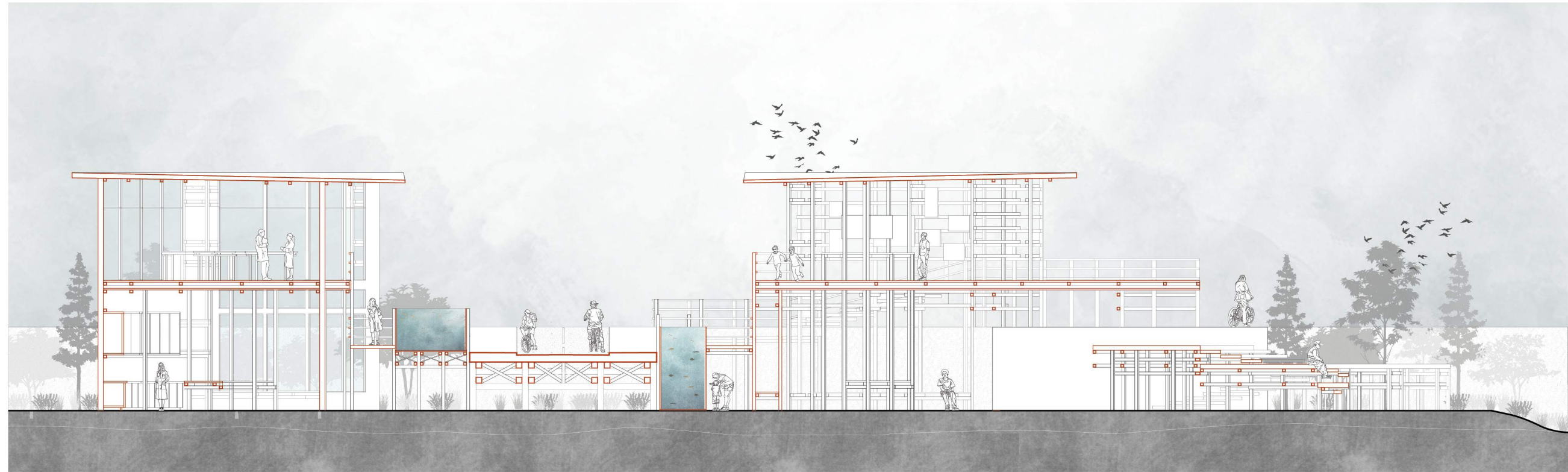
Professor: Laurie Hawkinson

Teaching Associate: Steven Lin

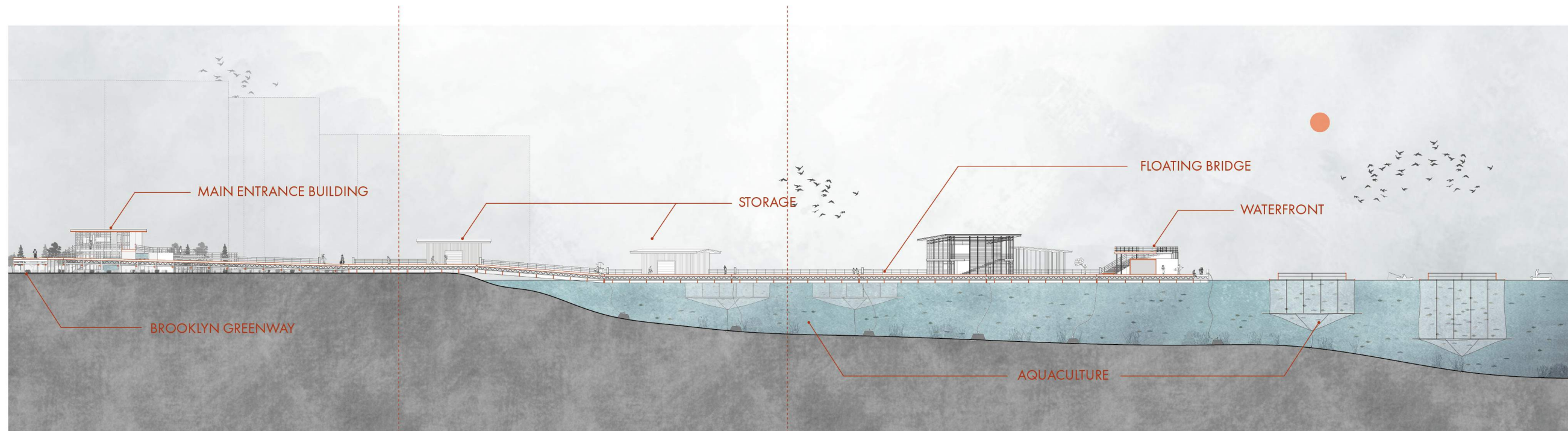
South Brooklyn Marine Terminal (SBMT) is featured by the great East River waterfront resource with rich fish species in various depths of water. However, due to the pollution in past centuries, the districts is constantly losing this precious feature resources.

As looking into the future, how could New York City bring back its surrounding water and fishes, and how could it connect with the existing network around the neighborhood, achieve a prospective growing resource for the community?

From land to water, utilizing the current on-site Greenway proposal, a line is created as a main path to create an access for the public, educated through and interacted with a series of programs in the floating landscape, inviting the kids and local residents to learn about their neighborhood - the river and the aquaculture.



CROSS SECTION THROUGH BRIDGE AT MAIN BUILDING



SECTION A

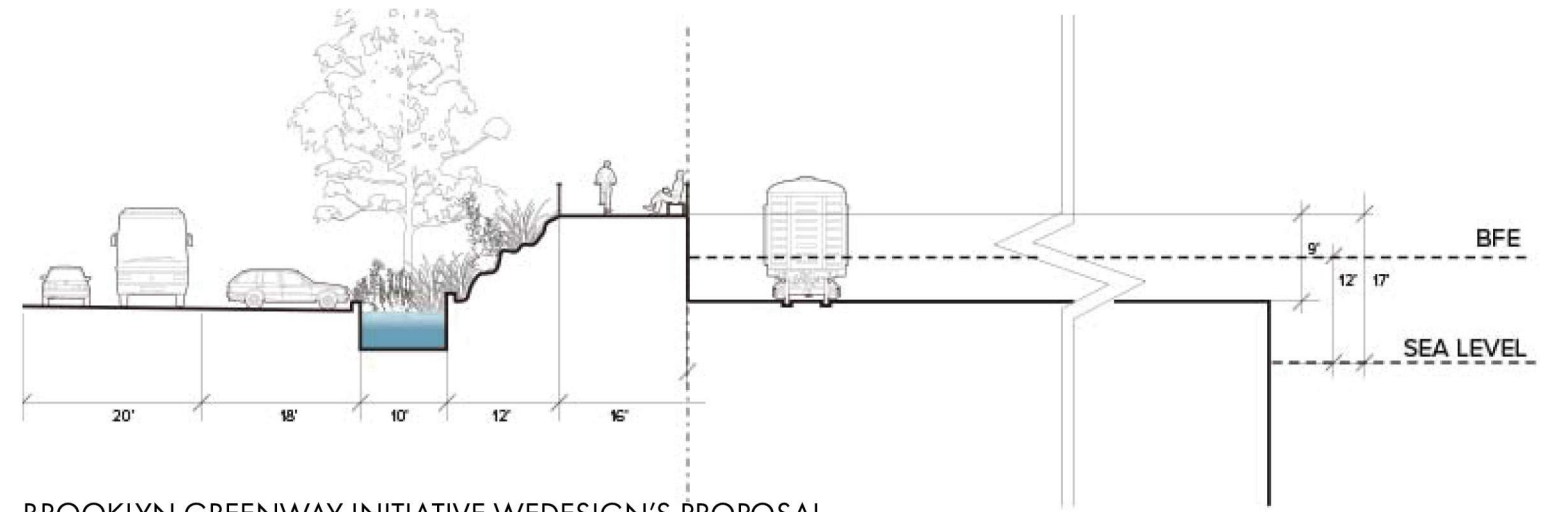
SECTION B

SECTION C
LONG SECTION THROUGH BRIDGE

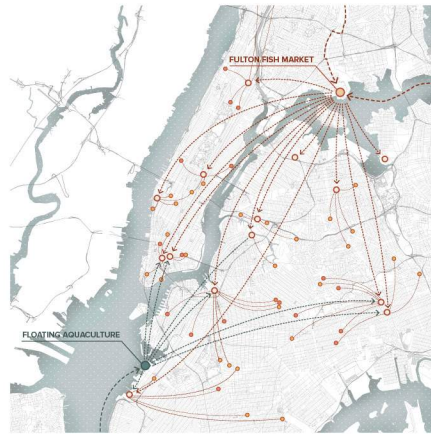
SBMT EXISTING CONDITIONS

Brooklyn as a district far away from the main New York City fish market network, has much fewer connection to the resources. Looking into the future, could SBMT be a new center point of the market by raising aquaculture here, as a way to bring back the water and fishes in East River. Meanwhile, the site combining other programs to educate the local residents and children for a prospective growing environment.

Considering the current on-site Greenway proposal is designed by WeDesign: an elevated bikeway 9 feet tall above the ground level to protect the neighborhood from stormwater and flooding caused by sea level rises - a sloped floating bridge is extended out from the Greenway, inviting the public access from land to the open sea water with aquaculture landscape.



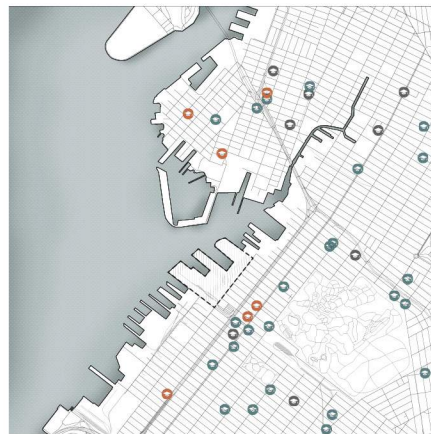
BROOKLYN GREENWAY INITIATIVE WEDESIGN'S PROPOSAL



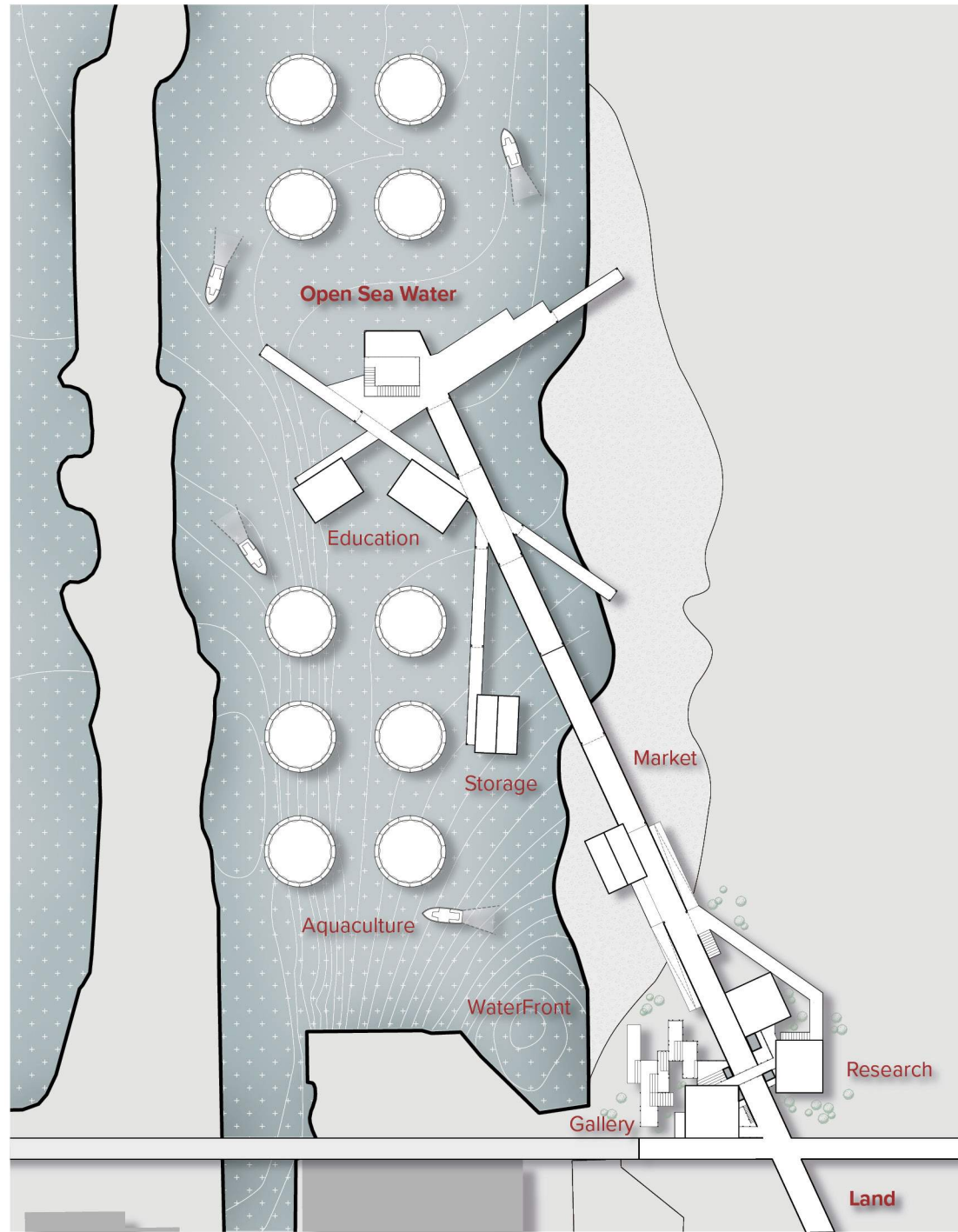
NYC FISH MARKET



TRANSPORTATION



EDUCATION



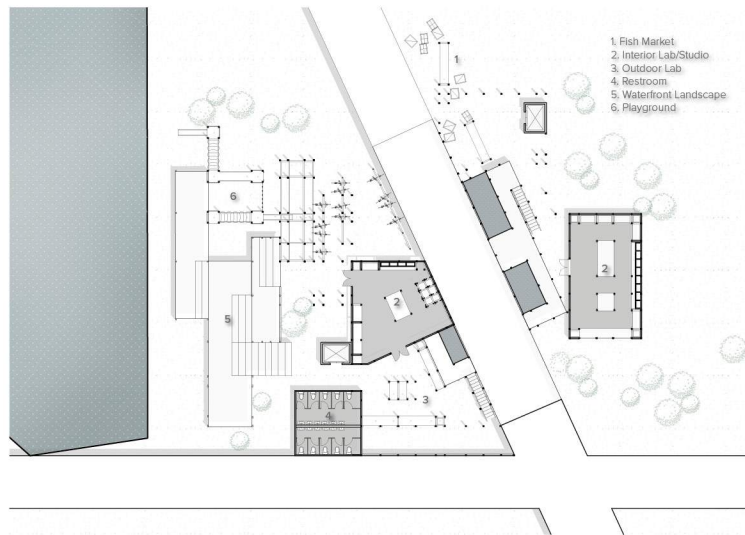
ENLARGED SITE PLAN



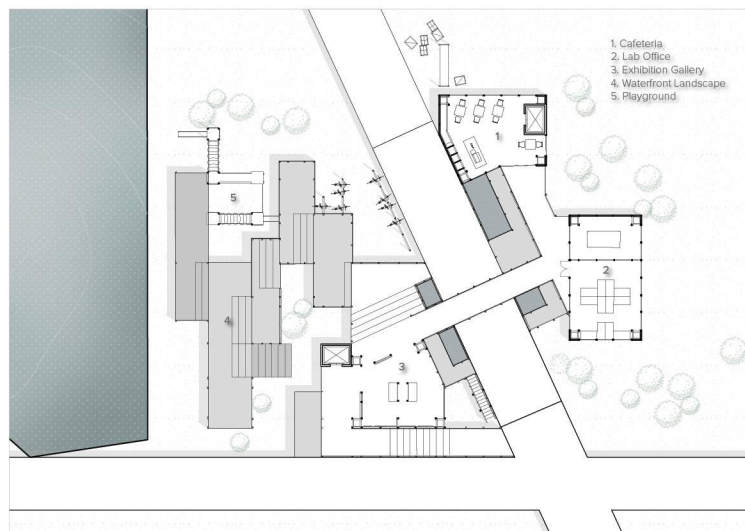
NOLLI PLAN (LAURIE HAWKINSON'S STUDIO - ALL PROJECTS)

MAIN ENTRANCE BUILDING

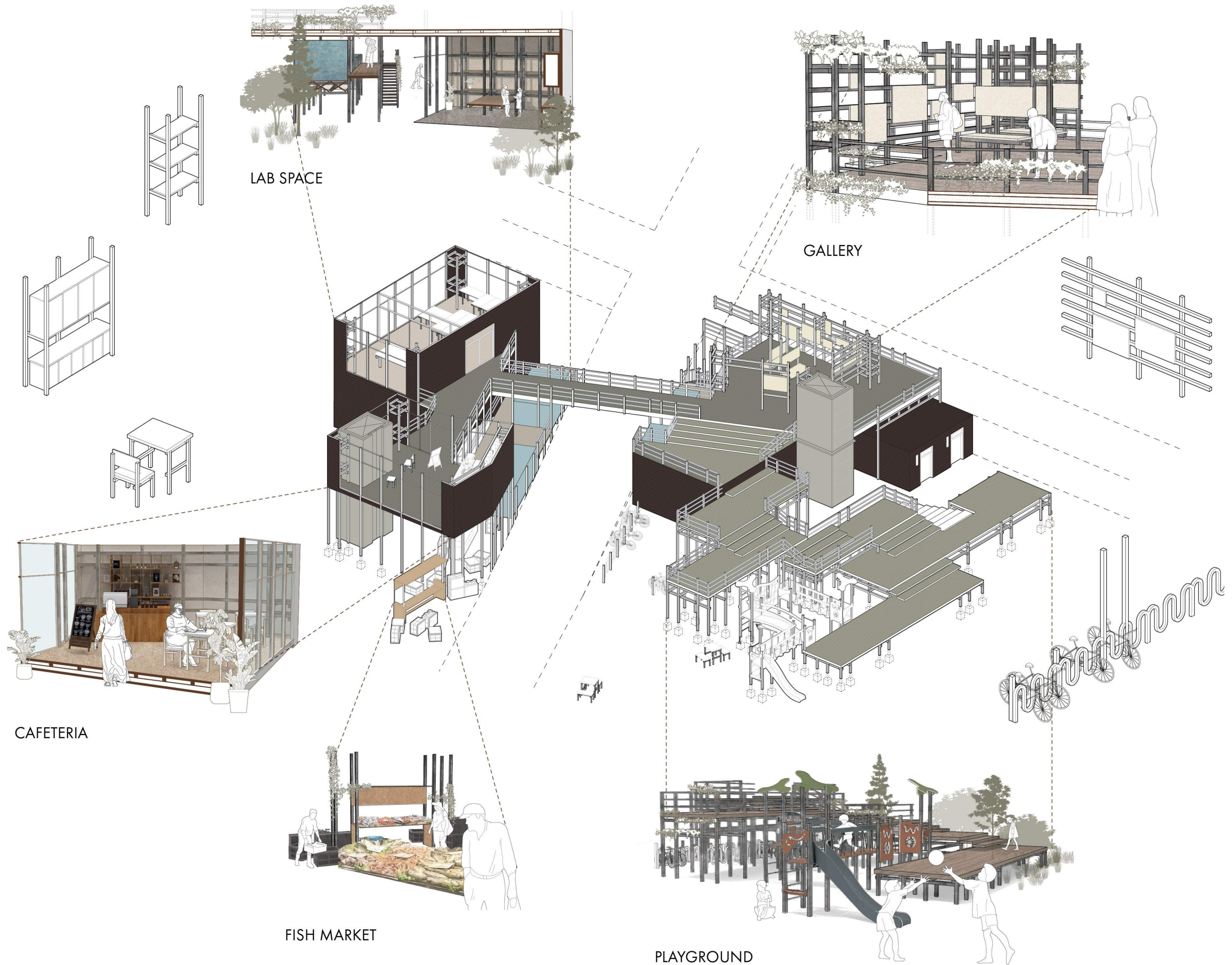
The main building functions as an entrance to the waterfront. The bridge goes between the buildings, connecting with the second floor and sloped to the first floor. The second floor is mainly open to the public with enclosure clean lab space, and the ground floor is designed for open lab and fish market, which are more open to the air as the area will be flooded. The framing system are used for structural support, meanwhile the subsystem could be utilized for designed furniture elements, such as shelves, tables, cabinets, fish market stalls, and playground for the children.



MAIN BUILDING 2ND FLOOR

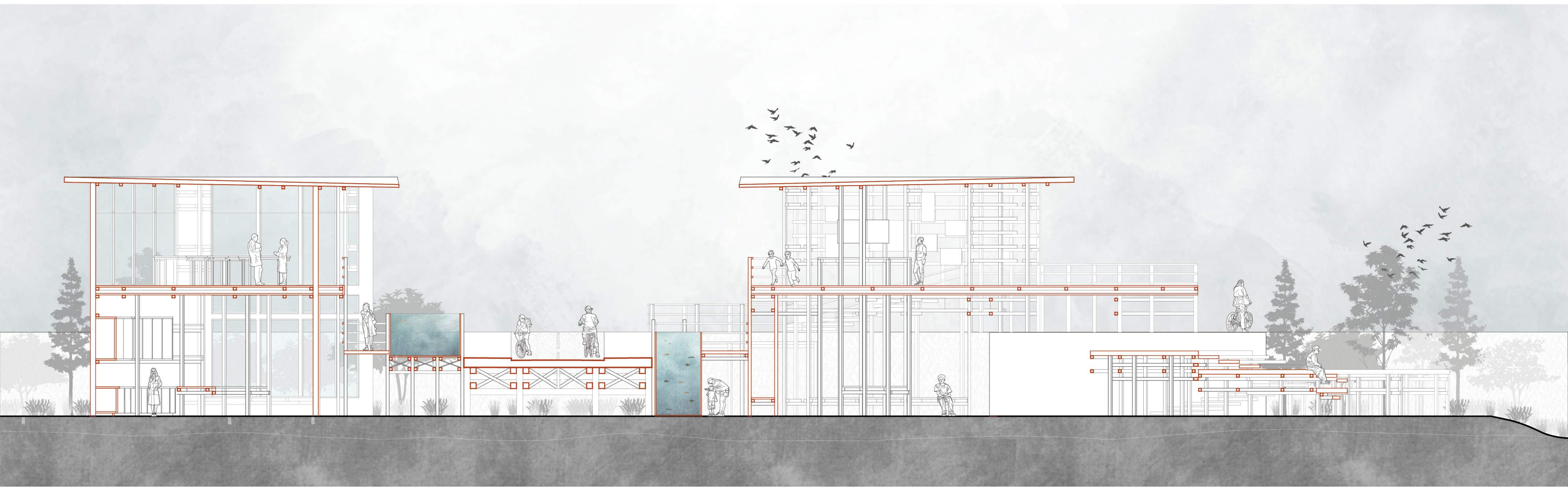
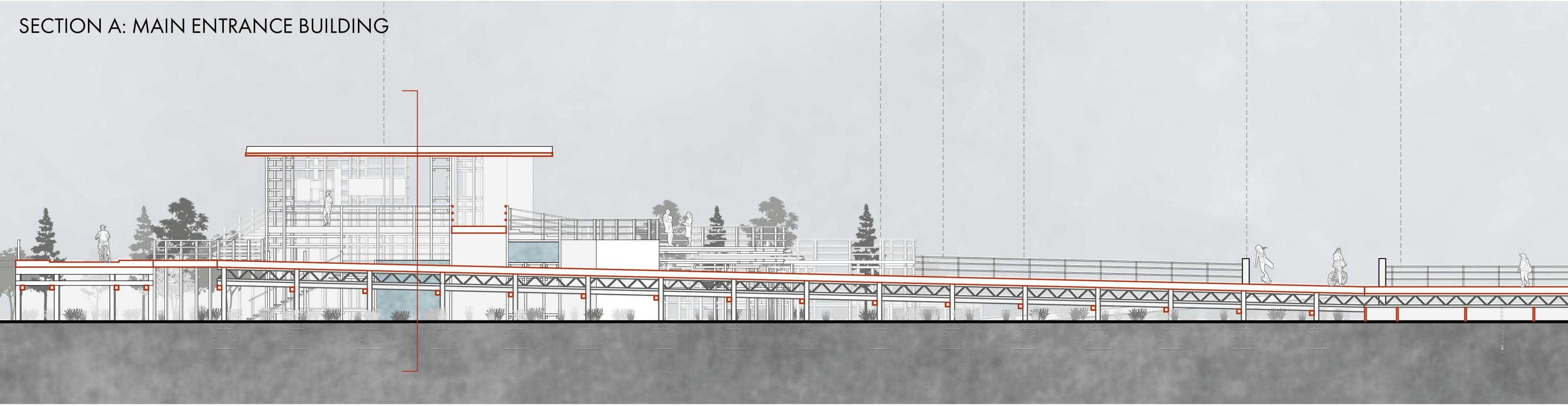


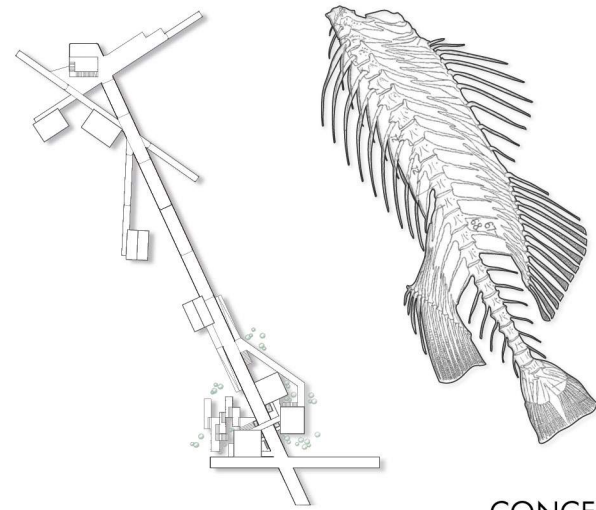
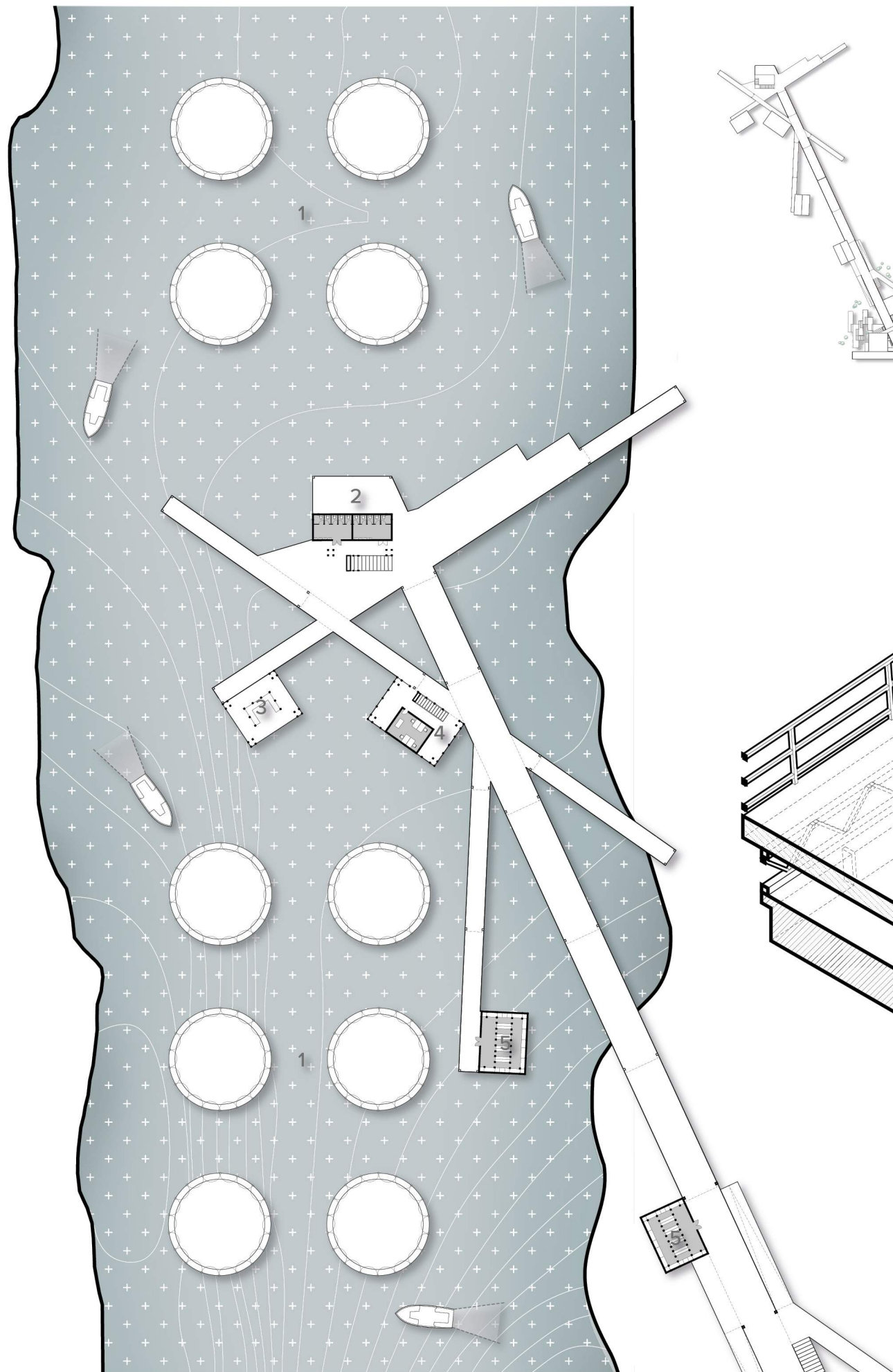
MAIN BUILDING 1ST FLOOR



STRUCTURE SYSTEM IN DIFFERENT PROGRAM

SECTION A: MAIN ENTRANCE BUILDING

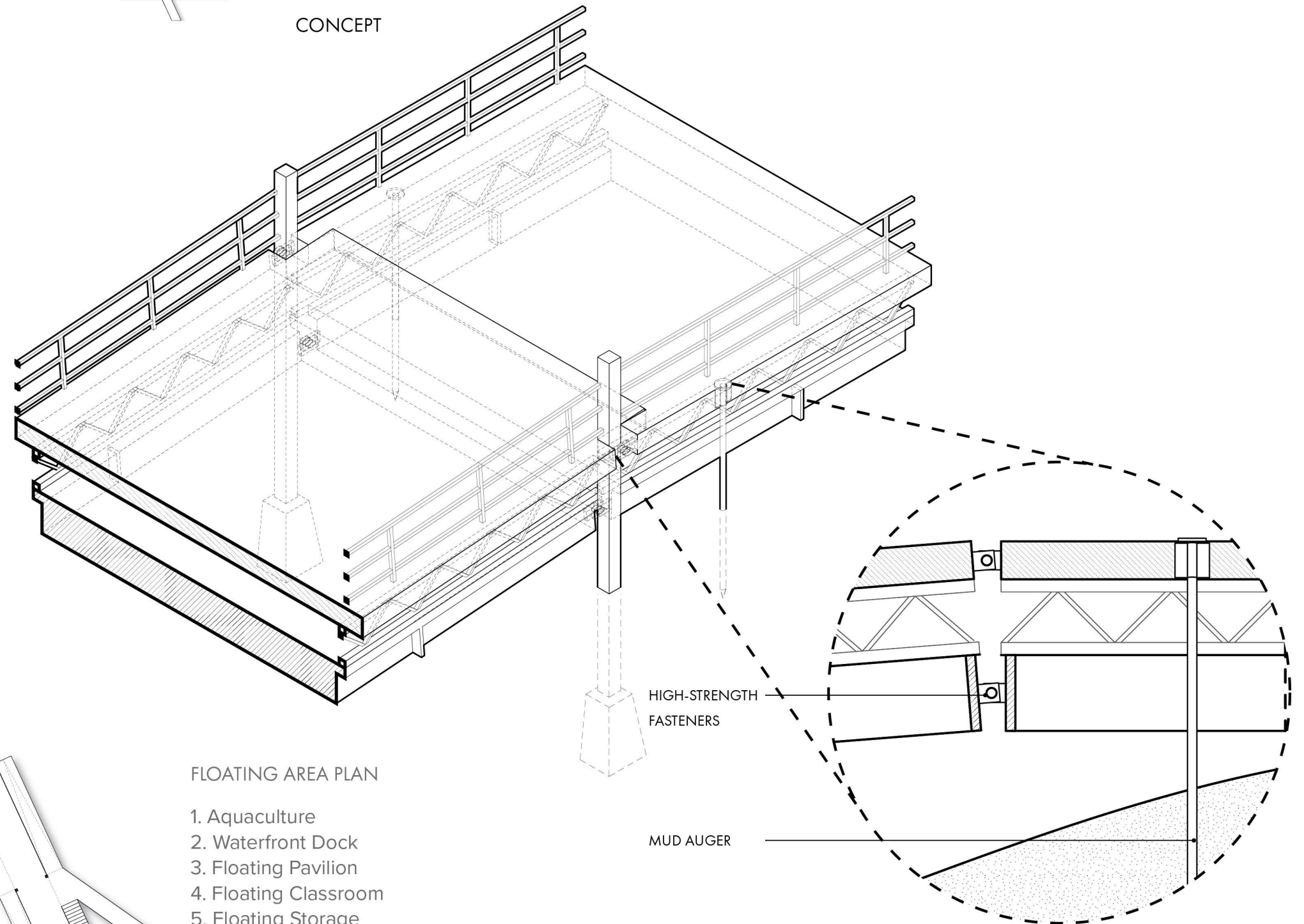




CONCEPT

FLOATING STRUCTURE

The floating bridge concept starting by the skeleton of a common fish in East River, striped bass. Smaller portion of floating bridge fragment connected each other by high-strength fasteners, similar to the abdominal vertebrae of the striped bass, and alternated narrow access to different programs followed the angle of the ribs. The bridge is consisted with wood platform on top and pontoon at the bottom, hinged at the edge of the land by mud augers to achieve its movement with the sea level.



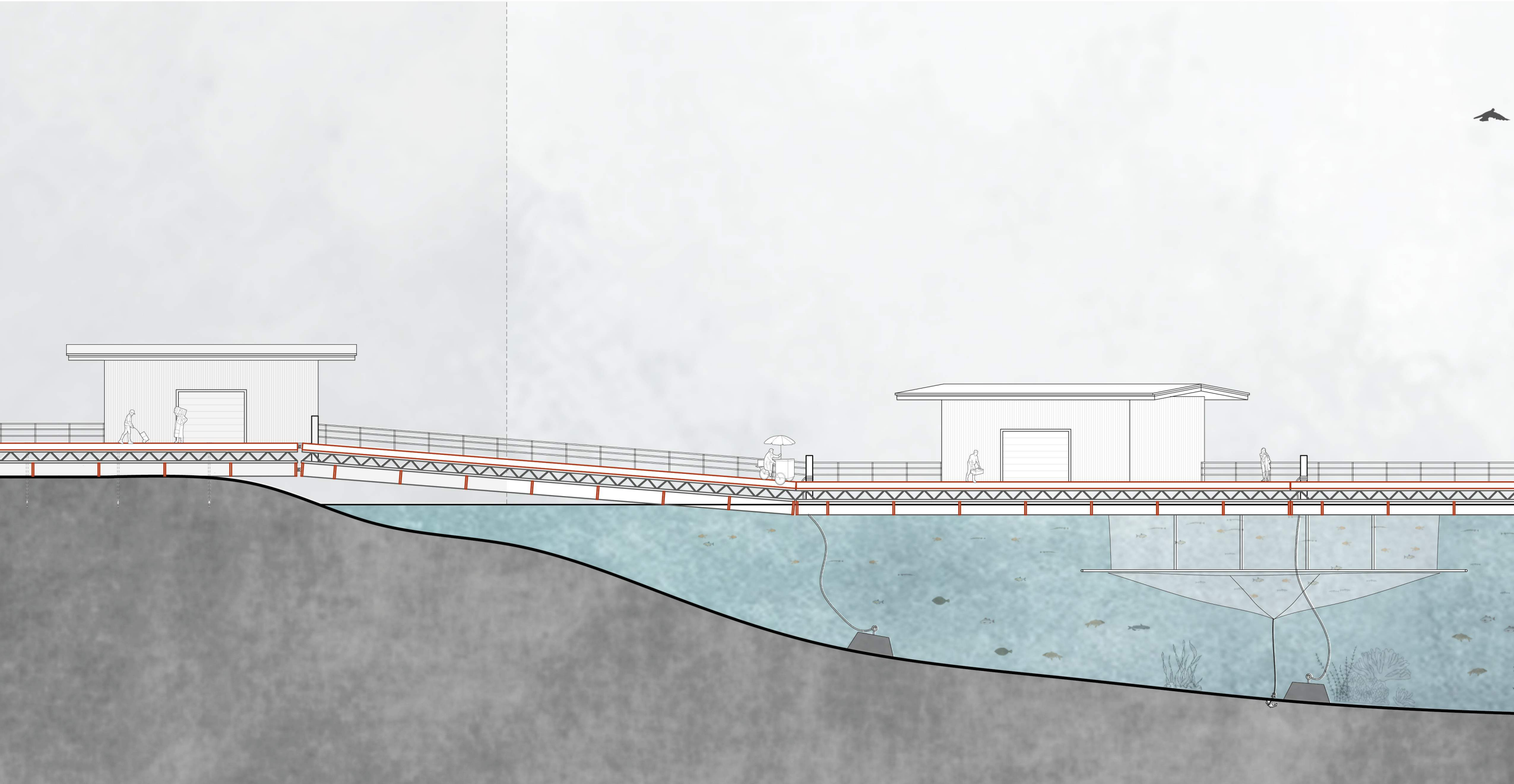
FLOATING AREA PLAN

1. Aquaculture
2. Waterfront Dock
3. Floating Pavilion
4. Floating Classroom
5. Floating Storage

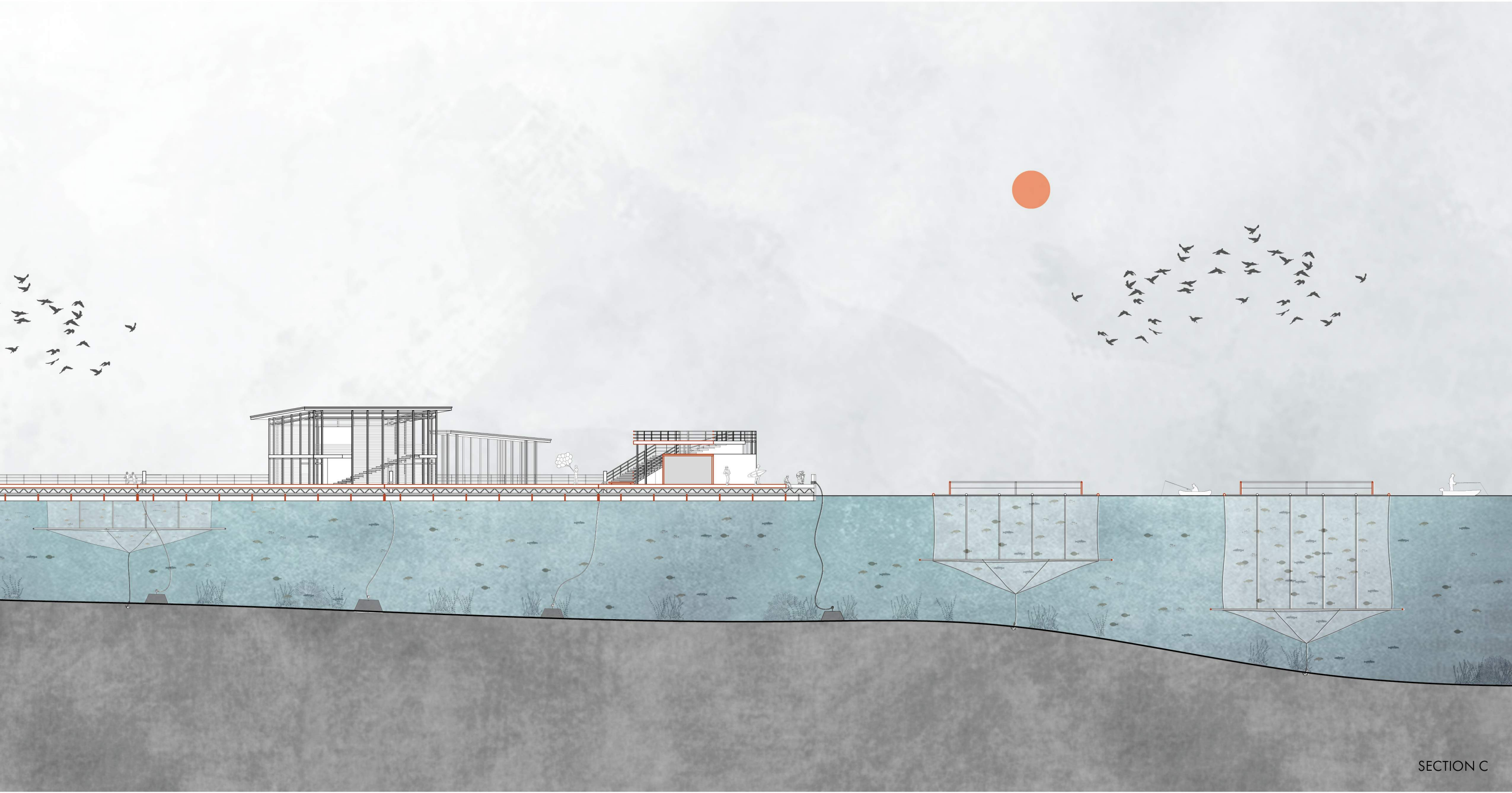
HIGH-STRENGTH FASTENERS

MUD AUGER

SECTION B: CONNECTION FROM LAND TO WATER



SECTION C: OPEN SEA AQUASCAPE



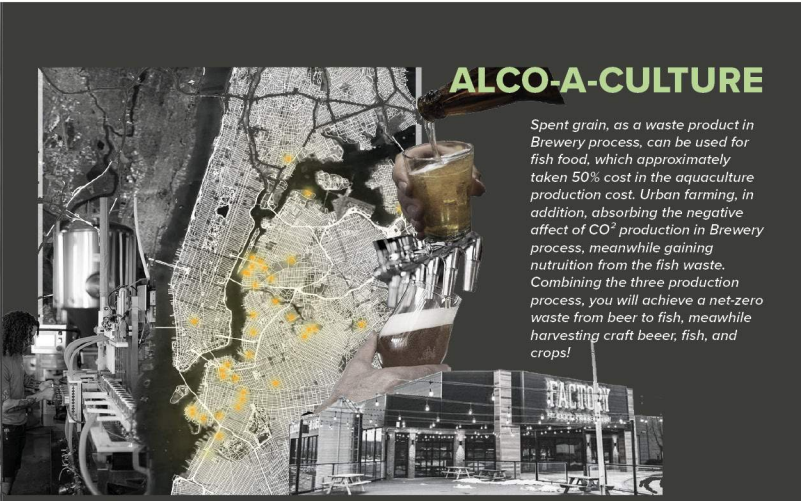
ALCO-A-CULTURE

Emerging Optimism: Resources + The Fourth Industrial Revolution

Professor: Sean A. Gallagher

Semester: Spring 2024

Spent grain, as a waste product in Brewery process, can be used for fish food, which approximately taken 50% cost in the aquaculture production cost. Urban farming, in addition, absorbing the negative affect of CO² production in Brewery process, meanwhile gaining nutrition from the fish waste. Combining the three above production process can lead to an achievement a net-zero waste from beer to fish, meanwhile harvesting craft beer, fish, and crops.

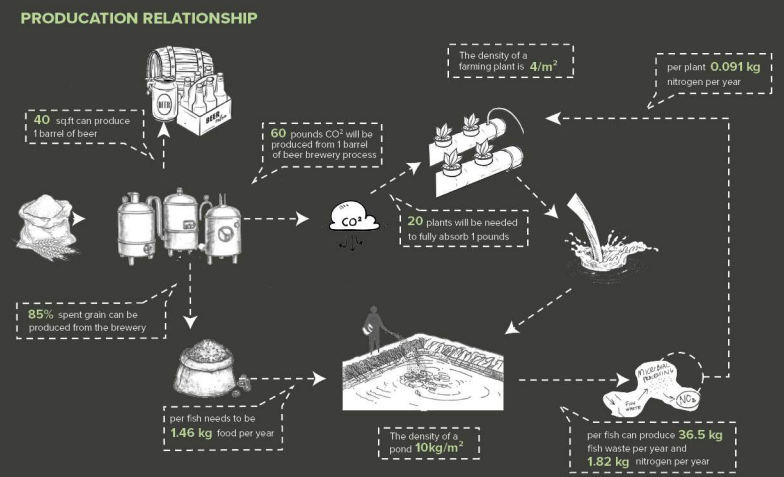


ALCO-A-CULTURE
Spent grain, as a waste product in Brewery process, can be used for fish food, which approximately taken 50% cost in the aquaculture production cost. Urban farming, in addition, absorbing the negative affect of CO² production in Brewery process, meanwhile gaining nutrition from the fish waste. Combining the three production process, you will achieve a net-zero waste from beer to fish, meanwhile harvesting craft beer, fish, and crops!

JOBS Approximately 20,000 full-time jobs are created by the craft beer industry in NY.

VALUE The annual economic impact of NY craft beer is \$3.4 Billion.

COST 50% of aquaculture production cost can be reduced by using spent grain



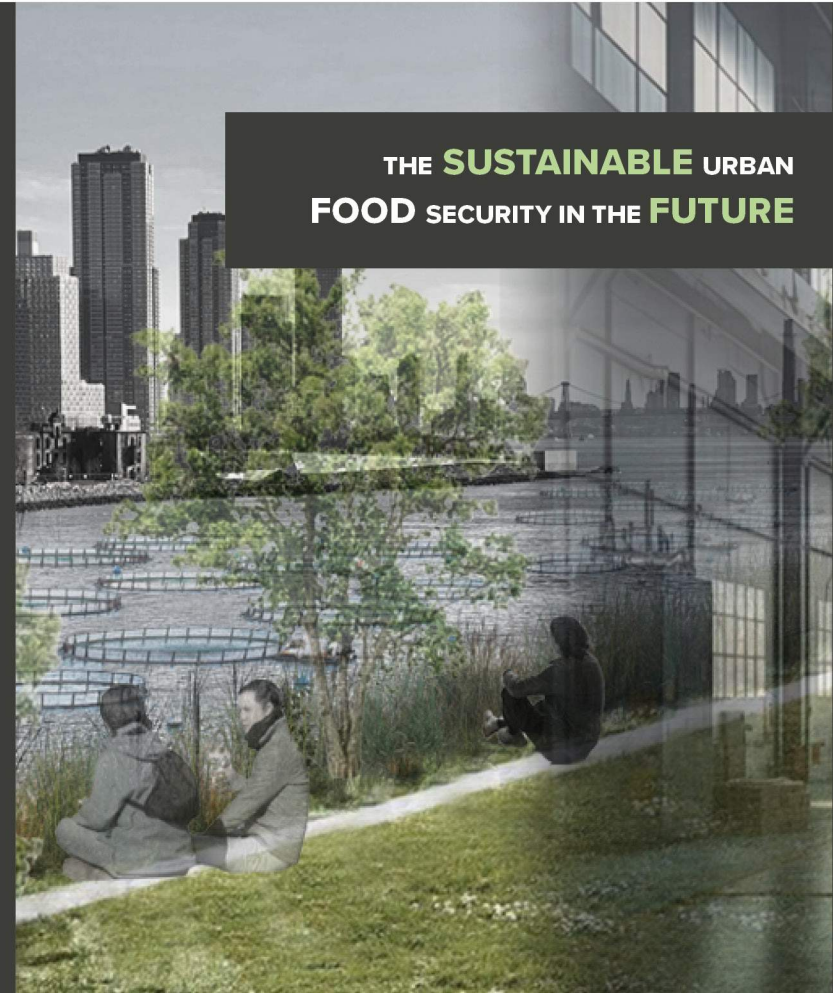
BROOKLYN NAVY YARD

99,000 FISHES
8,505 L BEERS
4,830 lbs CROPS

The total aquaculture area of this site is 8012 m². This includes 99,000 fish.

2,160 m² brewery area is needed to produce enough spent grain, which equivalent to a production of 8,505 L beer.

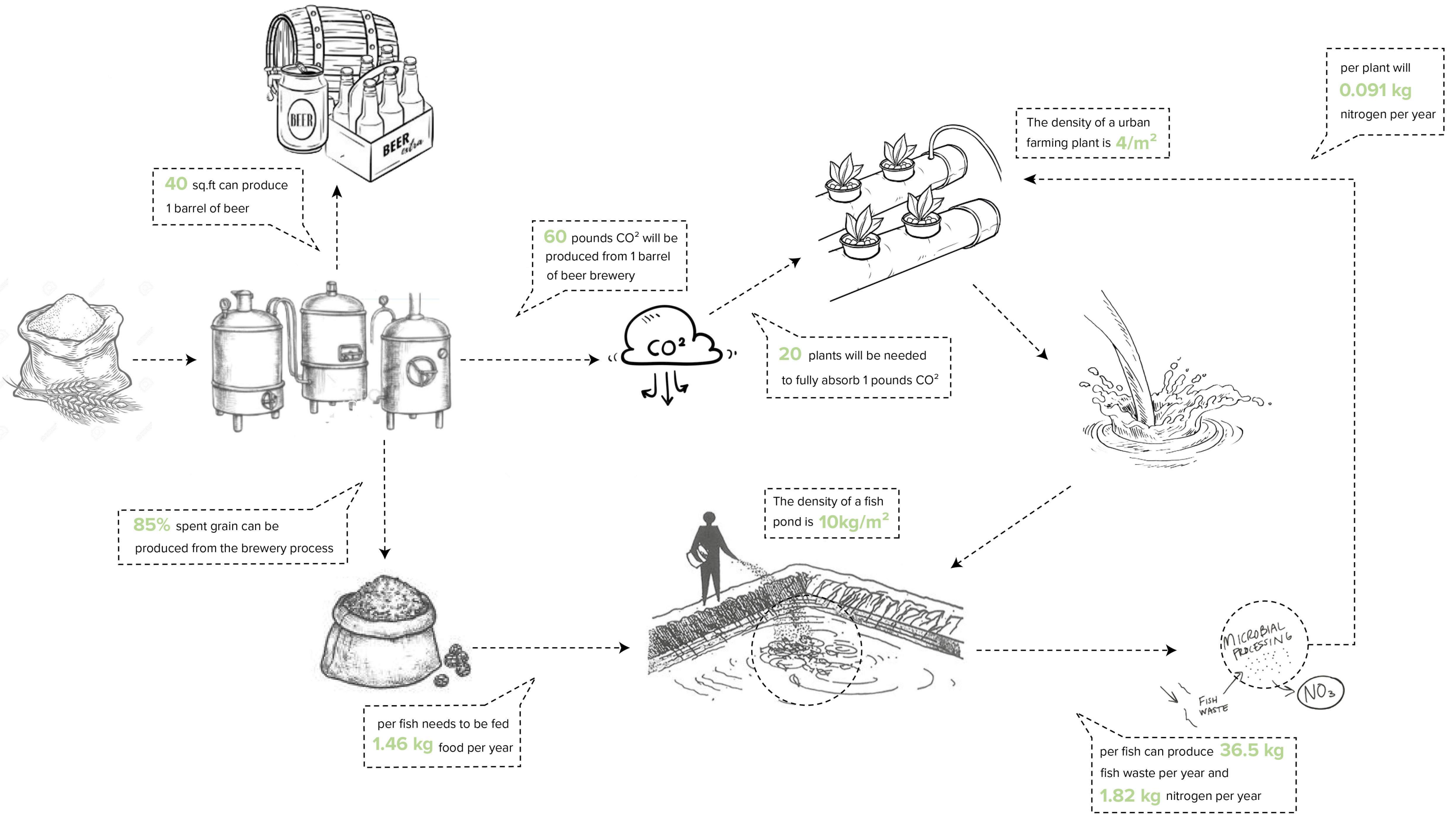
The amount of beer will produce 3,229 pounds CO₂, which leads to a requirement of 645 m² for urban farming in order to absorb the CO₂, while about 4,830 lbs of crops can be harvest from that.



THE SUSTAINABLE URBAN FOOD SECURITY IN THE FUTURE

PRODUCTION RELATIONSHIP

From Brewery to Aquaculture to Urban Farming





Emerging Optimism NET-ZERO Future

From Beer to Fish

VACANT STOREFRONT IN NEW YORK

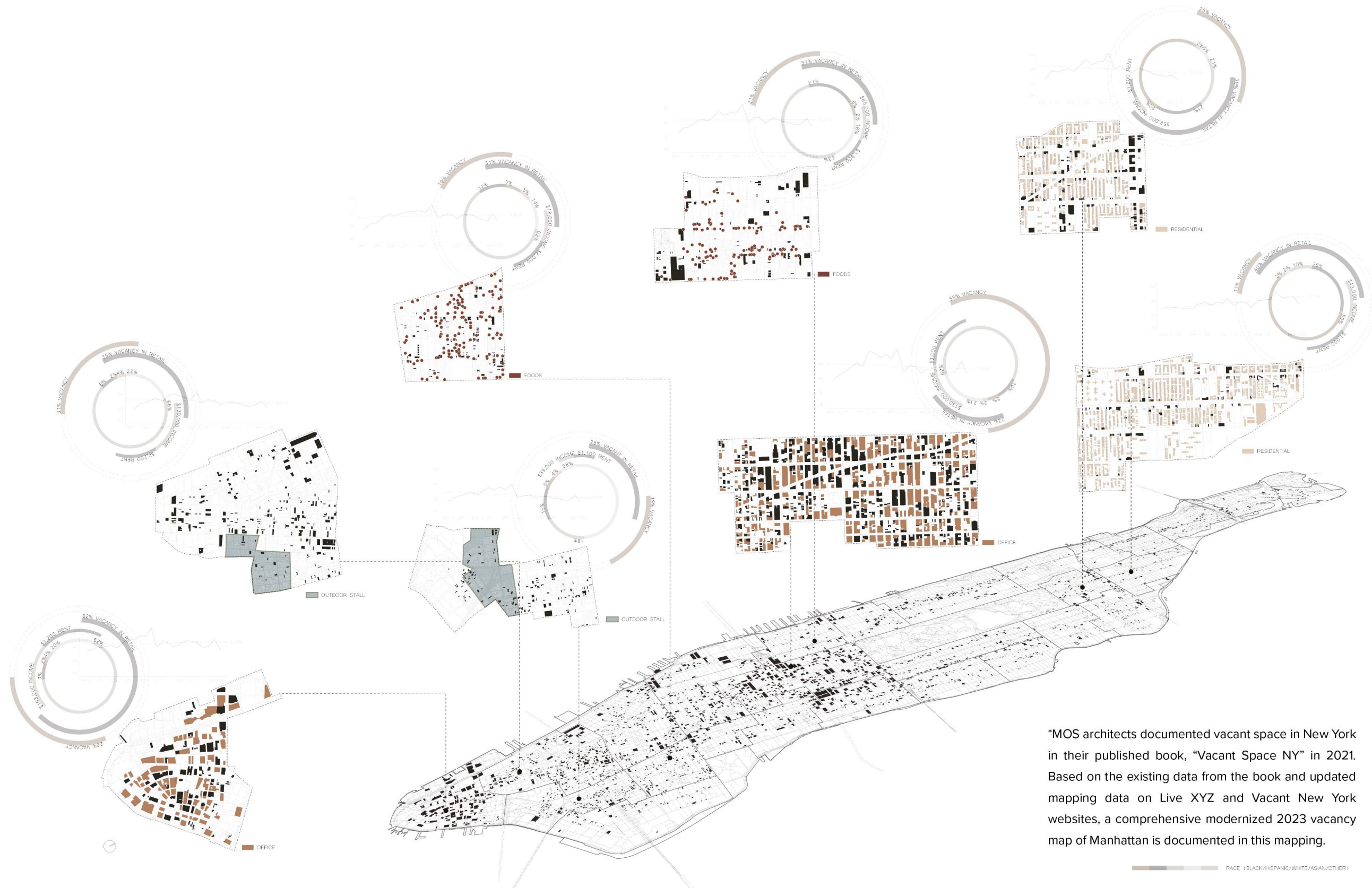
Speculative City

Professor: David Eugin Moon

Semester: Fall 2023

Walking along the avenues and streets of Manhattan Island, the surrounding environment undergoes significant changes from district to district. The bustling streets are renowned for their vibrant and eclectic atmosphere, filled with crowded pedestrians walking along the sidewalk.

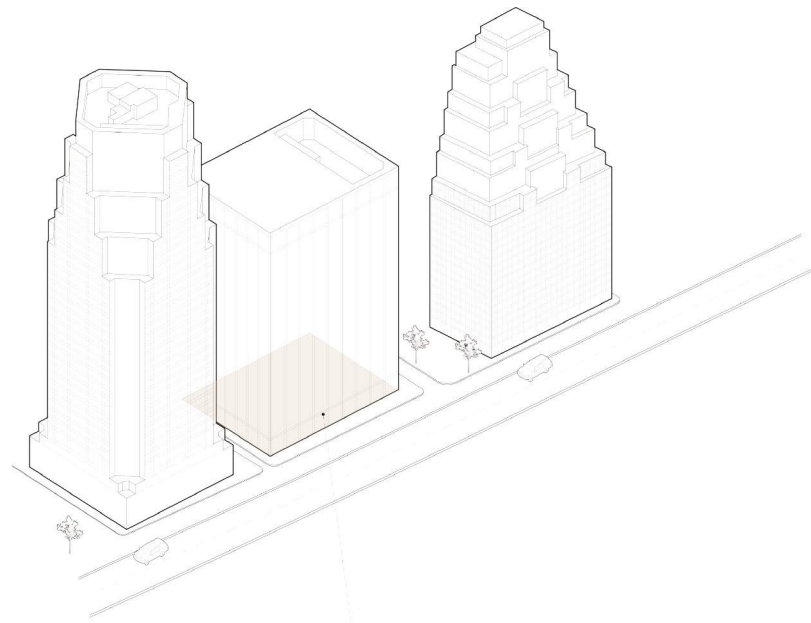
In contrast to the liveliness in the city, one noticeable growing phenomenon is the presence of vacant storefronts. Large shop windows covered with plastic bags or brown rosin paper signify their emptiness and are non-negligible to the passersby. Vacancies can be observed throughout New York City. Some are adorned with a “For Rent” sign, displaying a striking color on the storefront, while many remain empty or dusty, quietly sitting between the busy and noisy streets. maintenance issues.



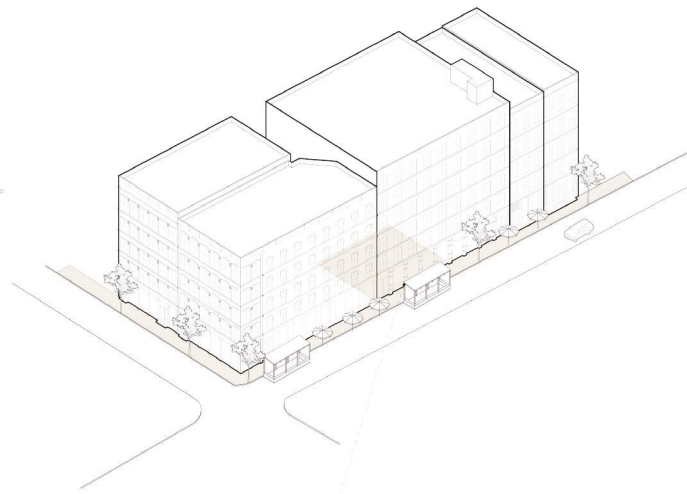
*MOS architects documented vacant space in New York in their published book, “Vacant Space NY” in 2021. Based on the existing data from the book and updated mapping data on Live XYZ and Vacant New York websites, a comprehensive modernized 2023 vacancy map of Manhattan is documented in this mapping.

REDESIGN STOREFRONTS WITH DISTRICT CHARACTERISTICS

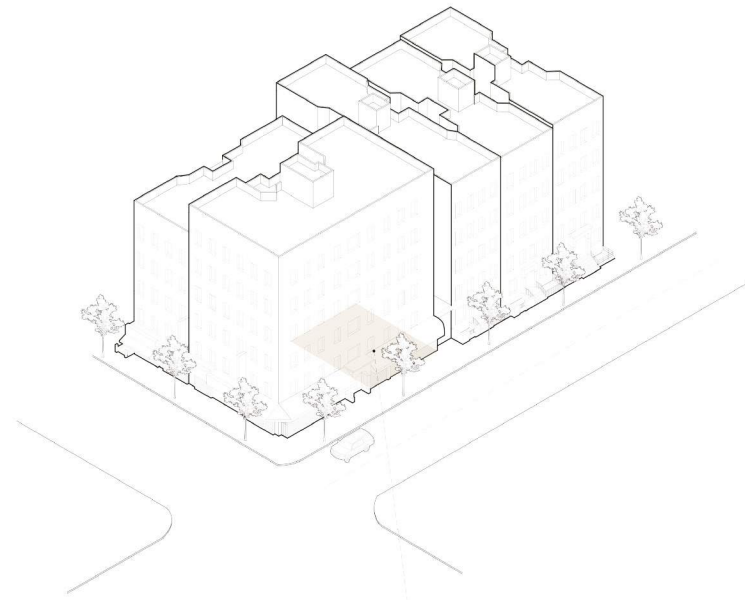
Different districts in Manhattan have their unique characteristics influenced by land use, stores, building types, and residents, all affecting the vacancy rate. Through the analysis of income, rent, race, and human traffic in comparison to the vacancy rate, 8 districts are selected as examples from the 27 districts in Manhattan. Each pair of districts shares certain street characteristics, and the final 4 types of street characteristics represent typical street vibes in New York City. With the walking experience along these 4 types of streets, vacant retail in these types is proposed to be redesigned based on their specific characteristics.



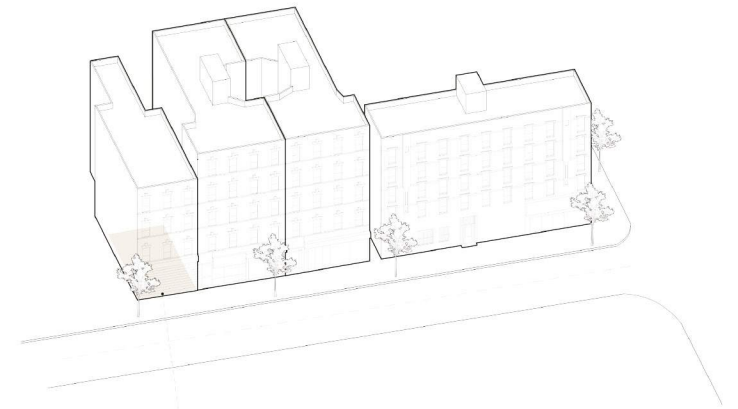
VACANCY IN MIDTOWN & FINANCIAL DISTRICT



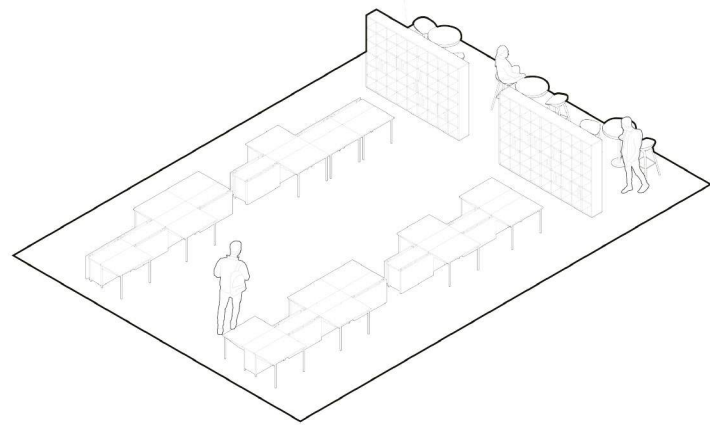
VACANCY IN CHINATOWN & LITTLE ITALY



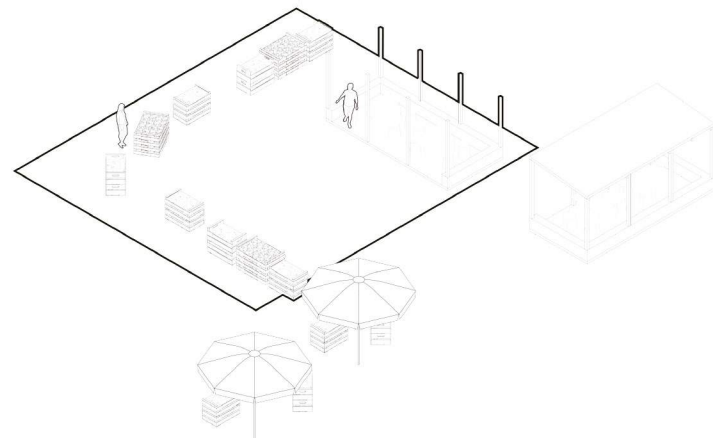
VACANCY IN HARLEM



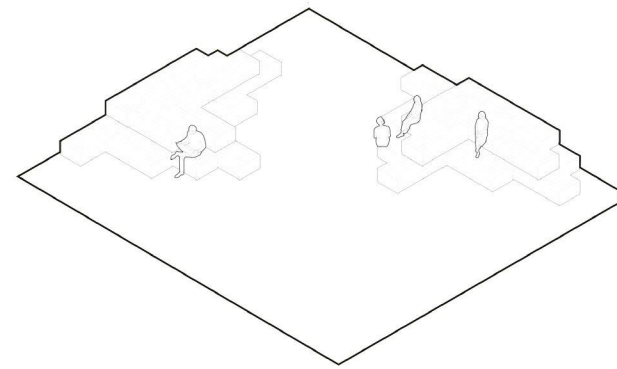
VACANCY IN HELL KITCHEN & EAST VILLAGE



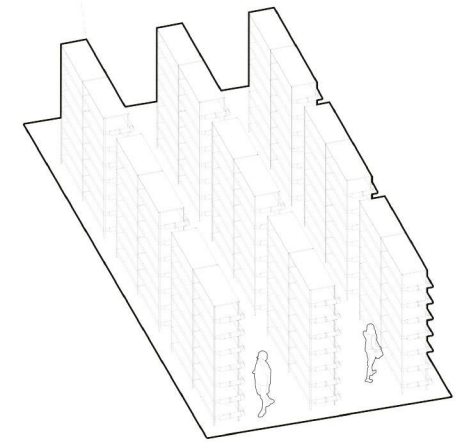
TEMPORARY STATION
PEOPLE IN THE COMMERCIAL ZONE AND OFFICES IS LACK OF A PLACE TO MAKE A STOP OR COMMUNICATE. THE VACANT SPACE REDESIGN AS A "TEMPORARY STATION", WHICH CAN BE OPERATE WITH FOLDABLE TABLE AND CHAIRS FOR SITTING, MEETING, STUDY-



EXTENSION OF SIDEWALK
CHINATOWN AND LITTLE ITALY HAVE A LARGE AMOUNT OF SIDEWALK FACILITIES AND OUTDOOR DINING AREA, THE VACANT SPACE CAN BE OPEN TO THE SIDEWALK AND REDESIGN AS AN EXTENSION, REDUCE THE HUMAN TRAFFIC CROWD ON SIDEWALK.



SHARED COMMUNAL ZONE
HARLEM IS A HIGH RESIDENTIAL AREA WITH LOW INCOME. PEOPLE LIKE TO GATHER OUTSIDE OF STAIRS OR SIDEWALK TO COMMUNICATE WITH EACH OTHER. THE VACANT SPACE CAN SIMPLY INSTALL DIFFERENT CHAIRS OR BENCH TO GATHERING PEOPLE TOGETHER.



VERTICAL FARMING
HELL KITCHEN & EAST VILLAGE HAS A LARGE AMOUNT OF DINING SPACE AND RESTAURANTS, VERTICAL FARM CAN BE INSTALLED IN THE VACANT SPACE TO OFFER FOOD RESOURCE AND COOPERATE WITH THE LOCAL RESTAURANTS.

06 Museum Collection Web Design

Professor: Celeste Layne
Semester: Fall 2023

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Museum Collection

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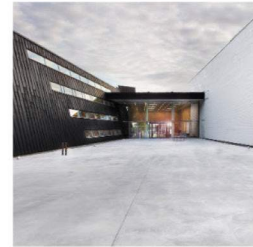
Austria Belgium Brazil China England France Germany Greece Italy Japan Korea Netherlands
Peru South Africa Spain Sweden United States



Acropolis Museum, Athens



Apartheid Museum, Johannesburg South



Artipelag Museum, Stockholm South



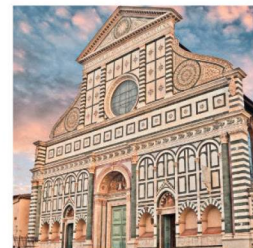
Art Science Museum, Singapore



Austrian Gallery Belvedere, Vienna



Basilica di San Lorenzo, Florence



Basilica of Santa Maria Novella, Florence



Belvedere Museum, Vienna



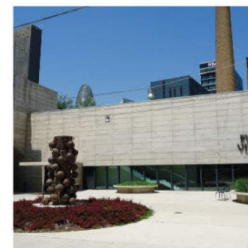
Magritte Museum, Brussels



British Museum, London



Caixa Forum, Barcelona



Can Framis Museum, Barcelona



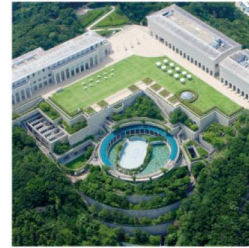
The National Art Center in Tokyo, Tokyo



The National Maritime Museum, London



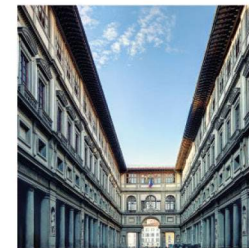
The Palace Museum in the Forbidden City, Beijing



The Otsuka Museum of Art, Naruto City, Beijing



Toyota Municipal Museum of Art, Toyota



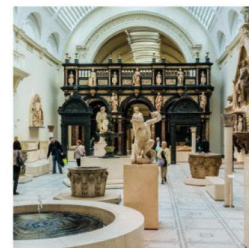
Uffizi Gallery, Florence



Va Gogh Museum, Amsterdam



Vasa Museum, Stockholm



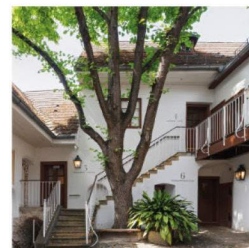
Victoria and Albert Museum, London



Villa Farnesina, Rome



Vintage Camera Museum, Singapore



Wien Museum Beethoven Museum,

Manfei Shi
manfeishi.ms@gmail.com
Flushing, New York 11355

Home

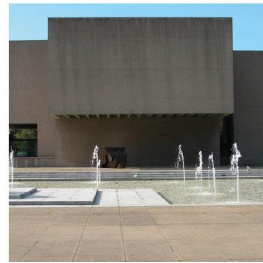
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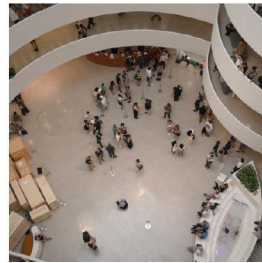
- Austria
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- Brazil
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- France
- Germany
- Greece
- Italy
- Japan
- Korea
- Netherlands
- Peru
- South Africa
- Spain
- Sweden
- United States



Everson Museum of Art, New York



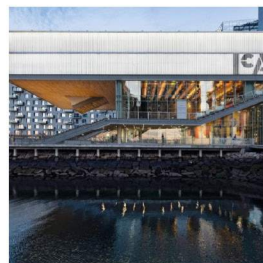
Field Museum of Natural History
Chicago, Chicago



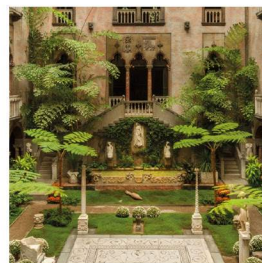
Guggenheim Museum, Boston



History of Natural Museum, New York



Institute of Contemporary Art, Boston



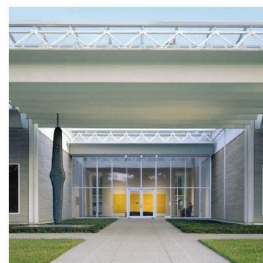
Isabella Stewart Gardner Museum,
Boston



Lucas Museum, Chicago



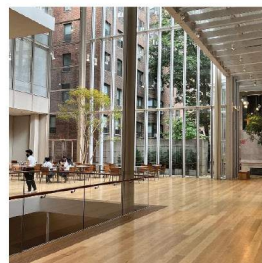
Magazzino Italian Art, New York



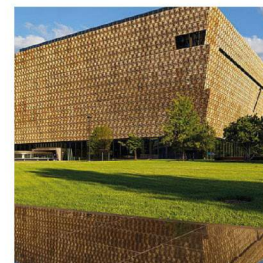
Menil Collection Museum, Houston



MET, The Metropolitan Museum of Art,
New York



Mogrgan Library, New York



National Museum of African American
History and Culture, Washington D.C.

JAVASCRIPT

```

const allImages = [
  {
    title: "Acropolis Museum, Athens",
    image: "img/Acropolis Museum Athens.jpg",
    Location: 'Greece',
  },
  ...
];

function filteredCategory (category) {
  let imagesToHTML = "";

  allImages.forEach(
    function (imgObj, index) {
      if (!category || imgObj.Location === category) {
        imagesToHTML = imagesToHTML +
          `
          <figure class="item item--${index}">
            
            <figcaption><h4><p>${imgObj.title}</p></h4></figcaption>
          `;
      }
    }
  );

  document.querySelectorAll('.category li').forEach(function (el) {
    el.classList.remove('active');
  });

  if(category){
    document.querySelector(`.M-${category}`).classList.add('active');
  }

  console.log(imagesToHTML);

  document.querySelector('.grid-container').innerHTML = imagesToHTML;

  filteredCategory();
}

```

CSS

```

.flex-container {
  display: flex;
  text-align: center;
  flex-wrap: wrap;
  justify-content: space-around;
  align-self: flex-start;
}

h4{
  font-family: 'Quicksand', sans-serif;
  color: #767676;
  text-align: inherit;
}

img {
  width: 100%;
  object-fit: cover;
}

.grid-container {
  margin: 5px;
  display: grid;
  grid-template-columns: repeat(4, 1fr);
  grid-gap: 5px;
}

.clip-square{
  width: 300px;
  height: 300px;
}

.category {
  list-style: none;
  padding: 0;
  margin: 0;
  display: flex;
  flex-wrap: wrap;
  font-family: 'Quicksand', sans-serif;
}

.category li {
  background: #eee;
  border-radius: 20px;
  padding: 5px 20px;
  margin-right: 5px;
  margin-bottom: 10px;
}

.category li.active {
  background: #4c4c4c;
  color: #eaeaea;
}

figcaption{
  font-family: 'Quicksand', sans-serif;
  color: #767676;
}

```