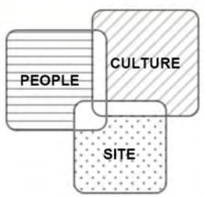
The Foodscape

Individual Work
Date: 2024.05 - 2024.8
Location: Punta Blanca, Manabi, Ecuador
Class: Arch 4853, Columbia University
Professor: David Barrigan



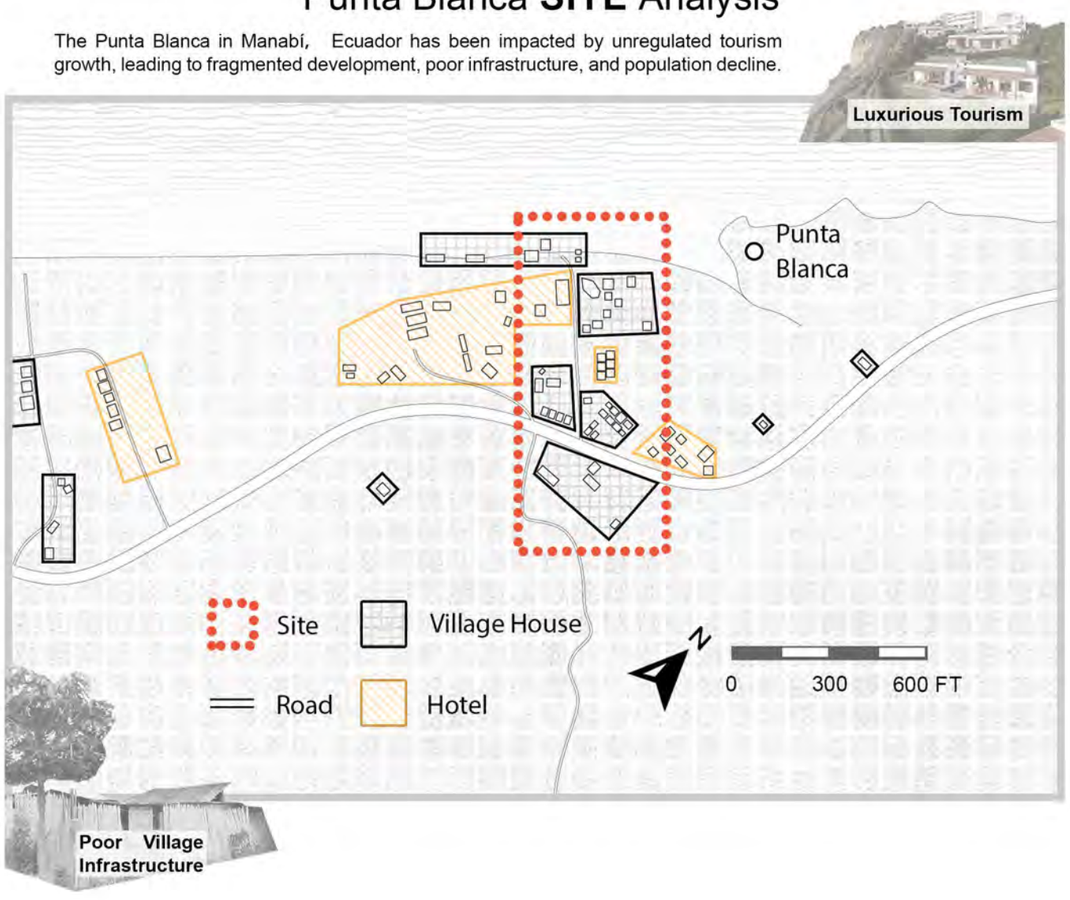
Manabí Province in Ecuador faces high youth unemployment, exacerbated by a lack of education, leading to issues such as juvenile crime and early pregnancy. Punta Blanca, a village in this region, has suffered from unplanned tourism development, resulting in fragmentation and poor living conditions, causing population decline.
This project aims to reconnect diverse community groups through a decentralized culinary school rooted in Manabí's traditional food culture. By providing vocational training for local youth and improving housing conditions, the project seeks to foster economic opportunity and a more sustainable future for the village while preserving local identity and strengthening social cohesion.

Limited Education among ECUADORIANS Leads to

Manabí in Ecuador faces high youth unemployment, due to limited access to education. This lack has contributed to rising rates of juvenile crime and early pregnancies, as many young people struggle to find employment.

Punta Blanca SITE Analysis

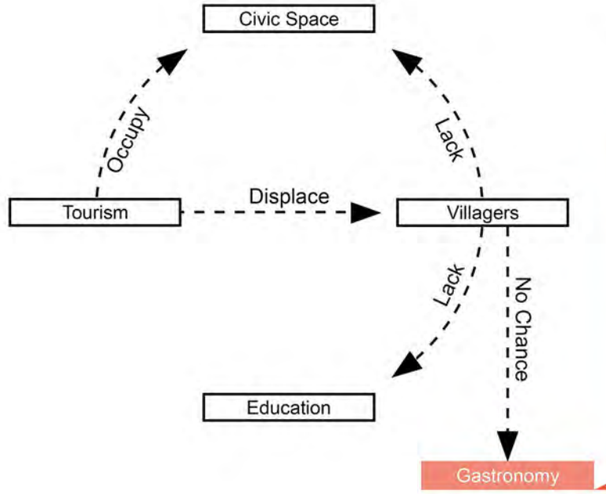
The Punta Blanca in Manabí, Ecuador has been impacted by unregulated tourism growth, leading to fragmented development, poor infrastructure, and population decline.



Strategy: Culinary Schools as Village GASTRONOMY Hub

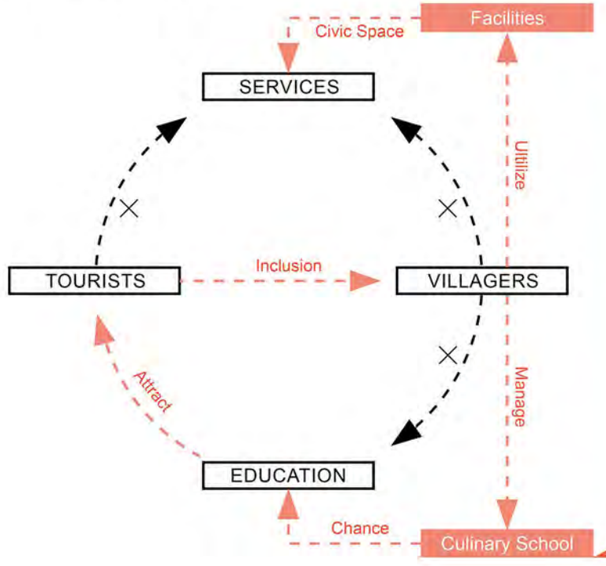
Existing Condition

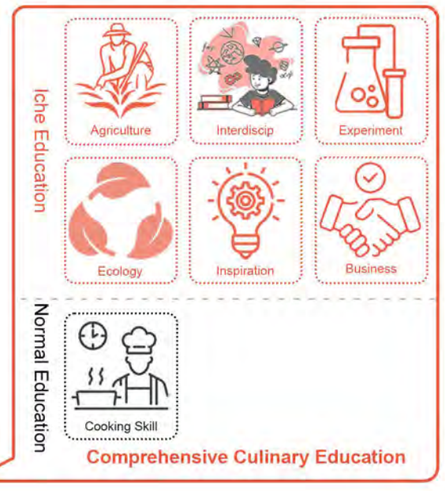
Unregulated tourism in Punta Blanca displaces villagers, occupies public spaces, and limits economic growth. Despite rich culinary heritage, locals lack chances to benefit from it.



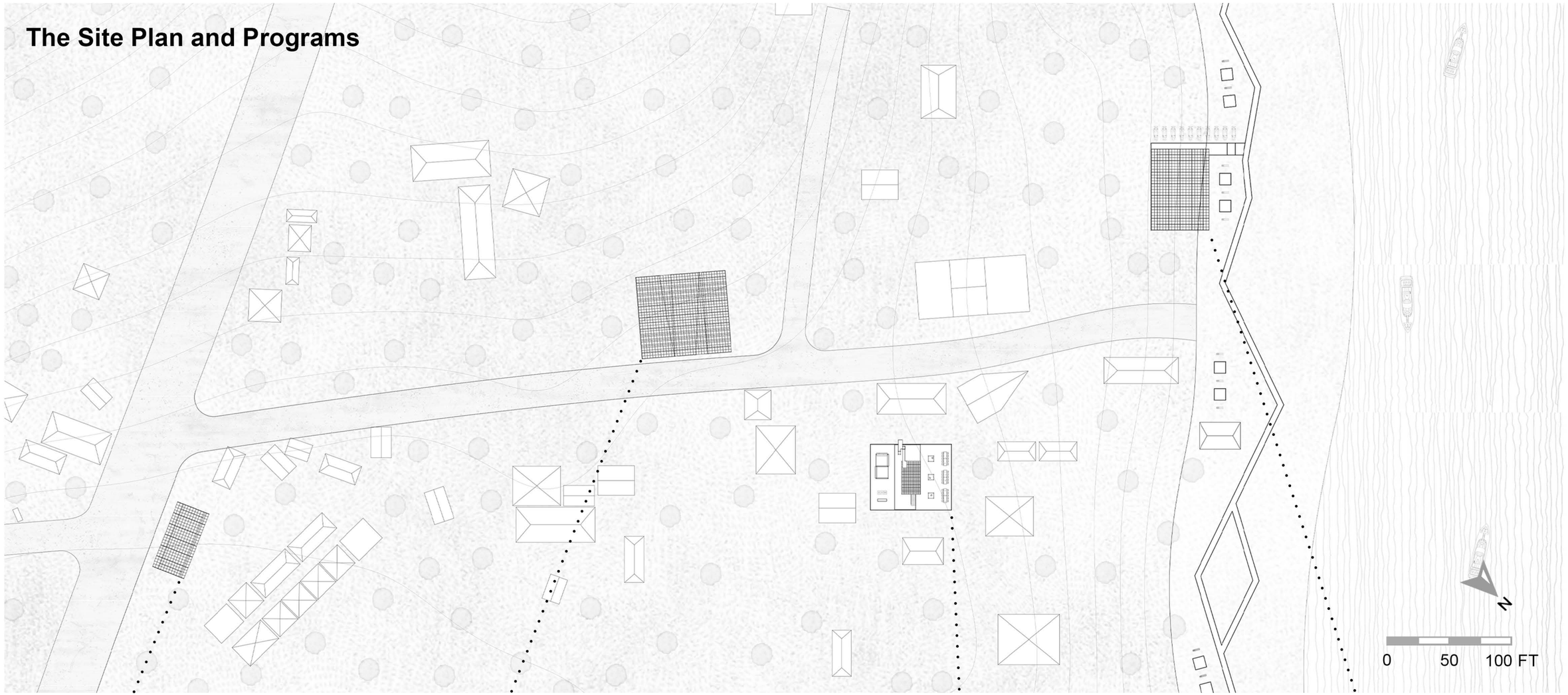
Symbiotic Cycle

Culinary schools in Punta Blanca train youth in horno Manabí cooking, linking education to tourism and services. Enhanced civic spaces foster inclusion and economic growth.



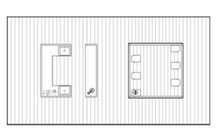


The Site Plan and Programs



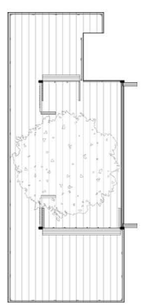
The Slope

Library

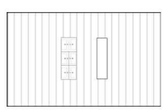


Cafe

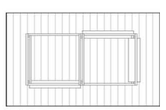
The Tree House



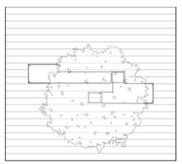
Theater



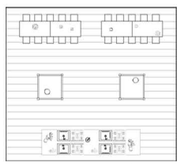
Laundry



Kid Playground

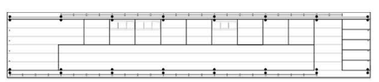


Viewing Deck



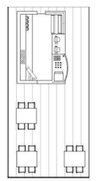
Community Kitchen

The Fold



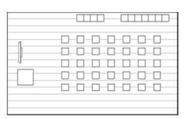
Exhibition

Market

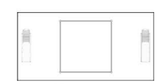


Food Cart

The Beach

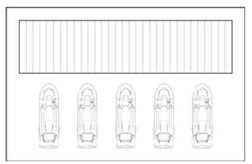


Meeting Room



Pavilion

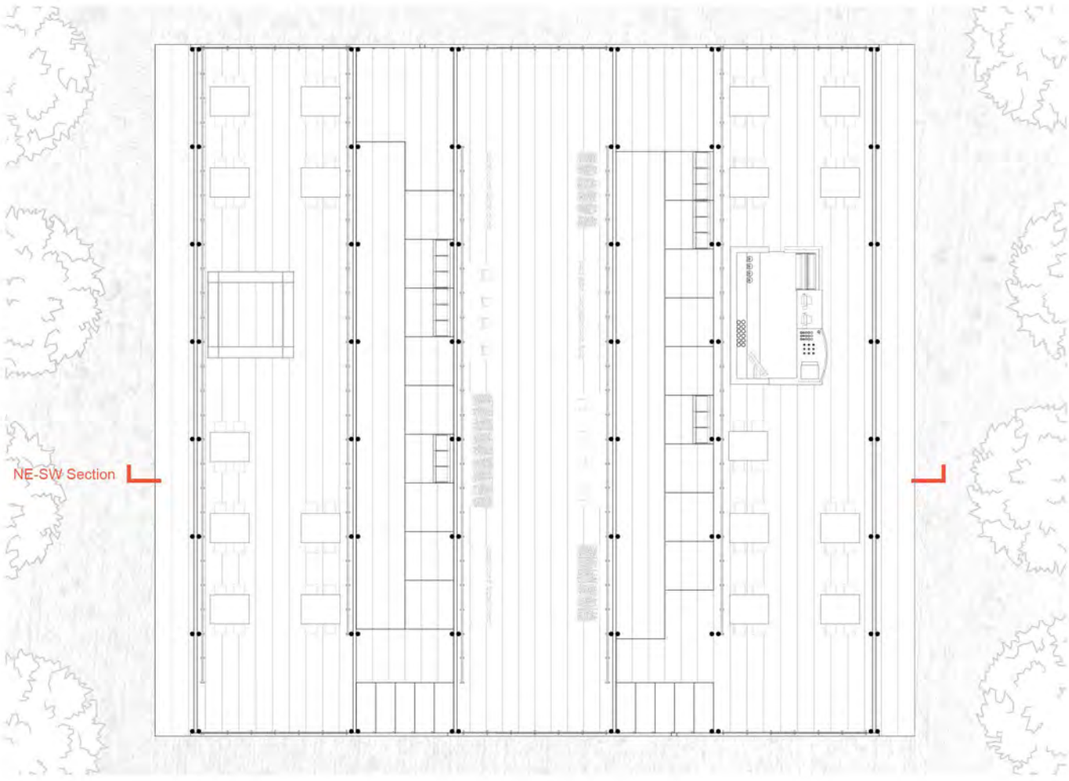
Manabi Restaurant

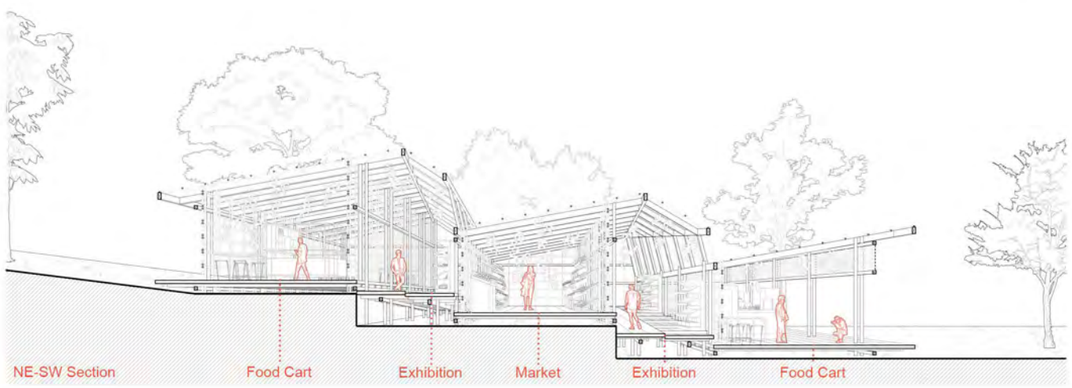


Boat Repair

The Fold

The Fold is a multifunctional space made up of food carts, exhibition centers, and markets. It features an open layout that encourages fluid movement and interaction between the different components. The design includes a green roof, which serves as a community greenhouse, promoting sustainability and offering space for growing produce.



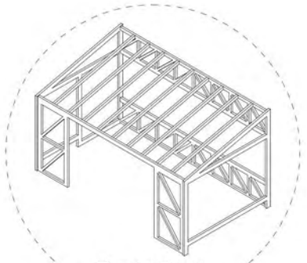


Open Layout

Exhibition Space and Greenhouse

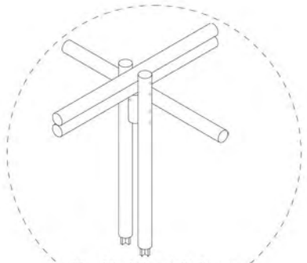
The Tree House

The Tree House is a community space that includes a kids' playground, laundry room, theater, and communal kitchen. Central to the design is the inclusion of Manabí ovens, a traditional cooking method that brings people together. The space fosters both social interaction and a range of facilities for families and tourists to connect and share experiences.

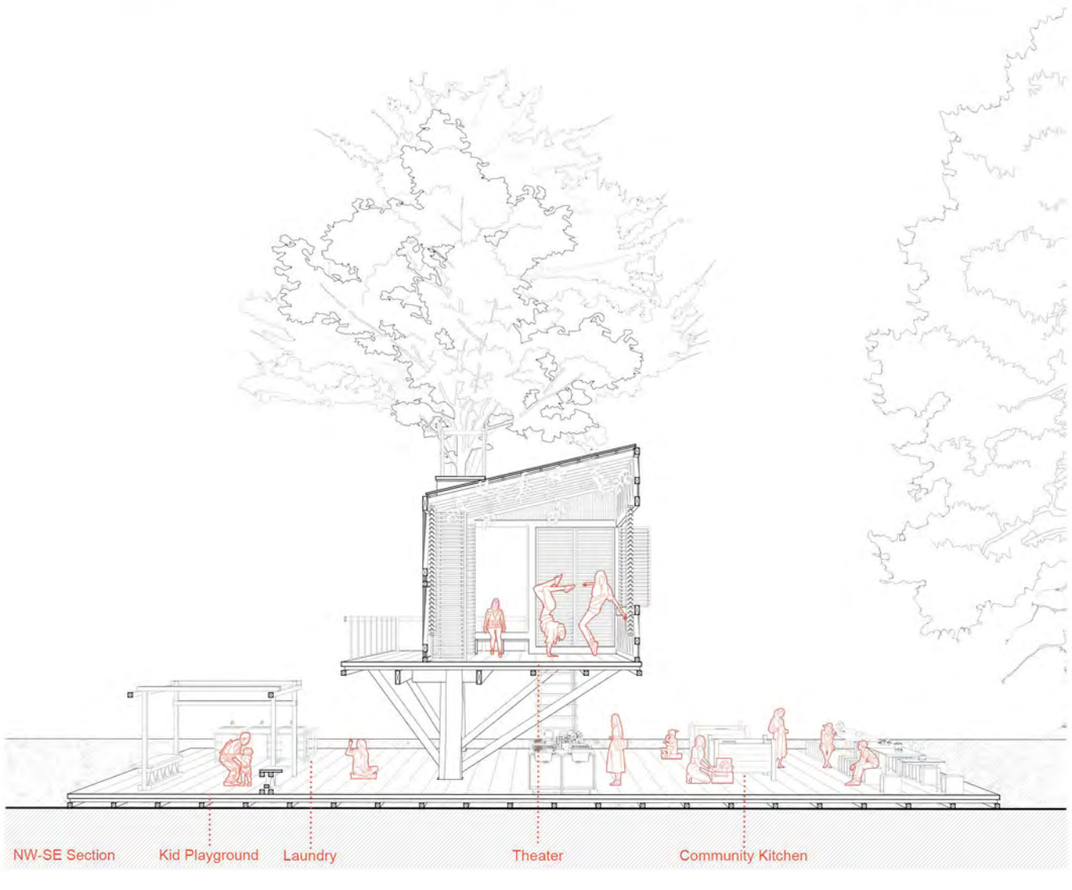


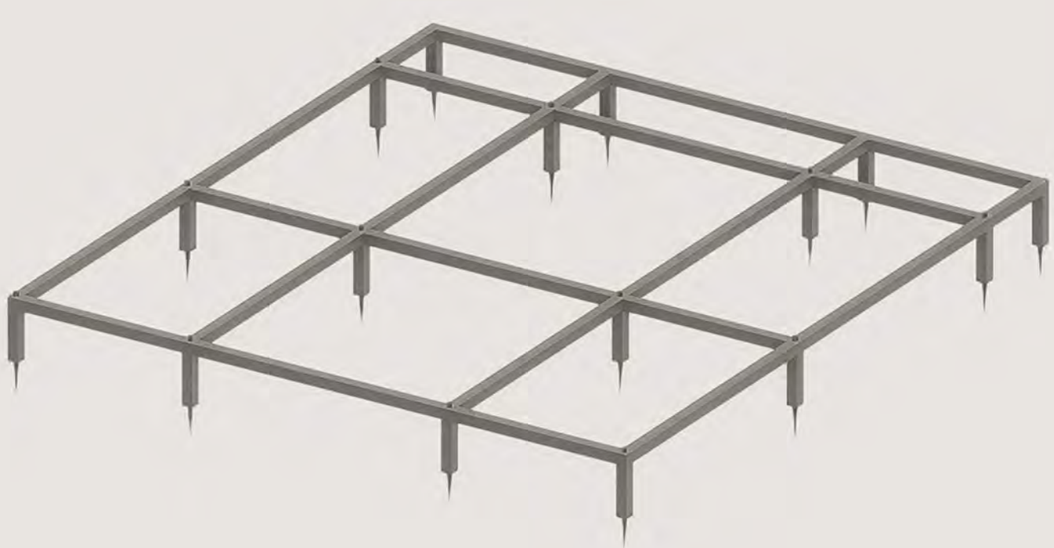
Theater Frame

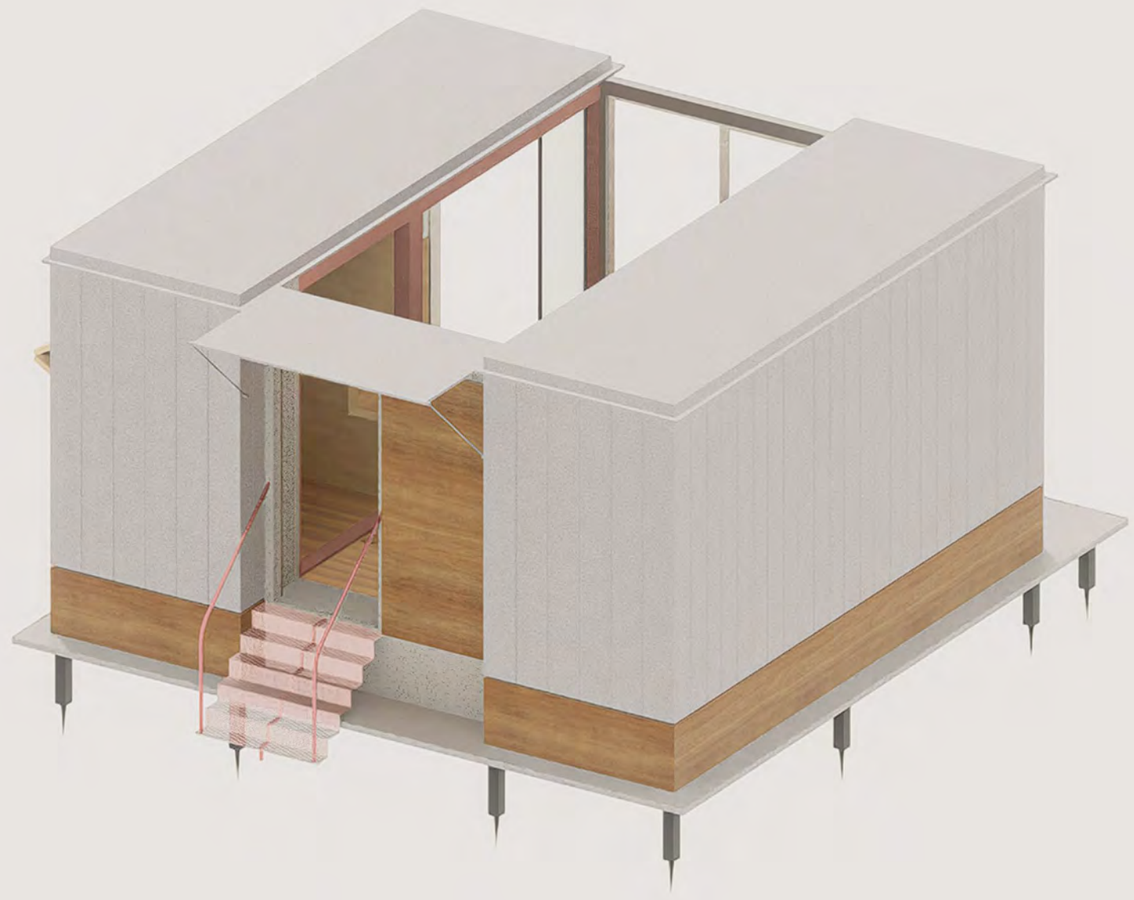
Viewing Deck Frame

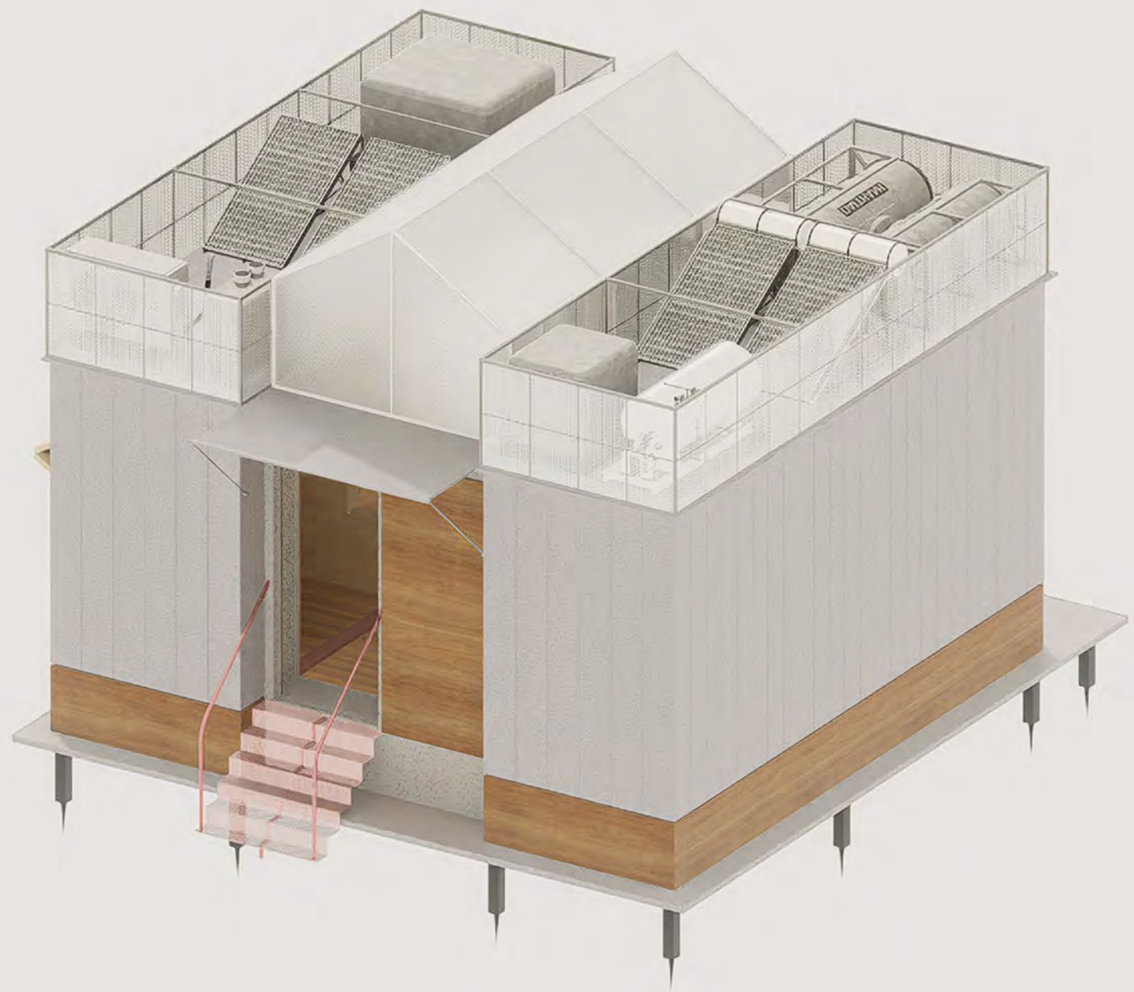


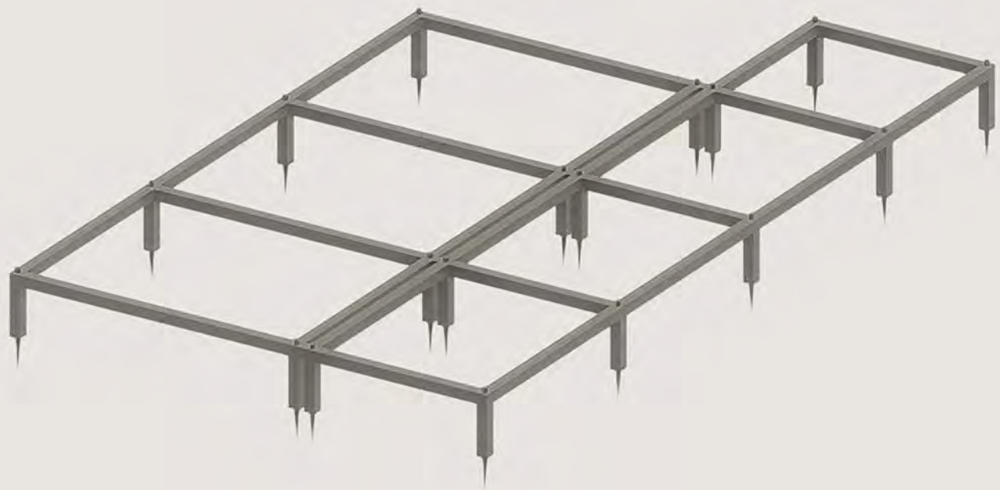
Double Wood Column

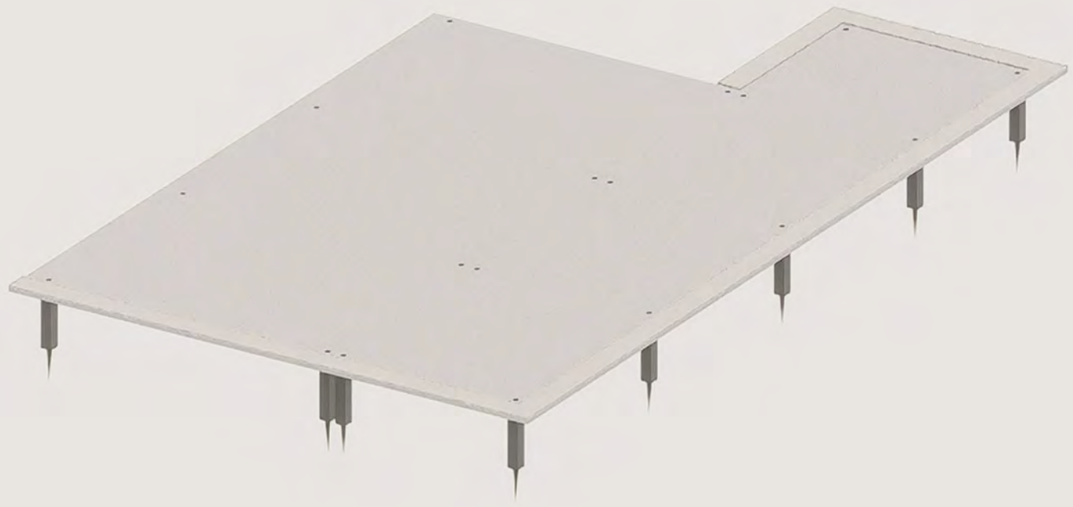


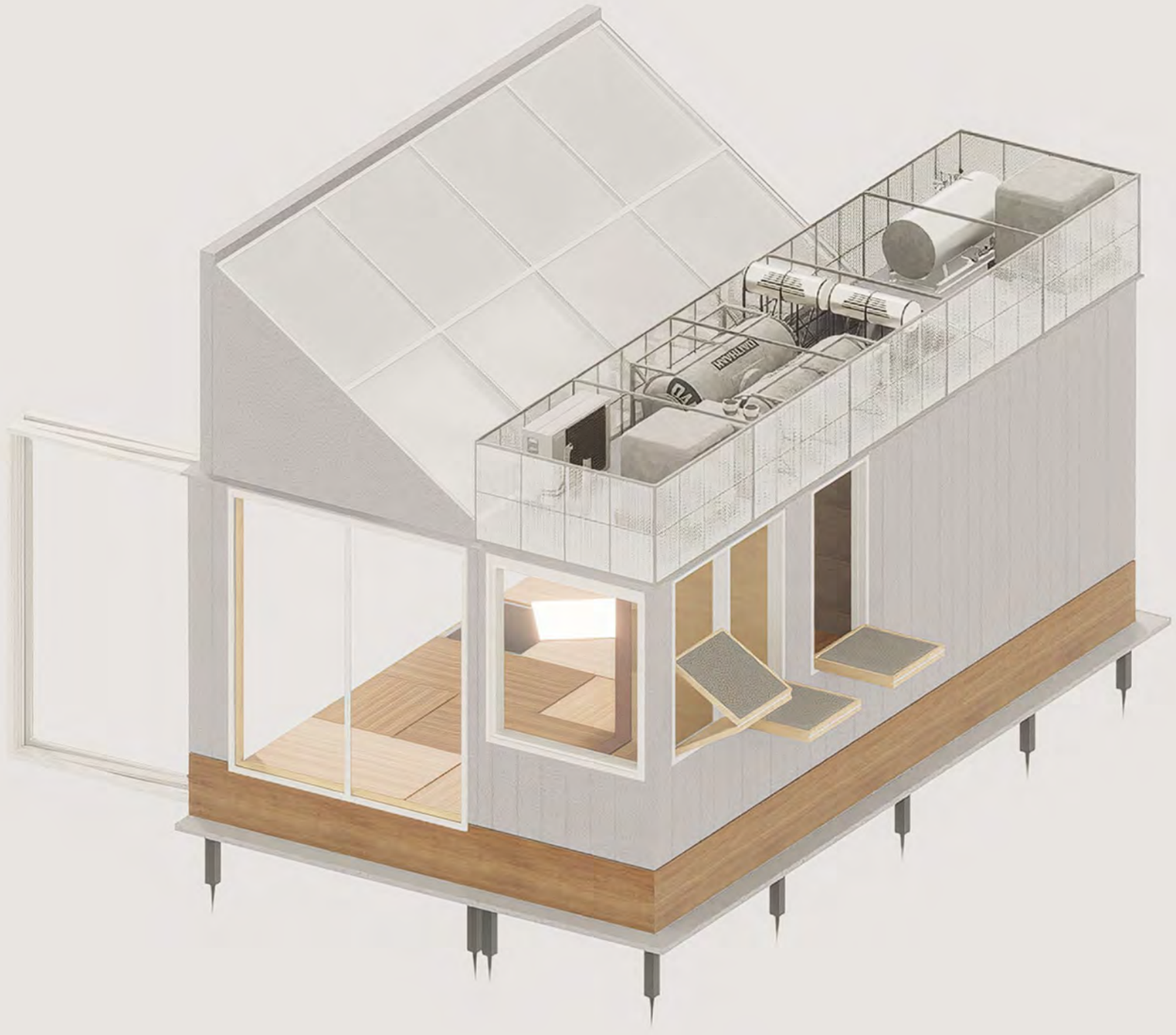











MITSUBISHI

Seed Bombs

We adopted a unique approach to sustainability through the integration of various materials and processes for environmental benefit. In the circular model, bamboo, fish rope, and marine nets are utilized to create durable structures, promoting longevity. Additionally, the use of Starbucks bottles for reuse and grass compost at the RETI Center illustrates an innovative recycling strategy that not only extends the lifecycle of materials but also contributes to a network of sustainable practices. This model emphasizes sourcing, lifespan, and recycling as key components in building an environmentally responsible system that aims to minimize waste and maximize resource efficiency.

Brooklyn, NY
United States

Eco-Floating Wetland

In this project, I learned a great deal. This was my first direct encounter with an ecosystem—it truly felt like encyclopedia images coming to life! We deeply considered our impact on other species and proactively addressed water contamination issues, ensuring our actions promoted ecological health.
The intriguing part was figuring out how it could float and last without harming the environment. We tested various bamboo structures and bottle floaters to ensure they wouldn't sink or burst. It's fascinating! Most importantly, we had the rare opportunity to rethink our relationship with nature. We're on the brink of entering the Symbiocene and need to be ready!
by MUHAN

Hao YAN
Muhan LI

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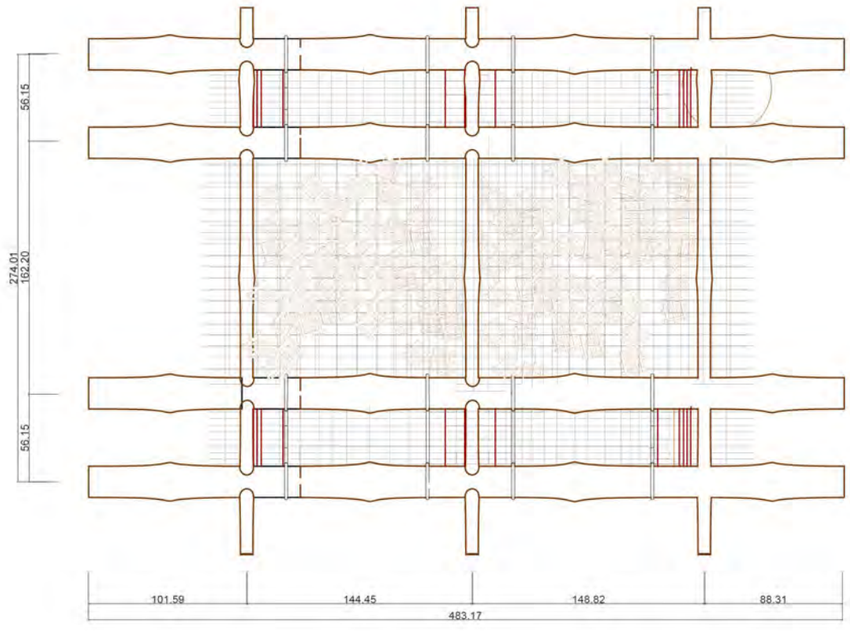
Hao YAN
Muhan LI

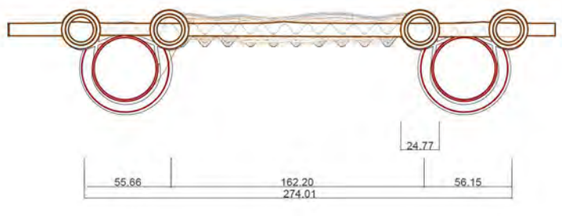
Our design aimed to utilize a variety of connection methods, not limited to just rope binding. We connected the bamboo frame through drilling and sealed the Starbucks glass bottles with wax to prevent water leakage. We used only two ropes and a net to secure all materials, significantly enhancing the durability and lifespan of the structure. However, if the Starbucks glass bottles were to leak, our structure would still sink, though it would remain intact.

We selected bamboo as our primary material for its natural aesthetic. However, we faced challenges during construction due to bamboo's inherent irregularities. Its non-straight shape and non-rectangular cross-section caused difficulties in drilling and connecting pieces, reducing our efficiency and increasing material waste.

Despite challenges, bamboo's flexibility allowed us to complete the basic framework, highlighting both its adaptability and complexities of natural materials. In hindsight, wood might have been a better choice for its uniformity and machining efficiency, reducing errors.

by HAO





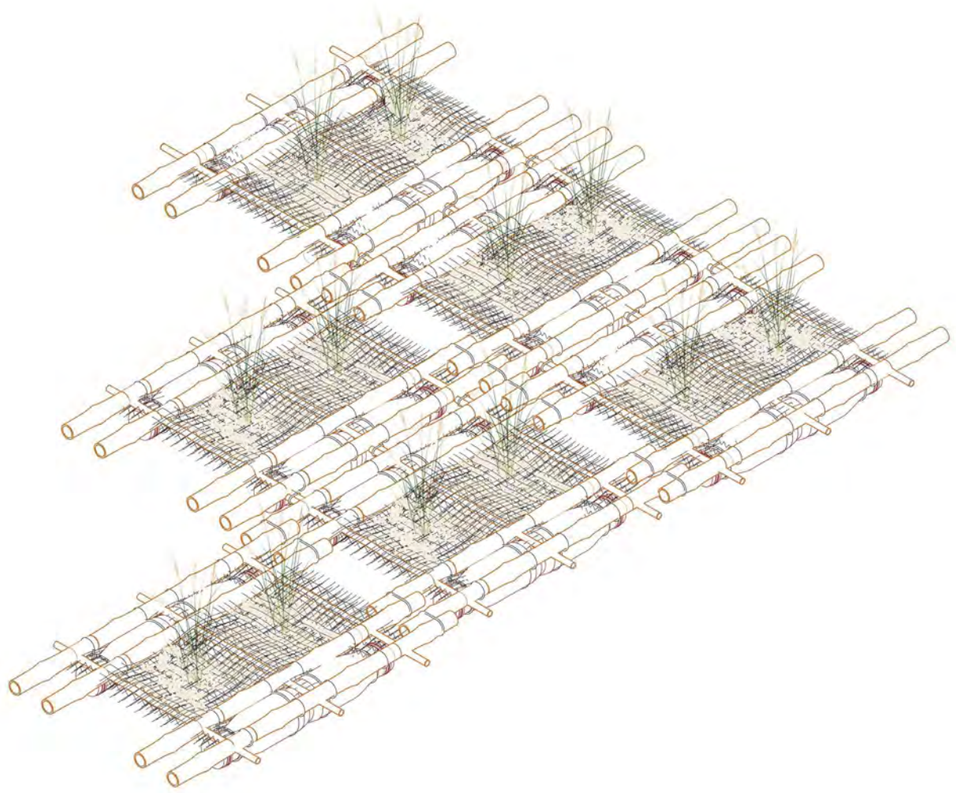
Brooklyn, NY
United States

Hao YAN
Muhan LI

Our current design uses four glass bottles (two per side) as buoys. We considered using six bottles (three per side) to expand our floating structure, but this would require more joints during manufacturing, increasing the likelihood of errors in the bamboo frame assembly. However, smaller units are more prone to capsizing in strong winds and waves.

Therefore, it is essential to connect multiple smaller units together, allowing them to collectively withstand wind and wave forces. This strategy balances the structural integrity and adaptability of the design, ensuring that while individual units are smaller and more manageable, their assembly into a larger composite structure enhances overall stability and resilience.

Our floating wetlands can be positioned in calm, accessible locations such as Hudson River Park and Brooklyn Bridge Park, chosen for their mild water conditions and public accessibility. This placement ensures the wetlands are effective in their ecological roles and facilitate community interaction. Community members are actively involved in assembling and maintaining the wetlands, a process that strengthens local ties to sustainability and ecosystem health. By embedding these structures within the urban landscape, we aim to create spaces that serve educational and recreational purposes, promote environmental stewardship, and connect city residents more closely with nature.



Brooklyn, NY
United States

Hao YAN
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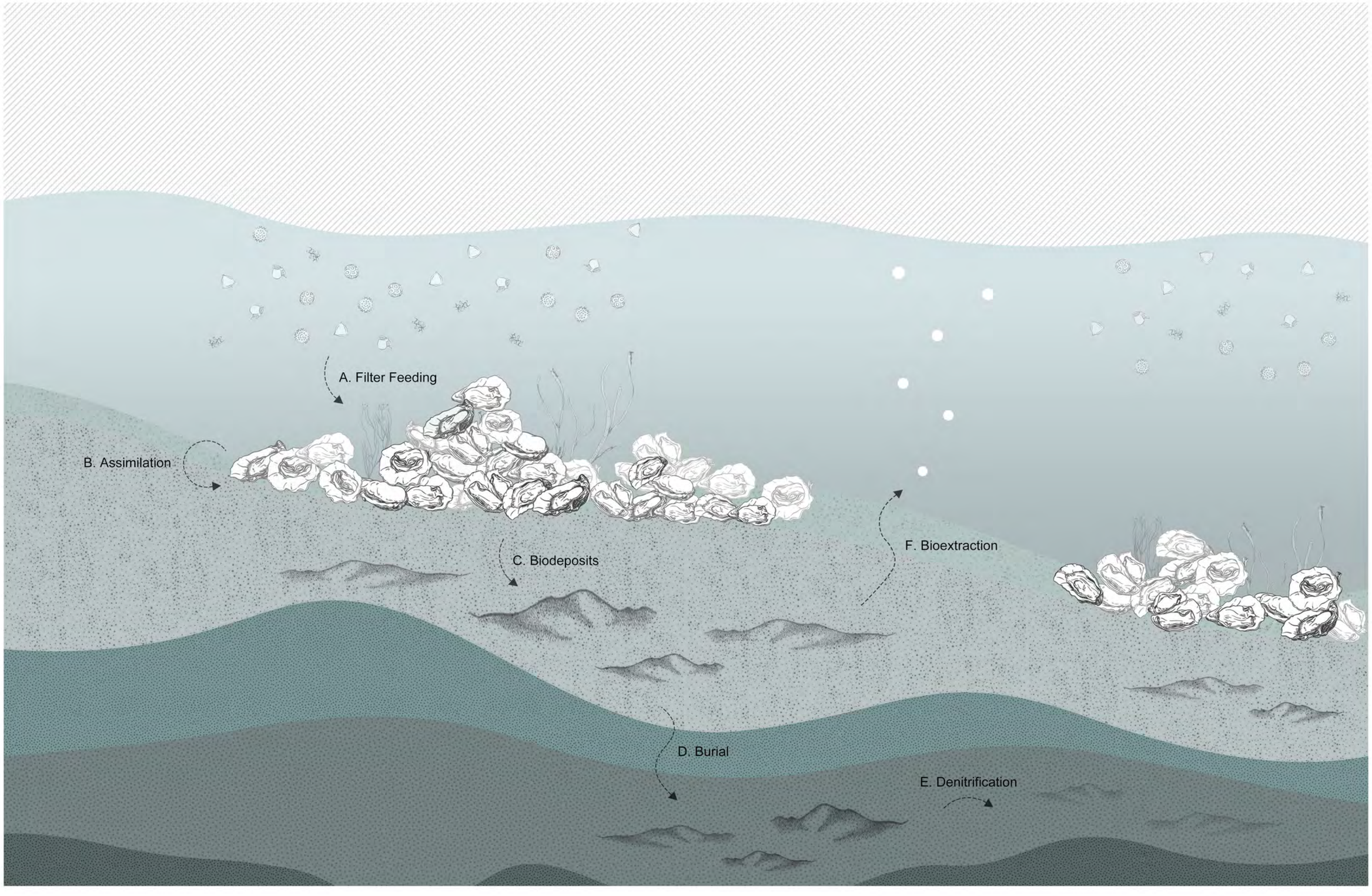
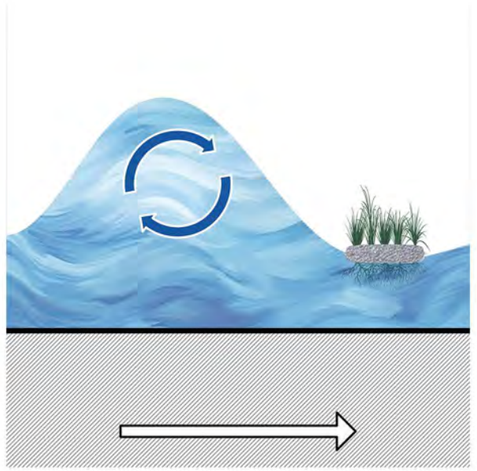
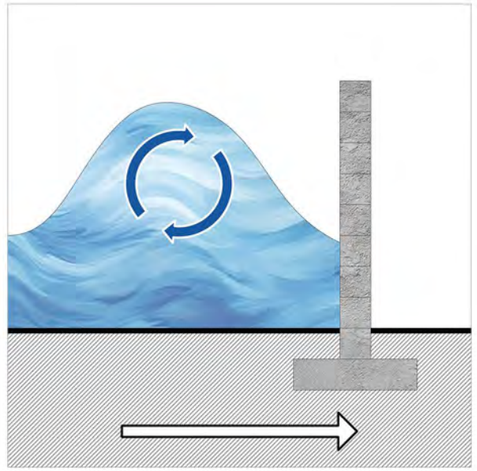
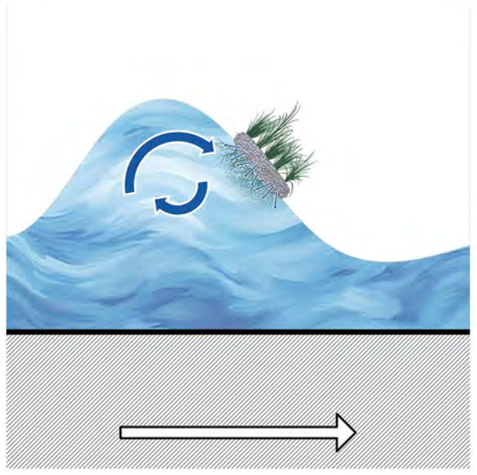
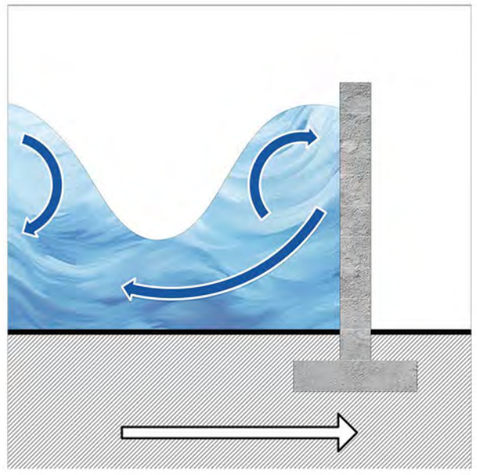
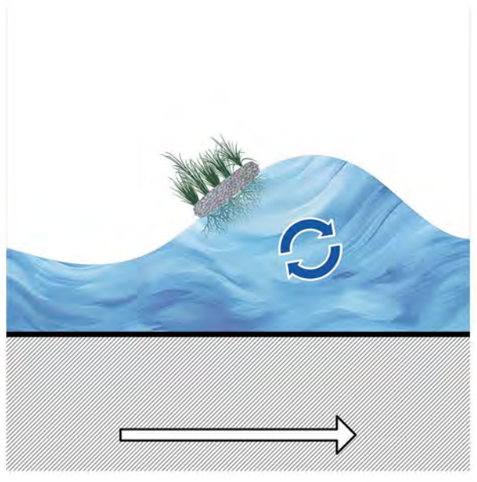

A. Filter Feeding
B. Assimilation
C. Biodeposits
D. Burial
E. Denitrification
F. Bioextraction

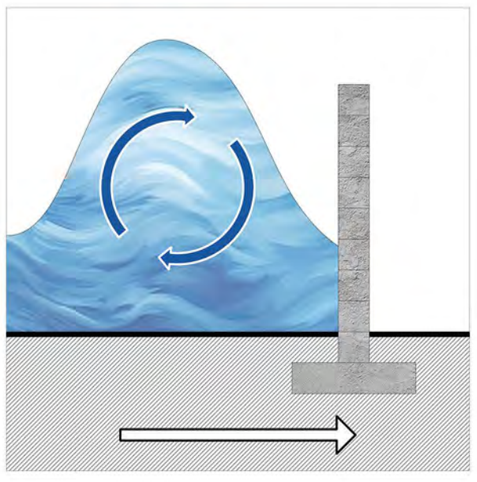


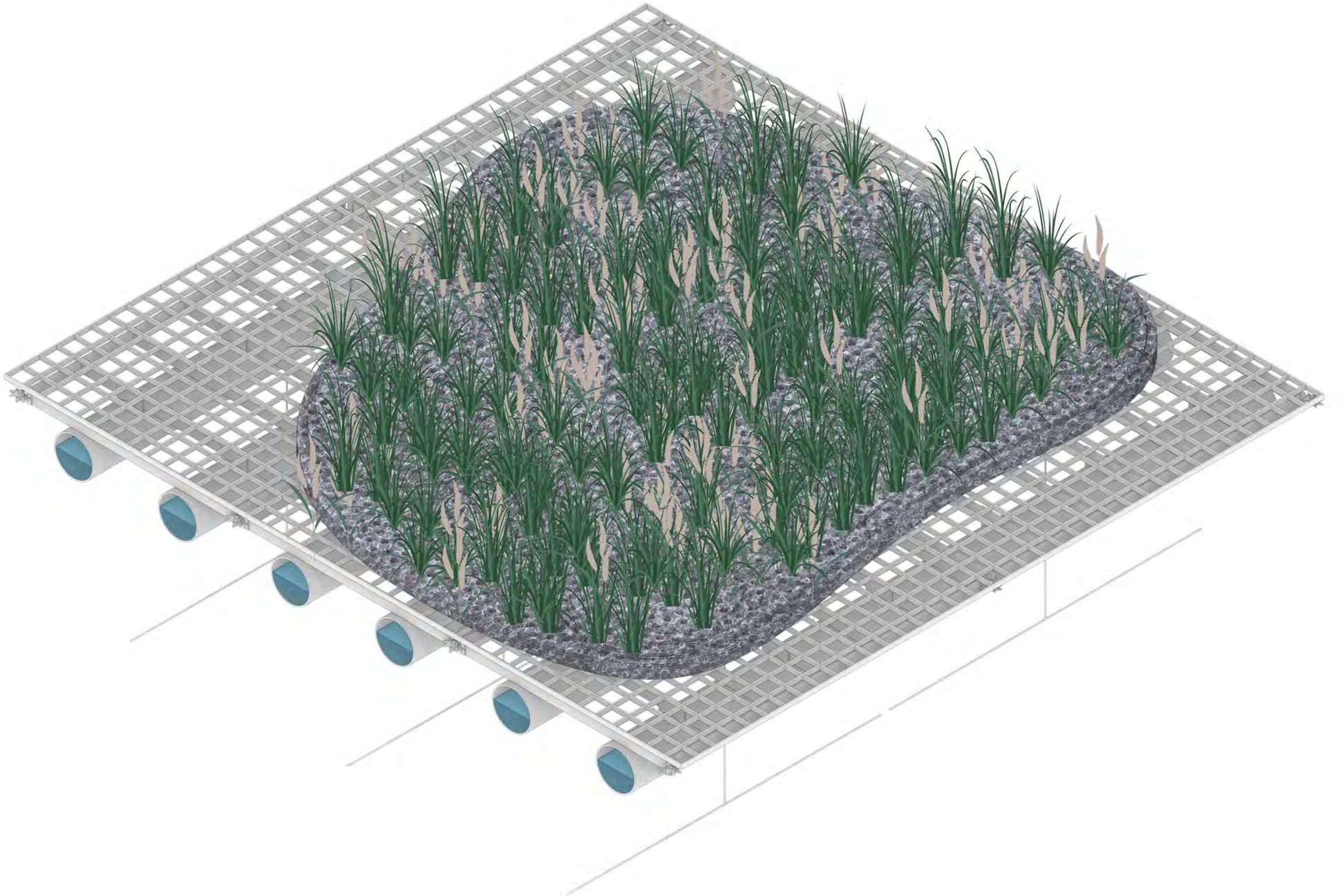


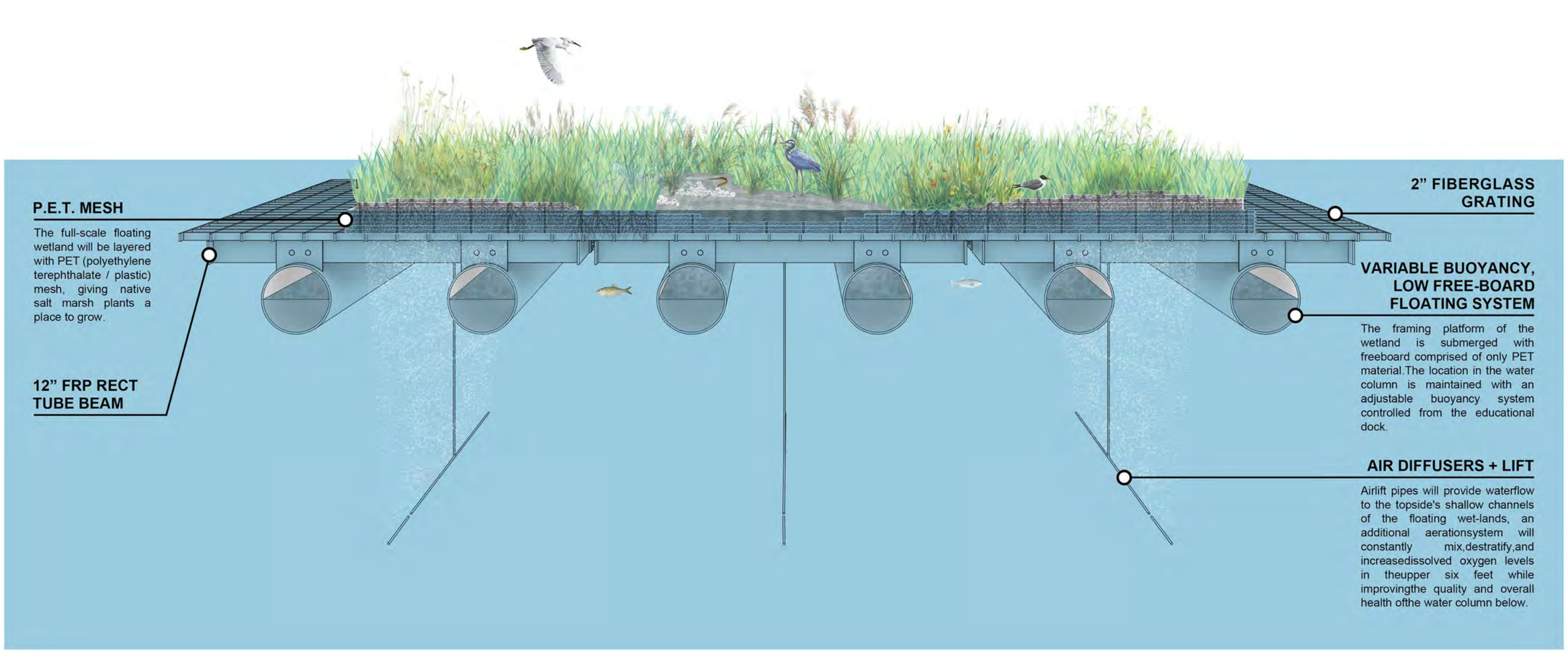












P.E.T. MESH

The full-scale floating wetland will be layered with PET (polyethylene terephthalate / plastic) mesh, giving native salt marsh plants a place to grow.

12” FRP RECT TUBE BEAM

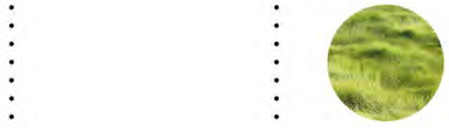
2” FIBERGLASS GRATING

VARIABLE BUOYANCY, LOW FREE-BOARD FLOATING SYSTEM

The framing platform of the wetland is submerged with freeboard comprised of only PET material.The location in the water column is maintained with an adjustable buoyancy system controlled from the educational dock.

AIR DIFFUSERS + LIFT

Airlift pipes will provide waterflow to the topside's shallow channels of the floating wet-lands, an additional aerationsystem will constantly mix,destratify,and increasedissolved oxygen levels in theupper six feet while improvingthe quality and overall health ofthe water column below.



Spartina
Patens

Iva
Frutescens

Scirpus
Americanus

Swamp Rose
Mallow

Baccharis
Halimifolia

Scirpus
Robustus

Ilex
Glabra

Spartina
Alterniflora

Desert
Saltgrass

Amorpha
Fruticosa

Wetland Channel
6” Deep
No Planting

Non-Submerged
Low Marsh
1” to 5”

Non-Submerged
High Marsh
5” to 8”

Shallow Submerged
Low Marsh
-6” to -1”

Non-Submerged
Low Marsh
1” to 5”

Non-Submerged
High Marsh
5” to 8”

Wetland Channel
6” Deep
No Planting