

# CONNECTIONS: SMALL & LARGE

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## **TABLE OF CONTENTS**

### **PAGE 4 : LACTATION PODS**

Adv VII | Feminist Technoscience | Ani Liu

### **PAGE 24 : BLOB**

Virtual Architecture | Nitzan Bartov

### **PAGE 28 : ECOPONICS**

Adv V | FutureCurrent | Vanessa Keith

### **PAGE 58 : FLOOD MITIGATION**

X-Information Modeling | Luc Wilson & Snoweia Zhang

### **PAGE 64 : FOOD TERMINAL**

Adv VI | The Tour | Gary Bates

### **PAGE 90 : DREAMSCAPES**

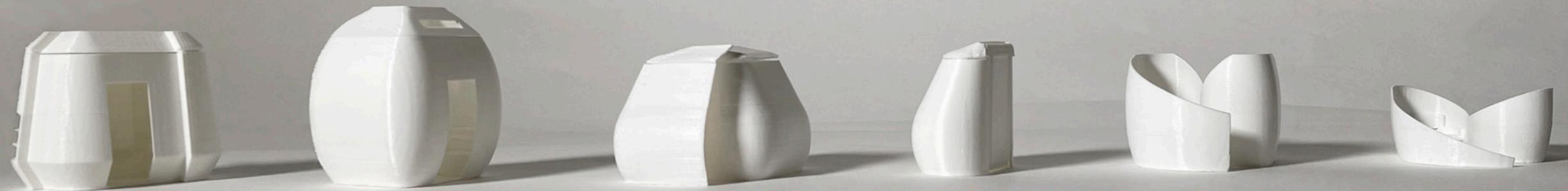
Techniques of the Ultrareal | Joseph Brennan & Phillip Crupi

# LACTATION PODS

ADV VII: FEMINIST TECHNOSCIENCE

CRITIC: ANI LIU

PARTNER: MARIE CHRISTINE DIMITRI



*Right: lactation pod models*

# Lactation Pods

The **lactation pods** redefine the traditional, sterilized, and hospitalized existing typologies.

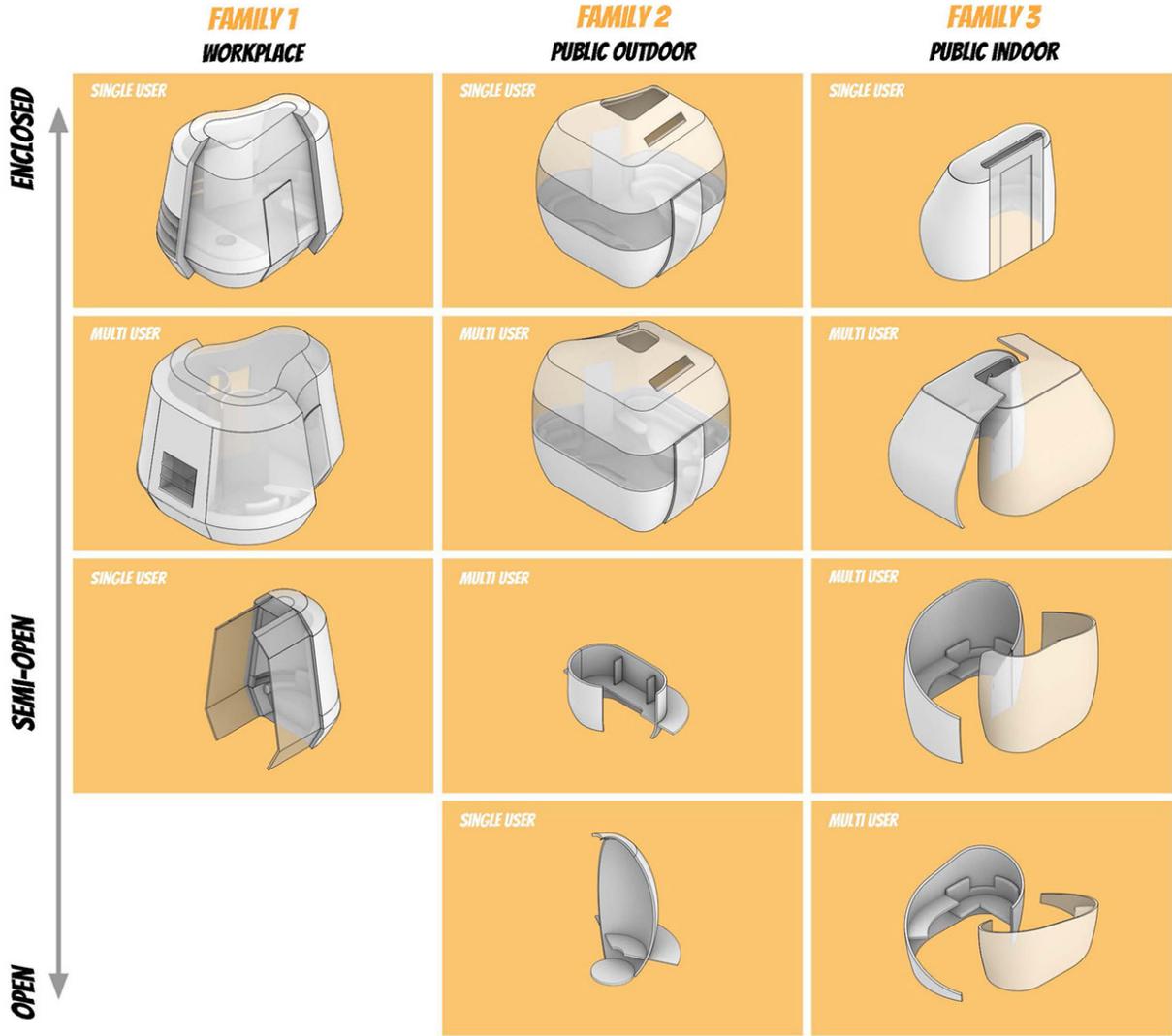
These pods incorporate a curvilinear and organic design, promoting inclusivity and genderless spaces for lactation. The goal is to provide intimate and non-institutionalized environments.

The design and project establish various typologies that are separated through three different family groups: the **workplace pod, the outdoor public pod, and the indoor public pod.**

The typologies range from **enclosed, to semi-open, to open**, catering to **single and multi-user situations.**

These lactation accommodations are designed with a spectrum of typologies, amenities, levels of privacy and different lactating "methods".

The idea is to cater for a variety of preferences. Some pods encourage pumping, and others would encourage breastfeeding. Nonetheless the spaces allow individuals to choose their own lactating methods.



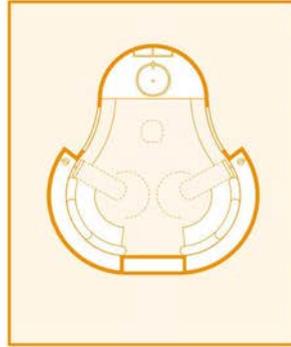
Bottom: models of original 3 typologies; Right: typology matrix

# WORKPLACE POD

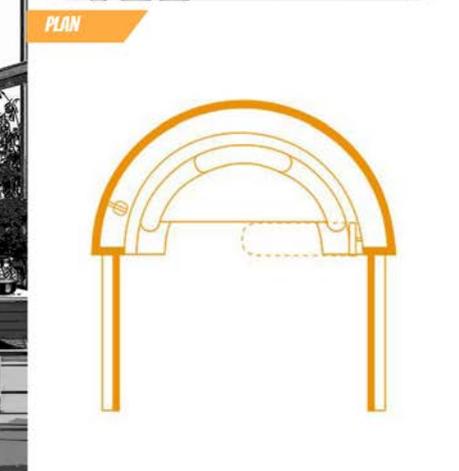
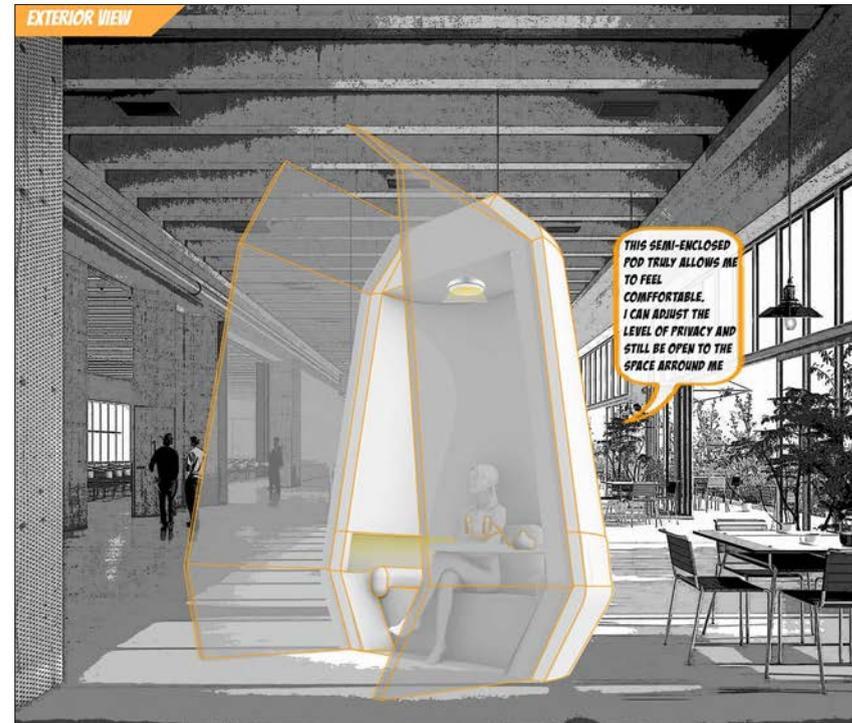
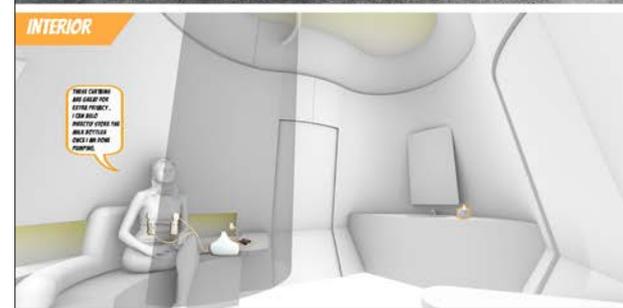
ENCLOSED / SINGLE USER



ENCLOSED / MULTI USER



SEMI-OPEN / SINGLE USER

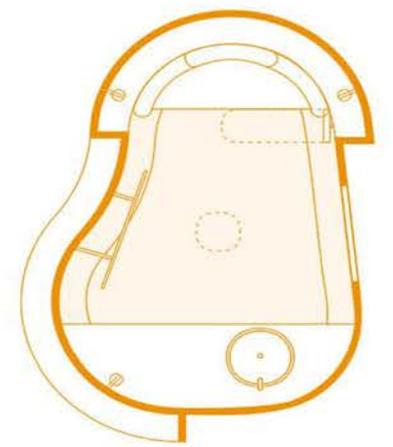


Left Top: workplace pod plans; Left Bottom: enclosed/single user pod  
Right Top: enclosed/multi user pod; Right Bottom: open/single user pod

# EXTERIOR VIEW

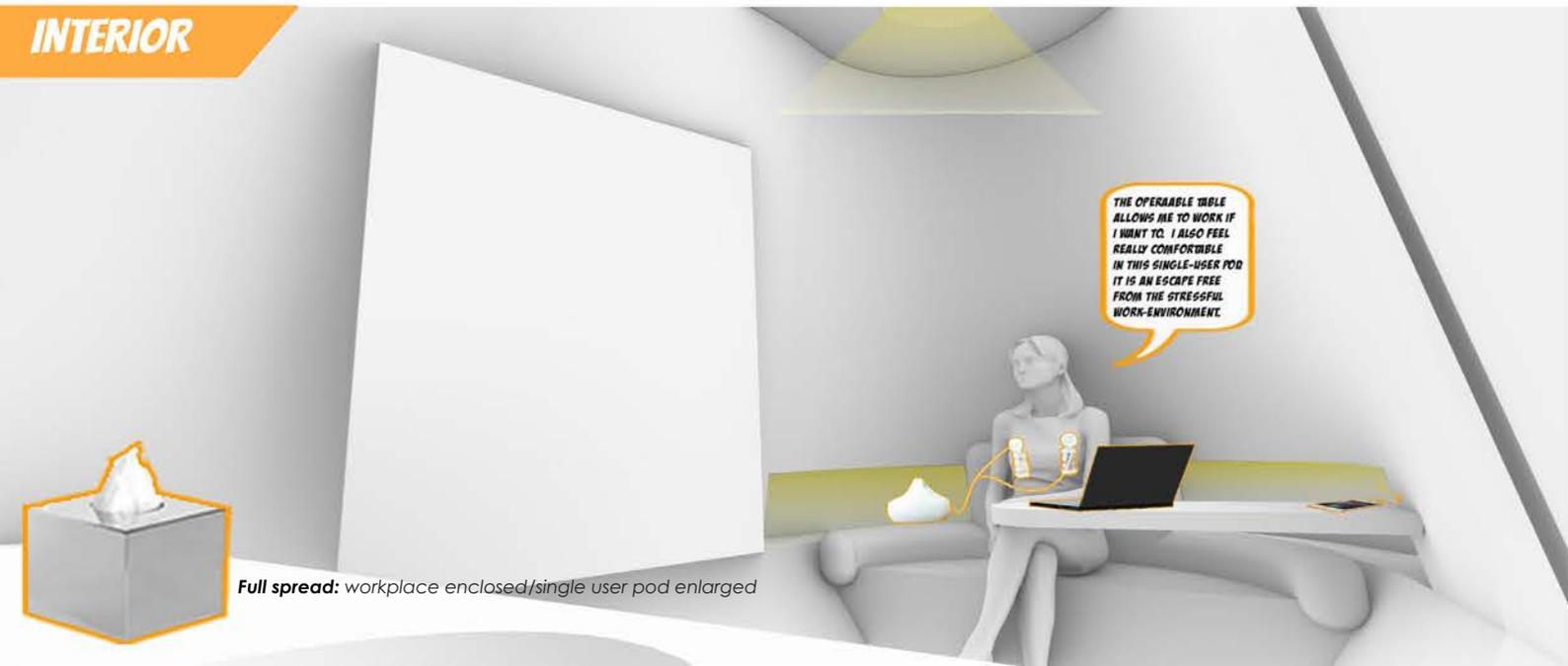


# WORKPOD - SINGLE USER - ENCLOSED



	Lighting	Location	Public	Semi-Public	Private
	Sink	Shelter	Open	Semi-Enclosed	Closed
	Wi-Fi	Hygiene	None	Partial Cleaning Station	Full
	Privacy	User	1	2	4+
	Projector	Occupancy	0	3+	5+
	Workspace	Exposure	Exposed	Partially Exposed	Hidden
	Refrigerator	Customization	Yes	Partially Modifiable	No
	Bluetooth	Function	Feeding	Multi Use	Pumping
		Milk Storage	None		Available

# INTERIOR



Full spread: workplace enclosed/single user pod enlarged

# SECTION

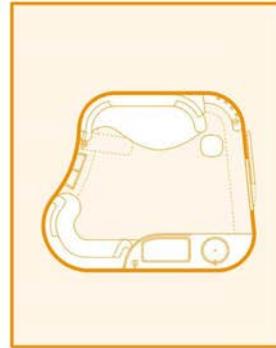


# OUTDOOR PUBLIC POD

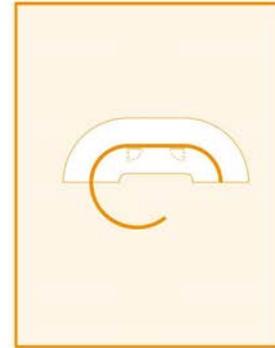
ENCLOSED / SINGLE USER



ENCLOSED / MULTI USER



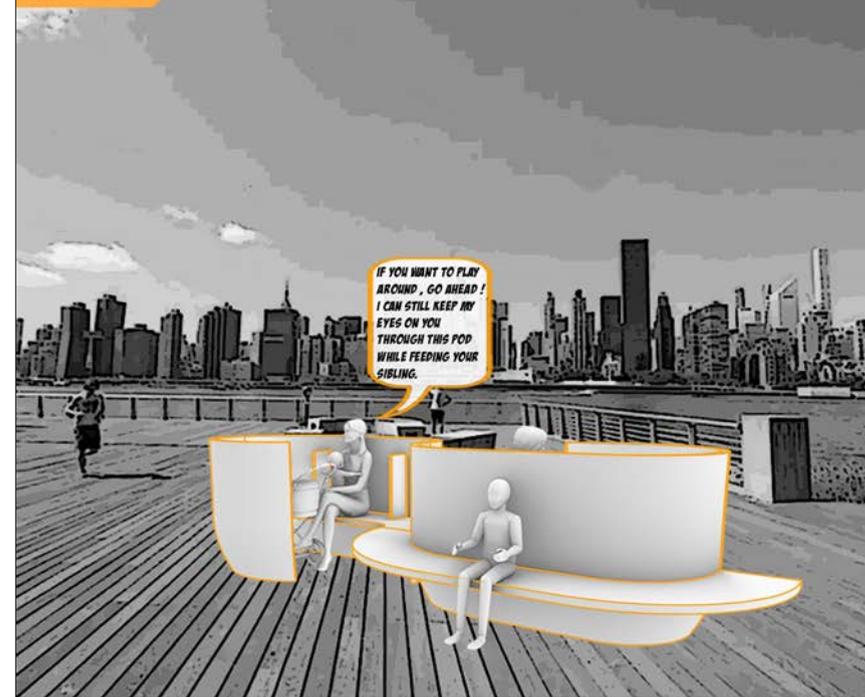
SEMI-OPEN / MULTI USER



OPEN / SINGLE



EXTERIOR VIEW



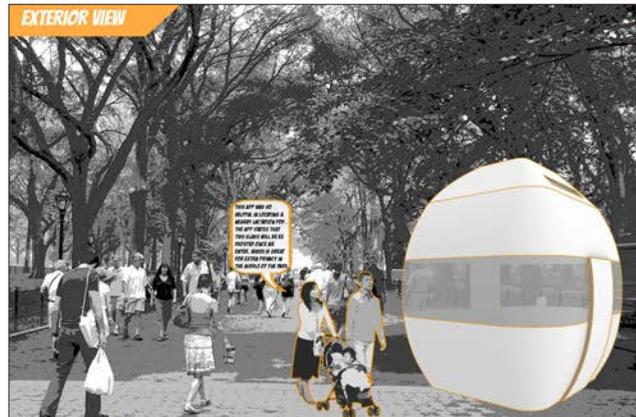
PUBLIC POD (OUTDOOR) - MULTI USER - OPEN



PLAN



EXTERIOR VIEW



PUBLIC POD (OUTDOOR) - SINGLE USER - ENCLOSED



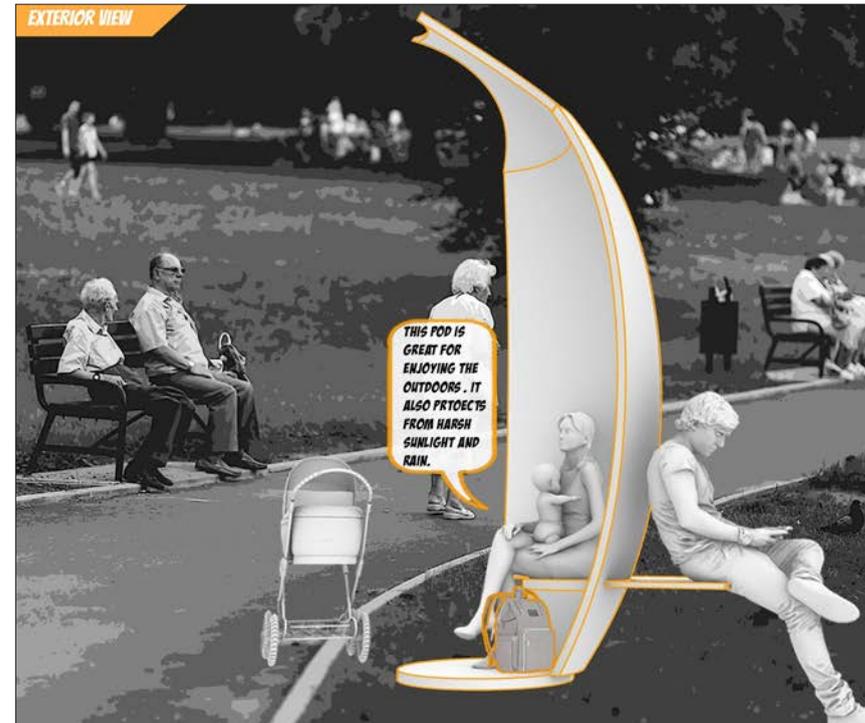
SECTION



INTERIOR



EXTERIOR VIEW



PUBLIC POD (OUTDOOR) - SINGLE USER - OPEN



PLAN

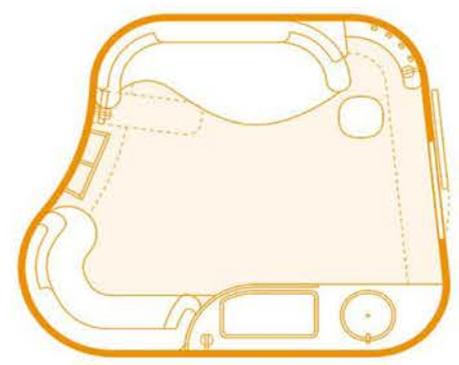


Left Top: outdoor public pod plans; Left Bottom: enclosed/single user pod  
Right Top: open/multi user pod; Right Bottom: open/single user pod

# EXTERIOR VIEW



# PUBLIC POD (OUTDOOR) - MULTI USER - ENCLOSED



Lighting	Public	Semi-Public	Private
Sink	Open	Semi-Enclosed	Closed
Privacy	None	Partial Cleaning Station	Full
Workspace	1	2	4+
Diaper Change	0	3+	5+
Coat Hanger	Exposed	Partially Exposed	Hidden
Stroller	Yes	Partially Modifiable	No
	Feeding	Multi Use	Pumping
	None		Available

# SECTION



# INTERIOR



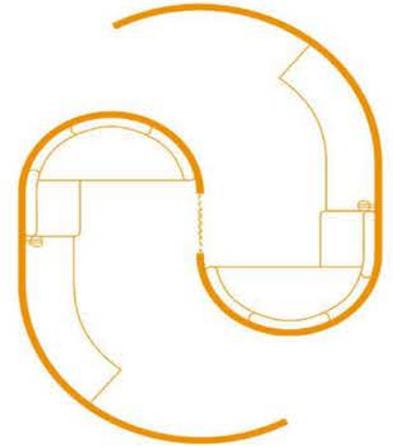
Full spread: outdoor public enclosed/multi user pod



**EXTERIOR VIEW**

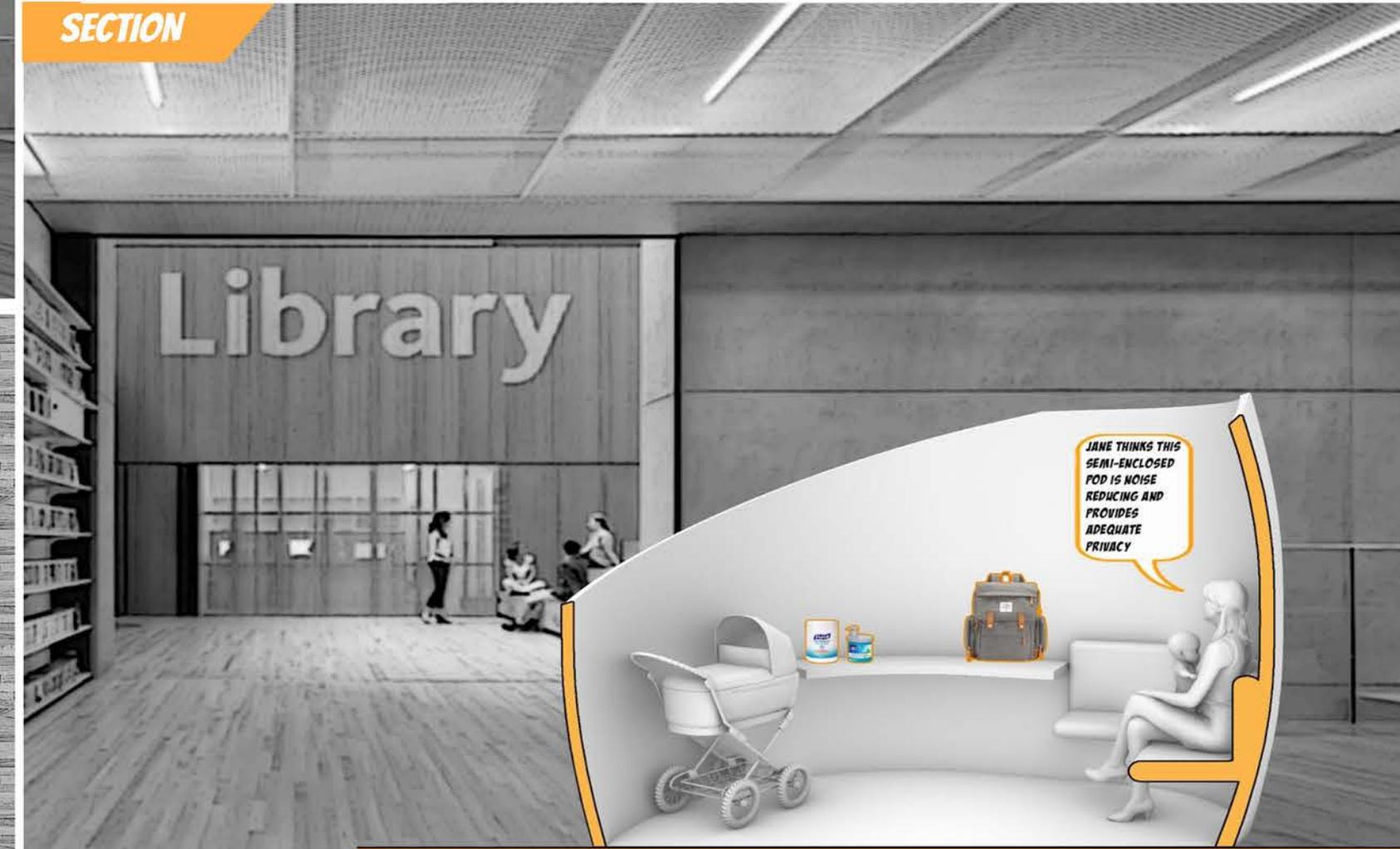


**PUBLIC POD (INDOOR) - MULTI USER - SEMI-OPEN**

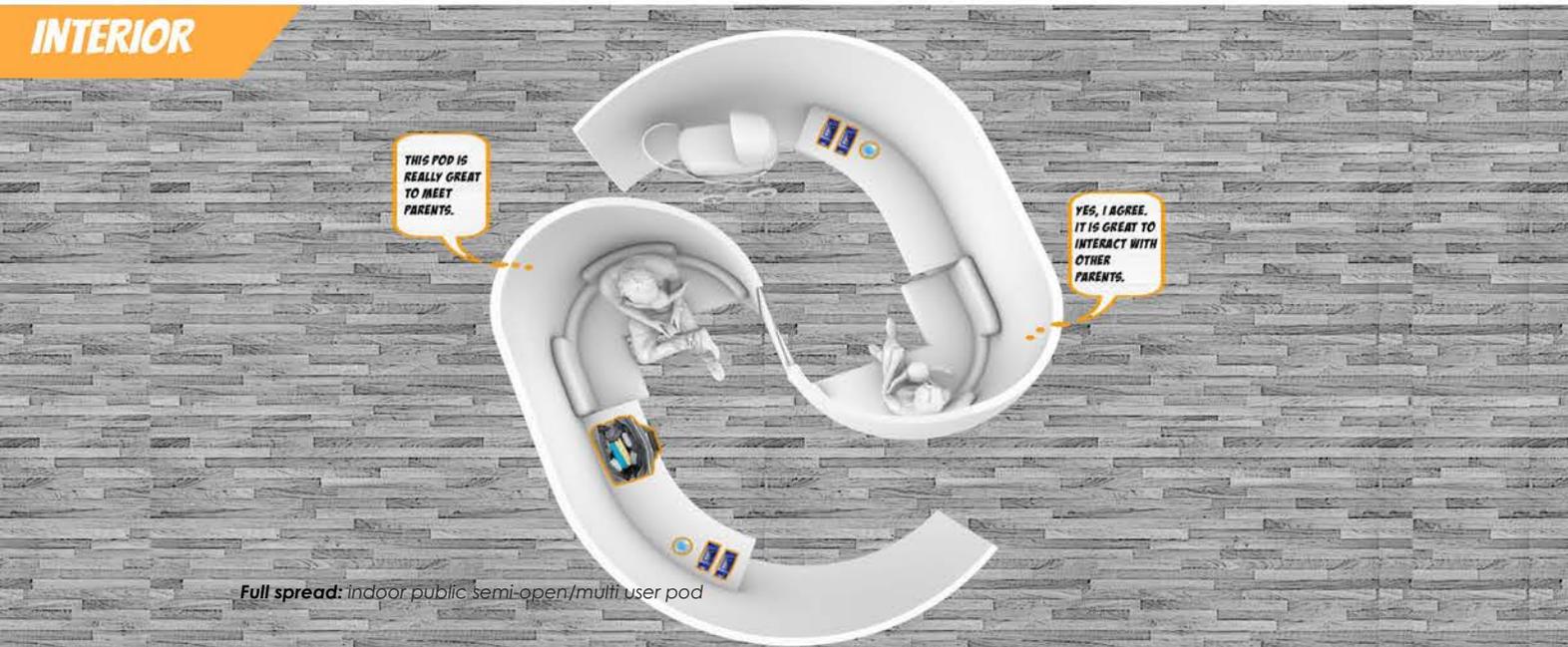


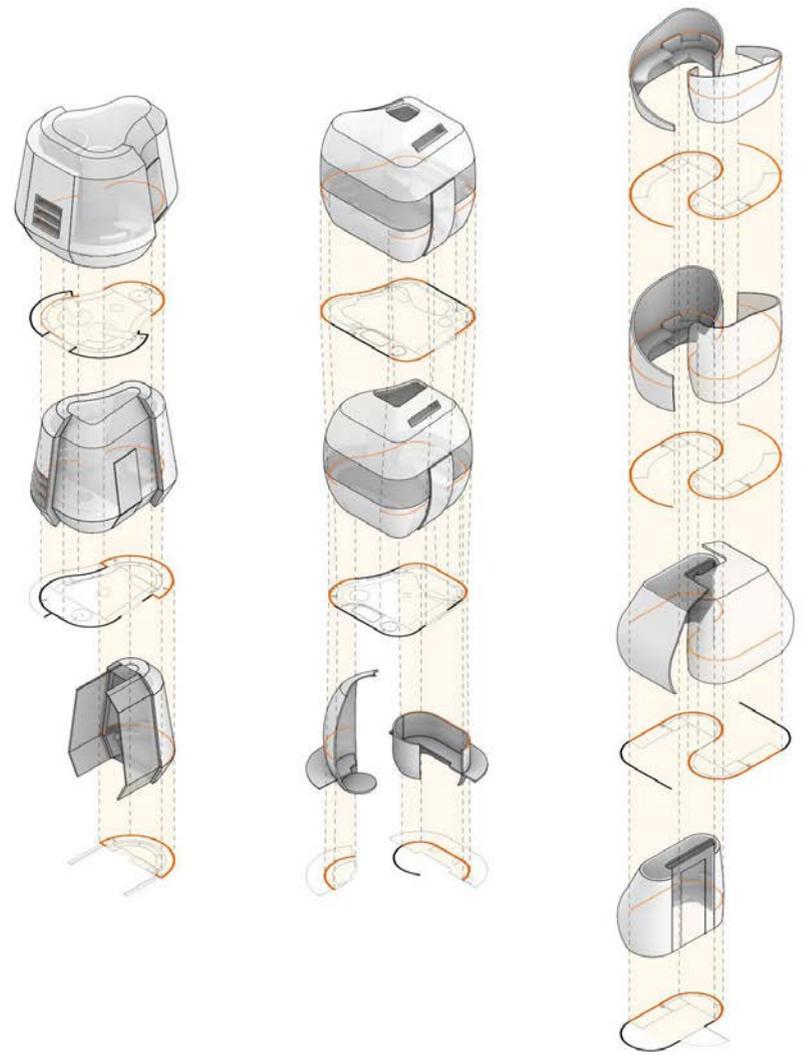
Lighting	Public	Semi-Public	Private
Sanitizer	Open	Semi-Enclosed	Closed
Wi-Fi	None	Partial Cleaning Station	Full
Privacy	1	2	4+
Stroller	0	3+	5+
	Exposed	Partially Exposed	Hidden
	Yes	Partially Modifiable	No
	Feeding	Multi Use	Pumping
	None		Available

**SECTION**

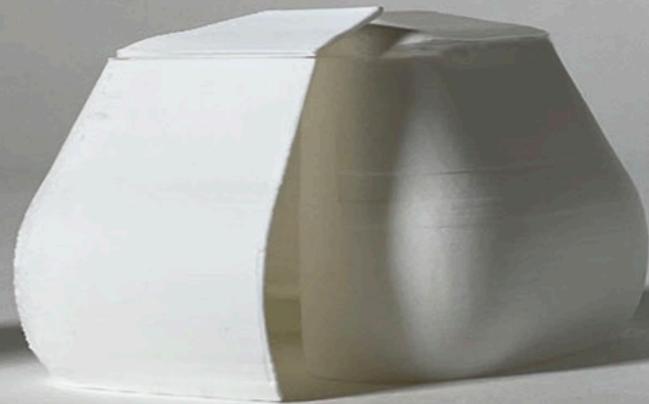
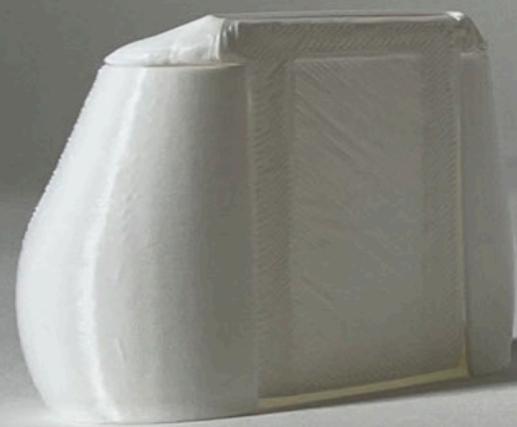


**INTERIOR**



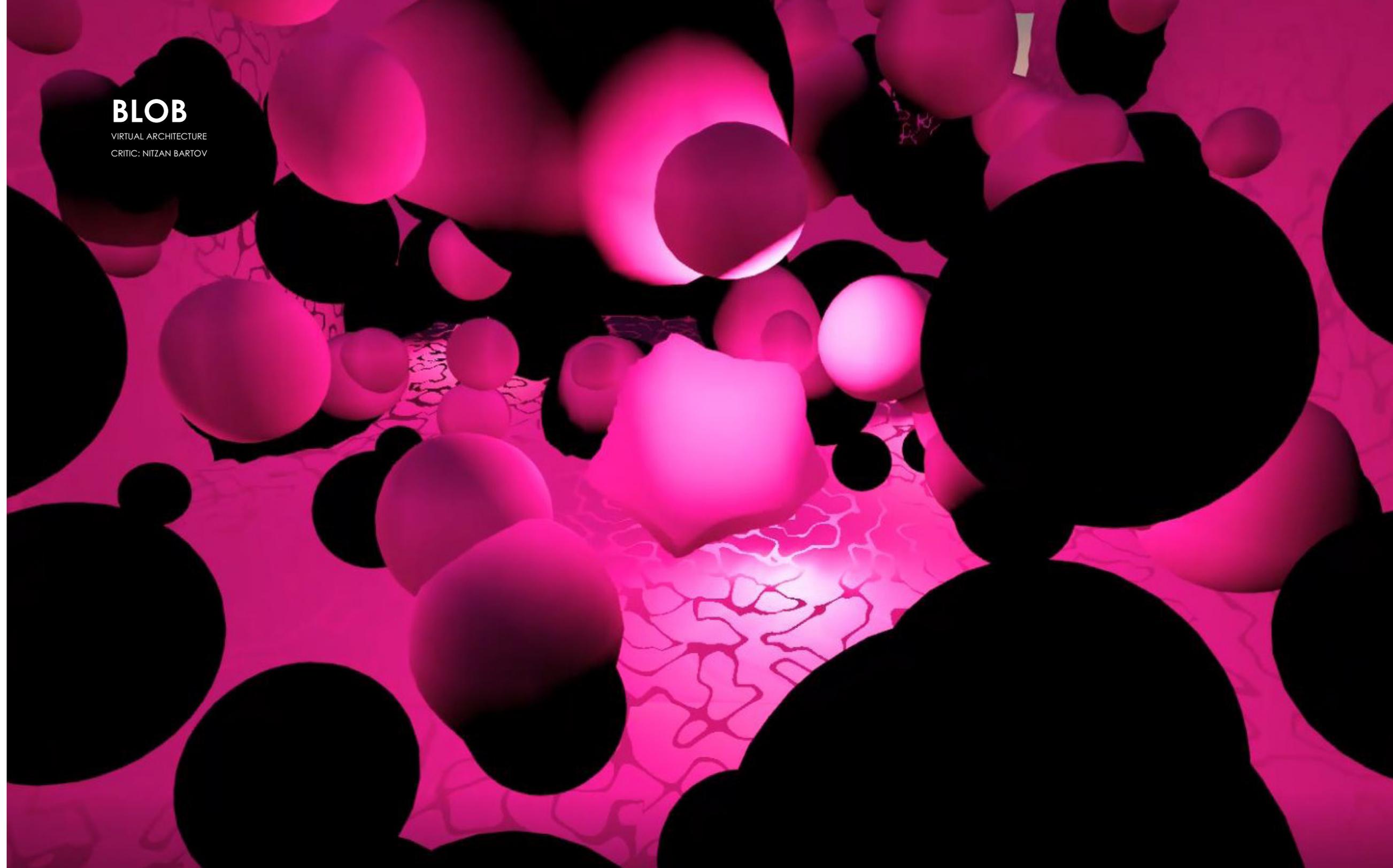


Left: typology fabrication relationship axonometric; Right: lactation pod app



# BLOB

VIRTUAL ARCHITECTURE  
CRITIC: NITZAN BARTOV

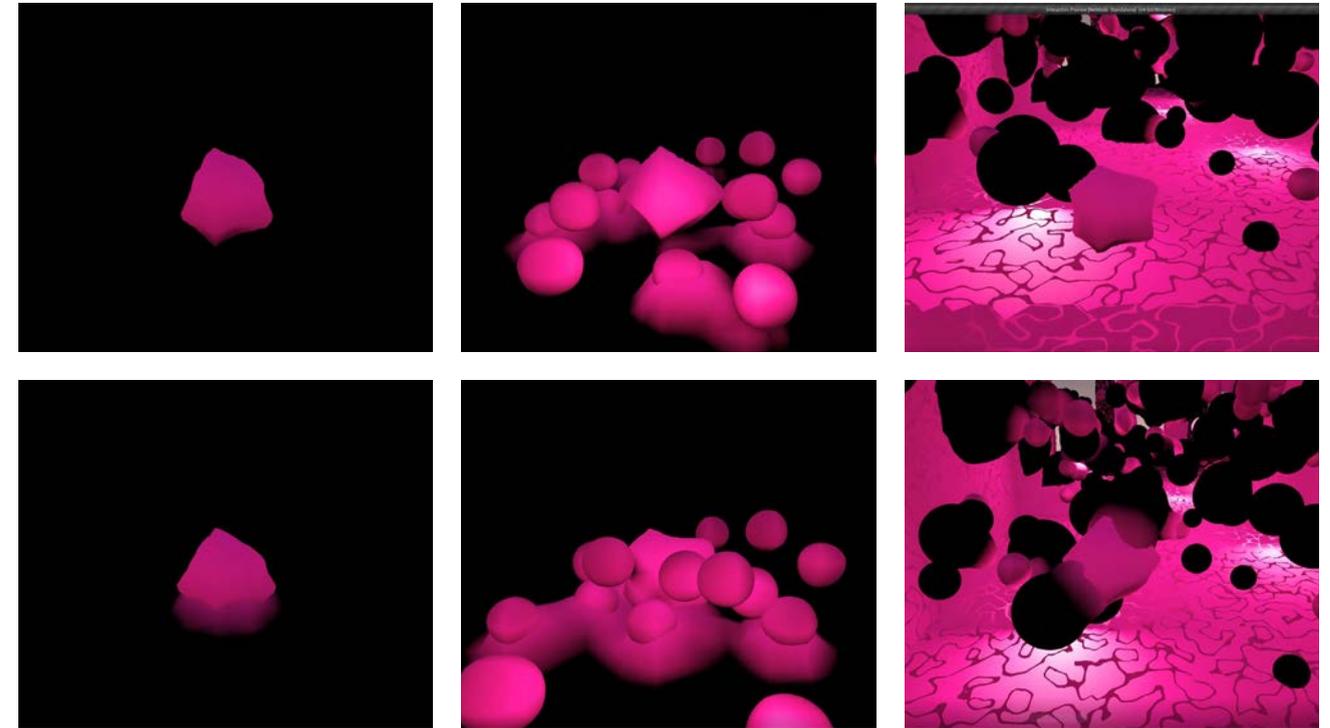
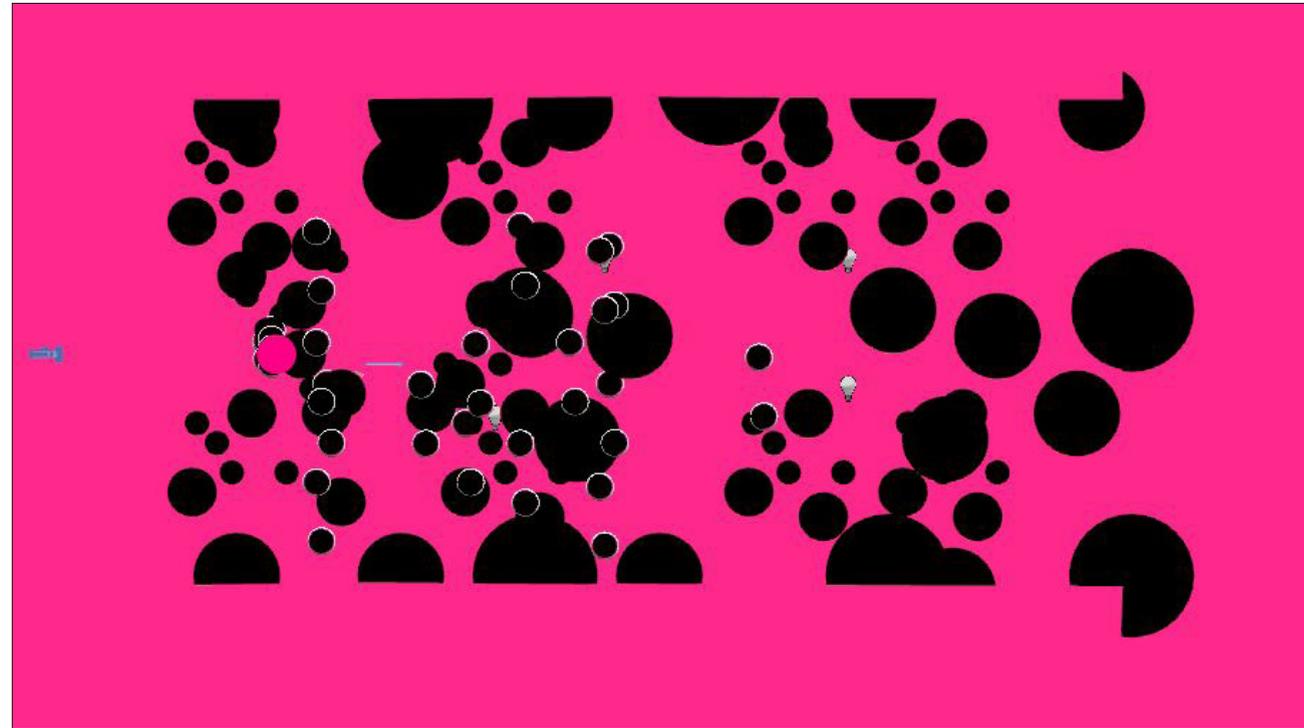


*Right: still from the Blob animation*

# BLOB

The **Blob** was inspired by the COVID-19 pandemic and how we are affected by a virus unseen.

This project seeks to make **intersectionality** visible by using **attraction** and **change in color** to highlight the overlap between two things, whether that be objects in a field or the landscape itself.

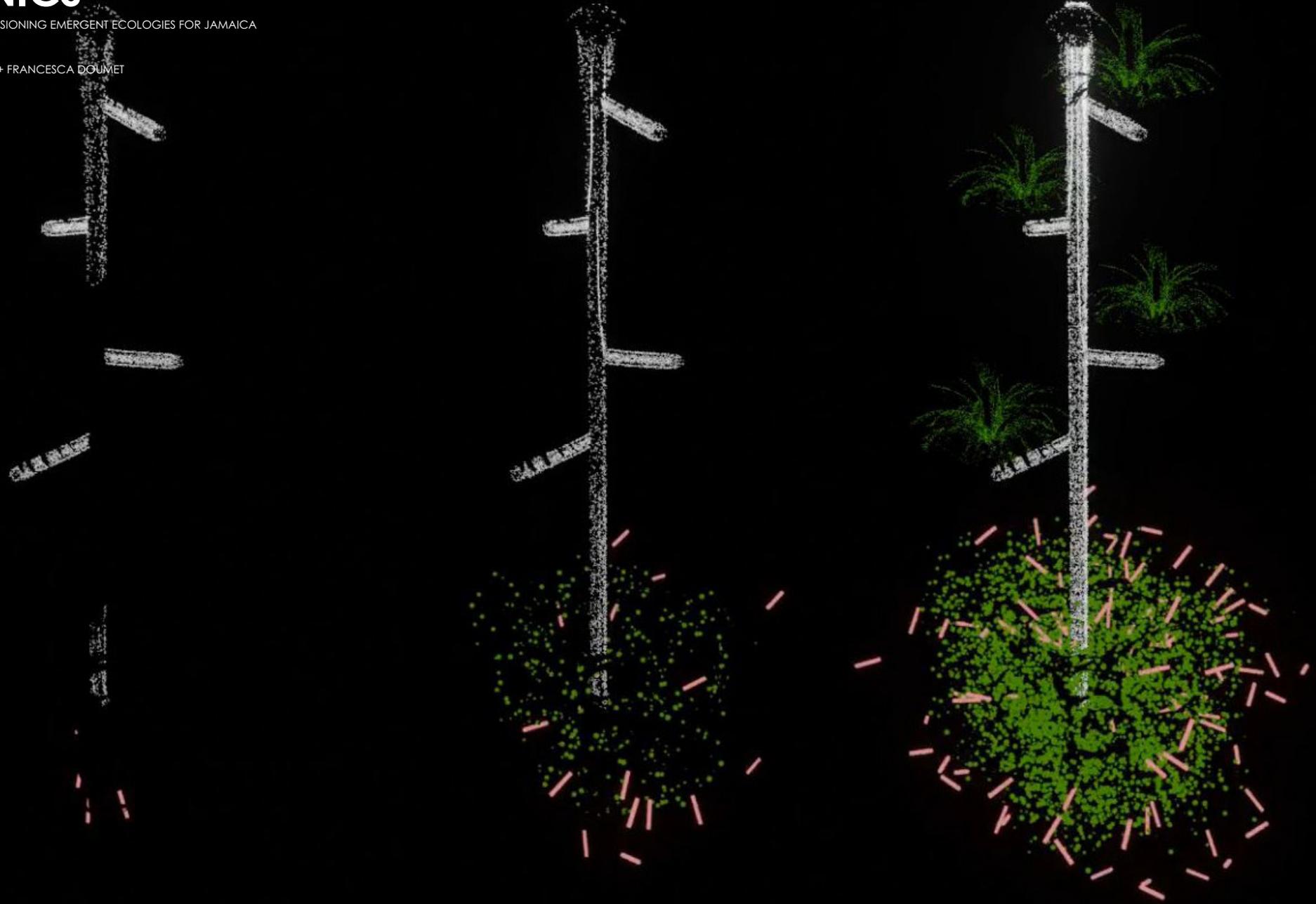


# ECOPONICS

ADV V: FUTURECURRENT: ENVISIONING EMERGENT ECOLOGIES FOR JAMAICA

CRITIC: VANESSA KEITH

PARTNERS: AAHANA BANKER + FRANCESCA DOUMET



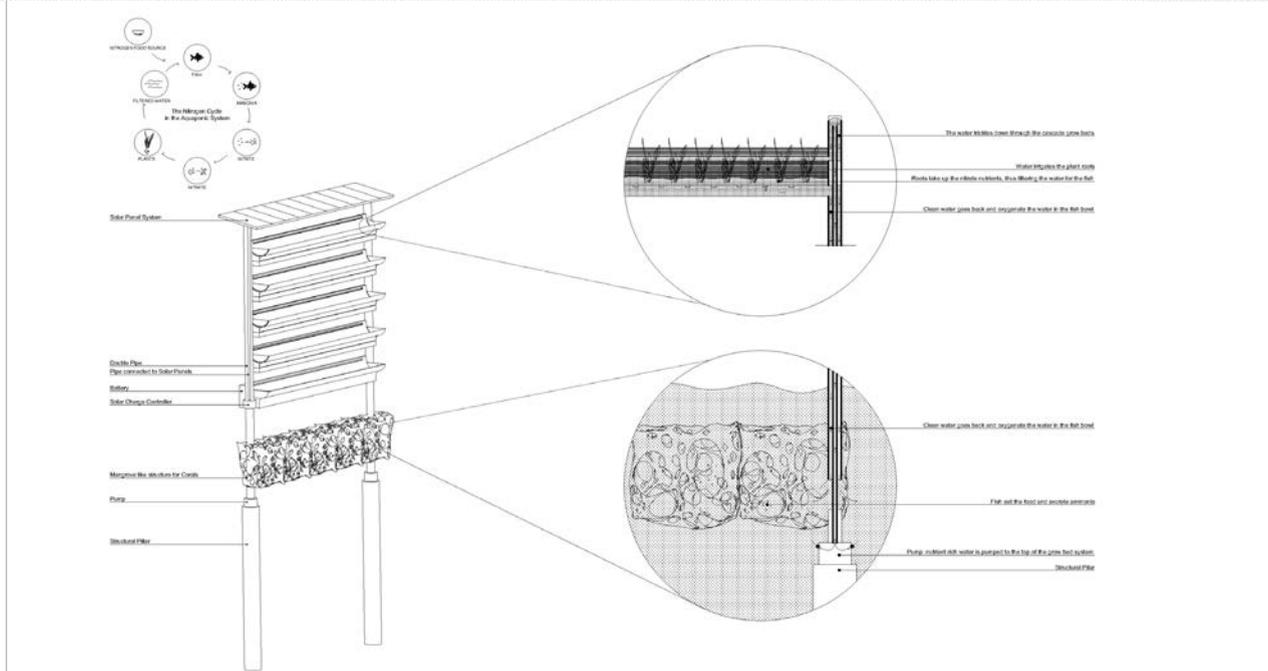
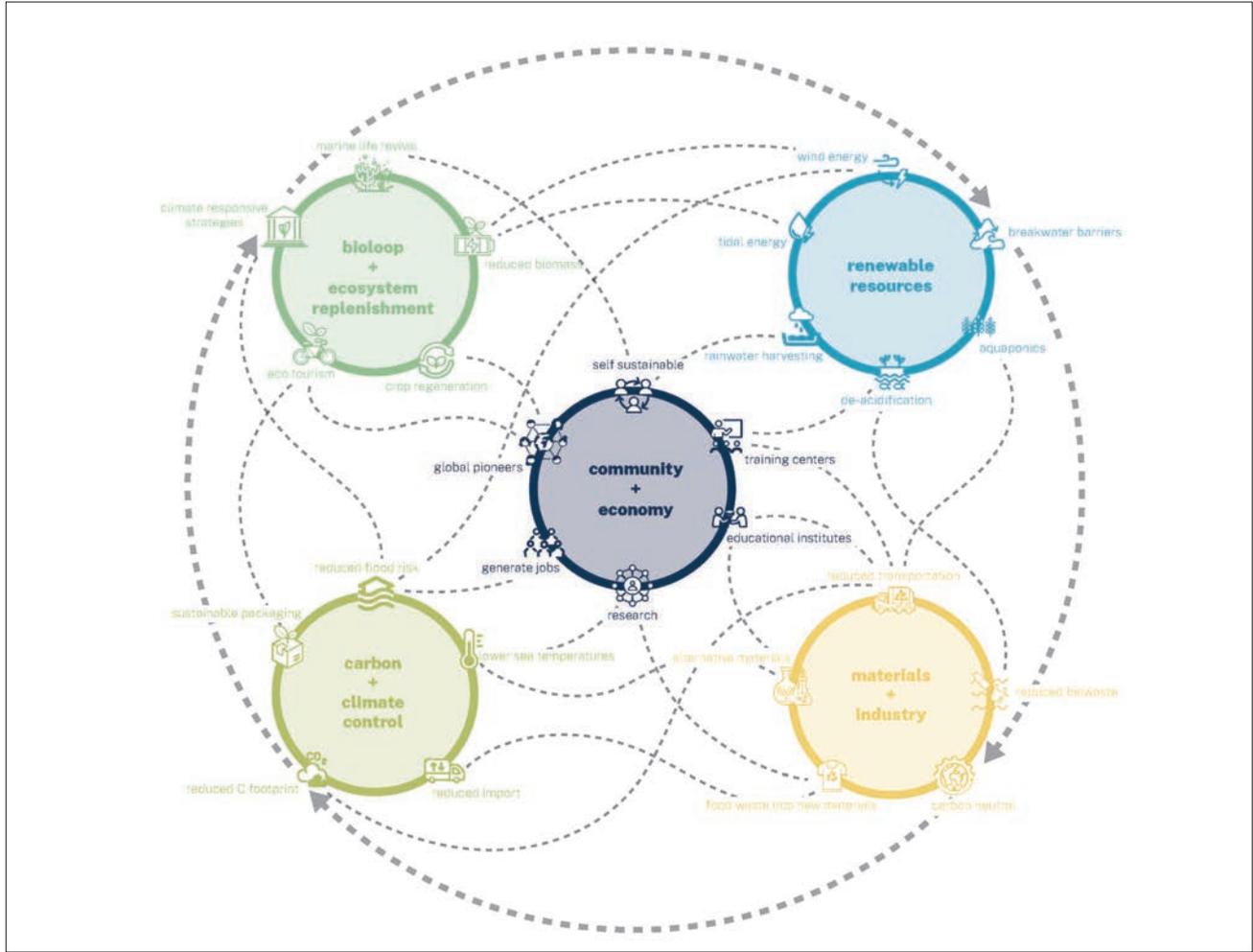
*Right: aquaponic system animation stills*

# Ecoponics

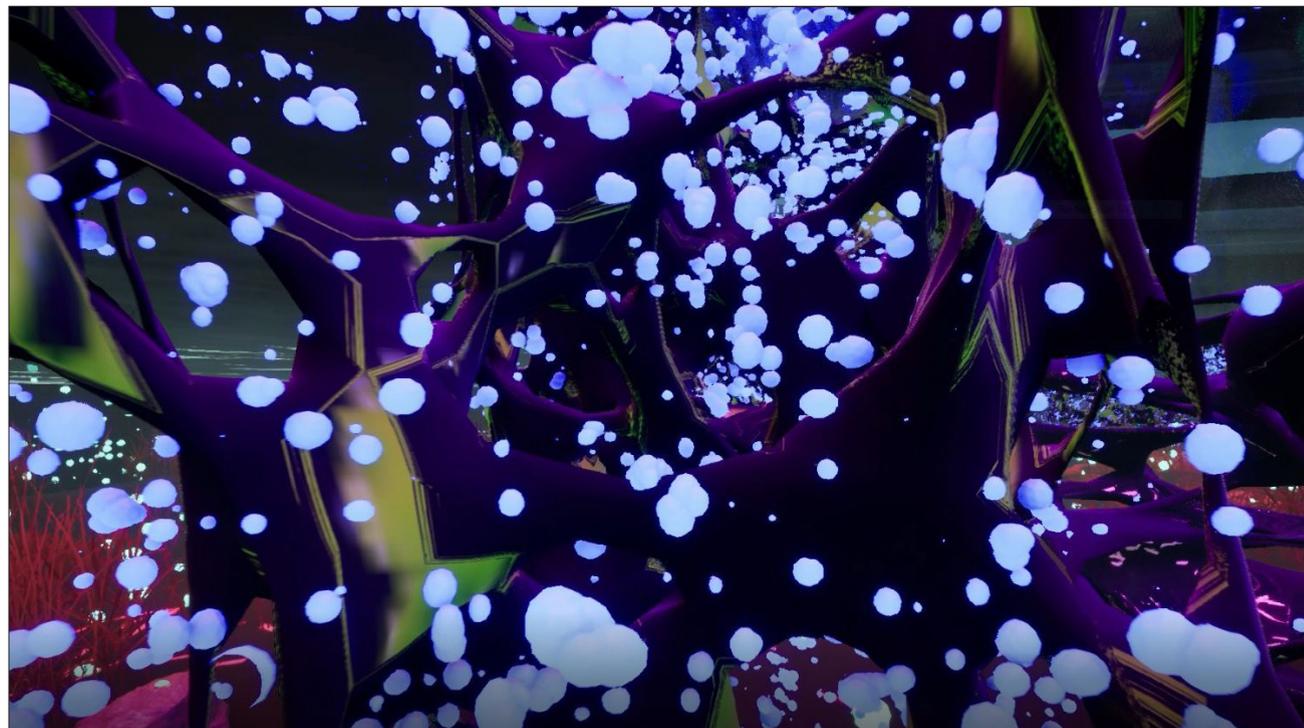
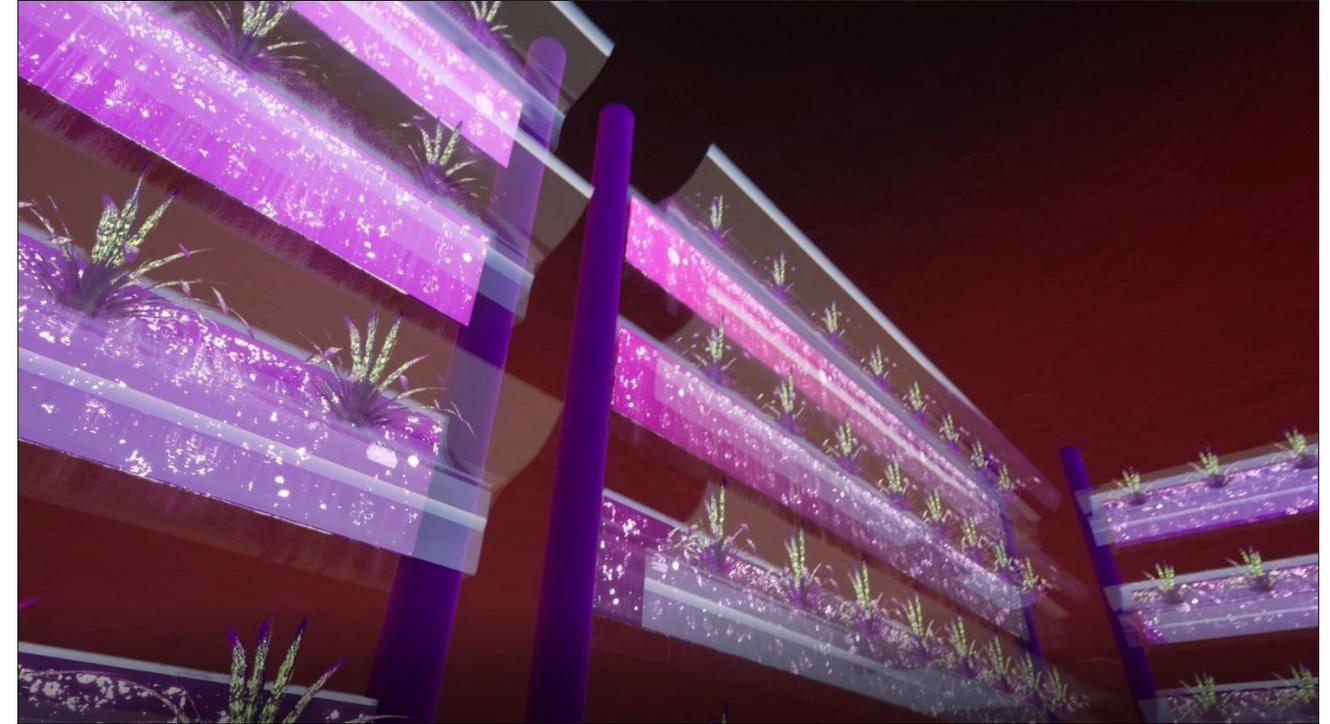
**Ecoponics** seeks to solve projected climate issues that Jamaica's East End will face by 2100. It seeks to bridge tourism and local environmental education together.

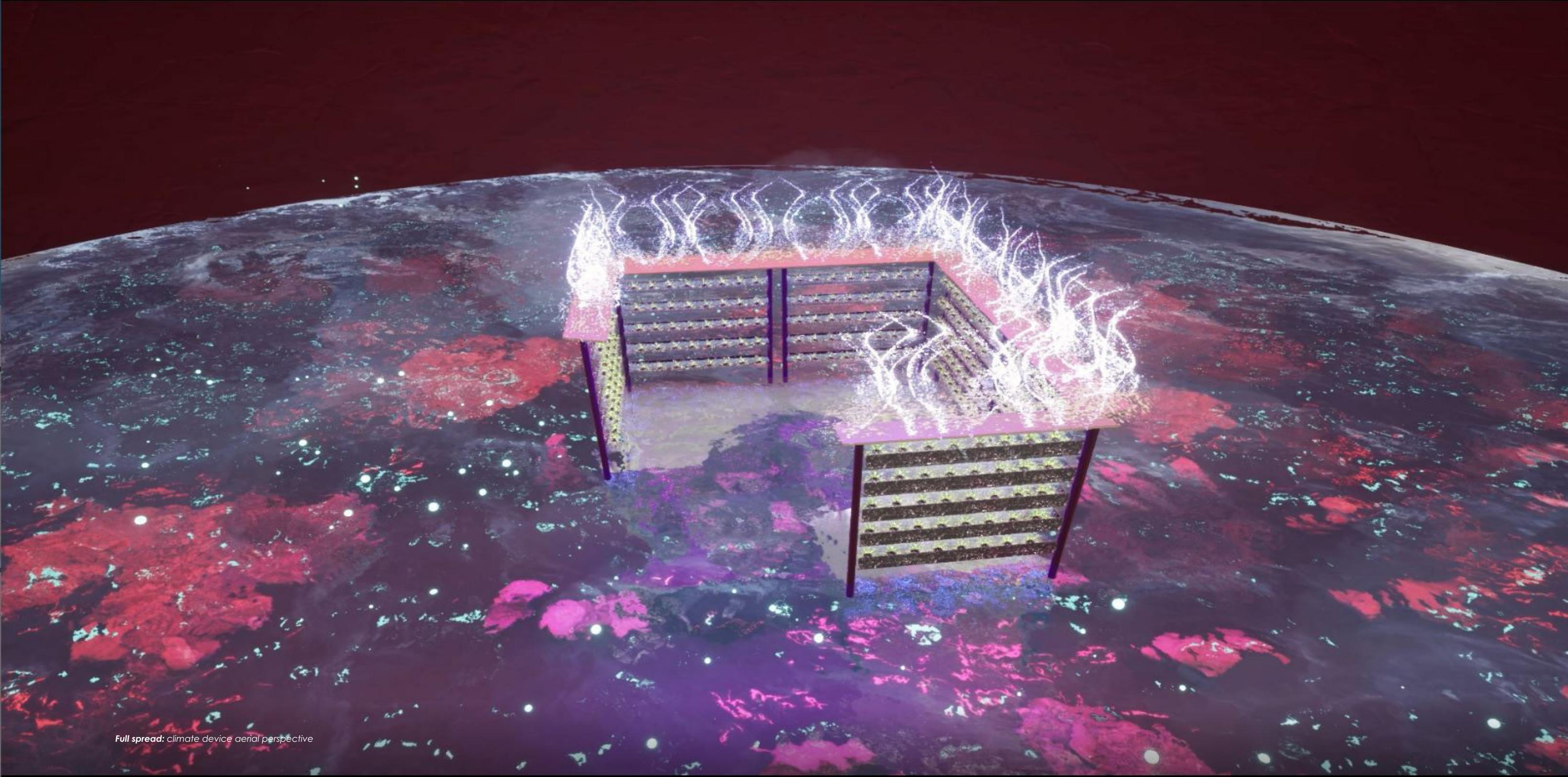
The project began with the creation of a new self-sufficient **climate device** that uses **aquaponics** to clean the water, improve fish population, and provide jobs through agriculture.

These ideas of facilitating community growth through sustainable means was carried out through the project's three building sites of an **ecolodge**, **crocodile visitor center**, and **oceanographic research center**.



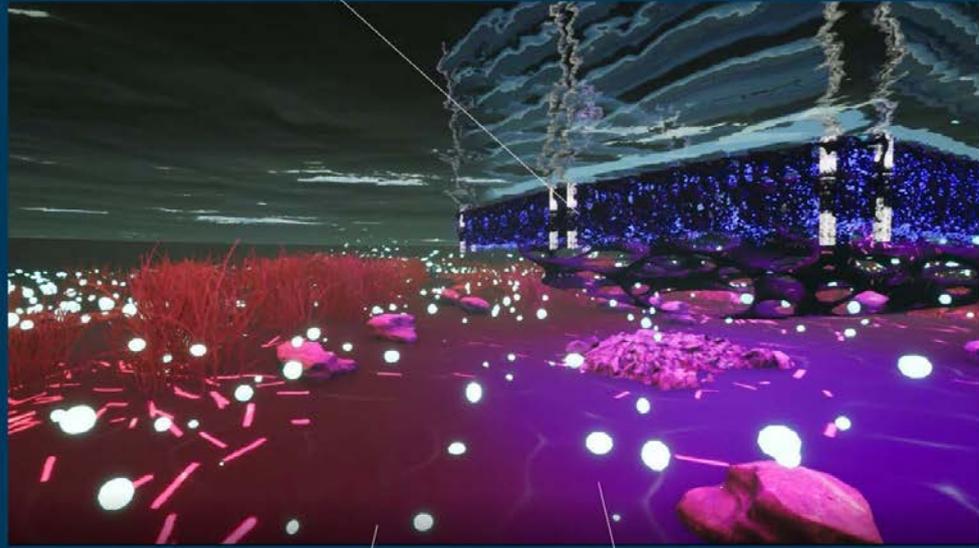
Bottom: closed loop diagram; Right: climate device system and detail





Full spread: climate device aerial perspective

Fish Environment created by Biorock

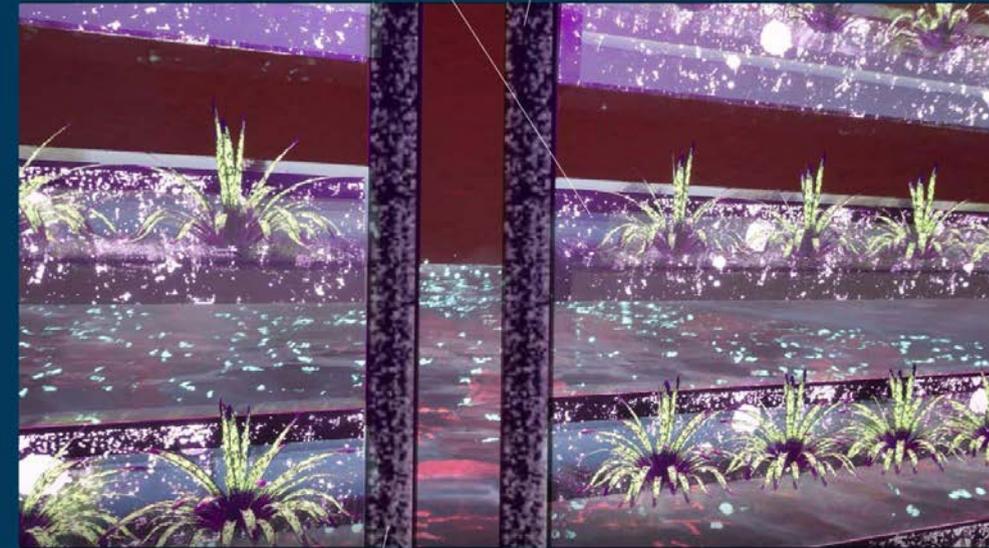


Acidic Water ( $H_2CO_3$ )

Clean Water ( $H_2O$ ) is Returned to the Environment

Plants receive Nitrates ( $NO_3$ ) as Nutrients and Filter the Water

Clean Water ( $H_2O$ ) is Returned to the Environment



Ammonia ( $NH_4$ ) and Water are pumped up through Pipes

Ammonia ( $NH_4$ ) from Fish Excrements become Nutrients for Crops

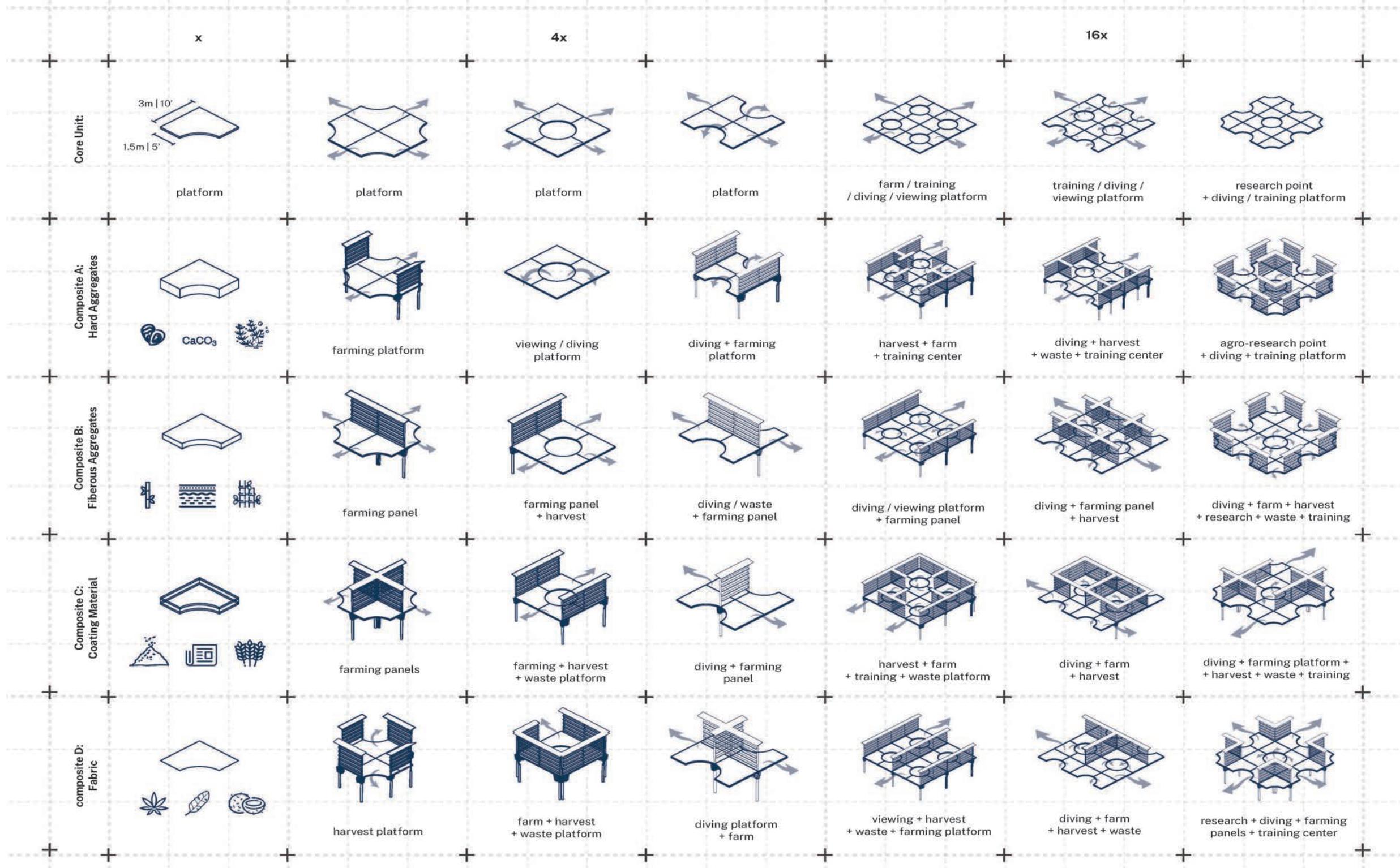


Biorock enhances Growth of Coral and Seagrass

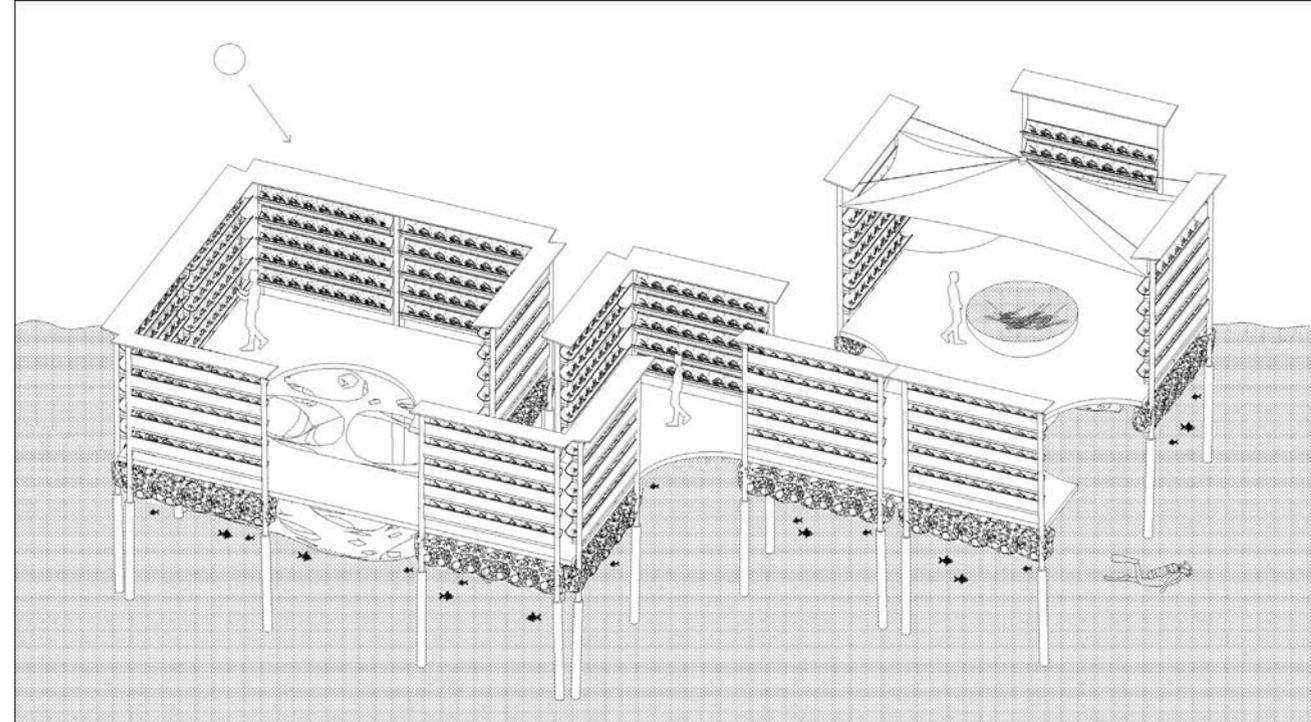
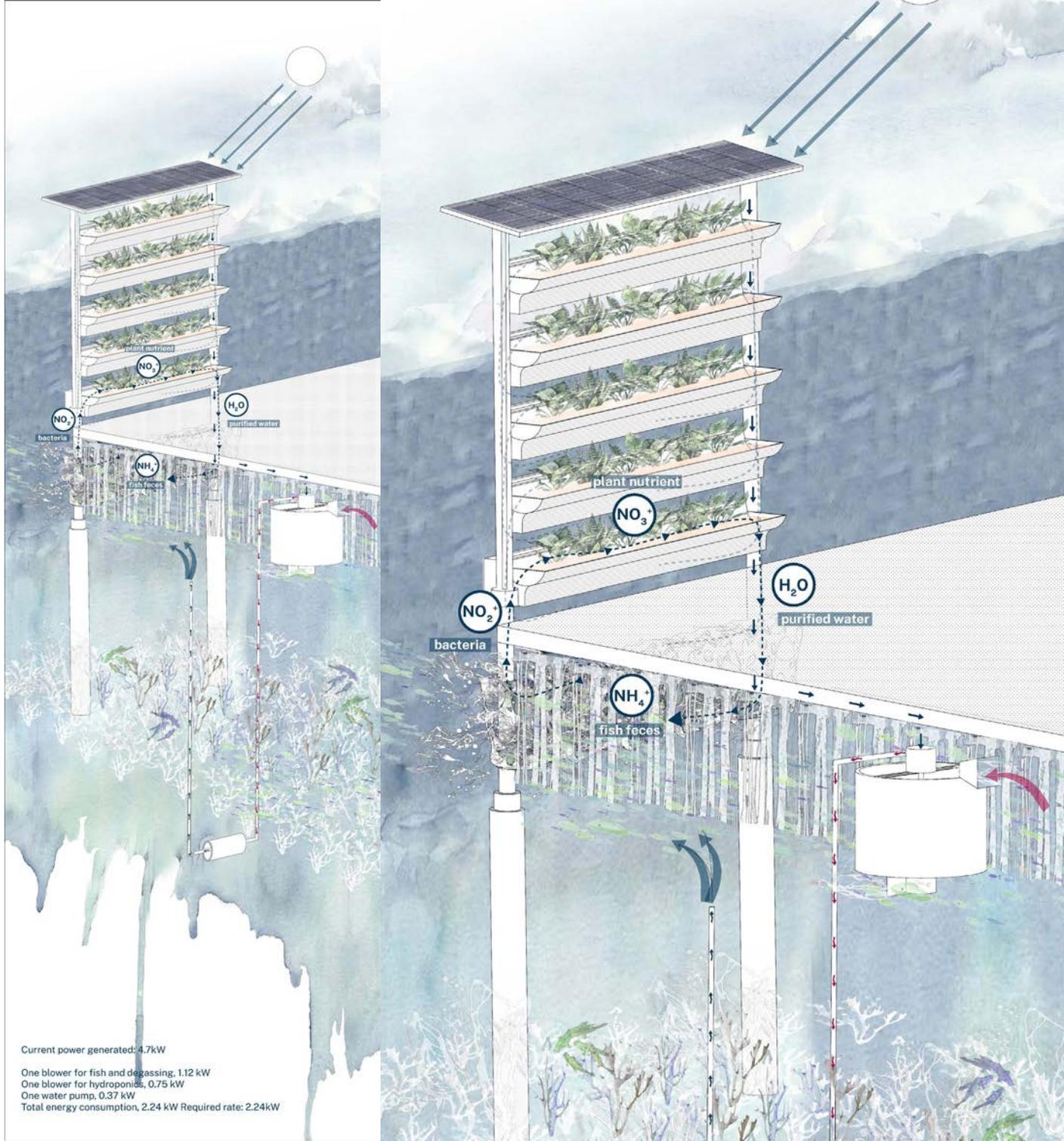
Solar Power is used to Power the System



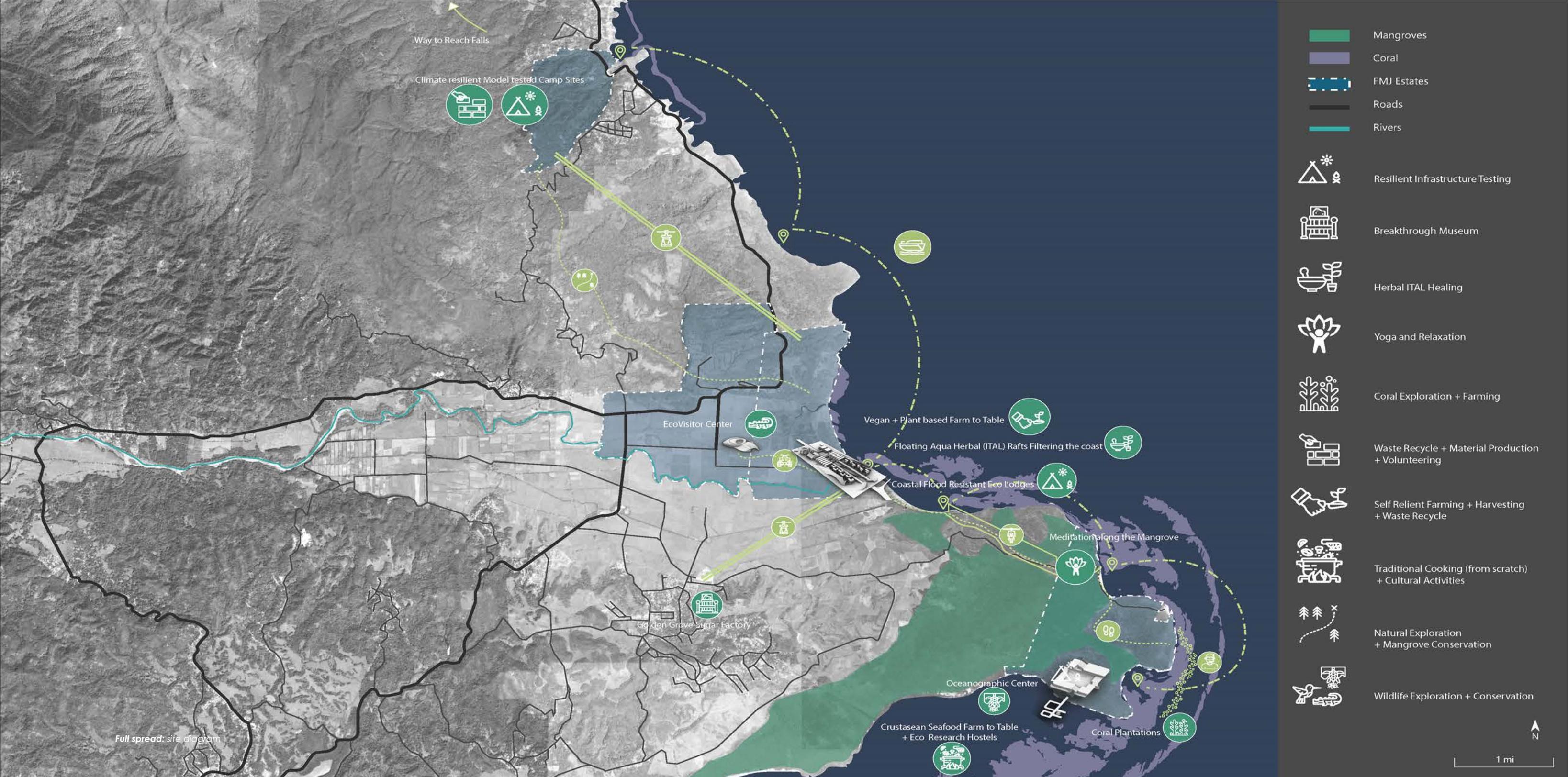
Left Top: water cleaning; Left Bottom: artificial coral environment  
Right Top: nutrient distribution; Right Bottom: solar powered



Full spread: configuration and material matrix



Left Top: system and energy diagram  
 Right Top: full configuration axon; Right Bottom: chunk model section



Way to Reach Falls

Climate resilient Model tested Camp Sites

EcoVisitor Center

Vegan + Plant based Farm to Table

Floating Aqua Herbal (ITAL) Rafts Filtering the coast

Coastal Flood Resistant Eco Lodges

Meditation along the Mangrove

Golden Grove Sugar Factory

Oceanographic Center

Crustacean Seafood Farm to Table + Eco Research Hostels

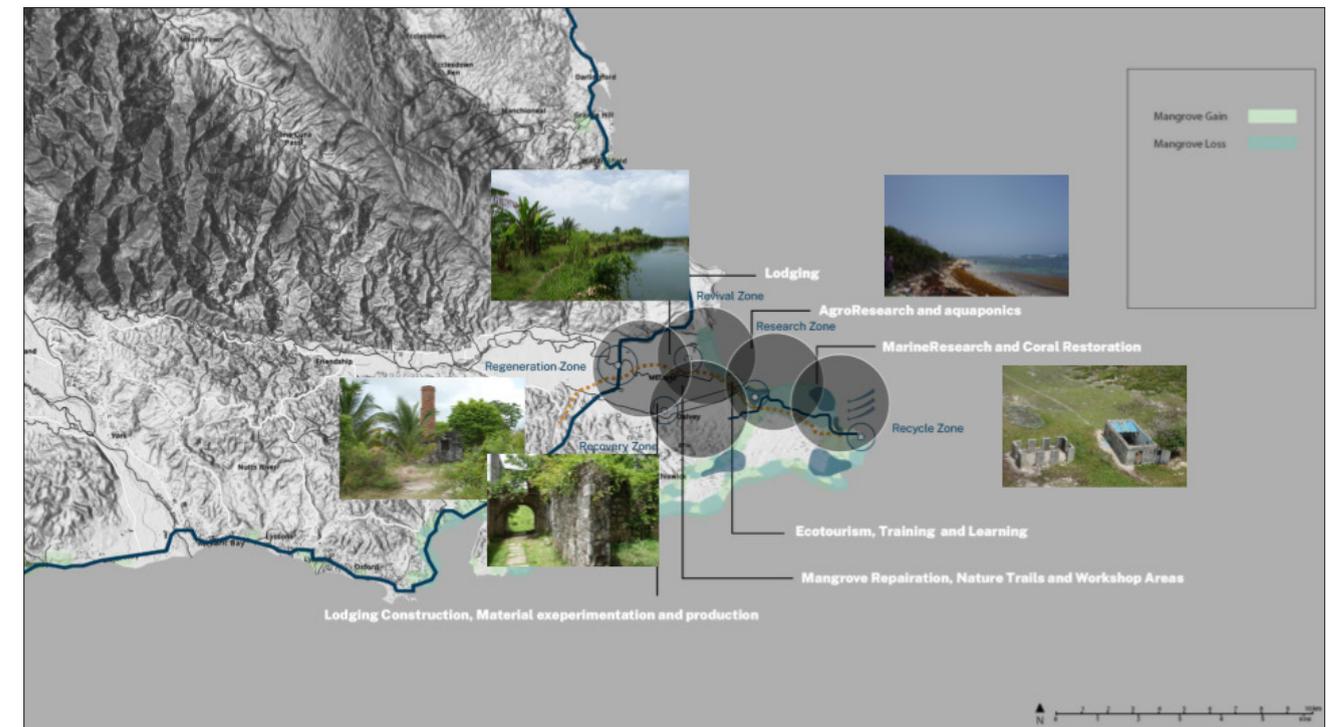
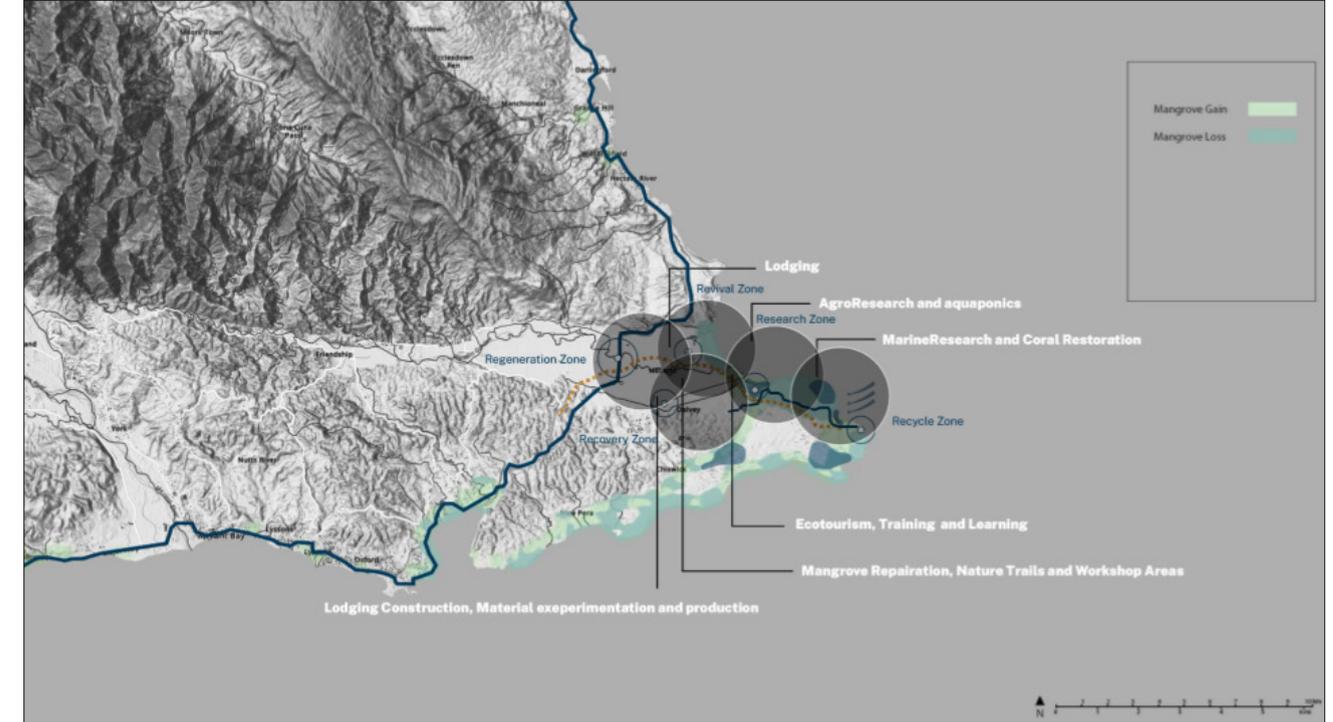
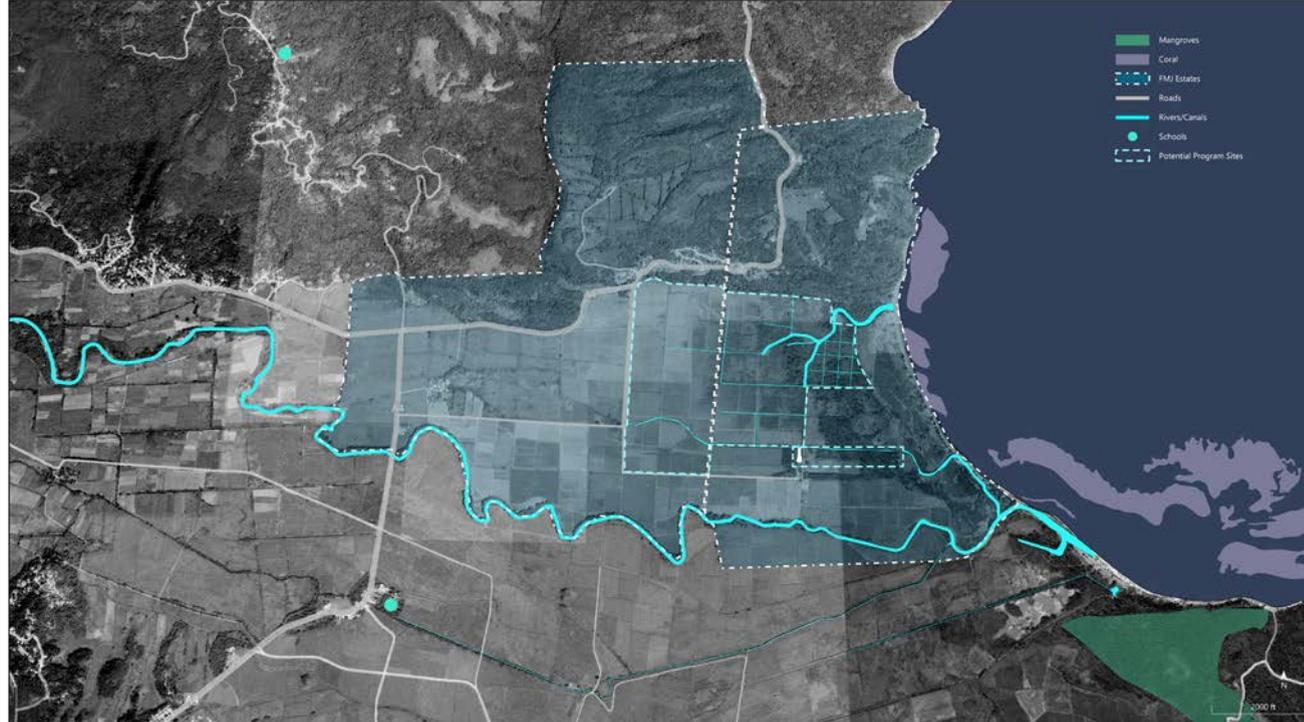
Coral Plantations

Full spread: site diagram

-  Mangroves
-  Coral
-  FMJ Estates
-  Roads
-  Rivers
-  Resilient Infrastructure Testing
-  Breakthrough Museum
-  Herbal ITAL Healing
-  Yoga and Relaxation
-  Coral Exploration + Farming
-  Waste Recycle + Material Production + Volunteering
-  Self Relient Farming + Harvesting + Waste Recycle
-  Traditional Cooking (from scratch) + Cultural Activities
-  Natural Exploration + Mangrove Conservation
-  Wildlife Exploration + Conservation

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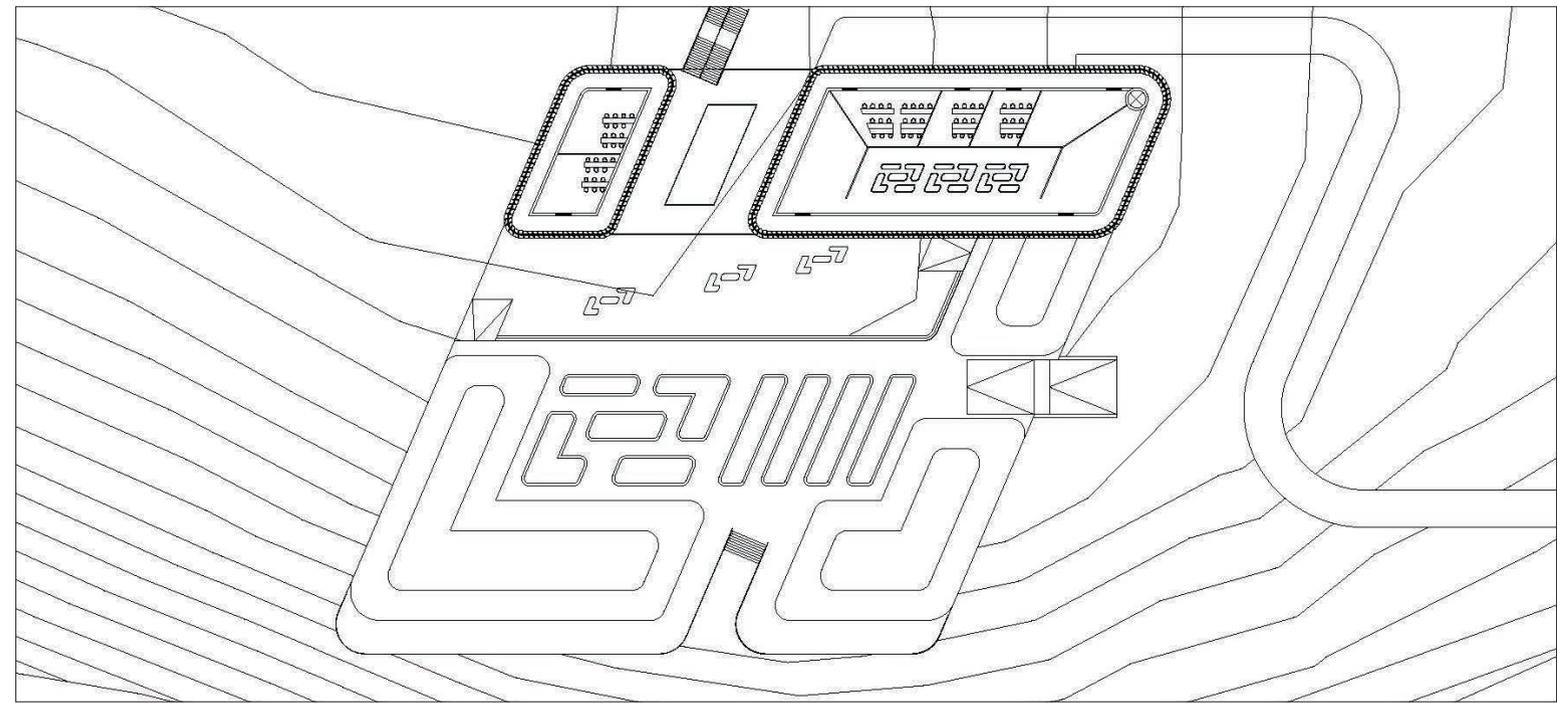
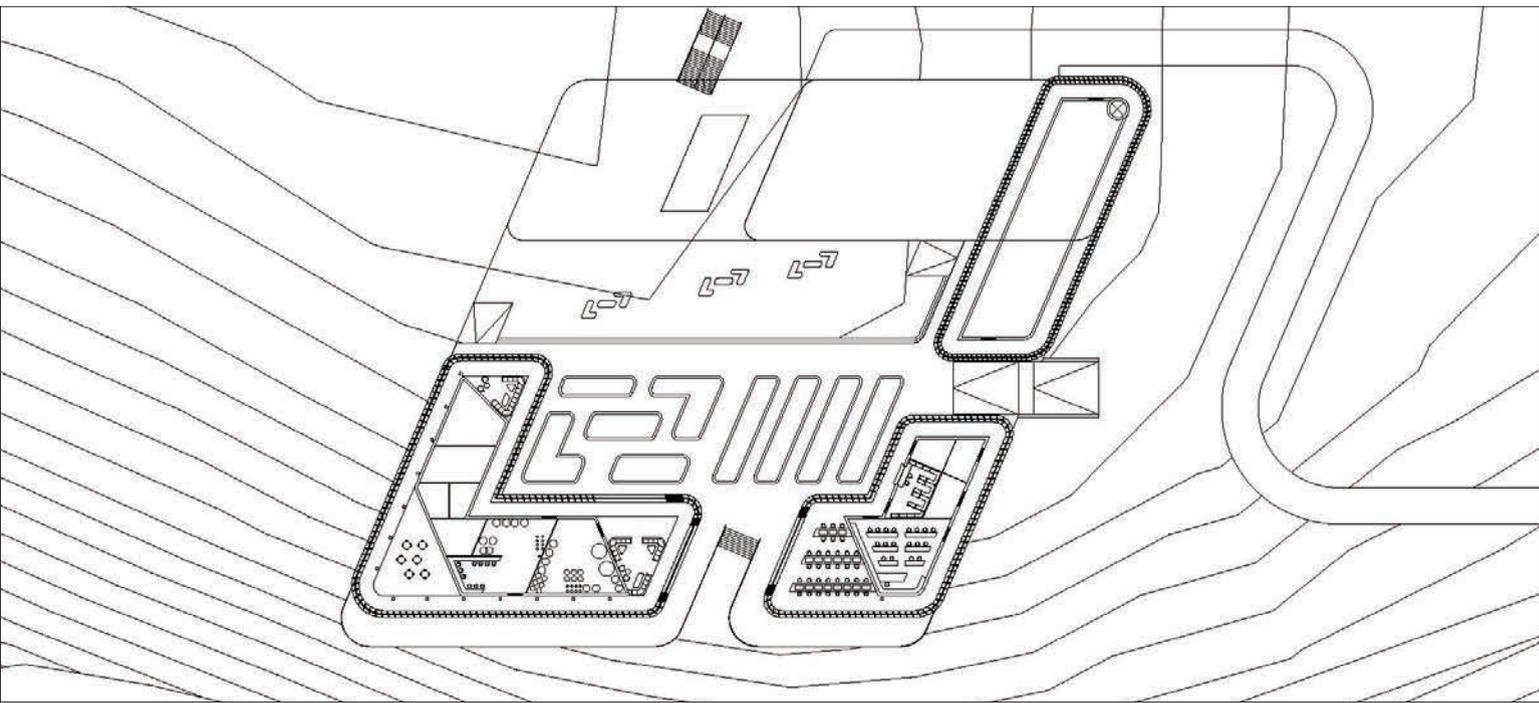
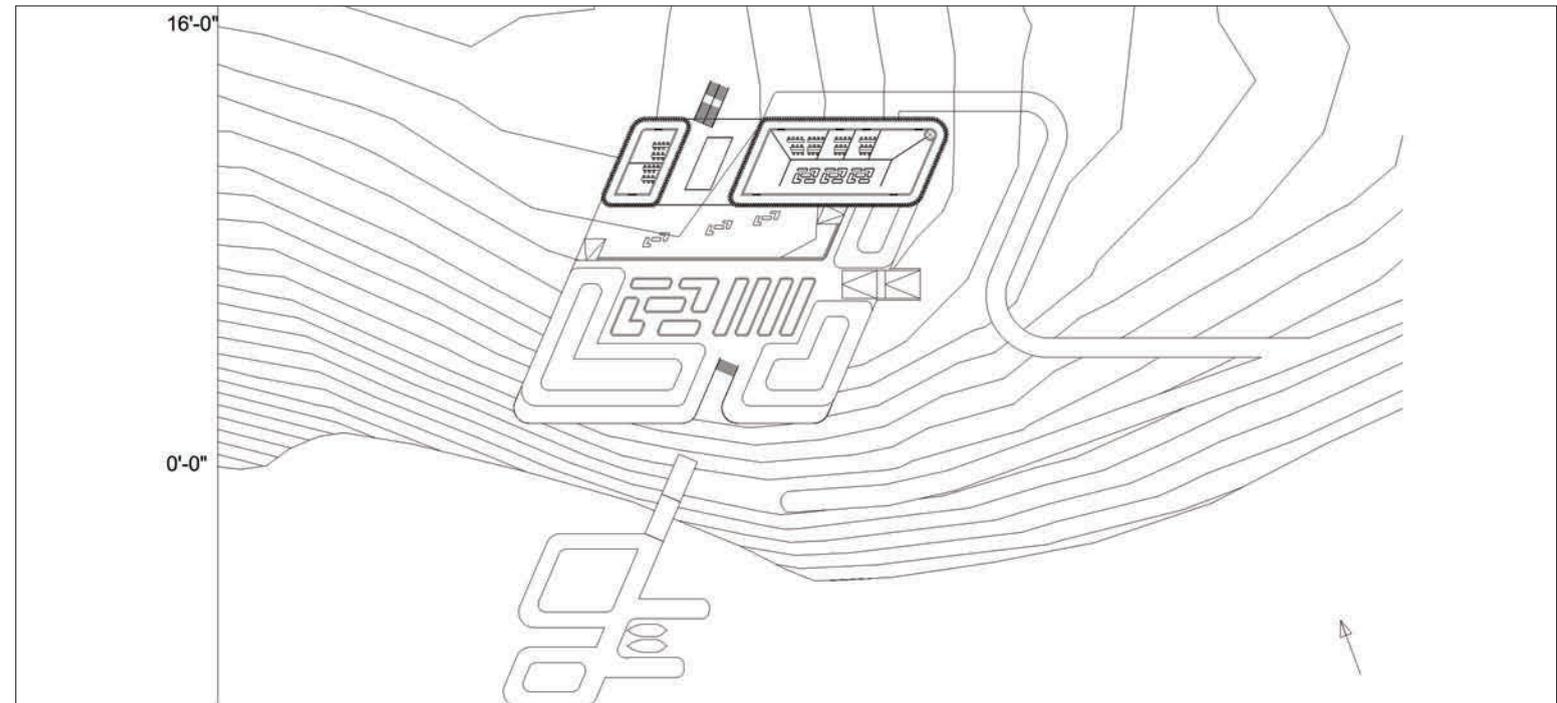
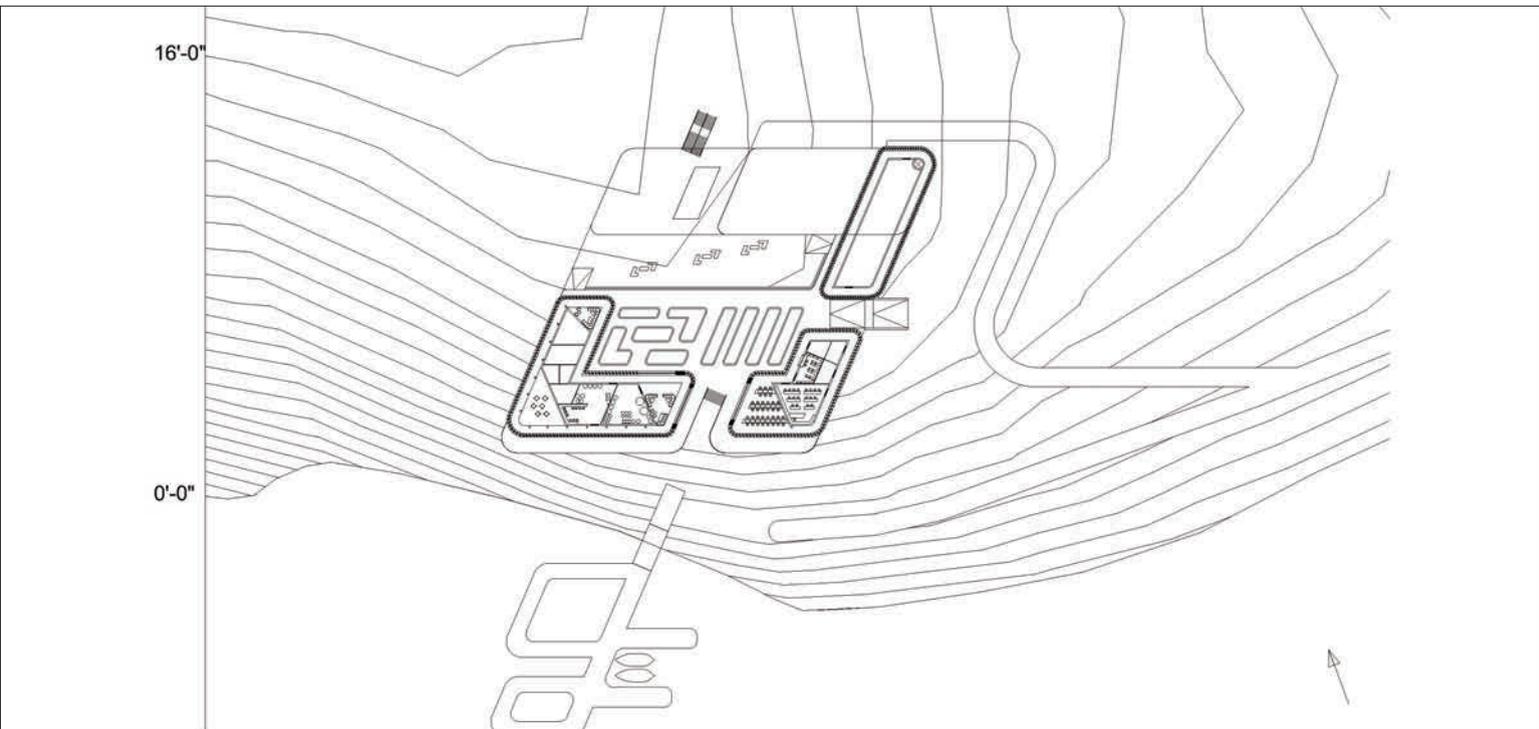
N



Left Top: visitor center and eco-lodge site; Left Bottom: oceanographic center site; Right Top: zone diagram; Right Bottom: site images



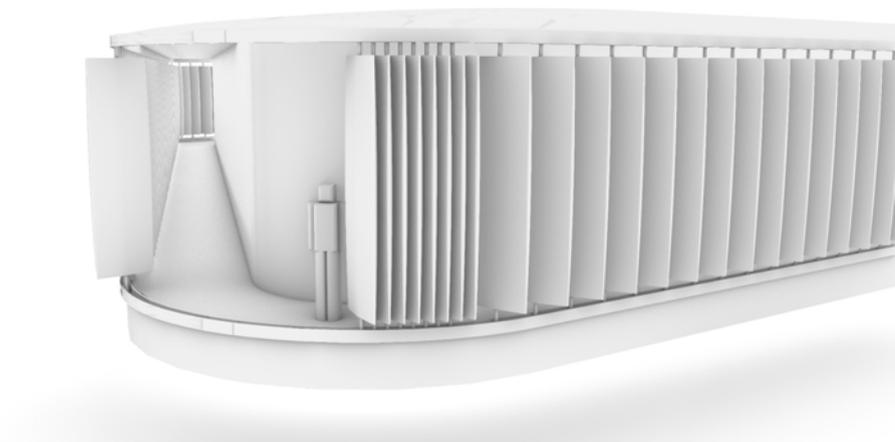
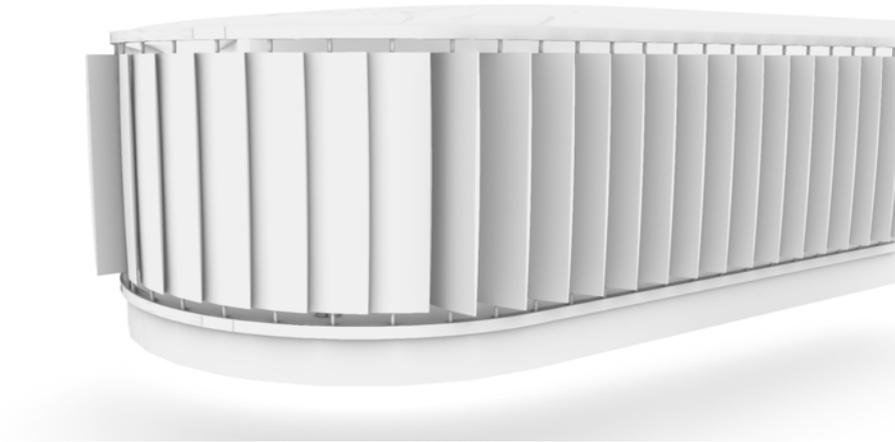
*Full spread: oceanographic research center roof plan*



Left: lower level plan; Right: upper level plan



*Left Top: entry perspective; Left Bottom: coral research pools;  
Right Top: wetlab sinks; Right Bottom: marine life research pools*



Closed Louvers



Open Louvers (semi-enclosed)



Open Louvers

**Full spread:** louver system for storm state



**Left:** during low tide (open shutters, low dock); **Right:** during storm (closed shutters, high dock)

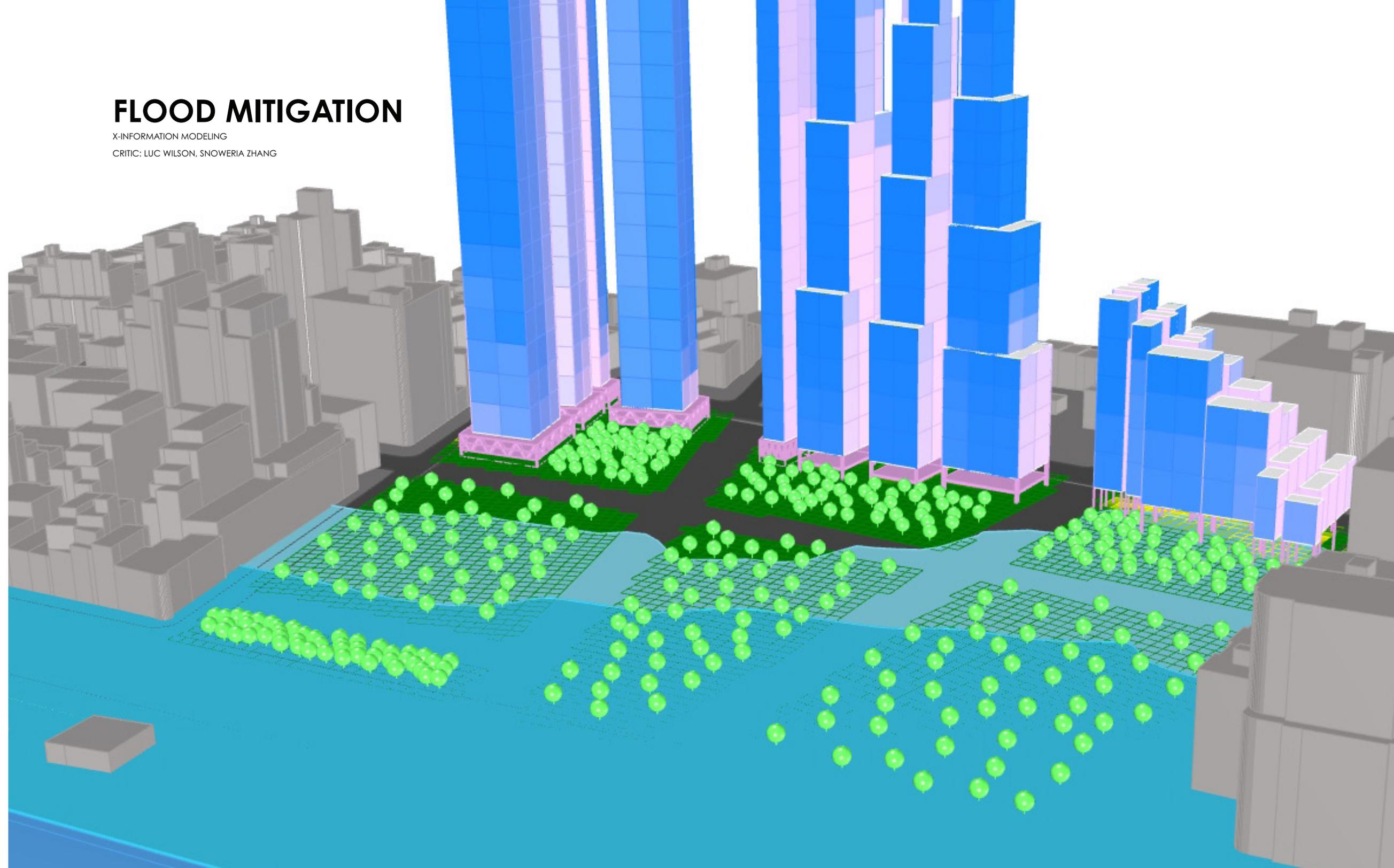


Full spread: oceanographic research center entry approach

# FLOOD MITIGATION

X-INFORMATION MODELING

CRITIC: LUC WILSON, SNOWERIA ZHANG



*Right: iteration of flood mitigation design space*

# FLOOD MITIGATION

Rise in sea level has highlighted **vulnerability** to flooding for communities located by the coast.

How can the the areas of **habitable space** and **quality of life** be protected and maintained during flood events?

The diversion of flooding through the **increase in open space**, **implementation of trees and rearrangement of buildings** would increase overall protection for residents while adding to the area's quality of life.

The **Flood Mitigation** project measures the potential to grow vegetation through the amount of daylighting to open spaces, the effectiveness of trees as a natural barrier through the percentage of trees to land, and the most unobstructed views according to the rearrangement of the buildings to find the best flood mitigation model that both protects and provides comfort residents.

## Inputs



Inputs	# of options	Description of the options
Grid Types	3	Original Grid, Diagonal, Radial
Density Locations	3	Safest Corner, Center of Safe Zone, Away from Coast
Density Distribution of 3 Elevated Building Types	5	10%, 30%, 50%, 70%, 90%
Amount of Walking Time Over from Water	3	More than: 1 min , 2min, 3min
Design Space Size:	135	



**NYC Flood Hazard Mapper**  
NYC Department of City Planning

- About This Mapper
- About Flood Hazards Today
- About Flood Hazards & Climate Change
- About the Map Layers

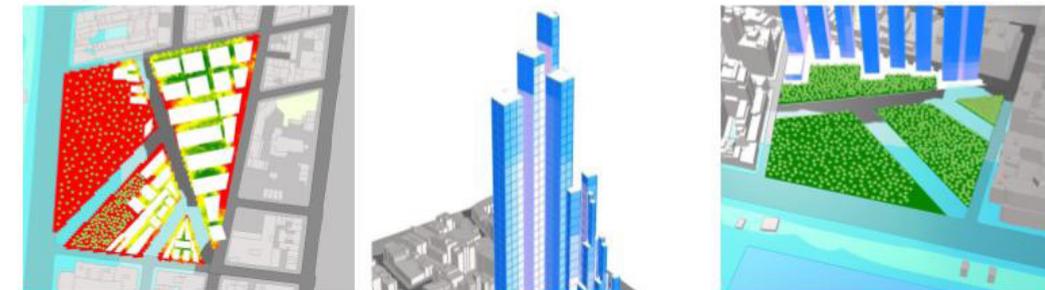
This mapping tool includes information from a variety of sources. In many cases the layers shown here are a combination of data collected from other agencies with additional representation or analysis by the NYC Department of City Planning (DCP).

The 2015 PFIRMs and 2007 FIRMs are produced by FEMA and may be viewed at their authoritative source [here](#). The Base Flood Elevation layer was generated by DCP using FEMA's 2015 PFIRM BFEs to determine the elevation of the BFE above grade based on a 2010 Digital Elevation Model of New York City. Property owners should consult a certified engineer or surveyor to determine the exact elevation of their structure in relation to the BFE.

Layers showing future high tide in the 2020s, 2050s, 2080s, and 2100 are based on IPCC's projections for SLR in New York City. Mapping of the flood inundation extents anticipated for each projection was completed by DCP based on a 2010 Digital Elevation Model for New York City using a modified bathtub approach provided by NOAA. The layers do not accurately depict inundation on over-water structures, such as docks and piers, and are not reliable for areas outside of New York City. The layers illustrate the scale of potential flooding on land, not the exact location, and do not account for erosion, rapid subsidence, or future construction. They are not appropriate for site scale planning or design.

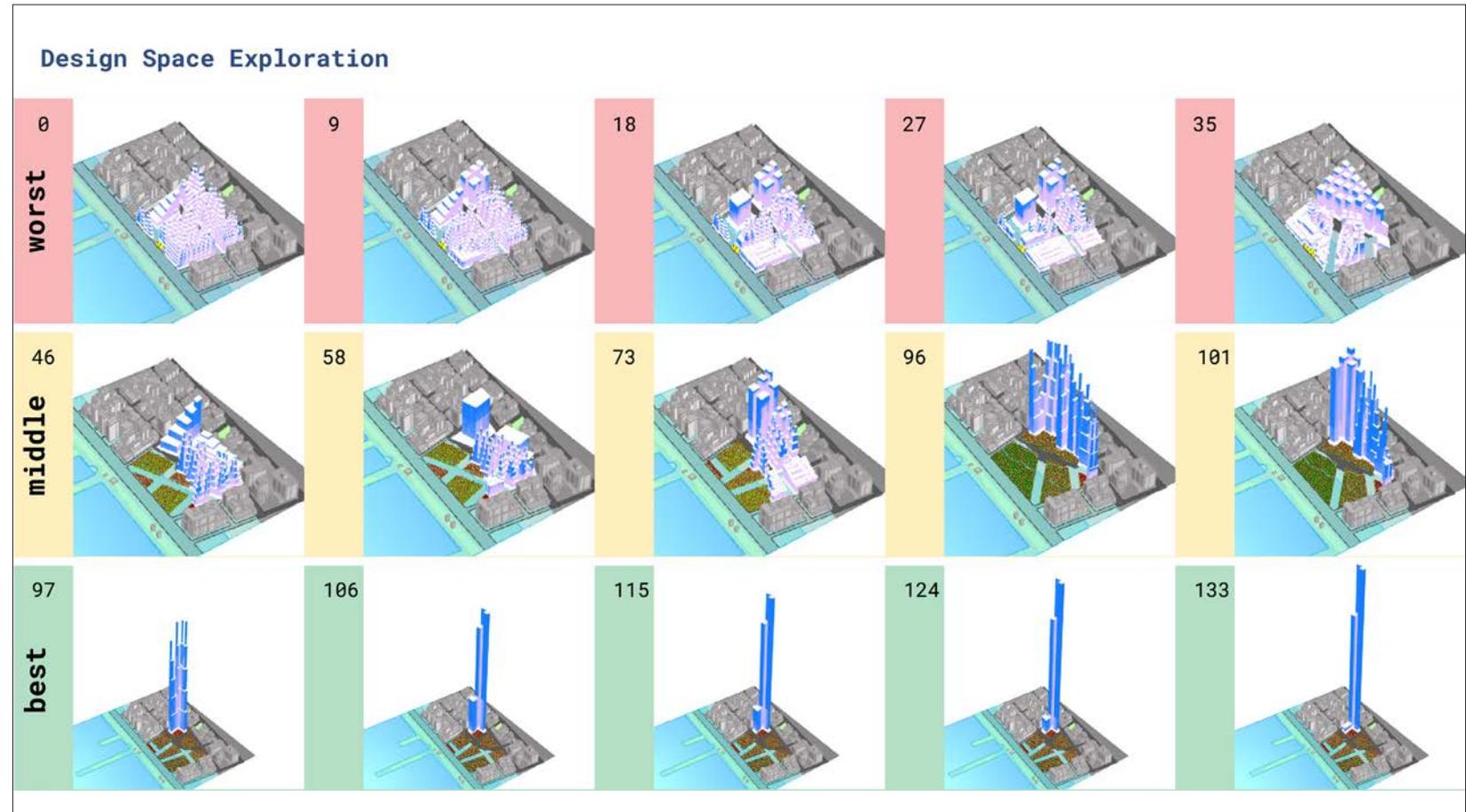
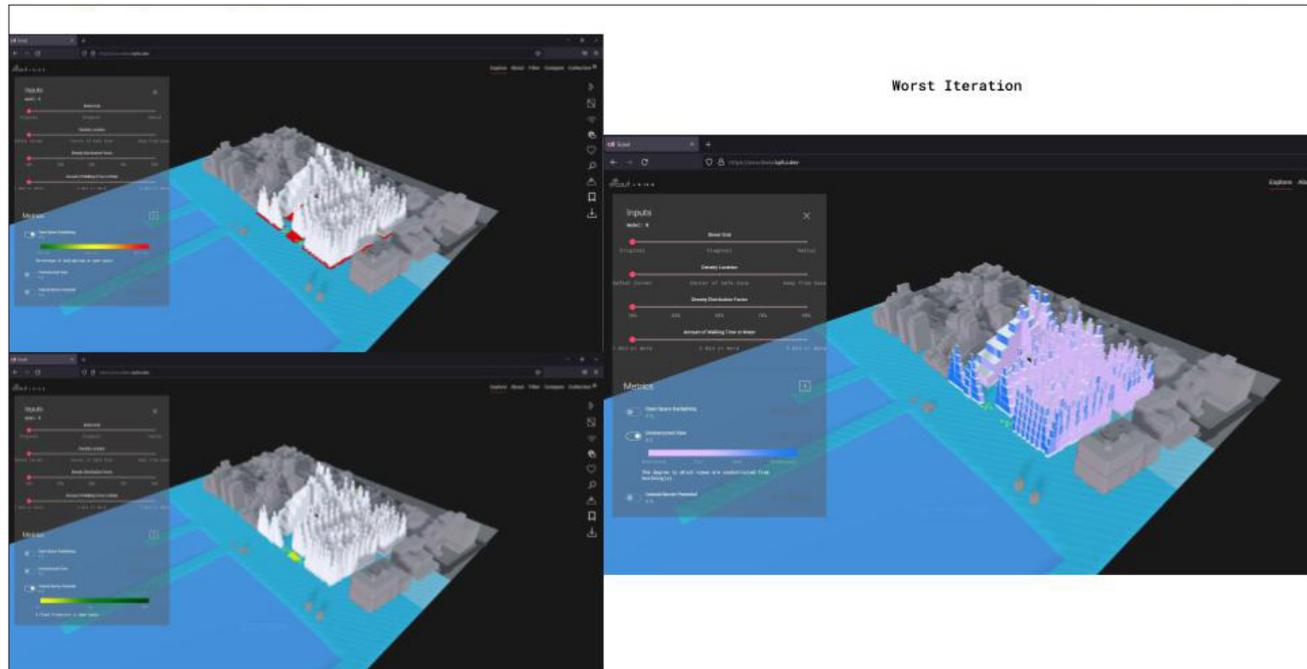
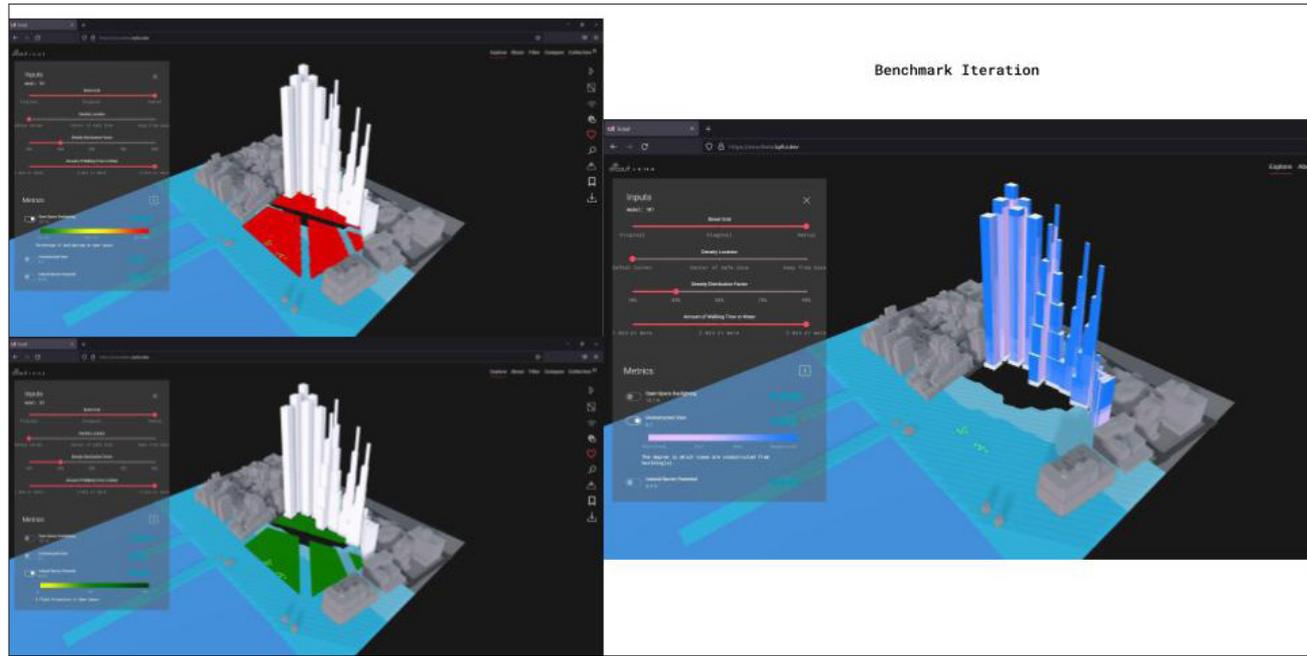
Layers showing the future floodplains in the 2020s, 2050s, 2080s, and 2100 are based on a layering of high estimates for SLR by IPCC on top of the 2013 PFIRM BFEs for the 1% annual chance floodplain and on top of the stillwater flood elevations for the 0.2% annual chance floodplain. Learn more about the GIS mapping methodology in IPCC's 1802d. The layers were created by the Institute for Sustainable Cities at the City University of New York. These data are intended to support long-range planning decisions regarding climate change adaptation and are not appropriate for determining current risk, insurance

## Metrics



Metric	Unit	How to measure
Potential of Open Space to Grow Trees	% of sunlight	Less Likely, Likely, More Likely
Unobstructed View		Obstructed, Fair, Good, Exceptional
Flood Protection by Trees in Open Space	% of Trees to Total Area	0%-100% Natural Barrier Potential

Bottom: site information in west village; Right: inputs and metrics



Left Top: benchmark iteration; Left Bottom: worst iteration  
 Right Top: design space: best, middle and worst iterations  
 62

# FOOD TERMINAL

ADV VI: THE TOUR  
CRITIC: GARY BATES



*Right:* site model

## FOOD TERMINAL

According to the USDA, a **food hub** is a center that collects food from local and regional farmers and food producers. They package, market, and distribute the goods to customers such as supermarkets and restaurants.

A **food bank** also collects, stores, and distributes food, but does so as a non-profit organization. This gives access to those who are food insecure.

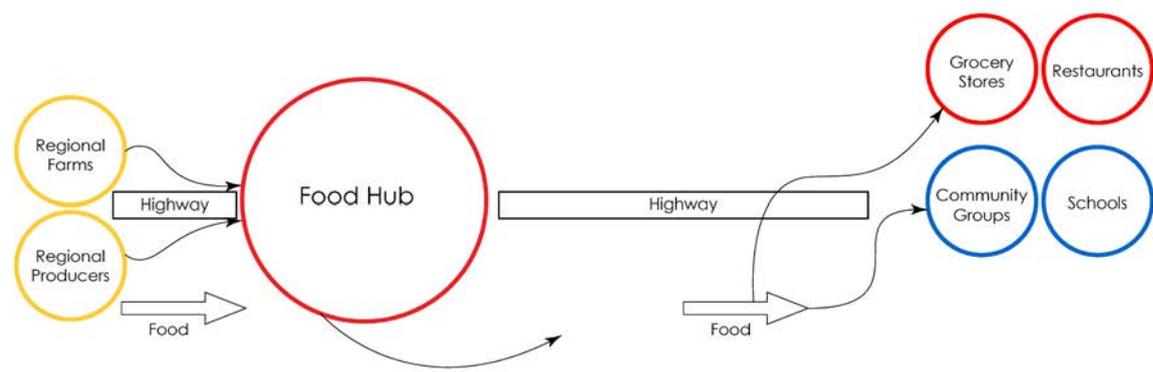
In the **Coachella Valley**, 50% of the population is made up of **migrant workers** who tend to the agriculture. Although these people work for food, they are the main users of food banks and food pantries in the area.

If the model of the food bank was hybridized with the food hub, and if all this food could travel from farms south of Salton Sea into the Coachella Valley by railway, **could this create a space where locals and tourists alike are bridged together by a space of food and movement?**

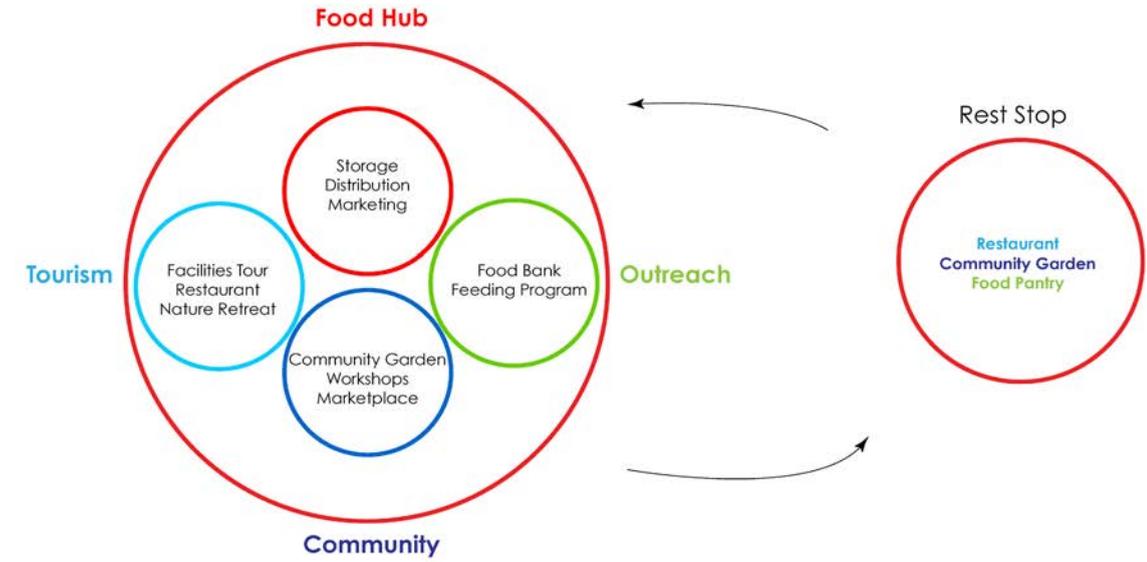


### Traditional Food Hub

Rural

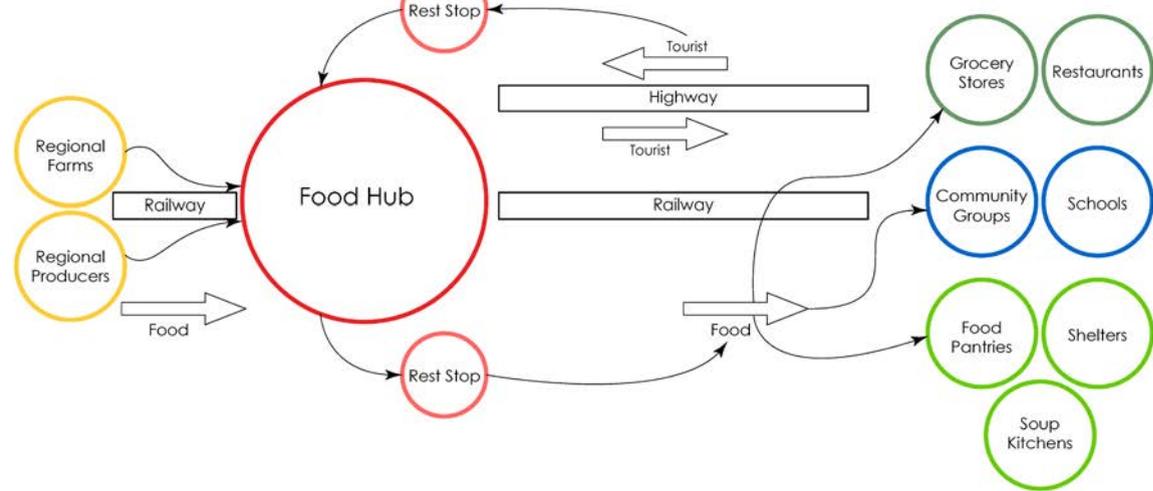


### Hybridized Food Hub/Food Bank

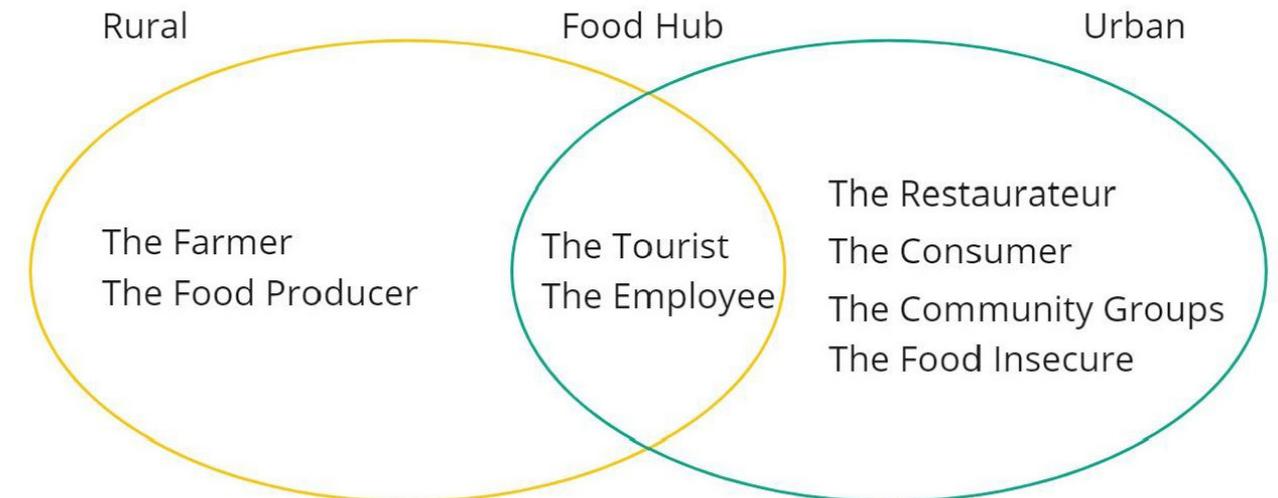


### Hybridized Food Hub/Food Bank

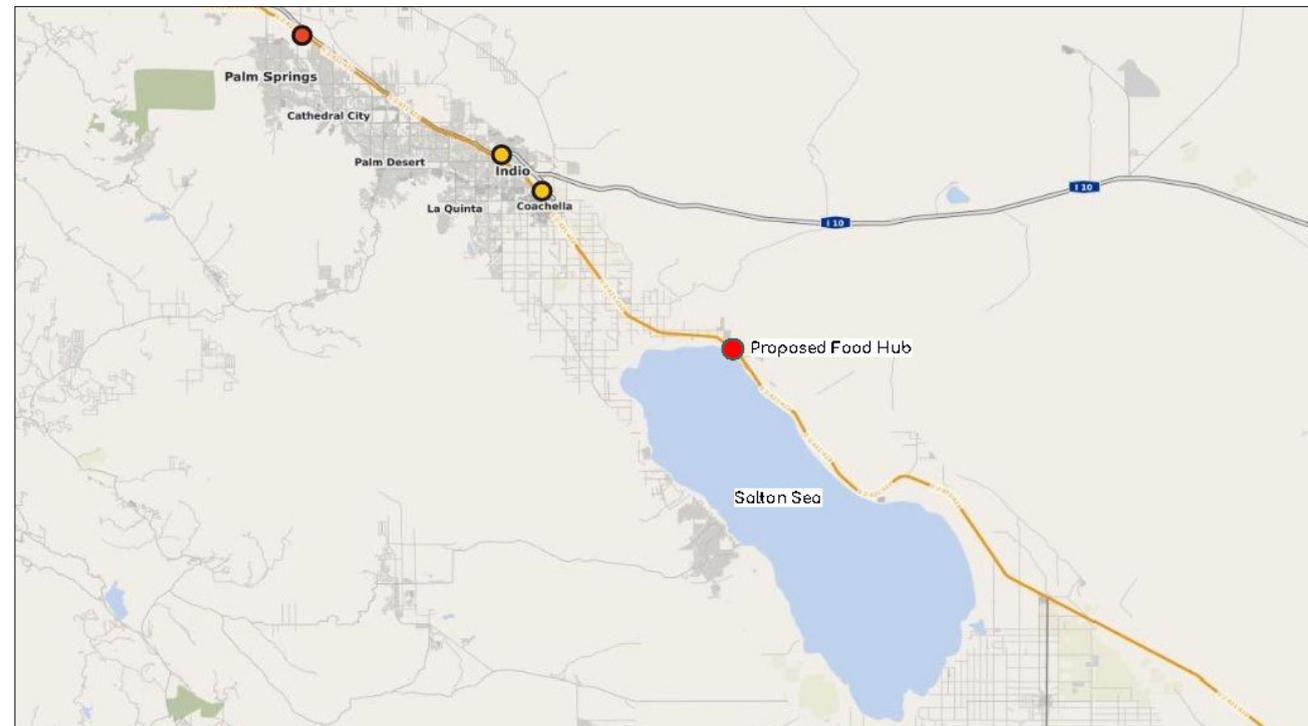
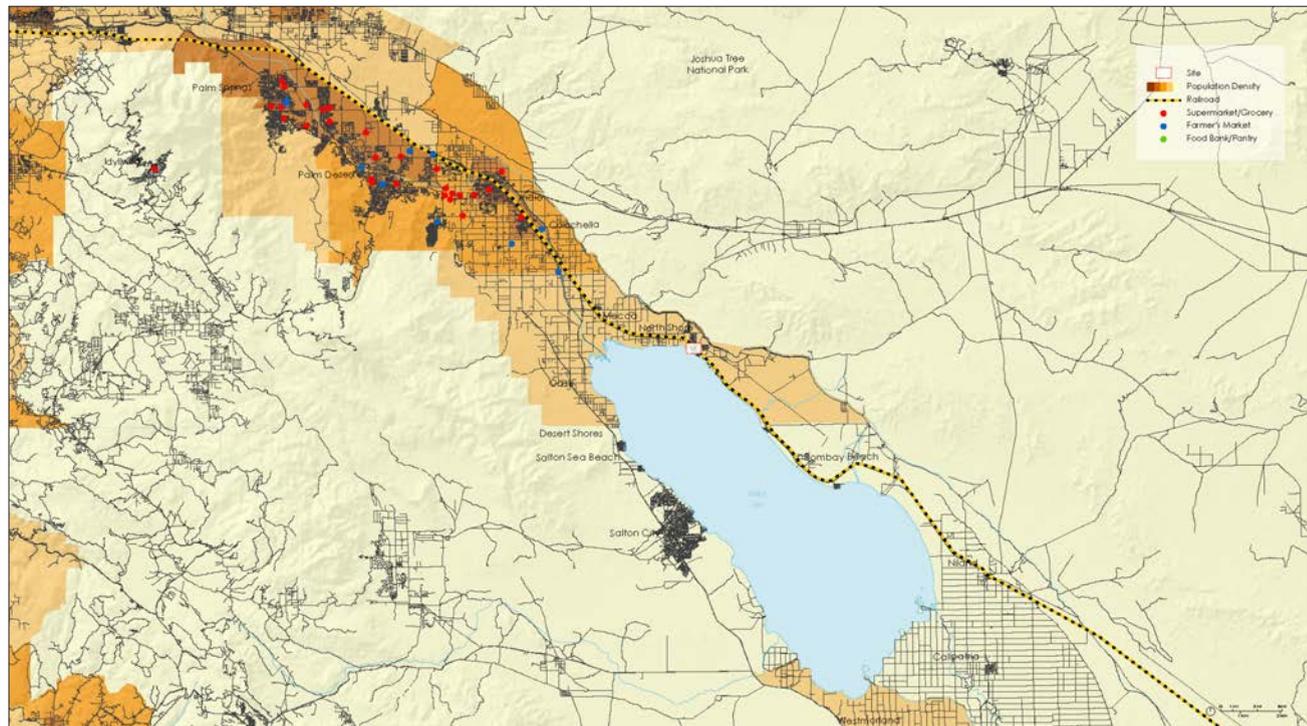
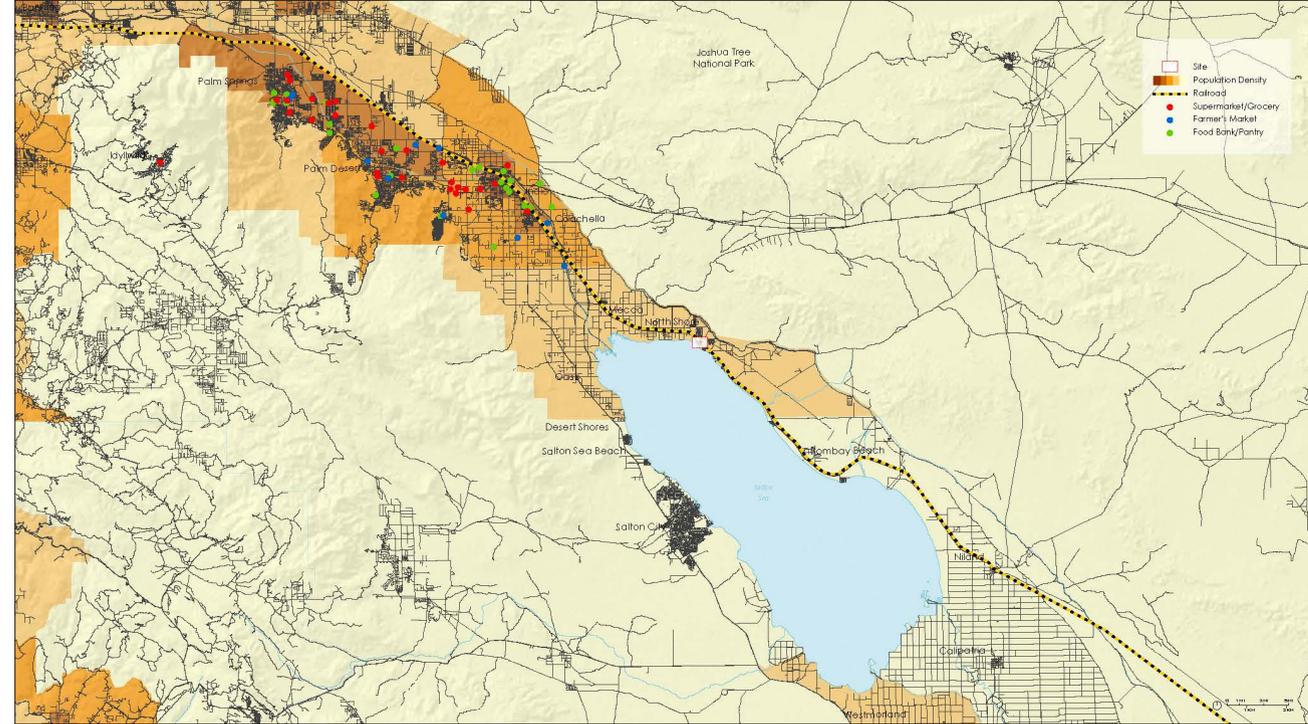
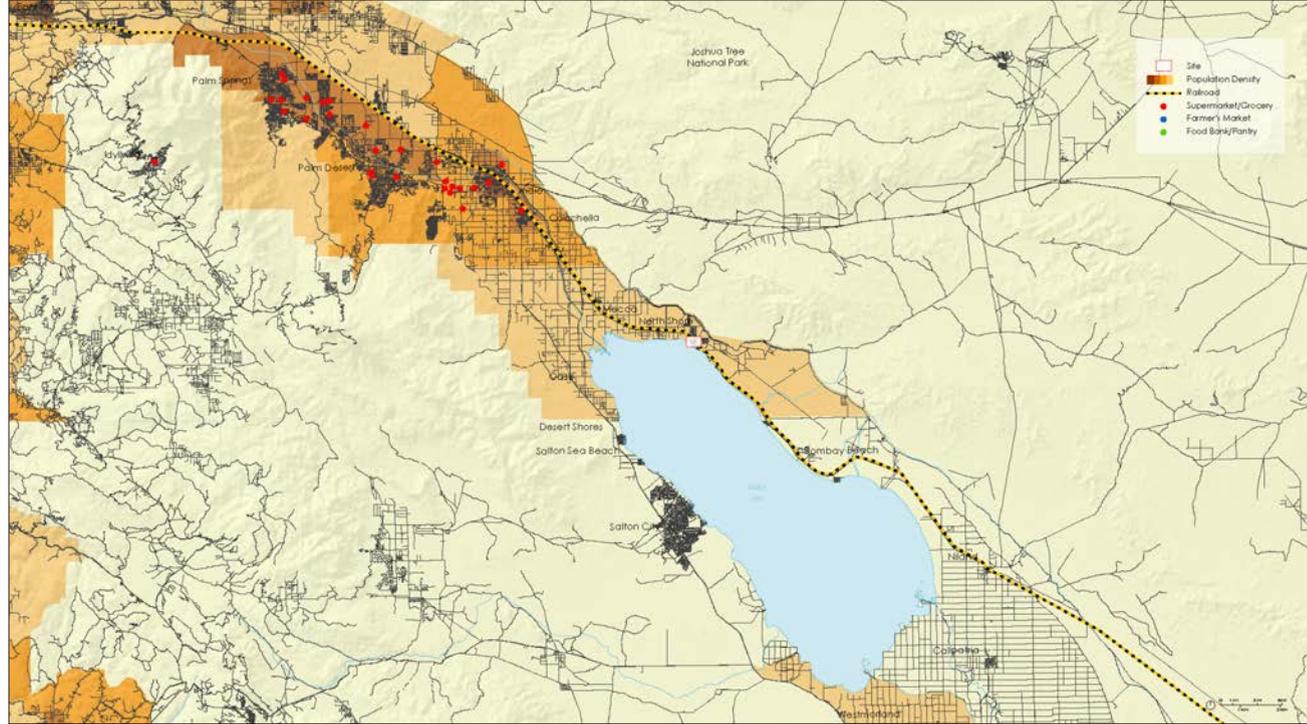
Rural



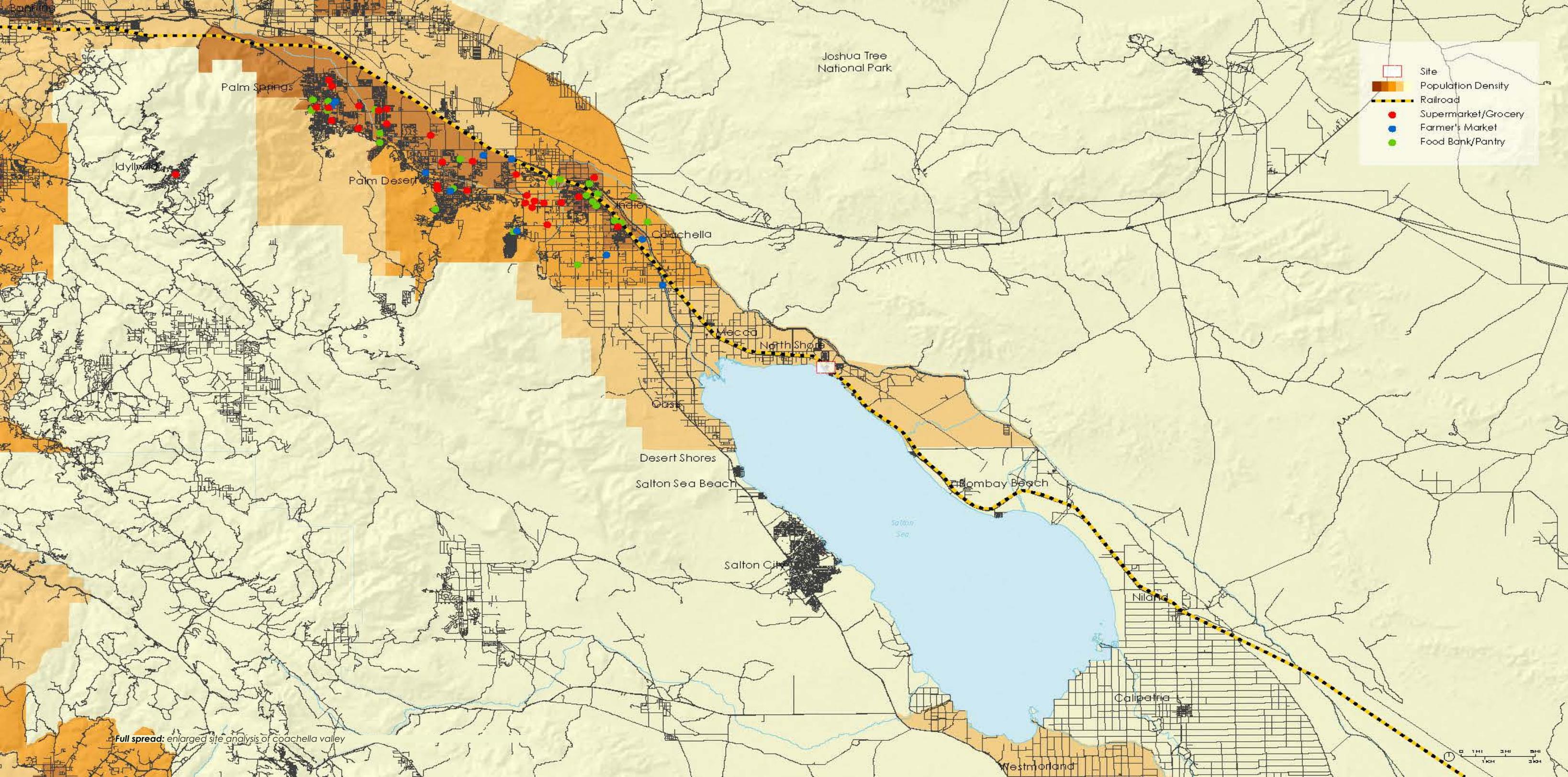
### THE PEOPLE:



Left Top: traditional food hub model; Left Bottom: proposed hybridized inclusive food hub model  
 Right Top: program diagram; Right Bottom: user diagram



Left Top: site analysis: supermarkets; Left Bottom: site analysis: farmer's markets  
 Right Top: site analysis: food pantries; Right Bottom: new train stops and proposed site stop



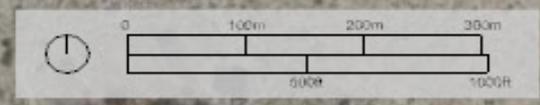
- Site
- Population Density
- Railroad
- Supermarket/Grocery
- Farmer's Market
- Food Bank/Pantry

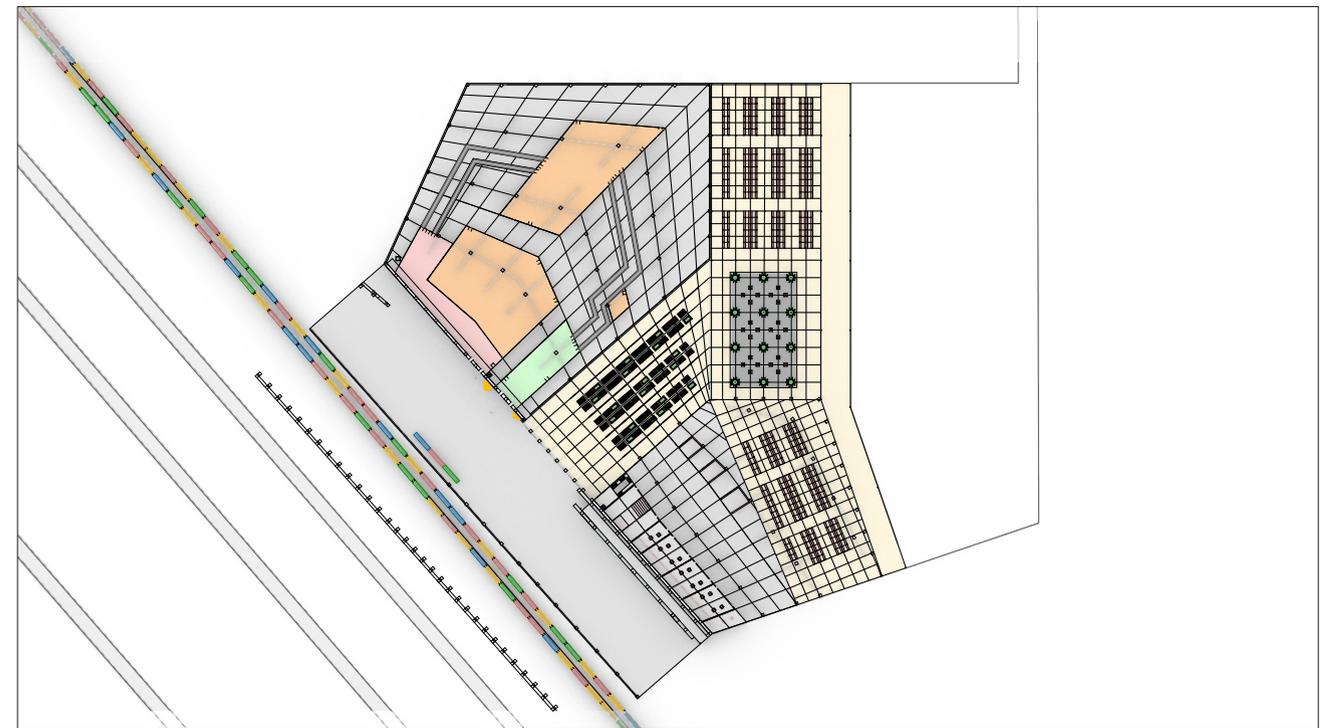
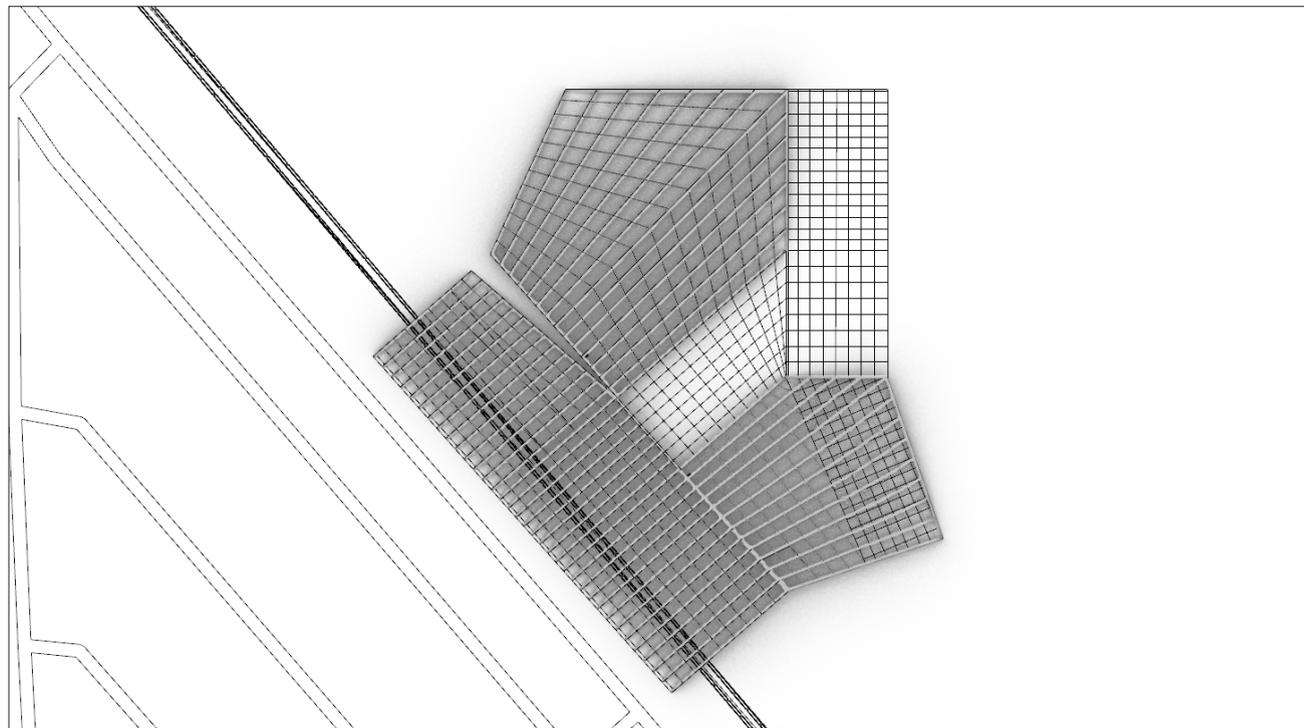
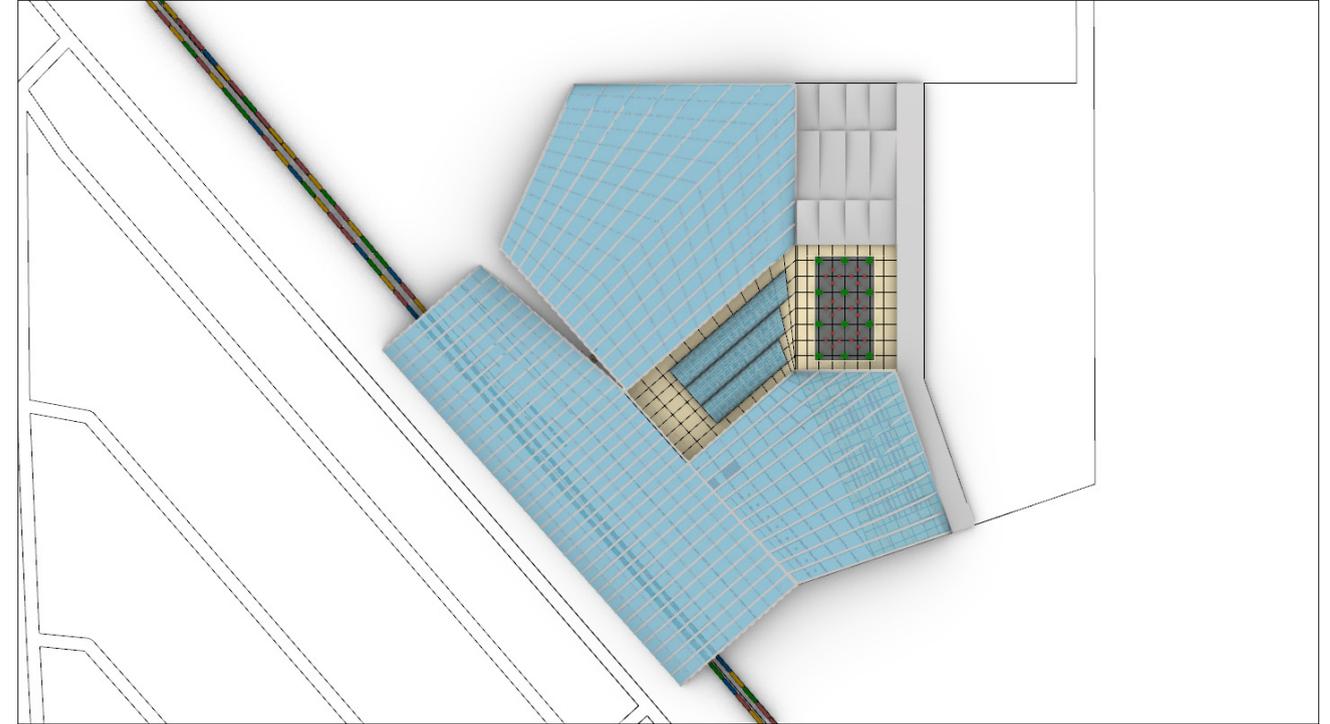
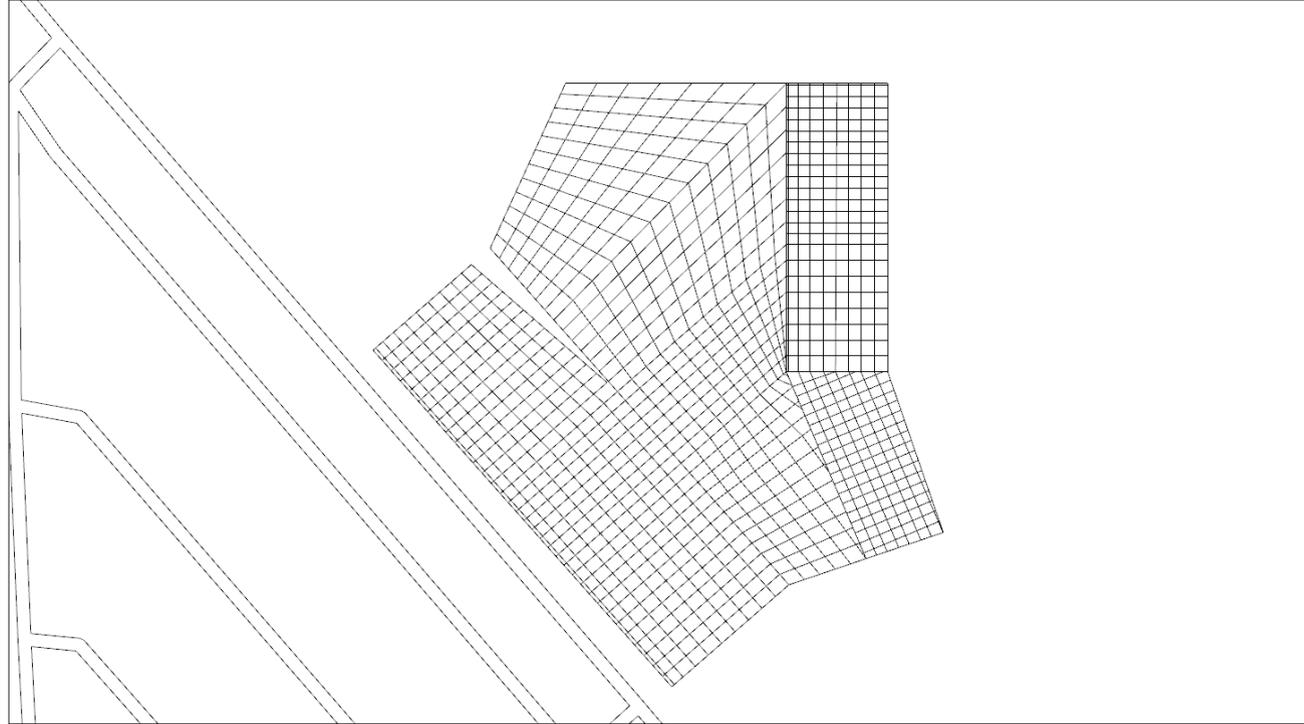
Full spread: enlarged site analysis of coachella valley



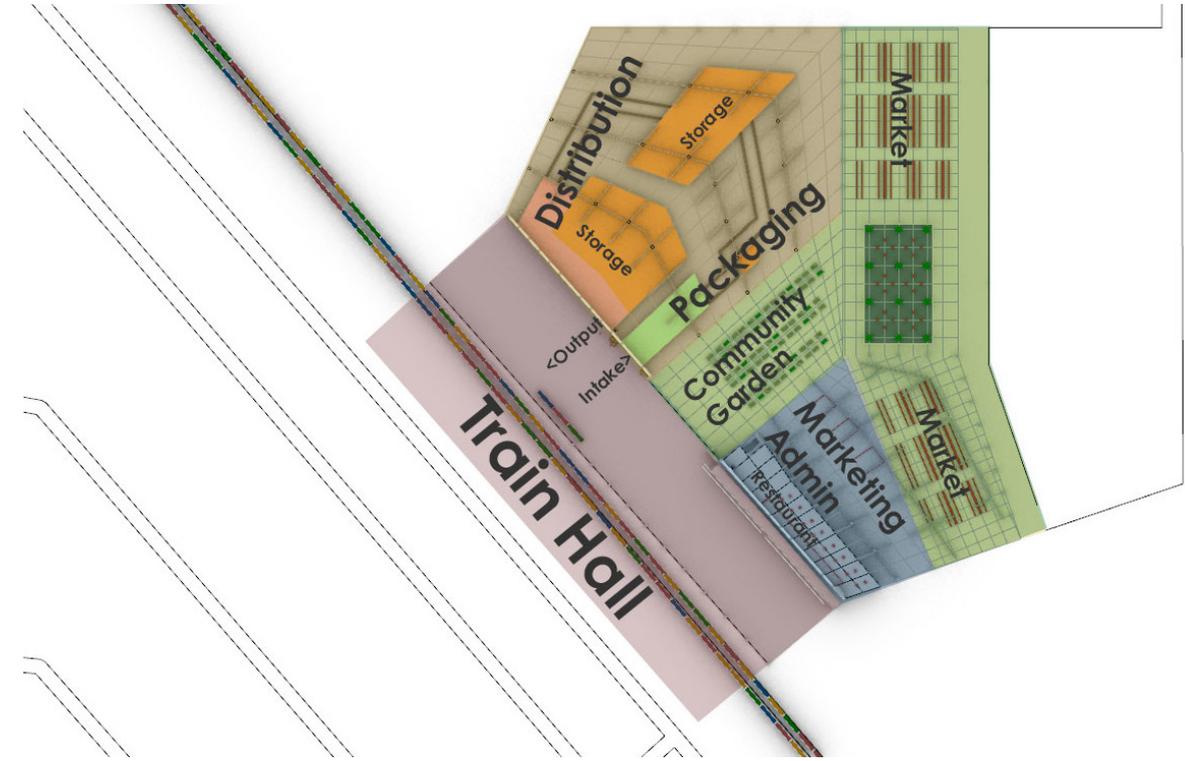
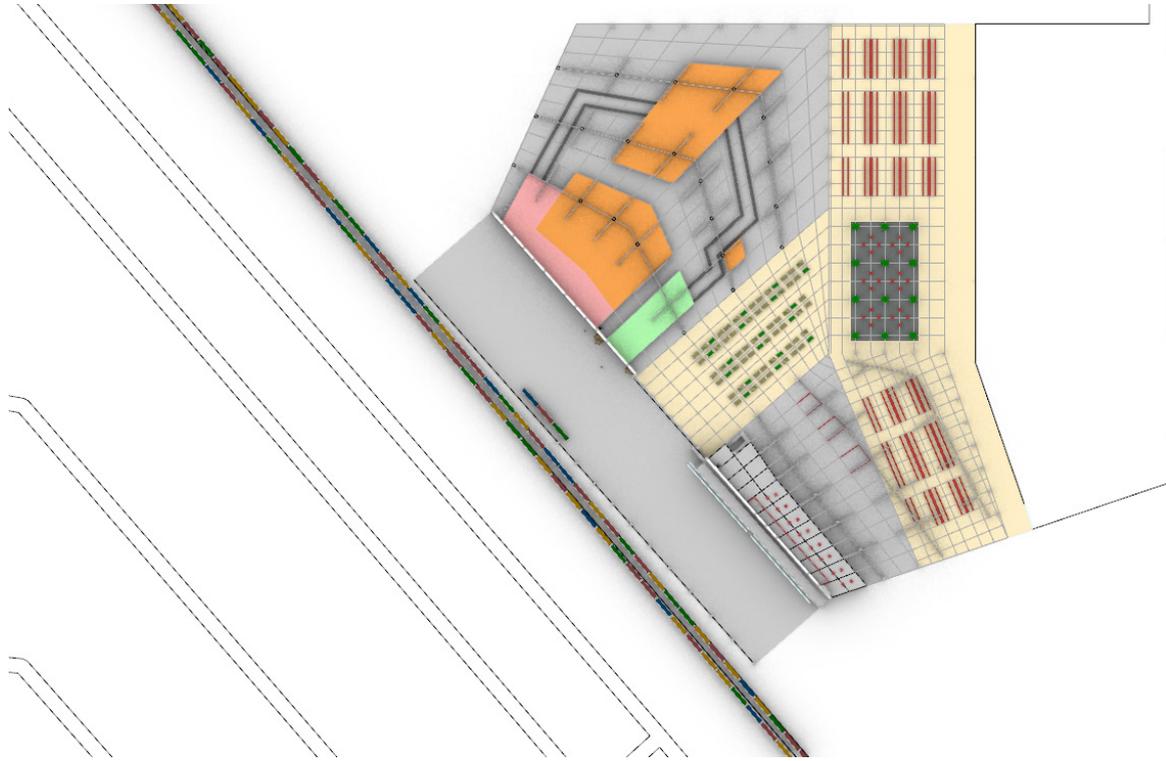


Full spread: site plan

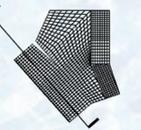




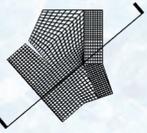
**Left Top:** grid plan; **Left Bottom:** structure plan  
**Right Top:** roof plan; **Right Bottom:** floor plan



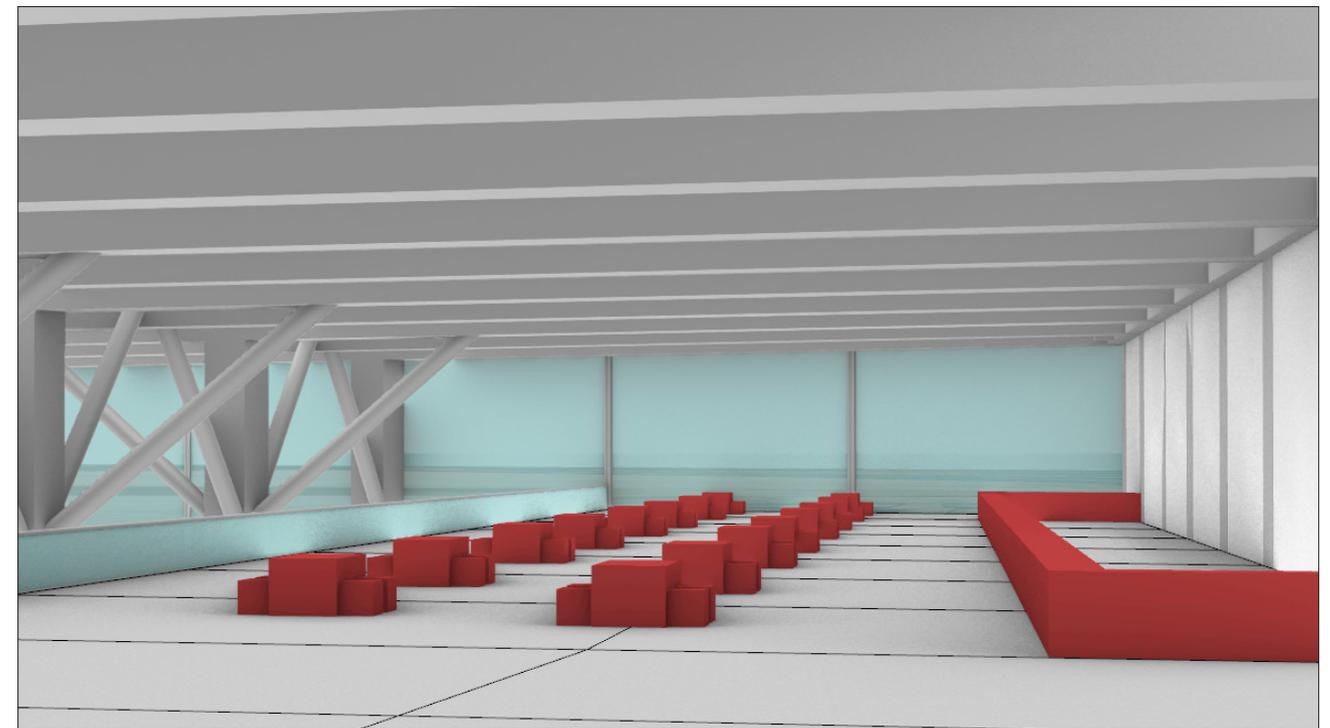
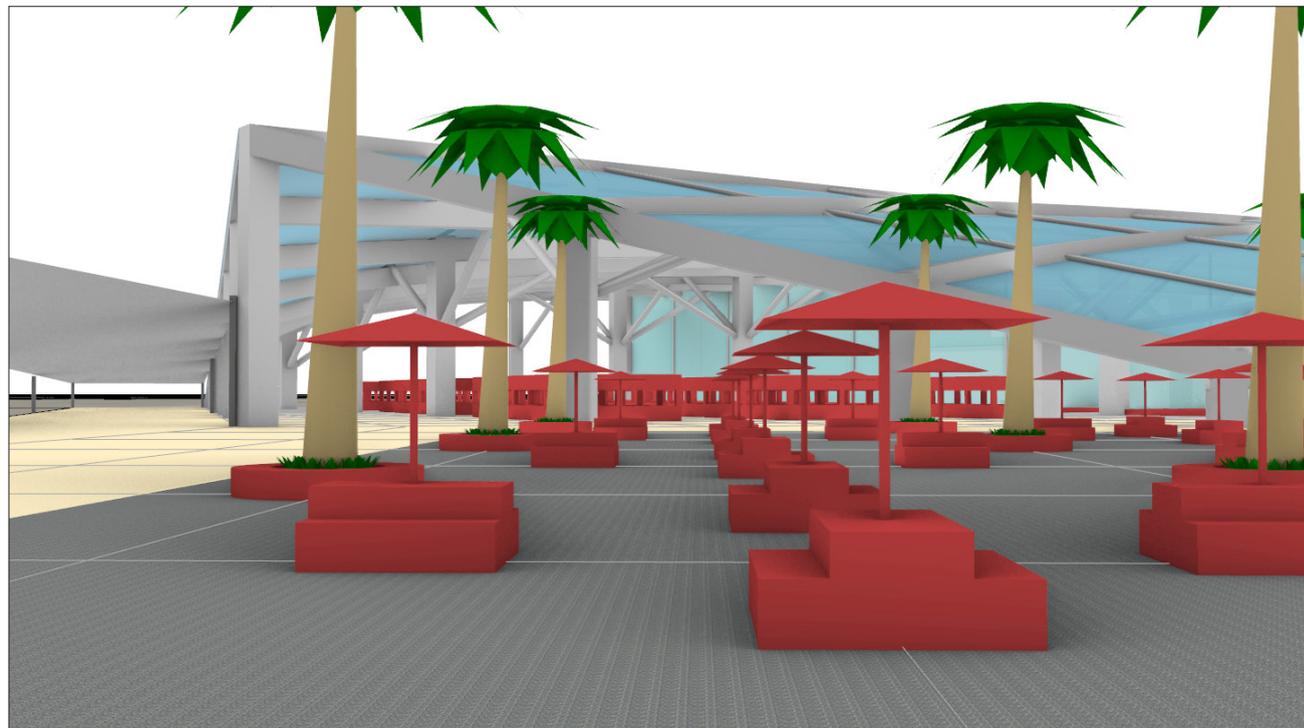
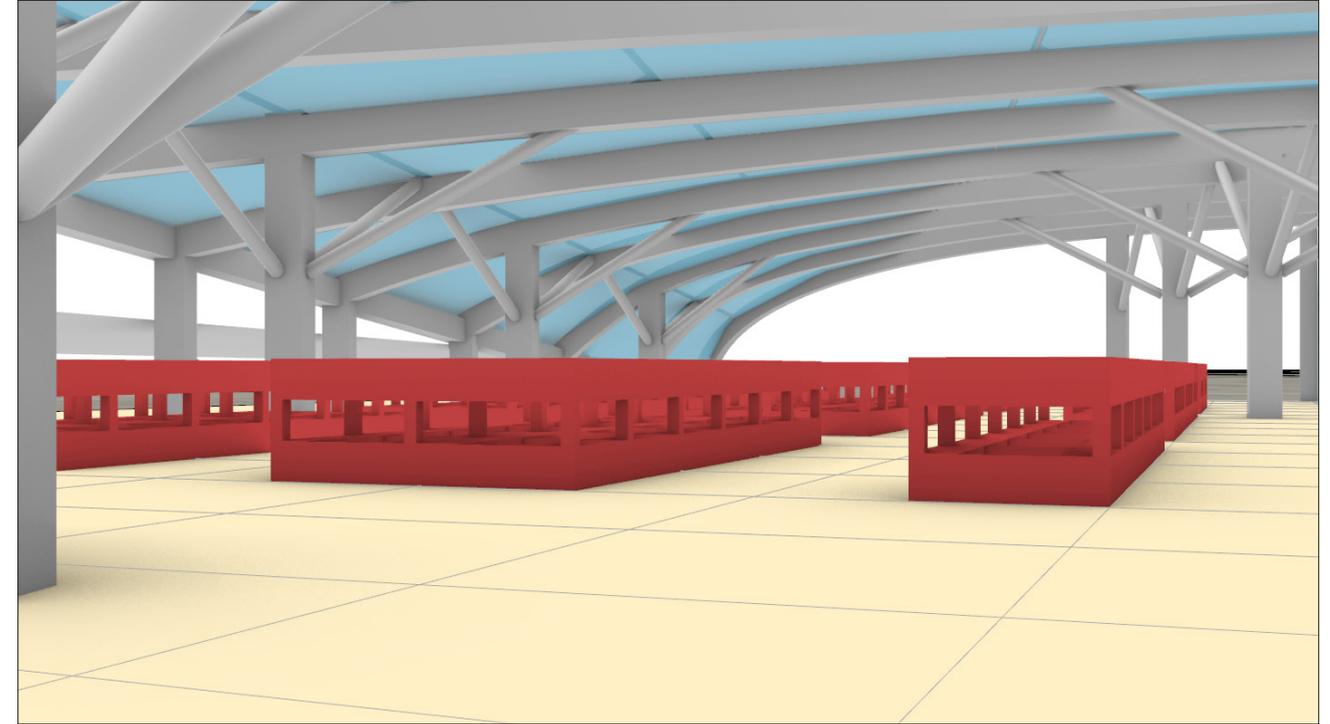
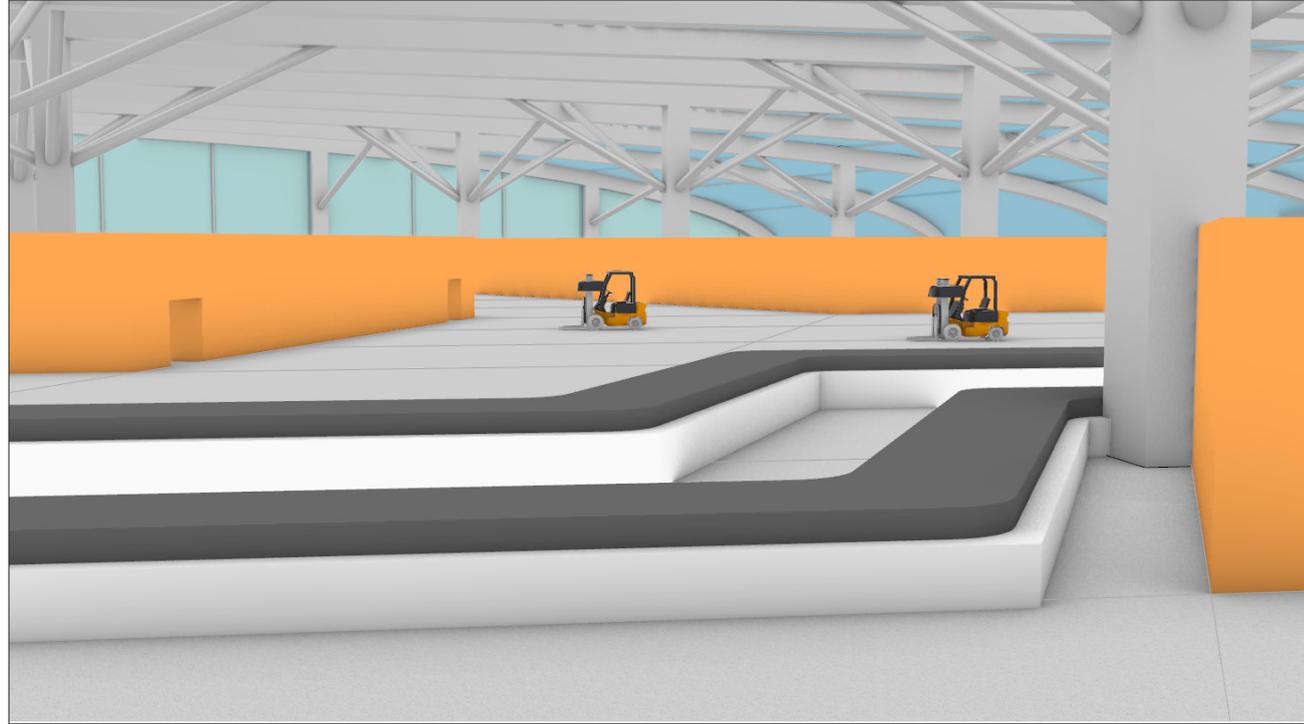
Left: floor plan diagram; Right: floor plan program diagram



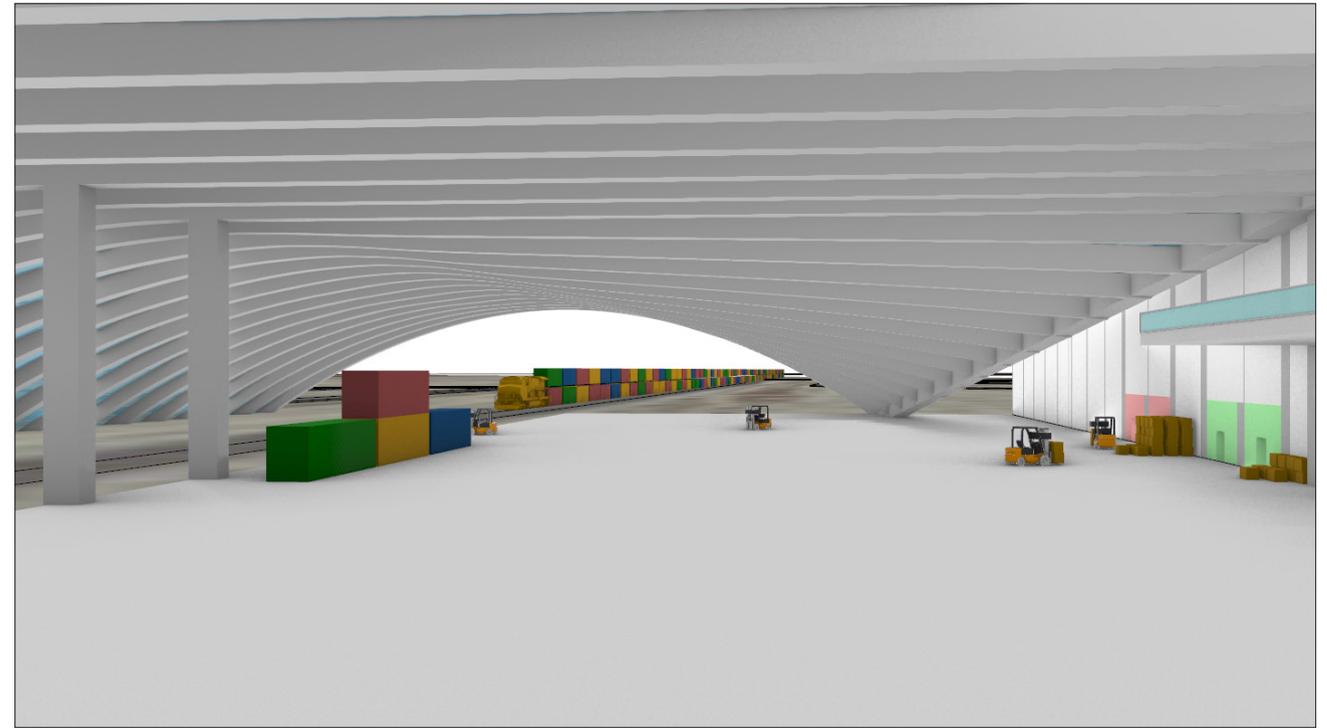
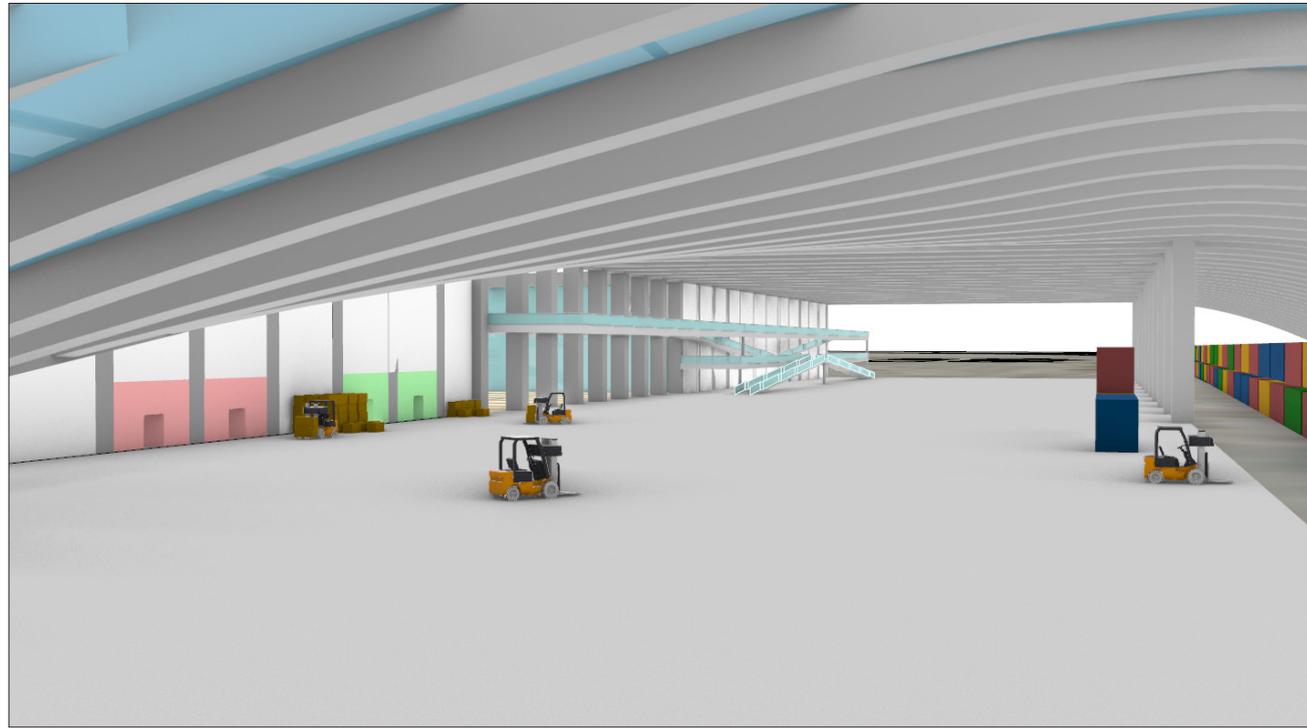
*Top full spread: section through train hall, train approaching*  
*Bottom full spread: section through train hall, train through*



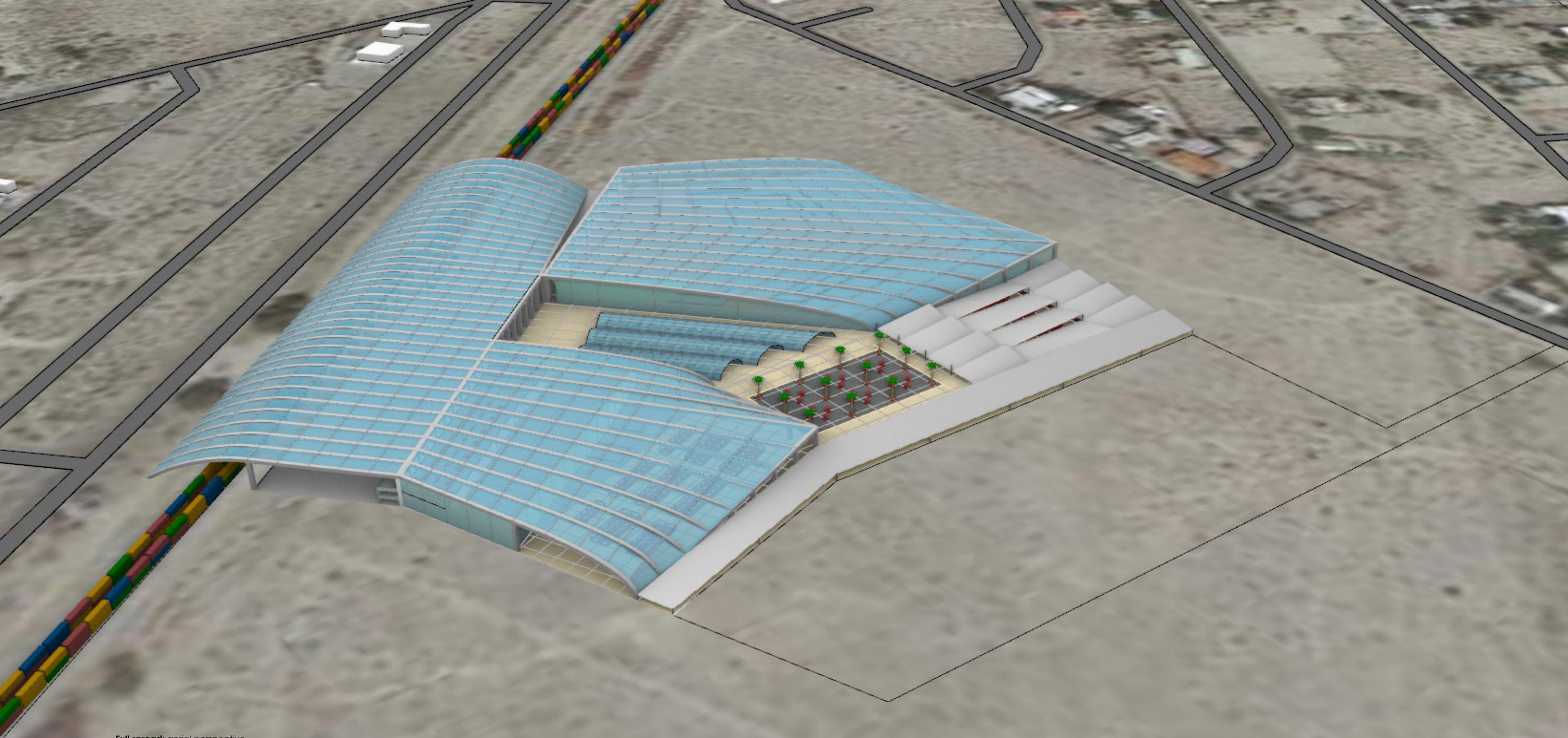
*Top full spread: section through train hall, community garden, and market*



*Left Top: packaging; Left Bottom: outdoor seating  
Right Top: market; Right Bottom: restaurant*



**Left:** train hall perspective from south ; **Right:** train hall perspective from north



Full spread: aerial perspective

# DREAMSCAPES

TECHNIQUES OF THE ULTRAREAL

CRITIC: JOSEPH BRENNAN, PHILLIP CRUPI

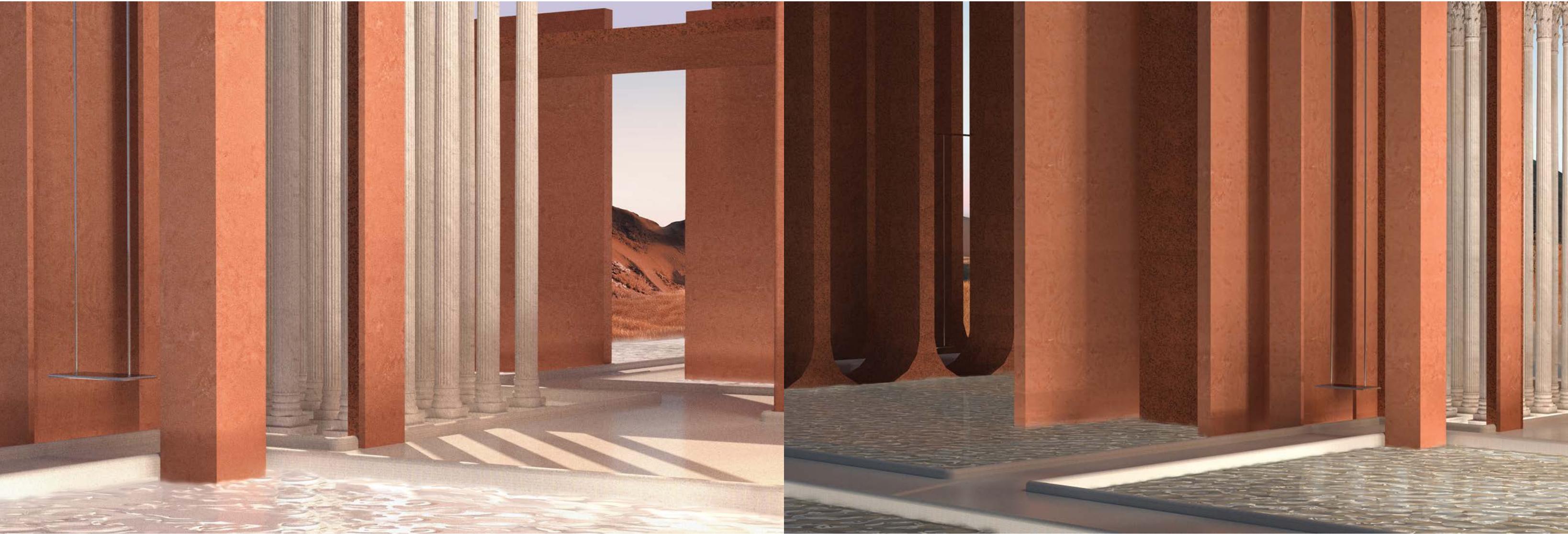
PARTNERS: AAHANA BANKER, FRANCESCA DOUGHERTY, OMAR DREEQ



*Right:* cloud pavillion view

# Dreamscapes

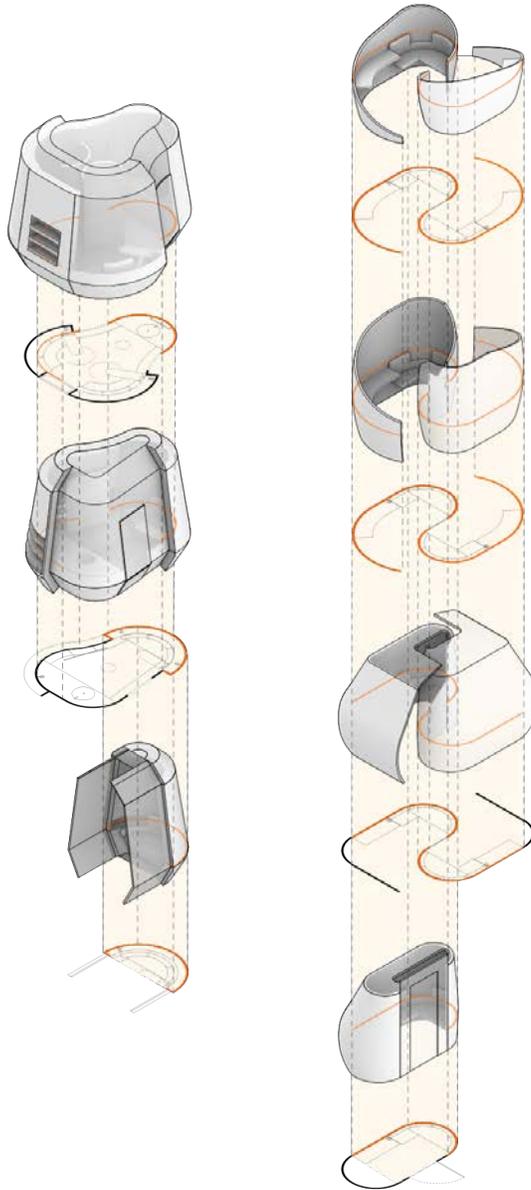
**Dreamscapes** is a creation of spaces inspired by classic forms and the warmth of the desert.



**Bottom:** columns view; **Right:** swing view



Full spread: grand arch view



## CONNECTIONS: SMALL & LARGE

ANTHEA VILORIA  
M.S. ADVANCED ARCHITECTURAL DESIGN  
COLUMBIA UNIVERSITY GSAPP