PORTFOLIO

Zhihao Xu

Selected Works 2023-2024

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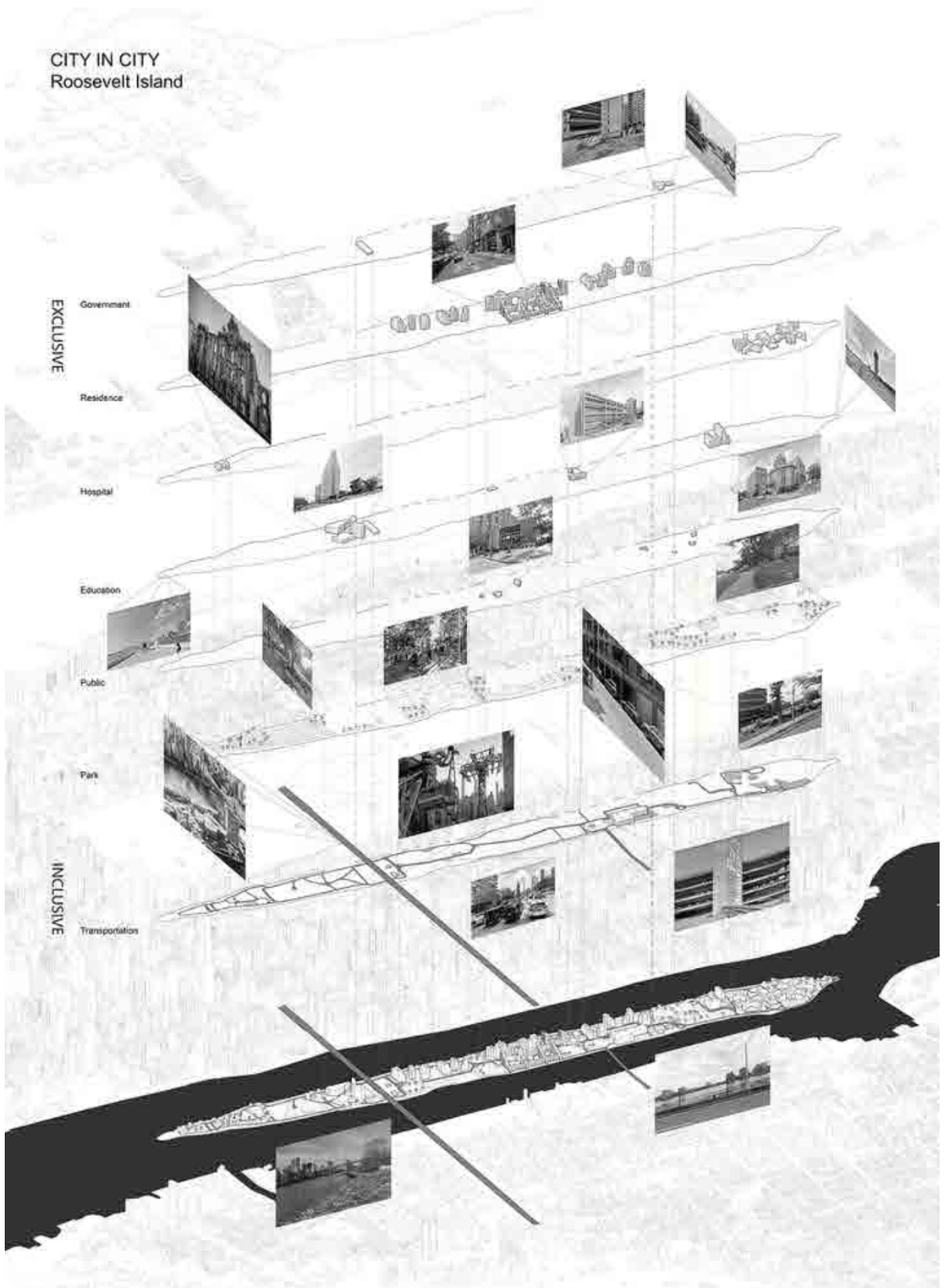
01
City In The City
Landscape for Animal

Group work: Junming Liao, Zhihao Xu
Instructor: David Eugin Moon
Site: Roosevelt Island, New York, America
Summer 2023

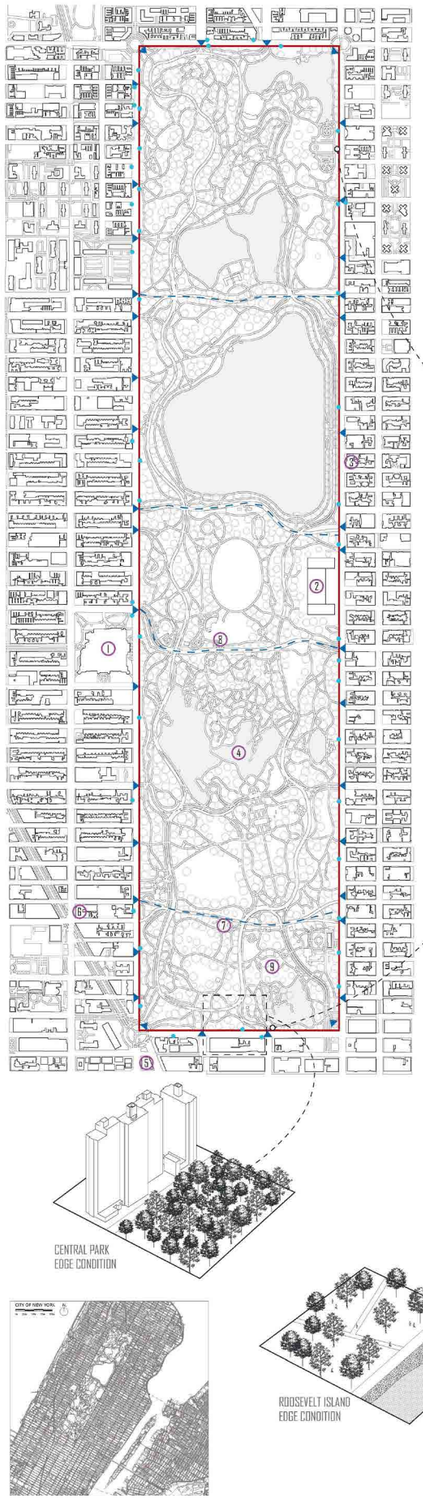
This is the city for animals in the city.

In City Island studio, the discussion about the idea of urbanization and deurbanization referring to the areas of Central Park and Roosevelt Island were focused in our project. The natural and urban typology differences existing in the two sites led the study to the relationship between human and nature. Through the establishment of a noun-human preserved area for animals with a steel bridge across for visitors on the south end of Roosevelt Island, the project tries to bring out a possible way of interaction between human and nature. The introduction of the new programs on Roosevelt Island could attract people, and also provide a refugee for animals to inhabit. Thus, transforming Roosevelt Island to more a activate and vibrant area in terms of programs and natural perspectives. As time goes by, the natural preserved area could potentially extend to the rest of Roosevelt Island, making the relationship between nature and humans more harmonious



Roosevelt Island is a very isolated island with a highly self-contained system. However, due to the limited size of the island's park, it is neither suitable for wildlife habitation nor conducive to people's relaxation. development and truly stimulating the exchange of people in the community.

CENTRAL PARK AREA: 1.32mi²



1. AMERICAN MUSEUM OF NATURAL HISTORY

4. LAKES

5. AMERICAN FOLK ART MUSEUM

8. BELVEDERE CASTLE

2. THE METROPOLITAN MUSEUM OF ART

6. MUSEUM OF ARTS AND DESIGN

7. CAROUSEL

9. WOLLMAN RINK

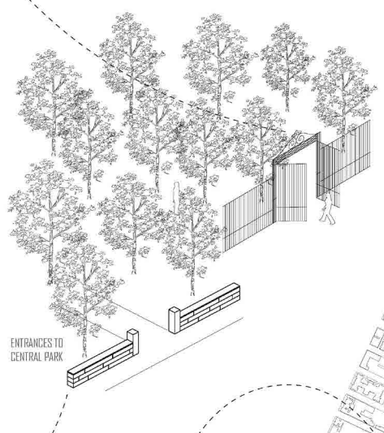
3. SOLOMON R. GUGGENHEIM MUSEUM

HOUSING

Recorded sales data from January 2018 to August 2018 showed us that the median price of units in the first row of blocks across Central Park were 25% more expensive than the median of every bordering neighborhood. The median home sale price of all the bordering neighborhoods combined was $1,222,500, while the median of the first row of blocks was $1.4 million—a $277,500 difference.
(resource:Property Shark)

New Yorkers, he discovered, are generally willing to pay 10 to 25 percent more for an apartment that allows them to wander over to the window and take in the sights — whether that's a boat moving up the river or the rolling lawns of Central Park.
(resource:The New York Times)

ROOSEVELT ISLAND AREA: 0.28mi²



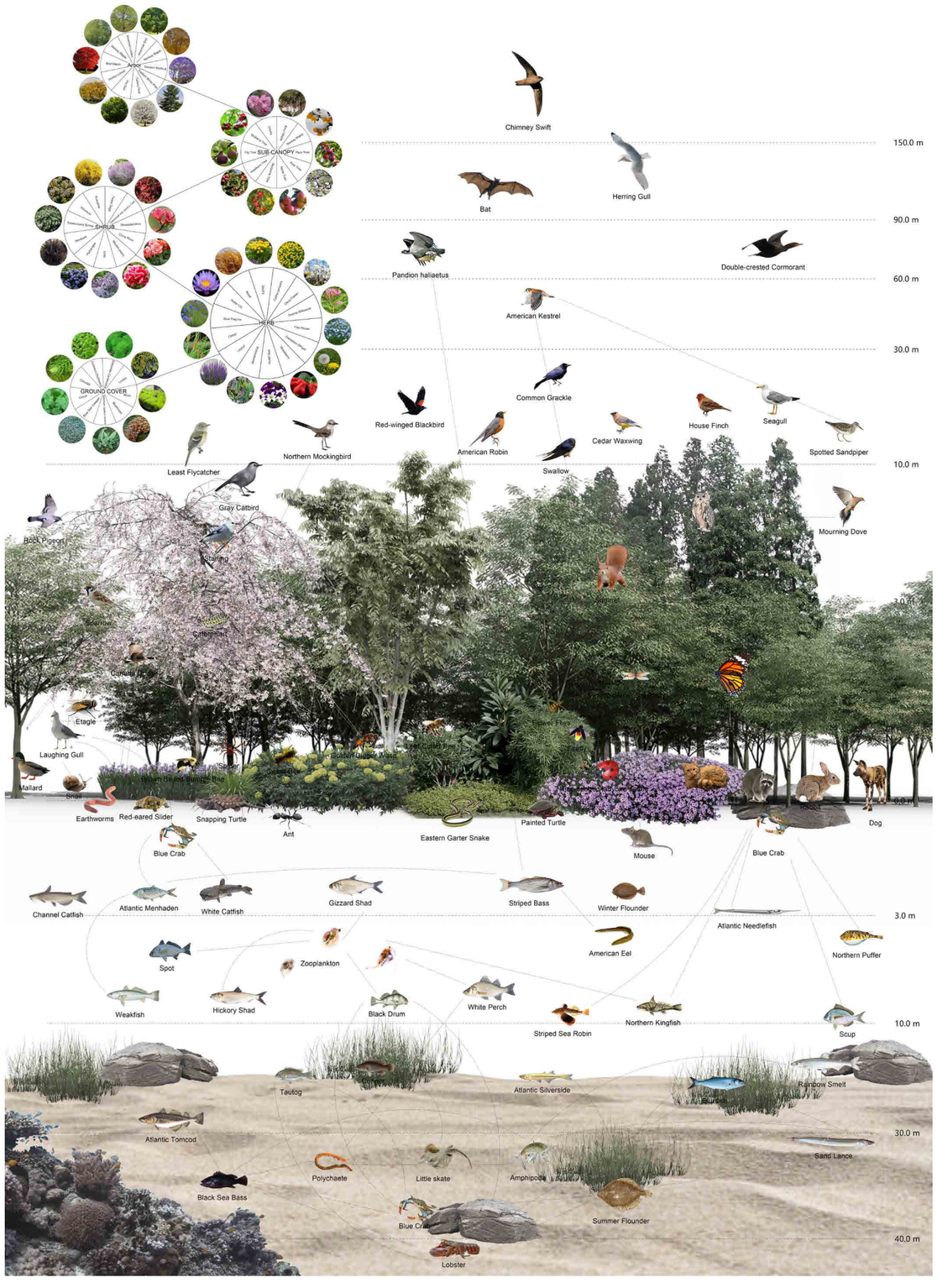
ENTRANCES TO CENTRAL PARK

ROOSEVELT ISLAND EDGE CONDITION

CENTRAL PARK EDGE CONDITION

ROOSEVELT ISLAND EDGE CONDITION

Meanwhile, in the center of Manhattan there is a big park, Central Park, where we can see a lot of people coming for picnics. Although the artificial park is also unsuitable for animals, it gives us an inspiration to convert Roosevelt Island into a place for animals to live!



Species on Roosevelt Island

This section shows the ecological species on Roosevelt Island in a vertical fashion, as we try to create a complete ecological chain that allows the island's ecosystem to self-circulate.

A natural wetland ecosystem

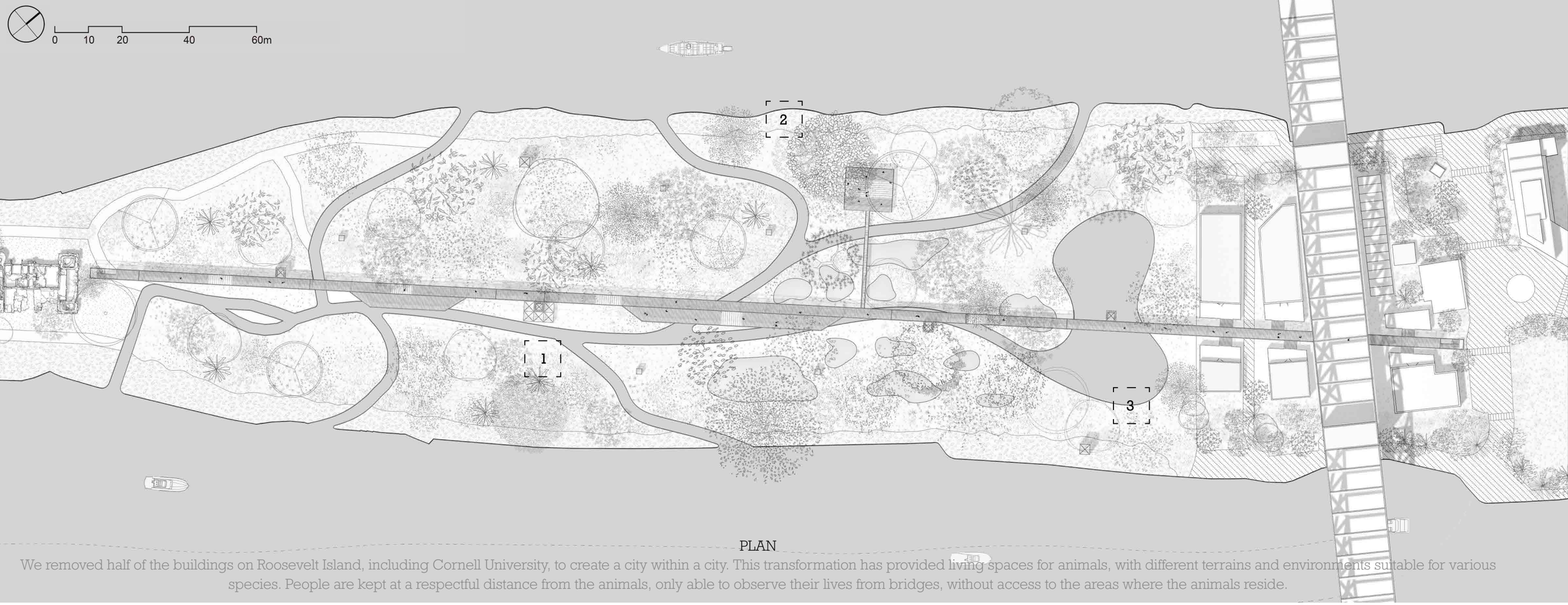
Different species live in harmony in the wetland, forming a self-cycling system

People see the view only on the brideg

Try to bring out a possible way of interaction between human and nature by this way.

The view form Manhattan

It is a natural park for animals. Different species inhabit here freely, people walk on the light bridge.W

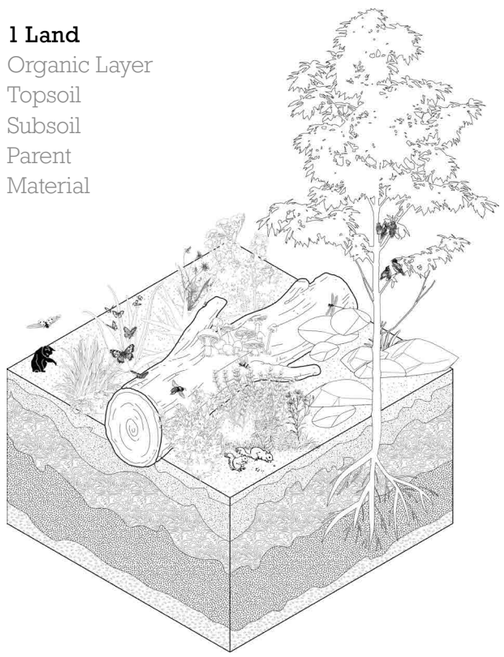


PLAN

We removed half of the buildings on Roosevelt Island, including Cornell University, to create a city within a city. This transformation has provided living spaces for animals, with different terrains and environments suitable for various species. People are kept at a respectful distance from the animals, only able to observe their lives from bridges, without access to the areas where the animals reside.

1 Land

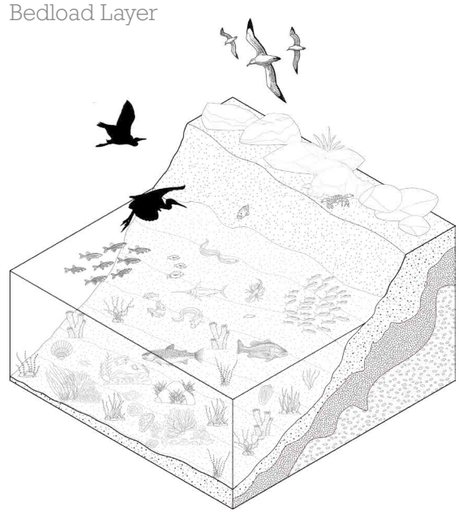
Organic Layer
Topsoil
Subsoil
Parent
Material



Jolcham Oak
Copperleaf and Jacob's Coat
Daisy Flower
Dandelion OPlant
Flax Flower
China Rose
Mushroom
Daylily
Strawberry
Lilyturf
Monarch Butterfly
Swamp Darner Dragonfly
Flower Flies
Leaf Cutter Bee
Nine-spotted Ladybird Beetle
Squirrel
Common Grackl
Cat
American Robin

2 Coastal

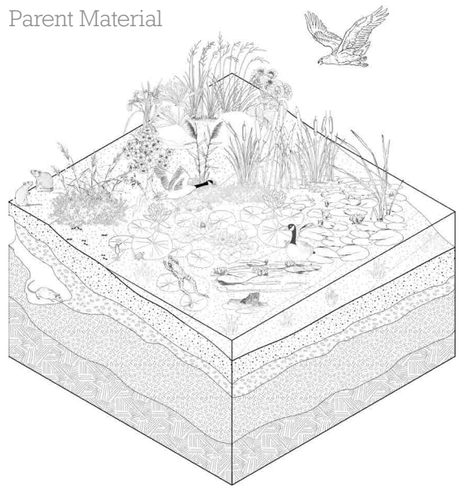
Silt Layer
Sand Layer
Gravel Layer
Bedload Layer



Halodule Wrightii
Ruppia Maritima
Saltmarsh Cordgrass
Sea Lettuce
Brown Algae
Green Algae
Sargassum
Rock
Zooplankton
Phytoplankton
Eastern Oysters
Atlantic Slipper Shell
Blue Crab
Lobster
Striped Bass
American Eel
Atlantic Needlefish
Atlantic Menhaden
Weakfish
Pandion Haliaetus
Herring Gull

3 Wetland

Organic Layer
Water Surface
Topsoil
Subsoil
Parent Material



Waterlily
Cattail
Pickerelweed
Buttonbush
Swamp Milkweed
Sensitive Fern
Marsh Marigold
Blue Flag Iris
Swamp Rose
Reed
Double-crested Cormorant
Canada Goose
Snail
Mouse
Ant
Golden Eagle
Caltha palustris
Red-eared Slider

Axon

As time goes by, the natural preserved area could potentially extend to the rest of Roosevelt Island, making the relationship between nature and humans more harmonious.

02
Algae New York
A Factory for Zero Carbon

Group work:Zhihao Xu, Zitao Yang
Instructor: David Benjamin
Site: Navy Yard, New York, America
Fall 2023

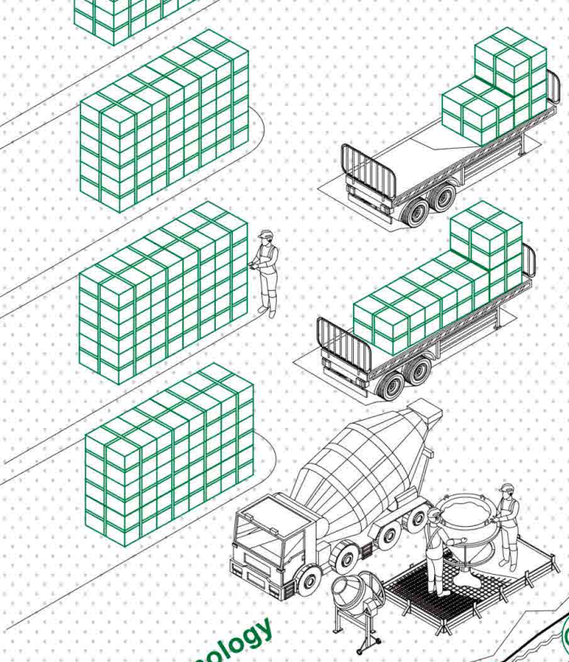
What is the capacity of the algae?
Is it possible for the construction industry to reach zero carbon?

With rapid urbanization, global temperatures will continue to rise. To reduce carbon emissions across the board, we must reduce carbon emissions from buildings, which account for 40% of global emissions.But the built environment is expected to double in the next 30 years.

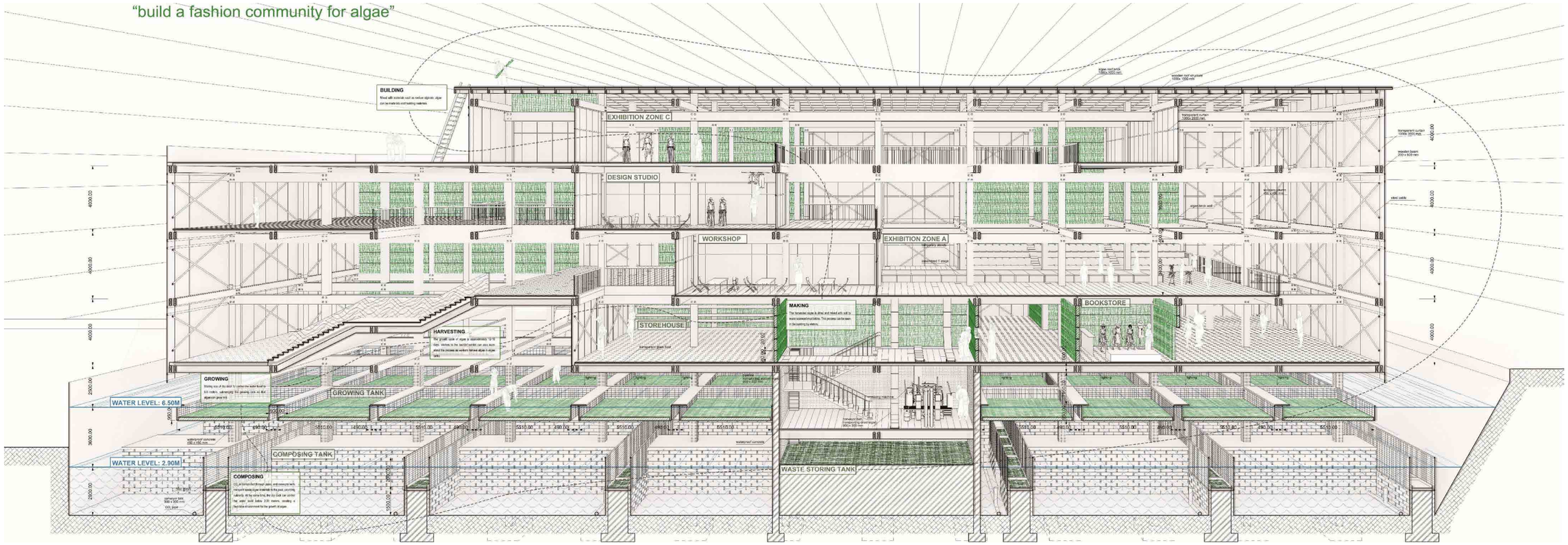
Algae is a material with enormous potential. It's amazing that we only need a very limited amount of area to grow algae, and its carbon negative effect will completely offset the carbon emissions produced by the building industry. Therefore, we focus on the research of algae architecture, and hope to present the algae processing factory to the public in a spatial model that is different from the traditional way.

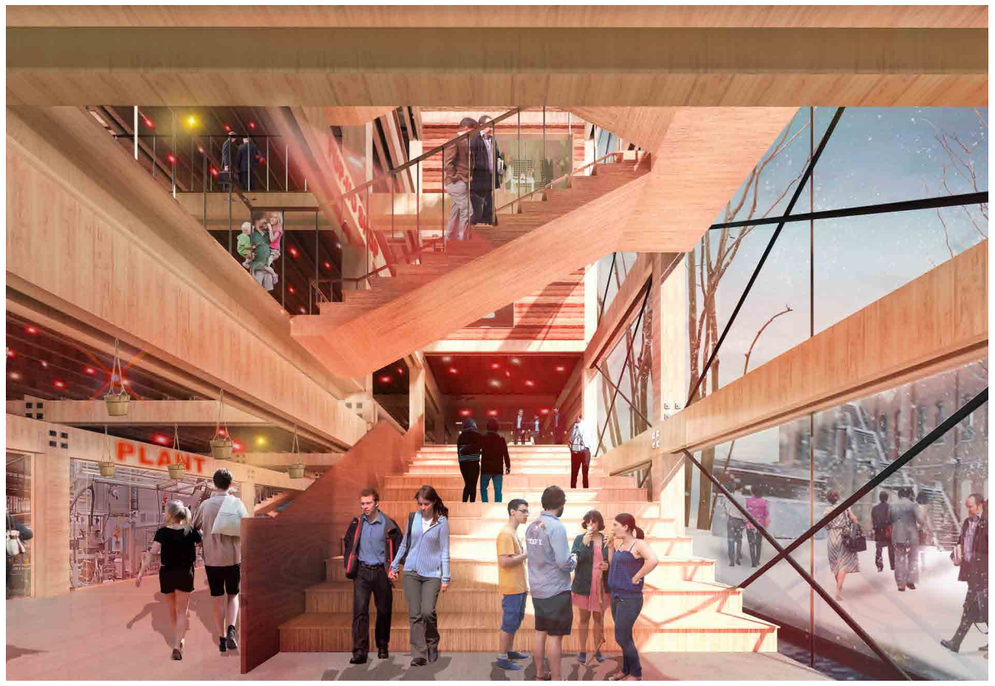
NAVY YARD

- Fashion Design Related Industries
  Navy Yard was transformed into an industrial park, and a lot of filming took place in these factories, resulting in a lot of related industries, such as design studios or costume rentals and sales.
- Green Industry
  With the support of the federal government, a large number of green industries have landed in Navy Yard, such as Green Manufacturing Center
- Future Green Industry
  With Algae Fashion Building as a beginning, more green industries will join Navy Yard
- Future Seaweed Buildings
  Extra algae material will be used in the Navy Yard renovation program with the construction of algae buildings
- Algae cultivation
  Because of the transformation of the industry, heavy industrial ship terminals wi ll be converted to algae farming
- Residential Area
  Nearby residents will visit the Algae Fashion Center to enhance the public's environmental a wareness and knowledge of algae technology



"build a fashion community for algae"





Plant

When you enter the building, they can see the algae plant and increase the knowledge of algae.

Perspective

People are watching the fashion performance to increase the knowledge of algae

Manhattan View
The algae building is like a lighthouse illuminated at night, enticing visitors to explore.

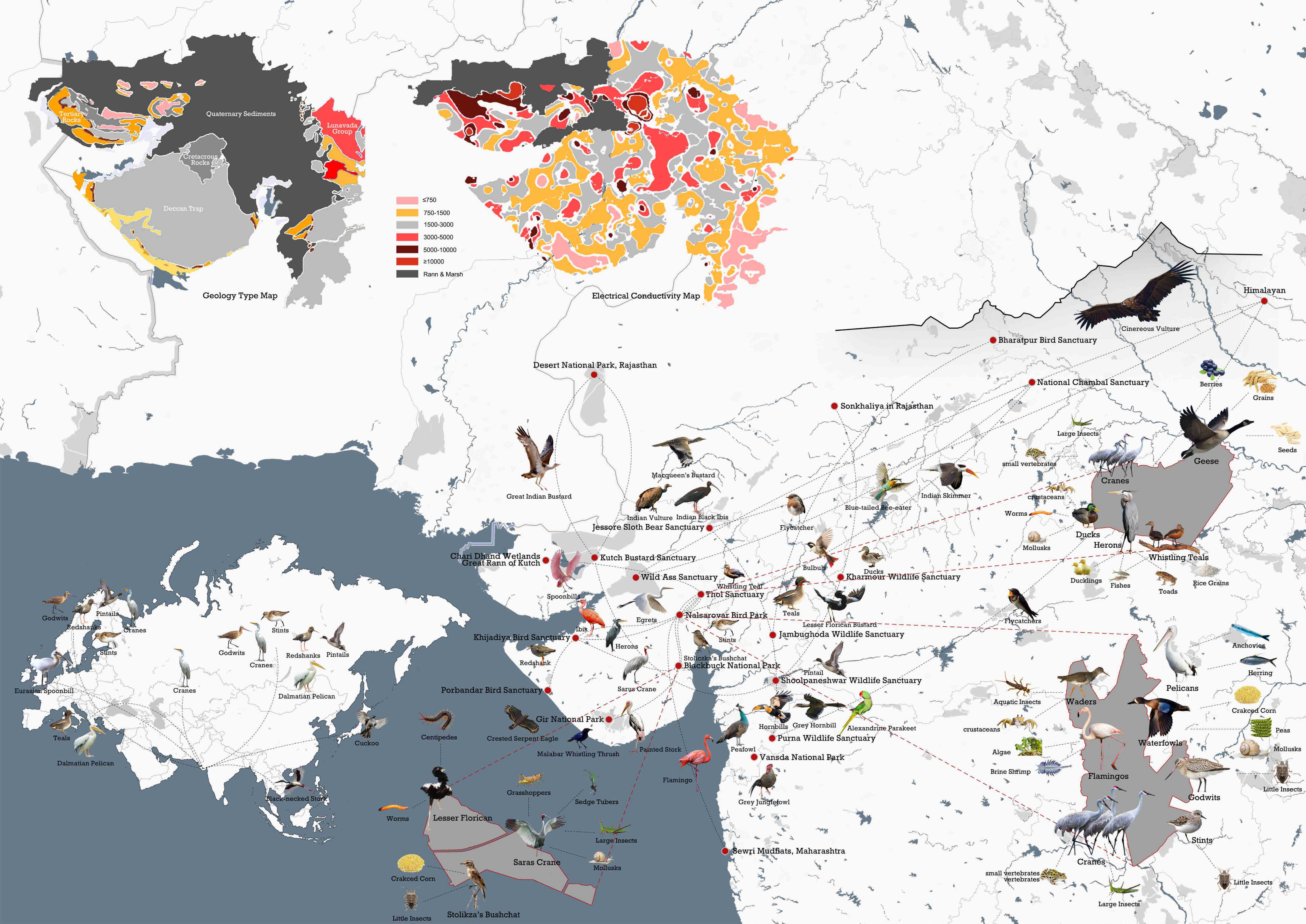
03
RE-BALENCE
A Circle for Animal Migration

Individual work
Instructor: Sandro Marpillero, Sonal Beri
Site: Godhavi, Gujarat
Spring 2024

How Animals Migrate in the Constraction Forest?

Gujarat is a vibrant ecological hub with numerous sanctuaries and diverse ecosystems, home to species like flamingos, bluebirds and wild asses. However, their annual migrations are significantly impeded by extensive infrastructure. This project aims to re-establish a balance between these artificial constructions and the native wildlife, exploring themes of humanism and dehumanism.

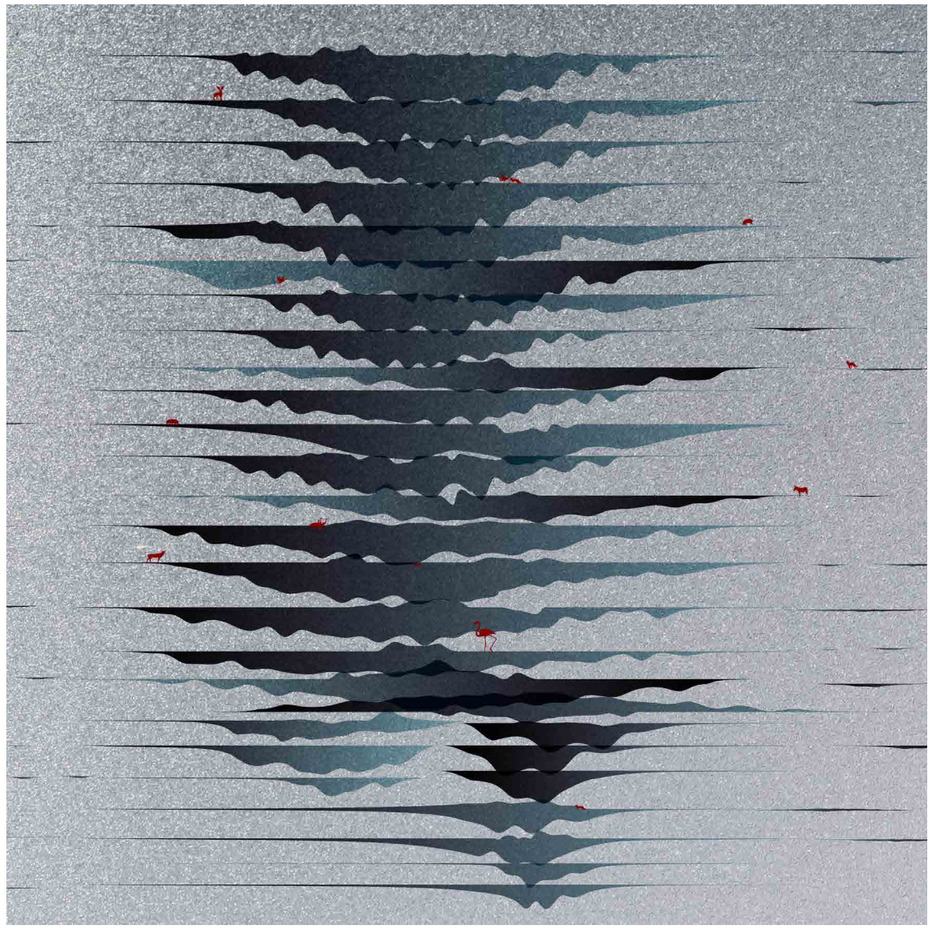
The water ecosystem in Godhavi serves as a crucial habitat where animals rest, feed and breed. However, the encroachment of highways, railways, and new residential developments leave the transition areas between the lakes and human constructions underutilized and degraded, not only disturbing animal life but also restricting their free movement.



Tertiary Rocks
Quaternary Sediments
Lunavada Group
Cretacrous Rocks
Deccan Trap
Geology Type Map
≤750
750-1500
1500-3000
3000-5000
5000-10000
≥10000
Rann & Marsh
Electrical Conductivity Map
Himalayan
Cinereous Vulture
Bharatpur Bird Sanctuary
National Chambal Sanctuary
Sonkhaliya in Rajasthan
Desert National Park, Rajasthan
Berries
Grains
Seeds
Geese
Large Insects
small vertebrates
Cranes
crustaceans
Worms
Ducks
Herons
Mollusks
Whistling Teals
Ducklings
Fishes
Toads
Rice Grains
Great Indian Bustard
Macqueen's Bustard
Indian Vulture
Indian Black Ibis
Jessore Sloth Bear Sanctuary
Blue-tailed Bee-eater
Indian Skimmer
Flycatcher
Bulbuls
Ducks
Chari Dhand Wetlands
Great Rann of Kutch
Kutch Bustard Sanctuary
Wild Ass Sanctuary
Kharmour Wildlife Sanctuary
Whistling Teal
Thol Sanctuary
Spoonbills
Egrets
Teals
Nalsarovar Bird Park
Lesser Florican Bustard
Flycatchers
Ibis
Khijadiya Bird Sanctuary
Herons
Stints
Jambughoda Wildlife Sanctuary
Redshank
Stoliczka's Bushchat
Blackbuck National Park
Pintail
Shoolpaneshwar Wildlife Sanctuary
Sarus Crane
Porbandar Bird Sanctuary
Anchovies
Herring
Pelicans
Aquatic Insects
Waders
Crakced Corn
Gir National Park
Crested Serpent Eagle
Malabar Whistling Thrush
Painted Stork
Hornbills
Grey Hornbill
Alexandrine Parakeet
Purna Wildlife Sanctuary
Peafowl
Vansda National Park
crustaceans
Algae
Brine Shrimp
Waterfowls
Peas
Mollusks
Flamingos
Little Insects
Godwits
Flamingo
Grey Junglefowl
Sewri Mudflats, Maharashtra
Stints
Cranes
small vertebrates
Large Insects
Little Insects
Godwits
Pintails
Redshanks
Cranes
Stints
Stints
Godwits
Cranes
Redshanks
Pintails
Eurasian Spoonbill
Cranes
Dalmatian Pelican
Teals
Dalmatian Pelican
Cuckoo
Black-necked Stork
Centipedes
Grasshoppers
Sedge Tubers
Worms
Lesser Florican
Saras Crane
Large Insects
Mollusks
Crakced Corn
Little Insects
Stolikza's Bushchat

Cannal Flow

Cannal flow through godhavi to the sanctuary. The animals will migrate according to the path of the canal.



Topographic Section

This diagram shows the topography of the site. These highs and lows show how the water are gathered to form the ponds. The red point, animals show the important relationship between ponds and animals.

Concept Clay Model

Two ponds connected by a canal as an attraction habitat and with a green corridor - the bridge - forming a new circulation system where the animals go up and down, completing one cycle after another one.

N

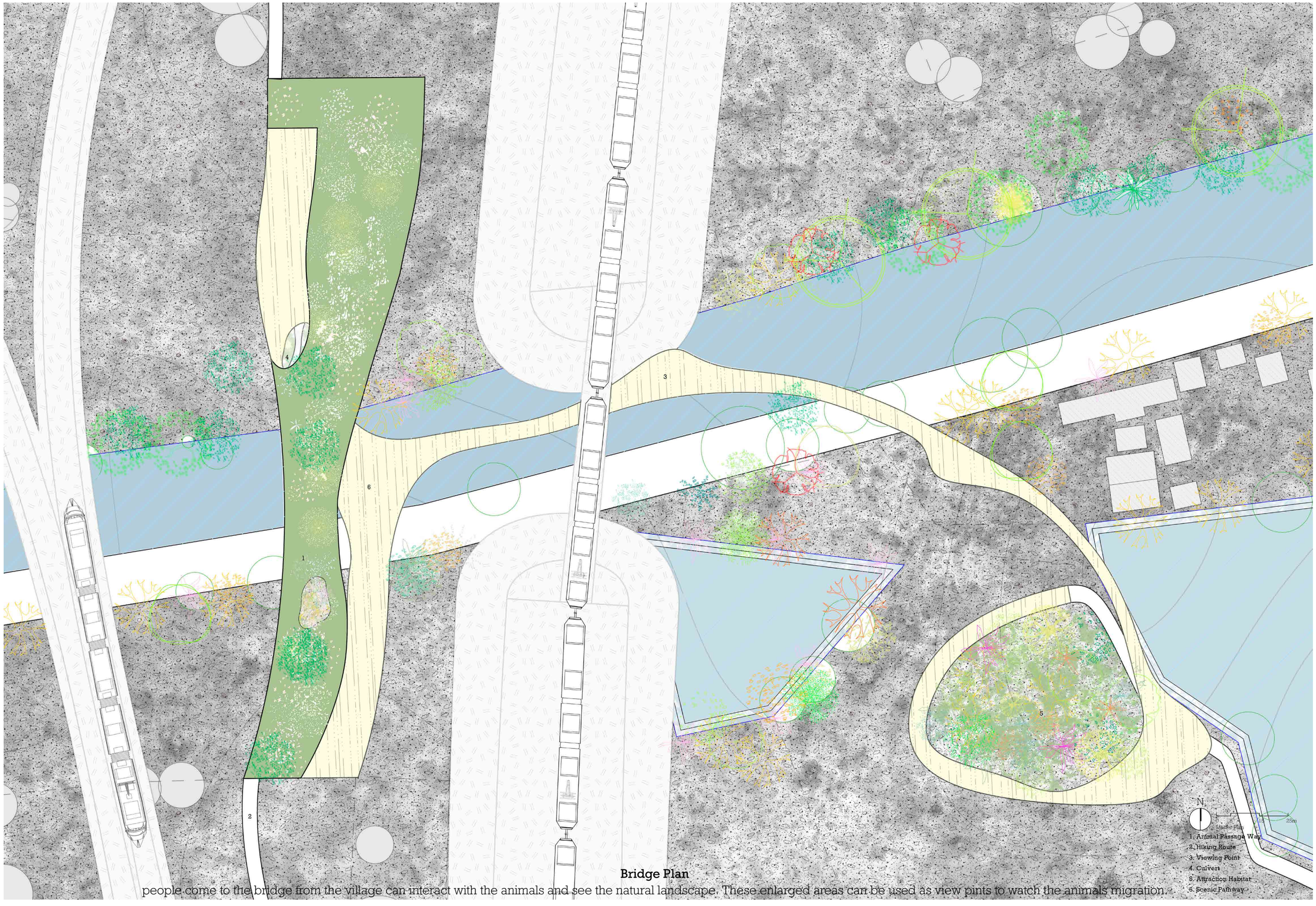
0 0.2 0.6 1km

Master Plan

1. Animal Passage Way
2. Hiking Route
3. Viewing Point
4. Culvert
5. Attraction Habitat
6. Scenic Pathway

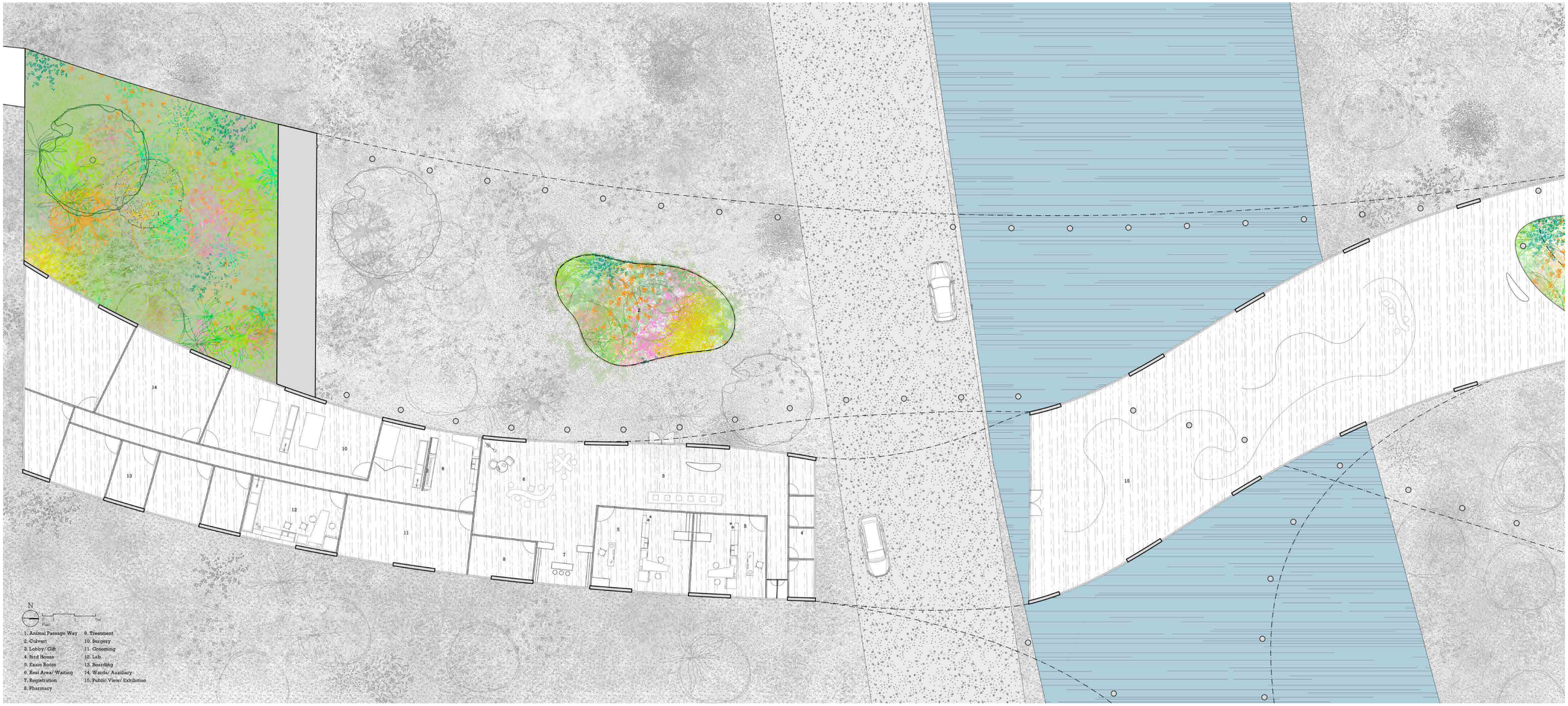
Master Plan

The new water system creates a circle that guides the safe migration of animals



Bridge Plan

people come to the bridge from the village can interact with the animals and see the natural landscape. These enlarged areas can be used as view pints to watch the animals migration.



Bridge Plan

The left half is an animal hospital where stray animals can be adopted and injured animals can be treated, and the right part is a migration viewing area

Section

The uplifted exhibition space provides recreational space for the village, and people watch the animal migration through the arched windows.