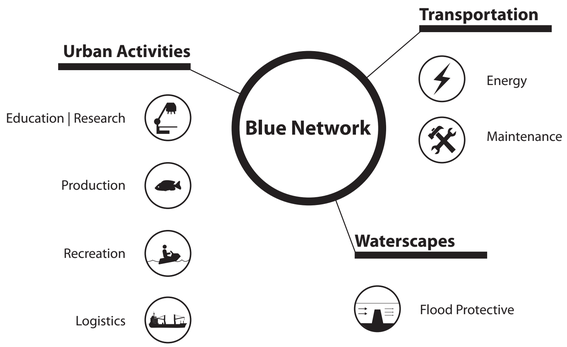
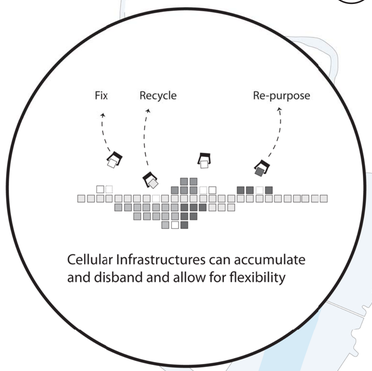
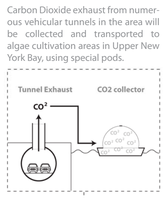






Produced Brine shrimp in nursery pods is a dominant food for shore birds. It can increase the attraction of birds to floating wetlands of Bronx Blue Terminal.

Algae will be delivered to newly created biopower plants in Cleantech Industry City in Queens. The algae will be harvested and its oil extracted to be used as biofuel.

Gowanus Canal Production Ponds: Enclosed water pools with various water depth, are separated from major water bodies by levees (conduits). This landscape makes it possible to control pollution, salinity and other environmental condition, necessary for various aquatic farming. Conduits circulate water through the ponds and contain monitoring, desalination and remediation facilities.

Nursery pods can provide the requisite water condition for accelerated production of commercial oysters. The shell is then thrown on the reef island area to nourish the islands

Collected CO2 from tunnels will be fed into movable floating bioreactors to cultivate algae which will be used to produce biofuel.

Nursery pods containing algae, provide the proper water salinity for brine shrimp production.

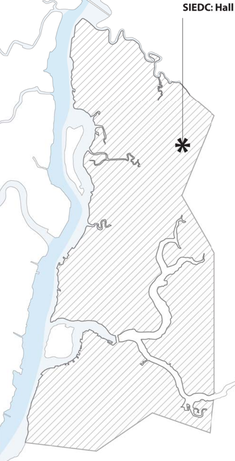
Produced Brine shrimp in nursery pods can be used as nourishment in fish farms of Gowanus canal.

Bronx Blue Terminal
Aquatic research and recreation fields

Floating wetlands create a natural habitat that has been replaced by landfills along the Soundview Park shore in the past. Planted with remediating plants, this floating park can also remediate metals and other toxins in the water. This complex creates a potent field of research and study of wetland ecosystem, hydrology, vegetation and native animal species.
The linear ferry terminal extends out of Soundview Park, creating two paths of recreation with activities including fishing, observation deck, kayaking, sail boat mooring area, bike parking, beaches and sitting areas. The paths are complemented by floating recreation pods accessible by kayaks and boats.

NY Gaia
Growing a productive landmark

The CO2 Pods collect CO2 from tunnels of New York City. The collected CO2 is brought to reef Islands to nourish the Algae Pods. Algae pods are relocated to Queens Cleantech Industry City for energy production. Algae is also used as a fertilizer in Nursery Pods that hold and accelerates brine shrimp and Oyster production. Brine shrimp pods are relocated to Gowanus Canal to nourish aquatic farming. Oyster shells or spat is dumped in Upper NY Bay to nourish and build natural islands that are both a flood defense system and a marine habitat stimulator. Islands form around wind turbines which are located in the middle of the bay to free urban context of their noise pollution.



NY Parallel Networks
Growing Symbiotic Performances in New York's 6th Borough

New York's relationship with water has been essential to its historical development and growth. Traditionally, water for New York has been a source of connectivity and large scale economic, and industrial activities, which have slowly transformed the once diverse water's edge with mono-functional industrial hardscapes. **Currently, migration of industrial activities outside the city, coupled with increase in water's edge development and awareness of environmental threats, have created a potential for reimagining a resilient, yet productive, waterscape capable of hosting a diversity of urban programming.** The Blue Network initiative and Clean Tech World Expo present fruitful venues for extending NY's blue footprint through a rethinking of the role of water in the overall health of the city. Hence, as well as providing a connective tissue between the 5 boroughs, The Blue Network needs to be imagined as a productive landscape able to deal with flux and to regenerate a socially and environmentally sustainable body of water.

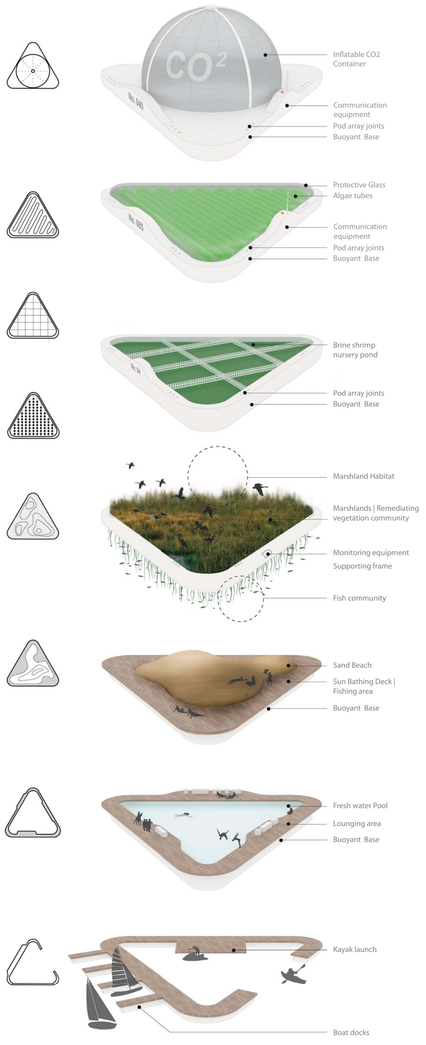
New York City, like many other metropolitan areas, is founded in a context that is environmentally and socially in a constant flux. Mono-functional infrastructures have proven incapable of effectively adapting to these fast and complex changes. Therefore, **The Blue Network needs to take into account not only transportation needs but also urban growth and environmental factors, through coupling or bundling of transportation infrastructure with water-based urban programming (for production, recreation, living, etc.), and new waterscapes(for environmental protection, research, re-habitation, etc.). This proposal exists at the intersection of the basic needs of The Blue Network, such as fuel and maintenance, and urban programming and new waterscapes.**

As The Blue Network is a large infrastructural project, a systematic thinking, instead of an all-encompassing super-structural remedy, can effectively enhance the performative qualities of the network. **In this proposal this systematic thinking is manifested through a cellular infrastructure. This cellular system allows for incremental implementation by various public and private entities, while allowing for easy maintenance, since each cell can be removed and repaired without jeopardizing the overall health of the network.** The cells of the Blue Network are translated to floating pods of various scales and functions, able to accumulate and disband, and to be moved from one location to another. This system, therefore, promotes a need-based growth over time, allowing for opportunities for experiments, while keeping the integrity of the network intact. Furthermore, pods are designed to forge symbiotic relationships with the context they are located in.

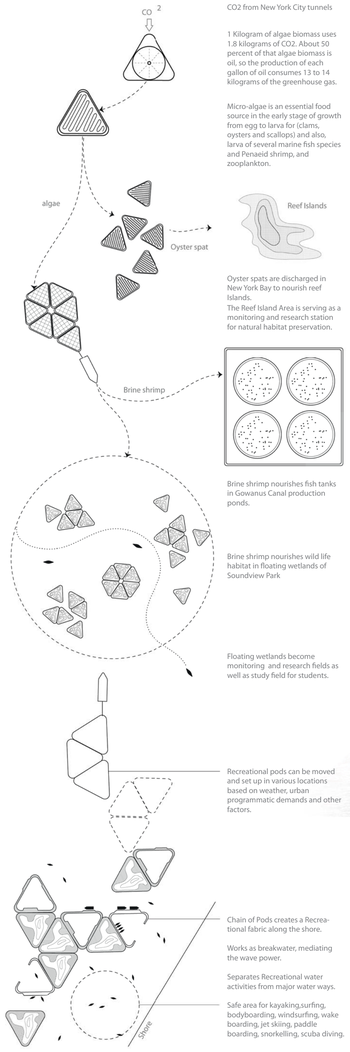
Two test sites are introduced for a more detailed examination of the network. NY Gaia, located in Upper New York Bay, is a productive landmark, and a centre for clean energy production and marine transportation maintenance activities. The Gaia will feed other cleantech industries with energy, through wind power and bio-fuel harvested from large scale algae cultivation. In addition, much needed maintenance and training spaces for marine transportation will be located adjacent to reef islands which will be grown over time.

Bronx Blue Terminal (BBT), located at the mouth of Bronx River and with strategic adjacency to Bronx Electric Car City, will provide Bronx area with a ferry terminal. In addition to a transit hub, BBT will act as a recreation, research and education node within the Blue network, building on the educational programs already underway in the area. Habitat preservation and regeneration is another part of the mandate for BBT.

POD Typologies



PODS at work



CO2 from New York City tunnels

1 Kilogram of algae biomass uses 1.8 kilograms of CO2. About 50 percent of that algae biomass is oil, so the production of each gallon of oil consumes 13 to 14 kilograms of the greenhouse gas.

Micro-algae is an essential food source in the early stage of growth from egg to larva for (clams, oysters and scallops) and also, larva of several marine fish species and Penaeid shrimp, and zooplankton.

Oyster spats are discharged in New York Bay to nourish reef Islands.
The Reef Island Area is serving as a monitoring and research station for natural habitat preservation.

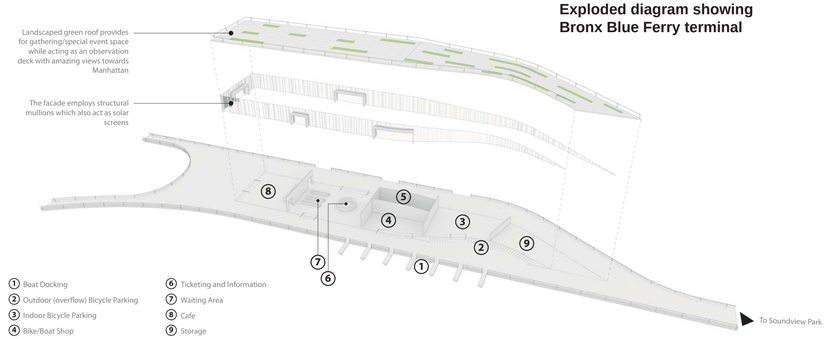
Brine shrimp nourishes fish tanks in Gowanus Canal production ponds.

Brine shrimp nourishes wild life habitat in floating wetlands of Soundview Park

Floating wetlands become monitoring and research fields as well as study field for students.

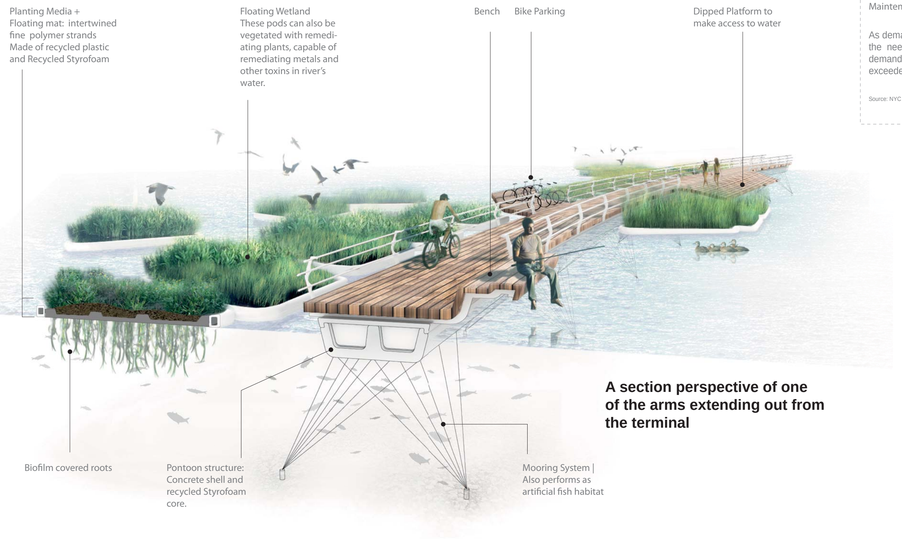
Bronx Blue Terminal

Aquatic research and recreation fields



Exploded diagram showing Bronx Blue Ferry terminal

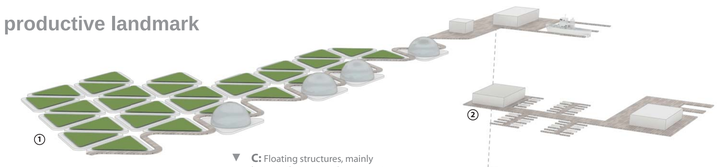
1. Boat Docking
2. Outdoor (overflow) Bicycle Parking
3. Indoor Bicycle Parking
4. Bike/Boat Shop
5. Change rooms, Lockers and Washrooms
6. Ticketing and Information
7. Waiting Area
8. Cafe
9. Storage



A section perspective of one of the arms extending out from the terminal

NY Gaia

Growing a productive landmark



C: Floating structures, mainly hosting shipping and transportation industry related programs, cluster in the safe area between islands. Their activities can expand on the reef islands that are now occupiable.

NOTE:

With the substantially growing shipping industry in New York Harbour, a great number of Barges and Tug boats will occupy the bay area. This growing traffic has requirements and NY Gaia is providing a space and structure where these requirements are met.

Cross-Harbor Shipping:

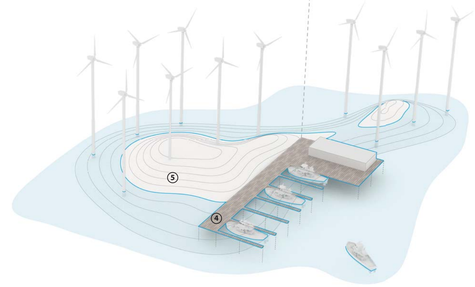
Capacity of cross harbor shipping as a replacement for road-based shipping:

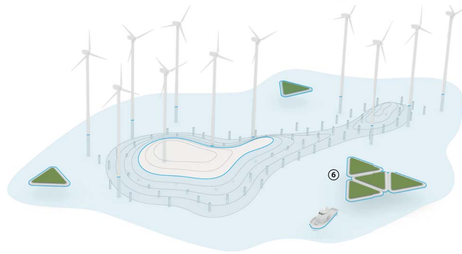
A dry barge, also known as a scow, can carry the equivalent of 60 truckloads in cargo. A tug propelling six barges can remove upwards of 360 trucks from the roads. A tank barge, which transports liquids, is capable of removing up to 1,500 trucks from the congested highways in New York City and the region.

Maintenance and Emergency Services: Tug Boats

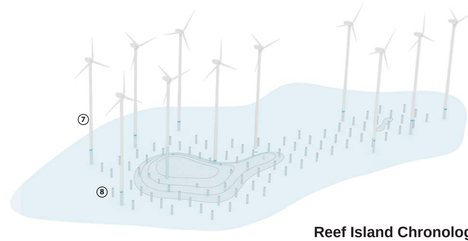
As demand for additional tugs and barges grows, so will the need for tie-up and mooring space. The current demand for tie-up and mooring space in the Harbor exceeded the supply.

Source: NYC Planning Vision 2020 , Department of City Planning City of New York





B: Reef Islands start to shape around wind turbines. Nursery pods nourish islands with Oyster spat. The process is monitored as a research process and the bay is performing as a field of research.



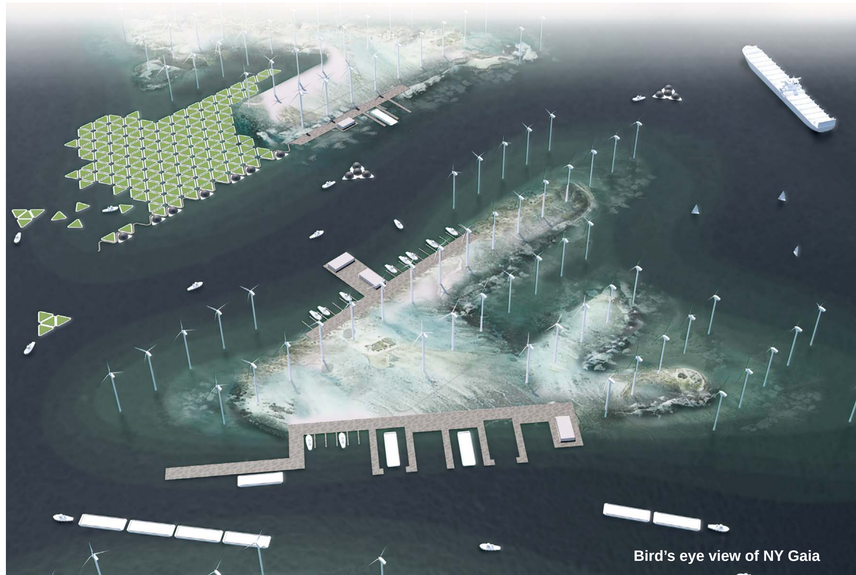
A: The foundation of reef islands is placed in the location to protect shells and sediments from currents. The wind turbines are placed in New York Bay.

1. Algae production Station
2. Marina | Boat Storage
3. Research Station
4. Tug boat Maintenance and fuel station
5. Occupiable land
6. Nursery Pods
7. Wind Turbines
8. The foundation

Reef Island Chronology

Bird's eye view of BBT

Walking from Soundview Park towards BBT



Bird's eye view of NY Gaia