STUDIO
AquaFlow
USPS VMF + Food Distribution
Islands in Motion: Making Coral Reefs

TECH
Techniques of the Ultrareal

ELECTIVE
Seminar of Section
This studio examined the urban and infrastructural networks connected through the septic system. It looked at the history of sewers and sewage and how the public has interacted with and grown fascinated with them. It looked at how architects and artists have addressed infrastructure and sewers in their work from Modernism until today. And finally, it looked at the potential future of the septic system and how it can function as an integral new people of a global green movement to make cities more ecological.

The project seeks opportunities to negotiate the relationship between community and infrastructure and create a social and cultural space for the public. The project forms a central circulation with the wastewater treatment on one side and the public service on the other. The circulation blends the infrastructure with other programs such as public baths, restaurants, kayak clubs, and oyster farms. As the wastewater is released from the treatment plant, the water contains chemical acid pollution. AquaFlow tries to reduce acidity by implementing the oyster field to neutralize the wildlife environment. Ultimately, the project seeks to intervene in infrastructural service into a communal social space to enrich the community’s daily life.
This studio speculated on ways in which new programs could expand the United States Postal Service and transform its mission, services and role for the zip code, as well as for City, State and Federal programs; possessing a new architecture in every sense of the term. In light of the recent Infrastructure Framework Plan ratified by the US Senate and The Inflation Reduction Act which includes legislation that will reduce carbon emissions by roughly 40 percent by 2030, the intention was to explore and reimagine that architecture, and its role in shaping this essential public infrastructure now and in the future.
As global warming becomes more severe and causes rising sea water temperatures, global coral reefs have migrated towards subtropical areas. Knowing that an estimated 25% of marine life depends on the coral reef ecosystem, makes restoring the coral environment an urgent necessity. Up till today, many countries have been using armored vehicles as a structure to regrow coral reefs and restore the ecosystem.

This gesture of using decommissioned destructive weapons as a reparative object to restore the coral has also brought up other questions. What is the value of an armored weapon? While coral migration occurs in many parts of the world, what is the new ecosystem, and how does it affect the original environment?

My architectural interest looks at the process of cause and effect across time and scale. This semester’s broad research theme is how island formation is constructed through this hybridization relationship of artificial (large discard) and natural (living organism). Under this broad topic, the research focuses on the trajectorial process of (artificially?) creating the temporal island. A transformative process generates a moving coral reef island that expresses the adaptive effect and reveals the new ground condition.
Artificial Reef

- Fore Reef (~500m)
- Reef Flat (~300m)
- Reef Slope
- Pinnacles
- Reef Framework
- Substrate

- Gun Mounts/ Main Gun
  - Steel/Crystal/Concrete
- Turret
  - Steel/Concrete
- Turret Ring
  - Steel/Concrete
- Hull Armor Skirt
  - Steel/Kevlar/Concrete

- Cylinder Reef Module
  - Concrete/Crystal/Steel
- Steel/Reef Module
  - Steel/Concrete
- Cube Reef Module
  - Steel/Concrete
- Triangle Steel Reef Module
  - Steel/Concrete/Elastic
- The Reef Module
  - Steel/Concrete/Plastic

- Drive Sprocket/ Road Wheel
  - Steel/Concrete/Crystal