



THE COAST IS CLEAR:

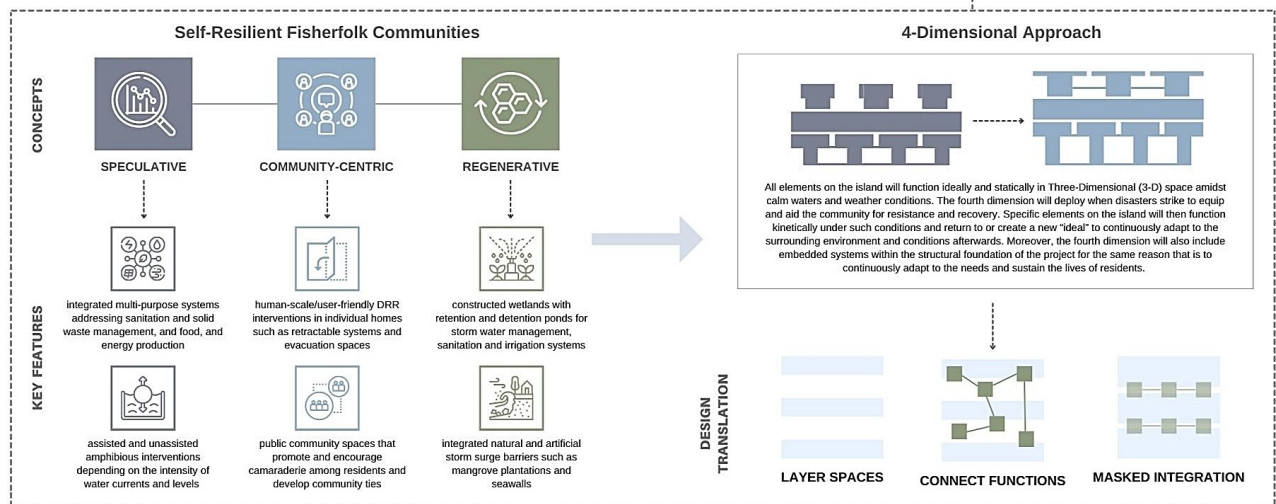
Redefining Resilience in Marginalized Fisherfolk Communities Against Natural Disasters through an Adaptive Housing Framework

The Problem

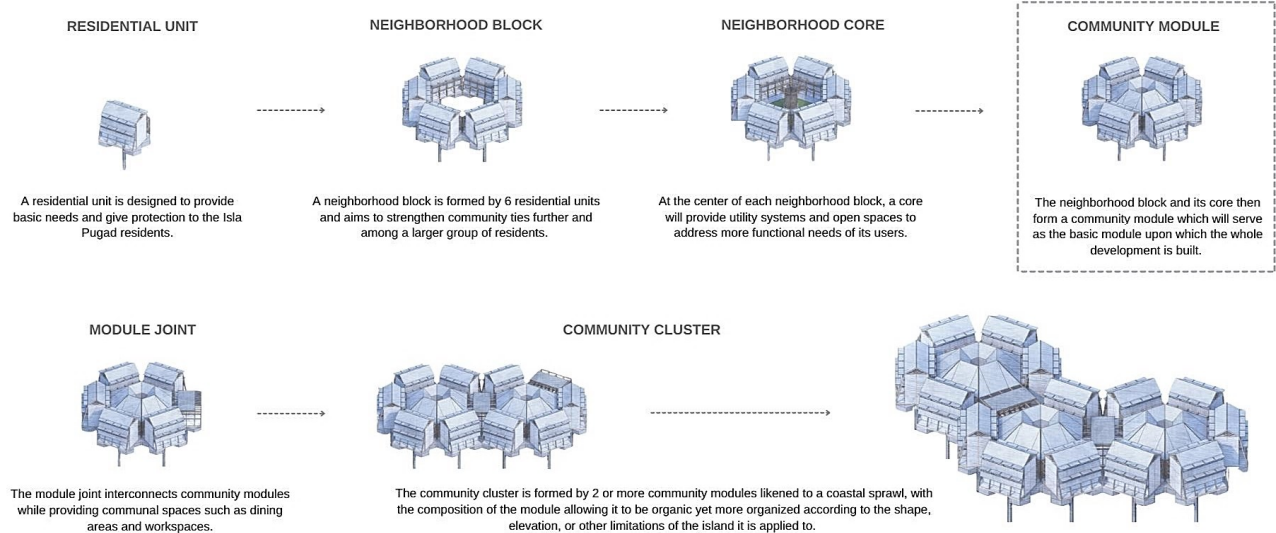
This study is premised on the current situation of urbanization and climate change in the Philippines where in the country has been recorded as one of the fastest urbanizing countries in East Asia and the Pacific and ranked 9th out of 181 countries in terms of World Risk index. Inevitably so, marginalized fisherfolk communities are among the most vulnerable against these two ordeals. The hybrid between fragile infrastructure and high-density populations along the coast and high susceptibility to the hazards of climate change introduce glaring vulnerabilities to the environment, infrastructure, community, and livelihood of marginalized fisherfolk around the country. The project seeks to build self-resilient fisherfolk communities through an adaptive housing framework.

The Design

To achieve this, speculative design, community-centric design, and regenerative design strategies will be used. Each strategy implies key features in the design that will aid in attaining the design goals. The disaster resilient housing framework will redefine resilience in coastal communities by providing standard psychological (shelter, sleep, water, food) and safety (personal security, safety, health) needs that will improve the lives of its users.



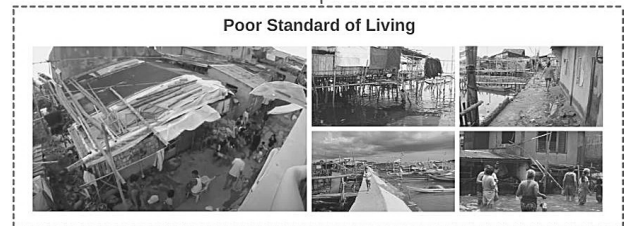
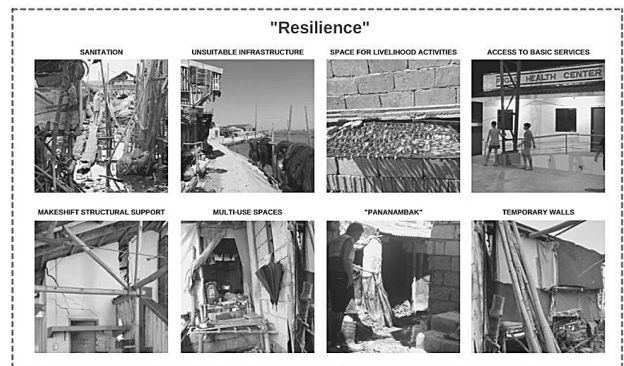
Housing Morphology





The Site

Isla Pugad is centered around fishponds and the Manila Bay. On its northeastern region are routes to the Hagonoy central district and barangay Tibaguin. The entire island is vulnerable to natural hazards and experiences daily flooding. In terms of circulation, Isla Pugad is interconnected by one major road network and two minor roads. These roads and walkways serve as extensions of residents' sala, where women dry fish, children play, and families store building materials. Residents most commonly traverse the island by foot.



Isla Pugad is home to a resilient fisherfolk community that experiences flooding on a daily basis. Although the island is constantly pressured by human-induced and natural hazards, its community continues to evolve and adapt, not only to survive, but also to thrive on their home island. However, Isla Pugad has been observed to be "sinking" over the years. This can be attributed to its high susceptibility to flooding, liquefaction, and land subsidence, and its tsunami and storm surge prone nature.

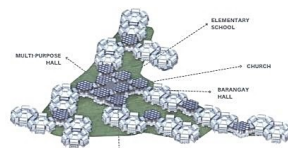
Site Development

MODULE PLACEMENT



Community clusters are plotted along a main axis that connects the 4 existing and still relevant entry points to the site determined by the site analysis.

COMMUNITY CENTER



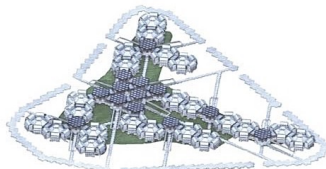
The community center adapts the concept of traditional town plazas to further enhance the strong sense of community felt by the residents of the island.

SEAWALL INTERVENTION



A seawall intervention is used as a buffer from harsh currents and storm surges, while providing more space on the site to fit the community's needs.

ACCESS POINTS



Access points are provided throughout the site in the form of "breaks" along the seawall, walkways intersecting the site, and access ramp to the modules.

ADDITIONAL SPACE



Using the same seawall module, docks and open spaces are plotted to address common user behaviors and activity patterns.

SPACE PROGRAMMING



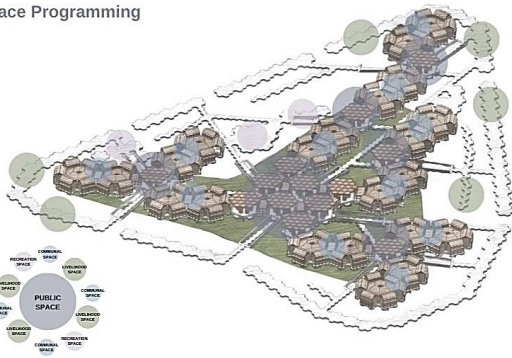
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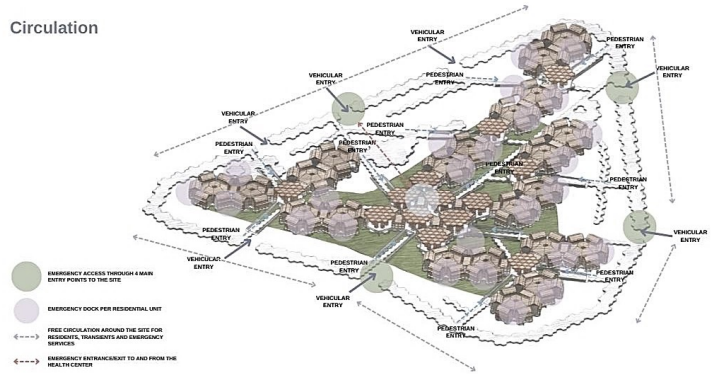
The Project

The overall programming of module joints and communal spaces in residential units and the design of the living corridors of neighborhood blocks and pathways within community clusters address common user behaviors on Isla Pugad such as gathering along eskinitas over food and karaoke, watching the Manila Bay sunset, and playing games for the children, on top of regular work schedules for fishermen and small business owners. Circulation throughout the site is enhanced through multiple pedestrian walkways connecting vehicular and pedestrian entry points with other programmed spaces throughout the island. The project assumes the use of fire boats to serve the community in case of fire emergencies and rescue boats in case of medical and disaster emergencies. Thus, minor docks are integrated into each residential unit. This intervention would also serve the fisherfolk community appropriately as residents will have direct access to a dock.

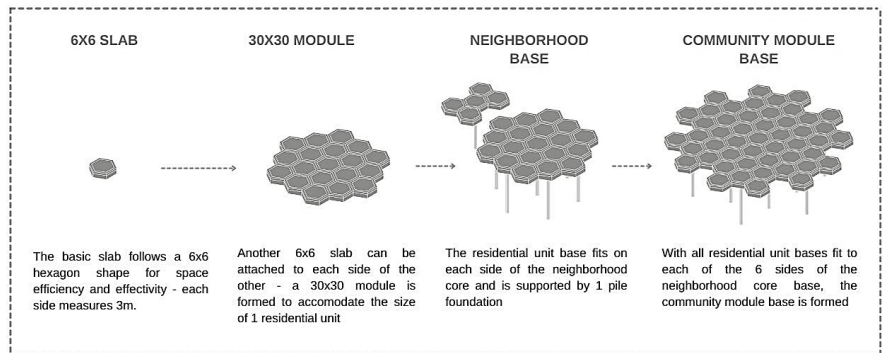
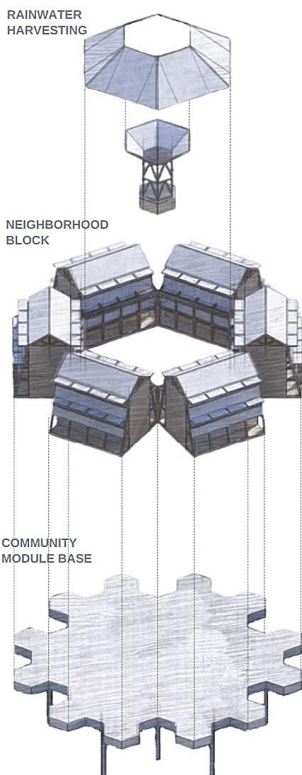
Space Programming



Circulation

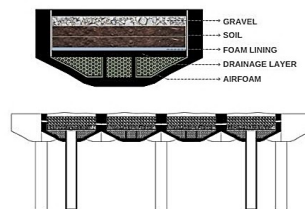


Structural Details



Constructed Wetland

Selected slabs will function as a constructed wetland to account for plumbing and sanitary systems on the island. Each will be connected to another wetland module, collection or storage tank through a piping system. Septic and water treatment tanks are attached to help with wastewater collection and filtration.



Pulley System

A pulley system will be embedded within the pile foundation using a spool and tension wire measured to 21 meters, enough to keep the island afloat for at least 100 years.

