

# Modular Floating Fish Breeding System for Coral Reef Restoration

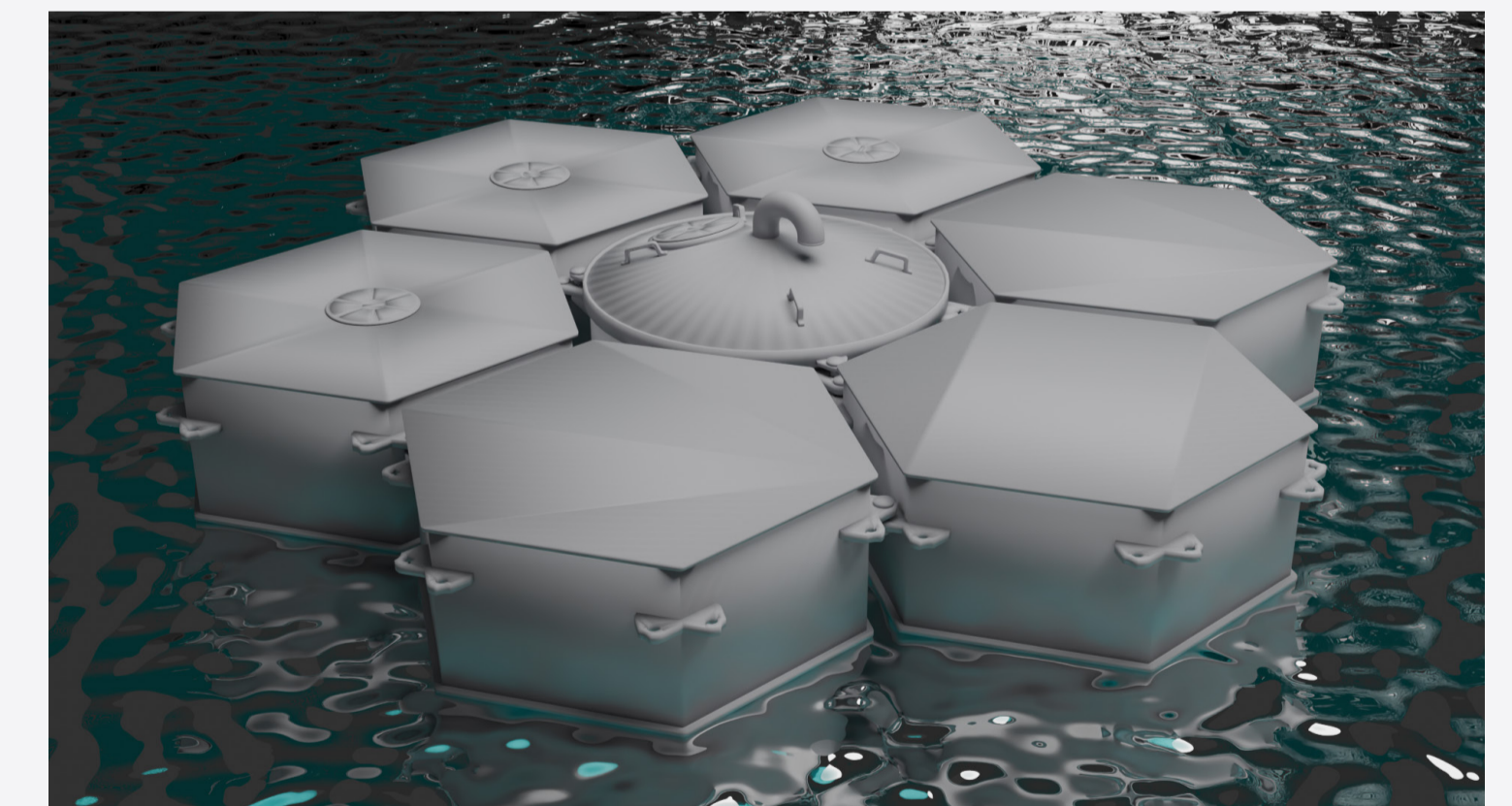
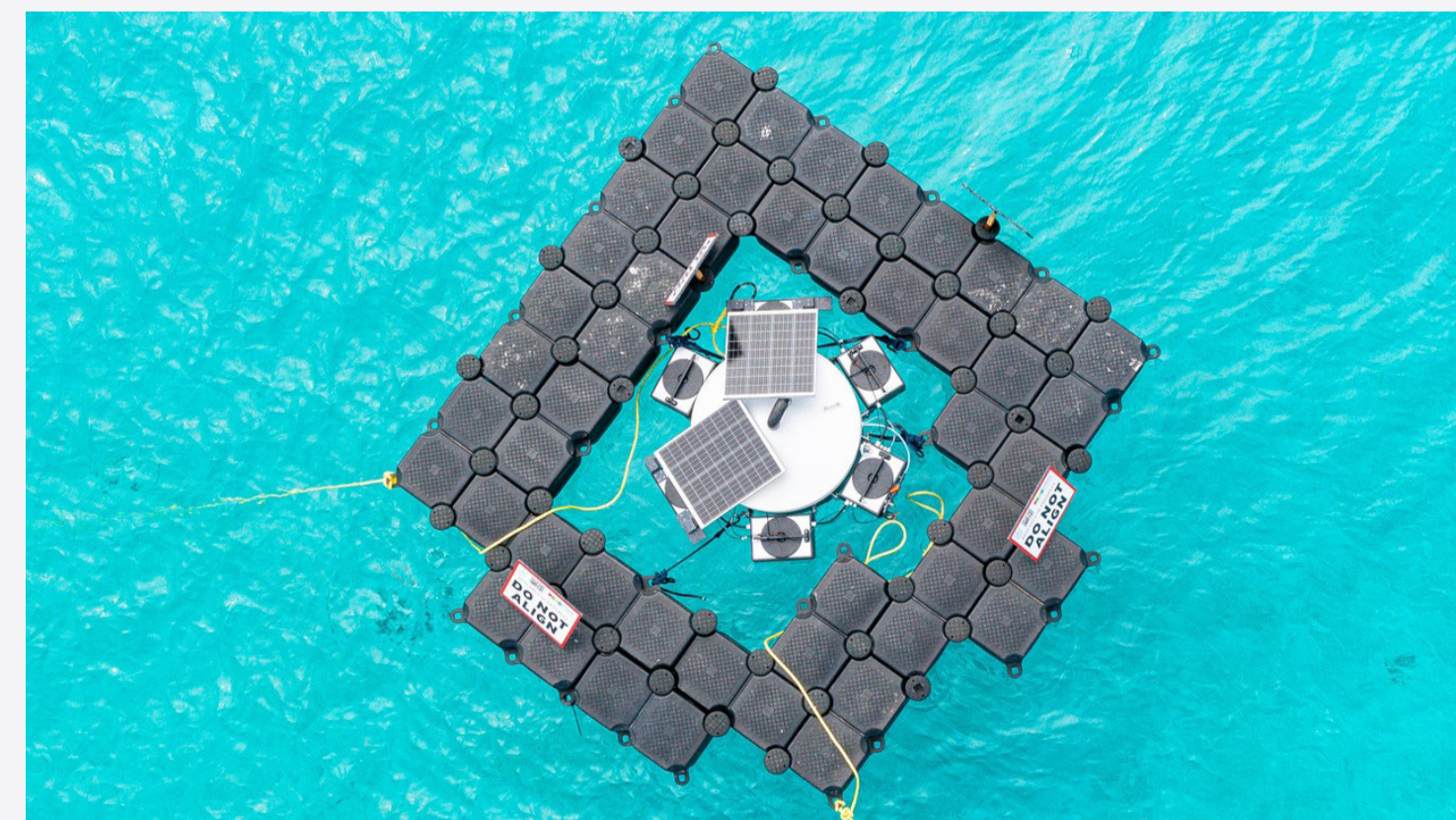
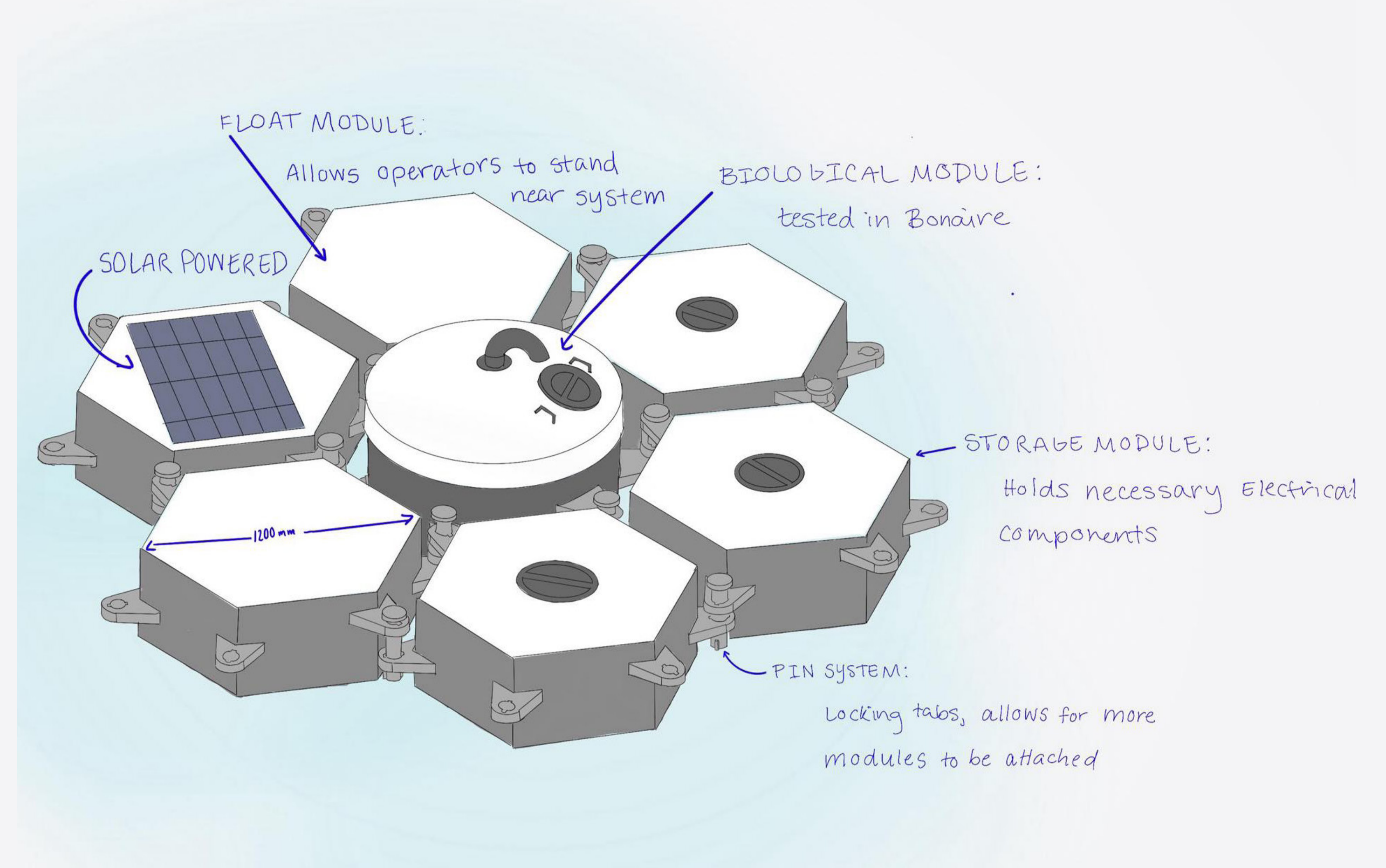
Redesign for improved **accessibility, stability and scalability.**

Coral reef ecosystems are an essential part of the ocean environment and imperative to the health of the entire ocean. With warming oceans, destructive fishing, marine pollution, and other factors, the coral reefs are dying. Globally, more than one billion people directly benefit from coral reefs. Therefore, restoring coral reefs is critical to ensure the well-being of both marine and human communities.

This thesis focuses on the redesign of a floating fish breeding system for the coral reef conservation start up, RoffaReefs. RoffaReefs is working on restoring ecosystem through the breeding of reef fish through a first of its kind floating fish breeding system.

This system works by allowing fish eggs collected from the reef to grow into larvae in a protected environment before being released back into nature. The overall aim for the redesign was to design a nature-based fish breeding system for improved performance that can be used in various marine contexts.

The proposed design is a modular design with three separate modules: biological, storage, and float. This new design can improve the system's operator accessibility and scalability in future contexts. Through the testing of scale models, it has been shown to improve the stability of the system in wavy conditions.



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