

# THE AQUATIC MUSE



EXPLORING THE DEPTHS, PRESERVING THE FUTURE

2023 JACQUES ROUGERIE FOUNDATION AWARDS

Award's category : Grand Prix – Architecture & Innovation for the sea

Project's Name

THE AQUATIC MUSE

Description

EXPLORING THE DEPTHS, PRESERVING THE FUTURE



FONDATION  
JACQUES ROUGERIE  
GÉNÉRATION ESPACE MER  
ACADÉMIE DES BEAUX-ARTS

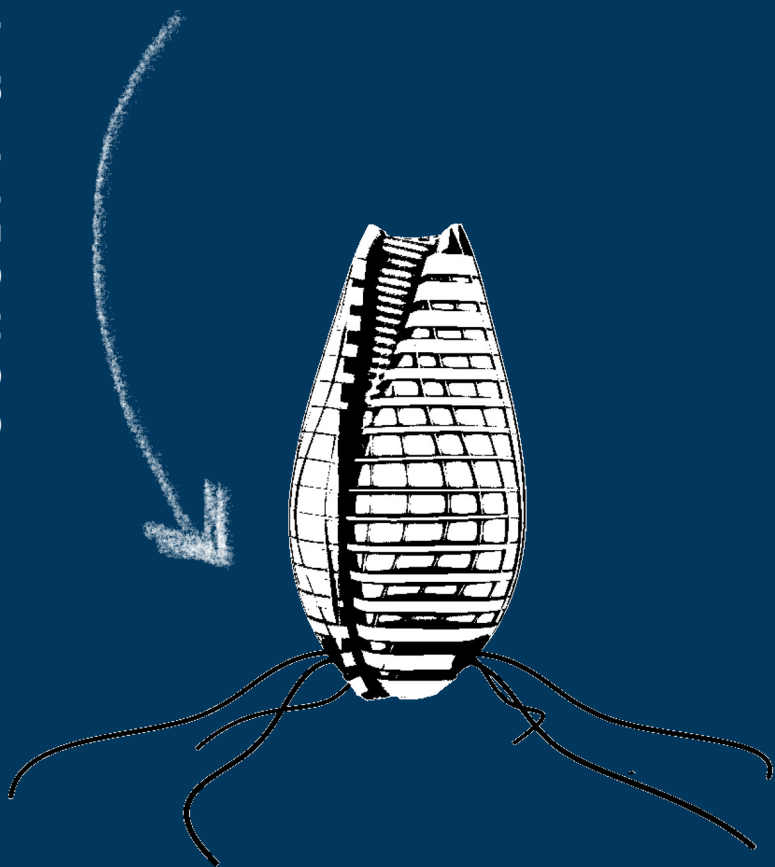
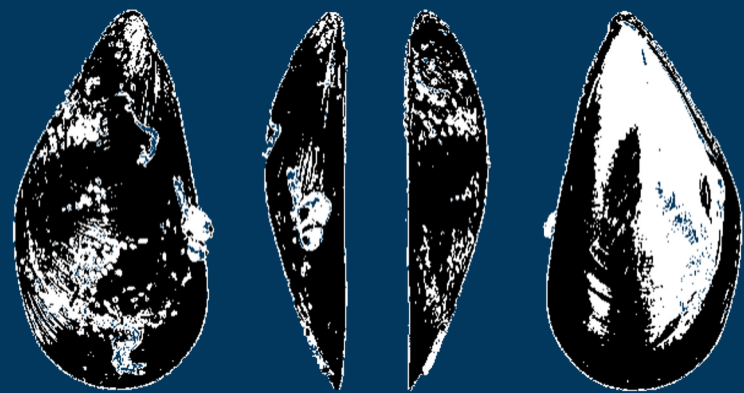


# THE AQUATIC MUSE: A SELF-SUFFICIENT CREATION

In a world where the depths of the ocean remain one of the last frontiers of exploration, a pioneering vision emerges, one that combines the thrill of discovery with the urgency of conservation.

**The Aquatic Muse**, a testament to human innovation, inspired by the elegance of the sea mussel's protective shell, understanding marine ecosystems, monitoring environmental changes and preserving underwater biodiversity motivated by the responsibility we have towards ourselves, our environment, our earth, our universe.

CONCEPT & INSPIRATION



Mussels, these bivalve shellfish, play a crucial role in marine ecosystems and can have benefits for humans both environmentally and nutritionally by providing sources of proteins and nutrients and by acting as natural filters, they play a fundamental role in water purification.

The Aquatic Muse represents a harmonious blend of biomimicry and cutting-edge technology. Inspired by mussels, it not only draws inspiration from these remarkable filter feeders but also seeks to replicate their ability to thrive in their environment while positively influencing the surrounding ecosystem. This self-sustaining underwater building showcases the potential for human innovation to coexist with and benefit the natural world.

## Biomorphic Architecture

Our design mimics the organic form of a sea mussel, creating a visually striking and functionally efficient structure that can withstand ocean pressures.

## Sustainable Ecosystem

The Aquatic Muse promotes sustainability by incorporating an artificial coral reef system around the structure, fostering biodiversity and aiding in coral reef restoration. OTEC (Ocean Thermal Energy Conversion) and advanced wave energy converters provide renewable energy sources.

## Underwater Gardens

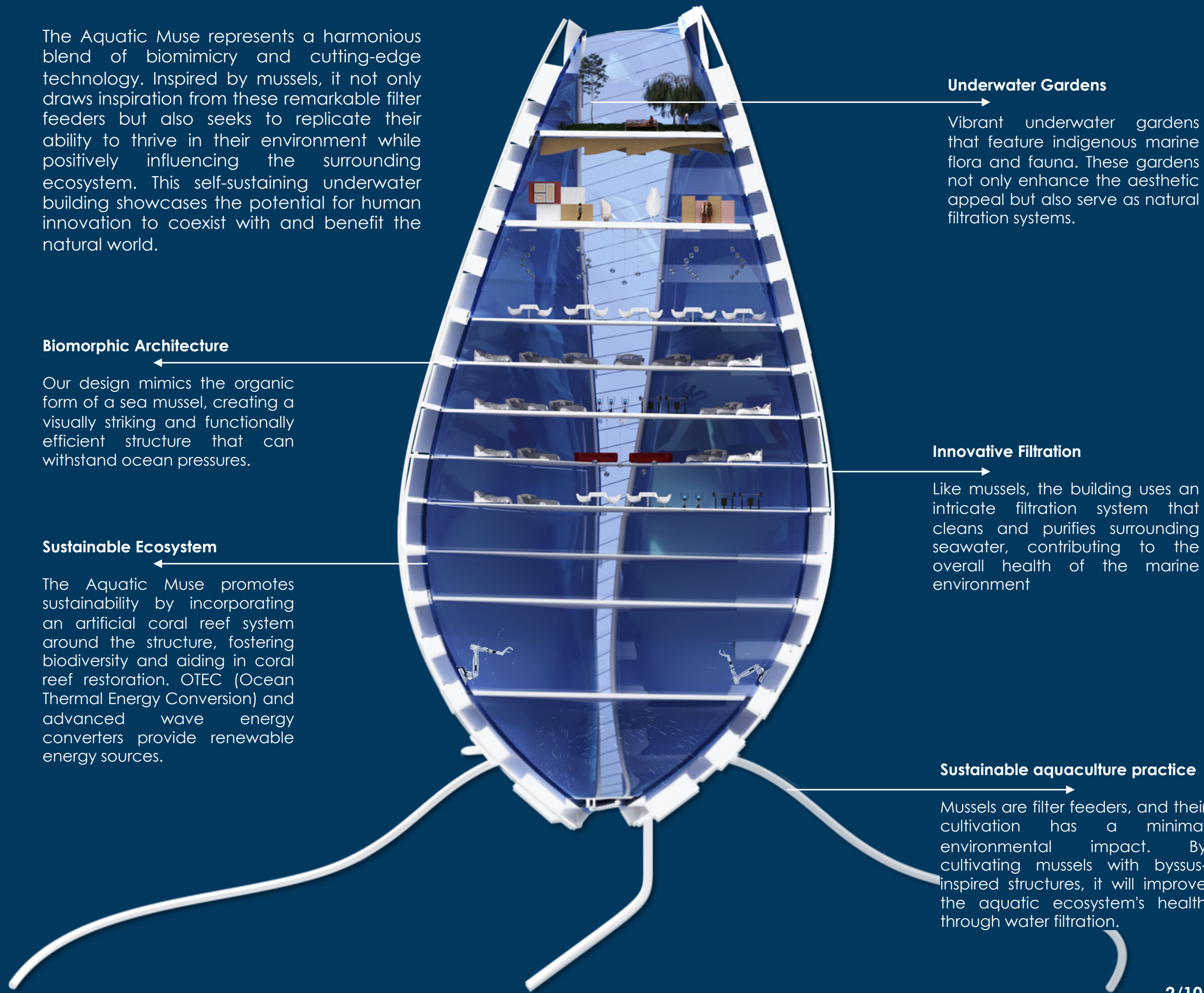
Vibrant underwater gardens that feature indigenous marine flora and fauna. These gardens not only enhance the aesthetic appeal but also serve as natural filtration systems.

## Innovative Filtration

Like mussels, the building uses an intricate filtration system that cleans and purifies surrounding seawater, contributing to the overall health of the marine environment

## Sustainable aquaculture practice

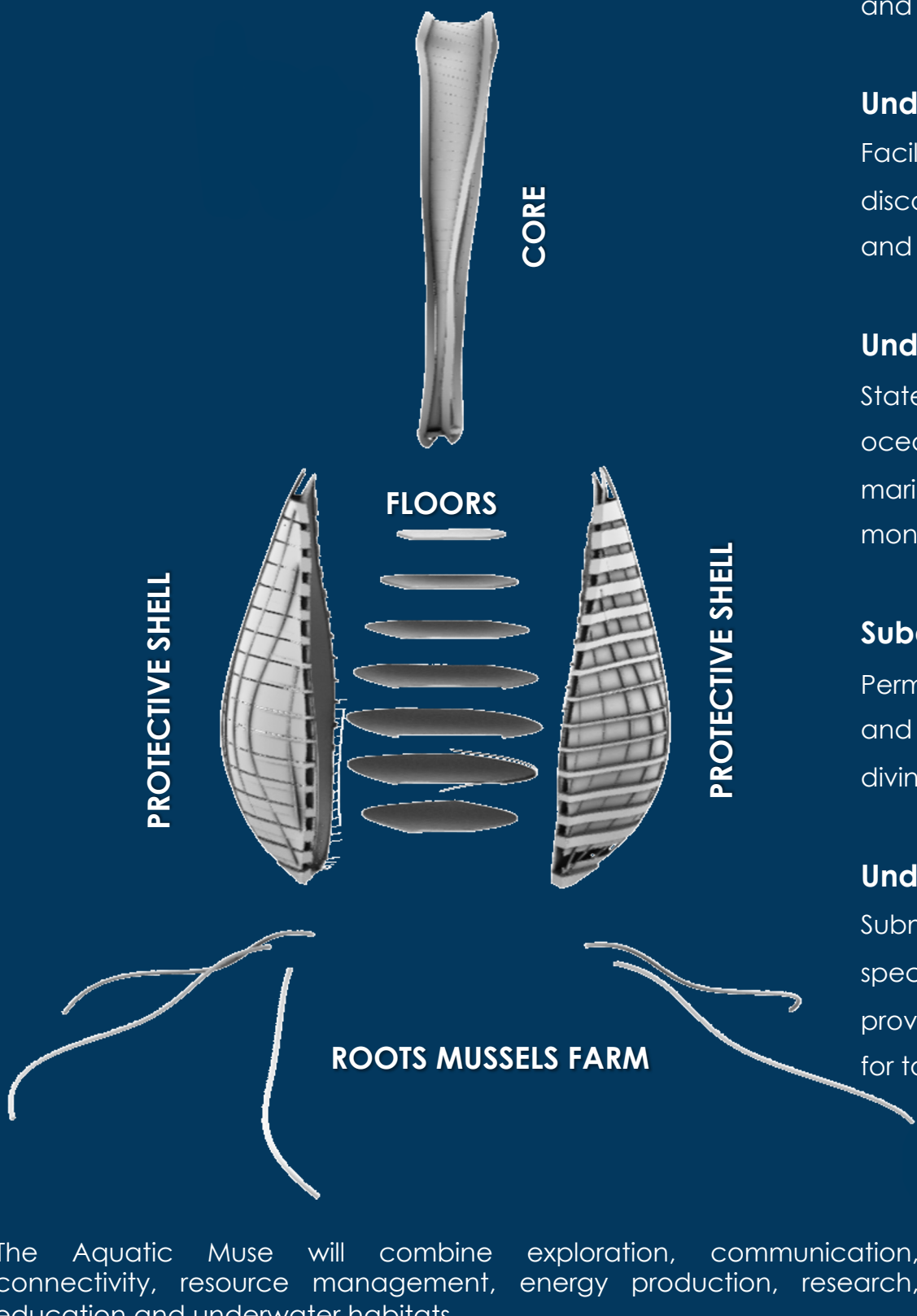
Mussels are filter feeders, and their cultivation has a minimal environmental impact. By cultivating mussels with byssus-inspired structures, it will improve the aquatic ecosystem's health through water filtration.





# THE AQUATIC MUSE: USAGE & PURPOSE

HUMAN → EXPLORATION → RESEARCH → PRODUCTION



## Marine Farms

Aquaculture facilities raising mussel's organisms for sustainable food production and water filtering.

## Underwater Launch Bases

Facilities for launching submarine to discover the depth of the ocean, explore and facilitate research.

## Underwater Research Laboratories

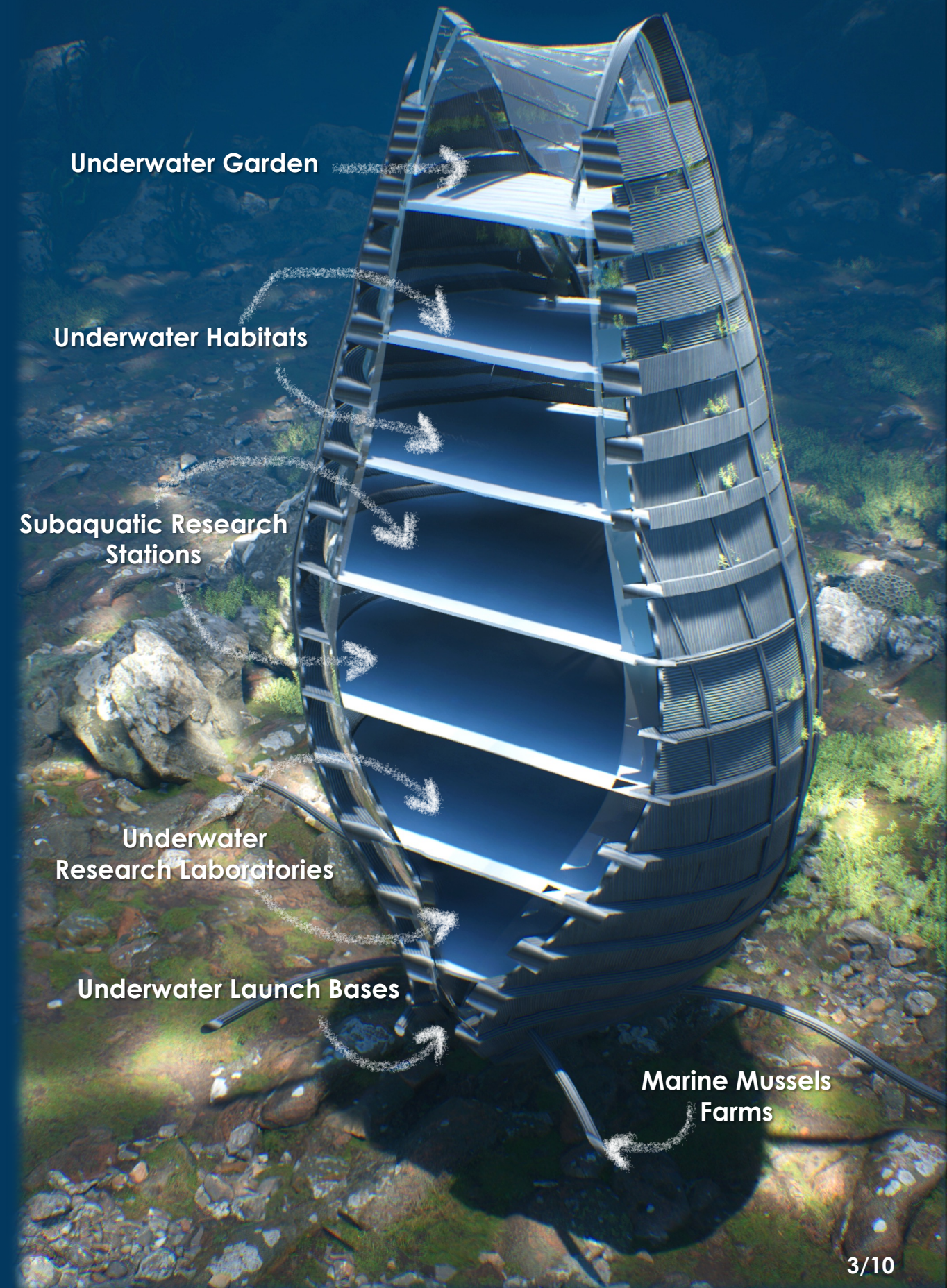
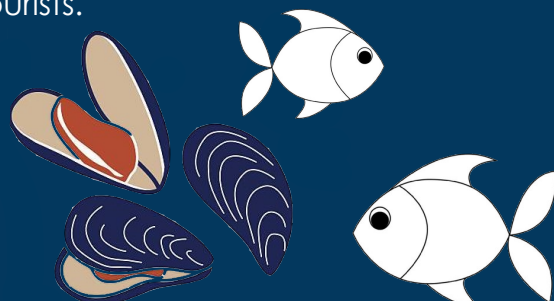
State-of-the-art facilities for oceanographic research, the study of marine biodiversity, and environmental monitoring.

## Subaquatic Research Stations

Permanent facilities for scientific research and deep-sea exploration, including deep diving.

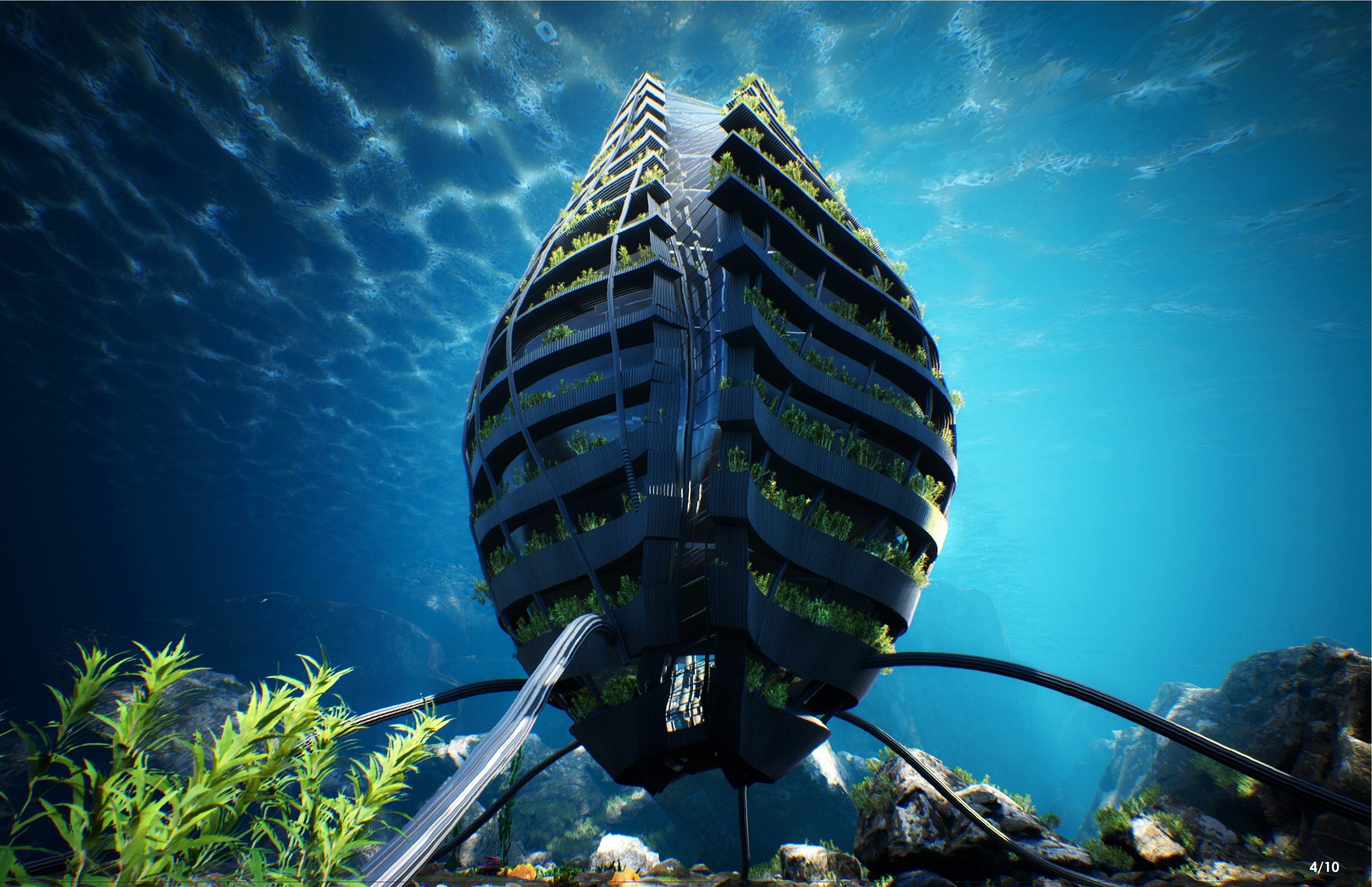
## Underwater Habitats

Submerged resort complexes offering spectacular views of marine life while providing comfortable accommodations for tourists.

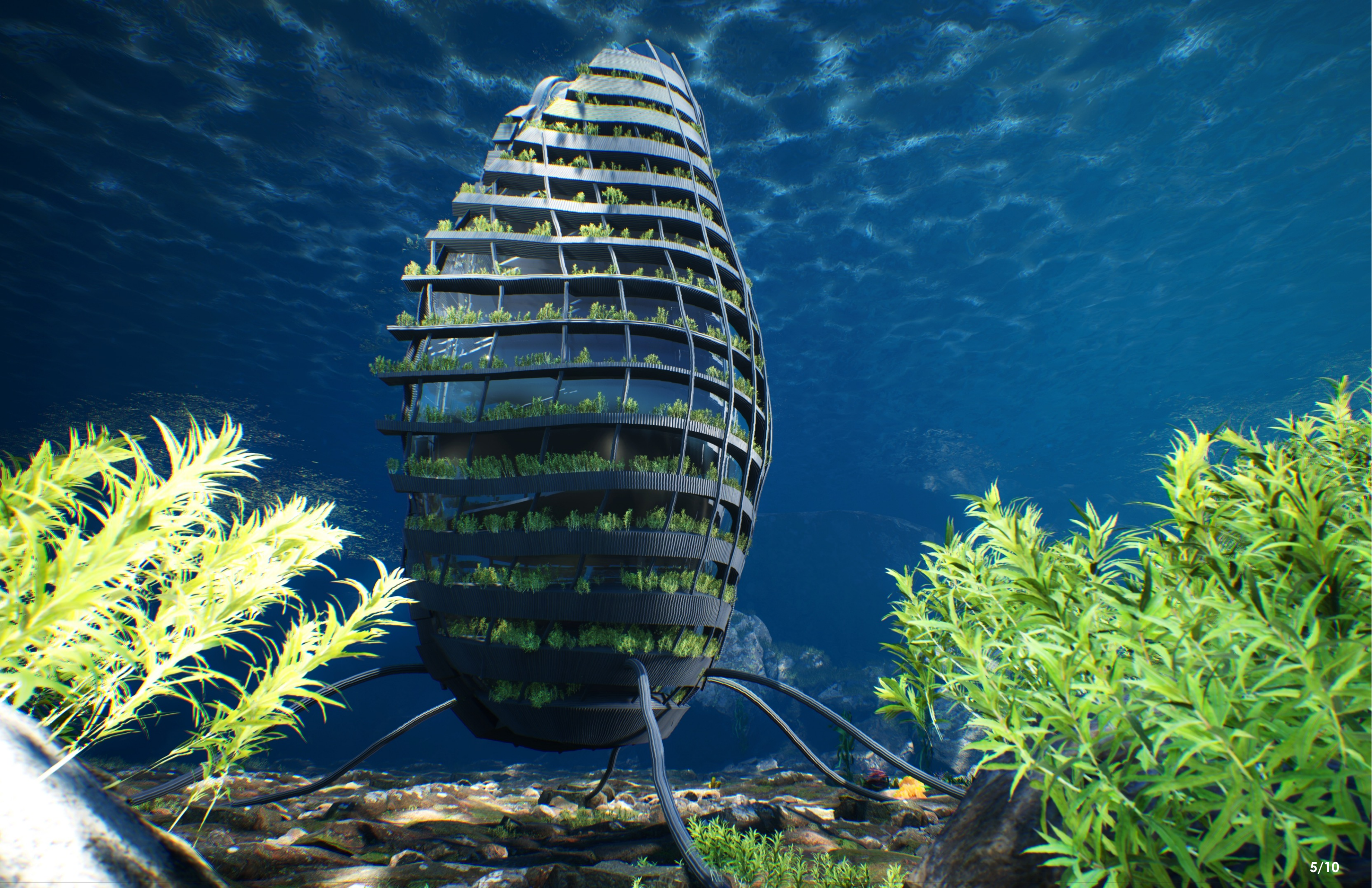


The Aquatic Muse will combine exploration, communication, connectivity, resource management, energy production, research, education and underwater habitats.





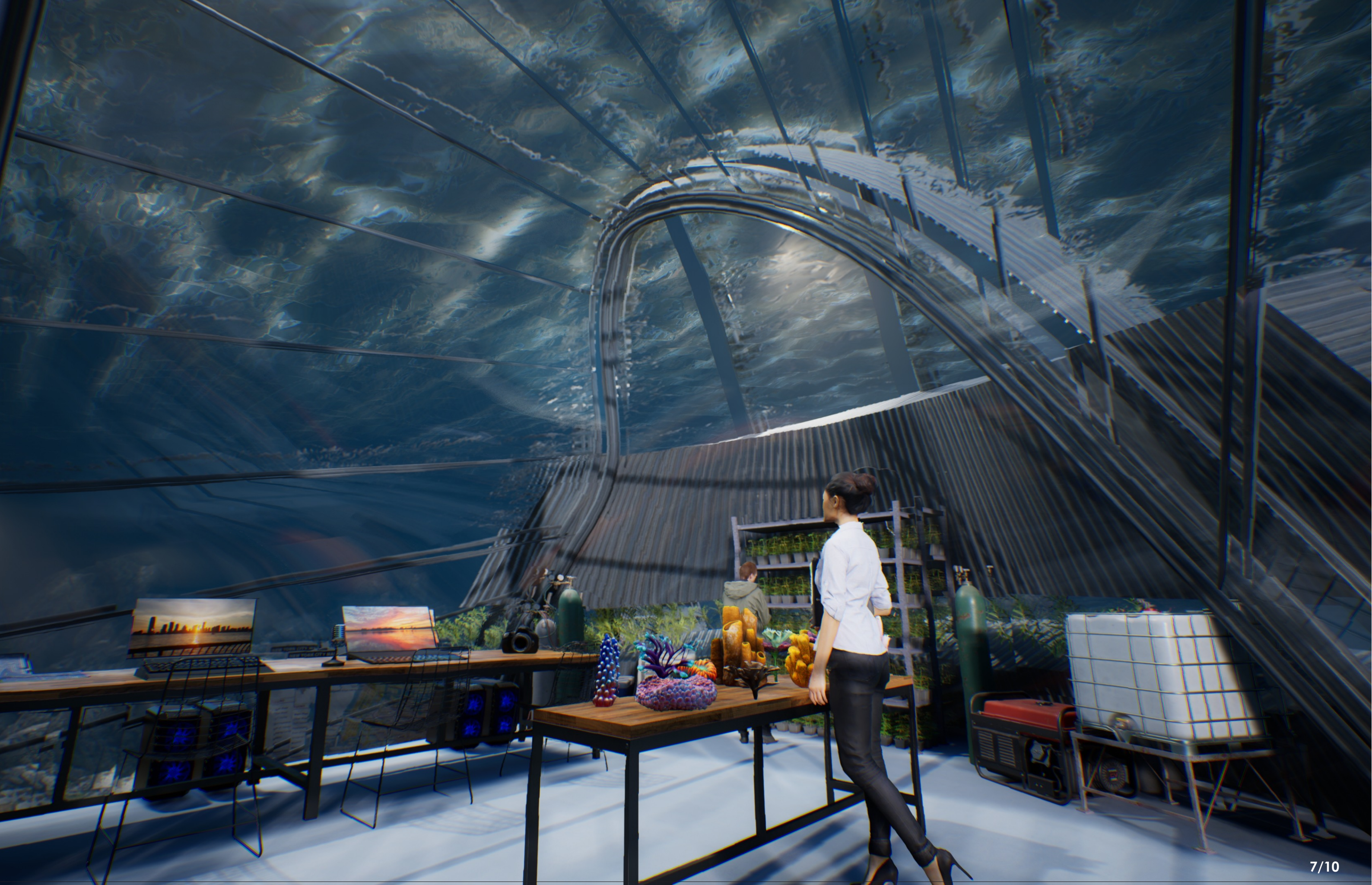




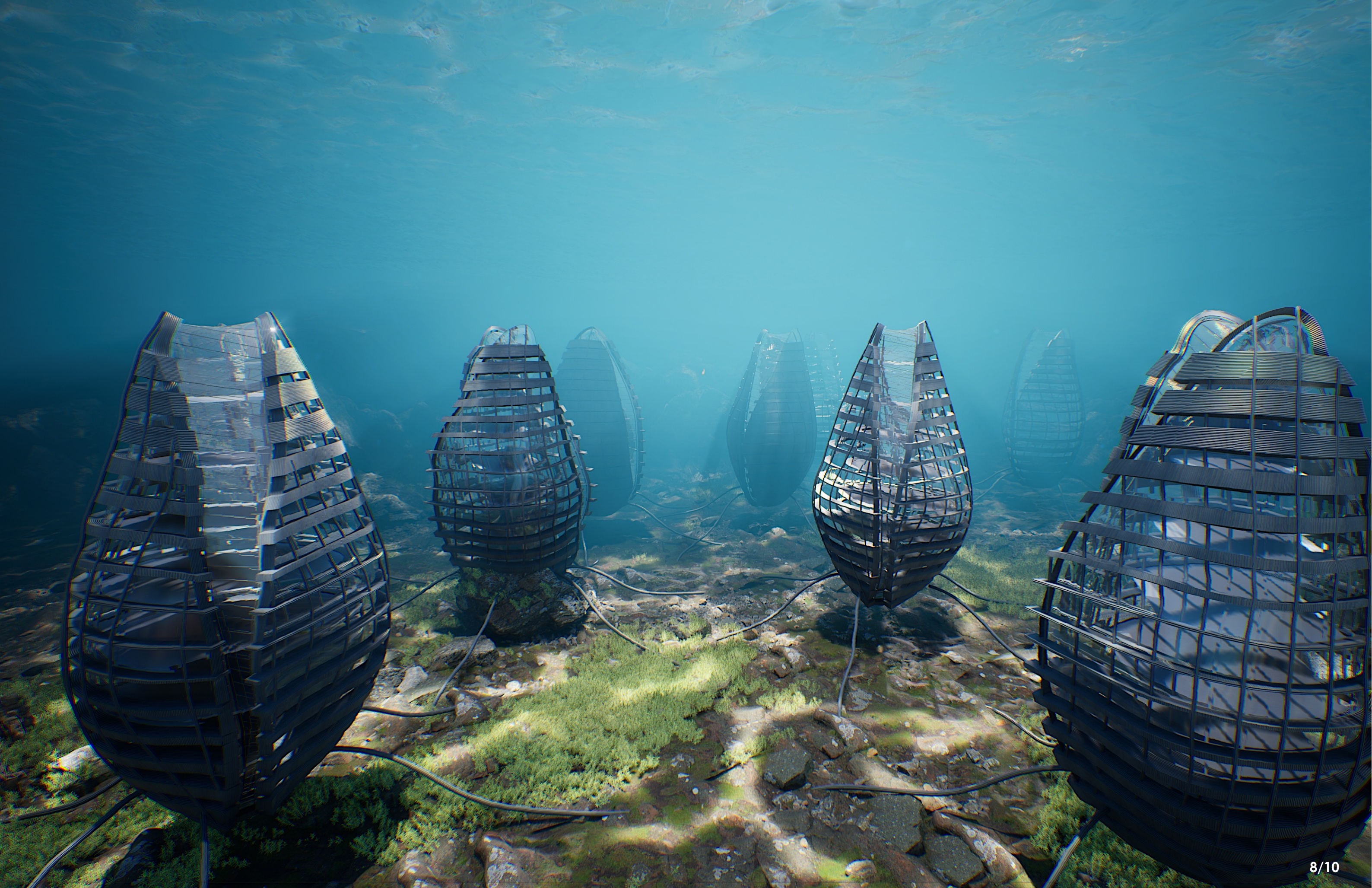














The Aquatic Muse is a revolutionary underwater complex concept that merges artistic elegance with scientific innovation. Inspired by the sea mussel's protective shell, it showcases biomorphic architecture, seamlessly blending into the marine environment while safeguarding its inhabitants.

This groundbreaking project isn't just about sustainability; it's a beacon of hope for our oceans. Its artificial coral reefs promote marine biodiversity, aiding in coral restoration, and its renewable energy sources symbolize a commitment to eco-consciousness.

Within The Aquatic Muse, residents and visitors are treated to surreal underwater gardens teeming with indigenous marine life, creating an enchanting and educational experience. It's not just a place to live; it's a place to discover, learn, and connect.

Beyond aesthetics, it serves as a research hub, catalyzing marine science and climate change studies. State-of-the-art communication ensures connectivity, bridging the underwater world with the surface.

The Aquatic Muse is a movement towards a more harmonious coexistence with our oceans. It encapsulates innovation, sustainability, and the boundless spirit of exploration. It's not just a project; it's a legacy for the future of underwater architecture.





## Books

"The Architecture of the Well-Tempered Environment" by Reyner Banham: A classic text on architectural design principles, which can provide insights into designing for extreme environments like underwater , consulted on 13/06 /2023

"Biomimicry: Innovation Inspired by Nature" by Janine M. Benyus: This book explores how nature's solutions can inspire innovative design, which aligns with our concept of mimicking the sea mussel, consulted on 24/06 /2023

"Coral Reefs: Cities Under The Sea" by Richard C. Murphy: This book delves into the world of coral reefs, which are critical to marine ecosystems, and can provide valuable insights for creating artificial coral reefs, consulted on 28/06 /2023

## Scientific journals and articles

<https://www.gsd.harvard.edu/project/2023-landscape-architecture-thesis-prize-kevin-robishaws-manatees-and-margaritas-toward-a-strange-new-paradise/>, consulted on 01/07 /2023

<https://www.cladglobal.com/architecture-design-features?codeid=33510&source=home&p=12>, consulted on 07/15/2023

<https://www.fastcompany.com/3026694/how-growing-buildings-underwater-could-fight-climate-change>, consulted on 09/08/2023

<https://www.leparisien.fr/week-end/vivre-et-travailler-sous-les-mers-02-10-2012-2197451.php>, consulted on 08/23/2023

<https://www.leparisien.fr/paris-75/rougerie-veut-construire-un-musee-sous-la-mer-26-12-2007-3291802334.php>, consulted on 02/09/2023