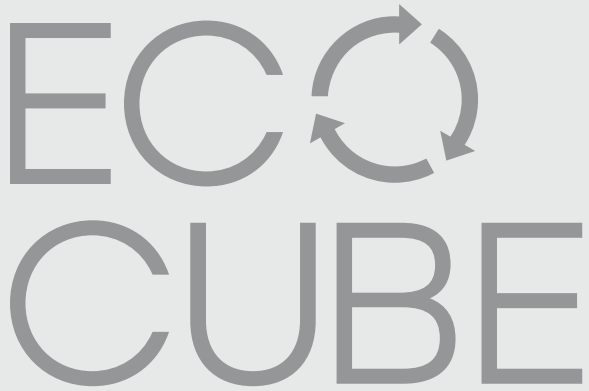
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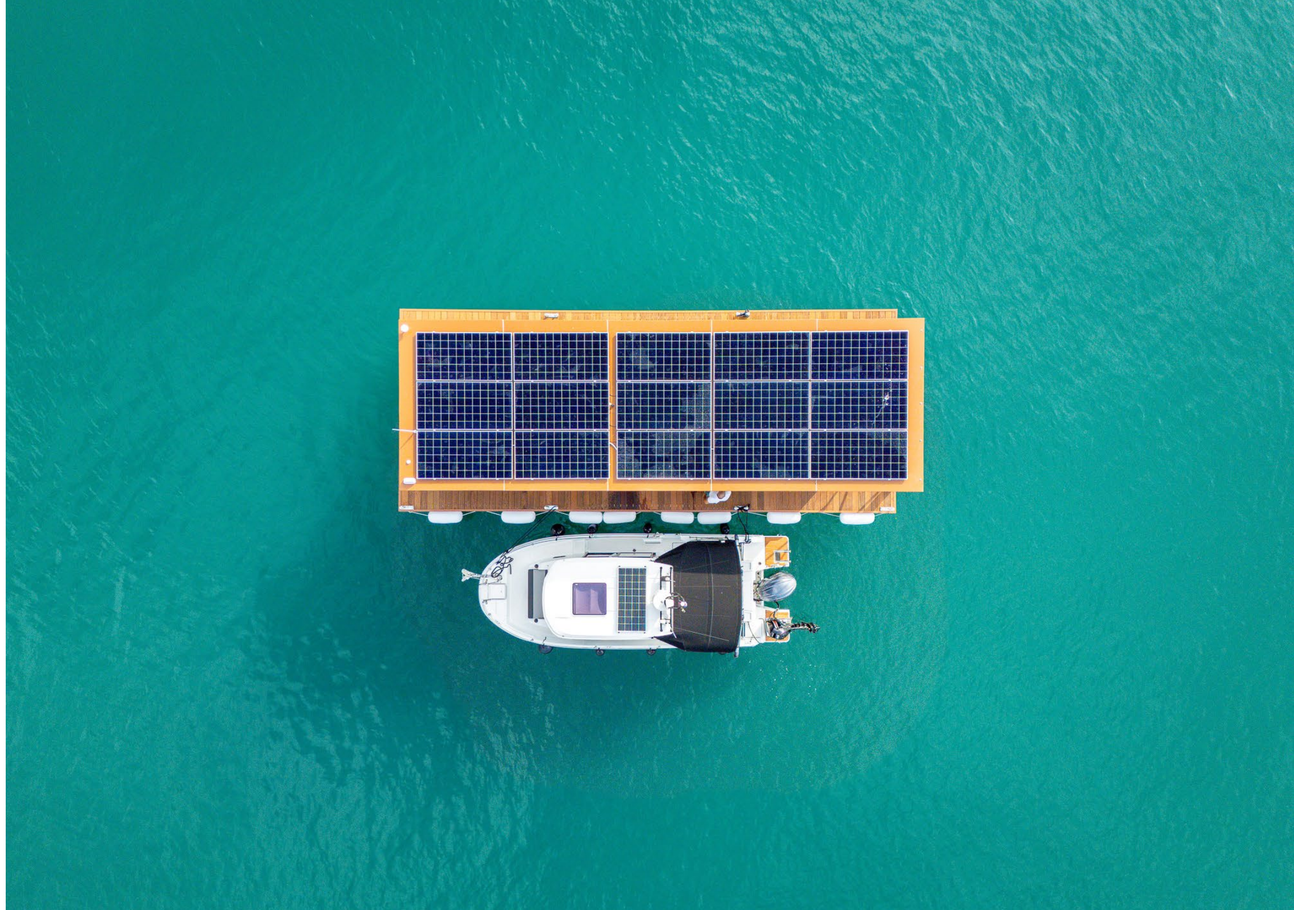
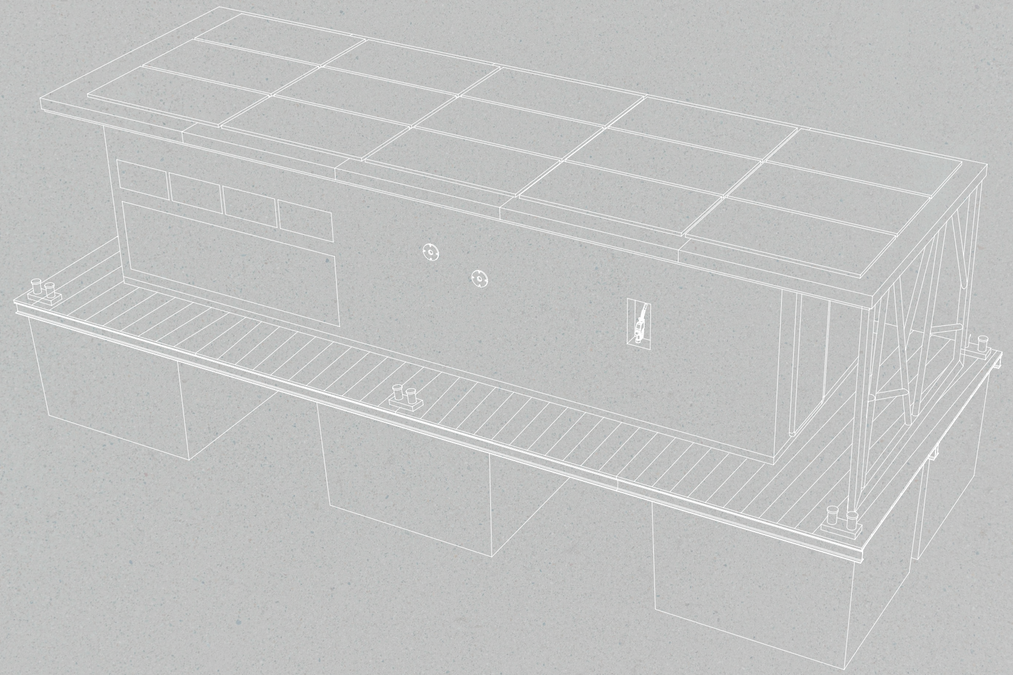




# ECOcube

ECOcube is a self-sustaining, floating waste collection system designed to service vessels efficiently and conveniently. It provides a designated space where sailors can dispose of solid waste, pump out black water, and refill their vessel with desalinated water. Unlike conventional systems that require detours, ECOcube is strategically placed along commonly used sailing routes, ensuring seamless waste disposal without interrupting maritime travel.

Designed to meet the needs of both sailors and environmental protection efforts, ECOcube operates autonomously, using solar energy and battery storage to power its functions. Its biocomposite construction ensures durability while maintaining an eco-friendly footprint. The use of natural fibers and bio-epoxy resin in the structure significantly reduces its environmental impact compared to traditional materials.


# Advantages

ECOcube is designed to make waste disposal as convenient as possible for sailors. Positioned along key sailing routes, it allows users to access waste management services without the need for detours or additional travel time. The docking process is effortless, thanks to a floating pontoon that maintains stability regardless of tidal changes.

The collection system enables the separation of different types of waste, including plastic / metal, glass, paper, and mixed waste. A high-capacity solid waste compartment ensures that all types of onboard refuse can be efficiently managed. For wastewater disposal, ECOcube features an advanced vacuum-based system that allows sailors to pump out black water with minimal effort. A simple, user-friendly interface allows users to select their desired service via a touchscreen or mobile application. In addition, vessels can refill their tanks with desalinated water directly from ECOcube's built-in reservoir, making it a comprehensive solution for waste and resource management at sea.


# Sustainability

One of the most significant advantages of ECOcube is its environmental impact. Made entirely of biocomposite materials, it is designed to be fully sustainable, ensuring minimal ecological impact. Unlike traditional collection points that rely on fuel-powered operations, ECOcube functions entirely on renewable energy sources. Its onboard solar panels generate power to maintain operations, while a battery storage system ensures continuous functionality even during periods of low sunlight.

By providing an accessible and efficient waste collection system, ECOcube actively reduces marine pollution. Instead of waste being discarded into the sea, it is collected in a controlled environment and properly disposed of at designated onshore facilities. This initiative not only prevents pollution but also raises awareness among sailors and maritime operators, encouraging more responsible waste management practices.


# Process

Sailors can easily locate the nearest ECOcube through their onboard navigation system (AIS) or mobile application. The system provides real-time information about the availability of services and the current waste collection status.

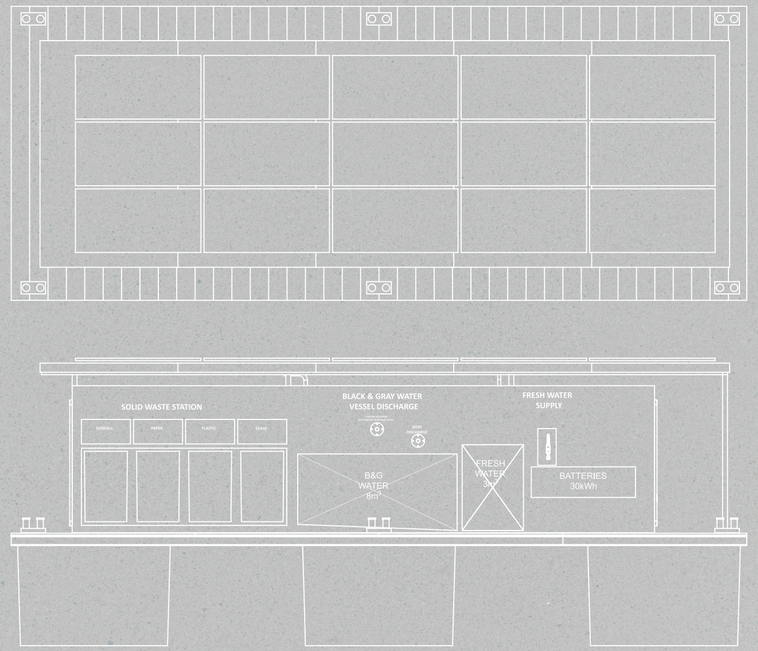
Solid waste is separated into designated compartments based on material type, with a total capacity of 6,4 $m^3$. For wastewater disposal, users connect the provided hose to their onboard system, activating the vacuum system to extract black water directly into ECOcube's secure storage tanks.

Sailors can connect their water tank to ECOcube's desalination system, which provides a continuous supply of fresh water. All services can be accessed via a digital interface, where users can select their preferred option and process payments through a contactless system.


# Monitoring

ECOcube is equipped with an advanced monitoring and control system to ensure efficient operation and real-time data collection. A built-in GPRS module allows seamless communication between the collection station and service providers, ensuring that waste levels, battery status, and operational conditions are constantly monitored. In addition, environmental sensors track changes in water quality and other ecological parameters, providing valuable data for sustainability efforts.

Each ECOcube unit is equipped with a video surveillance system for security, as well as a Wi-Fi module for direct user interaction. When necessary, service providers receive automated notifications about waste levels, enabling timely collection and maintenance. This automated system reduces the need for manual oversight, making ECOcube a truly autonomous solution for waste management at sea.




# Specification

ECOcube is available in different sizes, with modular surface designs ranging from 6 x 2.5 meters to 12 x 5 meters, depending on user needs. The unit features an 8,000-liter black water tank, a 4,000-liter desalinated water tank capable of producing 120 liters of fresh water per hour, and eight solid waste containers, each with a capacity of 800 liters.

For easy locating, ECOcube is equipped with an AIS transponder, while additional environmental and battery condition sensors ensure optimal performance. The built-in energy system, consisting of 30 kWh battery packs and 7 kW photovoltaic panels, guarantees continuous and sustainable operation.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