

The Living Thread

The modules are designed with sloped roofs that can hold up to 9 solar panels (1.6m x 1.2m). To store excess electricity generated during peak daytime hours, 7 x 28kWh batteries will be installed. Storage capacity can be adapted depending on the modular needs of the buildings. The batteries will charge over an 8–10-hour period and discharge energy to meet the demand during early morning and evening hours.

Additional generation capacity has been added to power 24/7 cold storage. During peak solar generating hours, the village can use excess electricity for tool charging and water treatment over an 8-hour window.

Electricity



PV panels

Quantity: 9 panels (1.6m x 1.2m) per roof, 23 solar roofs

Capacity: 400W capacity per panel, 3.6kWh per roof, Total capacity 83kWh
144,509 kWh of electricity annually



Batteries

Quantity: 7 batteries

Capacity: 28kWh per battery, storage capacity 200kWh, charging time of 8-10h



Cold Storage

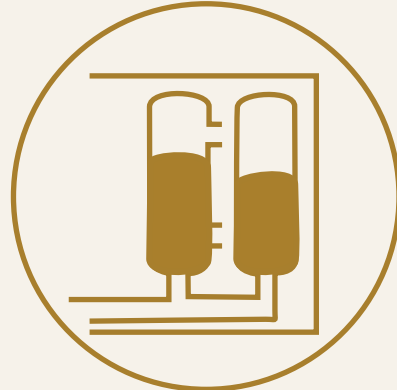
Water



Water Collection tanks

Quantity: 3x 15m³ rainwater harvesting tanks, 2x 20m³ collection tanks

Capacity: 20m³ per tank



Water treatment plant

Capacity: processing capacity: 5m³ of water per hour, 40m³ per day

Energy consumption: approx. 3kWh per cubic meter



Treated water tanks

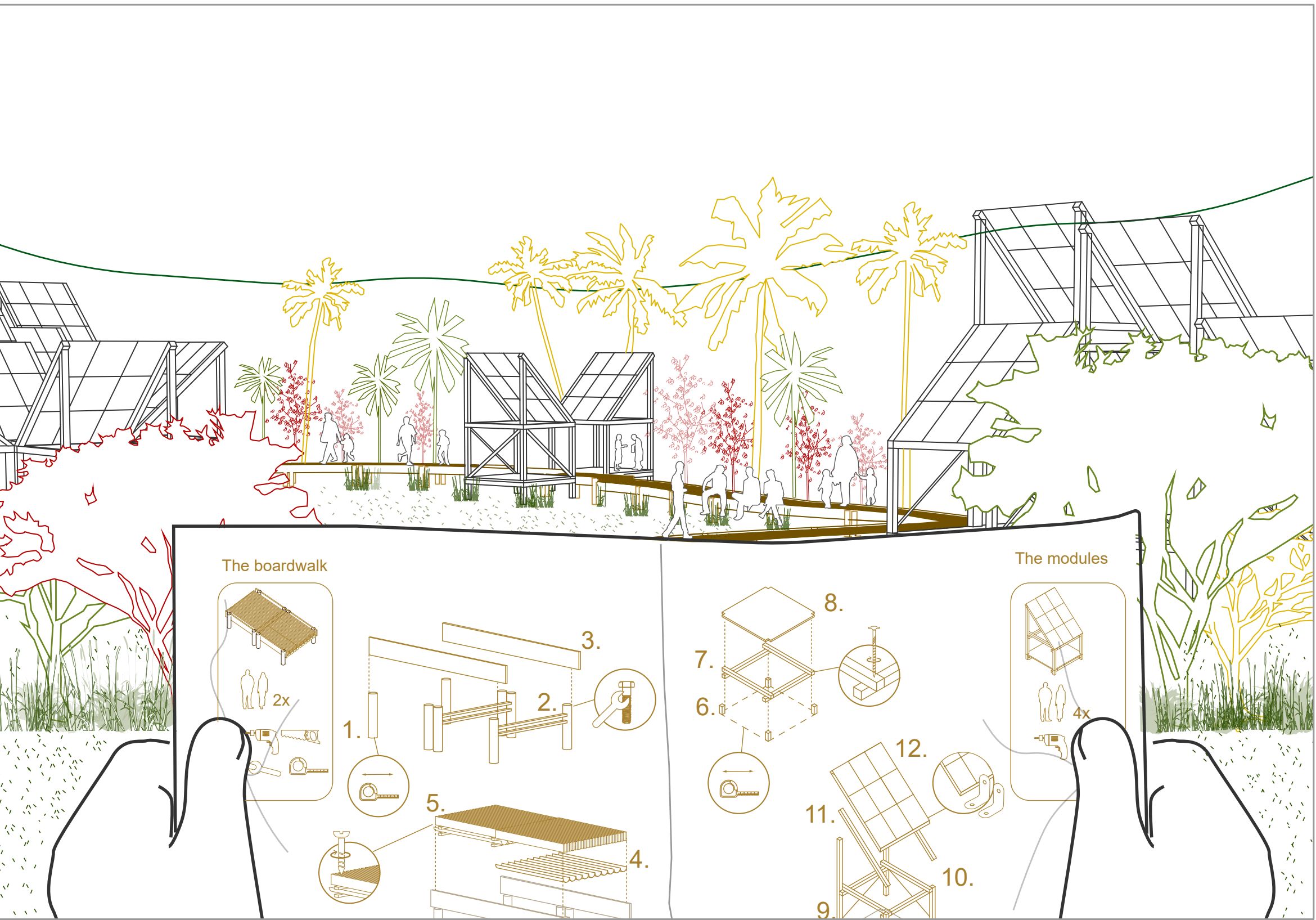
Quantity: 2x collection tanks

Capacity: 20m³ per tank

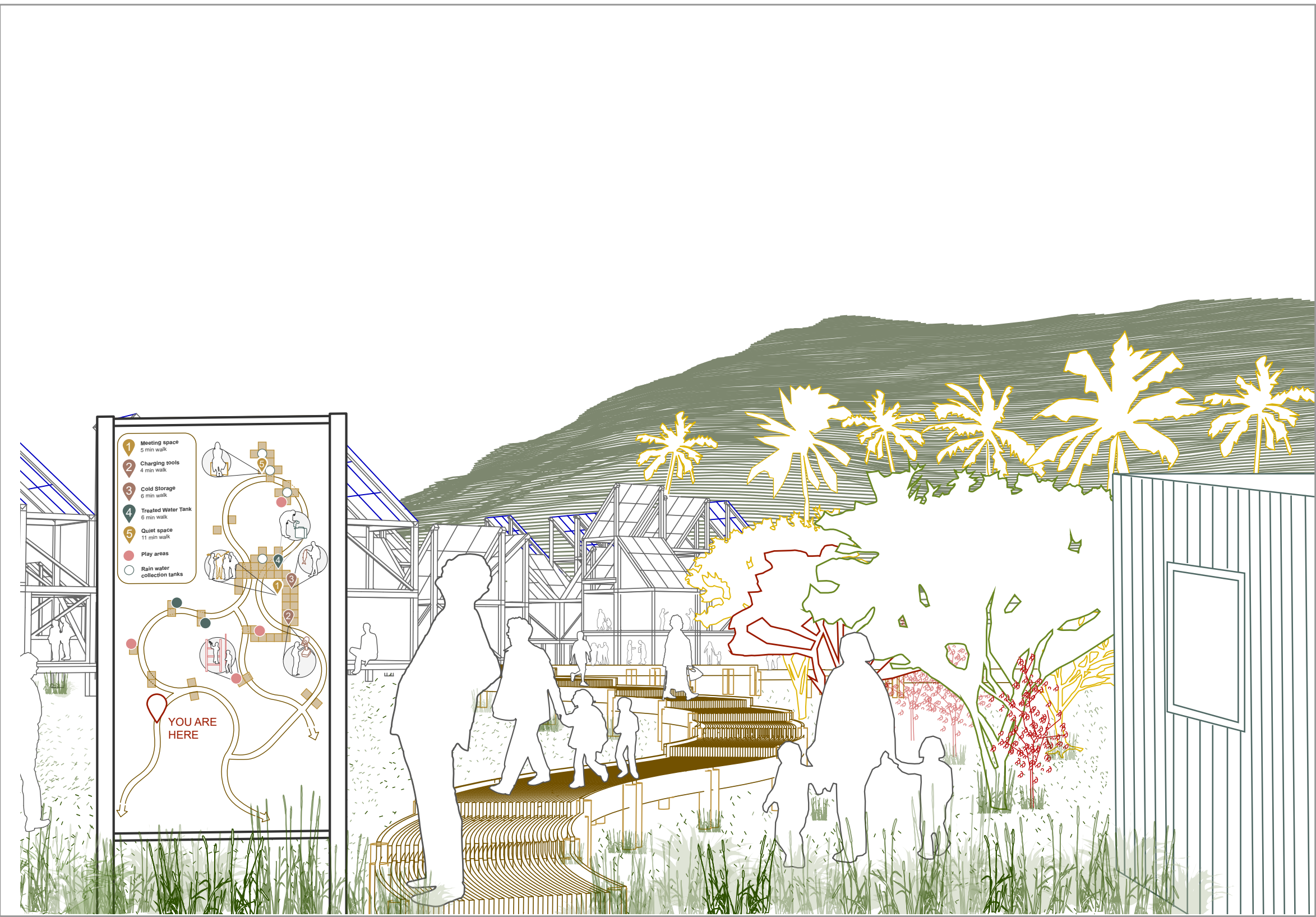
At the Northwest of the site, the modules have been designed to function as rainwater collection towers. Rainwater runoff will be collected in the centre of four modules, where it will flow into three 20m³ collection tanks.

A water treatment facility will be situated between the rainwater storage tanks and the main building, connected by the boardwalk. The water treatment plant will include ultra-filtration and reverse osmosis units, capable of processing 5m³ of water per hour.

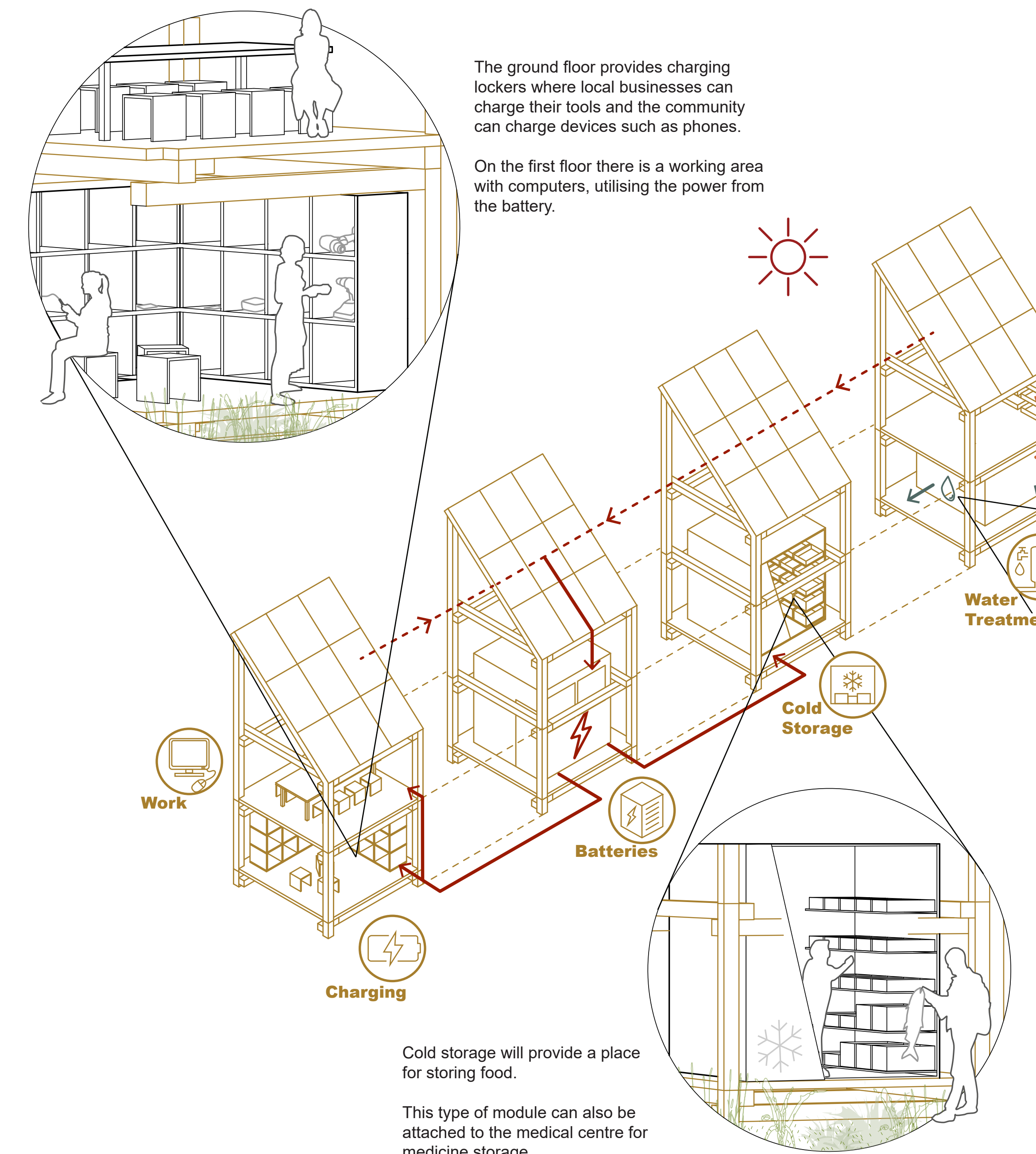
The boardwalk is integrated into the design, allowing water to flow downhill from the rainwater harvesting towers to the treatment plant and treated water storage tanks. Any overflow will be diverted to the sea to prevent erosion.



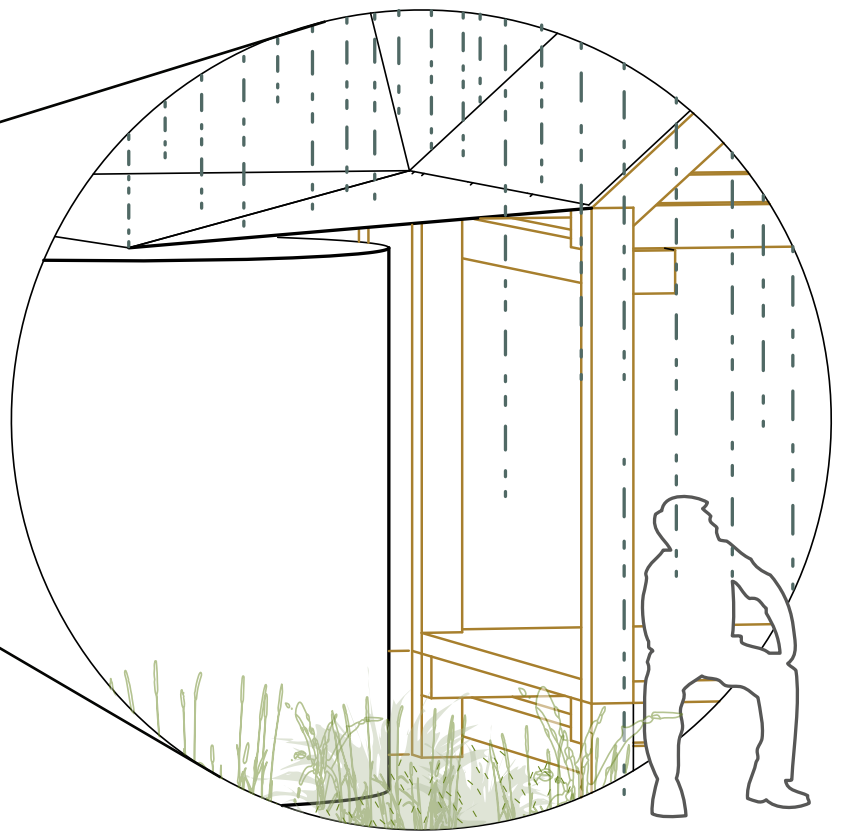
View E: How to Build



View F: How to Use



Linking modules so input and output can be fully utilised, creates a social, technical and ecological circular ecosystem.



At the centre of four modules is a water tank. The water is collected from the roofs and transported to the water treatment plan.

The modules surrounding the water tank provide space for relaxation, contemplation and shelter from rain or sun.

The ground floor houses a water treatment plant. The community can get clean water here.

The first floor offers space for agriculture/aquaponics using the nutrient from the water treatment process.