

1. Extension of the main walking path 2. Secondary paths to the "O" 3. Main accesses to the structure 4. Covered space under the canopy

6. Insulated room for battery storage and inverters (15sqm) 7. Enclosed rooms for flexibel use / storage

8. Underground modular water tanks



Producing 150MWh per year with a modular and reliable system



Standard Monocrystalline Panel

To guarantee durability, efficiency and easy mountability, the project proposes the use of standard dimension monocrystalline full-black panels. LG NeOn H Black has been used as reference. 120 cells, 370 W.



A Circular Solar Canopy

The solar panels are placed along the canopy in three lines, with a 19° tilt to maximise sun exposure across the year. Since not all the panels are perfectly aligned to north, this layout has an efficiency of 76-78%.

PANEL DIMENSION	MODULES	TOTAL AREA m2	PANEL CAPACITY W/m2	TOTAL CAPACITY	SYSTEM EFFICIENCY %	TOTAL CAPACITY Efficiency Adjusted - kW	ANNUAL OUTPUT Fiji Factor 0.21 - MWh	SOLAR OUTPUT kWh/day	BATTERY CAPACITY kWh
1768 x 1042 x 40	336	537	200	107,52	76	<u>81,72</u>	<u>150,32</u>	<u>411,84</u>	750

Water Harvesting

Harvesting 1,2 millions liters of water and transform it into freshwater for the dry season



A Modular and Flexible Tank System To limit aesthetic disturbance and protect from temperature and climate agents, the project proposes 10 modular and durable underground water collection tanks of 10.000 liters each, with a total capacity of 100.000 l of water.



A Large Harvesting Surface

The harvesting system uses the generous 768 sqm roof as the main collection surface, with the potential to collect over 1,2 million litres per year. The continuous roof ensures easy and efficient water harvesting.

EXISTING CAPACITY	TOTAL RAINFALL mm per year	TOTAL CATCH AREA m2	HARVEST POTENTIAL	HARVEST POTENTIAL	HARVEST POTENTIAL	STORAGE TARGET		TANK NUMBER unit	
900 000	2 000	768	1 536 000	1 228 800	3 367	30	10 000	10	<u>100 000</u>

A New Social Heart

A platform for the community to use, share and customise



A Multiuse Space for the Community The design offers approximately 700 m2 of flexible and adaptable space surrounded by nature which can host a variety of activities, with will be determined by the Marou community based on their needs and desires.



Collaborative From the First Pilot

The proposed design acts as a platform for community interaction and customisation. In the first pilot phase, workshops will engage the community in defining materials, floor decorations, and additional design elements.

TOTAL SPACE AREA	COVERED AREA	NO-COVERED AREA	ENCLOSED ROOMS	AREA X 1 MODULE	LAND WITHIN	PEOPLE CAPACITY	PEOPLE CAPACITY	WALK TIME	WALK TIME
m2	m2	m2		m2	m2	seated	standing / event	slow pace	avarage pace
712	487	225	15 x 4	9	1 320	up to 290	up to 500	3 min	2 min



Clustering & Inverters

The panels are clustered in 18 strings of 18-19 panels to optimise energy output and reduce electrical losses by managing voltage and current efficiently, with a cost-effective, easy to maintain system.



Control Room & Battery Storage

A 15 m2 insulated room provides space for 15 batteries (120x60x50cm) of 50kWh each and 4 inverters (80x60x30cm) + DC combiner boxes and a Battery Management System. The room is mechanically and naturally ventilated.



A Compact Layout

After falling on the roof, the water is collected by two gutters that run across the roof, taken to the ground by four pluvial pipes and then connected to the tanks by underground pipes that first pass through membranes and filters.



Potential Expansion

The system can be expanded in different ways. For example by adding another row of underground tanks, or if excavation want to be limited, by integrating ground tanks in part of the circular structure.









A Platform that can Evolve

For its very modular, and regular geometry, the structure can be easily adapted and modified for specific events or seasons. More rooms or enclosed spaces can be created, as well as dedicated spaces for specific activities.

