**Na lomalagi, na qele, kei na tamata**

**The sky, the earth, and the people**

**Concept Narrative**

Na lomalagi, na qele, kei na tamata. The sky, the earth, and the people. This is more than a phrase: it is the guiding principle of our design. It reflects the Fijian understanding of life as a balance between natural forces and human community.

Our proposal brings together the energy of the magnificent Pacific sun, life giving rain originating from the ocean, Naviti’s nutrient-rich volcanic soil, the island’s precious biodiversity, and the profound natural beauty of the village of Marou – with the people of Marou, through their care, knowledge, and creativity, to complete a life giving cycle.

The installation brings these elements together into a single living system responding to the village’s need for reliable energy and potable water. It generates energy, captures water, and sustains community, all while respecting the land and the cultural stories it holds.

A central sculptural landscape, shown here in the form of the Fijian deity Degei, houses a solar array, water catchment, and water storage system. A shaded recreational zone around the catchment pond offers a communal gathering space, while three mirrored stainless-steel lightning rods function as indicators and practical safety devices as well as symbolic beacons, visibly flexing in high winds and reflecting the surrounding environment.

We have designed this in a scalable and replicable form that, with sensitivity to local site conditions, can serve not only Marou but as a prototype for other high island communities seeking climate-resilience and a de-coupling from a petrochemical economy.

**Technical Narrative**

The key elements of the installation include:

* **Natural catchment** – use of the 760,000m2 natural watershed above the site, as a water collection field, collecting approximately 1.2m litres of rainwater each year.
* **Catchment pond –** this deep pool, formed by moving earth using a lightweight digger barged to site, collects and stores approximately 1.5m litres of water at any one time with overflow directed into the existing stream system. The pond is to be waterproofed using bentonite slurry. The clean deep water and the shaded and level community space around it invites gathering and recreation. Water in the pond is naturally filtered with extensive planting of Kuta grass which is used in traditional arts and weaving. The pond can also supply immediate irrigation requirements.

Water is then channelled through a series of filters into 12 x 27,000 litre rainwater tanks providing around 320,000 litres of potable water storage for the village.

The reservoir itself serves as a passive, manually operated system, to protect the solar array during category 5 cyclone events.

* **Solar Array and cyclone protection pool** – a solar array being a ~90 kW photovoltaic system designed to convert sunlight to DC electricity and then via hybrid inverter with battery management to AC. This is to be arranged in accordance with traditional Fijian motifs. It provides around 2,000 kWh/day of electrical energy exceeding the demands of the village. During cyclones, the array is protected by being submerged in its own pool to a depth of 1.5 metres of water which can then be drained to the sea after the event. Sodium ion batteries are to be stored within secure, child safe seating structures

Submerged protection basin allows solar panels to be safely flooded during cyclones

An underground minigrid can connect to Yasawa School and the Vatu Rua cell tower.

* **Lightning rods** – Three 10 metre high grounded lightning rods are set in a triangle to protect the solar array and function as beacons informing people of the beauty of the holistic, renewable water and energy system. They are low-tech indicators of critical water and power levels – they could be linked to tsunami or seismic warning systems as well. We envisage that these will be constructed from mirrored marine grade stainless-steel tube which reflects and amplifies surrounding earth, water and sky.  Our intention is that the rods visibly flex in high winds.

**Prototyping and Pilot Implementation Statement**

Initial prototyping will primarily focus on the functionality and design of the lightning rods, alert system and solar array protection methods (flooding) as they are the key elements to the overall success of this design.

Prototyping will also ultimately be used to test water collection/filtration/storage/distribution, solar collection, energy distribution, battery storage, irrigation, and earth moving.

Once these steps have been tested, perfected, and the resiliency verified, the system can then be easily installed and implemented on the site with minimal site disturbance.

We want to work with the Marou community through various co-creation opportunities throughout all phases of this process to explore cultural narratives further and ensure their ultimate acceptance and sense of ownership.

Key Test Factors:

* **Solar Array Protection** Designing a series of conditions that facilitate the protection of solar panels, wiring, and all electronics from debris, corrosion, water damage, and lightning using water.
* **Grounding Lightning Rods**testing will be required to keep lightning away from the array, while grounding lightning strikes, and not damaging the rods themselves or any internal electronics and/or warning systems
* **Alert System** designing and perfecting a non-invasive island-wide alert system to monitor system functions/levels and warn of impending danger

**Operations and Maintenance Statement**

Our system has been designed for minimal maintenance and operational oversight, in turn requiring minimal training.

Maintenance and operation include simple cleaning and monitoring of water filters as well as opening of manually operated flood taps to protect the array when cyclones occur. Other monitoring can be remote with the lightning rod/indicators’ warning lights being clearly visible from the village.

The use of heavy-gauge marine-grade non-corrosive stainless steel will allow the markers to visibly flex and withstand decades of use and abuse (lightning strikes, cyclone winds, debris hits, etc.). Lighting and electronics will be buffered in industrial insulating gaskets, isolating them from any electrical surges during lightning strikes or storms.

Batteries will be child and tamper proof but easily accessible and serviceable, buffered with heavy-duty isolators and insulation for maximum protection.

The array itself will be protected using a series of simple taps that flood and submerge the panels with water from the adjacent catchment pond, buffering the system from any direct hit from debris, while the adjacent grounded warning marker/lightning rod (and others nearby) protect the system from any direct lightning strikes.

**Environmental Impact Assessment**

Our design philosophy is to "touch the site lightly". We have designed our system to provide for the village’s critical energy and water needs in a technically pragmatic yet culturally sensitive manner.

Earthworks will be minimal and focused on reshaping existing terrain to form the pond and site layout. Only essential materials (solar components, sodium ion batteries, and steel rods) will be imported.

Biofiltration zones, shading plants, and reforestation efforts around the installation will enhance biodiversity and water quality. Materials and lighting have been selected to avoid wildlife disruption.

The aesthetic and symbolic integration with Marou's cultural landscape fosters a sense of stewardship. Long term, we expect this project to provide measurable environmental benefit, act as a template for sustainable development, and help the region reduce dependency on fossil fuels.