The Breath of Maoui

Exterior View

Project Description

Set along the southeastern coast of Marou Village, Vanua Levu, Fiji—where the steady trade winds meet the sea—The Breath of Maoui is a living landscape that generates electricity, harvests water, and produces sound through elemental interaction. This is not just a power plant, but a regenerative public instrument that transforms sun, rain, and wind into a multi-sensory architecture.

The form is composed of six large blocks, each containing 100 modular units. These blocks are deliberately spaced to allow airflow between and within them. The wind, channeled through carefully aligned gaps and tuned bamboo flutes, creates harmonic resonance—turning the entire site into a passive, sea-wind-activated sound sculpture.

Each 2m x 2m module includes:

- 4 functional solar panels (150W each), totaling 150 kW across the site
- 4 earthen pitchers for passive cooling and rainwater collection (2,400 total)
- Bamboo wind flutes calibrated to create varying sound frequencies
- Catchment systems guiding water from panels into storage vessels

In addition to 1,000 operational solar panels, 1,400 non-functional panels are integrated as shading, aesthetic, and additional rain-collecting elements—reinforcing the project's layered performance and ethos of reuse. All materials are sourced for low embodied energy and local familiarity, including structural bamboo (Dendrocalamus asper and Bambusa vulgaris) and traditional earthenware.

The project generates more than twice the minimum required 75 kW, while simultaneously providing cooled public space, cultural resonance, and aesthetic presence. This is a system that breathes with the island: cooling in silence, singing in the wind, and glowing with captured light.

Cost Estimation

Functional Solar Panels (1,000 units × 150W):
$200,000
→ These panels form the core of the energy system, generating 150 kW total — double the required capacity — to ensure long-term energy resilience for the community.

Non-operational Solar Panels (1,400 units):
$56,000
→ Repurposed panels are used as shading devices, rain catchment surfaces, and aesthetic cladding. They reduce waste while reinforcing modularity and visual unity.

Earthen Pitchers (2,400 units):
$240,000
→ These locally-crafted vessels collect rainwater and cool the air through evaporative processes, acting as both climate infrastructure and cultural reference points.

Bamboo Structure:
$90,000
→ The primary framework that supports all modular components. Made from Dendrocalamus asper and Bambusa vulgaris, it balances strength, lightness, and low embodied energy.

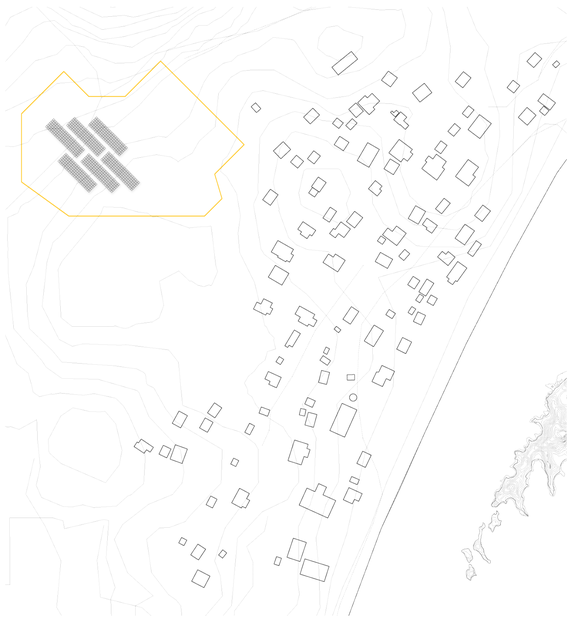
Bamboo Pipes:
$12,000
→ Wind-activated sound pipes integrated into each module. These create a passive musical layer, turning airflow into acoustic experience.

Inverter, Wiring, and System Setup:
$350,000
→ Covers all technical infrastructure required to convert, store, and distribute solar energy throughout the system and into the community grid.

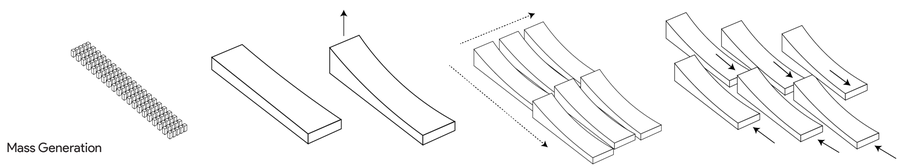
Installation:
$300,000
→ Includes labor, site preparation, material transportation, and local assembly. Designed to prioritize community involvement and knowledge transfer.

Contingency Reserve:
$100,000
→ Budget buffer for unforeseen costs, maintenance planning, or prototype refinement.

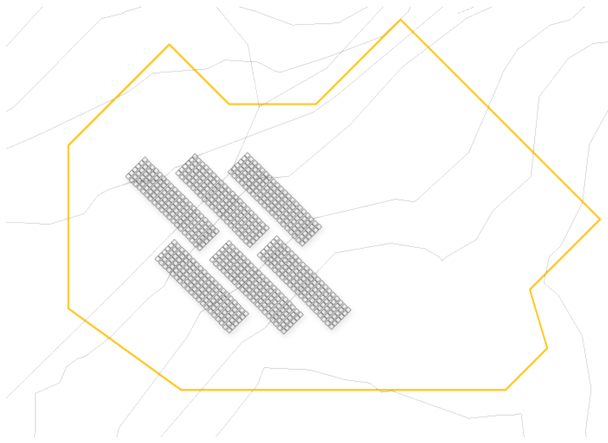
Total Estimated Cost: $1,348,000 USD



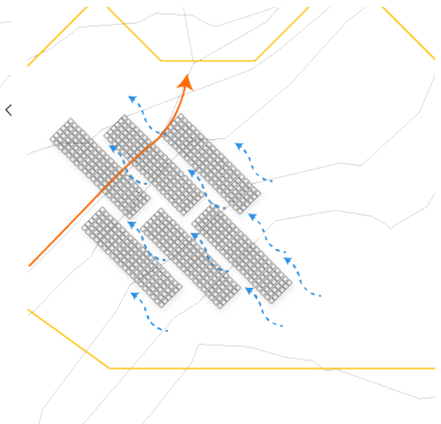
Site Plan - at Macro Scale



Mass Generation



Plan with Boundary



Wind Flow and Circulation