**LAGI 2025 FIJI DESIGN NARRATIVE: The Breath of Maoui**

**1. Conceptual Narrative**

The Breath of Maoui is a poetic and performative energy landscape located on the southeastern edge of Marou Village, Vanua Levu. The design transforms elemental forces—sunlight, wind, and rain—into a regenerative infrastructure that produces energy, harvests water, and activates sound. Structured as six large blocks of 100 modular units each, the arrangement invites airflow between and within the forms, turning the entire site into a breathing, musical organism.

Each 2m x 2m module is inspired by traditional basket weave patterns found across the Pacific and South Asia. This form offers both cultural symbolism and material efficiency. The structure is built from locally available bamboo (Dendrocalamus asper and Bambusa vulgaris), with Gigantochloa apus used for acoustically tuned flutes. The canopy integrates 1,000 operational 150W solar panels and 1,400 reused non-functional panels for shading and rain catchment. Earthen pitchers beneath the panels store rainwater and cool air through evaporative action.

Visitors move through shaded corridors under a humming canopy, cooled by wind and mist, and immersed in the subtle music of wind-activated bamboo flutes. The installation doubles as a shaded public gathering space, a community water-cooling system, and a solar energy generator. It invites ritual, learning, and play, making energy and ecology both visible and visceral.

Co-benefits include shaded microclimates, acoustic heritage preservation, community empowerment through local materials and skills, and the promotion of shared land use as performance, utility, and social infrastructure.

**2. Technical Narrative**

The system incorporates three primary technologies:

* **Photovoltaic solar panels (150W each)** to generate 150 kW of clean energy.
* **Rainwater harvesting via tilted panels and gravity-fed bamboo channels.**
* **Acoustic wind flutes** tuned to frequencies between 262–784 Hz for passive sound generation.

Each module includes four PV panels, producing 1 kW. With 1,000 such modules, the installation generates ~547,500 kWh annually, based on Fiji’s average solar yield. Rainwater collection is facilitated by the panel tilt angle and gutter design, feeding into 2,400 earthen pitchers with a total storage potential of ~240,000 liters.

System inputs: solar radiation, rainwater, and wind. System outputs: electricity, stored water, passive cooling, and sound.

All panels are mounted on a woven bamboo grid, with reinforced joints and corrosion-resistant lashings. The reused panels serve aesthetic, shading, and collection purposes, ensuring nothing goes to waste.

**3. Prototyping and Pilot Implementation Statement**

We plan to begin with a 1:1 scale pilot prototype of a single module in partnership with a local vocational institute and bamboo craft network. This prototype will test solar angle optimization, rainwater collection efficiency, flute resonance, and the bamboo joint system.

Full-scale implementation will include a phased rollout starting with one block (100 modules). We will collaborate with the local community in both fabrication and assembly, training local artisans and laborers. Construction workshops will also serve as educational and engagement opportunities, ensuring co-ownership of the process and outcome.

**4. Operations and Maintenance Statement**

The system is designed for **low-tech, community-managed maintenance** using accessible materials and modular construction logic. Bamboo components can be replaced without dismantling the full structure. Solar panels are modular and serviced via a ladder-access grid.

Local community members will be trained to maintain:

* Solar wiring and inverter systems
* Pitcher cleaning and seasonal rotation
* Bamboo joint inspections and replacement
* Sound pipe tuning and clearing

A local maintenance cooperative will be proposed, funded partially by energy savings and community-led tours or events hosted on-site.

**5. Environmental Impact Assessment**

The structure is built from **biodegradable and renewable materials**, requiring minimal land grading or concrete. Bamboo, clay, and reused solar panels significantly reduce embodied carbon.

Environmental considerations include:

* **Zero soil sealing**: Modules sit on bamboo or stone footings.
* **Minimal water runoff**: All rainwater is redirected and absorbed.
* **Acoustic neutrality**: Sound levels remain within safe dB limits.
* **Biodiversity protection**: Placement avoids native tree cover and preserves bird pathways.

Mitigation steps include seasonal audits, community feedback loops, and rotating sections of the installation for soil regeneration if needed.

The Breath of Maoui exists as a gentle intervention: one that listens to the island as much as it speaks.