

## 1. Concept Narrative

**Electric Sanctuary** is a project shaped by the landscape and by the community that lives within it. It is both a place and an idea—an open-air infrastructure that produces clean energy while offering space for gathering, listening, learning, and reflection.

At its centre are **25 structures we call guardians**. They are not simply supports for solar panels, but carefully designed elements that perform multiple roles: they generate electricity, harvest and purify rainwater, filter floodwater, capture moisture from the air, and produce sound. Their vertical form and octagonal geometry make them recognizable from afar—markers of presence and care. Each guardian is a small ecosystem, built using materials found on the island: terracotta, coconut fibres, volcanic stones. These aren't choices of convenience—they reflect the knowledge and skills already present in the village.

The guardians are placed in **two concentric arcs**, forming a kind of amphitheatre. This layout isn't symbolic—it follows the logic of topography, wind, and water. During storms, the area can flood, but the structures are raised on **dry-laid stone bases** that allow water to pass through, slowly filtering it and reducing erosion. Over time, sediment builds up, new vegetation takes hold, and the land begins to change. The site evolves. It's designed to do so.

The experience of the place is **sensory and slow**. As the wind moves through vertical bamboo canes encircling each guardian, it produces soft, breath-like tones. These tubes are designed as resonant instruments, reacting to variations in wind speed and direction. Each guardian thus becomes part of a larger, harmonic field—a **living instrument** played by the weather. This approach, blending traditional architecture and aural design, creates a unique soundscape that visitors can walk through and inhabit. It is not decorative: it transforms the site into a space of **active listening**, and into a point of connection between body, wind, and land.

Rainwater is collected into **ceramic jars**, and the slow fall of water droplets creates subtle, changing melodies inside the cisterns—each one a **sound chamber** with its own voice, resonating with the amount of water it contains. One can hear a guardian's "heartbeat" simply by placing an ear to its body.

Around the installation, a **ring of vegetation** provides protection from landslides and wind, while creating a space for experimentation. Endangered native plants, construction species, and edible crops grow together. The ring functions as a **botanical garden, nursery, and teaching ground**, where techniques like **agriculture-based energy generation (Plant-e)** can be explored.

More than its technical functions, the sanctuary is a **collective project**, built with and by the community through shared workshops. It will host cultural events, educational programs, and informal moments of daily life—a place that belongs to those who live with it. This isn't a fixed

object dropped into the landscape. It's a **living structure**, one that responds to climate, honours tradition, and gives voice to the land.

## 2. Technical Narrative

The **Electric Sanctuary** is grounded in the belief that architecture, even at its most infrastructural, can serve many purposes at once—technical, ecological, social, and symbolic. At the centre of the project are the **guardians**: 25 octagonal structures, identical in form, but differentiated in function. These are not generic modules; they are **active systems**, each contributing to the life of the sanctuary and the village in different ways.

Each guardian includes a **triangular photovoltaic array**, constructed from **flexible monocrystalline panels** mounted on a foldable structure made of **reinforced vegetal fibre**, derived from coconut husks. This petal-like system folds shut during high winds, exposing only the protective backing. The design borrows from **traditional Fijian sailing technology**, blending cultural memory with passive mechanical resilience. Collectively, the guardians generate **75 kWp of solar energy**.

Power is stored in **LiFePO<sub>4</sub> batteries** housed within specific guardians, which serve as protected **energy cores**. This allows energy to be distributed across the sanctuary and into nearby village infrastructure, providing a **reliable, autonomous energy system**.

The guardians also manage **water systems**. Each captures rainfall over a **12 m<sup>2</sup> canopy**, channeling it into a **3,000-litre terracotta cistern**. These are elevated on **stone platforms**, protecting them during floods and aiding filtration. Water is passed through **ceramic filters** before being directed to a **communal cistern** via a **gravity-fed system**. Over a year, the system collects up to **750,000 litres of clean water**. Inside, the cisterns also perform an acoustic function: the slow fall of filtered droplets produces distinct resonances, which change depending on the volume of water inside—turning the cistern into a **natural instrument**, a kind of environmental gauge that can be “read” by ear.

Each guardian is also a **wind instrument**. Its vertical bamboo canes are **tuned to specific pitches**, generating sound when wind flows through them. These tones vary by cane length and diameter, creating a **harmonic voice** shaped by the climate itself. Some canes are even calibrated to emit a sharp, high-pitched tone when wind speeds exceed 60 km/h—reviving the **Davui**, the Fijian conch trumpet, as a **storm signal**. These sounds aren't meant to dominate the landscape. They're **gentle and local**, perceptible only when walking near the structures, enriching the space without overwhelming it.

To support this complexity, the sanctuary includes a **welcome centre** and **materials lab**. The former is a space for learning and exchange, with exhibitions, resources, and a small library. The latter supports local fabrication—binding fibres, tuning acoustic canes, producing ceramic filters—ensuring that every element is **repairable, adaptable, and community-built**.

A surrounding **raingarden buffer** reinforces these systems by capturing runoff and hosting experimental agroecological technologies like **Plant-e**, which generates electricity from plant-root interaction.

This is **infrastructure as culture**: a system that sings, stores, teaches, and protects.

### 3. Prototyping and Pilot Implementation Statement

The **Electric Sanctuary** is not only a design—it is a cultural program. Its construction does not begin with machines, but with questions: What does the land tell us? What materials are truly sustainable here? What practices are already alive in the community?

The **prototyping phase** is envisioned as a process of **ecological learning and calibration**. Building the first full-scale guardian will not only test structural techniques, but also allow us to refine local sourcing, understand how materials respond to the environment, and tune the sanctuary's acoustic response in relation to the site. We will listen as much as we build.

Each guardian functions as a **resonant body**, and the prototyping phase will be used to explore its full sensory potential. The vertical bamboo tubes, which produce soft, flute-like sounds when activated by the wind, will be grouped into families of four notes—low, mid-low, mid-high, and high—based on their diameter and length. Their **sonic tuning** will be informed by a **Sonic Planimetry**, co-developed with community members through field recordings and analysis of the local soundscape. This process will help us identify which natural frequencies to preserve and which to enhance, ensuring that the sanctuary's voice does not overwhelm but **harmonizes with the existing acoustic ecology**.

Similarly, the internal cisterns will be monitored for how they respond to water input—the way a drop echoes in an empty jar versus a full one. These tonal shifts will help us understand how the sanctuary can **signal environmental conditions** not only through sensors, but through **sound and intuition**. These resonances, subtle but real, offer a way to engage the senses and convey information without text or technology.

Throughout the prototype phase, we will host **open days** where residents can observe the building process, test materials, and experience the acoustic qualities of the first guardian. These early interactions will shape the **co-design of workshops** for the full-scale implementation. During this next stage, construction becomes an act of **community making**—residents will learn how to build, repair, and even retune the guardians.

The sanctuary's modularity is intentional. One guardian alone can serve a household—providing power, water, shelter, and acoustic comfort. This makes the system scalable, able to spread organically across the village over time.

Prototyping, then, is not just technical—it is relational. It's how we begin the conversation between structure, climate, sound, and community. It's a space of **listening and adjustment**, where each choice is shaped by dialogue. The Electric Sanctuary will not arrive finished—it will be **assembled piece by piece**, both physically and culturally, in rhythm with the land and those who live upon it.

## 4. Operations and Maintenance Statement

The **Electric Sanctuary** is not designed to be a finished object—it is meant to grow and evolve. From the outset, its operation and maintenance are seen not as burdens, but as **opportunities**: to build skills, create economic value, and cultivate a long-term relationship between people and place.

The sanctuary offers **clean energy, potable water, flood mitigation, acoustic comfort, and public space**, but its most enduring role may be less visible. It functions as a **platform for a sustainable, place-based economy**, rooted in local resources, hands-on knowledge, and daily practice. At its core is the idea that infrastructure should not just work—it should **teach, respond, and inspire**.

Maintenance is embedded in the community. A team of trained residents will oversee the system: cleaning solar petals, checking water quality, managing batteries, adjusting acoustic elements, and tending the gardens. These are not technicians from outside, but **guardians of the guardians**—residents who know the structures from within, and who maintain them as part of daily life.

To support this, the sanctuary includes a **maintenance school**: both a physical space and a growing body of shared expertise. Here, people learn how to **bind coconut fibre, repair ceramic filters, adjust bamboo tones, and read the clues offered by the soundscape itself**. For example, a guardian that no longer “sings” in the wind may need a simple cleaning. A cistern that echoes too deeply might be nearly empty. These are subtle forms of environmental literacy, taught not through manuals, but through experience.

The maintenance school will also serve as a **hub for experimentation and research**. Residents, students, and visiting collaborators will work on small-scale innovations: improving the durability of the folding solar petals, enhancing passive water capture, or tuning sound tubes to respond to shifting climatic conditions. Some bamboo canes will even be tuned to emit sharp

warning tones during high winds—continuing the Fijian tradition of using **sound as a form of early alert**, as once done with the Davui conch shell.

The guardians themselves are designed with **simplicity and resilience** in mind. Each part can be replaced or repaired with locally available tools and materials. Nothing is hidden or needlessly complex. This is not incidental—it is a form of design ethics, ensuring that the community has full agency over its own infrastructure.

In short, the Electric Sanctuary is a **school of maintenance**, where **tradition and innovation** meet. It invites people not just to use the system, but to become **co-authors of its evolution**. It shows that care is not a cost—it's a form of cultural continuity. To maintain the sanctuary is to keep the relationship with the land alive.

## 5. Environmental Impact Assessment

The **Electric Sanctuary** was never meant to dominate its surroundings. It was imagined as something that could grow out of the land gently, responding to it, listening to it. From the beginning, we tried to make choices that respected the place: not taking more than needed, not covering the ground with concrete, not forcing the terrain to become something it isn't.

The guardians sit lightly on the earth. Their stone foundations are set dry, without cement, so that water and air can pass through. When it rains heavily, the structures don't block or divert water—they slow it down, let it sink, and give it space to settle. Over time, this helps reduce erosion and allows the landscape to shift naturally, as it always has.

The materials used are simple and close to home: coconut fibre, terracotta, volcanic stone, bamboo. There's nothing synthetic, nothing brought from far away. If one day the sanctuary were to be taken down, it would leave behind good soil, stable ground, and a community that knows how to build lightly.

The garden that surrounds the guardians does more than decorate. It holds the slope, provides shade, cools the air, and shelters birds, insects, and small animals. Many of the plants are edible, medicinal, or endangered. They've been chosen not only for resilience, but for meaning—plants that belong here, that people already know how to use and care for.

The sanctuary quietly supports the community's ability to adapt to climate change. It produces electricity without noise or fuel. It collects and filters drinking water without pumps or pipes. It softens the force of floodwaters. And it creates shaded, breezy spaces that feel good to be in, even on the hottest days.

It also respects the sound of the island. The soft tones made by the wind through the bamboo canes, or the echo of water inside the cisterns, aren't constant or loud. They come and go. They don't compete with the natural soundscape—they add to it. These sounds shift with the weather. They tell us things, if we learn to pay attention: that a storm is coming, that a cistern is full or nearly empty. It's a way of being informed without screens or alerts—through sound, through experience.

More than anything, the sanctuary is looked after by the people who use it. It isn't managed remotely. Its health is measured in daily gestures: a cleaned panel, a fixed filter, a moment of listening. It's a place that's understood from within.

In the end, the Electric Sanctuary doesn't try to fix nature. It tries to **be part of it**, and to remind us that sometimes, the best thing we can do is stop and **listen**.