**Concept Narrative**

***Kaukauwa Power Pavilions***  is conceptually based on the matter in which energy moves and can be stored. The pavilion is an acknowledgement to Fijian culture, history, and environmental context. This multi-functional structure creates a modern amalgamation of culturally significant Fijian forms: Bure houses, Tanoa bowls, and Lapita pottery. Their unified composition results in a pavilion-like structure, acting as an outdoor hallway that mirrors the energetic movement of the community, water, sun, and spirit, charging these energies towards one main point. This ‘charging point’ is designed to be a social amphitheatre that acts as both a gathering space for the community and an outdoor resting space. The design of the structure invites water, taking advantage of the extended roof space to direct water down curtains of rain chains with cups, inspired by Lapita pottery. The main hallway is a gesture towards spiritual energy and movement by stretching the architecture of a bure house form as a grounding force for the community. The roofs connect to a series of lime-washed bowls resembling scaled-up tanoa bowls to filter water for underground storage. The libs of the bowls are reserved for solar panels, which compensates for just over the required 75 kw of energy.

[modularity] The design implies modularity, allowing for expansion to occur with its form and construction in any direction linearly. If the need for solar energy and water retention increases, the design is flexible to accommodate those needs without compromising concept, beauty, or cultural significance.

Social spaces within the hall structure and at its end and exterior, and a connection to the walking paths and agricultural fields just beyond the selected site. The main materials consist of local bamboo and timber for the construction of the main structures, lime wash for the roofing shingles, concrete footings, metal rain chains, local rock, coral or stone for pavings, and photovoltaic solar panels more specifically hantile solar roof tiles or standard 1x2 meter photovoltaic panels.

The construction of these materials and other materials meaning energy, strength or resilience, is a root to this design proposal. The translation of the word gives way to drawing connections to where strength can originate from in the fijian island nation culture.

**2. Technical Narrative**

The incorporated technologies of the proposal include the photovoltaic solar panel grids connecting to the main grid, water collection technologies, including rain chain catchment systems, limewash filtration systems, and subterranean water storage, which are elegantly woven into one composition. These technologies were chosen to work alongside one another seamlessly as a singular building technology. It completes the purpose of collecting and storing solar energy for the village, while collecting water in multiple ways for potable or agricultural water, as well as overflows to the existing channels. Resilient and endemic-based designs that resonate with structures and forms that have withstood the test of time.

By the numbers, the solar system is projected to collect between 75 and 80 KW The pavilion design reduces the need for conditioned space, so the building itself uses little to no electricity, relying on shade and wind from the southeast to cool it down. The design is also projected to collect 3,924,930 litres of water.

The structural system, connected to the foundation by an overbuilt column grid, utilizes the strength of both circular forms and hipped-roof forms. Each bowl-like structure acts to

  **3. Prototyping and Pilot Implementation Statement**

The prototyping process will begin with community engagement and critique polls on the initial designs submitted in the competition. Understanding the more intimate needs, desires, and ideas of the community can be uncovered and implemented through a variety of interactive techniques such as wish lists, mood boards, activities, and talking sessions. Making people’s needs heard is important for community engagement, and the ability to be flexible as an architect leads to a more engaged public and a building that meets their needs. Adjustment charrettes can be explored to finalize the prototyping stage of the project.

Many accessible resources are available for processing bamboo to achieve the desired forms and structures for the design. A prototype at a smaller scale or for site furniture can be precedents for the built design and construction. Additionally, we can engage the community with informational pamphlets, graphics, and readings for the installation. Moreover, processing of certain materials like limewash on porous materials for water filtration, or other design build technologies.

**4. Operations and Maintenance Statement**

The design is intended to be relatively low-maintenance post-construction. This is achieved by maintaining the building in a way that is native to the people living nearby. An important example of this type of maintenance is the reapplication of limewash on the water collection structures. In the event of weather-related damage, locals can easily replace damaged bamboo shingles. The intent is for the structure to be straightforward, so the community will feel a sense of responsibility for the space. The maintenance of walking paths prioritizes keeping herbaceous-level plants from overgrowing, removing access to paths or structure entrances. It is of similar importance that palm or woody trees are unable to inhabit a radius surrounding the design, so that solar production remains optimal. The operation and maintenance of the building are intended to be simple so that a layperson could do it, with the exception of the solar array.

 **5. Environmental Impact Assessment**

The environmental impact of the proposal is centered around several simple design principles. The use of local materials, designing for the path of the sun

[materials] Locally sourcing materials like bamboo, timber, rock, and sand for construction purposes will minimize the import of foreign materials to the island while taking advantage of local builders’ knowledge. Materials with high thermal mass, such as those used for the water collection will release trapped heat at night and cold during the day.

[sun] The proposal is carefully designed around the path of the sun. The main spine is in line with the North-South axis to allow for maximum power gains during the peak time for collection. This orientation allows for equal collection during the morning and evening. The large central form will provide shade during the day, while allowing hot air to rise to keep occupants cool.

The tanoan bowl-like forms funnel rainwater into large collection tanks, while the rain chains that form the exterior facade filter water into the ground to recharge groundwater. Captured rainwater will be stored in underground cisterns for use by the village.

Existing plant material displaced on the site for construction will be replanted in the unused space within the site boundary. The far side of the island has optimal geography for vegetation that can be used to increase forest density on the island which already conflicts with cassava and palm groves.

The proposal acts as a threshold between the human-centered village and the raw environment of the upper slopes. The project uses this opportunity to make a bold statement within this threshold, using it as a point of connection.