**The Arc of Nature**

**Concept Narrative**

Our design inspiration comes from in-depth research on the existing terrain and local cultural traditions. Through this research, we discovered that the residents of the area believe in the concept of unity between nature and humanity, emphasizing a harmonious coexistence with the natural world. The community regularly holds bonfire rituals during their religious ceremonies, reflecting a deep connection with the elemental forces of nature. Additionally, we identified that the region faces urgent challenges regarding electricity and water shortages. As such, our design not only integrates ecological and cultural elements but also proposes practical technical solutions to meet the energy and water needs of the community.

In terms of design concept, we chose a circular structure, as the circle symbolizes inclusivity and infinity, much like the embracing nature of the environment. Taking advantage of the site's highest point, we designed an elevated platform. The roof of this platform is entirely covered with solar panels, which are suspended from columns by chains. The platform's design is not only aesthetically pleasing in terms of structure but also maximizes solar energy collection to provide the required power. This platform serves as an interactive space for both visitors and local residents. Positioned at the highest point of the site, it offers spectacular views, overlooking the entire village while aligning the sightlines with both the horizon and the mountaintop.

In terms of solar configuration, we installed 180 high-efficiency 600-watt photovoltaic panels, which are capable of meeting the daily electricity needs of 67 households in the village. To ensure cost-effectiveness, we compared several suppliers and ultimately chose LONGi Solar panels, known for their high efficiency and reliability. Additionally, all building materials will be shipped from China to Fiji by sea. After cost analysis, this method of transportation was deemed the most cost-effective.

The design also takes into account the recycling of water resources. Beneath the building, we designed a sunken water pool, and at the bottom of the pool, we integrated a soil-based water circulation system. The roof's recessed design effectively collects rainwater, directing it into the pool for storage and use. Furthermore, we harness the water flow created by mountain rainfall, channeling this natural water source through pipes that connect the external water supply to the pool beneath the building. This system not only helps conserve water but also effectively utilizes the natural conditions for water replenishment and management.

In summary, this design combines local cultural elements, ecological conditions, and technological solutions to create a sustainable space that harmonizes with nature, providing the community with electricity and water. The solar power and rainwater harvesting systems ensure long-term self-sufficiency.

**Technical Narrative**

Our design integrates solar energy and rainwater harvesting systems, achieving high efficiency and sustainability, which aligns with the local community's practical needs.

**Energy Generation:**
The building's roof is equipped with a total of 180 high-efficiency 600-watt solar panels, which are expected to generate approximately 108,000 kilowatt-hours of electricity annually. These photovoltaic panels, sourced from LONGi Solar, provide sufficient power to meet the local community's needs, particularly for lighting, public area electricity, and essential equipment within the building.

**Water Resource Collection and Utilization:**
Taking advantage of the terrain and natural rainfall flow, we designed a rainwater harvesting system. The recessed design of the roof helps concentrate and collect rainwater, directing it into a sunken water pool. Beneath the pool, a soil-based water circulation system ensures the continuous supply of water. The water pool is connected to an internal pool through a pipe system, forming a closed loop that minimizes water wastage. We expect to collect approximately 150,000 liters of rainwater annually, which can be used for irrigation, cleaning, and replenishing landscape water features.

**System Inputs and Outputs:**

**System Inputs:** Sunlight (through solar photovoltaic panels), Rainwater (via roof collection and natural terrain flow)

**System Outputs:** Renewable electricity (to power the community), Rainwater (for irrigation and internal pool replenishment), Ecological Benefits (promoting local biodiversity)