DESIGN CONCEPT AND STRATEGY

Vision and Cultural Significance

The Salusalu Marou Solar Park is more than a functional system - it is a spatial metaphor for *salusalu,* cultural emblem of unity and care. Just as the garland is composed of many parts brought together in harmony, this park binds clean energy, landscape, and tradition into a meaningful whole. It serves as a model of cultural preservaton through future-facing design.

Program and Functions

Solar Energy Generation: Photovoltaic arrays to be installed provide electricity for Marou Village and Yasawa School. The system is designed for off-grid autonomy with battery storage to ensure resilience.
Water Access and Purification: Rainwater harvesting and solar-powered filtration to supply, safe potable water to the community.
Outdoor Classroom and Amphitheater: An open-air structure inspired by Fijian architecture serves as a space for gatherings, storytelling, education, and ceremony.
Walking Paths and Resting Zones: Linear gardens are woven into the circulation system for social integration and proactive community gardening for edible and decorative crops. These routes encourage quiet reflection and connection with the landscape.
Educational Elements: Interpretive signage and small solar tech demonstration zone inform visitors about renewable energy and local culture.

Site Planning and Layout

Central Weave: At the heart of the park, the energy and water infrastructure are laid out like a *salusalu* strand - linear but organic - symbolizing flow and connection.
Zoning: Technical Zone: Solar Panels and water tanks concealed with native plant buffers
Social Zone: Seating and shaded spaces, multi-function event island for hosting community celebrations, art, farmng and food exhibition, spaces for dances, rituals and educational workshops.
Eduacation Zone: Outdoor classroom and amphitheater for exhibits, presentations, performances and interactive elements with Yasawa School.

Landscape Integration

Native Plant Palette: Uses drought-tolerant and cultural significant species - such as hibiscus, pandamus, and coconut palms - to support biodiversity.
Seasonal Bloom Strategy: Plantings are selected to reflect the rhythm of the seasons, reinforcing cycles of nature and renewal.
Edible Gardens: Community plots within the linear garden strands encourage food resilience and local stewardship.

Materiality and Construction

Sustainable Materials: Locally sourced timber, bamboo, stone, concrete masonry units and recycled elements for minimal environmental impact.
Low-tech, High-Impact: Construction methods allow for local participation and long-term maintenance.

Community Engagement

Co-Design Process: Village elders, youth, and school representatives contribute to design elements and programming.
Cultural Programming: Space for dances, rituals, and educational workshops.
Capacity Building: Training in solar maintenance and gardening best practices ensures long-term stewardship.

Scalability and Replication

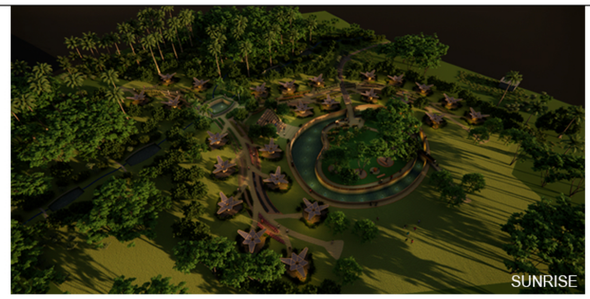
The design of the Photovoltaic-Rainwater Harvest Pod is modular and adaptable, making it possible to replicate the park's core systems in other villages. A toolkit of strategies and components (energy, water, landscape, education) supports customization across diverse island context.

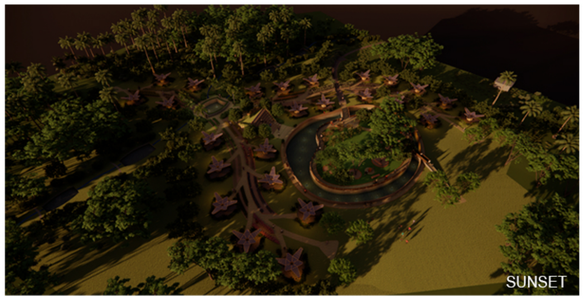
Conclusion

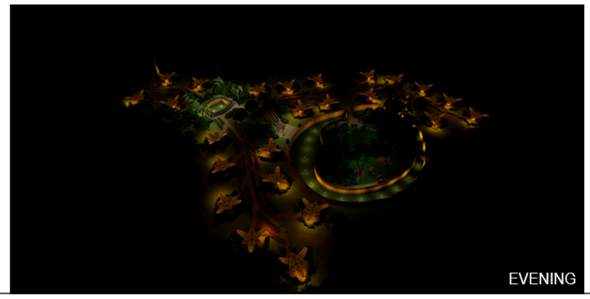
The Salusalu Marou Solar Park honors the past and powers the future. Like a *salusalu,* it encircles the community in beauty, function, and meaning - welcoming all who enter with the spirit of care, renewal, and resilience.

ZONING

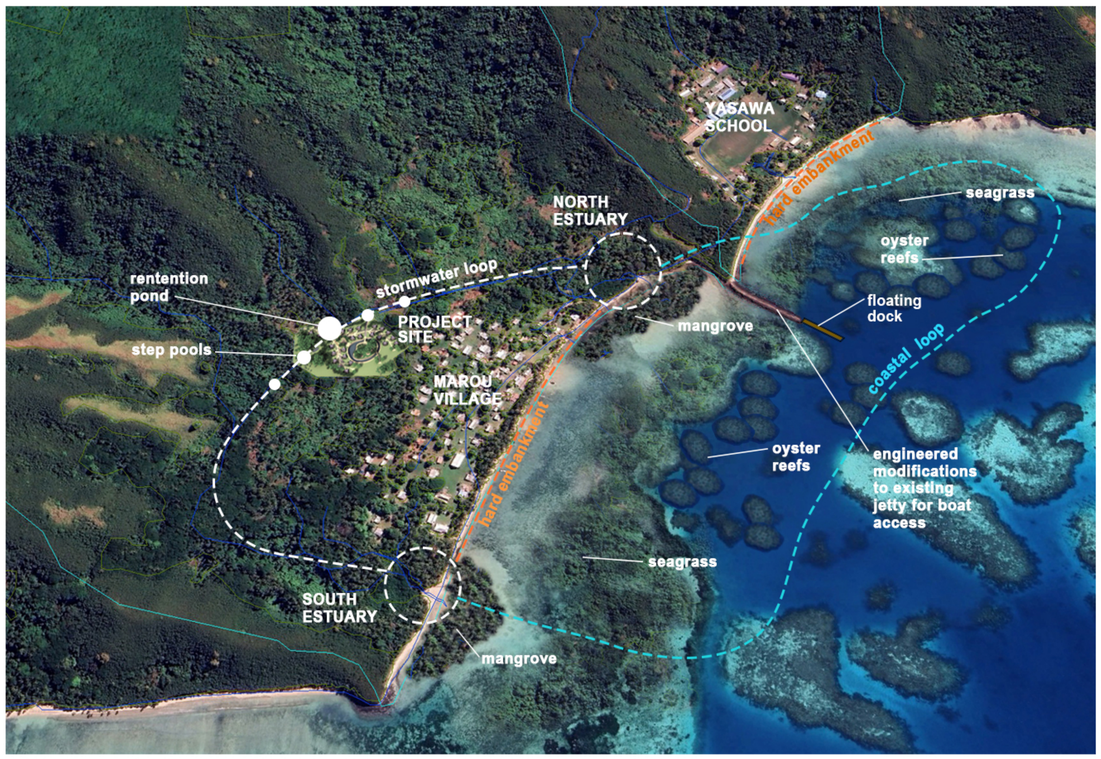
LIGHT QUALITY VARIATIONS



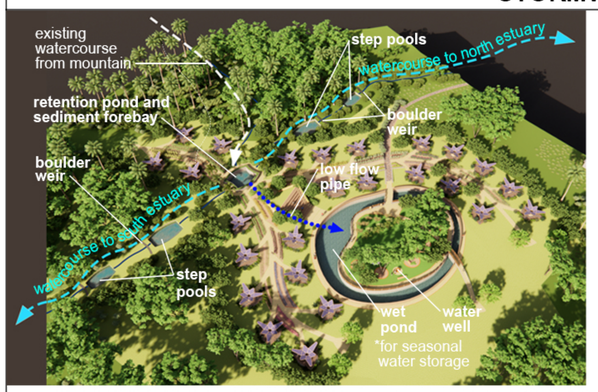




PERIMETER FLOOD MANAGEMENT SYSTEM



STORMWATER MANAGEMENT



Stormwater management is provided by utilizing a retention pond sediment forebay, step pools, boulder weirs and water reuse strategies.

Retention ponds hold a large volume of water and are designed to temporarily store stormwater runoff in a basin or pool, and release it slowly, reducing the peak flow into downstream areas. This mitigates and prevent overtopping of culverts, streams, and watercourses, which can cause flooding.

Step pools are stormwater conveyances (SPSCs), designed with a series of pools and permeable beds, similar to rain gardens and bioretention cells. This structure slows down the flow of stormwater, allowing for sediment and pollutants to settle out.

A boulder weir is a type of stream structure to create a low-profile barrier that redirects water flow. They are designed to span the width of the channel, often with a shape that imitates a natural step or arch.

The Wet Pond harvests rainwater and also receives stormwater via a low flow pipe from the retention pond. Wet ponds filter water primarily through a combination of sedimentation and biological processes. Incoming stormwater runoff enters a pool where heavier particles settle out. Plants and microorganisms in the pond take up nutrients and other pollutants, further purifying the water before being slowly released or infiltrates into the ground and aquifer.
Solar water bubblers and fountains in the pond assist in breaking the mosquito vector cycle by causing water surface disturbances that disrupts the mosquito raft habitat. Other mechanisms are available such as natural predators from aerial and aquatic animals but must be tailored for the local community.
A water well with a submersible pump and filtration system (powered by the photovoltaic system) provides potable water for distribution to the village and ancillary areas.

COASTAL RESILIENCE

OYSTER REEFS
Oyster reefs help protect coastlines from storm surges and erosion by dissipating wave energy, reducing the force of waves before reaching the shore.

MANGROVES
Mangroves reduce wave energy, prevent erosion, filters pollution runoff from upstream stormwater, and also serve as nurseries for many aquatic life.

SEAGRASS
Seagrass stabilize sediments, reduce wave action, improve water clarity and provide crucial habitats for many marine species.

HARDENED EMBANKMENTS
Hardened embankments provide storm surge protection by creating physical barriers to reduce wave action and flooding.

COIR LOGS

GEOTEXTILE BAGS