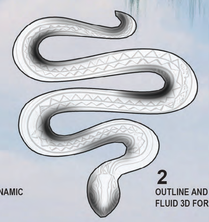
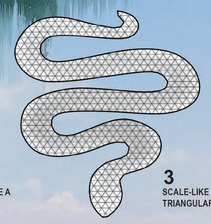
देगेई अरे DEGEI ARRAY

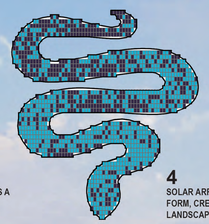
1
DEGEI'S FORM INSPIRES A DYNAMIC SOLAR ARRAY FRAMEWORK.



2
OUTLINE AND PATTERNS INSPIRE A FLUID 3D FORM



3
SCALE-LIKE GEOMETRY FORMS A TRIANGULAR LATTICE .



4
SOLAR ARRAY MERGES WITH DYNAMIC FORM, CREATING A PIXELATED LANDSCAPE.

DESIGN INTENT

The Degei Solar Array, designed for Marou Village in Fiji's Yasawa Archipelago, blends renewable energy with cultural reverence, communal function, and ecological care. Inspired by Degei, the Fijian serpent god, this timber-based solar system integrates with the coastal landscape, prioritizing ease of assembly, scalability, and sustainability. It generates clean energy, creates shaded "landscape rooms," supports agriculture via moisture runoff, and conserves water through retention ponds, forming a culturally resonant community hub. The project unfolds in two phases: Phase 1 establishes the solar array and initial water retention, while Phase 2 enhances water harvesting with damming for multiple retention ponds.

SPATIAL AND FORMAL STRATEGY

The array's sinuous, snake-like form of solar panels on modular timber frames traces Marou's slopes, optimizing solar exposure and creating shaded landscape rooms for community activities. Its scalable design reserves space for future panels.
Phase 1: Deploys initial solar panels to meet current energy needs, with agricultural strips using panel runoff to irrigate crops like taro and cassava. Single retention ponds at low points store water, lined with stone and native plants for ecological and aesthetic value.
Phase 2: Introduces damming to create multiple interconnected retention ponds, capturing more runoff for dry seasons and supporting expanded agriculture. Low-impact stone and timber dams blend with the landscape, enhancing biodiversity.

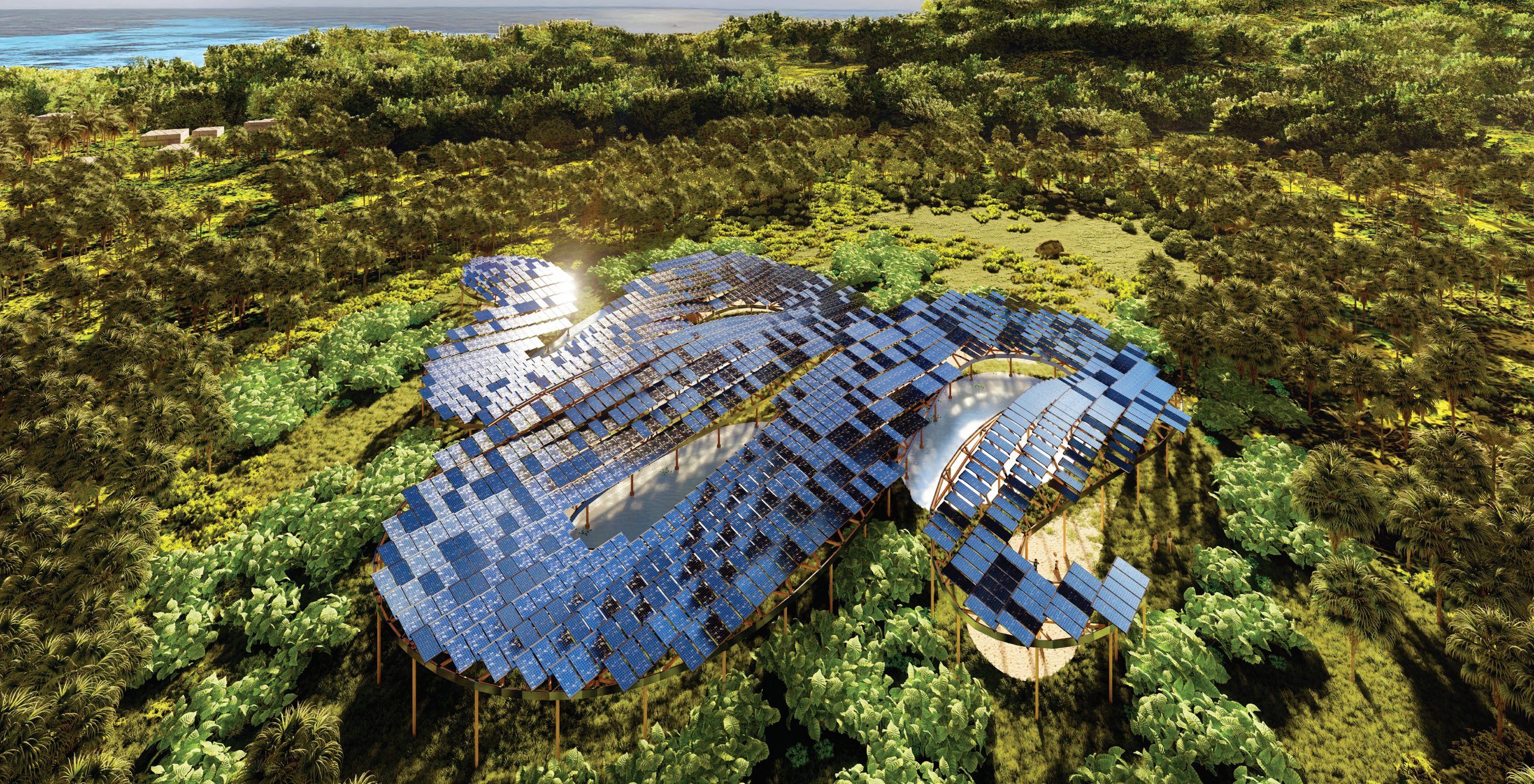
MATERIAL AND CONSTRUCTION LOGIC

Using durable Fijian hardwood, the array features prefabricated timber modules for rapid, community-led assembly. Lightweight panels on adjustable brackets optimize solar gain, with minimal concrete footings preserving soil. Phase 1 builds the core array and single ponds, while Phase 2 adds modules and dams, maintaining modularity for seamless expansion.

LANDSCAPE INTEGRATION

The array's serpentine path responds to Marou's topography, with landscape rooms enhanced by stone walls, pandanus screens, and native plants. These include:
Learning Nook: For education, with benches and storage.
Social Pocket: For rest, with seating and shade plants.
Art Corner: For crafts, with easels and worktables.
Ceremonial Pocket: For rituals, with stone paving and a fire pit.

Phase 2 adds plantings around new ponds, creating micro-ecosystems and supporting wildlife.

CULTURAL AND SYMBOLIC RESONANCE

Embodying Degei's protective spirit, the array's form is a landmark symbolizing sustainability and heritage. Phase 1 ensures energy and water security, while
Phase 2 boosts ecological resilience. Engaging local artisans, the project reflects Marou's traditions, offering a model for community-driven development in the Yasawa Archipelago.