Concept narrative

| Integration of Form, Energy, and Human InteractionThis architectural concept is structured in three interwoven layers that together form a spatial and functional system based on sustainability, interactivity, and renewable energy integration. 1. Base Layer – Swastika-Inspired Spatial OrganizationThe first layer is a ground-level structure extending up to 4.80 meters in height. Inspired by the swastika form (interpreted culturally and functionally), it defines spatial distribution, circulation paths, and sun orientation:The form ensures optimal solar orientation throughout the day.The layout promotes fluid spatial connections, inspired by Fijian spatial logic, encouraging organic movement and interaction.It acts as a grounding element, supporting the upper volume both structurally and conceptually. 2. Upper Volume – Fragmented Triangular Forms for Energy OptimizationThe upper part of the building is composed of interwoven triangular surfaces, each sloped toward a single collection point:Rainwater harvesting: All inclined triangles channel water toward a central pipe, which stores it in an underground reservoir.Solar energy collection: Solar panels are mounted on varied slopes, enabling maximum sun exposure across different times of day.Wind energy optimization: From an aerial perspective, the overall form resembles a wind turbine, with its fragmented surfaces guiding airflow directly to micro wind turbines embedded within the structure.3. Landscape – Interactive, Energy-Generating GroundThe surrounding landscape is designed not only for aesthetic and ecological balance but also as an active energy-generating system:Solar-activated grass technologies convert surface heat into usable electricity.Kinetic flooring is embedded along walkways to generate energy from pedestrian foot traffic.Indoor human-powered devices such as treadmills and stationary bikes allow users to produce energy through physical activity, feeding it back into the building's energy system. ConclusionThis project redefines architecture as a living energy-producing entity, where humans, nature, and technology form a fully integrated system. It serves as a prototype for interactive, responsive, and sustainable architecture in the context of future urban development.

Triangle:

Symbol of a Mountain or Island:

The triangle shape, especially in traditional Fijian art, can represent a mountain, volcano, or the island itself. Fiji consists of mountainous islands, and the triangle in traditional patterns can signify the stability and power of nature.

Symbol of Balance or Family:

Triangles sometimes represent important trinities such as “land, sea, sky” or “ancestors, current generation, future generation.” This shape may symbolize balance among different forces of nature or within human relationships.

Decorative Element in Traditional Masi Cloth:

Triangles and circles often appear in repeated patterns on traditional Masi cloths, used in rituals, weddings, or religious ceremonies.

Circle:

Symbol of Unity and Community:

In many Pacific cultures, including Fiji, the circle is a symbol of community and unity. Fijians often gather in circles for conversations (talanoa), celebrations, or communal decision-making. The circle represents the cycle of life, the rhythm of nature (seasons, tides), and cosmic order.

Spiritual and Protective:

The circle can also be a symbol of protection and sacred space. In certain traditional rituals, sacred places or ground symbols were surrounded by circular patterns.

Technical Narrative

Conceptual Diagram Description

Ground Layer:

This layer includes kinetic walkways that generate electricity through foot pressure, solar grass that captures thermal energy, and indoor human-powered devices like bikes and treadmills. All contribute energy to the building system.

🔸 Energy-generating paths

🔸 Solar-activated landscape

🔸 Human-powered energy stations

Base Layer:

The base features a swastika-inspired layout, oriented toward optimal sun exposure. This directional design promotes passive solar gain and spatial circulation aligned with Fijian spatial logic.

🔸 Directional form for daylight optimization

🔸 Passive thermal and spatial logic

Upper Layer:

Made of fragmented triangular volumes, each surface funnels rainwater to a central pipe and supports solar panels at various angles. The overall form channels wind into small turbines, maximizing wind harvesting.

🔸 Fragmented surfaces for rain collection

🔸 Multi-angle solar panels

🔸 Wind-guiding geometry

Water Collection and Purification System Diagram – 67 Houses Residential Units (67 Houses): Each house is equipped with an outlet pipe (e.g., for rainwater or greywater collection), connected to local branch pipelines. Branch Pipelines: Houses are grouped into smaller clusters (10–15 houses) that feed into branch lines, optimizing pressure control and pipeline length. Main Collector Pipe: All branch lines are connected to a central main pipe that transports the water to the central storage tank. Central Water Storage Tank: Positioned at a lower elevation to facilitate gravity flow. The tank should have a daily capacity of approximately 10,000–15,000 liters, based on the average daily usage per household. Water Purification Unit: The collected water passes through a multi-stage purification system: Sand Filter Activated Carbon Filter Reverse Osmosis or Membrane Filter UV Sterilization or Light Chlorination Pump and Distribution System: After purification, a water pump helps deliver clean, drinkable water to the distribution pipelines or back to the houses if needed. Control Valves and Safety Features: Non-return valves, pressure regulators, and overflow mechanisms ensure safety and reliability of the system.

(for Sports Equipment Power Generation): This system uses human kinetic energy to generate electricity through gym equipment: Stationary Bike with Generator: As a person pedals, a DC generator attached to the flywheel converts rotational energy into electrical power. Treadmill with Generator: When someone walks or runs, the belt movement drives a generator underneath, producing electricity. Rowing Machine with Dynamo: Pulling the handle moves a magnetic flywheel connected to a dynamo, generating energy. Power Conversion Unit: All generated electricity is sent to an inverter that regulates voltage and stores the power in a battery system. Usage: Stored energy can be used to power LED lights, USB charging ports, or contribute to the building’s grid.

how electricity can be generated from public outdoor elements: Kinetic Energy Bench: When people sit, their weight activates internal mechanical systems that produce small amounts of energy. Piezoelectric Walkway: As pedestrians walk over this special path, pressure is converted into electrical energy through piezoelectric materials. Cycle with DC Generator: Cyclists pedal a stationary or moving bike that is equipped with a DC generator, producing electricity. All the energy generated is collected into a central battery, which stores it and can power a street lamp or other public utilities.

Prototyping and Pilot

1. Digital Prototyping (Virtual Prototype) Before physical construction, prepare a digital version of the village: Design a full 3D model of the village using software like SketchUp, Blender, or Unreal Engine (to present to investors or local authorities). Generate realistic renderings from various angles (like the ones we've created in our conversation). Create a virtual walkthrough video to showcase the concept online. 2. Small-Scale Physical Prototype (Pilot Implementation) Build a smaller, simplified version of the design in real life: a. Site Selection: Either a small plot of land in Fiji (through collaboration or lease with local organizations) Or in your own country, such as Iran or elsewhere, where testing and public viewing is easier (for pilot purposes). b. Scaled-Down Construction: Construct just one accommodation unit or a small public feature (e.g., entrance gate or central fire pit). Use lightweight, modular, and portable materials (e.g., wood, bamboo, foam concrete, or prefab panels). 3. User Experience Testing (UX) Invite individuals (tourists, architects, or local residents) to: Visit and stay in the prototype Provide feedback on the space, form, color, comfort, and connection with nature 4. Economic and Cultural Evaluation Use this phase to assess feasibility: Actual construction and maintenance costs User satisfaction and attraction Reactions from local authorities and legal bodies 5. Documentation Document all stages (videos, interviews, photos) for use in: Investor presentations Obtaining permits Marketing and promotion

Maintenance Operations

Maintenance Operations for the Fiji Village Project

Technical and Structural Maintenance

Periodic inspection of structures (such as walls, roofs, and installations)

Repairing damages and wear (e.g., damaged wood or stone elements)

Servicing water, electricity, and lighting systems

Environmental and Landscape Maintenance

Irrigation, pruning, and care for plants and green spaces

Cleaning paths, buildings, and public areas

Pest and animal control measures

Cultural and Conceptual Maintenance

Restoration of local symbols and cultural elements in case of damage

Documentation of changes to preserve cultural authenticity

Staff training on local values and preservation practices

Security and Operational Maintenance

Presence of security personnel or human supervision

Installation and monitoring of cameras or smart devices

Updating safety protocols and emergency response systems

Environmental Impact Assessment

Environmental Impact Assessment (EIA) for a pilot implementation of the Fiji Village would involve the following steps:

Initial Identification and Survey: Collect data on the geographical location, natural resources, vegetation cover, wildlife species, and climate characteristics of the area.

Definition of Project Activities: Analyze all planned activities, including construction, infrastructure development, resource consumption, waste disposal, and energy use.

Identification of Potential Impacts:

Destruction of natural habitats and vegetation

Pollution of water, soil, or air

Impact on native or migratory species

Visual and noise disturbances

Resource usage such as water and timber

Assessment of Impact Severity: Determine whether the impacts are temporary or permanent, reversible or irreversible, and the extent of their influence on the environment.

Mitigation and Compensation Measures:

Replanting vegetation

Managing water resources and wastewater

Implementing sustainable