LAGI 2025 FIJI

LAND ART GENERATOR
RENEWABLE ENERGY CAN BE BEAUTIFUL

LAGI 2025 Fiji Narrative Template

1. Concept Narrative

Koro Coral is inspired by the functioning and composition of coral reefs as complex ecosystemic systems that weave diverse and essential natural relationships. First, they act as climate buffers, protecting coastlines from waves and storms, filtering water by removing pollutants, and contributing to the balance of CO_2 in the ocean. Second, they create habitats for many marine species, allowing them to thrive and develop. Third, they hold deep cultural significance in Marou and Fiji, home to some of the world's most extensive coral reefs, which are fundamental pillars for community building and tourism. Based on this premise, Koro Coral seeks to bring their ecological and symbolic importance from the sea to the land.

The morphology of coral has been abstracted in compositional terms to develop a laminar structure that emulates its natural configuration. Designed with an aerodynamic shape, this structure dissipates coastal winds and optimizes solar radiation capture. The system consists of modules that, when assembled, generate larger modules that evoke the organization of corals. The addition of these modules forms clusters, creating coral reefs on land.

The clusters are linearly arranged, evoking a terrestrial coral barrier that reinforces the sense of identity within the Marou community. Thanks to its double curvature, each module generates eaves that serve two essential functions: maximizing the effective surface for solar panel installation and providing habitable spaces for cultural, ritual, and community activities. This way, they become new gathering spaces for the community. Additionally, their morphology facilitates the efficient collection of rainwater, which is stored within the wooden platforms that connect the clusters, optimizing the project's water management system.

The variation in height among the larger modules creates a stratified composition that brings dynamism to the landscape and establishes architectural landmarks that invite visitors to explore and discover. The structure is designed with anti-corrosive steel, ideal for withstanding the region's climatic conditions, with a white acrylic upper coating that reflects light and enhances the efficiency of the solar panels. The lower part incorporates vernacular materials such as reed and bamboo thatch, which are traditional in Fijian architecture, encouraging community participation in their construction and strengthening the bond with the environment.

Finally, the modular assembly allows for great formal flexibility, generating diverse configurations that establish a dialogue with the sea, the natural surroundings, and the community. From this

vision emerges the name Koro Coral, a metaphor for a living and resilient ecosystem where architecture, nature, and society intertwine to form a coral community on land.

2. .Technical Narrative

The design of Koro Coral incorporates several key technologies that have been carefully selected for their functionality, sustainability, and suitability to the natural and cultural environment of Marou, in Fiji:

1. **Solar panels**: Installed on the upper part of the modules to maximize solar radiation capture, thanks to the aerodynamic and curved shape of the structure. This technology enables the generation of clean, renewable energy—essential in an island context where access to conventional energy sources may be limited or costly.

2. **Rainwater harvesting system**: Integrated into the double-curved structure, this system efficiently collects rainwater, which is stored in wooden platforms connecting the clusters. This takes advantage of available natural resources and reduces reliance on external water supplies.

3. **Corrosion-resistant steel structure**: Chosen for its ability to withstand the coastal climate conditions, such as humidity and salt exposure. This ensures the long-term durability and stability of the modules.

4. **White acrylic, reed, and bamboo thatch cladding**: The white acrylic on the upper surface helps reflect light and enhance the efficiency of the solar panels, while traditional materials like reed and bamboo on the underside not only adapt well to the local climate but also encourage community participation in the construction process, reinforcing cultural ownership.

These technologies were selected not only for their technical performance but also because they support a sustainable, participatory, and context-sensitive design that aligns with the ecological and social realities of the region.

3. Prototyping and Pilot Implementation Statement

Large-Scale Pilot Implementation:

- Phased deployment strategy:
  A gradual, cluster-by-cluster implementation is planned, starting with strategic areas identified as having the greatest community impact (such as cultural spaces, educational centers, or gathering

points). This phased approach allows for real-time adaptation and continuous improvement.

- Local training and employment:
  Technical training workshops will be organized for members of the community, who will actively participate in the assembly, maintenance, and customization of the structures. This promotes sustainable job creation and knowledge transfer.

- Joint technical supervision:
  The design team will collaborate with local experts in vernacular architecture, ecology, and land planning to ensure the system is harmoniously integrated into the physical and cultural environment.

- Participatory evaluation and continuous feedback:
  Community assemblies and surveys will be conducted to gather feedback on how the spaces are used, the feelings they evoke, and suggestions for improvement—ensuring genuine ownership and long-term relevance for local residents.

4. Operations and Maintenance Statement

The structure will be built using corrosion-resistant steel and coatings such as white acrylic (which reflects solar radiation) and reed and bamboo (typical of local architecture), ensuring high durability in coastal environments and reducing the need for frequent maintenance.The modules can be replaced or adjusted independently, making repairs easy without affecting the entire system. Additionally, key components such as solar panels or rainwater collection systems are designed for easy access, facilitating regular checks.

The design leverages solar energy and rainwater harvesting, minimizing the need for complex mechanical systems that require external intervention. This ensures a simple, efficient, and low-cost operation over the long term.Within the proposed clusters, cat ladders will be integrated, making it easier to access hard-to-reach areas and improving maintenance capabilities. Additionally, the more complex solar panel systems will be located in the tallest module, which will serve as a control tower, enabling centralized monitoring and efficient maintenance of all energy systems

5. Environmental Impact Assessment

Any intervention in the natural environment may bring change, but in the case of Koro Coral, these have been carefully anticipated, and solutions have been designed not only to mitigate risks but to turn them into opportunities:

- To avoid disturbing native flora, a floating or elevated foundation system is proposed instead of traditional footings, significantly reducing direct contact with the ground.
- While the presence of new structures may alter natural dynamics, the design adapts to the landscape and its organic aesthetic blends harmoniously with the surroundings.
- As for rainwater flow, the harvesting system has been designed to work with natural hydrological **cycles**, even enabling the reuse of water for irrigating native vegetation.

Commitment to conservation:

Koro Coral was conceived with the belief that it should be an extension of the ecosystem, not a disruption. For this reason, the project includes:

- Collaboration with local biologists and ecologists to select the most suitable installation sites.
- Ongoing monitoring and adaptive development, ensuring the project evolves sensitively in response to any environmental changes.
- Active community involvement in every phase — from construction to maintenance — reinforcing a sense of ownership and care for the land.