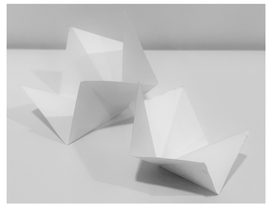
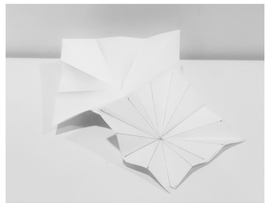
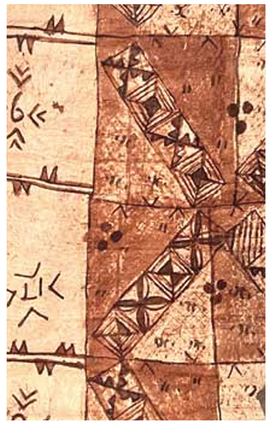


Paper Folding Experiment

A 4-side folding form was selected for its simplicity, structural efficiency, and ease of modular fabrication. It offers a practical base for integrating PV panels and fog harvesting units

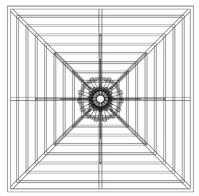


The 8-side folding form further reduces wind exposure, optimizing the wind sphere module for efficient wind energy generation.

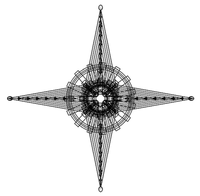


This design uses Tapa cloth, a traditional fabric made from the inner bark of the mulberry tree, as a tensile membrane in a vernacular wind turbine. The material bridges local craftsmanship with sustainable design

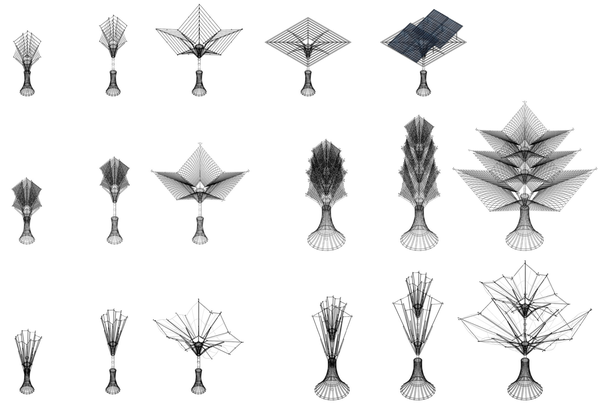
Magimagi Rope in Fog Harvester incorporates Magimagi rope, a traditional Fijian material, as a key component in the fog harvest. The rope's natural absorbency helps capture and store water from the air, enhancing the system's efficiency and aligning with local, sustainable practices.



Plan view Full Form

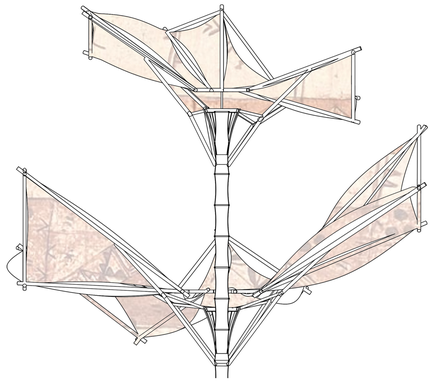


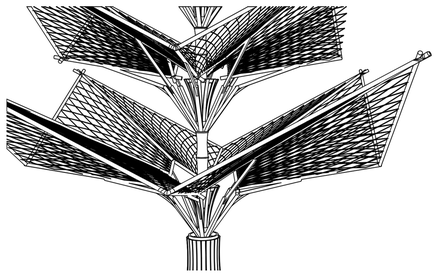
Plan view Folding Form

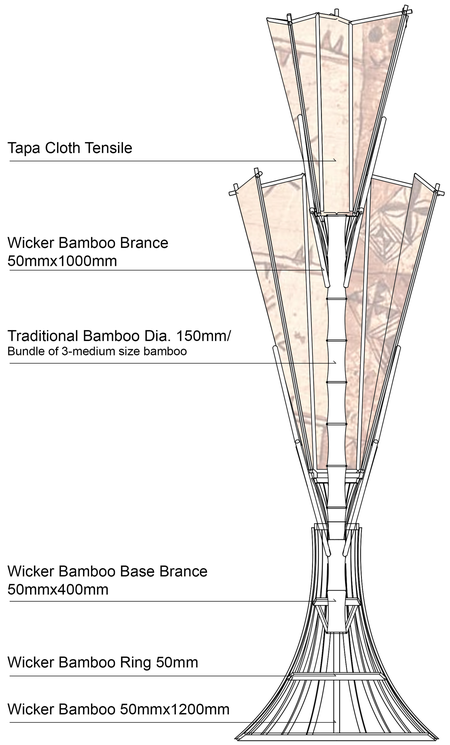


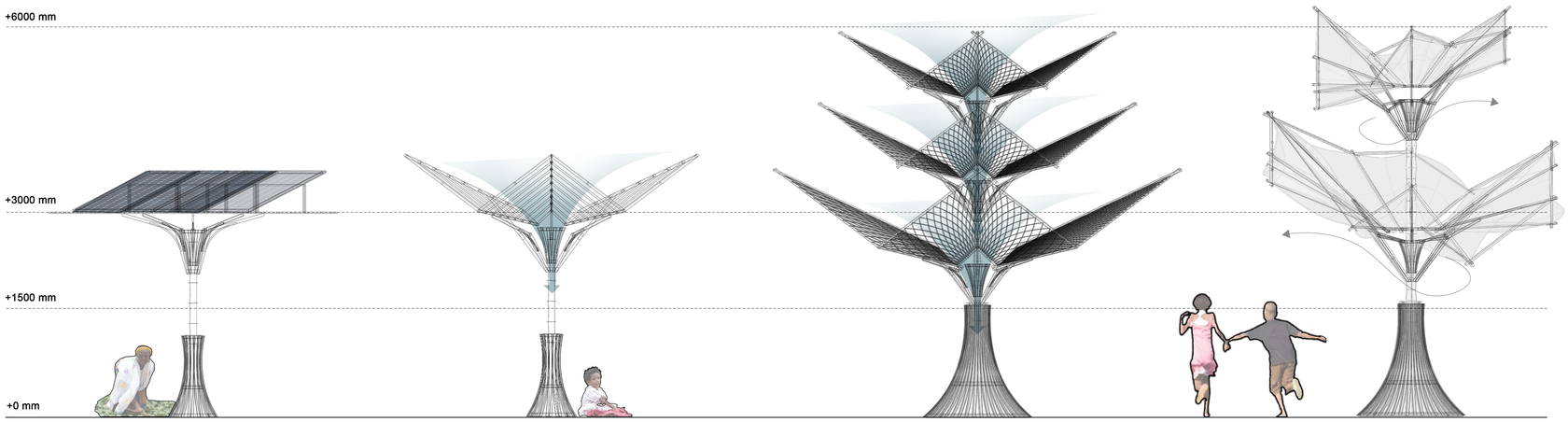
3000mm Height Prototype

6000mm Height Prototype









Typcal Module
Photovoltaic-use

Typical Module
Rain cap-use

Fog Harvester Module

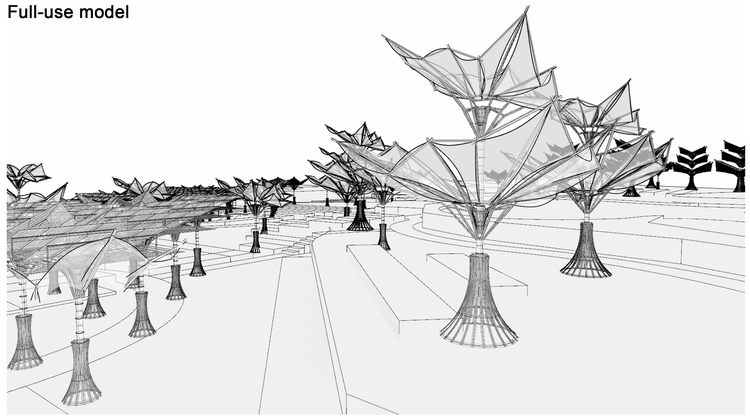
Wind Shear Module

Hurricane-Resilient Vernacular Innovation

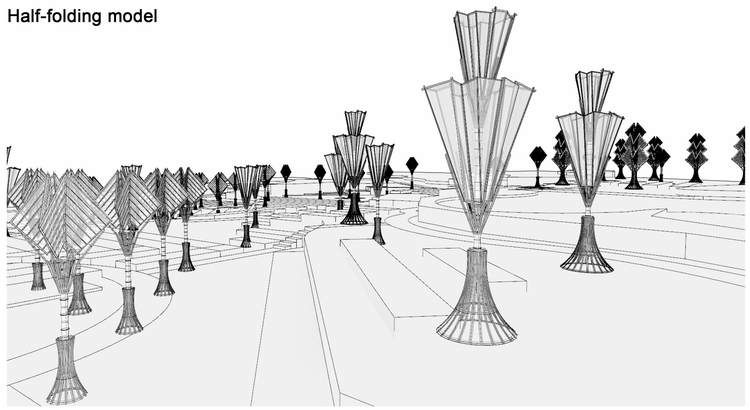
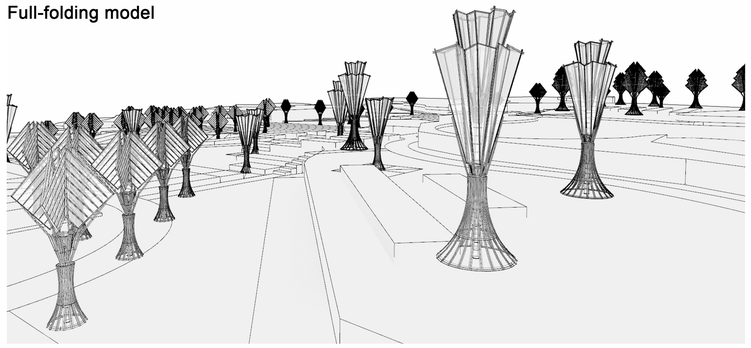
This design reinterprets traditional knowledge through a collapsible, umbrella-like structure made from bamboo, a sustainable material deeply rooted in local culture. Drawing from vernacular techniques, it responds to Fiji's frequent cyclones with a structure that functions as a energy generator and provides usable, shaded space during normal conditions.
When storms approach, the entire structure can be quickly folded down, minimizing damage. If affected, it can be easily rebuilt by hand using readily available local materials, ensuring low-cost recovery and community self-reliance.

By blending traditional craftsmanship with climate-responsive design, this solution demonstrates how vernacular architecture can evolve to meet today's environmental challenges offering resilience, sustainability, and cultural continuity.

Full-use model



Half-folding model



Full-folding model