ENVIRONMENTAL IMPACT

This structure uses renewable, locally sourced bamboo and coconut timber, and minimizes land disruption with lightweight foundations. Rainwater harvesting reduces groundwater pressure, while solar energy displaces carbon emissions. Construction is monitored for ecosystem impact, and stormwater is integrated into village drainage. The design is a regenerative system that respects and supports both community and nature.

COST EFFICIENCY

This design meets the LAGI cost target of $15 USD max per installed Watt through:
- Local bamboo sourcing, minimizing transport and material costs
- Community-led construction, lowering labor costs and increasing ownership
- Standard PV and battery components, leveraging economies of scale
- Integrated design, combining water, energy, and place for social functions

PROTOTYPING & PILOT IMPLEMENTATION

The prototype will be developed on-site in Marou Village to test key systems—solar power generation, rainwater filtration, and bamboo construction. Local craftspeople, builders, and youth will join the process early, helping shape a structure that reflects lived experience. While not a full-scale build, this prototype will model the design's core functions and forge connections with future stewards. Community insights will inform spatial uses and cultural features. The pilot will include hands-on workshops, systems testing, and feedback loops to guide the path toward full implementation.

REPLICABILITY & SCALABILITY

- Adjustable size and form, adaptable to other island or rural settings
- Modular batteries and filtration systems, scaled to local needs
- Bamboo construction, repeatable with local skills and materials
- Community co-design model, transferable across cultures and regions