Vunilagi



The shape of Vinulagi is curved, inspired by the all important coconut palm leaf. In this way the very form of the building embodies a key source of life for the village.



The Fijian Dura Boat used a hand woven sail stretched between two points and hoisted by ropes. Vunilagi calls upon this cultural history in its use of roof covering but especially in the walls, stretched and controllable by ropes.

The entrance references the volcano, rising upwards to provide a dramatic triangular form, lit red using flexible LED lights which pays homage to the formation of the ancient islands of Yasawa.



Vunilagi seeks to strike the right balance between technical feasibility, community empowerment, skills development and land art aesthetics. It is important to us that Vunilagi can be a reality for the village by being built by the community themselves.



Built by Marou Villagers

Locals in Marou Village can build the entire Vunilagi structure themselves, with local materials which are sustainable and renewable and transportable. Traditional knowledge of palm leaf weaving is used in order to create the surface coverings for the floor, roof and walls, thereby extending what is already well practiced in the community into a new paradigm. The Yasawa High School is invited to incorporate the construction into their curriculum for generational sustainability. Marou villagers and young people can obtain a unique skill and create a sustainable source of income as leaders in this sustainable mode of construction.



Modular Construction **Bamboo**

Vunilagi connects Marou Village to a means for By using bamboo we create an example for what this ongoing housing and resource sustainability. The simple triangle is used here as a structural frame, replicated and adjusted in its angles. It creates a basis for sustainable building by anyone, with only a few tools, in any community anywhere. The format can be adapted for flood and cyclone resilient buildings of any size - locally made with local materials.



form of sustainable building might look like in Fiji's future. Current government initiatives are focused on bringing this resource into the building sector. By introducing new agricultural knowledge we can grow bamboo on site in Marou Village and therefore create the means for Marou Village to become a leader in bamboo construction and agriculture. This creates a sustainable community long term.



A Building Format with Wider Applicability. Each frame is made individually on the custom jig, moved into position, raised and connected, to the frame before it. This exact format of modular construction can be adapted for smaller structures that can be used as flood and cyclone resilient housing in the village. It has the potential to revolutionalise village life and replace many of the existing buildings which are regularly flooded and in need of repairs which are beyond the capacity of locals to carry out.



Rainwater Collection. The structure collects rainwater by catching water at the bottom of the roof. The protruding poles in this drawing offer framing support for the roof covering to wrap upwards (not shown). Each pole sits 300mm proud of the roof surface. This 300mm high channel slopes down from right to left across the structure as the roof curves downwards towards the entrance. The entrance will feature a small collapsible 1000L tank which captures the water before distribution by pressure pump and high diameter poly pipe to the network of village tanks for storage.



Retractable Walls. The design system for the retractable walls uses bamboo, rope and palm leaf mat. These can be made in any length and any width found to be practical. They and overlapped with each other as needed and repaired by locals with existing skills. Ropes slung over and into the structure can be pulled to control the lowering and raising exactly like a retractable or folded blind







Locally Maintained

The ability to fix something locally is a key need for Marou Village. By providing locals with agricultural knowledge of already environmentally approved Fiji bamboo we set them up for ongoing maintenance and the means by which to create other storm resistant, flood resistant structures in their village and other villages. Marou can become a leader in this field and the epicentre of the practice in the Yasawa region. As the structure requires repair, locals can fix it using locally grown bamboo and with the knowledge they gained from building it.





The structure is made up of 37 individual bamboo frames, each made as a single unit using the jig, then laid flat, and raised by walking the frame upright.



Mat, Fiji, date unknown, pandanus leaf, 176.5 x 77.5 cm (Auckland War Memorial Museum) The structure is made from straight lines, straight bamboo frames each one with a different angle to achieve curving form. This geometric repetition is a cultural product realised in Oceanic art such as the Tapa Cloth. This is the basic structural framework of Vunilagi

By controlling the movement of air, Vunilagi can embrace cooling breezes and batten down for inclement weather.



Ropes can be slung over the frame before it to use leverage and help raise the next one. Once upright, it is self-supported by its legs, it is then connected to the frame before it mechanically and then concreted (if needed) into the ground. Each frame is lightweight even the large ones and are able to be raised by 6 people, some with ropes and others pushing and walking towards each other.