

ENERGY DESIGN SITE

Storm Water management
The water channel run down from the mountains to the sea is close to the energy design site. The water can be used and stored for farming purpose or other secondary usage. The storm water can be treated using Green Bridge Technology.

Water harvesting and treatment
During the rains from November till April, there is a plenty of fresh water that is collected in the 2 large central ponds created inside the Bure Ring and 14 large water tanks placed in the Energy Design Site. Rain water collected from the roof top of the Bure ring will be collected in the Central ponds and the outer Moon ponds which will be channelized to the 14 large tanks placed on Energy Design Site. Each Water tank has the capacity of 2000 liters.

GREEN BRIDGE
The Green Bridge refers to an eco-friendly natural system designed to treat polluted water using a combination of physical filtration and biological purification.

Mesh:
The mesh fixed over Solar panels act as shield to protect solar panels during cyclone from flying coconuts. The mesh placement will reduce the efficiency of Solar panels by 5% only which is negligible.

Solar Panels:
75kW photovoltaic mini grid capacity solar panel unit will be required to fulfill the needs of the Marou village. The entire roof of the Bure Ring will be covered with around 250 Solar panels

Corrugated Sheet:
These are modern elements which are used as roofing material instead of traditional thatch roof. The corrugated sheets rests on wooden beams.

Wooden columns and beams:
Wooden columns and beams have been used as framed structure element like in Fijian vernacular architecture timber was used as a crucial element for Bure house structure.

Flooring:
Traditional Fijian floor construction reflects the island's use of natural, locally available materials suited to the tropical climate. Floors in traditional Fijian bures (houses) are typically built on a raised foundation made from compacted earth, stones, or coral rock to protect against moisture and flooding. Over this base, a layer of flattened and well-compacted earth is applied, sometimes mixed with sand or clay for improved stability. In some areas, crushed coral or volcanic ash is used to create a firmer surface. The floor may be finished with mats woven from pandanus leaves or coconut fronds, which add insulation, comfort, and cultural value. These mats are often replaced or refreshed during ceremonies or major family events. This approach results in a breathable, cool, and sustainable floor ideal for the Fijian environment.

Foundation and Plinth:
Bure houses in Fiji were built on an elevated earthen platform- Yavu used to be 1m above the ground to manage runoff during cyclones. Similarly, Bure ring is placed on an elevated plinth of local stones which is 1.2m above the ground to manage the cyclonic runoff.

CONSTRUCTION TECHNIQUES

