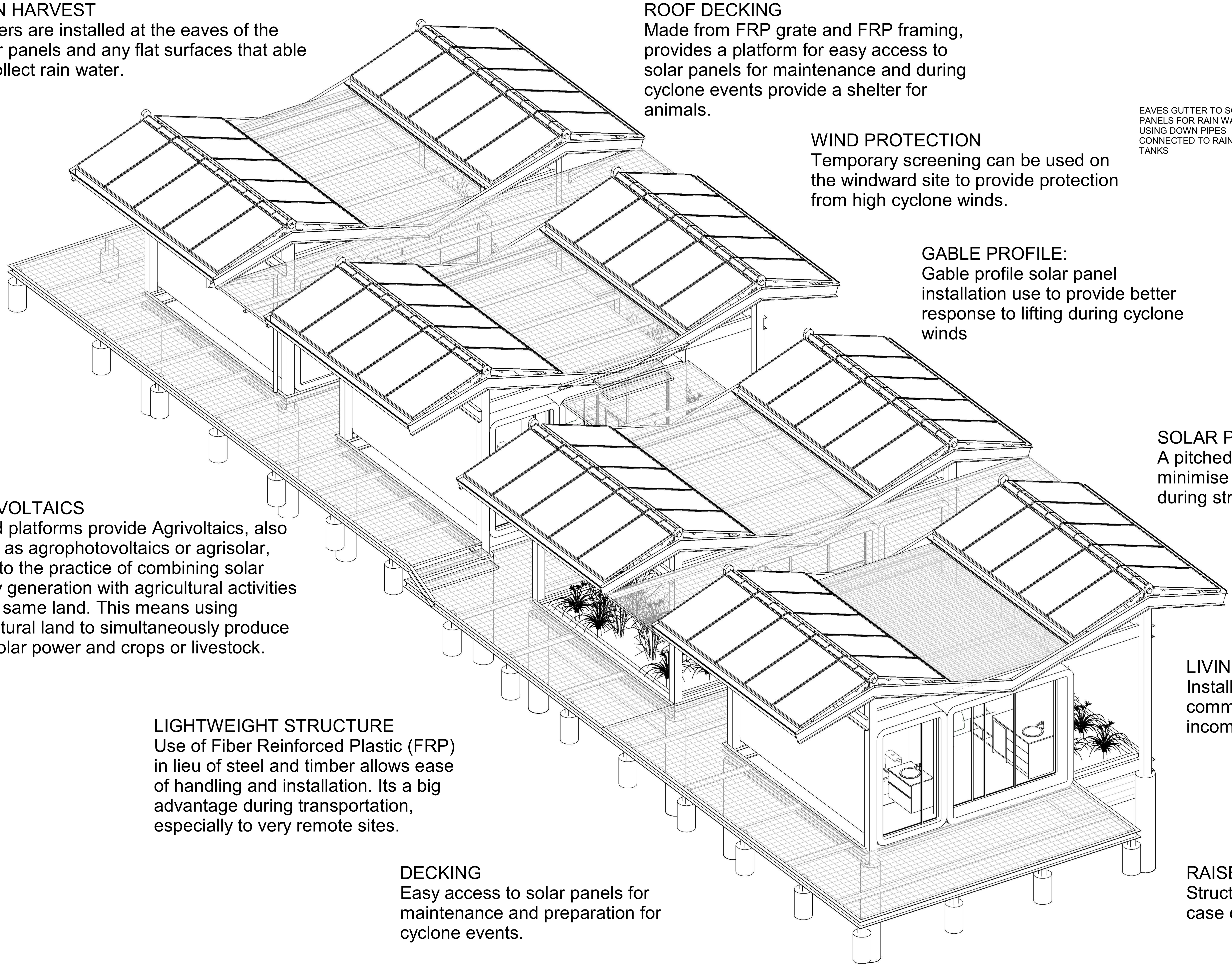
RAIN HARVEST
Gutters are installed at the eaves of the solar panels and any flat surfaces that able to collect rain water.

ROOF DECKING
Made from FRP grate and FRP framing, provides a platform for easy access to solar panels for maintenance and during cyclone events provide a shelter for animals.

WIND PROTECTION
Temporary screening can be used on the windward site to provide protection from high cyclone winds.

GABLE PROFILE:
Gable profile solar panel installation use to provide better response to lifting during cyclone winds



SOLAR PANEL PITCH >15°
A pitched solar panels is used to minimise lifting of the panels during strong cyclone winds

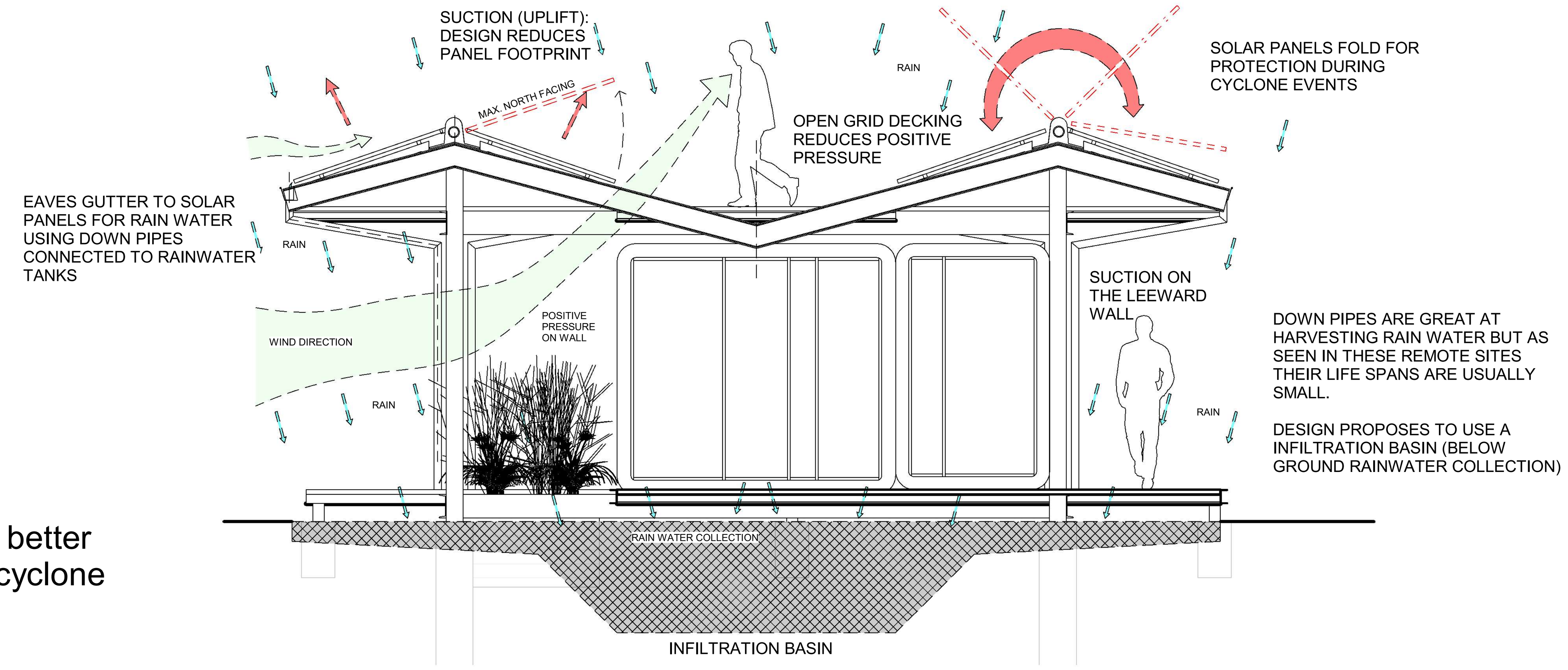
AGRI VOLTAICS
Raised platforms provide Agrivoltaics, also known as agrophotovoltaics or agrisolar, refers to the practice of combining solar energy generation with agricultural activities on the same land. This means using agricultural land to simultaneously produce both solar power and crops or livestock.

LIVING PODS
Installing living pods provides the community source of tourism income.

LIGHTWEIGHT STRUCTURE
Use of Fiber Reinforced Plastic (FRP) in lieu of steel and timber allows ease of handling and installation. Its a big advantage during transportation, especially to very remote sites.

DECKING
Easy access to solar panels for maintenance and preparation for cyclone events.

RAISED STRUCTURE
Structure is raised on stilts in case of heavy flooding



Technical Narrative (4 Modules)

SOLAR ENERGY

1.5m² per Solar Panel x 20No. Panels x Pod - 30m²
4No. Pods per Module = 120m²
4No. Modules = 480m² of PV Surface Area.

Peak capacity (kW of power) x Hours x Capacity factor = Total energy generated (Kwh of energy)
75 kW x 8,760 (hours in a year) x 0.21 (capacity factor) = 137,970 kWh (138 MWh) per year or about 378 kWh on an average day.

Yearly capacity - 480MWh

WATER STORAGE

Underground Tanks
Module Area - 26m x 10m = 260m²
Infiltration basin - 3m² x 26m = 78m³
4No Modules 312L x 4 = 1,248L capacity

Water Tanks
4No Modules = 120m² x 3000mm = 360L capacity

Prototyping and Pilot Implementation Statement

Design and Engineering
We will start with a site visit, It is important to know the people of Marou Village, the site and the constraints involved.

The basic (solar) module will be engineered, shop drawings and assembly instructions drawn up. Preliminary costing will be looked at to make sure we are not only within budget but also making sure we come up with the most economical product.

Fabrication
We will then fabricate the parts and a 1:1 scale model will be assembled. Testing and checks will then follow. Solar panels will be procured in Fiji.

Transportation
The model will be disassembled and packed making sure the right tools are provided to assist on site. Once the prototype is tested and installed, production in Fiji can be explored.

Installation
We will work with local partners in Fiji to transport the materials and assemble on site. We have working relationship with local consultants and builders should they be required, otherwise our aim is to make sure our design can be installed by locals.

Operations and Maintenance Statement

Minimizing maintenance and replacements is a main design principle for our submission. From the choice of materials, production, delivery and installation. Our approach to technology in remote areas should be one of engagement rather than a plug, play and forget approach.

A simple act of preparing for a cyclone every year will promote care rather than fear of this technology. Rather than waiting on a technician to travel in to repair and maintain this system, the locals could be educated to do more.

Similarly, with the rainwater harvesting, we have opted for both the passive underground storage system with the above ground collecting system. Like most houses in Fiji, the eaves gutters are the first to fail and without replacement, the rainwater from roofs cannot be harvested.

Finance is a big hurdle for remote communities when operating and maintaining any technology system. Our approach to this, was to include the Living Module that will provide the community with income that can utilised to pay for any operation or maintenance issues.

FIJI
LAGI
2025
RUKU Ni VALE

TECHNICAL DETAIL