



La'ngi

a platform for and with the elements

SUN AND WATER

Solar PV are set in different angles. Maximum electricity output is not achieved, but, when horizontal, they have nearly maximum conversion and also serve as water storage lips. By being horizontal they contribute to the experience. The circle set is angled at 71° so sunrise and sunset energy can be converted into electricity in those users' demand key moments. Some are at 19° facing North.

Totally flat water slabs are a simple and economic solution. Setting edges, water can be stored. 35 cm height weights less than general loads in any residential buildings, but it's not so lightweight it can be uplifted or moved by a cyclone. Thus, a medium-lightweight timber structure (columns, beams are local, Clt imported) gains weight at no-cost: rainwater on it.

INTERLINKED

Interlinked, they act together with the ground-level pods-cisterns. This loop enriches the destination experience, avoids Village's flooding and drinkable water shortage. Also, from 17:45 to 18:45 h aprox, 2kWh are delivered to the village as a result of the release of 180m3 of water from the elevated slab-tanks to the pods-cisterns, with a micro turbine. (Energy is 2.3kWh, the turbine % rate is around 85%.)

ENERGIES AND SCENARIOS

This 'platform' of energies, rather than 'plant', can handle water and sunlight varied scenarios. The platform receives water from the channel and from the clouds and eventually receives saline water from a well nearby the S estuary. It has internal loops for many scenarios (just to mention 2, before the dry season, the core grass lap will be filled through a buried pipe, so the platform will storage up to face the winter. Another scenario: saline water from the estuary will be harvested during dry season, desalinated and will fall to the main covered space creating a happening and stored in its 60cm depth stair-storage. Plastic films or crafted rugs can cover this precious water when needed.

STEP 1

A timber slab is created. Modularity (6.9 x 11.3 m) simplify incremental stages if needed.
A Clt slab (from New Zealand) or a dovellinked Fiji's planks slab, is supported by 2 level beam grids, total of 77cm of h. The beams are supported by 6 local log columns + a massive round wall + extra fixings against lateral forces (wind) by 4 square profiles



1

STEP 2

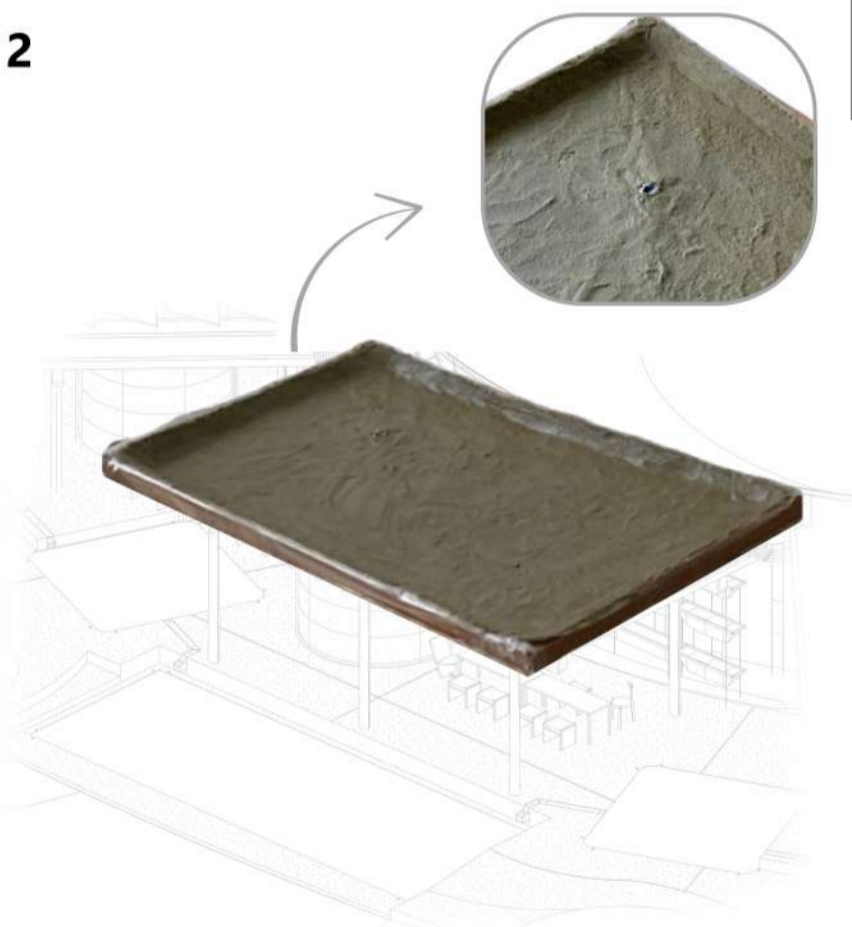
A plastic film as 1st waterproof layer cover all faces except the ceiling, needing to cut corners and then seal it with silver tape. Pipe type B, is exemplified to show how the film bends into it. The timber slab thus receives an hermetic layer. The fascias sides will be protected with an aluminum flashing and, if rain occurs with wind, with a varnish, only in these parts.



2

STEP 3

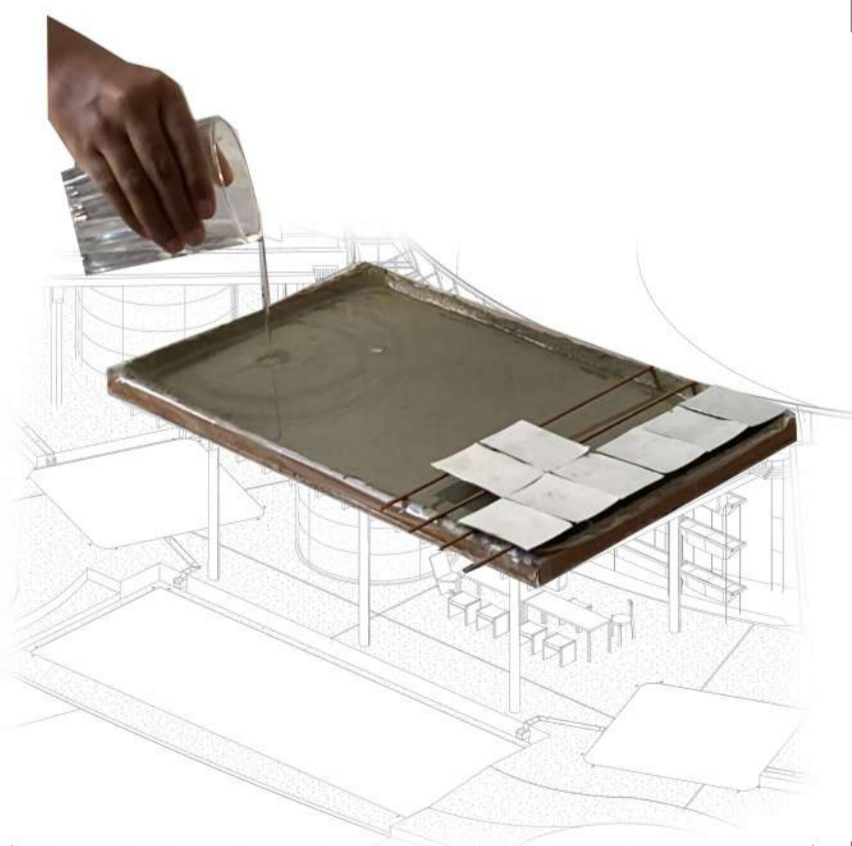
A gently cured fiber reinforced concrete 2cm layer will fill the bowl to extra waterproof and to protect the film, compressing renewable-energy-produced aluminum fascias. The same mortar is used to round edges and the pipe type-01 approach. An easy to maintain 2nd waterproof layer (polymer based 1mm coat) is (re)applied with brush once each 5 years and cleaned once per year.



3

STEP 4

Few hours after, potable water fills the bowl till 40cm h to complete the semi-lightweight slab-water roof. Partially covered to foster curing for 14 days, water is lowered to designed 35cm, and 5cm h aluminum railings with pedestals are set to reinforce solar PV modules above. Modules could be installed emptying the slabs temporarily. The railings continue to form the Solar Circle shape of the main destination space.

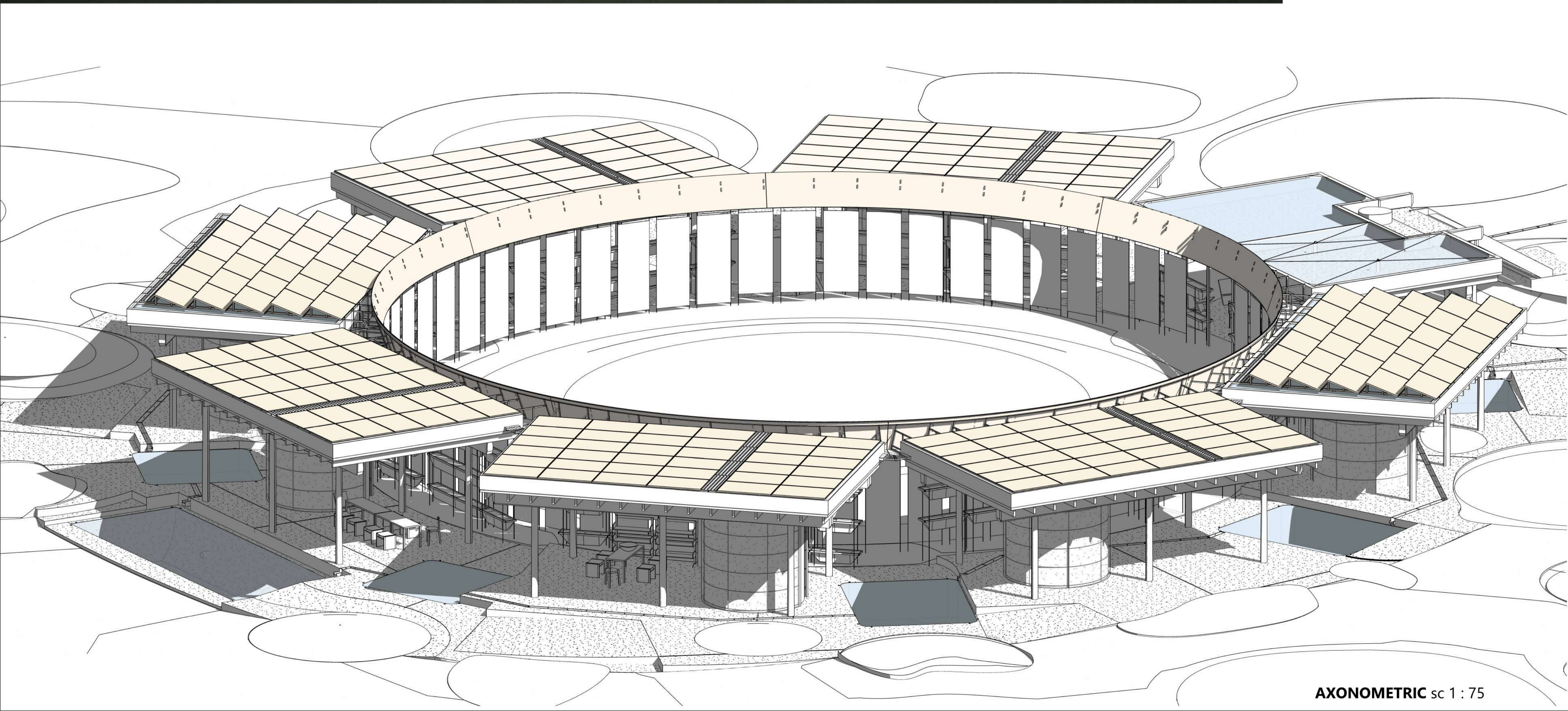


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EXTENSIVE USE OF TIMBER

Building with timber allow us to take local and regional advantages. With the model, we focus on how a timber slab can host water with 2ble waterproof layer.

Within the Fiji's 30 million new trees goal, this project would foster new forests within site and Naviti island. Instead of foresting with mono-specie, the idea is to mix several. Instead of planting to cut the tree 10 years after, the idea is to cut 1 tree out of 5 or 6, and after 25 years, in order to renew and maintain the column posts, beams and log beams designed.



AXONOMETRIC sc 1 : 75