



TWO GUEST SUITES

SOLAR PANEL ASSEMBLY

CURRENT DESIGN

and create functional spaces to benefit the community. The overall host visitors to the village. form for the PV array came from origami folding which creates a thin structure that looks "crispy", thus giving the project its name as CRISPY PARK.

OUTDOOR THEATRE

30x22.7 meters, a footprint small enough to avoid occupying large rates a multi-height landscape with steps and planting pots. open areas. The empty land within the site boundary can be preserved for future development or agricultural activities.

current proposed shape has corner modules removed to allow for views. a more fluid, dynamic airflow to mitigate cyclone impacts. The PV The scheme aims to avoid cutting down any existing trees, array also includes hollowed-out squares in the middle to allow

Besides the public school, the Marou village lacks major public buildings. Including communal functions in our project would acts as a shading device for the space below; the other is the events for around 60 people is placed beneath the PV array. The els. The panels are facing to the north with a tilting angle of 19 de-

With consideration to Fiji's beautiful landscape and power- ground-level landscape design, featuring a small outdoor theater stage is flanked by informal stepped seating on three sides, en- grees which should be the optimal angle for receive maximum sun An array with 12 modules mounted on posts and beams is ful oceanic influence, our scheme proposes a humble installation and patches of greenery. The ground area also includes several couraging communication. Attendees rays. The the pair of panels would each further tilt to the east and an ideal prototyping size, resulting in dimensions roughly measurthat would focus not on the sophistication of the design but on architectural spaces: two utility rooms for solar energy storage and can use the space freely, sitting on the ground or grassy planting west with 19 degrees. To suit the geometric requirements, each ing 7.5x7.2m² and standing 4 to 5 meters tall. Although each panel providing locals with an elegant PV array to supply clean energy future fog-harvesting water storage, and a pair of guest suites to areas. The two guest suites to areas. The two guest suites to profull-fledged bathrooms, which are scarce in the village. Doors and 2m². Given that each square meter provides approximately 200W duce custom-shaped panels within a reasonable budget. major openings face away from public spaces, opening instead of solar power, each panel has a power rating of 400W. The design The arrangement of the solar panel units is highly flexible. The toward the surrounding landscape to ensure privacy and scenic includes 96 PV modules, producing 192 panels in total, resulting in For the full-scale implementation stage, the PV module coma peak capacity of 76.8 kW (192 panels × 400W). Using a capacity ponents should still be outsourced and shipped to the site (unfactor of 21%, the total energy generated per day would be 387 less Fiji has the capacity to manufacture them). The ground-level Our scheme mainly focuses on generating electricity with kWh (76.8 kW × 24h × 21%), and per year would be 141 MWh elements—including stone pavement, wood plank seating, local which leaves few options for its placement. The current choice of larger patches of light to enter the space below, illuminating the panels made from high-efficiency monocrystalline photovoltaic (76.8 kW × 8760h × 21%). planting, concrete structures for the few rooms, and stone tiles For the prototyping phase, our team plans to manufacture for the facade—can be locally sourced. The ground construction location within the site boundary is close to the center, surrounded theater and planting areas. Due to a 1.8-meter elevation difference cells, as required by the project brief. Within the project, there are by three groups of trees. The size of the scheme measures roughly between the northwest and southeast areas, the design incorpo- significant areas that could accommodate fog-harvesting nets for and test the prototype in our country. Factory-based production is process will be simpler, and villagers can actively contribute to this water generation. However, the scheme currently prioritizes the required to ensure the precision of the mounting space truss. The phase. The interiors of the two guest rooms can be finished in a prototype will be designed to be easily assembled and disassem- vernacular style, with final details to be decided during discussions design of the PV module mounting.

bled. All materials will then be shipped to Fiji for test installation. with the village council. The PV module consists of primary beam members, a sup- We can send one team member to Fiji to assist in facilitating the The design consists of two parts: one is the PV array, which greatly benefit village life. A small outdoor theater accommodating porting space truss, mounting purlins, and two photovoltaic pan- installation process.



NUMBERS:

96 PV MODULES: TOTAL PANELS: 192 PANEL POWER RATING: 400W

PEAK CAPACITY: PER DAY PRODUCTION:

 $86kW \times 24h \times 21\% =$ PER YEAR PRODUCTION:

86kW x 8760h x 21% =

76.8KW 387kWh

141MWh

CRISPY PARK LAGI2025 FIJI COMPETITION ENTRY