

VALELACA ROKATAKI (PRISMATIC PARASOL)

As a solar installation, we designed a form that is a space of prospect and refuge - a tower overlook and a canopy parasol. The colorful prismatic parasol creates a community center for celebrating festivals and events, holding village meetings, relaxing in the shade or sheltering from the rain. Below the canopy, a stepped landscaped amphitheater provides a new space for village congregations. Rising 21 meters above the ground, the tower is an overlook, a place to contemplate the landscape or survey the sea for weather changes or returning fishing boats. At night it is illuminated, providing a return beacon for night fishing. In addition to providing an elevated vantage point, the tower utilizes stack ventilation to passively ventilate the communal space below the canopy. We envision this as a new cultural landmark for Marou village and a destination for eco-tourists visiting Naviti Island.

Marou Village has a projected demand of 244 kWh. In our experience, once this demand is met it often increases quickly as residents explore new forms of livelihood. Therefore, we propose a solar canopy and tower capable of generating more than this - an average of 364 kWh per day with an 82 kW system.

Marou Village often floods in the rainy season. The flooding is an opportunity for freshwater collection and energy storage. We propose excavating a series of strategic depressions at specific elevations in the existing gullies above Marou village. These catchments can store the excess water as potential energy and house turbines to convert this into electricity. Located with sufficient vertical separation, excess power can be used to pump water to higher ground as passive energy storage. When power is needed, weirs open to turbines that generate power when the solar cells are not productive (at night or during very cloudy days). At the same time, the catchments collect excess run off from the mountains keeping the water from flowing through and flooding the village. This stored water will serve the village during the dry season when rainfall is scarce. Additionally, we have designed a series of small-scale water collection filter devices to be deployed throughout the village. Specifically designed solar lighting is deployed along the pathways to increase accessibility and support village activity later into the evening.

