# THE SOLAR PROJECT

# BANTAYAN ISLAND

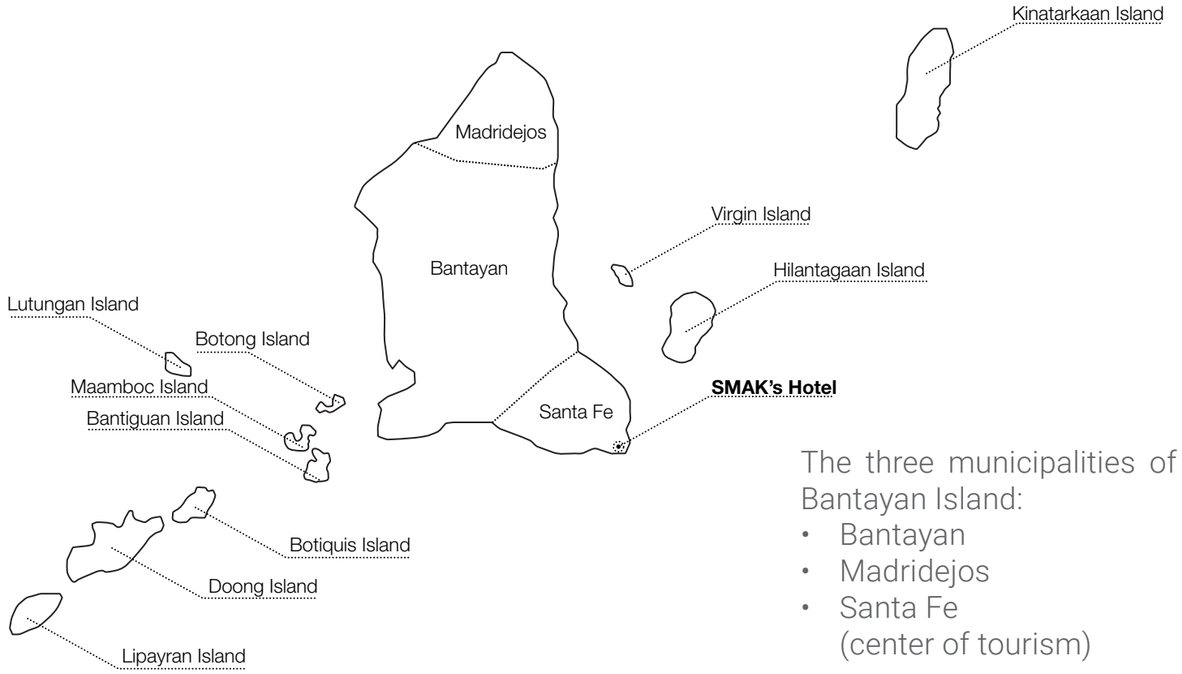
## Project Specifications

November 2022

# Our Vision

Ecologically sustainable development is always linked to the social and economic stability of an ecosystem. Our vision: sustainable tourism through solar energy.
We want to react to the economic and social consequences of the COVID-19 pandemic by contributing to a more sustainable tourism industry in the Philippines.

# Location




- Population: 160'000 (EST, cs. 2015: 120'447 *)
- Area: 108.77 km2 *
- Energy Consumption p.a.: 0.82 TWh (EST)
- Energy Sources: 98% Fossil fuels (EST)

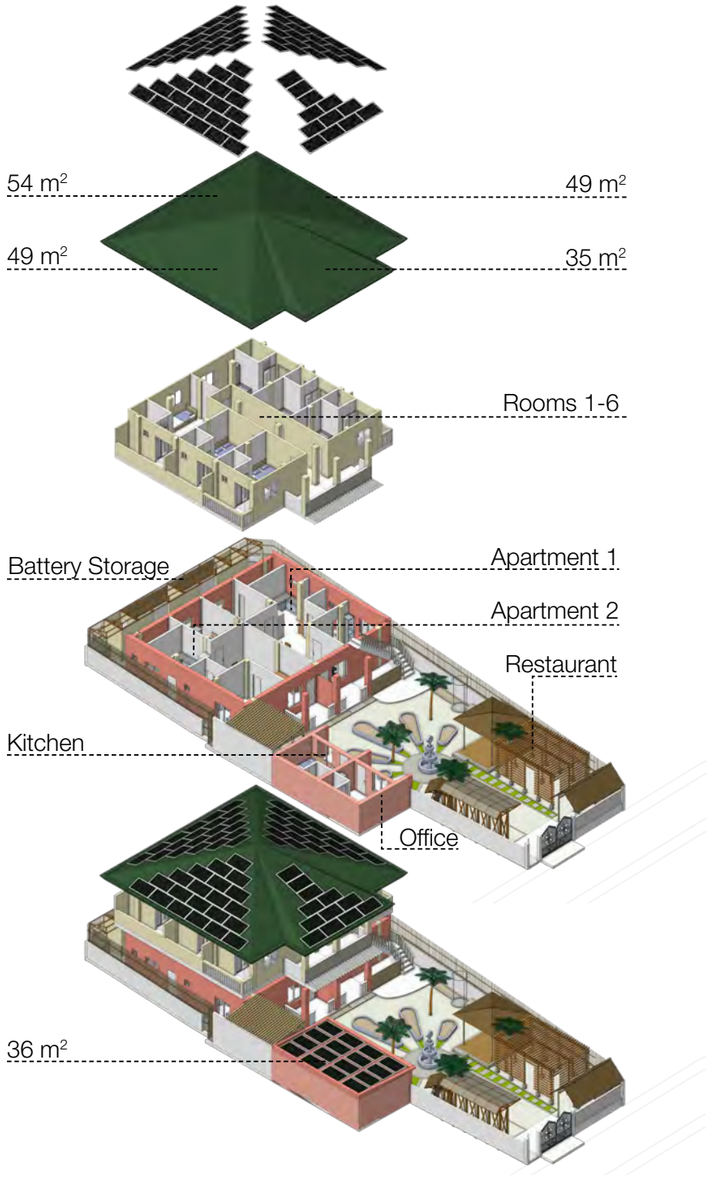
* Source: https://en.wikipedia.org/wiki/Bantayan_Island

The three municipalities of Bantayan Island:
- Bantayan
- Madridejos
- Santa Fe
  (center of tourism)

Island Group:
Bantayan is the main and largest island of the Bantayan island group (around 20 Islands) that lies close to the geographical centre of the Philippine archipelago.



# The Property




«SMAK's Hotel» is our boutique Hotel in Santa Fe, Bantayan Island - Philppines.

Rooms:
- 2x Two Bedroom Apartments
- 4x Double Rooms
- 2x Deluxe Double Room with Extra Bed

Amenities:
All bedrooms are equipped with Split Type Inverter Air-Conditioners.

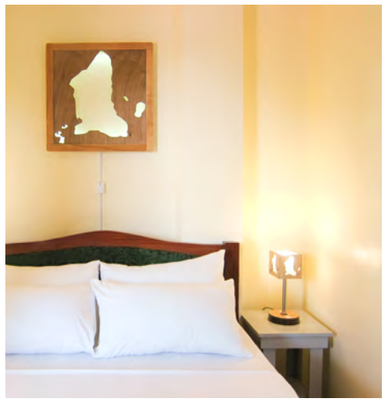
The two Apartments on the ground floor have each an Inverter Refrigerator.

Four of the Bedrooms upstairs have a Mini Bar Fridge
All of the 10 Showers have each a flow heater.

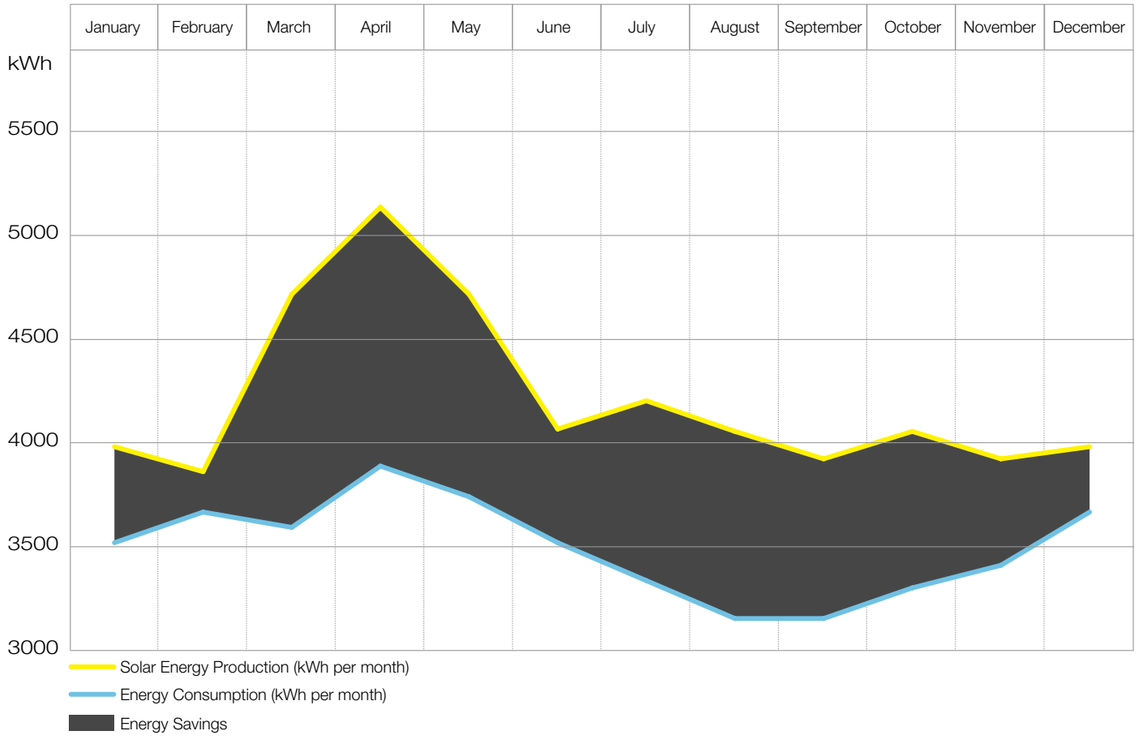
Sure, comfort is sometimes in conflict with the rational handling of energetic resources.

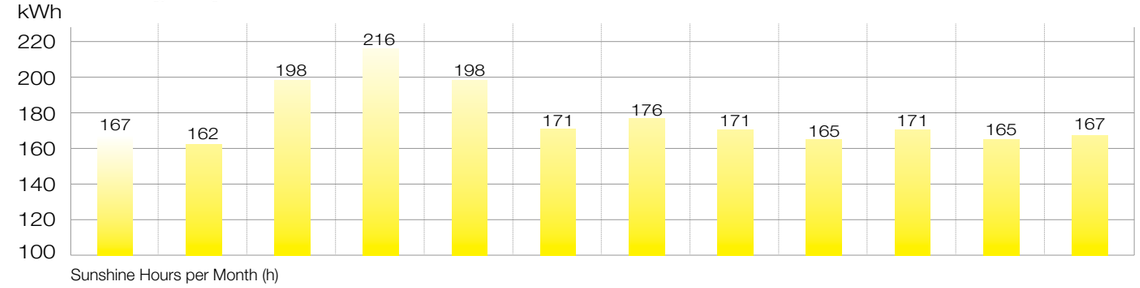
Check our location here on google maps:

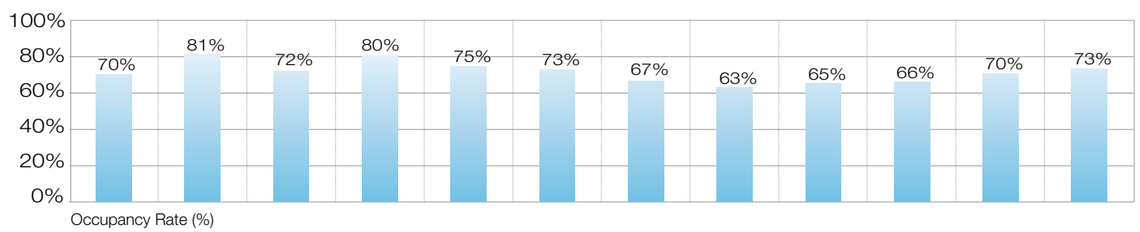
SMAK's Hotel



# Facts & Figures




- Avg. Sunshine hours per day on Bantayan Island: 5.83h *
- Avg. Energy Consumption Monthly (70% Occupancy): 3422 kWh **
- Roof Space (total): 222 m2
- Roof Space (useable, *0.65): 144.5 m2
- Standard Size Solar Panel: 1m x 1.7m = 1.7m2
- Number of Solar Panels: 85 (280 W per hour)
- Av. Solar Electricity Production (Monthly): 4519 kWh

* Source: https://beach-weather.com ** Source: Monthly Electricity Bill (Bantayan Island Electricity Corp. BANELCO)



| | January | February | March | April | May | June | July | August | September | October | November | December | Average | Total Year |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUNSHINE HOURS AND OCCUPANCY | | | | | | | | | | | | | | |
| Days | 31 | 28 | 31 | 30 | 31 | 30 | 31 | 31 | 30 | 31 | 30 | 31 | | 365.0 |
| Sunshine Hours per Day | 5.4 | 5.8 | 6.4 | 7.2 | 6.4 | 5.7 | 5.7 | 5.5 | 5.5 | 5.5 | 5.5 | 5.4 | 5.8 | |
| Sunshine Hours per Month | 167.4 | 162.4 | 198.4 | 216.0 | 198.4 | 171.0 | 176.7 | 170.5 | 165.0 | 170.5 | 165.0 | 167.4 | 177.4 | 2'129 |
| Guests Staying Overnight | 480 | 500 | 490 | 530 | 510 | 480 | 455 | 430 | 430 | 450 | 465 | 500 | 476.7 | 5'720 |
| Occupancy Rate * | 70% | 81% | 72% | 80% | 75% | 73% | 67% | 63% | 65% | 66% | 70% | 73% | 71% | |
| ENERGY CONSUMPTION AND PRODUCTION | | | | | | | | | | | | | | |
| Solar Energy Production kWh per Day ** | 128 | 138 | 152 | 171 | 152 | 136 | 136 | 131 | 131 | 131 | 131 | 128 | 138.7 | |
| Solar Energy Production kWh per Month ** | 3'980 | 3'862 | 4'718 | 5'136 | 4'718 | 4'066 | 4'202 | 4'054 | 3'923 | 4'054 | 3'923 | 3'980 | 4'218 | 50'616 |
| Energy Consumption kWh per Day *** | 114 | 131 | 116 | 130 | 121 | 117 | 108 | 102 | 105 | 106 | 114 | 118 | 115 | |
| Energy Consumption kWh per Month *** | 3'520 | 3'667 | 3'593 | 3'887 | 3'740 | 3'520 | 3'337 | 3'153 | 3'153 | 3'300 | 3'410 | 3'667 | 3'496 | 41'949 |
| Energy Savings kWh per Month with Solar | 460 | 195 | 1'124 | 1'249 | 977 | 546 | 865 | 901 | 770 | 754 | 513 | 314 | 722 | 8'667 |
| ELECTRICITY COSTS AND SAVINGS | | | | | | | | | | | | | | |
| Electricity Costs PHP per Month (on Grid, non Solar) **** | 33'890 | 35'302 | 34'596 | 37'420 | 36'008 | 33'890 | 32'125 | 30'360 | 30'360 | 31'772 | 32'831 | 35'302 | 33'655 | 403'854 |
| Electricity Costs USD per Month (on Grid, non Solar) ***** | 692 | 720 | 706 | 764 | 735 | 692 | 656 | 620 | 620 | 648 | 670 | 720 | 687 | 8'242 |
| Savings USD on Electricity per month | 89 | 38 | 217 | 241 | 188 | 105 | 167 | 174 | 148 | 145 | 99 | 60 | 139 | 1'670 |

* Percentage of rooms occupied during the month (in total 10 rooms good for 2-3 persons)
** 85 Panels on 144 m2 Roof space, Energy production per Panel: 280 W per hour
*** Average usage per guest staying overnight: 7.33 kWh
**** According to monthly electricity bill: 1 kWh = PHP 9.44 (USD 0.18)
***** 1 USD = 49 PHP

Through Solar Energy we could produce more than 120% of our monthly Energy usage with an average Occupancy of 70%. The actual average monthly electricity bill is about 10% of the total cost under normal operation and around 6% of the monthly revenue.

- For a completely self-sufficient, off-grid solar system, about 10 batteries (13.5 kWh) would be needed as storage.
- For a hybrid solar system connected to the grid, 2 batteries (13.5 kWh) would be sufficient to meet the energy demand during temporary electricity outages.

# Be part of the change and get rewarded

We want to use the abundant energy of the sun not only for moments of happiness for our guests, but also for independent climate-neutral production of power.

For your contribution we will invite you to stay here on one of the most amazing islands! Experience the great hospitality like also the relaxing atmosphere on Bantayan Island. If no time to travel we are happy to put your name on our Wall of Fame.


Thank you so much for your support and we hope to welcome you here on Bantayan Island soon!

The Solar Project - Bantayan Island

bantayanisland.info/solar