Ar. Andrés Prera, LEED Fellow, MSc Urban Management
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Guatemala

sustainable solutions
interaction
nature + people

first international svagriha project
41 points – 4 stars
efficiency  

human  
nature
Panadas Residence

Location: Guatemala City

Site Area: 1800 sq.m.

Built-Up Area: 475 sq.m.

Typology: Residential

SWA GRIHA Rating: 4 stars

The following strategies were adopted to reduce the building impact on the natural environment:

1. **Landscape**
   - Over 50% of the total open area on site is covered with soft and/or shaded under trees.
   - Evergreens, if available, have been planted on site.

2. **Energy**
   - Over 50% of total living area has under-drain design.
   - Lighting power density is 2.11 W/m², which is lower than the ASHRAE 90.1 specified upper limit of 2.95 W/m².
   - Solar photovoltaic panels of over 1kW nominal power and solar water heater of 100lt capacity have been installed on the roof of the residence.
   - As the local climate conditions provide good solar thermal comfort, therefore, the house has no air conditioning or fans installed.

3. **Water and Waste**
   - Plan of the house features separate buildings for sanitary water demand by about 50% compared to GRIHA.
   - Rainwater storage tank of 10000lt capacity has been installed on site to capture and utilize rainwater.
   - The project has plans to compost the organic waste on site.

4. **Material**
   - Use of low VOC paints have been used to maintain good indoor air quality.

5. **Livelihood**
   - A dedicated bathroom and toilet facility has been provided for the service staff.
   - The built-up area per family is 35 m², which is lower than the prescribed data.
   - A book in the greener measures of the project is being published to create more awareness on green buildings.
   - Waste water generated from the project is being recycled and reused.

**Integrated Design Teams**

Client: M. Daniel Panadas, Guatemala

Architect: M. Gustavo Hino, Guatemala

Green Building Design and Certification: Academia de Arquitectura de Guatemala

Rainwater Harvesting for 30% 1200lt
Passive architectural design strategies
Low VOC finishes
Purity of materials: Local materials

Daylighting: 83% daylit zone
Solar Heating for swimming pool

Solar Heating for water fixtures

LPD 2.19W/Sqm

Solar PV System for Energy Generation

Passive design strategies
Reduction of water demand by 56.8%.

No HVAC or fans are needed to achieve thermal comfort.
come in
THE BEGINNING

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