



Hibiscus Villa

Kerala, India

System specifications:

- **Batteries:** (32) L16RE-A, Trojan Battery's Premium Line of flooded deep-cycle batteries
- **Inverter-Chargers:** (2) Outback Power, 3048E
- **PV Charge Controllers:** (2) Outback FM80
- **Solar modules:** aSi Thin Film, Getwatt S100- 6KW

Thanneermukkam, India is located on the banks of Lake Vembanad where nature perfects its healing touch with the expanse of backwater that instantly casts an ethereal feeling. While it is a popular tourist destination, the remote region lacks a reliable grid-tied power supply, which poses a challenge to local resorts to use alternative power sources.

To ensure its guests have all the "comforts of home," the Hibiscus Villa resort home has implemented a state-of-the-art solar system with energy storage from Trojan Battery to power the villa's many electrical systems and appliances. Thomas Dominic, owner of Hibiscus Villa, wanted energy independence as well as energy security, and chose to install an off-grid solar photovoltaic system, enabling the villa to be unaffected by power failure or quality of the grid.

Hibiscus Villa is the area's most energy efficient building with the lowest energy footprint, both in terms of connected load and energy consumption. Despite popular local opinions that solar

installations were not a good fit for the Kerala region because of its rainy tropical climate, Hibiscus Villa's solar installation has been very successful in harnessing the power of the sun to support its electricity needs.

"Since the area's grid is very poor and experiences frequent power outages and very low voltages during the night, it is impossible to run air conditioners and similar inductive loads without a reliable energy source," said George Mathew, TeamSustain CEO. "The Hibiscus Villa installation helped illustrate to the country and the public in general that a properly engineered and executed solar PV system can work successfully in the area, and can be easily replicated in various installations."

The fully equipped resort home features high-end amenities that require electricity to operate so guests can enjoy their stay. Modern conveniences such as air-conditioning, LED lighting, television, microwave oven, refrigerators, hair dryers, and irons, etc. are powered by the solar system. The villa's swimming pool pump, sanitation system, water pump, water filtration system, and water pressure pump are also operated by the solar system that features Trojan batteries.

"TeamSustain took a holistic approach, ensuring the project was as energy efficient as possible," Mathew said. "This included installing LED lights and occupancy sensors, as well as energy efficient refrigerators and air conditioners."

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To consistently operate as a "green" resort, diesel generators are not used because of their noise and emission of noxious fumes that pollute the environment. Diesel generator also are very expensive to operate. In fact, the project's return on investment is estimated to be five years, primarily driven by fuel cost savings as a result of not operating diesel generators.

Because of the very demanding nature of this off-grid project, TeamSustain required the most powerful deep-cycle batteries for energy storage enabling Hibiscus Villa to access enough power to support its daily electrical needs.

TeamSustain chose Trojan Battery's Premium Line of flooded deep-cycle batteries which is specifically engineered to withstand the rigorous conditions of renewable energy applications.

Trojan's Premium Line incorporates advanced battery features such as Trojan's DuraGrid™, MaxGuard® XL separator and Alpha Plus® Paste technologies that provide superior performance, rugged durability and exceptionally long life. Trojan batteries play a critical role in providing uninterrupted power for Hibiscus Villa guests in the evenings and on cloudy days.

"With the successful implementation of its uniquely engineered solar system, Hibiscus Villa is the perfect example of a 'Net Zero' energy independent resort home," Mathew said. "The Hibiscus Villa installation is a clear testimony of the energy independence that can be achieved with solar technology, robust and reliable energy storage and engineering innovation."



For more information contact:

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Trojan batteries are available worldwide through Trojan's Master Distributor Network. We offer outstanding technical support, provided by full-time application engineers.

**For a Trojan Master Distributor near you, test
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