



VVIP Circuit House

Location	: Pune
Site Area	: Approx 9584.24 m ²
Built up Area	: 4886.90 m ²
Air-conditioned Area	: 2629.93 m ²
Non Air- conditioned Area	: 2256.97 m ²
Energy Consumption Reduction	: 42.04 % reduction in energy consumption compared to GRIHA benchmark
EPI	: 89.16 KWh/m ² /year
Renewable Energy	: Rated capacity of solar PV installed on site is 22 KW
TERI GRIHA provisional rating	: 5 Stars
Year of completion	: 2014 - 15

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

Sustainable Site Planning

- All necessary measures were adopted to preserve and protect landscape during construction, such as limiting construction activity to pre-designated areas, soil erosion control and storm water management using trenches and sedimentation basin.
- Building was planned on the site in such a way that minimum numbers of trees are required to be cut.
- Landscape has been designed to maximize green area and minimize hard paving. The net paved area is only 21.32% of landscape area.

Reducing water consumption

- The landscape water demand has been reduced by 48.6% from the GRIHA benchmark by minimizing the turf area, planting only indigenous species and using drip irrigation system for shrubs and trees.
- Building water use has been reduced by 53.1% from the GRIHA benchmark by using low flow fixtures.
- Phytotrid technology based STP of 25 kLD capacity has been installed on site. Treated water from the STP is being reused for landscape irrigation. Additionally, 35 kL of storage tank has been installed to collect rainwater for use in the building.

Reducing energy consumption (compared to GRIHA benchmarks) while maintaining occupant comfort.

- More than 80% of the regularly occupied spaces receive optimum daylight. The building is optimally oriented and façade is designed such that the heat gain is minimised and daylight is maximised.
- EPI of the building is reduced to 89.16 kWh/m²/yr from the benchmark EPI of 153.82 kWh/m²/yr with the help of high efficiency façade, optimizing artificial lighting and using high efficiency VRV system for air-conditioning.

Renewable energy technologies installed on site

- Solar photovoltaic of 22 kWp rated capacity has been installed on site which is equivalent to 10% connected load for lighting and air-conditioning. This will generate electricity equal to 43.47% lighting demand of the project.
- Heat pump based hot water system of 3,000 L capacity has been installed which shall cater to 90% of the daily hot water demand of the project.

Use of low energy materials

- Fly ash has been extensively used in the project in RCC, mortar plaster and in the form of AAC blocks.
- Low energy materials such as unpolished stone and ceramic tiles have been used.

Integrated Design Team

Client	: PWD Pune Project
Coordinator	: Mr. Santosh Bampalwar
Principal Architect	: Ar. Sunil Patil
Landscape Architect	: Ar. Sunil Patil
Project Management Consultant	: PWD
Structural Consultant	: Dr. A. B. Kulkarni and Associates
Electrical Consultant	: Siddhivinayak MEP consultants, Pune.
Green Building Design and Certification	: Environmental Design Solutions Pvt Ltd.