



Suzlon - One Earth

Location	: Pune, Maharashtra
Site Area	: 45392 m ²
Built-up Area	: 70865 m ²
Air-conditioned Area	: 40418 m ²
Non Air-conditioned Area	: 24582 m ²
Energy consumption reduction	: 47% reduction from GRIHA benchmark
Water consumption reduction	: 65% reduction from GRIHA benchmark
EPI	: 55.86 KWh/ m ² /year
Occupancy hours	: 2640 hours / year (approx.)
Renewable energy installed on site	: 154.83 KW
GRIHA rating	: 5 Stars

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

- 📍 Sustainable Site Planning:
 - Dust screens provided around construction area to prevent air pollution.
 - Soil erosion control measures adopted on site.
 - Utility corridors designed along roads and pathways on site.
- 📍 Reduction in water consumption (compared to GRIHA benchmark):
 - 65% reduction in building water consumption by use of low-flow fixtures.
 - 55% water recycled and reused within the complex.
 - 50% reduction in landscape water consumption by planting native species of trees and shrubs and by using efficient irrigation systems.
- 📍 Passive architectural design strategies adopted in the building:
 - Orientation: Facades of the building face north, south, north-west and south-east
 - 100% shading by external louvers on first and second floor.
 - Partly self-shading blocks.
 - Small terraces created in all blocks to promote interaction with external environment.
- 📍 Reduction in energy consumption (compared to GRIHA benchmark) while maintaining occupant comfort:
 - For achieving visual comfort
 - Adequate day lighting and glare control measures adopted.
 - 100% desks equipped with LED lights governed by motion sensors.
 - For achieving thermal comfort
 - Pre-cooling of fresh air
 - Heat recovery/exchanger mechanisms to minimize energy consumption
 - High efficiency mechanical systems to reduce energy consumption.
- 📍 Renewable energy technologies installed on site:
 - Installed capacity of solar energy: 13.44 KW.
 - Installed capacity of wind energy: 18 windmills of 4.75 kW each.
 - 250000 units of electricity generated annually.
- 📍 Use of low-energy/green materials:
 - 37% reduction in quantity of structural concrete by using Post Tension slabs.
 - 50% reduction in quantity of structural steel by using Post Tension slabs.
 - Use of siporex fly-ash blocks for better insulation.

Building performance as per audit report:

📍 Energy

- Energy generated through solar PV - 127,299 KWh/year.
- Final EPI achieved - 33.2 KWh/sqm/year.
- Actual reduction in EPI from base case - 56% (9% more than predicted).
- Thermal comfort is met as per NBC 2005.
- Lighting lux levels are met as recommended by NBC 2005.

📍 Water and waste

- Water test report indicates conformity to IS code 10500.

📍 Noise level

- Outdoor noise levels are within acceptable limits as per CPCB.
- Indoor noise levels are within acceptable limits as per NBC 2005.

Integrated Design Team:

Project Head:

Architect:

Landscape Design:

Mechanical/Electrical/Plumbing:

Energy Consultant:

GRIHA Facilitation:

Mr Shimone Samuel

Christopher Charles Benninger, Pune

Ravi and Varsha Gavandi

Spectral Services Consultants

Environmental Design Solutions

Environmental Design Solutions