



smartData Enterprises (I) LTD

Location	: Nagpur, Maharashtra
Site Area	: 3000 m ²
Built up Area	: 2972 m ²
Energy Consumption Reduction	: 54% reduction in energy consumption compared to GRIHA benchmark
EPI	: 64.4 KWh/ m ² /year
Renewable Energy	: Installed capacity of solar Renewable Energy on site is 6.5 KWp
GRIHA final rating	: 4 Stars
Year of completion	: 2014-15

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

📍 Sustainable Site Planning:

- The fertile top soil was collected and stored on site during construction and re-applied for landscaping post construction.
- Spaces such as services and toilets are provided along the east and west direction, which act as buffer spaces.
- Proper timing of construction ensured to minimize soil erosion and pollution.

📍 Reducing water consumption:

- 56.86% reduction in building water consumption by use of low flow fixtures.
- 42% reduction in the landscape water requirement over the GRIHA base case.
- Reduction in water consumption during construction by using gunny bags and curing compounds for curing.

📍 Reduction in energy consumption (compared to GRIHA benchmarks) while maintaining occupant comfort:

- For achieving visual comfort:
 - » Window to Wall ratio (WWR) is 12.57%, which is less the 60% as mandated by GRIHA.
 - » Double glazing with an SHGC of 0.23 has been installed in the building which conforms to the benchmarks of Energy Conservation Building Code (ECBC) 2007.
 - » 85% of total living area is day-lit and meets daylight factor as prescribed by National Building Code (NBC).
- For achieving thermal comfort:
 - » ECBC compliant building envelop to reduce cooling loads in the building.
 - » Centralized air conditioning done through variable refrigerant flow technology.

📍 Renewable energy technologies installed on site:

- Installed capacity of solar and wind energy to meet space conditioning and internal lighting loads: 6.5 KWp.
- Installed 20 nos LED solar street lights

📍 Use of low-energy/green materials:

- Fly ash bricks and Autoclaved Aerated Concrete (AAC) blocks had been used in the project to demonstrate utilization of fly ash in building structure.

Integrated Design Team:

Project Management Consultant	: Abhijeet Shahi, smartData Enterprises (I) Ltd
Project Coordinator	: Pankaj Kachewar - smartData Enterprises (I) Ltd
Principal Architect	: Parag Kotwal, Ekveera Architects
Green Building Consultant	: Amar Nath, Scube Solutions

Building performance as per audit report

Energy

- Final EPI achieved-64.4 KWh/sqm/year.
- Reduction in EPI from proposed case- 54%.
- 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 codes.
- Water consumption in building-7631.82 kL/ annum

Noise level

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