NHPC Corporate Office Phase 2

Location	:	Faridabad, Haryana
Site Area	:	23,733 m^2
Built up Area	:	14,584 m^2 (excluding basement)
Typology	:	Residential (excluding auditorium)
Air-conditioned Area	:	13,284 m^2
Non Air- conditioned Area	:	1300 m^2
Energy Consumption Reduction	:	20% reduction in energy consumption compared to GRIHA benchmark
EPI	:	104 kWh/m^2/year
Renewable Energy	:	Rated capacity of solar PV installed on site is 70 KWp
GRIHA provisional rating	:	4 Stars
Year of completion	:	2014

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

Sustainable Site Planning

- Most of the existing trees (approximate 100 nos) were properly preserved and protected and also compensation of damaged trees was done to maintain the natural environment.
- Top soil from the entire site area was properly protected and preserved and re applied within site premises for landscaping application.
- The construction activity was planned in an effective manner by avoiding the rainy season for excavation work and proper arrangement was done by providing sedimentation basin and drains along the boundary wall so that runoff from site premises does not go outside.

Reducing water consumption:

- The project has demonstrated a reduction in water consumption in lamdscaping by more than 64.8% compared to the base case scenario by adopting necessary water saving measures by using drip irrigation system for shrubs and trees & sprinklers for lawn.
- Annual water consumption for landscaping has been reduced from 19,063 kl to 7,279 kl
- Low flow taps, sensor based urinals and 3lt/6lt flushing for WC have been installed on site reducing the water demand of the building by 30.95%.

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

- For achieving visual comfort
  - » The LPD of the project is 7.8 W/sqm which is lower than the ECBC specified LPD limit of 10.80 W/ sqm for offices.
  - » Installation of Motion sensor/ Occupancy sensor at Conference Rooms, Washrooms, lobby area and Cabins etc.
  - » 100 % of outdoor lighting fixtures are feeding with Solar PV systems.
- For achieving thermal comfort
  - » Energy efficient building envelope comprising of cavity wall, insulated roof and high performance glazing.
  - » Energy recovery ventilation system and
  - » ECBC compliant water cooled screw chillers and efficient plant equipment's.

Renewable energy technologies installed on site:

- 70 kWp solar photovoltaic system is installed on rooftop
- 48% of lighting energy consumption is offset through SPV system

Use of low energy materials:

- The building blocks used in the construction are fly ash bricks with more than 40% fly ash content by volume.
- PPC with 33% fly ash content is used in Reinforced Concrete, masonry mortar and plaster are used.
- Use of Vitrified tiles, kota stone and cement concrete is done for flooring which contributes to use of more than 70% Low energy material.

Integrated Design Team

Client	:	NHPC Corporate Office Phase 2
Coordinator	:	NHPC
Principal Architect	:	M/s Enarch Consultants Private Limited
Project Management Consultant	:	National Building Construction Corporation (NBCC)
Green Building Design and Certification	:	The Energy and Resources Institute (TERI)