Suzlon - One Earth

**Location**: Pune, Maharashtra
**Site Area**: 45392 m²
**Built-up Area**: 70865 m²
**Air-conditioned Area**: 40418 m²
**Non Air-conditioned Area**: 24582 m²
**Energy consumption reduction**: 47% reduction from GRIHA benchmark
**Water consumption reduction**: 65% reduction from GRIHA benchmark
**EPI**: 55.86 KWh/m²/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.

**Integrated Design Team:**
**Project Head:** Mr Shimone Samuel
**Architect:** Christopher Charles Benninger, Pune
**Landscape Design:** Ravi and Varsha Gavandi
**Mechanical/Electrical/Plumbing:** Spectral Services Consultants
**Energy Consultant:** Environmental Design Solutions
**GRIHA Facilitation:** Environmental Design Solutions

**Building performance as per audit report:**

**Energy**
- Energy generated through solar PV - 127,299 KWh/year.
- Final EPI achieved - 33.2 KWh/sm²/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.