



Power Grid SR-II RHQ Office Building, Bangalore

Location	: Singanayakanahalli Village Dodballapur Road, Bangalore
Site Area	: 13787.32 m ²
Built up Area	: 3204 m ²
Air-conditioned Area	: 925 m ²
Non Air- conditioned Area	: 2,315 m ²
Typology	: Commercial/Office
Energy Performance Index (EPI)	: 32.70 KWh/ m ² /year
Renewable Energy	: 4.2 kWp Solar PV installation
GRIHA provisional rating	: 4 Stars
Year of completion	: 2017

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

📍 Sustainable Site Planning:

- Barricading of site was done to prevent air pollution.
- Existing trees were preserved and native trees were planted.
- Adequate ventilation has been ensured to facilitate and maintain optimal thermal comfort in the non A/C public spaces.
- Systematic site management practices were adopted such as confining the construction activities to pre-designated areas and minimal damage to the existing topography of site.

📍 Water management:

- Reduction of 53.35% from the GRIHA base case has been demonstrated in building water use by installing water efficient flush and flow fixtures.
- Strategies such as use of native shrubs, trees; minimal turf area; and efficient irrigation systems have been utilized to achieve 44.74% reduction in landscape water consumption from the GRIHA base case.
- Construction water consumption was reduced by use of RMC, and curing techniques such as gunny bags and ponding.

📍 Energy Optimization:

- The Energy Performance Index of the project has been reduced by 72.75% below the GRIHA base case through envelope optimization, and integrating high performance systems.
- Lighting Power density has been reduced over ECBC prescribed values with the use of efficient lighting fixtures like T5 and LEDs; which further aided in indirectly reducing the air conditioning consumption due to less heat emission.
- Installed glass with low SHGC value of 0.26, in combination with the shading devices has reduced the heat gain into the building. Walls were constructed using concrete blocks which have thermal breathability.
- 76% of total living area is day-lit and meets daylight factor as prescribed by National Building Code (NBC) 2005.
- Light pipes have been used to enhance day lighting.
- 4.2 kw solar photovoltaic PV system has been installed on site to reduce the dependence on fossil fuels.

📍 Sustainable building materials:

- High grade steel & concrete have been used to optimize the embodied energy of the materials used in structural concrete.
- Materials with recycle content such as fly ash bricks have been used for block work.
- Regionally available materials such as Sadaralli stones are used in the project.
- All paints, adhesives & sealants used in the project have low VOC content.
- Insulation, refrigerant and firefighting system are zero ODP compounds.

Integrated Design Team:

Client	: Power Grid Corporation of India Ltd.
Principal Architect	: Klimart Pvt. Ltd.
Project Management Consultant	: KBR Infratech Ltd.
Green Building Design and Certification	: The Energy and Resources Institute