



## Service Building at 2 x 600 MW SCCL Thermal Power Plant

<b>Location</b>	: Singareni Thermal Power Project, Pegadapalli (V), Jaipur (M), Dist. Mancherial, Telangana, India
<b>Site Area</b>	: 1905 m <sup>2</sup>
<b>Built-up Area</b>	: 6086.5 m <sup>2</sup>
<b>Air-Conditioned Area</b>	: 4156 m <sup>2</sup>
<b>Non-Air-Conditioned Area</b>	: 1930.5 m <sup>2</sup>
<b>Typology</b>	: Commercial
<b>Energy Consumption Reduction</b>	: 47.86% reduction in energy consumption compared to GRIHA benchmark
<b>Energy Performance Index (EPI)</b>	: 87.59 kWh/m <sup>2</sup> /year
<b>Renewable Energy</b>	: Rated capacity of solar PV installed is 10 kWp
<b>GRIHA Provisional Rating</b>	: 5 Stars
<b>Year of Completion</b>	: 2017

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

### 🕒 Sustainable Site Planning:

- Air pollution control measures such as site barricading, coverage of dusty material, wheel washing, and water sprinkling were implemented during construction.
- More than 50% of hardscape area is shaded by trees.
- Gravity fed sewage system has been laid.

### 🕒 Water Management:

- Reduction of more than 52% from the GRIHA base case has been demonstrated in landscape water demand through use of highly efficient drip irrigation system.
- Reduction of 58.2% has been demonstrated on building water use by installing water efficient flush and flow fixtures.

### 🕒 Energy Optimization:

- Automatic timer based control has been provided for 100% of the outdoor lighting system.
- 62.98% of the habitable spaces are day lit and meet the daylight factors prescribed by the National Building Code of India.
- EPI reduction of 47.86% from GRIHA benchmark has been demonstrated.
- Temperature sensor is placed for maintaining the temperature level in the cooling system. RH sensor is also installed in the system.

### 🕒 Renewable Energy Technology installed on site:

- Rooftop solar PV of 10 kWp capacity, consisting of 40 panels, has been installed on site.

### 🕒 Waste Management:

- Multi-coloured bins have been provided on each floor level to collect waste in a segregated manner at source.
- A dedicated place has been provided on site to store segregated waste prior to disposal.

### 🕒 Sustainable Building Materials:

- 100% of materials used in sub-assembly/internal partitions/false ceilings in the project are low energy containing recycled content, which include gypsum board, medium-density fibre boards and vitrified tiles.
- Pozzolana Portland Cement with 30% fly-ash content by weight has been used in plaster and masonry mortar.

### Integrated Design Team:

<b>Client</b>	: The Singareni Collieries Company Limited (SCCL-STPP)   A Government Company
<b>Principal Architect</b>	: M/s GreenTree Building Energy Ltd. and Bharat Heavy Electrical Limited (BHEL)
<b>Landscape Architect</b>	: M/s GreenTree Building Energy Ltd.
<b>Project Management Consultant</b>	: Bharat Heavy Electrical Limited (BHEL)
<b>Structural Consultant</b>	: M/s GreenTree and Bharat Heavy Electrical Limited (BHEL)
<b>Electrical Consultant</b>	: Bharat Heavy Electrical Limited (BHEL)
<b>Green Building Design and Certification</b>	: M/s GreenTree Building Energy Ltd.
<b>Project Sub-Contractor</b>	: M/s Prasad & Company Limited