



## Construction for Upgradation of Tirunelveli Medical College

<b>Location</b>	: Tirunelveli, Tamil Nadu
<b>Site Area</b>	: 33,710 m <sup>2</sup>
<b>Built-up Area</b>	: 23,031.69 m <sup>2</sup>
<b>Typology</b>	: Hospital building
<b>Energy Consumption Reduction</b>	: 72.6% reduction in Energy Consumption compared to GRIHA benchmark
<b>EPI</b>	: 123.3 kWh/ m <sup>2</sup> /year
<b>GRIHA Provisional Rating</b>	: 3 Star Rating (Version: 3.1)
<b>Year of Completion</b>	: 2021

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

### 📍 Sustainable Site Planning:

- Air pollution control measures such as site barricading, wheel washing facility and other appropriate measures were strictly adhered to during construction.
- All the 16 existing mature trees on site were preserved and 79 new trees were planted.

### 📍 Water Management:

- Reduction of 55% from the GRIHA base case has been demonstrated in the building water demand by installing efficient low-flow fixtures.
- Gunny bags were used for curing of columns and ponding technique was used for curing of slabs.

### 📍 Energy Optimization and Occupant Comfort:

- For achieving visual comfort:
  - » 77.2% of the regularly occupied spaces are day-lit and meet the daylight factor as prescribed by NBC 2005.
  - » Automatic timer control has been provided for 100% of the outdoor lighting system.
- For achieving thermal comfort:
  - » EPI reduction of 72.6% from the GRIHA base case has been demonstrated through the integration of high performance systems.

### 📍 Renewable Energy Technology installed on site:

- Solar photovoltaic system of capacity 10 kWp has been installed.
- Solar hot water system (flat plate collector type) of 6,200 LPD capacity was installed.

### 📍 Sustainable Building Materials:

- Pozzolana Portland cement with 28% fly-ash content by weight has been used in plaster and masonry mortar.
- Vitrified tiles, granite and ceramic tiles have been used as flooring materials in the project.
- 100% of the internal doors and frames installed in the building were low energy.

### 📍 Waste Management:

- Multi-colored bins have been provided for segregation of dry & wet waste.
- Central waste collection area has been provided for storage of segregated waste on site.
- Organic waste converter of capacity 125kg/day has been installed on site to treat bio-degradable waste.

### Integrated Design Team:

<b>Client</b>	: HITES – HLL Infra Tech Services
<b>Principal Architect</b>	: Achal Kataria Architects
<b>Landscape Architect</b>	: Achal Kataria Architects
<b>Structural Consultant</b>	: TPC Technical Projects Consultants (P) Ltd
<b>Electrical Consultant</b>	: Acrobat Engineers Pvt. Ltd
<b>Green Building Design and Certification</b>	: Ela Green Building & Infrastructure Consultants Pvt. Ltd