



Infrastructure Development of Government Medical College in Odisha - VSS

Location	: Burla, Odisha
Site Area	: 60,743 m ²
Built-up Area	: 53,180 m ²
Air-Conditioned Area	: 15,954 m ²
Non-Air-Conditioned Area	: 37,226 m ²
Typology	: Commercial (Office Building)
Energy Consumption Reduction	: 73.09% reduction in energy consumption compared to GRIHA benchmark
Energy Performance Index (EPI)	: 36.54 kWh/m ² /year
Renewable Energy	: Rated capacity of solar PV installed on site is 15 kW
GRIHA Provisional Rating	: 3 Star Rating (Version 3.1)
Year of Completion	: 2017

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

📍 Sustainable Site Planning:

- Out of the 33 existing trees, 5 trees were cut, 28 trees were preserved and 55 new native trees were planted.
- Utility services are consolidated and are planned along the roads for preventing unnecessary cutting and trenching of the site.

📍 Water Management:

- Reduction of 54.58% from the GRIHA base case has been demonstrated in building water demand by installing water efficient low flow fixtures.
- Reduction of 31.20% from the GRIHA base case has been demonstrated in landscape water demand.
- Construction water consumption was reduced by use of gunny bags for curing and ponding technique for curing of roof slabs.

📍 Energy Optimization:

- For achieving visual comfort:
 - » 63.14% of the habitable spaces in the building are day lit and meet the daylight factors as prescribed by the National Building Code of India.
 - » DGU with 0.47 SHGC has been installed for medical block and auditorium.
- For achieving thermal comfort:
 - » Heat Reflective albedo paints were painted on the roofs of the non-air-conditioned buildings.
 - » Through integration of high performance systems, EPI reduction of 73.09% from the GRIHA base case has been demonstrated.

📍 Renewable Energy Technology installed on site:

- Solar Photovoltaic system of capacity 15 kWp is installed on-site which meets the 100% indoor lighting requirement.

📍 Sustainable Building Materials:

- Pozzolana Portland cement indicating use of 33.4% fly-ash content by weight has been used in plaster and masonry mortar.
- Sustainable materials such as mineral fiber for false ceiling; gypsum for paneling; vitrified tiles and granite for flooring have been used.
- Reduction of 31% from GRIHA base case has been achieved in embodied energy of non-structural elements by using flyash bricks.

Integrated Design Team:

Client	: VSS Medical College, Burla
Principal Architect	: L&T Construction
Landscape Architect	: L&T Construction
Structural Consultant	: L&T Construction
Electrical Consultant	: L&T Construction
Green Building Design and Certification	: SGS India Limited