



Type IV Non- Faculty Apartments, NITK Surathkal

Location	: Mangalore, Karnataka
Site Area	: 2,550 m ²
Built-up Area	: 3,662 m ²
Typology	: Residential
Energy Consumption Reduction	: 36.5% reduction in Energy Consumption compared to GRIHA benchmark
EPI	: 63.5 kWh/ m ² /year
GRIHA Provisional Rating	: 3 Star Rating (Version: 3.1)
Year of Completion	: 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, covering of fine construction materials and other appropriate measures were strictly adhered to during construction.
- 1,545 cu.m top soil was preserved at site and reused for landscaping.
- Building has been design in such a way that it mutually shades each other and reduces solar heat gain.

🔗 Water Management:

- Reduction of 33.54% from the GRIHA base case has been demonstrated in the building water demand by installing efficient low-flow fixtures.
- Reduction of 50% from the GRIHA base case has been demonstrated in the landscape water demand efficient irrigation systems.
- Hessian cloth was used for curing of columns and ponding technique was used for curing of slabs.

🔗 Energy Optimization and Occupant Comfort:

- For achieving visual comfort:
 - » 98% of the regularly occupied spaces are day-lit and meet the daylight factor as prescribed by NBC 2005.
 - » Automatic timer based control has been provided for 100% of the outdoor lighting system.
- For achieving thermal comfort:
 - » EPI reduction of 36.5% from the GRIHA base case has been demonstrated through the integration of high performance systems.

🔗 Renewable-energy-based hot water system:

- Solar PV system of 1 MWp has been installed, which is able to offset 100% of the internal lighting consumption of the project.

🔗 Sustainable Building Materials:

- Cement concrete blocks with 22% fly ash content by volume have been used for walling in the project.
- Vitrified tiles, ceramic tiles and granite have been used as flooring materials.
- 100% of the paints, adhesives & sealants used in the project are low VOC.

🔗 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.
- Moving Bed Biofilm Reactor (MBBR) type STP of 500 kLd capacity has been installed.

Integrated Design Team:

Client	: NATIONAL INSTITUTE OF TECHNOLOGY, SURATHKAL
Principal Architect	: AAD ARCHITECTS
Landscape Architect	: AAD ARCHITECTS
Electrical Consultant	: AAD ARCHITECTS
Structural Consultant	: CPWD
Green Building Design and Certification	: CORAL ARCHITECTS