Madanjeet School of Green Energy Technologies, Pondicherry University, Puducherry

Location	:	Pondicherry University, Puducherry
Site Area	:	12248 m^2
Built up Area	:	4728 m^2
Air-conditioned Area	:	2414 m^2
Non Air-conditioned Area	:	2314 m^2
Typology	:	Institutional
Energy consumption reduction	:	85.88 kWh/ m^2/yr (38.65% reduction in energy consumption compared to GRIHA benchmark)
Renewable Energy	:	Rated capacity of solar PV installed is 15 kWp
GRIHA provisional rating	:	3 Stars
Year of Completion	:	2015

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

Sustainable Site Planning:

- Excavated top soil was reused within the Pondicherry University campus.
- Total 132 trees were cut, 62 were protected and 16 were transplanted out of 210 existing trees. Compensatory plantation was done in more than 1:4 ratio, by planting 660 new trees within the Pondicherry University boundary.
- Sitting areas for students were created underneath the existing preserved trees.

Water management:

- Reduction of 51.34% from the GRIHA base case has been demonstrated in building water use by installing water efficient flush and flow fixtures.
- Reduction of 30% from the GRIHA base case has been demonstrated in landscape water demand through use of efficient landscape methodologies and native plant species.

Energy Optimization:

- Energy Performance Index has been reduced by 38.65% compared to GRIHA benchmark.
- 15 kWp solar PV panels have been installed in the project which meets 54% of interior lighting requirement.
- For achieving visual comfort:
  - » Energy efficient artificial lighting including sensors was installed as per ECBC norms.
  - » 53.63% of the habitable spaces are day lit and meet the daylight factors as prescribed by the National Building Code of India.
- For achieving visual comfort:
  - » Double glazed windows with a Solar Heat Gain Coefficient of 0.25; cavity wall and roof insulation were installed as a part of building envelope.

Sustainable building materials:

- Fly-ash bricks containing 40% fly-ash content by volume have been used in the interior and exterior walls.
- 30% of cement was replaced with fly-ash by weight in the structural concrete.
- Pozzolana Portland Cement indicating use of 30% fly-ash content by weight has been used in plaster and masonry mortar.
- Granite stone and vitrified tiles were used as flooring material in the building.

Integrated Design Team:

Client	:	Pondicherry University, Puducherry
Project Coordinator	:	Mukesh & Associates, Salem
Principal Architect	:	Mukesh & Associates, Salem
Landscape Architect	:	Mukesh & Associates, Salem
Project Management Consultant	:	Rites Ltd., Gurgaon
Structural Consultant	:	Mukesh & Associates, Salem
Electrical Consultant	:	Mukesh & Associates, Salem
Green Building Design and Certification	:	Mukesh & Associates, Salem