



Green, energy efficient buildings are the need of the hour, say experts during Green Tour

New Delhi, November 11: The Energy and Resources Institute (TERI) and ADaRSH (Association for Development and Research of Sustainable Habitats) today organized a Green Tour of the Indira Paryavaran Bhawan, India's first net zero energy building, which has been constructed through the adoption of solar passive design and energy efficient building material.

The building has got GRIHA 5-Star (provisional) rating for the following features:

- The design is such that **75 per cent of natural daylight is utilised** to reduce energy consumption.
- The entire building has an **access friendly design for differently-abled persons**.
- With an installed capacity of 930 KW peak power, **the building has the largest rooftop solar system** among multi-storied buildings in India.
- The building is fully compliant with requirements of the Energy Conservation Building Code of India (ECBC). **Total energy savings of about 40 per cent has been achieved** through the adoption of Energy Efficient Chilled Beam System of Air Conditioning. This is an innovative air conditioning system, where air conditioning is done by convection currents, rather than air flow through air handling units, and chilled water is circulated right up to the diffuser points unlike the conventional systems.
- **Green materials have been used like fly ash bricks**, regional building materials, materials with high recyclable content, high reflectance terrace tiles and rock wool insulation of outer walls.
- **Use of renewable bamboo jute** composite material for door frames & shutters.
- **UPVC windows, with hermetically sealed double glass**. Calcium Silicate ceiling tiles having high recyclable content, and grass paver blocks in pavements and roads.
- Reduction in water consumption has been achieved by the use of low discharge water fixtures, **recycling of waste water through Sewage Treatment Plant**, use of plants with low water demand in landscaping, **use of geothermal cooling for HVAC system, rainwater harvesting** and use of curing compounds during construction.

Speaking about the energy efficiency of the building, Ms Mili Majumdar, Director, Sustainable Habitat Division, TERI, said: **"The Indira Paryavaran Bhawan is one of the first buildings in India to have deployed energy efficiency and renewable energy technologies at a large scale. It is one of the exemplary projects to be rated under GRIHA and has set standards that can be emulated by upcoming buildings in the region."**

The building is an earthquake resistant structure, with a total plinth area of 31,488 sq m. The building covers only 30 per cent of the total area, while more than 50 per cent area, outside the building, is a soft area with plantation and grassing. The building has a robotic parking system in

the basement that can accommodate about 330 cars. Thin client networking system has been provided, instead of conventional desktop computers to minimise energy consumption.

Buildings have an enormous impact on the environment, human health, and the economy. The energy used to heat and power our buildings leads to the consumption of large amounts of energy, mainly from the burning fossil fuels, oil, natural gas and coal, which generate significant amounts of carbon dioxide (CO₂), the most widespread greenhouse gas. The successful adoption of green building strategies can maximize both the economic and environmental performances of buildings.

About GRIHA

GRIHA is an acronym for Green Rating for Integrated Habitat Assessment and is a rating tool that helps people assess the performance of their building against certain nationally acceptable benchmarks. It evaluates the environmental performance of a building holistically over its entire life cycle, thereby providing a definitive standard for what constitutes a 'green building'. The rating system, based on accepted energy and environmental principles, will seek to strike a balance between the established practices and emerging concepts, both national and international. Some GRIHA facts and figures:

- ❖ GRIHA registered projects: 550
- ❖ GRIHA footprint: More than 20 million sq. m.
- ❖ Rated projects: 30

About TERI

The Energy and Resources Institute (TERI) is an independent, not-for-profit research organization deeply committed to every aspect of energy, environment, and sustainable development. From providing environment-friendly solutions to rural energy problems, to helping shape the development of the Indian oil and gas sector; from tackling global climate change issues across many continents to enhancing forest conservation efforts among local communities; from advancing solutions to growing urban transportation and air pollution problems to promoting energy efficiency in Indian industries, the emphasis has always been on finding innovative solutions to make the world a better place to live in. All activities at TERI move from formulating local and national-level strategies to suggesting global solutions tackling critical energy and environment related issues.

Headed by Dr R. K. Pachauri, also the chairperson of the Nobel Peace Prize winning climate change body, IPCC, TERI has emerged as an institution of excellence for its path-breaking research, and is a global brand widely respected by political leaders, policy makers, corporate entities as well as the civil society at large.

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