



# Indira Paryavaran Bhawan (IPB)

<b>Location</b>	: Aliganj, Jor Bagh Road, New Delhi
<b>Site area</b>	: 9,565 m <sup>2</sup>
<b>Built-up area</b>	: 3,1400 m <sup>2</sup> , (18726 m <sup>2</sup> – superstructure & 12675 m <sup>2</sup> - Basement)
<b>Air-conditioned area</b>	: 1,1967 m <sup>2</sup>
<b>Non Air-conditioned area</b>	: 1,9433 m <sup>2</sup>
<b>Energy consumption reduction</b>	: 67.3 % reduction in energy consumption compared to GRIHA benchmark
<b>EPI</b>	: 24.13 KWh/ m <sup>2</sup> /year
<b>Renewable Energy</b>	: Rated capacity of solar PV installed on site is 930 KW
<b>GRIHA provisional rating</b>	: 5 Stars
<b>Year of completion</b>	: 2013

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

- Sustainable site planning:**
  - 3 • The IPB office building for the ministry of environment and forests has been planned in 2 parallel blocks facing the north south direction, with a large linear open court in the centre. The Building blocks create a porous block form to optimize air movement throughout the site and the N-S orientation allows for optimum solar access and shading.
  - The large no. of trees on site have mostly been preserved to preserve the relatively cooler microclimate of this relatively green segment of the city. Greenery has augmented by creating hard green spaces all around.
  - A full Solar Panel Cover on top covers the building, the court and the edges to further create a shaded microclimate. The Building is planned as a Net Zero Building producing as much energy onsite through solar energy, as it consumes over the year. This is the first govt. building in the country to achieve this landmark and one of the very few full fledged multifunctional office buildings in the world to do so on a tight urban site.
- Reducing water consumption:**
  - All water has been recycled to create a zero wastewater discharge building by utilizing an STP with FAB/MBBR technology.
  - Low flow fixtures have been used to reduce the water consumption of the building by 64%
  - Usage of Native plants/trees and a judicious usage of sprinkler and drip irrigation helps reduce the water requirement further.
- Reducing energy consumption (compared to GRIHA benchmarks) while maintaining occupant comfort:**
  - o For achieving visual comfort:
    - Direct line of sight to the outdoor environment to vision glazing for building occupants for more than 90% of the occupied spaces. Avoiding Deep floor plates to create maximum daylighted spaces.
    - Landscaping planned with native species and water body features in central court and all around the building.
  - o For achieving thermal comfort:
    - All circulation spaces or passages were naturally ventilated / shaded / not air conditioned.
    - Energy Efficient Chilled beam based Cooling system proposed together with condenser water cooling through ground pipes.
    - Openable windows were proposed in conditioned areas to be able to utilize favourable outdoor conditions.
    - Insulated Walls through using an integrated AAC + Rockwool combination together with high efficiency DGUs and UPVC frames for the windows.
- Renewable energy technologies installed on site:**
  - It's planned as an energy positive building, where both the blocks and the whole central courtyard is covered with efficient solar PV's of 930 KWp.
- Use of low energy materials:**
  - Tile terrazzo flooring combined with local stones, Jute Bamboo composite internal doors, Upvc windows and Sandstone Jalis.

## Integrated Design Team:

<b>Client</b>	: Ministry of Environment and Forests,
<b>Project Coordinator</b>	: CPWD
<b>Principal Architect</b>	: PWD
<b>Landscape Architect</b>	: CPWD
<b>Project Management</b>	: CPWD
<b>Structural Design</b>	: Central Design Organization, CPWD
<b>MEP Consultant</b>	: Spectral Services Consultants
<b>Green Building Design and Certification</b>	: Deependra Prashad, Architects and Planners (DPAP)