

GRIHA: Going the Green Way



A society is defined not only by what it creates, But by what it refuses to destroy –Johan Sawhill
Human Habitats (buildings) interact with the environment in various ways. Throughout their life cycles, from construction to operation and then demolition, they consume resources in the form of energy, water, materials, etc. and emit wastes either directly in the form of municipal waste or indirectly as emissions from electricity generation. The growth and development of our communities has a large impact on our natural environment. The manufacturing, design, construction and operation of the buildings in which we live and work are responsible for the consumption of many of our natural resources. With an overall objective to reduce resource consumption and greenhouse gas emissions and to enhance the use of renewable and recycled resources by the building sector, GRIHA (developed by TERI) was adopted as the national rating system for green buildings by the Government of India in 2007.

GRIHA- Green Rating for Integrated Habitat Assessment

GRIHA, short for Green Rating for Integrated Habitat Assessment is a Sanskrit word meaning 'abode'. In India, it is mandated to promote development of buildings and habitats through GRIHA. It attempts to minimize a building's resource consumption, waste generation and overall ecological impact to within certain nationally acceptable limits. GRIHA is a rating tool that helps people assess the performance of their building against certain nationally acceptable benchmarks. Internationally, the rating system is based on accepted energy and environmental principles which seek to strike a balance between the established practices and emerging concepts.

Going Green- Tirupati and Chandigarh got 4 Star Rating

As a major step towards reducing carbon footprint, Airports Authority of India being a responsible organization, is committed to adopt green building norms as per GRIHA. It is a matter of immense pride for AAI that New Integrated Passenger Terminal buildings at Chandigarh and Tirupati airports have been conferred with GRIHA-4 Star rating.

Green features adopted at Tirupati Airport:

- Fly Ash bricks, lux-level sensors and timers for street lighting
- Low heat gain glass, LED lighting, energy efficient centrifugal chillers, Low VOC paints (Volatile Organic Compound)
- Rain water Harvesting, Low heat gain Glazing
- Controlled taps and flushing systems to check wastage of water, Sewage treatment plant, re-use of treated water for gardening and flushing
- Double Insulated Roofing System to avoid the transfer of direct heat from the sun into the building
- VFD's (Variable Frequency Drive) for High capacity Motors, Grass track pavers in the parking lot



Green features adopted at Chandigarh Airport:



- Terminal building designed for optimal solar orientation with apt shading to minimize heat gain and maximize energy efficiency
- 58% of the façade limited to glass and well-insulated roof
- Building AC controlled by variable frequency drive (VFD) and advanced building management system (BMS) for high efficiency
- Terminal building constructed using recycled products and sustainable materials like fly ash
- Recharge wells developed for rainwater harvesting
- A 600-kld STP treating sewage water
- Valuable top soil preserved during building excavation and utilized for horticulture and landscape work

There are many benefits of a green design to a building owner, user and the society as a whole. It helps in lower energy consumption without compromising comfort and destruction of natural areas, habitats, biodiversity and reduced soil loss from erosion etc. On a broader scale, Green system, along with the activities and processes that lead up to it, will benefit the community at large with the improvement in the environment by reducing Greenhouse gas emissions, reducing energy consumption and the resultant stress exerted on natural resources.