Grand Chola, ITC Hotels Limited

Location: Chennai
Site Area: 32330 SqM
Total Built up Area: 132598 SqM
Air-conditioned Area: 132598 SqM
Non Air-conditioned Area: NA
Energy Consumption Reduction: 41.5% reduction from GRIHA benchmark
Water consumption reduction: 50.7% reduction from GRIHA benchmark
EPI: 186 kWh/SqM/year
Occupancy hours: 24 hours/day (24x7)
Renewable energy installed on site: 12600 KWp
GRIHA rating: 5 Stars

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

- **Sustainable Site Planning:**
  - Existing trees were preserved and transplanted along the periphery of the site
  - Excavation and construction started after the monsoon season to prevent soil erosion and soil run-off from the site
  - Top soil was preserved and re-used to raise the ground level along the periphery
  - Service corridors are planned to cause minimum damage to the site and natural topography
  - Orientation of the building is east-west but zoning of the building has been appropriately done to reduce negative impact of bad orientation

- **Reduction in water consumption (compared to GRIHA benchmark):**
  - Reduction in building water consumption by use of low-flow fixtures: 50.7%
  - Water recycled and reused within the complex: 90%
  - Reduction in landscape water consumption by planting native species of trees and shrubs and by using efficient irrigation systems: 62.3%

- **Passive architectural design strategies adopted in the building:**
  - Thick stone and AAC block walls to reduce solar heat gain
  - Recessed windows to cut direct sun rays and glare inside the building
  - 99% of living areas are day-lit and window to wall ratio restricted to 25% to reduce solar heat gain inside the building

- **Reduction in energy consumption (compared to GRIHA benchmark) while maintaining occupant comfort:**
  - For achieving visual comfort
    - Energy efficient artificial lighting design is compliant with ECBC recommendations
    - Occupancy sensors in rooms to reduce energy consumption
    - All electrical fixtures (lights, space conditioners, appliances) controlled by i-pad to reduce energy consumption
    - External shading and efficient glazing to reduce solar heat gain and have glare-free daylight have been installed
  - For achieving thermal comfort
    - Building envelope is ECBC compliant, which helps reduce cooling loads in AC spaces and meets thermal comfort levels in non AC spaces.
    - Centralized air conditioning through variable refrigerant flow technology is installed. Facility of controlling each indoor unit centrally as well as individually based on occupancy censor is provided.

- **Renewable energy technologies installed on site:**
  - Installed capacity of wind energy: 12600 KWp
  - Units of electricity generated annually: 27900000 KWh

- **Use of low-energy/green materials:**
  - Use of Plywood and MDF boards manufactured by Uniply, Greenply and Centuryply certified by SGS and recyclable fabric
  - Use of high density composite wood panels
  - Use of AAC blocks in the infill wall system.

**Integrated Teams:*
- Project Owner: M/S ITC LTD
- Project Coordinator: M/S Larsen & Toubro
- Principal Architect: M/S Smallwood Reynold Stewart Stewart, Singapore
- Landscape Architect: M/S Belt Collins, Singapore
- Project Management Consultant: M/S ITC LTD
- Civil Contractors: M/S Larsen & Toubro
- Structural Consultant: M/S Sterling Engineering Consultants
- Electrical Consultant: M/S Spectral Consultants
- Green Facilitation: Green Dimensions
- Green Building Design and Energy Consultant: The Energy and Resources Institute