

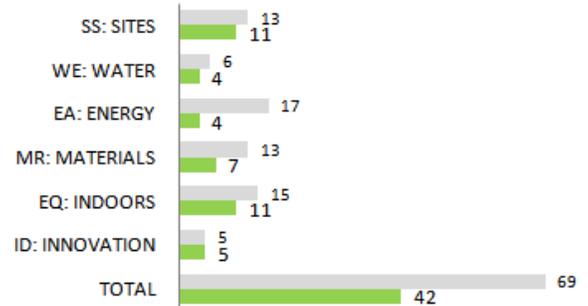


CASE STUDY: FL SMIDTH ENGINEERING DESIGN CENTER



LEED SCORES

■ POINTS POSSIBLE ■ POINTS ACHIEVED



KEY PARAMETERS

Occupancy Type	Office Space
Built up area	277703 sq. ft
Completed	August 2009
Location	Egatoor, Chennai.
Owner	FL Smidth Engineering Design Center
Green consultant	En3 Sustainability Solutions
Rating System	LEED India NC version 1.0
Rating Achieved	Gold

FL Smidth is the leading supplier of equipment and services to the global cement and mineral industry. FL Smidth is contributing to direct environmental improvements on the part of our customers in terms of reduced energy consumption, greenhouse gas emissions, impact on the local environment and usage of natural resources. En3 has been working close with the FL Smidth team to make their new design center in Chennai a green building as a part of green program. The project has achieved LEED GOLD certification under LEED India NC version 1.0.



SITE SUSTAINABILITY FEATURES

- The project is in ideal location with close proximity to public transportation and sufficient transportation management plan for their staffs thereby minimizing transportation pollution and strain on local infrastructure
- Provision of battery charging stations for **4.42%** of the total car parking capacity and in an effort to promote use of alternative and low emitting vehicles and to reduce transportation pollution.
- Provision of carpooling spaces for **5.5%** of the total car parking capacity within the premises in an effort to promote and ride sharing to reduce transportation pollution as well as strain on the local infrastructure.
- **94.47%** of its car parks in the basement to create more open spaces on the ground and also reduce the local heat island effect.
- Rain water harvesting tanks have been provided to harvest 933.7cum per day of rain water and this is to ensure post-construction runoff is less than pre-construction runoff.
- Reflective roof to reduce heat islands and to minimize impact on microclimate and human and wildlife habitat.



WATER EFFICIENCY

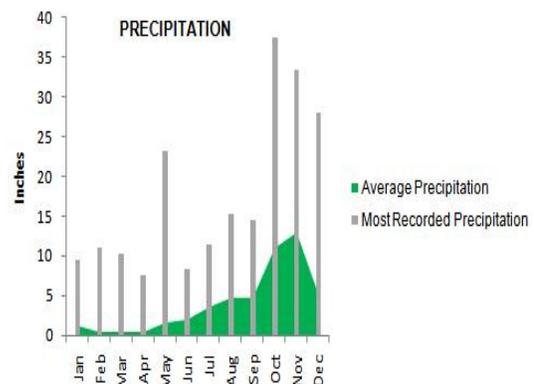
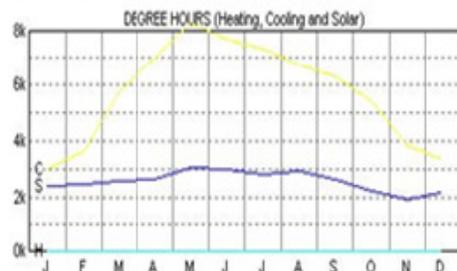
- Water is an integral part of “FLSMIDTH” building and every effort is been taken to minimize water use by installing water efficient fixtures. Low flow dual-flush toilets, sensor based urinals and other low flow fixtures have been selected to install at site to reduce water consumption by over 31.63 %.
- Specialized selection of landscaping design and species to reduce overall landscaping water requirement to 62.5%.
- 100% of wastewater will be treated onsite to tertiary standards.

ENERGISING THE BUILDING

- Energy efficiency measures such as Hi albedo paint on roof, high performance glazing, efficient lighting design, efficient HVAC design, VAV systems, AHU's with VFD and Heat recovery wheels for saving more energy than the conventional systems
- Selection of CFC free and HCFC free refrigerants thereby avoiding global warming and ozone depletion.
- Monitoring the energy use in the building from EB and DG energy monitoring, also providing individual meters for common area lighting, lifts, chillers, pumps, office area lighting, power and AHUs independently for each consumption using BTU meters for the ongoing accountability and optimization of building energy and water consumption performance over time.
- Installation of green power plant that meets 100% of the project's annual energy consumption.

NAME: Chennai-Madras
 LOCATION: IND
 DESIGN SKY: not available
 ALTITUDE: 16.0m

LATITUDE: 13.0"
 LONGITUDE: 80.2"
 TIME ZONE: +5.5hrs





RESOURCE MANAGEMENT

- The project has ensured up to 86% of total construction waste of debris has been recycled or reused thereby diverting them from landfills.
- The project has achieved a combined recyclable content value of 10.57% of total material by cost thereby reducing virgin material exploitation.
- About 46.04% of the project's material and products by cost was extracted and 48.47% of the total material cost was manufactured locally/regionally thereby reducing the pollution associated with transportation.
- About 8.92% of the total materials by cost used in the project are from rapidly renewable sources.

INDOOR ENVIRONMENTAL QUALITY

- In order to support enhanced IAQ and long-term well-being of all occupants, 30% more than the minimum ventilation rates as per ASHRAE standards is provided.
- The entire building is a non-smoking building thereby ensuring the health and safety of all its occupants.
- Permanent monitoring systems that provide feedback on ventilation system performance to ensure that ventilation systems maintain design minimum ventilation requirements.
- Low emitting paints, carpets and composite wood products have been used to enhance the indoor environment and provide superior workplace for all employees.
- After completion of all interior activities, the project has done proper building flush out in line with LEED requirement to enhance their staffs working spaces.
- Provision of a thermally comfortable environment that supports productivity and well-being of all building occupants
- About 83.83% of the regularly occupied areas are designed to get day light provision as per the LEED compliance.
- About 95% of the project's regularly occupied spaces gets direct line of sight to vision glazing. Thereby the occupants can view outside.



NOVELTIES

Initiatives shall be taken to educate the staff, building occupants, visitors and the clients on the various sustainability measures that can be taken to create more environmental friendly energy efficient spaces. Housekeeping by biodegradable materials to address health, hygiene and well being of staff make them eco-friendly. The building has been designed by En3 to showcase various green and sustainability measures and practices to ensure great amount of awareness is created by the buildings to promote green awareness to all the visitors and occupants & spearhead the green movement in the state and the country.

En3 would be glad to answer any queries or questions you have on any green or sustainability related topics. Feel free to contact us at info@en3online.com and for more information about us and our work visit www.en3online.com