



CASE STUDY: Hewlett Packard Global Business Operations



KEY PARAMETERS

Occupancy Type	Office Space
Built up area	158975 sq ft
Location	Chennai
Green consultant	En3 Sustainability Solutions
Rating System	LEED ID+C - Platinum

LEED SCORES



The HP Office space in Chennai has been awarded Platinum certification under USGBC’s LEED ID+C rating system. HP is an environmentally responsible organization and is always striving to protect the environment and has taken enormous efforts along with En3 to implement various sustainability and green measures within its interior space.



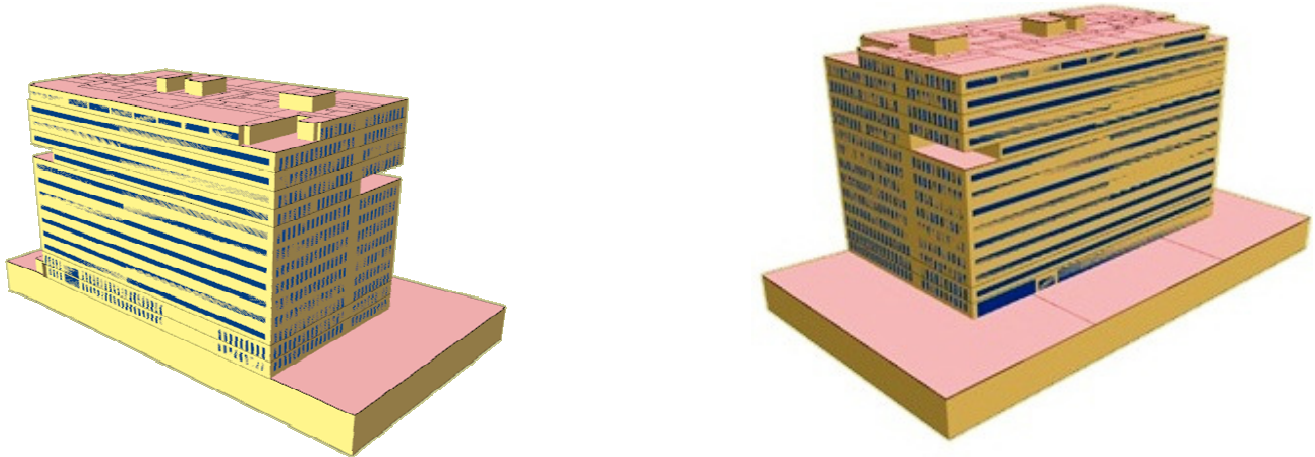
SITE SUSTAINABILITY FEATURES

- The project has provided many private bus lines for its building occupants thereby minimizing transportation pollution and strain on local infrastructure, protects green-field site and preserve habitat and natural resources.
- The base building roof surface has the required high Solar Reflectance Index based on the roof slope.
- Provision of Bicycle and Shower facility for their staff reduces pollution and land development impacts from automobile use.
- Carpooling spaces within the premises in an effort to promote and ride sharing to reduce transportation pollution as well as strain on the local infrastructure.
- The base building landscaping and irrigation systems have been designed to reduce potable water consumption for irrigation by 100% from a calculated baseline case and 50% in total water use

WATER EFFICIENCY

- Water plays an integral part in the greening process of the HP.
- The project has reduced potable water use by 46.11% from the calculated baseline design fixture performance requirements established by the Energy Policy Act of 2005 through the installation of low flow urinals, showers, kitchen faucets, flush water closets

ENERGISING THE BUILDING



- Provision of high reflective material on roof, high performance glazing, efficient HVAC design, AHU's with VFD and Heat recovery in the base building, has contributed to HVAC energy savings of about 41.91% over conventional building HVAC systems.
- Selection of CFC free and HCFC free refrigerants avoids global warming and ozone depletion.
- Light fixtures and efficient lighting design contribute to 39.9% of reduction in connected lighting power density over the base case of ASHRAE standards with the interior spaces achieving a lighting power density as low as 0.61 watts/square feet.
- Provision of day lighting sensors within 15 feet throughout the periphery of the building has been installed in all regularly occupied spaces. This controls the artificial lights. Daylight responsive controls have been installed in 100% of all regularly occupied spaces.
- About 90.6% of the equipment and appliances such as Monitors, CPU, Projectors, Refrigerators, and Printers are ENERGYSTAR rated.
- Metering equipments have been installed for monitoring the energy use in the building such as EB and DG energy monitoring, individual meters for common area lighting, lifts, chillers, pumps, office area lighting, power and AHUs independently for each tenant, measuring chilled water consumption for each tenant using BTU meters for the ongoing accountability and optimization of building energy and water consumption performance over time. Sub-metering equipment has been installed for lighting systems , plug loads , electric heating, and electric cooling.



RESOURCE MANAGEMENT

- The project has diverted more than 99.2% of the on-site generated construction waste from landfill.
- The project has achieved a combined recyclable content value of 23.1% of total material by cost thereby reducing virgin material exploitation.
- Rapidly Renewable materials account for 5.16% of the project's material cost. Special emphasis has been made to use these rapidly renewable materials to reduce virgin material exploitation.

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 have been provided.
- The entire building is a non-smoking building thereby ensuring the health and safety of all its occupants.
- The project conducted a flush-out prior to occupancy by supplying a total air volume of 14,000 cubic feet of outdoor air per square foot of floor area while maintaining an internal temperature of at least 60 degrees F and relative humidity no higher than 60%.
- Low emitting adhesives, paints and composite wood products have been used to enhance the indoor environment and provide superior workplace for all employees.
- All system seating and furniture used in the project are Green guard certified and reduce indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants
- Provision of a thermally comfortable environment that supports productivity and well-being of all building occupants.
- The project has achieved the daylighting requirements in 82.89% of all regularly occupied spaces

NOVELTIES

- The project has achieved HVAC energy savings of about 41.9% over conventional building HVAC systems using high performance glazing, efficient HVAC design, AHU's with VFD and Heat recovery.
- Light fixtures and efficient lighting design contribute to 39.9% of reduction in connected lighting power density over the base case of ASHRAE standards with the interior spaces achieving a lighting power density as low as 0.61 watts/square feet.
- The project has reduced potable water use by 46.11% from the calculated baseline design fixture performance requirements established by the Energy Policy Act of 2005
- Moreover the building has been designed to showcase various green and sustainability measures and practices and the effort is to use this building to create greater awareness on green concepts and sustainability to all its 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 visit us at www.en3online.com.