



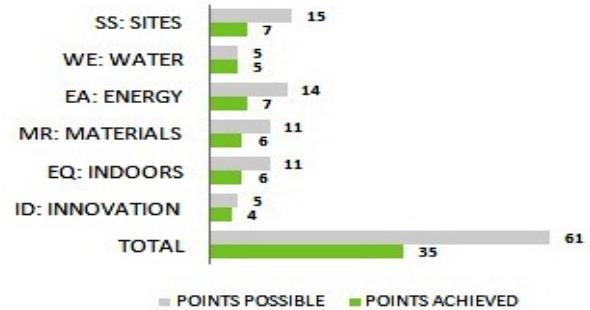
CASE STUDY: ABAD NUCLEUS MALL, KOCHI



KEY PARAMETERS

Occupancy Type	Mall
Built up area	250000 Sq Ft
Completed	June 2011
Location	Kochi, Kerala
Owner	ABAD Builders
Green consultant	En3 Sustainability Solutions
Rating System	LEED India CS version 2.0
Rating Achieved	GOLD

LEED SCORES



ABAD's Nucleus Mall, Kochi, an environment friendly green Mall, is an engineering marvel, which not only saves energy and cooling costs but also gives more lung space and natural light for employees working there. En3 has done innovative work to help Nucleus Mall get greener and achieve its LEED GOLD certification from the Indian Green Building Council.

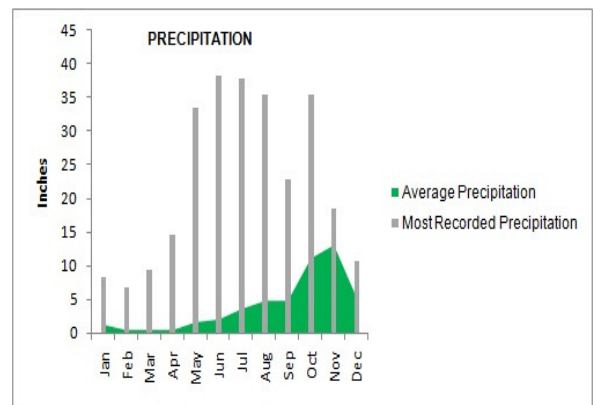
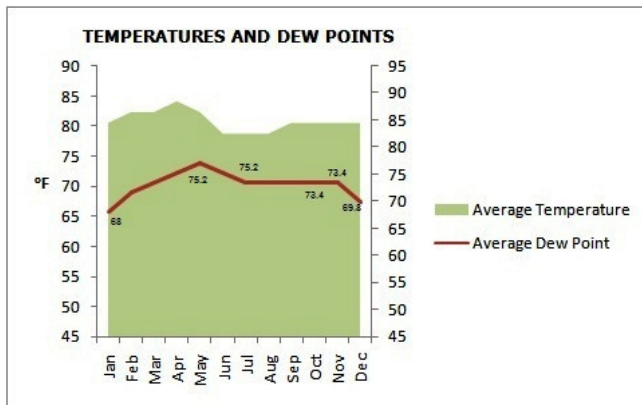


SITE SUSTAINABILITY FEATURES

- The project is in an ideal location with close proximity to public transportation thereby minimizing transportation pollution and strain on local infrastructure.
- Alternate Refueling stations with parking facilities promotes the usage of alternate fuel vehicles thus reducing pollution due to transportation as well as strain on local infrastructure
- 95% of the car parks are covered which will create more open spaces on the ground and also reduce the local heat island effect.
- Provision of high reflective albedo roofing for 75% of the roof surface thus reducing urban heat island effects.

WATER EFFICIENCY

- The project is treating grey water onsite and this treated water caters to 100% of the irrigation requirements for plants. Native and Adaptive species have been planted that minimize the irrigation water requirements.
- Efficient Landscaping is done resulting in 100% reduction in potable water usage.
- 100% of the waste water is treated on site to tertiary standards.
- Special efforts have 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 reduce water consumption by over 51.79%.





ENERGISING THE BUILDING

- In line with international standards, the refrigerants used in the air conditioning system are environmentally friendly and have very low ozone depleting and global warming potential
- A detailed metering system ensures adequate measurement and monitoring of all building systems to continuously monitor the building post-occupancy as well
- A detailed energy analysis and modeling has been done to ascertain various options for energy savings with cost-benefit/payback analysis including Energy efficient Air Conditioning System (HVAC) using high efficiency Water Cooled Chillers, Air Handling Units (AHUs), in-built Variable Frequency Drives (VFDs) and Heat Recovery wheels



RESOURCE MANAGEMENT

- The project has ensured up to 95.22% 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 12.97% of total material by cost thereby reducing virgin material exploitation.
- About 65% of the total material cost was manufactured and extracted regionally thereby reducing the pollution due to transportation
- The project has sourced 66.8% of the wood based materials & products in accordance with FSC principles & criteria.



INDOOR ENVIRONMENTAL QUALITY



- Ventilation System is designed to provide 30% more fresh air than ASHRAE 62.1 2004 requirements.
- In order to support enhanced IAQ and long-term well-being of all occupants, adequate fresh air has been planned in line with international ASHRAE standards
- Low emitting adhesives, paints and carpets have been used to enhance the indoor environment and provide superior workplace for all employees.
- Provision of a thermally comfortable environment that supports productivity and well-being of all building occupants.

NOVELTIES

65% of the total project's materials, based on cost, were manufactured regionally. Green housekeeping program creates awareness and promotes green concept.

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.