

# ZODIAC CLOTHING CO. LTD.

## CORPORATE OFFICE AWARDED LEED (INDIA) GOLD CERTIFICATION

The Corporate Head office building of **Zodiac Clothing Co. Ltd.** has been awarded the prestigious **GOLD** certification under LEED INDIA New Construction rating system by Indian Green Building Council for its commitment to sustainable development. Godrej Green Building Consultancy Services was the consultant for the project.

Zodiac is in the business of men's fashion for the last 61 years and is benchmarked in India for providing discerning customers with the finest quality clothing. It designs, manufactures, and sells, high quality clothing to the best brands and stores across the globe, also retails them in India through its network of 131 company owned and operated stores, and through 1200 dealers across India.

With expansion of business, Zodiac had undertaken a major renovation and refit of their corporate office building, visualized as being contemporary & imposing while expressive while being an extention of the identity of the brand.

Electric power plants, which burn coal to generate electricity, are the main source of global warming. Power plants cause other environmental and health problems, including acid rain, smog, and mercury poisoning in lakes and rivers. We can reduce these hazards by curbing energy use through sustainable building technologies, as buildings account for a significant amount of the nation's electricity use.

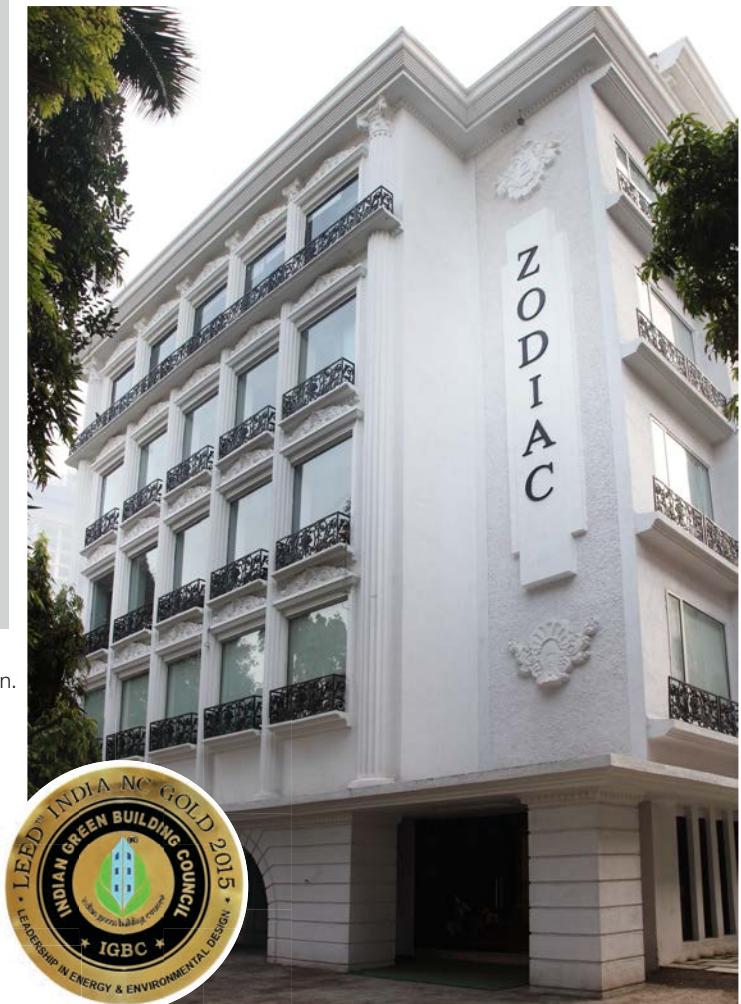
The main focus of the project undertaken by ZODIAC was the interior of the corporate office building, carefully integrating and adopting, sustainable design. Various aspects right from its location and site character, to planning the concept, use of materials and sustainable technologies for essential services, were all undertaken with an aesthetic approach.

With its energy-efficient design, the ZODIAC corporate office uses over 60 percent less energy than a typical office of the same size. If all commercial buildings in India were as efficient the country could cut energy production enough to meet not only the demands of the Kyoto Protocol, (the international pact to reduce the greenhouse gas emissions that cause global warming), but this surplus could then be used by the nation for areas where our country is short of power.

All equipment has been selected to meet the building's code of energy efficiency. The refrigerator and microwave range fitted in the canteen all carry the Energy Star rating. Energy Star is a partnership between appliance and equipment manufacturers and the government, to manufacture appliances that exceed government energy efficiency standards. Projectors have been done away with, replaced by low energy consuming LED Televisions. The glass elevator at the front of the building is a certified, energy efficient, MRL (Machine Room Less) model. The V3F drive uses 50% less energy as compared to a standard elevator.

In commercial buildings, a lot of energy is used for lighting. The building was strategically designed to dramatically reduce artificial lighting demand. Sunlight reaches every floor through large floor to ceiling windows; through light wells, extending from ground floor to roof, and through a superbly designed Pyramid shaped rooftop skylight. The office fixtures, suspended from the ceiling, project light up and down, allowing 90 percent of the light to be utilized (which is about 50 percent better than typical systems) with reduced glare. All offices and conference rooms have interior windows facing the hallways in order that natural light flows thru. Light fixtures have been provided with dimmable electronic ballasts, which are about 30% more efficient than conventional ones. Daylight sensors automatically dim the lights when sunlight is available, and gradually turn up the lights as daylight fades. Occupancy sensors turn lights off when rooms become vacant.

All of the exterior windows contain two layers of low E (low Emissivity) glass, which allow visible light in—reducing the need for artificial light, but block heat flow, thus reducing energy needed for cooling. West facing windows with direct exposure to the sun are double-paned “super-windows” which have a “desiccated air sandwich” in between to insulate the interior when it's warm outside. Certain designated rooms are controlled by an automation system, whereby blinds are automatically lowered keeping the room cool, when the room gets direct sunlight, or is not in use.



In summer, cities can be six to eight degrees warmer than rural areas because of what scientists call the urban heat island effect. Heat islands occur when vegetation is replaced by asphalt and concrete, which typically absorb the sun's heat, then radiate it back into the air. The scarcity of trees and shrubs in cities also reduces shade and the natural evaporative cooling that plants provide. Recognizing this, ZODIAC Corporate Head Quarters has been built as a “green top” – the roof has been covered with a lawn and plants for most of the area exposed to sunlight, thereby providing cooling to the building and reducing the heat island effect on the surrounding area. Natural ventilation cools the building through transoms and operable windows in every office. Besides this, special ducting connected to a fresh air AHU, prevents CO2 buildup throughout the building.

Peak-load cooling is supplied by high-energy efficiency water-cooled central chillers that use 0.67KW per ton instead of the normal 1.5 to 2 KW per ton. These units use outside air only and a non-ozone-depleting refrigerant. The chilled air is delivered through air handling units (AHU's) using VFD (Variable frequency drive) Motors. Every individual office has a thermostat control in order that occupants may control their own office temperature, or turn off the air conditioning when it is not required, thereby using energy only when needed. In conventional buildings, all individual offices are wastefully heated or cooled to the same temperature, even if rooms are vacant, or occupants of different rooms have different preferences. Non peak-load cooling is supplied through an insulated chilled water tank which stores chilled water while the chillers have been running through the day, in order that during non peak hours, the identified remaining occupants are provided with chilled air conditioning for up to three hours, with the central chilling plant completely switched off.

What most people don't know is that a conventional desktop PC with its monitor consumes 150-200W, and each server consumes an additional 400-700W. At Zodiac, desktop computers have been replaced with an energy efficient thin client environment, where all compute happens on powerful back end servers, and only keystrokes and screenshots are carried to the client device, fitted with low energy consuming LED monitors. The backbone of the IT setup – the server rack has also been designed as a "green server rack" with energy efficient blade servers. These have a centralized cooling fan and share two power supply units among fourteen high-powered servers, instead of individual units, (which are heat generating, and not very efficient), for each conventional rack mounted server. These modern 64 Bit blade servers use the latest processors, which have the internal computing equivalent of thermostats to reduce their own CPU clock speeds when compute loads on the servers decrease, (e.g. at night) thus reducing power consumption by about 30-50% over previous generations of processors. Physical servers have been made to perform multiple roles by splitting them into multiple virtual servers using virtualization technology, without which 3-4 physical servers would have been used; each would have been under-utilized but would have consumed electricity and generated heat. About half the heat of a desktop is generated by its hard drive, and small hard drives generate nearly as much heat as high capacity one's. At the new office, data is centrally stored in large RAID arrays and FLASH drives (storage systems in the data center), unlike conventional offices, where each user has a PC with a large hard drive, or server based storage systems, which use 2-6 hard drives within each server. This centralization has resulted in computing heat being heavily centralized, allowing the data centre of 150-sqft to be cooled intensely and efficiently, but requiring less cooling over the rest of the office. Physical storage has therefore been minimized, and the need to print physical copies of documents will eventually vanish, resulting in less consumption of ink, paper, files, air conditioning, and energy.

Wash basins in the toilets, as well as outside the canteen, are fitted with motorized low flow taps with sensors, such that they provide water only when the sensor circuit is interrupted, and, that too at a constant low flow rate. They switch off as soon as the circuit is completed, thereby saving the earth's most precious resource -water.

Each w/c has a combination flush valve, which allows either a "half flush" (half the flush tank is used) or a "full flush" (where the entire tank is used). Energy efficient hand dryers have been fitted in all toilets thereby doing away with hand towels, which consume a lot of water and electricity in rewashing. Naturally, all water used in the energy efficient cooling towers, as well as from the washbasins and from watering the lawns and plants, is collected, cleaned and reused for flushing and gardening, in a loop - again and again.

The debris generated during construction was used on the site itself for landfill of the compound. Most of the walls are constructed of synthetic gypsum, which is recovered via flue gas desulfurization at some coal-fired electric power plants. The walls of the office are therefore constructed from a by-product of waste generated during power generation.

All areas have been fitted with low voltage electronic rodent repellent devices, tucked away into the ceiling. These devices emit a high frequency sound, not audible to humans, but unbearable to rodents, thereby driving them away. Pest control has therefore been achieved without the use of harmful chemicals, toxins and poisons. The building has a waste management code, and also electric car charging stations. The project symbolizes ZODIAC's commitment towards an environment friendly and sustainable future.

#### Commenting on this Mr Salman Noorani M.D. ZODIAC Clothing Co Ltd said

"If all commercial buildings in India were as efficient as ours, the country could cut energy production enough to meet not only the demands of the Kyoto Protocol, (the international pact to reduce the greenhouse gas emissions that cause global warming) This surplus could be used by the nation for areas where our country is short of power."

#### ABOUT ZODIAC CLOTHING COMPANY LTD. (ZCCL\*)



must meet identical requirements to qualify

**ZODIAC** Clothing Co. Ltd.\* is a vertically integrated, trans-national that controls the entire clothing chain from design, manufacturing, distribution to retail sales.

With a manufacturing base of 7 million shirts and sales offices across India, UK, Germany and USA, ZCCL\* has 2500 people in its fold. The company operates a 5000 sq ft Italian inspired design studio at its Mumbai Corporate office building.

ZCCL\* has 3 premium, menswear brands, each clearly positioned to address a specific target consumer. **ZODIAC** for the classic yet contemporary male's corporate wardrobe, **ZOD!** Club Wear for the trendy, fashionable young man and **Z3** for those who do not need to wear a tie to work. Our brands are retailed across India at premium prices through over 131 company-managed stores and over 1200 multi - brand retailers.

#### WHAT IS LEED?

Leadership in Energy and Environmental Design (LEED) is a rating system devised by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building and encourage market transformation towards sustainable design. The system is credit-based, allowing projects to earn points for environmentally friendly actions taken during construction and use of a building. LEED was launched in an effort to develop a "consensus-based, market-driven rating system to accelerate the development and implementation of green building practices." The program is not rigidly structured; not every project

#### WHY CHOOSE LEED?

LEED certification is recognized across the globe as the premier mark of achievement in green building.

#### PROVEN PERFORMANCE

If you're serious about saving money, conserving energy, reducing water consumption, improving indoor air quality, making better building material choices, and driving innovation, then LEED is the best choice. Bar none. Third-party certification verifies that your project is designed, built and operating the way it was intended. It is also your first step toward managing your building through its entire life cycle.

#### CONTINUOUS IMPROVEMENT

Behind the LEED program is an immense infrastructure developed to support the leaders in the industry as they innovate and create cutting-edge, high performance buildings. We make significant investments each year to maintain, operate and improve LEED and its delivery. No other rating system has an infrastructure that comes close.





#### LIFETIME OF RETURNS

LEED-certified buildings cost less to operate, reducing energy and water bills by as much as 40%. Businesses and organizations across the globe use LEED to increase the efficiency of their buildings, freeing up valuable resources that can be used to create new jobs, attract and retain top talent, expand operations and invest in emerging technologies.

LEED buildings have faster lease-up rates and may qualify for a host of incentives like tax rebates and zoning allowances. Not to mention they retain higher property values.