



GreenHabitat

"A newsletter on Green Buildings"

From Indian Green Building Council, CII-Sohrabji Godrej Green Business Centre

President inaugurates CII-Godrej GBC, the Greenest Building in the World

CII-Sohrabji Godrej Green Business Centre building was inaugurated by **His Excellency, Shri A P J Abdul Kalam, President of India on July 14, 2004.**



His Excellency, **Shri A P J Abdul Kalam**, President of India inaugurating the building. Also seen from L to R: **Mr Jamshyd N Godrej**, Chairman, CII-Godrej GBC, Hon'ble Chief Minister of Andhra Pradesh, **Dr Y S Rajasekhara Reddy** and **Mr S K Munjal**, President, Confederation of Indian Industry.

The occasion was also graced by the former **Governor of Andhra Pradesh, Shri Surjeet Singh Barnala** and **Hon'ble Chief Minister of Andhra Pradesh, Dr Y S Rajasekhara Reddy.**



The President lighting the ceremonial lamp

CII-Sohrabji Godrej Green Business Centre is the third building in the world and the first in India to receive the prestigious **Platinum Rating** from **US Green Building Council** under the **Leadership in Energy and Environmental Design (LEED) programme Version 2.0.**

Some of the unique features of the building include:

Zero water discharge, 50% savings in energy and 35% savings in water vis-à-vis a normal building, Use of native vegetation so as to consume less water, 100% collection

of rain water which is used for irrigation, Use of waterless urinals, Use of fly ash based blocks & cement, low VOC paints & carpets, indoor air quality monitoring, roof gardens, high efficiency chillers & lighting systems.

The building attracts a wide variety of visitors including heads of States, Corporate CEOs, Govt. representatives and delegations from bilateral & multi-lateral agencies.

The building has earned accolades from the visiting dignitaries. A few excerpts:

- "Features incorporated in CII-Godrej GBC are noteworthy goals towards energy efficiency and renewable energy" - **His Excellency, Shri A P J Abdul Kalam, President of India**
- "Innovative and impressive accomplishment"- **Mr. John Corvyn , US Senator**
- "This sustainable green building could have very long term positive spin-offs"- **Mr.Essop Pahad, Minister, South Africa**
- "In the Republic of Tatarstan, we pay a lot of attention to energy saving. For us it is very important to see that you can combine energy saving and ecology. We are also moving in this direction. This is truly a great building" **Mr Rustam Minnikhanov, Prime Minister, Republic of Tatarstan**

Green Buildings vs Conventional Buildings -The benefits:

Externally, a Green Building and a conventional building look alike. In terms of functionality too, a Green Building is as much functional as a normal building. However the difference is in the benefits that a green building can provide.

Tangible benefits:

- A Green Building consumes 30-40% less water than a conventional building
- Energy consumption lesser by 40-50%
- Enhanced productivity of occupants, 10-15% more than a conventional building
- Reduction in initial investments on equipment and systems

Intangible Benefits:

- Green corporate image
- Health and safety of occupants
- Enhanced occupant comfort
- Imbibe best operational practices from day one

Incremental cost of constructing a Green building gets paid back in 3-5 years.

CII signs LEED India license agreement with USGBC

To take the Green Building Movement forward, CII-Godrej GBC signed a license agreement with USGBC, to launch LEED Rating System in India.

Under this agreement, CII-Godrej GBC would be the sole license holder to offer LEED programme in India.



Signing of the LEED India license agreement at Green Build 2004, Portland, Oregon, USA. From L to R : Mr Nigel Howard, Vice-President, USGBC, Mr S Raghupathy, Senior Director & Head, CII-Godrej GBC and Mr Richard S Fedrizzi, President & CEO, USGBC.

The activities will be executed in two phases as under:

I Phase Activities[2004-2006] :

- CII-Godrej GBC will promote USGBC's LEED Rating in India
- Indigenise LEED programme for India and build infrastructure
- CII-Godrej GBC will offer LEED training in India
- US version of the LEED Accredited Professional exam to be administered in India

II Phase Activities[2005-2007]:

- CII-Godrej GBC will offer and administer LEED India
- Continue to offer LEED workshop programmes
- Administer LEED Accredited Professional examination based on LEED India

Changes Proposed in LEED India

Recognising the need to indigenise LEED US to suit Indian requirements, a steering committee representing all stakeholders has been formed under the chairmanship of **Mr C N Raghavendran, Architect, CRN & Associates and Member, IGBC** (Indian Green Building Council).

The committee has proposed several changes including two new prerequisites and a few additional credits.

Prerequisites

- **Emissions from Captive Power Generators (prerequisite) :** In general, all buildings in India have captive power generation facility. The emissions from these captive power plants can have a direct impact on the building occupants and the community. To facilitate strict adherence to CPCB (Central Pollution Control Board) specified emission levels, LEED India proposes to introduce this requirement as a prerequisite.
- **Safety (prerequisite) :** LEED US does not address safety as an issue since other building construction codes would cover this aspect. LEED India proposes to incorporate safety as a prerequisite, both during construction and post occupancy to ensure that a Green Building is also a safe building.

Credits

1) Potable Water Use Reduction:

In the existing US based rating, potable water use reduction by 20% would qualify for 1 point and 30% would qualify for 2 points. LEED India would award one more point if the project demonstrates a saving of 40%.

2) Potable Water Use Reduction for Air-Conditioning Applications:

Air conditioning being a major user of water for cooling tower make-up, LEED India proposes to recognise projects which would use recycled waste water for cooling tower make-up applications. Hence, it is suggested as follows:

- 1 point for 75% reduction in potable water use for A/C
- Additional 1 point for 100% reduction in potable water use for A/C

3) Green Power:

LEED India Steering Committee proposes that the quantum of investment on renewable energy made by the building owners, anywhere in the country should be recognised and awarded a point.

4) Cooling Towers:

ASHRAE 90.1 stipulates that cooling towers in buildings be CTI (Cooling Tower Institute, USA) Certified.

Cooling tower testing facility is not available in India. Hence LEED India Steering Committee proposes that USGBC should accept cooling towers manufactured in India which have been type tested and certified by CTI standards.

5) Low VOC (Volatile Organic Compound) Paints:

As per the existing LEED requirements, low VOC paints are required to be used inside the building. LEED India proposes to stipulate use of low VOC paints for the exterior surfaces also.

6) Development Density:

This credit intends to channelise development to areas where the infrastructure is already in place.

In the Indian scenario, the National priority is to move developments away from the existing infrastructural areas, since they are already over-burdened and saturated. Hence it is proposed to exclude this credit in the LEED India rating system.

7) Alternative transportation, Parking capacity:

LEED India proposes to introduce preferential parking space to eco-friendly two wheelers in addition to cars, which have not been addressed in LEED US, besides preferential parking space for four wheelers.

ITC Green Centre The largest Platinum Rated Green Building in the World



A perspective view of ITC Green Centre, Gurgaon

ITC Limited, in keeping with its commitment to ecology, has come up with the ITC Green Centre, an environmentally conscious green building.

The office complex coming up at Sector 32, Gurgaon, India has been awarded the Platinum Green Building rating by USGBC (US Green Building Council) under the LEED (Leadership in Energy and Environmental Design) version 2.1.

The company's delegation headed by **Mr S C Sekhar, Executive Director (Projects), Development & Infrastructure, ITC limited** received the award at the recent International Green Building Convention held in Portland, Oregon, USA.



ITC Delegation receiving the Platinum Rating. From L to R: Mr James E Hartzfeld, Chairman, USGBC, Mr H S Kumaraswamy, General Manager (Projects), ITC limited, Mr S C Sekhar, Executive Director(Projects), ITC limited, Mr A R Noronha, Vice President(Projects), ITC limited, Mr Richard S Fedrizzi, President & CEO, USGBC.

ITC Green Centre is now the largest Platinum-rated building in the world having achieved 53 points out of a possible 69 points.

It is the first corporate house in India to bag this prestigious award.

Some unique green features of ITC Green Centre are:

- **Storm Water Management :** Rain water collection pits to ensure zero discharge to municipal drainage

- **Water Efficient Landscaping:** Native plants, high efficiency irrigation system, 100% recycled water for irrigation, 40 per cent reduction in potable water use
- **Innovative Waste Water Technologies:** Fluidized aerobic bioreactors (FAB) sewage treatment plant provided to treat grey water to tertiary standards
- **Building Envelope:** External Wall built of 250mm thick AAC (Autoclaved Aerated Concrete) blocks, double glazed windows, 75m thick extruded polystyrene roof insulation
- **Energy:** 51 per cent energy savings over a conventional building, high efficiency Chillers of COP 6.1, VFD's for fans and pumps, heat recovery wheels
- **Resource Reuse:** More than 10% of the building materials (by value) have been salvaged from other buildings including used furniture
- **Recycled Content:** Fly ash based cement, fly ash based AAC blocks, gypsum based acoustic ceiling, recycled glass, ceramic tiles with a high recycled content and MDF cabinetry
- **Environmental Tobacco Smoke Control:** Designated smoking rooms provided at various floors with separate exhaust. The rooms are maintained at negative pressure and have been tested for leakage by the Tracer Gas method.
- **CO₂ Monitoring:** Sensors at various locations to monitor CO₂ level; differential level of less than 530 ppm maintained in occupied areas
- **Green Housekeeping Practices & Materials:** Eco friendly chemicals and practices with low impact on environment and the housekeeping personnel
- **Indoor Environmental Quality:** Use of low VOC paints, carpets, adhesives & sealants

The complex is being constructed on a 2-acre plot of land and the building has a ground, mezzanine, three upper floors and two basements. The total built-up area is approximately 1,80,000 sq ft. The building is expected to be commissioned by March 2005.

Learning Points from Green Building Mission to US

A CII delegation visited the Green Build 2004, a conference cum exhibition, held at Portland, Oregon State, USA during 12-14 November 2004. The delegation has also visited a few Platinum buildings. Some of the unique concepts implemented in these buildings are highlighted below:

Donald Bren School, University of California, Santa Barbara, California:

- Use of recycled automobile rubber products as flooring materials
- Toilet partitions made of recycled plastic and crushed pet bottles
- Wheat straw board panels for interiors
- Linoleum based flooring



Toilet partitions

Inland Empire Utilities Agency Administrative Headquarters, California:

- Use of recycled and sliced automobile rubber products used as mulching materials
- Pervious Concrete flooring -this has been achieved by laying concrete flooring without using sand.
- Methane generated from dairy manure used as fuel in boiler
- Bathroom tiles made of automobile windshields



Concrete pervious car parking area



Mulching with rubber products

Audubon Centre at Debs park, California:

- 280 acre park used for National Habitat Preservation Programme for school children and others
- Porous Venetian blinds to increase day lighting and minimize glare
- Tiles used in Toilets are made of crushed bottles



Porous Venetian blinds

If you are constructing a building, Go Green!!

CII-Godrej GBC offers Green Building Advisory Services in India to achieve the green building rating awarded by USGBC, under their LEED Rating Programme.

The services offered include feasibility study to evaluate the realistic ratings achievable, quantify benefits, estimate investments and handholding till the rating is achieved.

Upcoming Green Buildings in India

The Indian corporate have evinced keen interest in the concept of Green Buildings. A few of the projects which have already registered for the LEED rating are

Name	Square footage	Building usage
NDPL, New Delhi	60,000 Sq ft	Corporate Office
Grundfos, Chennai	40,000 Sq ft	Corporate Office
NEG Micon, Chennai	40,000 Sq ft	Corporate Office
Wipro, Gurgaon	1,60,000 Sq ft	Software Development Centre
IMTMA, Bangalore	4,00,000 Sq ft	Exhibition & Convention Centre

Green Building Programme Calendar – 2005

Major events being hosted by IGBC this year:

Event	Date	Place
Green Building Material Manufacturers Meet	19-20 May 2005	Hyderabad
Green Building Congress 2005	14-17 th Sep 2005	Delhi

Green Building Congress 2005:

Date: 14-17 September; **Location:** Delhi

Green Building Congress is a flagship event of CII-Godrej GBC on Green Buildings.

In focus will be the latest trends, new concepts, innovations and ideas, best practices and much more in the area of Green Buildings from across the globe

- **International Conference on Green Buildings:** Experts and professionals from across countries assemble to discuss the latest in Green Buildings. It is an excellent opportunity for networking and learning latest concepts in Green Buildings.
- **International Exhibition on Green Buildings:** An exhibition of the latest products / innovations in the area of Green Buildings. A great opportunity to learn about the latest Green products in the market and network with manufacturers.

For assistance, kindly contact:

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