



**Confederation of Indian Industry
CII – Sohrabji Godrej Green Business Centre**

Mission to USA

on

Green Buildings

(8 - 18 Nov 2004)

January 2005

MISSION TO USA ON GREEN BUILDINGS

EXECUTIVE SUMMARY

- ❖ A CII delegation comprising of participants from ITC Limited, Energy Management Centre, Kerala, NEG Micon India Limited, Karan Grover & Associates and staff of CII – Godrej GBC visited USA for a Green Building Mission during 8th – 18th Nov 2004. The study tour was organised as part of the CII-USAID-GDA project.
- ❖ The delegation attended **Green Build 2004**, organised by the US Green Building Council. The conference and exhibition attracted about 6000 participants. During the Green Build 2004, **ITC Green centre project, Gurgaon** have been awarded the prestigious **“Platinum Rating”** under LEED 2.1 (Leadership in Energy and Environmental Design) program of USGBC. With a built-in area of about 180000 sq.ft, this is the single largest building in the world, till date, to have received the coveted platinum rating.
- ❖ During the Conference, a **License Agreement** has been signed **between USGBC and CII – Godrej GBC** to work on **LEED India rating system**. This would accelerate the green building movement in India.
- ❖ The delegation visited LEED Platinum rated buildings in California viz., **Donald Bren School of Environmental Science & Management, Santa Barbara, Audubon Centre at Debs Park, Los Angeles and Inland Empire Utilities Agency, Chino**. These visits helped in a deeper understanding of the concept of green buildings.
- ❖ The conference, exhibition and the building visits has evoked considerable interest among the participants and would help in advancing the green building concept in India

MISSION TO USA ON GREEN BUILDINGS

Action plan arising out of the visit

Based on the visit, the following action plans have been drawn that would be pursued by CII-Godrej GBC:

1. LEED-India Rating system:

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.

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

2. More than 400 green product manufacturers participated in the exhibition, covering a wide entire spectrum of green building products and technologies. The CII-Godrej GBC team had discussions with a few select exhibitors who have shown keen interest in participating at Green Building Congress 2005, a flagship event of CII – Godrej GBC on green buildings.

3. Based on the learning and networking established at the Green Build 2005, CII-Godrej GBC would organise Green Building Congress 2005 and upscale the program to attract **500 delegates** from India and other Asian countries

4. Reducing the cost of constructing a green building is critical to take the movement forward. **CII-Godrej GBC would work with various manufacturers and other stakeholders in this regard.**

Conclusion

- ❖ The mission has enriched the delegation with several learning and best practices that are being adopted in USA. CII-Godrej GBC would explore possibilities of introducing these concepts in green buildings coming up in India. This would also enable CII-Godrej GBC to work on reducing the construction cost of green buildings in India
- ❖ The visit has helped in networking with a large number of international participants and Green product manufacturers. This would help in facilitating exchange of business linkages between Indian and US manufacturers
- ❖ The announcement of the platinum rating for the ITC Green centre project has demonstrated the commitment of Indian corporate towards green initiatives. The achievement of ITC has incited several other corporate in the country to envisage adopting this concept.

1.0 **Introduction:**

CII – Godrej GBC delegation visited USA on a Green buildings mission during 8 to 18 November 2004.

The objectives of the mission were the following:

- ❖ Attend Green Build 2004, conference-cum-exhibition organised by US Green Building Council in Portland.
- ❖ To receive '**platinum rating award**' for the ITC Green centre project, Gurgaon, India.
- ❖ Signing of agreement with USGBC to indigenize LEED rating system, suitable for India
- ❖ Visits to a select platinum rated green buildings in the USA for understanding the best practices adopted
- ❖ Interact with various US companies involved in Building design, Technology development, Equipment & Materials and seek their participation in Indian market

2.0 **Mission delegation**

The CII – Godrej GBC delegation comprised of the following members:

- ❖ **Mr K M Dharesan Unnithan**, Jt Director & Registrar, Energy Management Centre, Kerala
- ❖ **Mr A R Noronha**, Vice President-projects, ITC Limited
- ❖ **Mr S C Sekhar**, Executive Director-Projects, Developments & Infrastructure, ITC Limited
- ❖ **Mr H S Kumaraswamy**, General Manager-Projects, ITC Limited
- ❖ **Mr Karan Grover**, Architect, Karan Grover & Associates, Baroda
- ❖ **Mr N Ravichandran**, General Manager-Quality Assurance, NEG Micon India Limited
- ❖ **Mr S Raghupathy**, Senior Director & Head, CII-Sohrabji Godrej Green Business Centre
- ❖ **Mr S Srinivas**, Senior Counsellor, CII-Sohrabji Godrej Green Business Centre
- ❖ **Mr M Selvarasu**, Counsellor, CII-Sohrabji Godrej Green Business Centre
- ❖ **Mr A Karthikeyan**, Executive, CII-Sohrabji Godrej Green Business Centre

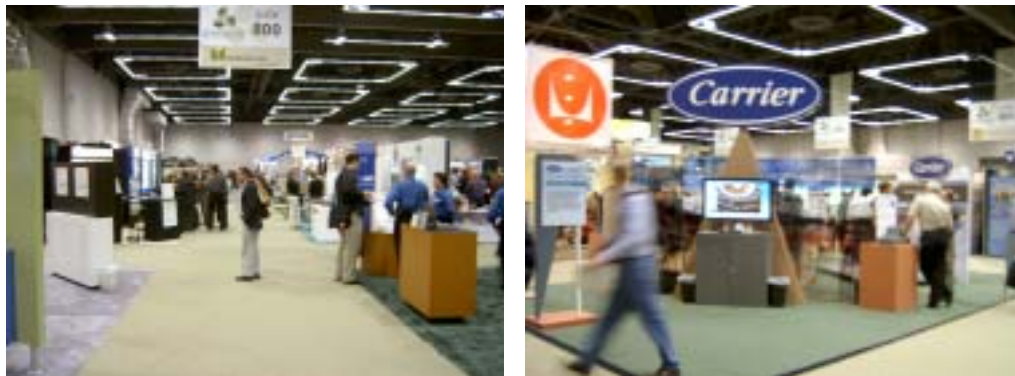
3.0 Green Build 2004

3.1 Green Building Conference & Expo, Portland:

The conference has provided deeper insights on latest green building concepts and best practices adopted in USA as well as other countries.

Some of the key learning that emerged from the conference & Exhibition are highlighted below:

- ❖ Green building materials and technologies are vital for promotion of green buildings. There were more than **400 exhibitors** and about **100 innovative products** displayed in Green Build 2004 exhibition. There is a need to develop several green materials and technologies in India to cater to the growing demand for green buildings in India. This would enable market transformation of green building products.
- ❖ Green building rating system is being adopted in several countries including **USA, UK, Canada, Australia, China, Spain and Brazil**. The experiences and challenges of these countries have been shared at the conference. These experiences would help us in developing 'LEED India' rating system, suitable for Indian context.
- ❖ As part of Green Build 2004, an exhibition of green building products was



hosted, by the USGBC. Several of the unique products that were exhibited were **Blue liquid free waterless urinals, Linoleum based partitions, Bamboo based interior products, Agro-based panels for interiors and Under flow air distribution system besides** low VOC paints, sealants & adhesives, FSC Certified wood, , Energy efficient lighting systems, High efficiency Air-conditioning system

- ❖ Based on the learning and networking established at the Green Build 2005, CII-Godrej GBC would organise Green Building Congress 2005 and upscale the program to attract **500 delegates** from India and other Asian countries

3.2 **Platinum Award for ITC Project:**

The coveted '**Platinum rating**' for ITC Project was announced on 12th November, 2004 during the Green Build conference. With a built-in area of about 180000 sq.ft, this project is the single largest building in the world, as on date to be awarded the prestigious platinum rating.



Presentation of Platinum Plaque

From Left: Mr James E Hartzfeld, USGBC, Mr H S Kumaraswamy, ITC Ltd, Mr S C Sekhar, ITC Ltd Mr A R Noronha, ITC Ltd, Mr Rick Fedrizzi, USGBC

3.3 **Presentation by Mr Karan Grover:**

Mr Karan Grover, Architect, made a detailed presentation on 'Sustainable buildings' from Indian perspectives.

He articulated that how Indian architecture have been following many of the green building concepts traditionally, with several examples.

The session was attended by more than 150 delegates and created tremendous enthusiasm amongst the delegates.

4.0 **Visits to select Green Buildings & Centres:**

The Indian delegation have visited select platinum rated buildings in USA to understand the latest green building features incorporated in buildings.

4.1 **Donald Bren School, California University, Santa Barbara:**

The Donald Bren School is one of the **Platinum Rated buildings** under LEED V1.0 rating system of USGBC. The project has scored 36 points out of a possible 51 points. The following are the select green building features incorporated in the building

- ❖ Use of recycled automobile rubber products as flooring materials
- ❖ Solar PV for lighting
- ❖ Toilet partitions made of recycled plastic and crushed pet bottles
- ❖ Extensive use of rapidly renewable materials in the building, eg., linoleum.
- ❖ Wheat straw board panels for interiors
- ❖ Water efficient dual flush toilets
- ❖ Educational tour to create awareness



Display of green materials used in the building



Toilet partitions made of crushed bottles

4.2 Inland Empire Utilities Agency - Administrative Headquarters, California:

The Inland Empire Utilities manages water treatment and distribution in several parts of state of California.

Their office building has received the **Platinum rated building** under the LEED V2.0 rating system of USGBC. The project has scored 52 points out of a possible 69 points. The following are the select green building features incorporated in the building;

- ❖ Use of recycled and sliced automobile rubber products as mulching materials
- ❖ Pervious concrete flooring in car parking areas. This has been achieved by preparing concrete without using sand
- ❖ Creation of wet land around the building to attract birds and animals.
- ❖ Use of porous blinds to allow natural light to penetrate and minimise the glare



Pervious pavers



Rubber mulching

4.3 Audubon Centre at Debs Park, California:

The Audubon Centre is the centre for Environment and carrying out research work on birds. This building had received platinum rating under their LEED V2.0 rating system. The project has scored 53 points out of 69 possible points.

The following are the select green building features incorporated in the building

- ❖ The project has achieved significant level of reduction in initial investment by adopting cost effective technologies. The total built-up area of the building is around 4700 sq.ft. **The total cost of construction was US\$ 380 per sq.ft,17 % higher than a conventional building**
- ❖ Solar PV to cater 100% of the building energy requirements.
- ❖ Extensive use of natural lighting
- ❖ Tiles used in toilets are made out of crushed glass bottles



Toilet tiles made of crushed bottles

- ❖ 280 acre park used for National Habitat Preservation Programme for school children and others

4.4 Visit to LBNL, Sanfransisco:

Mr S Raghupathy visited LBNL office at San Francisco to explore various possible tie-ups in the areas of Green Buildings. LBNL has shown keen interest in working with CII-Godrej GBC in the area of Indoor Environmental Quality pertaining to green buildings.

4.5 Visit to Arizona University, Phoenix:

Mr M Selvarasu visited Arizona University to explore the following working areas for co-operation between the university and GBC:

- ❖ Organising joint workshops in India in the areas of building simulation and energy optimisation
- ❖ Tie-up with Indian educational institutions to introduce a subject on 'green buildings' in the curriculum

5.0 Conclusion

- ❖ The mission has enriched the delegation with several learning and best practices that are being adopted in USA. CII-Godrej GBC would explore possibilities of introducing these concepts in green buildings coming up in India. This would also enable CII-Godrej GBC to work on reducing the construction cost of green buildings in India
- ❖ The visit has helped in networking with a large number of international participants and Green product manufacturers. This would help in facilitating exchange of business linkages between Indian and US manufacturers
- ❖ The announcement of the platinum rating for the ITC Green centre project has demonstrated the commitment of Indian corporate towards green initiatives. The achievement of ITC has incited several other corporate in the country to envisage adopting this concept.