Green Buildings in India
Emerging Business Opportunities

February 2008

Green Buildings in India- Emerging Business Opportunities

1.0 Introduction

Construction Industry in India is one of the rapidly growing sectors and contributes significantly to the Nation's economy. The sector contributes to **10% of India's GDP**.

Indian construction sector is growing at a **rate of 9.2%** as against the **world average of 5.5%**. The sector is likely to record higher growth in the coming years.

India has construction capabilities in the areas of buildings, infrastructure development and highway projects.

The growth of construction industry provides impetus to other manufacturing sectors like cement, iron & steel, power, chemicals, etc.,

2.0 Indian Green Building Council (IGBC)

IGBC, which is part of CII-Godrej GBC, has taken on the initiative of promoting the Green Building concept in India. The council is represented by all stakeholders of construction industry - **Corporate, Government & Nodal agencies, Architects, Material manufacturers, Institutions, Media, etc**

The activities of the council are steered and guided by the council members headed by Dr. Prem C Jain. The council operates on a consensus based approach and member-driven.

The vision of the council is to serve as single point solution provider and be a key engine to facilitate all Green Building activities in India.

The council has set the following specific tasks:

- **Catalyse registration of 1000 Green Buildings per year by end 2010**
- **5000 IGBC Accredited green building professionals by end 2010**
- **Tap Green Building materials and equipment market of Rs.15000 Crores by 2010**
- **Tap service opportunities for green building consultants in India and other countries**
- **Develop LEED India as robust green building rating system**
- **Enable reduction in cost of constructing green buildings. The ultimate goal is to work towards reducing the cost of Green Buildings as compared to conventional buildings**

3.0 Green Building movement in India

The Green Building movement has gained tremendous momentum during the past 5 years, ever since the Green Business Centre embarked on achieving the prestigious LEED rating for their own centre at Hyderabad.

The **'Platinum Rating' for the Green Business Centre building** has sensitized the stakeholders of the construction industry. Today, several corporate and Government organizations are considering Green Buildings in a major way. This has resulted in a spurt in the demand for green materials & equipment.

From a humble beginning of **20,000 sq.ft** of green footprint in the country in the year 2003, to a staggering **70 million sq.ft till date**, green buildings are well poised to reach scalar heights. Today a variety of green building projects are coming up in the country - residential complexes, exhibition centers, hospitals, educational institutions, laboratories, IT parks, airports, government buildings and corporate offices

The Indian materials and equipment manufacturers are now faced with a challenge to seriously look at green features to meet the growing demand for Green Buildings.

4.0 LEED India

As part of indigenization of the LEED rating system, IGBC has been working on LEED – India for the past 2 years. LEED India for New construction (LEED India NC) was formally launched in January 2007 and LEED India CS (Core & Shell). Projects in India will be accepted for certification under the LEED-India rating system.

The LEED-India rating system has incorporated few changes like more emphasis for water conservation and adoption of local Indian Codes and Standards. For example LEED-India would adopt the NBC guidelines, MoEF guidelines for large projects, ECBC for energy efficiency, etc.,

5.0 Green Building Potential in India

There is a tremendous potential for construction of Green Buildings in India. This could open up a plethora of opportunities for several stakeholders like construction industry, architects, material, equipment manufacturers etc in India and abroad.

The projected growth potential for Green Buildings in India is shown in the following table:

Year	Projected Certified Green Buildings (Nos. per year)	Estimated Market Potential in Million US$
2006	20	80
2007	50	200
2008	150	500
2012	1000	4000

6.0 Green Building Materials & Equipment in India

While constructing Green Buildings in India, the availability of materials and equipment is one of the major issues to be addressed.

Towards this objective, the Green Business Centre is networking with several manufacturers in India to create new markets.

A few green materials and equipment are available in the country. To name a few - **Fly-ash cement, Fly-ash block, Recycled Aluminum, Recycled steel, Recycled tiles, Low VOC paints, Bamboo based products, HFC based high efficiency chillers, Building Controls, Green Roof, Recycled wood, etc**.,

However there is a huge market for green materials, which is still untapped.

Typical examples are **- Composting toilets, waterless urinals, Low VOC adhesives & sealants, CRI certified carpets, FSC Certified wood, High albedo roof paints, BIPV, CTI certified cooling towers, Living machines, etc.,**.

The total estimated potential for Green Building materials and equipment is about **4000 Million US$ by the year 2012. This potential is only for those buildings, which would go for the LEED rated buildings**.

However there would be other buildings also which would opt for green materials & equipment. Considering these buildings also, the overall potential for Green Building materials & equipment would be at least 10-fold.

The estimated business potential for green materials & equipment (from those aspiring for LEED rating buildings) are shown below:

Green Building Materials & Equipment (Product-wise) Business Potential in India by 2010				
Sl No	**Materials & Equipment**	**Potential for Green Buildings Million US$ per year**	**Potential for Non Green Buildings per year in million USD**	**Total potential Million US $ per year**
	Select Materials			
1	Fly ash based blocks	90	810	900
2	Recycled flooring tiles	10	90	100
3	CRI Certified Carpet	10	90	100
4	Recycled materials for false	10	90	100
5	Low VOC Paints	10	90	100
6	Recycled Particle & Gypsum boards	10	90	100
7	Recycled Aluminum works	10	90	100
8	FSC Certified Wood	15	135	150
9	Energy efficient Windows	10	90	100
10	High performance Glazing & Glass	15	135	150
11	High Albedo roofing paints	10	90	100
12	Eco Friendly Modular	25	225	250
13	Bamboo Products	15	135	150
	Select Equipment			
1	HFC Based High Efficiency chillers	50	450	500
2	Variable Frequency Drives	10	90	100
3	Building Automation System	30	270	300
4	Solar PV	10	90	100
5	High efficiency light sources	10	90	100
6	Waterless Urinals	5	45	50
7	Composting toilets	5	45	50
8	Living machines	5	45	50
	Total	**365**	**3285**	**3650**

7.0 Conclusion

The launch of 'LEED India' Green Building rating system will facilitate to advance the growth of green buildings in India.

Considering the tremendous potential available for green materials & equipment, India would be the destination for several green materials and product manufacturers.

The Indian Green Building Council would provide the right impetus for advancing the Green Building movement in India and enable India to be recognised as one of the leaders in Green buildings.