



ITC Green Centre
A Blueprint for Protecting the Future



ITC Limited
Hotels Division - Headquarters

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> Introduction	3
> Innovative Design	4
> Water Efficiency	6
> Energy & Atmosphere	8
> Indoor Environmental Air Quality	12
> Materials & Resource	14
> A Sustainable Site	16
> Economic Commitment	18
> Ecological Commitment	20
> Social Commitment	22
> The Green Home Make A Difference Where You Live	24
> Awards	26

contents



introduction

At ITC, we recognise that being certified Green is not enough. So, we make sure that every step we take is in complete accord with the natural world, not just in thought and word, but most importantly, in deed as well.

In our endeavour to adopt practices that go beyond mere compliance with ecological guidelines, we have, over the past decade, committed ourselves to conducting business with a passionate respect for the environment. This commitment has been substantiated through clear policy directives that have in turn grown from the fundamental understanding that our resources are finite and shared. Economic growth translates into sustainable growth only when it is inclusive of the environment, both social and natural. All our business, therefore, is conducted at three distinct levels ecological, social and economic.

At **170,000 sq feet**, ITC Green Centre is the world's largest 0% water discharge, non-commercial Green building, and compared to similar buildings, ITC Green Centre has a **30% smaller carbon footprint**.

Whether it is air, water, energy or design, we take responsibility for our every interaction with the environment. And with the use of sensible technologies, we do our best to make green go greener.

design

One of the strongest aspects of ITC Green Centre is its design. All our systems are integrated in a way so that they can function as naturally as possible. Our systems have not been designed to operate separately, handling specific aspects of the environment within ITC Green Centre, but rather to lend and receive support from each other, to operate as organically as they can. And this has been solely possible because of the degree of intelligent thought devoted to the design of the whole structure.

For example, the L-shaped architecture of the building serves more than one function in more than one area of the immediate environment. The central atrium allows a column of glare-free natural light to form in the heart of the building, thereby reducing the use of artificial light. It also ensures that one part of the façade is always in the shade, preventing too much heat from entering the structure, and the cooling effect is supported moreover by the discreet bodies of water placed in front of the building. Significantly, the atrium also connects the various parts of the building to each other, both horizontally and vertically. Not only does it provide a sense of space, but by its very design it encourages interaction between the various parts, and more, it promotes a sense of community. It is the hub of the building in every sense of the word.

In every aspect of the building, the design is integrative. The water in our water closets, for example, is 100% recycled through our sewage treatment facility. Similarly, the organisation of space within ITC Green Centre, the high ceilings, for example, affects the temperature and quality of air, which in turn affects the use of air-conditioning, which in turn affects the total amount of energy used by the building.

Whether it is systems that regulate air quality, or water distribution, or energy conservation, the design of ITC Green Centre seeks to work efficiently and responsibly within its immediate environment, rather than imposing an alien structure in its midst it does its utmost to make the most of the natural resources we receive.

The degree to which ITC Green Centre integrates careful thinking and technology demands a remarkable inventiveness and originality in design, and that alone has made it possible for us to achieve the kind of results we have since ITC Green Centre's inception.



Only 1% of the Earth's water is fresh-water from rivers and lakes. Another 2% can be located at the Poles. A staggering 97% is in the salt-water seas and oceans, and that water is not potable by any means. It is vital that our use of water is not wasteful or unwarranted.

Water is a resource that people use with the least concern because it is assumed that on a planet where 75% of the surface is covered with water, there is enough available for it to be considered an infinite resource. Unfortunately, this is not the case.

ITC Green Centre, therefore, is water efficient in the most holistic way possible. We harvest 100% of the rain that falls on the building, and we recycle 100% of all the water used in the building including waste water to tertiary standards through our sewage treatment plant. Along with the rainwater harvesting at ITC Green Centre, there are interlocking tiles placed across the landscape of our building to harvest rain water through the grass that grows between the tiles while ensuring 0% surface run-off. Over 2008-09, our storm water pits recharged ground water by 5491.83 kilolitres, and our sewage treatment plant recycled 6852 kilolitres of water in total, limiting costs but more importantly water use tremendously.

An intelligent approach to landscaping has informed the hosting of indigenous plants from the region which require very little water to thrive. Nevertheless, we irrigate all our plants and lawns with recycled water, so that we make this particular scarce resource last as long as it possibly can.

Apart from innovative plumbing methods, techniques to conserve water include the use of waterless urinals in the building. The urinals use biological blocks containing particular bacteria that reduce odour problems and blockages in the urinals. Incidentally, all our waterless urinals annually saved approximately **300,000 litres** of drinkable water collectively. Furthermore, our sewage treatment facility uses Fluidised Aerobic Bioreactors, which not only assist organic processes, but significantly reduce the space necessary for the facility, as well as positively affect power and operating costs.

There isn't one facet of water conservation that we have not considered. It is after all a basic necessity for existence, and the efficient use of water in ITC Green Centre clarifies how highly-valued a resource it is to us.

efficiency

water



energy



& atmosphere

At ITC Green Centre we've done our best to optimise energy management so that every unit is put to use and nothing is wasted. Temperature control and lighting, for example, are the most expensive energy consumers in a commercial building, and so our efforts to conserve energy focus on these two aspects over others. We've ensured that we use as little energy as possible in terms of basic lighting. The architecture of ITC Green Centre allows enough natural light to penetrate throughout the building during daytime, and business is concluded by sundown, so we need very little energy to light the building at night. And this particular stratagem goes further to prevent any kind of light pollution produced by the building. We like to think of our lighting as intelligent. For example, a commercial building the size of ITC Green Centre usually consumes about 620,000 kilowatts per hour per annum, whereas we use as little as 130,000 kilowatts per hour per annum.

Energy may be infinite but our best methods to harness energy from the earth are still fairly limited. Most often, the energy we generate goes unappreciated, spent frivolously, and the costs we bear economically and ecologically go unaccounted for. ITC Green Centre uses only as much power as it needs, no more, no less.

The high albedo roof coating reduces the amount of heat absorbed by reflecting over 90% of visible and infra red radiations away from the building. This reduces the roof surface temperature by **30 degrees** and brings down the use of energy for air conditioning in the top floor by 10-15%. Moreover, the 250mm thickness of the building's walls, the double glazed windows and high performance glass reduce the amount of solar heat entering the building by more than 65%. But, we also use the sun as practically and efficiently as we can imagine for all our hot water needs. For example, water heated by solar thermal technology saved us approximately 30,000 kilowatts per hour in 2008-09.

Moreover, the air conditioning operating within ITC Green Centre is Chloro Fluro Carbon (CFC) free, making the cooling system within the building not merely efficient or cost-effective, but more importantly, responsible. With a consumption of 11,47,828 kilowatts per hour against an estimated 2,33,51,332 kilowatts per hour we saved 51% of our total budget: 81% on lighting, 40% on Heating, Ventilation and Air Conditioning (HVAC) and 40% on hot water over 2008-09.

air quality

Air quality is a delicate facet in any large building. Whether it's basic air circulation or ventilating areas where there are too many harmful substances, or even ensuring that some of those substances don't find their way into the building, regulating air is a difficult and careful operation.

The quality of the air we breathe is essential to our well being, and we have been made increasingly aware of it in the recent past. We do our best to make certain that the air within ITC Green Centre is clean and healthy using intelligent solutions to solve challenging problems.

The low levels of Volatile Organic Compounds in the materials used in the construction of ITC Green Centre, in adhesives, sealants used for carpets, composite woods and paints ensures that there aren't any known harmful substances in the air that might affect inhabitants of the building, and the comfortable distance between floor and ceiling allows us to ventilate naturally. Not only do we have designated smoking zones in convenient locations with their own exhaust fans, but the copy-printer room in the building has its own separate exhaust as well. Moreover, 90% of all regularly occupied areas have access to open-able windows, should anyone feel the need to open one.

When the temperature outside is low, an external air-economizer draws in 100% of the air from outside, inviting fresh air into the building. And this works especially well when working in conjunction with the fan-based night-purge system that flushes out heat when the building is vacant, making sure that the environment is pleasant when people return in the morning to work. And during work hours, the CO² monitoring system maintains carbon dioxide levels based on the number of occupants within the building and the conditions outdoors.

indoor environmental



materials &



resource

Every resource taken from the planet must be accounted for in some way. The guideline we followed uncompromisingly when constructing ITC Green Centre was appropriately, “reduce, reuse and recycle”.

For example, over 40% of the materials used in the construction of ITC Green Centre was available within 800 kilometres of the building site, which is not only cost effective but also offers the chance of easy renewal. Supporting the initiative to reuse resources, more than 10% of materials used to make work-stations, cabinets, conference tables, wall panels and door frames was refurbished or salvaged from other building sites.

There is a very high proportion of recycled material like fly ash in the cement and concrete used in the building. The Autoclaved Aerated Concrete blocks, for example, contain 55% fly ash, and given the high content of quicklime in the bricks, can be safely described as ‘self-cementing’. These bricks are manufactured in a way that saves energy, reduces mercury pollution, and costs 20% less than traditional clay brick manufacturing, not to mention the fact that they last over 100 freeze-thaw cycles. Over 10% of our construction material, such as glass, ceramic tiles, steel and aluminium, used in the building are recycled.

The wood in the building is either FSC certified or Medium Density Fibreboard (MDF). FSC certified Steam Beach wood comprises 64.49% of our wood usage in ITC Green Centre, and MDF is composed mostly of rapidly-renewable eucalyptus wood (85%), and the rest of it comes from other recycled woods (15%). Even our carpets are made from 100% post industrial recycled yarn, with 50% recycled tile-backing.

Furthermore, there are storage bins on every floor of ITC Green Centre for recyclable materials like paper, cardboard, glass, plastic and metals, affirming our commitment to ‘reduce, reuse and recycle’ and making it a point of everyday practice.

Materials used in construction are significant not just in terms of their contribution to the structure being built, but also in terms of their absence from the environment. Where a material comes from, what it is being used for, and how it is being used, are deeply important facets in any construction.

ITC Green Centre was not built merely to exemplify the efforts made to build a Green building, because in today's day and age, that isn't particularly difficult but rather to articulate the value of Green thought. To not just construct an eco-friendly building through eco-friendly means, but also to invest in systems that will sustain the structure, that will enable it to endure.

Intelligent planning and design have enabled us to do precisely that. All our systems are integrated very carefully to conserve energy, harvest and recycle water, and control temperature and air quality. Even the materials used in construction and the ways in which they have been used support each of these aspects, preventing too much heat from entering the building, saving energy costs, aiding the harvesting of water, and helping improve the quality of air within the building, just to mention a few. Furthermore, not only are the materials reused, recycled and rapidly renewable, but significantly, they are also more durable than more conventional materials.

Over the past few years ITC Green Centre has demonstrated that it is more than capable of sustaining itself. Certainly, ITC Green Centre was meant to embody Green thinking to a large extent, but not so as to pay tribute to it, but rather to provide a point of reference for the future. To encourage not just corporations and industry magnates to adopt Green practices but also individuals and households. To not just spread awareness of pressing environmental concerns but more, to provide alternative methods and practices that aid Green efforts and gradually rejuvenate natural resources.

It is not enough to express a commitment to an idea, especially if it is an important idea. Given the altering nature of climates in the world today, the condition in our forests, farmlands and oceans, it is essential that we build for future needs rather than present wants.



sustainable
site

ITC is one of India's most valuable corporations with a market capitalisation of nearly US\$14 billion, and a turnover of over US\$5 billion over 2008-09. It is rated among the World's Best Big Companies, Asia's 'Fab 50' and the World's Most Reputable Companies by Forbes magazine, among India's Most Respected Companies by BusinessWorld and among India's Most Valuable Companies by Business Today. Furthermore, ITC ranks among India's '10 Most Valuable (Company) Brands' in a study conducted by Brand Finance and published by the Economic Times, and it also ranks among Asia's 50 Best Performing Companies compiled by Business Week.

With a history almost 100 years old and over 25,000 employees in more than 60 locations across India, ITC has a deep stake in the Indian economy. The company's approach to business seeks to enrich the competition as much as overcome it.

From consumer goods like cigarettes, branded packaged foods, ranges of retail clothing, greeting cards and stationery, safety matches and incense, to packaging products and solutions, the ITC-Welcomgroup chain of luxury hotels, and the exporting of agricultural produce and managing rural distribution, ITC has a deep and diversified presence within the Indian economy.

This diversified position comes from a simple but effective corporate strategy. It seeks to create multiple drivers of growth based strongly on its time-tested core expertise: an unmatched distribution reach, superior brand-building capabilities, an effective supply chain management, and widely acknowledged service skills in hoteliering. ITC hopes to create enduring value for India in the international economy. Not only by driving each of its businesses towards competing internationally but also by consciously contributing to improving competitiveness within the domestic industries of which it is a part.

**economic
commitment**

ecological commitment

ITC constantly endeavours to minimise the direct and indirect environmental impact of its business operations. Not only does it make serious and concerted efforts to conserve natural resources but wherever possible, the company also strives to support and enrich the natural environment.

ITC is the world's largest 'Water Positive' corporation. The amount of rainwater we harvest regularly exceeds the total amount of water consumed by the company's units. And all the company's units have sustained a steady reduction of the amount of water required for each unit of production. Furthermore, the units are encouraged to eliminate waste water discharge as far as possible through careful water conservation and the reuse of treated waste water. The treated waste water, for instance, is reused mostly for toilet flushing, cooling towers and gardening.

The 'zero discharge' objective helps reduce fresh water intake, of course, but more importantly, it minimises energy consumption, brings down indirect CO² emissions and eliminates effluent pollution. Significant recycling improvement and sufficient waste reduction efforts have made ITC a Solid Waste Recycling Positive Company

Moreover, all ITC units endeavour to minimise energy consumption per unit of production. Energy audits by experts, deployment of latest technologies, awareness campaigns and global benchmarking have helped reduce specific energy consumption in several units. And, ITC is now a 'Carbon Positive' corporation. Its energy conservation and large-scale forestry programmes have put the company in the unique position of being able to create 'Certifiable CO² Credits'.



It is our belief that India's rural transformation cannot be brought about by the government alone. Through rural partnerships, women's organisations, and primary education programmes, that touch the lives of over 3.5 million villagers across the country, ITC expresses its commitment beyond the market.

Using ITC's internet stations in villages, the e-Choupal programme enables farmers to log on to ITC-created vernacular websites that provide weather forecasts, expert advice on the best farming practices and local, national and international agricultural commodity prices online. The initiative reaches out to over 3 million farmers in Madhya Pradesh, Uttar Pradesh, Rajasthan, Karnataka, Maharashtra, Andhra Pradesh and Kerala.

ITC's unique forestry programme has helped transform former wastelands belonging to small and marginal tribal farmers into dense plantations. The programme has rejuvenated more than 29,230 hectares of wasteland by planting nearly 100 million saplings, generating livelihoods for over 20,000 people and making a substantial contribution to India's green cover. And, by financing and organizing farmers into water-user groups that plan and build water harvesting structures, such as nalia bunds, check dams, percolation tanks and farm ponds, ITC has helped provide critical irrigation to over 8,000 hectares of drought-prone tracts.

Furthermore, ITC organises rural women into micro-credit groups and provides them ample support to build and manage a revolving development fund. These groups extend financial support to members, helping them set up small businesses to supplement family income. They also provide better health care, nutrition and education for the children of members.

Moreover, the Primary Education programme aims to overcome the lack of basic infrastructure in village schools by creating a more engaging school environment in an attempt to maximize enrolment. And supplementary learning centres help students with their studies, making it possible for thousands of children across the country to aspire to education and a better future.

social
commitment 

> the green home

make a difference where you live

Water:

1. Avoid use of drinking water for construction, use effluent treated water, if available.
2. Install low flow showers in the bathroom and a dual flushing system in the toilet. (1.5 litres discharged for liquid waste and 7 litres for solid waste.)
3. If a residential colony is being made, the installation of a Sewage Treatment Plant (STP) should be mandatory, with the water from the plant being used for horticulture or flushing needs.
4. Use drip irrigation for the garden.
5. Rain water harvesting should be initiated from the design stage.
6. Kitchen water must be harvested.

Energy:

1. Orient the building to ensure minimal heat gain in the summer and maximum heat gain in winter.
2. Install a solar hot water system and, space permitting, a solar concentrator for the kitchen.
3. Use solar photo voltaic for emergency lighting.

Material Use:

1. Use local material - the preferred distance is not more than 500 km.
2. Use green material to reduce heat gain from the rooftop and walls a low cost version of this idea is to paint the rooftop white or roll out gunny bags in summer.

Most of what has been shared with you has been implemented in the ITC Green Centre. In addition, the Welcomgroup Housing Society has integrated a number of these ideas. If you would like to explore other options, TERI has developed an Indianised version of the ITC Green Centre that might be worth looking into.

Global warming caused by a high proportion of Green House Gases (GHG) is not a new concept. What we have to be aware of, however, is that the leading culprit is CO².

The level of CO² in the pre-industrial atmosphere was approximately 280 parts per million (ppm). Since the industrial revolution, the concentration has risen to 370 ppm and is increasing at a rate of approximately 2 ppm per annum. It is this particular increase that is driving policy, and will shift market and regulatory pressure toward reducing CO² output from the construction industry, which transports and uses a large quantity of cement and steel.

The key intent of the green building movement is to reduce negative effects with known and emerging technologies. Spreading awareness concerning the importance of bigger issues, like the cost of production to the ecology, and making suggestions about what individuals can do, is a major step towards achieving this. There are small precautions that can be taken by anyone building a home, that have remarkable environmental impact.

awards

Green policies have been an important aspect in ITC-Welcomgroup practices for close to a decade now. They are in fact, central to our ethic of conducting business or providing hospitality, with responsibility. In all our properties across the country, our commitment to go Green has not only been substantiated by results, but moreover has been recognised by those concerned.

▶ **US Green Building Council Leadership in Energy and Environmental Design**

Platinum Rating awarded to ITC Green Centre

▶ **British Safety Council**

5-Star Rating & Sword of Honour awarded to cigarette factories in Shahrampur, Bangalore and Kidderpore, Chirala Leaf Processing Plant and Munger printing factory.

▶ **Royal Society for the Prevention of Accidents (RSPOA)**

Gold Award presented to cigarette factories at Shahrampur, Bangalore, Kidderpore, and Munger, and ITC Group Research & Development Centre.

▶ **Centre for Science and Environment**

Green Rating for paperboards unit at Bhadrachalam, ranked First in the Indian Pulp & Paper Sector.

▶ **Greentech Environment Excellence Awards 2009**

ITC Grand Central was awarded 'Silver' in the 'Service Sector' category.

▶ **Golden Peacock Awards 2009**

ITC Kakatiya was awarded 'Winner' for Environment Management.
ITC Mughal was awarded a 'Special Commendation'.

▶ **Srishti Good Green Governance Award 2008 & 2009**

awarded to the Sheraton Rajputana Hotel.

▶ **India Today Travel Plus Toplist Survey 2008-09**

ITC Maurya was winner in the Hotels: Eco-friendly category.

▶ **FHRAI Awards 2008**

ITC Grand Central awarded Environment Champion for Large Hotels.

▶ **NCPEDP-Shell Helen Keller Awards 2008**

ITC-Welcomgroup was recognised as a "Company who... through their policies and practices demonstrate their belief in equal rights and gainful employment for persons with disabilities."

▶ **National Tourism Awards 2007-08**

ITC Grand Central was recognised as the Best Private Public Enterprise Providing Facilities for Physically Challenged Persons.

▶ **CII National Awards 2004**

Paperboards unit at Bhadrachalam awarded Excellence in Energy Management.

Cigarette factory at Shahrampur awarded Excellence in Water Management.

▶ **Golden Peacock Awards 2004**

ITC Mughal and ITC Group Research & Development Centre awarded prizes for Environment Management.

▶ **Greentech Foundation 2003-04**

ITC Maurya awarded Platinum Award for Safety.

Cigarette factories at Munger and Kidderpore, and Chirala Leaf Processing Plant awarded Golden Award for Safety.

ITC Mughal and Sheraton Rajputana Hotel awarded Silver Award for Safety.

▶ **Environmental Excellence Awards 2003-04**

Cigarette factories at Shahrampur and Munger, Chirala Leaf Processing Plant and Paperboards unit at Bhadrachalam awarded Gold Award.

Printing factory at Munger awarded Silver Award.

▶ **National Energy Conservation Awards 2004**

Paperboards unit at Bhadrachalam awarded Second Prize in the Pulp & Paper Sector.

