Sheraton New Delhi Hotel, New Delhi.

Building Profile:

This hotel is built on 9850 Sq. Mtrs area in the heart of the city on the South Delhi, 19 Km. From International Air Port & 18 Km. From Domestic Air Port. The hotel offers two specialities and one multicuisine restaurants, banquet halls, boardrooms, lounge bar, swimming pool, shopping arcades & fit ness center.

Operation commenced from 31st December 2000. Currently it offers the Five Star Deluxe Hotel accommodation in the city of New Delhi.

Part of the Corporate giant – ITC Group, The Sheraton New Delhi Hotel New Delhi is committed to bench marking practices and operational excellence in all areas including Environment, Health & Safety.

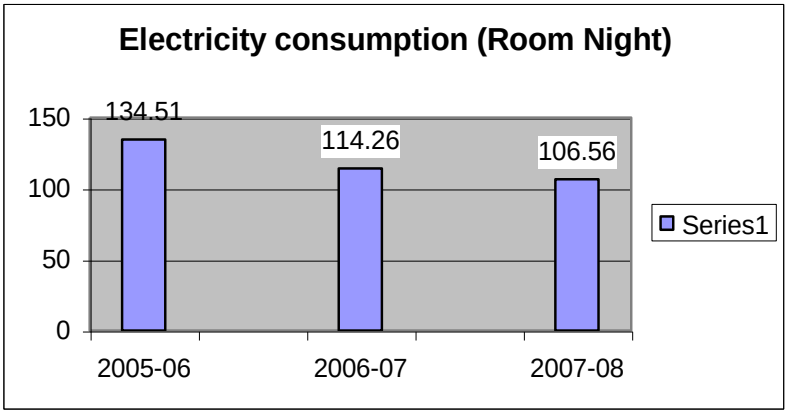
The hotel offers 220 rooms as Deluxe, Executive floor, Executive suits, Executive floor exclusive and Presidential Suits. The hotel has been one of the best choices for many dignitaries including Heads of states and Diplomats.

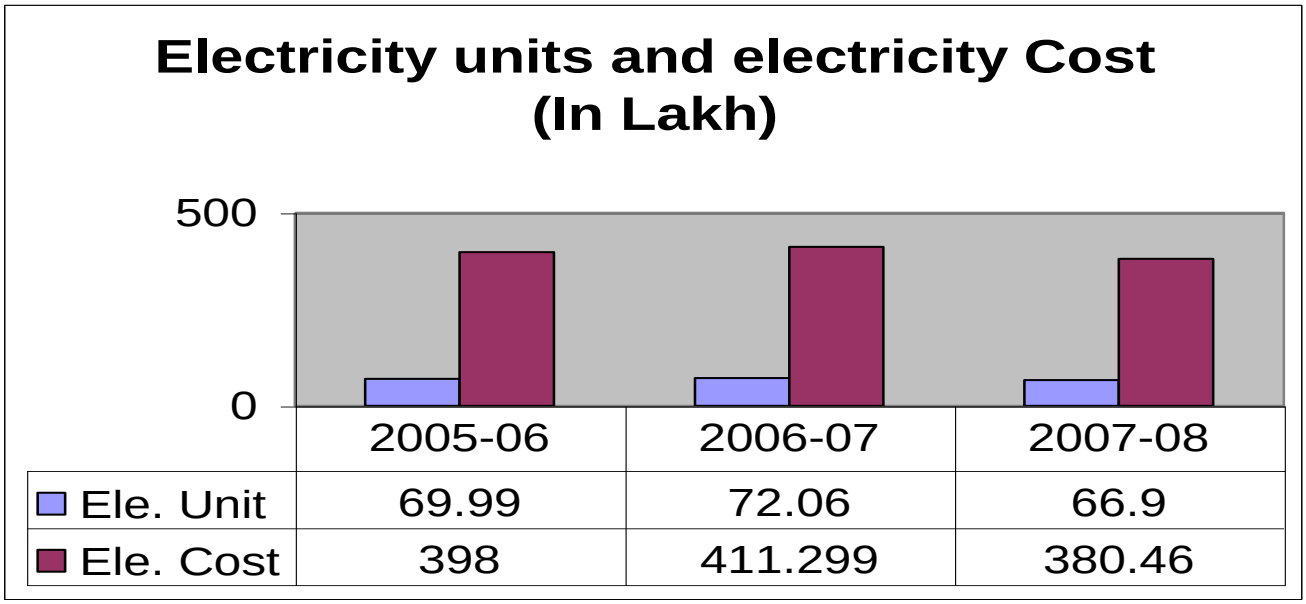
The unit has been faring very well in Environment, Health, & Safety performance. The unit is also a consistent performer in the ITC Corporate EHS Audits.

As part of its ongoing endeavor towards environment protection, the hotel had achieved the **ISO- 14001: 1996**, **Greentech Environment award, Greentech safety award** and **Golden Peacock Environment Management award 2008.**

Energy Consumption:

The connected load is approximately 2081.72 KW, Energy consumption in Sheraton New Delhi Hotel is shown in the fig. Below:





Energy Conservation Commitment, Policy & Set up:

The Sheraton New Delhi Hotel team closely monitor the energy consumption (shift wise/day wise/month wise/year wise). The targets are decided by the corporate as below:

- **Conservation of energy (Electricity) by 5% every year over the next three years.**
- **Reduction of fuel consumption by 5% every year over the next three years.**
- **Conservation of water by 5% every year for the next three years.**
- **Use of 100% Eco-friendly refrigerants.**
- **Reduction of solid waste by 10% over the next three years.**
- **Plantation of trees (450 trees per year for the next three years)**
- **Reduction of noise.**
- **Recharge ground water by Rain Water Harvesting**.
- **Charcoal consumption reduction by using accurate size & good quality charcoal.**
- **Conducting EHS training to create awareness amongst employees.**
- **Maintain "0" accident statistics.**
- **To achieve maximum rating in EHS audit done by Corporate Team**

Not only does the top management emphasize on achievement of highest level of energy efficiency but also provides the financial supports and best energy efficient equipments. Regular training and monthly energy conservation meetings are done to achieve the given target and to save energy consumption.

Energy Conservation Achievements:

Implemented Measures: -- The following energy efficient measures have been implemented in the following areas:

1. ENERGY SAVER

Installed three 40 kVA and two 30 kVA lighting energy savers in raising mains and one 60 kVA energy saver in plant room for optimizing voltage

Rising Main Energy Saver

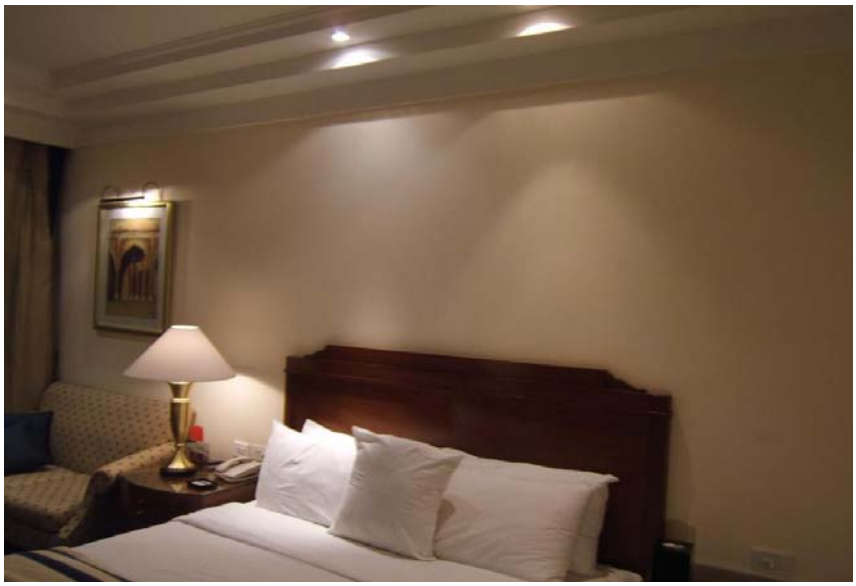
Plant room Energy Saver

2. INSTALLATION OF ENERGY EFFICIENT PUMPS

Installed the energy efficient pumps for secondary,primary, condensor pumps in plant room.

3.HALOGEN BULBS FOR GUEST ROOMS

Replaced 12 V, 36^{o}, 50 W standard halogen lamp with 12 V, 36^{o}, 35 W energy efficient Osram make IRC halogen lamp

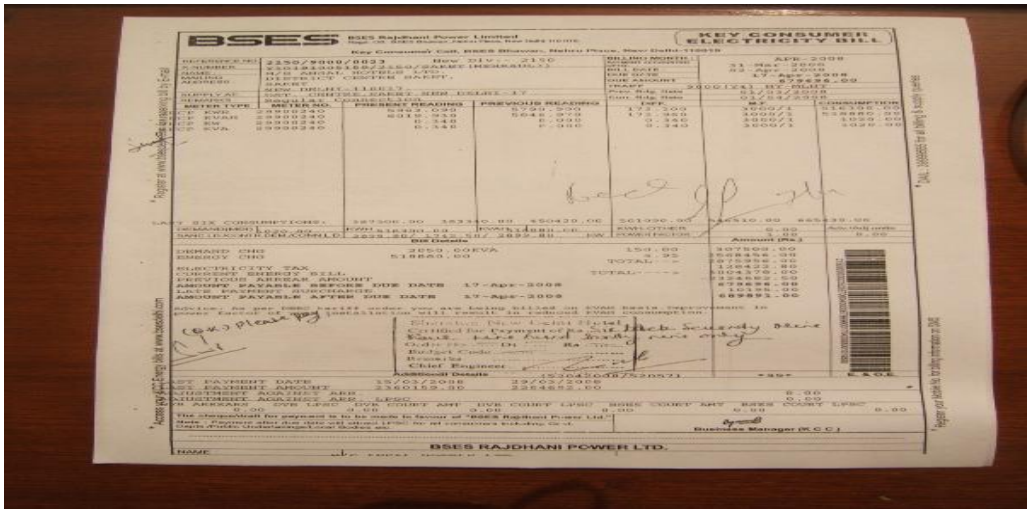


4. DIGITAL THERMOSTAT FOR GUEST ROOMS

Siemens digital thermostat with auto fan speed controller installed in all guest rooms fan control units (FCU)

5.REDUCING CONTRACT DEMAND

The contract demand is reduced from 2450 kva to 2050 kva.



6. PC Based Energy Management System:

The building control automation system is a state of the art system that is microprocessor based system. One scalable system that pulls together all core building systems and integrates information from many different enterprise sub systems. With the Landis and Steffa (Siemens) building integrator, the building has the information needed to make critical decisions quickly- decisions that ultimately help us to conserve energy

7. Energy Management Strategy For Chillers:

a) **Load Reset:-** The chilled water flow control responds quickly to load changes by the microprocessor control panel, to maintain the chilled water temperature. The chilled water temperature may be reset from chilled water return temperature.

b) **Chiller Sequencing:-** In the chiller sequencing the Chilled water flow temperature is controlled by switching chillers ON /OFF. If the flow and temperature are below the specifications for the chillers, then the system first circulate the cooling load, checks the load and decides number of chillers to be on line.

c) **Cooling Towers:-** The Cooling Tower's capacity to cool the water is limited by the ambient conditions, If the condenser water design temperature minus the approach temperature of the tower than the outside air temperature, then the cooling tower fans can be sequenced / VFD will vary the speed of C.T. Fans. Set point of the condenser water can be raised, quantity of water can by-passed to reduce the load on CT.

d) **VFDs:-** The VFDs are installed to reduce the energy consumption by the C.T. fans, it sense the temperature from the return water from the cooling tower and according to the condenser water the VFD's speed will vary.

8. Energy Management Strategy for Air Handling Units:

a) Duty Cycling:- The duty cycling software program reduces energy consumption (Electrical and Mechanical) in the HVAC systems by switching fans ON/OFF periodically on a fixed time schedular, however if space temperature exceeds the limits, duty cycling program is disabled.

b) Optimum Start/Stop:- Air handling units are switched ON depending upon the outside air / inside air temperature and the capacity of the AHU to recover the space temperature to the middle of the comfort band before occupancy.

Chillers and Fan coil units optimization is also done during the low occupancy period or lean Hours.

Optimum stop function is the opposite of optimum start function. It calculates the earliest possible point in time when the HVAC system can be stopped, ensuring that the minimum comfort condition has just been reached at the end of the occupancy period.

9. Energy Conservation Project Implemented:-

a) VFDs for AHUs/ Fresh air fans/ Exhaust units, Cooling tower C.T. Fans, & Chilled water secondary pumps.
b) Replacement of CFL tubes of External lights & offices.
c) Replacement of low capacity motors inplace of high capacity motors.
d) Road blinker with Solar Power at the staff entrance.
e) Replacement of Tube lights with the energy saving tubes (Picostar-Osram) in the BOH/Basements/ Service Floor/Plant room etc.
f) New steam Boiler (Thermax make) – Low fuel consumption.
g) Increasing of the capacity of power capacitor bank (400 KVAR- 725 KVAR)
h) Automatic taps in the Public toilets/staff lockers/staff cafetaria.
i) PNG is being used inplace of LPG.
j) Use of anti scaling chemical in the Boiler feed water.
k) Recycling of steam condensate water for the Boiler feed.
l) Thermostatic steam control system for the hot water system.
m) Installed Energy saver


CAPACITOR PANEL NO.2

10. Energy conservation measures for 2008-09

a) To install Heat recovery wheel
b) More VFD's for AHU's/Fresh Air Fans/Exhaust Units for energy conservation.
c) To install LED lights in the corridor
d) To install Hot water solar system
e) Energy Audit by the External agency.
f) Organic Waste convertor to be installed
g) 300 Ton new Carrier make screw chiller to be installed
h) Area-wise Energy meters for Electrical energy monitoring.

11. Details on Energy Effeciency Improvement Projects/Measures:

Description of upgrades & approximate investment at Sheraton New Delhi Hotel.

S. N.	Solution	Make	Description	Qty.	Value (In Lakhs)
1.	Auto Voltage Regulator	ABB / Equivalent	To regulate the voltage	01	20.00
2.	VFDs	Schneider	Variable frequency Drives with panel suitable to drive	10	20.00
3.	Tube lights	Osram-Picostar	Energy efficient fluorescent tubes	600	5.00
4.	CFLs	Osram/GE	Energy efficient compact fluorescent lamps	480	4.00
5.	Energy Audit	M/S UVK Rao (External Auditor)	For achieving energy saving in the unit.	01	6.00
6.	Sewage Treatment Plant	Ion Exchange	Energy efficient equips. And process improvement.	01	3.50
7.	Energy Meters	Enercon / equivalent	For monitoring Area wise power consumption	10	.80

Environment, Health & Safety:

ITC's mission is to sustain and enhance the wealth generating capacity of its portfolio of business in a progressively globalising environment. As one of the India's premier corporations employing a vast quantum of societal resources, ITC seeks to fulfill a larger role by enlarging its contribution to the society of which it is a part. The trusteeship role related to social and environmental resources, aligned to the persuit of economic objectives, is the cornerstone of ITC's Environment, Health and Safety philosophy. ITC's EHS philosophy recognizes the twin needs of conservation and creation of productive resources.

- Commitment of top management help create greater awareness and under standing of environmental issues leading to improved corporate culture and industrial relations.
- Organization committed for identifying and meeting mandatory legal and other requirements and continued improvement.
- ISO-14001 provides a unique tool and framework to help address legal commercial and other issues related to environment.
- Minimized occurrence of incidents / accidents and consequent liabilities.
- Emergency preparedness of the Unit to face any eventuality.
- Improved overall efficiency by substantial reduction in operation costs, reduction and recycling of waste, conservation of material and natural resources.
- The organization is meeting its stated environmental policy, goals and objectives without compromising on its standards.

ITC EHS Policy:

- **To contribute to sustainable development through the establishment and implementation of environment standards that is scientifically tested and meet the requirement of relevant laws, regulations and codes of practice.**
- **To take account of environment, occupational health and safety in planning and decision making so as to assess risks and mitigate their impact to a practical minimum.**
- **To provide appropriate training and disseminate information to enable all employees to appreciate risks, accept individual responsibility for**

environment, health and safety, implement best practices and work in partnership to create a culture of continuous improvement.

- **To instill a sense of duty in every employee towards personal safety as well as that of others who may be affected by the employee's actions.**
- **To provide and maintain facilities, equipment, operations and working conditions which are safe for employees, visitors and contractors at the company's premises.**
- **To ensure safe handling, storage, use and disposal of all substances and materials that are classified as hazardous to health and environment.**
- **To reduce waste, conserve energy and promote recycling of materials wherever possible.**
- **To institute and implement a system of regular EHS audit in order to assure compliance with laid down policies, benchmark standards and requirements of laws, regulations and applicable codes of practices.**
- **To proactively share information with business partners towards inculcating world-class EHS standards across the value chain of which ITC is a part.**