

GRAND HYATT MUMBAI

BUILDING PROFILE:

- Super Deluxe Hotel located close to the International Airport situated within a sprawling 10 Acres or 42230 Sq. M. area.
- Hotel is having 547 guestrooms including Grand club floors, three Presidential suites & 147 Mumbai's most spacious fully serviced apartment.



Hotel operation commenced from 17th March 2004.

Energy Conservation Achievements

The implementation of following energy saving initiatives has resulted into an annual saving above Rs. 1.7 Cr, at present unit cost.

- **Electrical System Proposals**

1. **Energy efficient bulbs:** - Replaced 3762 nos. 12V, 50W standard Eye bulb with 12V, 35W energy efficient IRC Technology bulbs, by keeping same lux level & also reduces load on air-conditioning.
2. **Energy efficient ballast with reflective medium:** - Replaced 370 nos. of ordinary twin tube light fixture with single energy efficient ballast & reflective medium.



3. **Occupancy and motion sensors:-** Installed 62 nos. occupancy and motion sensors in back of house area where lighting circuit can be switched ON/OFF automatically, which maintain required illumination level based on the movement / sensing of occupancy.



4. **Installation of VFD:** - Installed 5 nos. of VFD's for Electrical motor load variations are regulated by variable frequency drive contributing to electrical energy saving.
5. **Energy efficient CFL:** - Replaced 208 nos. GLS bulbs with the energy efficient CFL bulbs.
6. **Provision of mechanical timer:-** Installed timers for lighting in Staircases area exposed to sun
7. **Provision of switches/Modification in Circuit:** - Provided switch control in all service floor area & back of house area where we are able to control the lighting usage as per requirement.
8. **LED signage:** - Installed LED signage at the Hotel entrance road, also in lobby/restaurant renovations LED are being replaced with ordinary lamp.

9. **Separate lighting preset:** -Set the lighting preset for cleaning & setup mode to avoid wastage of energy (i.e. Total connected load - 110 KW & Load on Cleaning /Set Up preset - 32 KW) in Banquet area.

- **Thermal System Proposals**

1. **Laundry condensate heat recovery:-** Installed 4 stage heat recovery unit due to which hot water generator operation is reduced



2. **Flue gas monitoring:-** Periodically flue gas analysis and burner tuning done in order to maintain optimize flue combustion ratio.
3. **Hot water feed pump operation:** - Pumps operation interlocked with Burner operation to eliminate unwanted running of pump.



- **HVAC System Proposals**

1. **Losses in supply air fan:-** After calculating CMW we have replaced old pulley with required optimum capacity pulley due to which results in to saving in electrical energy.
2. **Trimming impeller for primary pump:** - 1 no. Primary pump impeller trimming carried out on trail basis as these pumps were operating on higher head compared to the head required.
3. **Trimming impeller condenser pump in plant room:** - 1 no. Condenser pump impeller trimming carried out as pump was operating on higher head compared to the head required.

- **Pump & pumping System Proposals**

1. **Replacement of fountain motors:** - Replaced 14 nos. existing fountain pumps with optimal sized pumps of higher efficiency & energy efficient motors.



- **Water System Proposals**

1. **STP Up gradation:** - Recycling 100 % of STP outlet Water by upgrading the existing facility. Same water is being used for cooling tower & Gardening.



2. **Water aerators:** - Installed 450 nos. water aerators for wash basin in the guest room & 235 nos. Kitchens sink taps in Apartment & all kitchens.
3. **Auto sensor taps:** - Installed 50 nos. auto sensor taps with aerators in all the cloakrooms.

Initiatives on which work in progress

- **Electrical System Proposals**

1. **External light sensor:** -Use of electronic timer (Photo sensor) for auto switching on-off the external lights based on lux level which is giving significant saving as mechanical timer have an error of +/- 15 min. Received 28 nos. of sensors for all external DB. Installation started.
2. **Occupancy and motion sensors:** - Ordered 33 nos. sensors for the back of house area.

- **HVAC System Proposals**

1. **Primary Pump:** - Received 3 nos. primary pumps. Work will be finish till this month end.
2. **Condenser pump:** - Replacing existing 100HP pump with energy efficient 60HP pump for the centrifugal chiller. New pump received, work will be complete in till this month end.

- **Water System Proposals**

1. **ETP Up gradation:** - Up gradation work in final stage (i.e. Target date: - 10th Oct 08) where Laundry waste water can be recycle & use as fountain make up water. Expected water saving to be 120KL.



2. **Water Aerators:** - Remaining water aerators (250 nos.) for guest room wash basin.

3. **Rain Water Harvesting:** - Bore well digging done on a sample basis in order to check the subsoil water quality where we are planning to make rain water harvested bore well. Waiting for water quality report after that we will decide on Bore well/Ring well Harvested Method for rain water Harvesting.



- **Bio System Proposals**

1. **Feasibility study for Waste Audit/bio gas generation plant:** - Conducted waste audit for the hotel by M/s Green Circle, as per survey we will be able to get 220-240 Cu. Meter bio gas from the waste generation which can be use for soft cooking purpose.



Initiatives are under consideration

- **Electrical System Proposals**

1. **T5 Tube light** :- Replacement of ordinary tube lights with energy efficient T5 Tube lights in all Back of house area
2. **VFD units for AHU & Car parking Exhaust fans:** - VFD for selected AHU to reduce load during lean operation/requirement. And Car parking exhaust fans operation can be regulated on through CO sensor.
3. **Energy efficient motors for TFA:** - Replacement of existing motors with energy efficient motor for identified TFA/AHU/EF/SF installation (68 nos. motor identified.)
4. **LED signage:** - Neon signage's which consume a lot of energy are being replaced with LED signage's which more energy efficient and durable.
5. **LED:** - We are planning to replace Zeon artwork light & Exit signage by LED.
6. **Energy efficient bulbs:** - 100 rooms will be renovated till Mar 09, where energy saving lamps will be used.

- **HVAC System Proposals**

1. **Heat pipe unit:** - To improve the indoor air quality (i.e. Humidity Reduction) Heat pipe installation is under evaluation. One sample unit is received, installation in progress.
2. **Chilled condensate water:** - Done a survey for using chilled condensate water from 32 nos. Treated Fresh Air Units & 12 nos. Air Handling Units. We will be able to get in between 12KL to 15KL minimum water daily which will be used for Cooling tower Make up. This water is in chilled form (12 Deg. C) plus is soft in nature which will improve chiller efficiency. Expected completion till Dec 08.
3. **Chiller Automation:** - Automatic operation of the chiller.

- **Solar System Proposals**

1. **Solar heating:** - Use of solar system for hot water generation. On 16th Oct 08 Mr. Powell from M/s Cheq. Point Dubai is coming for feasibility study on solar system for our hotel.

- **Water System Proposals**

1. **Drip irrigation system:** - Pump operation reduces as per requirement