Guestroom Energy Conservation…
…Saving Money Comfortably

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President and Founder

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- Cost of energy (particularly for heating and cooling) is *the* largest guestroom expense.
- Total energy consumption is usually the second highest cost of business in the lodging industry.

Saving Energy:

- Reduces operating costs
- Extends useful life of FF&E assets
- Adds dollars directly to bottom line profits
- Provides 50%-60% Return on Investment (ROI) for owner
- Improves hotel's environmental image and "Green Lodging" perception

How can guestroom energy consumption be significantly reduced?

Guestrooms are usually empty…

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- *Un*rented rooms are empty 100% of the time, except for staff personnel
- Rented rooms are empty 60%-65% of the day
- HVAC, lights and TV continue to operate at guest-selected levels
- Automatically reducing consumption when rooms are empty can save 35%-45% in room utility costs
- Savings can range from $140-$180 or more per room each year

Four Primary Factors Determine Guestroom Energy Costs…

1. Climate
2. Local cost of energy per kWh, kW, and Therm of Gas
3. Type of HVAC Unit
   - PTAC
   - Split System
   - Fan Coil Unit
4. Room Construction
   - Exterior corridor
   - High-rise full service interior corridor

"Occupancy is not the primary factor in determining room energy consumption and cost."

- AH&LA, FPL and other sources report that hotels/motels spend a US National Average of about $1.25 per sq. ft. on Electricity and about $0.40 on Natural Gas

12' x 25' = 300 sq.ft. guestroom
$1.25 x 300 = $375 average annual cost
per guestroom for electricity

Energy Consuming Devices

- HVAC
- Lighting
- Cooktop
- Television

- Hair dryer
- Electric Iron
- Coffee maker
- Mini-bar/ Refrigerator
- Microwave

Guestroom Energy Consumption…

- HVAC (heating, ventilating, air conditioning)
  - Largest consumer of energy in the room
  - Consumes 3-10 times more energy than lighting
  - Costs $18-$40 per room per month depending on:
    - Local climate
    - Type HVAC unit
    - Room construction
    - Utility rate

Guestroom Energy Consumption…

- Lighting
  - Room lighting by incandescent bulbs consumes 300-700 watts
  - Costs an average of $4.50-$9.00 per room per month, at 6 hours per day operation, depending on wattage and number of bulbs

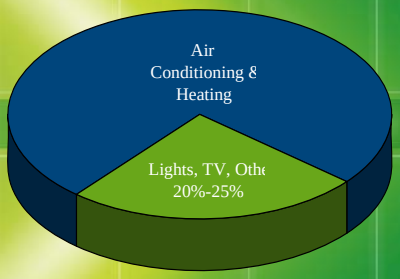
Guestroom Energy Consumption…

- Cooktop
  - Consumes 1100-2650 watts
- Television
  - Consumes 80-120 watts

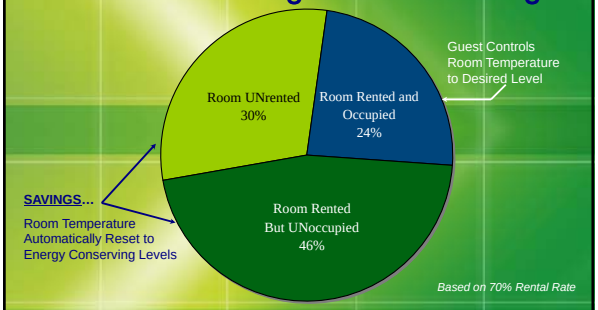
Guestroom Energy Consumption…

- Miscellaneous
  - Hair dryer 1500 watts
  - Electric iron 1100 watts
  - Coffee maker 800-1000 watts
  - Mini-bar/Refrigerator 700-1000 watts
  - Microwave oven 1200-1500 watts

Guestroom Energy Consumption…

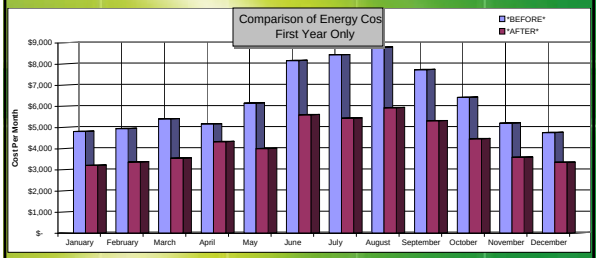


Potential for Significant Savings



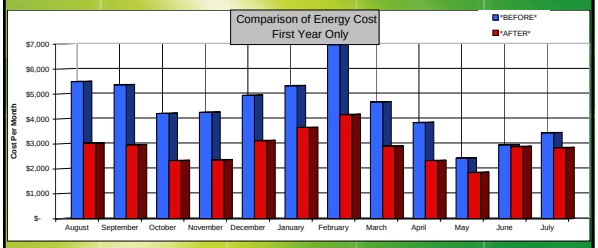
Actual Savings

Hampton Inn - 88 Rooms (Interior Corridor)



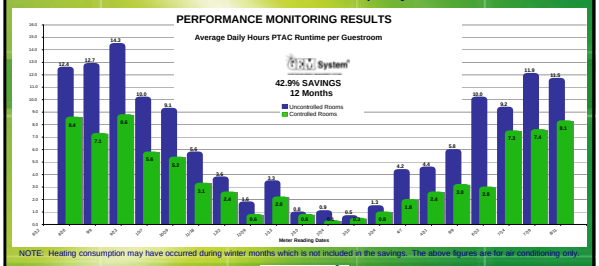
Actual Savings

Best Western - 73 Rooms (Exterior Corridor)



Actual Savings

A Florida Resort Property



NOTE: Heating consumption may have occurred during winter months which is not included in the savings. The above figures are for air conditioning only.

Actual Savings

Common Sense Energy Saving Practices

- Housekeeping Procedures
  - Turn HVAC units off in *unrented* rooms in mild weather
  - If units are left on in *rented* rooms, set fan speed to medium or high
  - Pull *draperies together in summer* to reduce heating by sun
  - Leave *draperies open in winter* to maximize heat gain
  - Objects should not be positioned in a manner that *restricts air flow* from HVAC vents
  - Clean lampshades and bulbs on a regular basis

Common Sense Energy Saving Practices

- Engineering/Maintenance Procedures
  - Maintain HVAC units to manufacturer specs on regular, preventive schedule
  - Clean coils and fan blades, lubricate motors (if required) and clean filters on regular schedule
  - Insure proper size, shape, material and fit of filters to keep coils clean for proper airflow
  - Clean drain holes and hoses in condensate pans
  - Repair or replace weather stripping around doors and windows
  - Caulk around HVAC wall sleeves and other openings

Carefully Select Your Energy Management System Supplier…

- First, decide what you want from an EMS:
  - Maximum savings with least hassle?
  - Hands-on control and involvement with the equipment?
  - Staff expertise and availability to be involved daily?

Carefully Select Your Energy Management System Supplier…

- Important factors to consider about your supplier:
  - Becomes a partner, not simply a supplier
  - Length of time in business
  - Member and supporter of hotel associations
  - Knowledge of industry and guestroom requirements for saving energy
  - Provides direct sales, installation and service
  - Installation capability and technical support after installation
  - Warranty on equipment
  - Cost/savings ratio that provides simple payback of 2 years or less

Bottom Line Impact

- Beware of savings claims that are too extravagant.
  - It is virtually impossible to reduce guestroom energy consumption more than an average of 45% over time without aggravating guests or staff.
  - *The cheapest system may not be the least expensive.*

Bottom Line Impact

- Properly designed occupancy sensor energy management systems can reduce these costs 35%-45%.
- Simple payback of 2 years or less with Return on Investment (ROI) of 50-60%.

Green Lodging = Green Profits^{sm}

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