



## Hotel energy conservation can be easy as 1, 2, 3

*Another great article from The Rooms Chronicle<sup>®</sup>, the #1 journal for hotel rooms management<sup>®</sup>! \*\*\*Important notice: This article may not be reproduced without permission of the publisher or the author.\*\*\* College of Hospitality and Tourism Management, Niagara University, P.O. Box 2036, Niagara University, NY 14109-2036. Phone: 866-Read TRC. E-mail: editor@roomschronicle.com*

*Notice: The ideas, opinions, recommendations, and interpretations presented herein are those of the author(s). The College of Hospitality and Tourism Management, Niagara University/The Rooms Chronicle assume no responsibility for the validity of claims in items reported.*

In an issue of *The Rooms Chronicle*<sup>®</sup> earlier this year, I predicted there will be \$5 per gallon gasoline by Labor Day. I may be slightly off, but this dramatic increase in the cost of gasoline will have a direct effect on the cost of electricity and natural gas, as well as all other common energy sources.

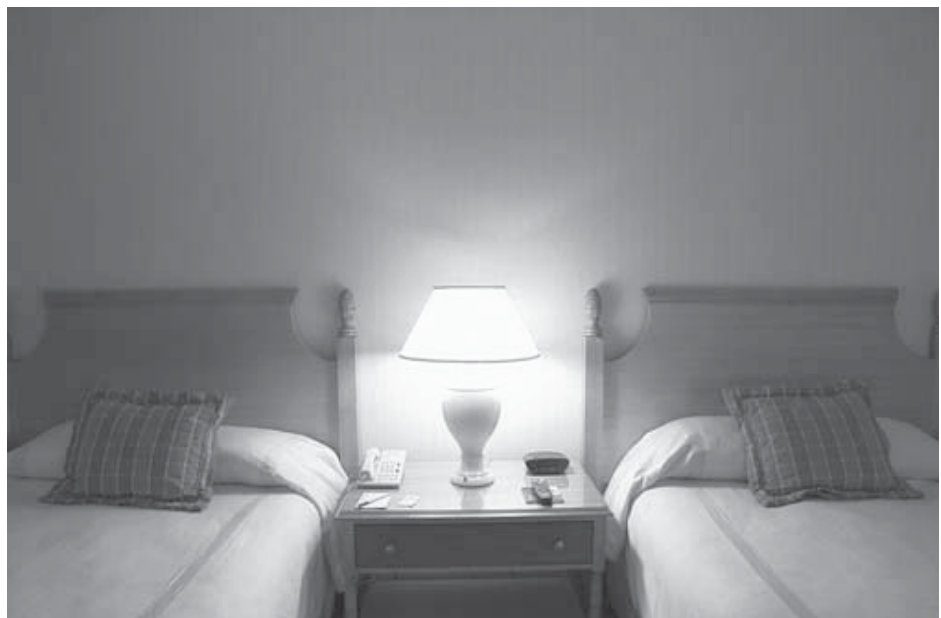
This dynamic change in the cost of energy will have a profound effect on the return on investments for energy conservation purposes. A project that may have had a two-year return on investment might now have a six-month return, and so on. For hotels that are strapped for cash for energy investments, this article may help them get started on an energy savings program, regardless. At these rates, the monthly savings on capital investments for energy conservation will likely be greater than the monthly finance payments, thus giving the hotel a more positive cash flow and increasing the value of the property.

### Number 1: Lighting

Energy-saving lighting retrofits have always been the most popular energy-saving projects for hotels, for obvious reasons. These projects are extremely cost effective and can significantly improve the aesthetics of the interior of the hotel.

To get started, simply place a phone call to a local lighting contractor. Explain first that you would like them to do a lighting audit on your property. These audits frequently have no cost to the hotel, assuming you agree to retain the contractor for their lighting services. Insist that the contractor individually address in his proposal the guestrooms, the corridors, the public space and the back-of-the-house as separate categories. This is because these areas have significantly diversified run hours. For example, the corridor operates twenty-four hours a day, while guestrooms operate on the average of four hours per day. Try to minimize the number of lamps used in the hotel. For example, use the same lamp and wattage throughout all guest rooms, which would be a 23-watt compact fluorescent. In the corridors, public areas and back-of-the-house, which frequently use four-foot fluorescents, use only new technology "T-8" 25-watt electronic ballast fixtures. Exit lights should be 1-watt LED type, which replace 50-watt incandescent type.

Be sure to ask the lighting vendor to show a payback on each individual project, rather than adding all the projects together to justify some projects that have long paybacks. Current and previous results would suggest that if a hotel implements the entire lighting project, it would likely see a six to eight-month return on investment after it receives about a fifteen percent rebate from the local utility. As one can see, this action requires little more than a couple of phone calls to a lighting



vendor and perhaps a follow-up meeting, without spending any capital.

### Number 2: Mechanical equipment

There have been huge advances in the efficiency of heating, ventilating and air conditioning equipment in the past twenty years. Here again, make a phone call to a local reputable mechanical contractor. Explain to them that the hotel would like a survey done on all its heating, ventilating and air conditioning equipment to identify potential improvements that will save energy. Typically, older equipment brings in an excessive amount of outside air which must be either heated or cooled. This is a tremendous waste of energy that can easily be corrected by adjusting dampers.

Ask the contractor to provide a proposal for time clock applications throughout the property. This includes areas such as bathroom exhaust from guestrooms, kitchen exhaust, and air handling units that close at the end of the work day. During Spring and Fall, corridor heating and cooling equipment can also be turned off for about six hours in the middle of the night. Also, consider an ongoing maintenance program with this mechanical contractor to include items such as filter changes, belt tightening, and temperature control calibration.

This category will likely be the most difficult to evaluate. Ask the mechanical contractor to put this information in the simplest terms that you can understand to make an intelligent economic decision. My experience has shown that all of the items that have been discussed also have well under a one-year return on investment, with a utility rebate.

### Number 3: Electrical contractor

A reputable local electrical contractor can provide the hotel with a Christmas list of actionable ideas to conserve energy. Calculating the payback on these devices can be a little more difficult because of the technical aspects associated with electricity. Here again, ask the contractor to provide a comprehensive, yet very simple to understand, list of these opportunities. Be sure to keep the hotel's chief engineer involved in this and all other projects associated with energy conservation.

Additionally, request the electrical contractor to provide a list of the hotel's electric motors, focusing primarily on those that are five horsepower or greater. These motors can easily be replaced with new energy-efficient electric motors that have a very good return on investment, especially motors in air handlers such as those that serve corridors and operate twenty-four hours a day.

New technology has provided all buildings with an electronic device referred to as a *variable frequency drive*. The variable frequency drive allows the hotel to speed up or slow down a motor, depending on the needs of the area that it serves. Slowing down a motor by just twenty percent provides a fifty percent reduction in energy consumption.

*Power Factor* is a term used by utility companies to measure the efficiency with which each of its commercial customers uses electricity. Sometimes it

is necessary to install capacitors at a hotel's main electric vault to correct the Power Factor. This project requires contacting the hotel's utility representative to determine what the Power Factor is for the property and what the penalty may be. An electric contractor can resolve this problem typically for less than \$2,000 and under a one-year return on investment.

A hotel's electrical contractor or mechanical contractor may be able to fulfill the next recommendation. Energy management systems for both guestrooms and public spaces are readily available from almost any contractor and can be extremely cost-effective, especially for those buildings which seem to operate completely out of control. The public space energy control system will use a personal computer to literally control the entire building from one central location. It can also be interfaced with the property management system through the front desk to provide a preventive maintenance work order system. Unless the hotel's chief engineer is experienced in this area, the hotel may find it beneficial to consult an expert to represent its interests for a minimal service fee. This system will undoubtedly be the most expensive capital retrofit to conserve energy in the hotel; but it can bring an older property into the modern age of heating, ventilating and air conditioning controls.

The guestroom energy management system typically involves the use of a motion sensor and a digital thermostat. These devices simply set the temperature back in each guestroom when it is unoccupied. Vendors that provide these guestroom



controls typically operate through local electrical or mechanical contractors, and/or have factory representatives in most areas of the country. The typical hotel can figure a cost of about \$200 per room, with under a one-year return on investment at the new increased energy rates.

Most importantly, make a simple call to the hotel's electric supplier representative to find out what local or state programs are in effect in the local area. This can be tremendously important when calculating the return on investment to make sure it provides a positive cash flow.

All indications are that the cost of all forms of energy will continue to rise at a rapid rate. The previously discussed three steps will merely soften the blow of these rapidly increasing energy costs. Since there is no relief in sight for the escalating costs of energy in the future, hotels may be "forced" to consider some relatively expensive alternatives to our current form of energy, such as wind, solar and co-generation to avoid being adversely affected by worldwide market conditions. ✧

*(TRC's resident energy expert, Phil Sprague is a retired member of the AHLA Executive Engineers Committee and president of PSA Energy Consultants. Based in Minneapolis, PSA Energy Consultants assists lodging companies and individual properties to develop effective, cost-saving energy strategies by auditing and assessing all energy consuming devices and appliances, and delivering comprehensive, customized recommendations in an actionable format. They can be reached at 952-472-6900.)*