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## Good Gadgets

Employing Energy-Saving Technology

By Lisa Iannucci

You don't need to go too far back to be reminded about energy conservation. Remember the stifling triple-digit heat in August? The power outages in Queens due to the strain on the distribution grids? And the annual call by public officials urging people to conserve electricity as summer power usage exceeded the overall record?

Given the high cost of heating and cooling buildings (not to mention regulating light and power for appliances and utilities), it's no wonder that elected officials are constantly reminding residents and employees to conserve energy.

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## Unplanned Interruptions

Just two years ago, in January 2004, the New York City Energy Policy Task Force released a study titled "New York City Energy Policy: An Electricity Resource Roadmap" that discussed the changes that needed to be met in order to ensure electricity reliability, promote economic growth and address environmental issues.

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According to the executive summary, "New York City has been recognized as having the most reliable electricity distribution system in the country. However, as the regional blackout of 2003 pointedly reminded us, electricity systems can also be subject to unplanned interruptions. The city has adequate energy resources for its electricity needs today, but the margins necessary for reliability are extremely thin. And the growth of demand for electricity in the city continues to be strong, even in the face of a weakened economy."

Fast forward just a few years and history repeated itself with the 2006 'unplanned interruption' summer blackout in Queens. So, once again the topic of energy conservation came to the forefront.

So what needs to be done? While the city works with bigger electricity issues, building owners and property managers should be implementing methods of reducing energy year-round in their individual buildings to help lower the demand on electricity and even, ultimately, increasing their own bottom line.

## Improving the Bottom Line

According to Lewis Kwit, president of Energy Investment Systems in Manhattan, building owners are trying harder to make their structures more energy efficient.

“Building owners are interested in having their buildings be LEED-rated now,” says Kwit. The LEED (Leadership in Energy and Environmental Design) Green Building Rating System® is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.

In existing buildings, a LEED rating means that the building “maximizes operational efficiency while minimizing environmental impacts,” says Kwit. “[The system] provides a recognized, performance-based benchmark for building owners and operators to measure operations, improvements and maintenance on a consistent scale. LEED-EB is a road map for delivering economically profitable, environmentally responsible, healthy, productive places to live and work.” The LEED Rating System for Existing Buildings addresses, among other items, energy and water efficiency.

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In new construction, LEED encourages reducing water usage by 50 percent by implementing hydro-efficient landscaping, using on-site sources of renewable energy, optimizing energy performance and using green power. Using green power requires the new building to provide at least 35 percent of its electricity from renewable sources, and by engaging in a two-year minimum renewable energy contract. Renewable sources are as defined by the Center for Resource Solutions (CRS) “Green-e” products certification requirements.”

## Lights On, Lights Off...

One of the easiest ways to reduce energy consumption is to invest in and install devices that help not only to lower, but to monitor the energy consumption of individual residences as well as entire heating and cooling systems, lights, etc. The information gathered from these devices can be used to determine where changes need to be made.

“The most advanced product for reducing electricity use for lights is the DALI, or the Digital Addressable Lighting Interface,” says Kwit.

“This is a system of lights that you put in public hallways rather than in individual apartments that can be dimmed automatically when you expect a blackout,” says Kwit. Another advantage to the DALI system is that it requires no special wiring of data cables and no hardwired control groups. According to reports on the system, the lighting can be grouped through various methods such as personal computers, infrared remotes, PDAs, etc.

## Time for a Timer

It's a common scenario in New York City—walk into an apartment building in the middle of winter and the resident has the window open. According to Vincent Clerico, vice president of sales and marketing of Heat-Timer Corporation in Fairfield, New Jersey, many buildings are overheated. Clerico says that a heat timer will help to stop the overheating and keep the resident shareholders comfortable.

“Everybody thinks when you put in a control, it will drastically reduce the heat and freeze people out,” says Clerico. “But what happens is that you reduce the wasted heat and increase the comfort level.”

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Over the last few decades, the advancement of energy conservation products have also been directly related to what technology is available. For example, says Clerico, in the 1980s a building owner could access information about the heating units via a computer back in their office.

“In the 1980s, we had a modem connection with a DOS-type format,” says Clerico. “In the 1990s, the technology became more affordable for our segment of the market. We still had the modem, but now we had a Windows format. We also went from being able to put three sensor units in a building to 64 sensor inputs.”

Today, Clerico says they can now put up to 100 sensors in a building and the technology has gone wireless. “It drastically decreases the labor, it reduces the installation cost, reduces the amount of inconvenience to a tenant. You are in and out of an apartment in two or three minutes now—and that makes it more flexible.

“The more efficiently you can run your systems, the quicker the return on your investment,” says Clerico. “The one thing that's unique is that if you have a 50-unit building or 100-unit building, the capital cost isn't much more for the 100-unit building.”

Optimum Applied Systems Inc., in Hawthorne, New York also creates and installs heat timers and heat computers that operate based on the inside temperature of the apartment.

“The heat computer acts like the thermostat,” says Jim Bluett, Optimum's vice president. “We put sensors in various apartments throughout the building and the computer looks at the temperature inside the apartments. If the inside—not the outside—of the building drops below 70 degrees, the heat will go on. You'll see a return on your investment within six to 14 months.”

In addition, says Bluett, they are working on building an online portal to make the entire process more interactive. “People are going to be totally interactive with the building, so if there is a problem, you can click to the solution. Click on the plumber, and he'll be sent—or click to have your oil delivered. You can also control your heating systems while you are in China on vacation through your Blackberry or your PDA.”

Installing wireless sensors that allow you to read your energy consumption and make necessary changes is approximately \$6,000 to \$18,000 and the company provides support for these products.

“There are some government incentive programs too,” says Bluett. “If you’re just putting in the sensors, it’s too small [a project], but if you put in a new boiler system too, there are grants available.”

## Water, Water Everywhere?

Similar to energy conservation, timers for water conservation are available as well.

“Today, we can read individual apartments and units and the new technology uses a meter the size of a quarter that you can attach to the plumbing, toilet, bath, shower, washing machines and dishwashers,” says Debbie Ginsberg, president of Remote Meter Technology of NY/MyWaterMeter.com in West Hempstead.

With this automatic meter reading (ARM) technology, mywatermeter.com will install the equipment and then bill the resident for their actual water usage.

“In a co-op or condo, it’s a fabulous method of taking water out of the maintenance and letting each unit entity pay for their own water, thereby controlling costs and reducing the total,” says Ginsberg.

“Taking out of maintenance, you can get people to be more conservative because the end user is now paying. It’s that much easier to get a mortgage because the cost of the maintenance is now reduced and people will conserve. When the board has no control, it can be an uncontrollable expense.”

The cost of installing submetering products is between \$800 and \$1,000 per unit.

“However, if you’re looking at the return on your investment, you’re looking at less than two years in a residential building,” says Ginsberg.

“People should start paying to the attention to the fact that we don’t have enough sources of water that are EPA approved to handle the increasing demand,” says Ginsberg. “We need to conserve it or we will need to start paying for filtration plants that can cost billions and high millions of dollars to maintain each year and that trickles down to the board, maintenance fees, owners of building and consumers. We should all conserve.”

## Teach the Residents Well...

The simplest way of reducing energy consumption is to teach residents exactly how they should conserve water and electricity.

“You pay more for electricity when the price is high and supply is scarce (during the day), but when supply is abundant they pay a whole lot less,” says Kwit. “The new concept of energy conservation is what I call introducing the ‘element of time’ into the electrical equation. In other words, put off what you’re going to do and you won’t strain the grid.”

For example, Kwit advises residents to wash dishes after 10 p.m. and on the weekends, not after dinner.

By implementing various energy saving techniques in each building, next summer we won't have to hear, yet again, the public officials ask us to conserve energy. We're already doing what we need to do.

Lisa Iannucci is a freelance writer living in Poughkeepsie, New York.

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