ENERGY COST SAVINGS COUNCIL

Multitenant Buildings: The Energy Opportunity

Owners of leased spaces are taking note that energy-efficient properties pay off in improved cash flow and increased asset value

BY NICOLE STURDEVANT • SPECIAL PROJECTS EDITOR

IN OWNER-OCCUPIED BUILDINGS, the benefits of energy upgrades are first-hand. For owners of leased spaces, the pressure to squeeze as much profit from a rental space as possible often overrides any inclination to invest in energy efficiency. After all, the tenants are usually the ones who are responsible for the energy bills, not the building owners. What many owners of leased spaces don't realize, though, is that by upgrading their facilities they can actually increase their cash flow through shared energy savings and increased rents.

Compelling Reasons

Running a building is a business, and much of its money is tied up in energy, according to Bob Sauchelli, ENERGY STAR® Building program manager at the U.S. Environmental Protection Agency. Energy is the largest operating expense for a commercial office building, accounting for nearly a third of a building's operating expenses, according to the EPA.

But too often, building owners fail to take advantage of the opportunity to reduce wasted energy. Sometimes, for example, building owners upgrade only the common areas within the facility so they can see direct savings, and neglect to tap the upgrade potential in the rest of the building. The most effective route is to reduce energy costs via upgrades throughout the facility. This approach maximizes operating cost savings, which increases net operating income (NOI). That's a key benefit.

ARDEN REALTY

Every dollar invested in energy efficiency can yield as much as $3 in increased asset value of a building.

Increased NOI enhances asset and shareholder value, while allowing owners to invest their money in other areas. Every dollar invested in energy efficiency can yield as much as $3 in increased asset value of a building, according to the EPA.

Increased NOI is only one benefit to real estate owners. Another benefit is recognition by other building owners, tenants and organizations concerned with energy efficiency and the environment. Recognition leads to a positive company image and increased exposure within the community.

Upgrades can also increase tenant attraction. Tenants recognize the importance of energy efficiency and understand that energy-efficient buildings will save them money. They also know that these buildings are more comfortable and easier to work in. As property owners become more conscious of this and take the steps to upgrade their facilities, it will be easier to obtain and retain tenants.

Tools for Upgrading

Building owners and facility executives are often overwhelmed when trying to decide whether or not to upgrade, which areas of their facilities to upgrade and how much it will cost to upgrade. The first step is an audit. Owners can perform the audits with in-house staff, or can turn to any one of a number of energy management consultants, energy service companies (ESCOs), or electric and gas utility professionals to conduct preliminary energy audits that will determine potential savings.

One tool to perform preliminary audits, as well as financial analysis, is the EPA's QuikScope software, which estimates a building's potential energy cost savings. Users simply input information, such as the building's square footage, energy use history and fuel type.

QuikScope is designed to take little time to calculate. When users change their input, the program automatically recalculates the figures. Building owners can use the program to determine how much of an investment they'll have to make in order to get the desired results. They can use it to make comparisons between different properties. They can even use it to determine the best time to upgrade.

Running a building is a business, and much of its money is tied up in energy

QuikScope is particularly useful for owners of leased space because it can also calculate the savings and financial benefits for tenants and owners based on existing lease structures. Building owners and property management companies already have the data for existing leases. The program makes proposing upgrades easy, too, because building owners can "see" how much they will benefit from the upgrades in real estate business terms.

Building owners who sign a letter of intent to join the EPA's ENERGY STAR Buildings program receive the QuikScope software at no cost.

Another marketplace tool is an energy calculator called the "Business Energy Checkup," which was developed by the Alliance to Save Energy (ASE). Building owners and facility executives simply fill in information about their facilities' size, location and current energy costs, along with information about their lighting, HVAC and other systems, in order to determine the facilities' energy efficiency. The calculator takes users through the five upgrade stages that the EPA recommends.

Owners can go to the "Business Energy Checkup" through

Upgrading One Step at a Time

Once owners of leased spaces determine what their potential energy cost savings are, they can begin to implement the upgrades. Yet, not all building owners are in positions to carry out upgrades all at once, and some shy away from the idea for that reason. But upgrades are often done one step at a time. The EPA recommends upgrading in the following sequence.

- **Lighting — This isn't necessarily the least expensive upgrade, but it offers the most aggressive paybacks, often less than three years. "You rarely hear people talk about upgrades without mentioning lighting," says Bob Rose, section chief for new market tools at the EPA. Lighting is a main contributor to a building's heat load and is responsible for approximately 40 percent of energy use in a typcial commercial building.**
- **Tuning Up — Otherwise referred to as commissioning, this growing area of concentration is simply the stage when building owners balance the air distribution systems, calibrate equipment, etc. "The commissioning process ensures design intent and lays out procedures step by step," says Dennis Peltz, mechanical engineer and associate vice president in the MEP studio at RTKL Associates Inc.**
- **Load Reductions — These can be accomplished with automation controls, window films, etc., and by turning off equipment when it's not in use.**
- **Fans and Motors — These control air handling and distribution. After heat loads are reduced, fans and motors can often be downsized. Motors and drives account for over 40 percent of a commercial building's electricity use, according to a U.S. Department of Energy survey.**
- **HVAC — This equipment is upgraded last because it, too, can often be downsized after the previous steps have been taken.**

Ninety percent of all commercial buildings in the United States were built prior to 1986, and the vast majority of these contain outdated, inefficient electrical equipment. These buildings have great potential for energy savings. Energy upgrades are low-risk. Upgraded lighting, HVAC, motors, drives and building automation can produce energy savings of $1 to $1.50 per square foot of floor space, especially when used in combination with each other. These products have life spans of 10 to 20 years, so savings continue year after year.

the Energy Cost Savings Council's (ECSC) Web site at www.plug-in.org/howsave/bottomline.html. The ECSC is an alliance of electrotechnology manufacturers, industry associations and other organizations that was formed to educate corporate America on the benefits of energy upgrades in commercial, industrial and institutional buildings.

Business Energy Checkup is an exploratory and educational tool that gives relatively accurate estimates based on typical office buildings for 11 U.S. climates. A summary at the end shows owners their investment costs, annual savings and payback periods. It also shows how much pollution will be reduced by the energy upgrades. It is a way for owners to get a rough estimate of energy savings based on minimum, moderate and maximum upgrades.

"Commercial buildings are capital-intensive, as opposed to labor-intensive, businesses. The primary raw material that they consume in providing their services is energy, and it represents the single greatest opportunity to cut costs and increase profits," says Sauchelli. Buildings are owned as investments, and owners want to see returns on their investments. QuikScope and Business Energy Checkup help answer the question, "What's in it for me?"

After getting initial estimates, it is wise for building owners to get a confirming audit. Often, the cost of the confirming audit can be applied to the cost of the upgrades.

The Owner Perspective

Arden Realty is a perfect example of how great an impact

ARDEN REALTY

Energy upgrades can reduce occupancy costs while improving comfort, making a building more attractive to tenants.

phased upgrades can have on a company's bottom line. The company has upgraded 35 of its properties within the last couple of years. The majority of the upgrades have been phased upgrades. Arden has saved approximately $4 million on energy costs during the last year alone.

Following an upgrade sequence that the EPA recommends, Arden performed lighting retrofits in the buildings first. Then it looked at automated controls. In all, 22 energy management sys-

ECSC Keeps Moving Forward

The Energy Cost Savings Council was formed in 1998 by electrotechnology manufacturers, industry associations and other organizations that share a common goal — to educate and promote energy-efficient upgrades in commercial and industrial buildings.

The organization asserts that energy upgrades can produce up to a 50 percent reduction in annual energy costs. Leased-space property makes up approximately one-third of the U.S. commercial and industrial buildings. There is great opportunity for owners of these buildings to reduce the energy that's being wasted by retrofitting their buildings with upgraded equipment. According to ECSC industry chairman, Jack Briody, "Energy costs are not necessarily fixed. Energy-efficient electrical product upgrades can routinely offer corporate America two- to three-year paybacks and 30 to 50 percent returns on investment, while additionally improving building aesthetics and benefitting the environment." The private-sector-based ECSC "Re-Electrification of America" campaign has joined with ongoing government efforts that share the same goals, including the ENERGY STAR Buildings and Green Lights programs sponsored by the U.S. Environmental Protection Agency. The campaign is also supported by the U.S. Department of Energy and is formally endorsed by the National Electrical Manufacturers Association (NEMA).

The ECSC helps facility professionals better understand and undertake energy upgrades in their buildings by:

- **providing information on area ESCOs and other energy service providers**
- **promoting the viability and benefits of high-efficiency products**
- **acting as a clearinghouse for information on new technologies**
- **providing case studies from upgraded facilities**

The ECSC provides information about many technologies, including:

- **high-efficiency lamps**
- **efficient, new-generation lighting fixtures**
- **electronic ballasts and transformers**
- **microprocessor-driven power-distribution controls**
- **interoperable building control systems**
- **high-efficiency, three-phase motors**
- **smart card-based electronic access control systems**
- **solid-state, reduced-voltage motor starters**
- **variable frequency drives**
- **electronic lighting controls**
- **occupancy sensors**
- **surge-protection devices**
- **uninterruptible power supply (UPS) systems**
- **digitally controlled generator systems**

For more information on the ECSC, go to www.plug-in.org.
The organization can be reached at:
P.O. Box 32129
Washington, D.C. 20078-3207
Phone: 888/829-2209; Fax: 301/263-2342

tems (EMS) were installed. Sixteen mechanical retrofits were performed, which included new HVAC, revamping various systems and strategies to utilize outside air. The company also installed variable speed drives on some of the buildings' fans and pumps.

The company uses its in-house engineering team to plan its upgrades. When deciding what and where to upgrade, the Arden team analyzes the capital outlay and return on investment, much like with any business decision. According to Robert Accomando, first vice president, asset management, at Arden Realty, the company looks at its properties with long-term goals in mind.

And the tenants couldn't be happier. "They have better lighting conditions, proper ventilation, higher comfort levels and lower costs," says Accomando. Arden Realty is happy because they can sustain a high occupancy rate, while sharing the energy cost savings.

Harwood Inc., another property management company, has performed total upgrades on six of their buildings and partial upgrades on 10 properties. The company is in the process of upgrading three others.

For Doug Walker, president of Harwood Inc., the decision to upgrade is practically instantaneous after "running the numbers." "Reducing the amount of kilowatts used is money in our pockets. And controlling energy usage during peak demand periods is an especially powerful saving tool."

Harwood's tenants experience additional benefits besides reduced energy costs. They have controlled comfort in their spaces, lower operating costs and the flexibility of controlling after-hours energy use and, therefore, lower occupancy costs.

"By operating at a lower cost, you create a greater net operating income (NOI) and, thus, increase the value of the property," says Walker.

With the exception of a gas utility rebate of $120,000, Harwood has paid cash for all of its upgrades, financing the improvements internally. The company's longest payback has been 2.3 years.

For Walker, even owners of leased spaces should need little convincing. By not upgrading their facilities, building owners are "wasting valuable natural resources and letting money go into other people's pockets."

Energy efficiency is becoming extremely important to tenants, according to Dennis Peltz, mechanical engineer and associate vice president in the MEP studio at architecture and engineering firm RTKL Associates Inc. Practically every project his company works on deals with energy efficiency on some level, whether it's life-cycle costs or optimizing various systems.

Peltz feels that energy efficiency is a major part of any Class A office space. "From a systems standpoint, Class A space includes good indoor air quality, a high level of comfort — including comfortable temperatures and no drafts — and flexibility," he says. Peltz looks at "green" design as simply improving designs that are already in use.

Upgrade Payback

The Energy Cost Savings Council studied data from 1,000 energy upgrade projects completed between 1988 and 1996 throughout the United States. The study found that:

- **The average project saved over $250,000 per year in energy costs.**
- **Average payback period was 3.09 years. Average ROI was 32.4 percent.**
- **More than half of the projects saved at least 50 cents per square foot per year.**

For a free copy of this analysis, contact the ECSC at 888/829-2209.

AVERAGE PAYBACK PERIOD AND ROI OF SINGLE-TECHNOLOGY PROJECTS

Technology	Average Payback Period	Average ROI
Meters & Monitors	.5	200%
Lighting	2.2	45%
Controls	2.3	43%
Motors & Drives	2.4	42%
HVAC	3.6	28%
On-site Power	4.3	23%
Building Automation	5.9	17%

Benchmarking

For many building owners, it's not enough to know that their facilities are energy-efficient. They want to know how their facilities compare to other facilities. Benchmarking is a way for owners of upgraded facilities to see how their buildings rate.

The EPA's ENERGY STAR Label for Buildings Benchmarking Tool is one way that owners can do this. Users simply go to www.epa.gov/buildings/label, and enter basic data about their facilities. After the computer compares the input to similar buildings, it gives an energy score between zero and 100. Buildings that score 75 or above are eligible for an ENERGY STAR Building label. A certified professional engineer must then go to the building to verify its energy performance and adherance to indoor air quality standards. The owner then receives a plaque from the EPA and gets listed as an energy-efficient building on the EPA's Web site.

Benchmarking is also a way for building owners to decide if their facilities are in need of upgrading. For example, if a building owner takes the online test and gets a score of 25, the building is probably full of opportunities for profitable upgrades. That would be an ideal time for owners to start estimating potential energy cost savings, so they can start putting money in their pockets. BOM