

environmental / green buildings



Bottom-line benefits of green building for profitability and the env.

By Richard Halley,
Trane New York/New Jersey

Green building is not just a hot trend. The numerous business and environmental benefits of green building ensure that it is here to stay.

This is especially true in the real estate sector. Real estate owners and developers – and the designers and contractors who plan and build projects for them – are becoming increasingly aware of the incentives for going green on new and existing buildings.

Energy is the single largest operating expense in a typical commercial building and energy bills for commercial buildings total about \$100 billion per year. Building owners have a major opportunity to save on energy costs by creating high-performance buildings that use less energy and cost less to operate and maintain.

Despite what some building owners may believe, there are not high additional costs associated with green construction. Developments in technology, energy services and government incentives make it a very cost-effective way to achieve better building performance, particularly on a life-cycle basis. The U.S. Green Building Council estimates that an upfront investment of 2% in green-design elements will net, over 20 years, a 20% return on total costs.

In addition to reduced operating costs, energy-efficient buildings increase worker productivity, reduce facility shut-down times and are more valuable and desirable assets. According to EnergyStar, a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy, every dollar invested in energy efficiency can add up to \$3 in building asset value.

High-performance systems can also increase business performance and worker productivity by an average of five percent, according to data from the Institute for Market

Transformation to Sustainability. A report by the Rocky Mountain Institute and the USGBC found productivity gains from green design as high as 16 percent. Green buildings offer better indoor comfort and air-quality control, which leads to less environmental and health costs associated with air pollution, less risk of sickness and increased productivity.

Building green also has a significant positive impact on the environment. For example, electricity demand is expected to outpace current capacity in New York by 2012. A major part of that demand comes from buildings, which emit 79% of the global warming gases in the city. By using green building techniques, building owners can reduce their use of natural resources and lower green house gas emissions.

Incentives to make buildings more energy efficient are also offered through various local and state governments, distributed either as rebates or through tax credits or deductions. For instance, New York City recently enacted Local Law 86, which mandates green building for many city-funded construction or renovation projects. Funding opportunities are also available through the New York State Energy Research and Development Authority (NYSERDA).

The industry benchmark for building green is USBGC's Leadership in Energy and Environmental Design (LEED). LEED certified buildings use only 20 to 50% of the energy that typical buildings use, and emit 40% fewer carbon emissions. All 50 states now have LEED projects completed or in progress, including several in New York.

Building owners have several options to increase the efficiency of their buildings. Energy modeling software is used to assess and improve the efficiency of buildings through a sophisticated software tool that recreates building systems in a simulated environment. The simulation displays the building's systems

and their interactions to show how the building is currently operating and demonstrates how the systems affect energy performance. Once the model is complete and verified, you can virtually run the building in software. This provides a powerful resource for making infrastructure changes in a virtual environment and testing a variety of solutions to determine which would function best in the building.

A recent energy model developed for a Trane financial services client identified a clear benefit to installing a crossover connection between office and data center systems. This application provided energy savings by sharing building system resources under specified load conditions.

There are several energy conservation measures that building owners can implement, which range from renewable energy technologies to relatively simple upgrades. The following are some examples of this type of technology.

- **Solar Photovoltaic:** Devices that use semiconducting materials to convert sunlight directly into electricity.

- **Geothermal Systems:** Transfer heat stored in the Earth or in ground water into the building during the winter, and transfer it out of the building, back into the ground during the summer.

- **Thermal Energy Storage:** Generate ice during the night to cool buildings during the day.

The green building industry has experienced phenomenal growth throughout the country. The numerous benefits of high-performance buildings, combined with rising energy costs and government pressure to combat global warming, suggest this growth is likely to continue. Building owners have a tremendous opportunity to help the environment, while increasing their financial performance.

Richard Halley is district manager of Trane New York/New Jersey

Newman Institute offers new green building course

NEW YORK, NY Everyone is talking about green buildings and the Mayor's PlaNYC2030 is all about sustainability. This fall the Steven L. Newman Real Estate Institute at Baruch College, City University of New York will be offering a new course entitled High Performance Green Buildings for Real Estate Professionals.

Approved by New York State for continuing professional real estate education, this 22.5-hour course will address the actual nature of green or high performance buildings and sustainability, ranging from energy efficiency to financing and selling green development. In addition, it will provide an overview of the technical aspects such as selection

of construction materials, roof and storm water design, and heating, cooling and plumbing systems in relation to how properties can reduce their carbon footprint, be sustainable and help reduce global warming.

The course includes details about relevant state and city codes, as well as voluntary programs such as LEED (Leadership in Energy and Environmental Design, by the Green Building Council) and the U.S. EPA's Energy Star. The class will be Monday evenings from 6 to 8:45 p.m. from September 10 to October 29, at a cost of \$465. This course is the first of the Newman Institute's expanded educational programs on sustainability.

Con Edison and NYSERDA

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partnered with NYSERDA to improve more than 1 million sq ft of healthcare space in four of its facilities.

Through participation in NYSERDA's Enhanced Commercial/Industrial Performance and Technical Assistance programs, energy efficiency measures were recommended at the four Jewish Home and Hospital Lifecare System facilities. These measures included installing variable-speed drives, replacing an electric chiller, installing energy-efficient motors, installing Light Emitting Diode (LED) exit signs, and replacing incandescent and fluorescent light fixtures with energy-efficient lights.

Implementation of the energy efficiency measures resulted in:

- Annual energy cost savings of \$220,000;
- NYSERDA incentive of more than \$196,000;
- Annual electricity savings of 1.8 million kWh;
- 250 kW of summer peak demand savings.

As can be seen by the Pathmark Stores and the Jewish Home and Hospital success stories, energy efficiency and cost savings can be attained with both technical and financial assistance from NYSERDA. There are a variety of programs available through the Power-Saving Partners initiative designed to meet the needs of New York metropolitan area businesses. Information and energy efficiency assistance is just a phone call away!

Bamboo flooring by Eleonora Shtytser

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performance, and maximizing LEED achievements for our clients. Floor Fantasy is proud to present the *Green Standard For A Lifetime Of Sustainable Living - Environmentally Friendly Exclusive EcoGreen Sustainable Signature Style Bamboo Flooring Collection* to achieve higher standards of sustainability in the development of high performance buildings.

To accomplish high performance in sustainable green built environment and construction, "New York City Local Law 86" became effective on January 1, 2007. Known as "LEED Law" and "The Green City Buildings Act" it is significant to the construction industry for the reason that it requires all construction projects to achieve exacting standards of sustainability as green buildings, and incorporate the environmental strategies to meet sustainability goals and principles of the green design – To save energy, conserve water, contribute to a safe, healthy indoor environment, and protect the natural resources by incorporating use of

rapidly renewable environmentally friendly materials integrated in the sustainable design principles.

The act is applicable to capital projects for which the final design is approved after the law's effective date. This act has the potential to dramatically affect the New York construction industry because the building materials and architectural design required by the act are substantially different than those used in traditional buildings. As the guidelines demonstrate, cities are becoming increasingly concerned with the efficiency and environmental performance of their buildings.

Industry innovator and leader in developing of high-performance sustainable products, Floor Fantasy supports significant environmental challenges of the green design development by incorporating use of environmentally friendly materials to meet sustainability goals and principles of green design.

Eleonora Shtytser is the president of Floor Fantasy, Inc., Fort Lee, N.J.

GMAC Real Estate is helping the Earth and your wallet grow

NEW YORK, NY Going green, the environment-friendly trend, is permeating every aspect of life, including real estate. Renewable energy sources that do not contribute to pollution, also known as green energy, have become increasingly popular. Mona Wachtel, managing director at GMAC Real Estate IPG, has been fielding more questions concerning fuel alternatives during her speaking engagements lately. "During this energy crisis," she said, "people are more interested in alternatives to petroleum or at least a synergy between the two." Wachtel was recently invited to speak at the

Atlantic Region Energy Expo on site selection for gas stations and convenience stores.

She began her work by locating land for gas stations, convenience stores, food eateries, travel plazas, and plants, which has taught her the wide spectrum of requirements for the food and energy markets. Finding such locations has helped her gain experience in all sorts of urban redevelopment.

She not only works with plants and warehouses, but has had success in finding space for restaurants and eateries. "I manage the whole gamut for food storage, distribution

and restaurant space as a special-use broker working with food, energy, and industrial firms in and around New York City," said Wachtel.

Because of Wachtel's stellar reputation, biodiesel firms are seeking Wachtel for her assistance. "Biodiesel plants require several components, such as truck and rail access, liquid bulk terminal, and proximity to a waterfront," lists Wachtel. Though finding a space with these prerequisites can be difficult, Wachtel offers a creative solution. "It is not necessary to alter land," she says. "Breweries can be converted into plants, too."