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NORTHEAST LEADS THE WAY IN GREEN BUILDING **The green building trend ramps up in the Northeast with stellar results.**

Richard I. Halley

From Maine to Long Island, New York, we are seeing more and more green buildings across the Northeast.

Green buildings are constructed, renovated, operated and maintained in highly efficient ways to reduce their impact on the environment. Also known as sustainable buildings, they provide profitable, healthy and productive places to live, work, heal, learn and play.

This is not a tree huggers' trend. Builders and building owners are discovering that building green makes business sense, not only for new construction but for existing facilities.



As the cost differential narrows to zero between traditional construction and building green, the financial benefits of sustainable projects increase. Outcomes run from lower operating costs, higher worker productivity, and lower absenteeism to compliance and increased building asset value. Often there are also government incentives available for energy efficient building systems.

Buildings Take a Bite Out of Energy Costs

The Northeast is helping to pioneer the green building movement, which is becoming a national trend. Today, roughly 800 buildings are LEED-certified, with another 6,000 seeking certification nationwide.

The need to preserve resources and control utility costs in an era of volatile energy prices is creating a critical need for better, more efficient buildings. Energy is the single largest operating expense in a typical commercial building. Green buildings can achieve efficiency gains of 20 percent or more over traditional construction.

The idea is to incorporate sustainability into every aspect and phase of a building's life, from raw materials and space conditioning to waste disposal and eventual demolition. This often results in innovation, as designers, architects, builders and contractors search for ways to implement the latest building systems and renewable energy technologies.

Existing buildings can also make enormous gains in efficiency and functionality by replacing outdated, inefficient systems with modern ones. Financial services leader Morgan Stanley was recently recognized by state and county officials for installing the New York metropolitan area's largest ice storage-based air-conditioning system. The system makes ice at night during off-peak hours to provide cooling the next day during on-peak hours. This has potential to lower the facility's peak energy usage by 740 kWh, reduce overall electric usage by 900,000 kWh, and reduce overall fuel consumption by 15,000 MMBtu. The system also provides substantial environmental benefits.

This project earned an incentive check of more than \$300,000 from the New York State Energy Research and Development Authority. Based upon the operational results of the first project, Morgan Stanley is currently installing a similar system in one of its midtown New York City facilities. It is an excellent example of how existing buildings can make huge strides in sustainable practices and cost-effectiveness.

Walk the Talk

New York-based Cook + Fox Architects is one of the region's leaders in building green. They are the designers of the Bank of America tower, the largest office building in the U.S. to be certified Platinum by LEED, the national benchmark rating by the U.S. Green Buildings Council.

Recently Cook + Fox completed its own sustainable facility, a 12,000-square-foot high-performance, green office building. It did so without spending more than it would have using traditional construction practices.

Cook + Fox's new space, also LEED Platinum, incorporates numerous green features, from sustainable building materials to a "green roof," which diminishes rooftop temperatures and mitigates storm-water runoff. The lighting, heating, ventilation air-conditioning and water systems are highly efficient. All this was accomplished while maintaining the building's historic Beaux Arts architecture.

Politicians Take Green to Task

The potential for buildings to save natural resources, reduce emissions and preserve the ecosystem has persuaded public officials to embrace the green concept.

In a significant move toward making New York a green city, Mayor Bloomberg signed legislation requiring most publicly funded capital construction, starting in 2006, to be LEED certified. Other states and municipalities have also launched initiatives to encourage energy efficient buildings.

While energy costs go down, worker well-being goes up. Since green buildings take into account every factor in the indoor and outdoor environment, they are better places to inhabit. This is not only good news for the people who occupy the buildings, but for the businesses that profit from them.

William J. Fisk at the Lawrence Berkeley National Laboratory in Berkeley, California, compiled a report that shows if United States' indoor environments are improved, potential annual savings and productivity gains would be \$6 billion to \$14 billion

from reduced respiratory disease, with many more billions saved from reduced allergies, asthma, sick building syndrome and gains in worker performance.

While green buildings enjoy financial advantages, they also contribute to the public welfare by preserving the environment and conserving energy. Buildings represent 39 percent of U.S. primary energy use and account for 30 percent of greenhouse gas emissions. They also put a significant strain on the energy grid, which lessens the security of our power system.

Green buildings make as much use as possible out of generated and purchased renewable energy, as well as strategies and technologies to reduce peak-period energy use.

Evergreen Facilities

Sustainability goes well beyond the construction phase. Efficient ongoing operation and management practices are vital to ensuring that a building that starts green remains green. This includes ensuring that facility managers keep building systems running at optimal efficiency, sustainable disposal practices are implemented, and sound energy management practices are carried out.

The average lifespan of a commercial building is 30 to 50 years. This means green construction will have an impact on businesses and the environment well into the future. It also raises the challenge of renovating and retrofitting existing buildings for high-performance and sustainability. The Northeast region is rising to that challenge, and we can expect to see a lot more green in the coming years.

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