

ARCHITECTURE & ENGINEERING

By Richard I. Halley, Trane New York/New Jersey

Building green gets results: Bottom-line benefits of sustainable buildings

Commercial building professionals are demanding better facility performance and greater energy efficiency. This has led to phenomenal growth in the high-performance green building industry throughout the country, according to the U.S. Green Building Council (USGBC).



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Why the green upswing?

The bottom-line benefits of highly efficient buildings are becoming critical in light of rising energy costs, government pressure to reduce energy consumption and climate change emissions, as well as a public need for better places to live, work, heal, learn, shop and play.

This is not just a trend — the long-term benefits of highly efficient buildings assure that they are the face of the future.

The business case for building efficiency

A high-performance green building typically achieves

some or all of the following:

- Significantly higher energy efficiency and lower utility costs than standard buildings
- A healthy, productive and comfortable indoor environment for occupants
- Low impact on the external environment
- Sustainability for lifetime performance with continued efficiency

Energy is the single largest operating expense in a typical commercial building. Lowering energy costs can have a major impact on a building's financial perfor-

mance. Depending on the solution, building efficiency measures can reduce energy use by 15 percent or more.

New and existing buildings can implement energy efficiency measures, often without incurring more costs than standard construction projects.

Possibilities range from building systems or controls upgrades to more complex solutions, such as highly efficient chiller plants, renewable energy technologies, or thermal ice storage, which generates ice during off-peak hours to cool a building during

the day.

Building green gets results

The industry benchmark for building green is USGBC's Leadership in Energy and Environmental Design (LEED). All 50 states now have LEED projects completed or in progress and there are a number of LEED certified buildings in the northeast region. Trane has worked closely with public and commercial clients to develop LEED certifiable buildings in NJ with very efficient HVAC systems.

Sophisticated technology and knowledge available today allow the commercial building professional to gauge the benefits and payback of creating a high-performance green building.

Developing the optimal solution requires analysis of the objectives of the building owner and operators, and of energy consumption data.

Energy modeling, or energy simulation, is one effective way to measure and predict the energy consumption of a building.

Software is used to examine the facility's building systems and thermal characteristics. It then produces a virtual picture of the facility's energy performance to identify opportunities for higher efficiency.

Energy modeling is especially powerful for finding energy efficiency opportunities in existing buildings. We have used this tool with many of our financial services clients to develop high performance replacement HVAC systems for their mission critical facilities.

High-performance green buildings are here to stay. They are opening opportunities for building owners and operators to reach their objectives through better building performance, lower operating costs, and sustainable results.

Trane is a world leader in HVAC systems, service and solutions.

Trane's NY/NJ office is the leading indoor comfort solutions provider for more than 10,000 buildings in the area.

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