

# ACHIEVING HIGH PERFORMANCE

**BY FOCUSING ON ENERGY—THE SINGLE LARGEST OPERATING EXPENSE IN A TYPICAL COMMERCIAL BUILDING—TRANE GENERATES BOTTOM-LINE SAVINGS FOR CUSTOMERS.**

**W**ith oil topping \$100 a barrel and the U.S. economy slumping, business leaders are anxious to find ways to increase productivity and lower operating costs. For starters, many are taking a hard look at how the cost of heating, cooling, and lighting their buildings is affecting their bottom lines. No surprise here, given that energy is the single largest operating expense in a typical commercial building. Roughly 20% of operating expenses needed to keep such buildings humming typically pays for energy, according to Trane, a leading global provider of energy efficient building systems, services, and solutions. Fortunately, the government and some utilities provide grants, tax incentives, financing systems, and rebates to fund energy-saving initiatives. These programs often cover 50% or more of costs.

Creating high performance buildings is one of the best ways companies can save energy. According to Larry Wash, service and contracting leader at Trane, companies that take this approach—which starts by linking the physical environment of their buildings to business outcomes like energy and operating efficiencies, or employee productivity—improve their performance. The U.S. Green Building Council has found that such buildings increase worker productivity by up to 16%. The highest-performing buildings are those that continuously reassess and redesign systems for efficiency and reliability.

Central to this process, Trane uses a diagnostic approach to conduct a total building analysis, drilling down to details such as hourly energy consumption. The Trane team then suggests and employs energy-conservation measures that may include updated lighting, water-control technologies, and customized control systems for better monitoring and decision-making.

Trane also sets up systems to test, measure, and validate the performance of the system and technology it installs, ensuring that customers' goals are

met. "Typically, we would see a 25% initial reduction in energy usage," says Wash. Trane then maintains the systems so they function optimally for the life of the building and business. "We don't let performance or efficiencies deteriorate over time," says Wash.

Creating high performance buildings is good business for Trane customers. Improving the efficiency of Virginia's Carilion Roanoke Memorial Hospital, has saved \$100,000 since the project was completed in 2007, says John Christodoulides, Carilion's director of design, construction, and project and property management.

To evaluate the building, Carilion first used Energy Retrofit Services™, a benchmarking tool that compares the hospital to others in the same industry. Then it applied TRACE 700™, building

modeling software to forecast the business impact of the improvements it was considering.

Using the data from the analysis, Carilion modified its systems to increase efficiency and is now tightly monitoring its performance. With improved knowledge of its building systems, Carilion saves a dramatic amount of energy and operating costs, and is making more informed decisions about its operations

Financial services company, TIAA-CREF expects to save \$600,000 in energy costs annually from upgrades the company just completed at its New York City headquarters. Trane started by evaluating how TIAA-CREF purchased energy, how the building was consuming it, and how the building systems were operating. Based upon this analysis, TIAA-CREF upgraded its outdated steam-powered cooling to a highly efficient thermal storage system.

Thermal storage systems make ice for cooling at night when there's less strain on the power grid and when energy costs are lower. It then stores the ice for use throughout the day, says TIAA-CREF senior vice president, Jeff Meaney. The result is significant energy and costs savings for TIAA-CREF, and the reduction of nearly 6 million tons of carbon emissions each year. "That's a home run," says Meaney.

—E.M. Sicoli

