

## Ingersoll Rand Announces Its Trane High Performance Buildings Offering

by David Clayton on 7/29/2011 10:33 AM

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### Overview

ARC Advisory Group attended Ingersoll Rand's Trane High Performance Buildings Program on May 19 in New York City. Ingersoll Rand used the event to announce its Trane High Performance Buildings offering to the public. Trane High Performance Buildings is an outcome-based approach that complements building industry standards and helps owners link the physical environment of a building to a business mission. More than 400 building owners and operators, media, industry analysts and public policymakers attended the program. The event included presentations from Brian Gardner of The Economist and Larry G. Wash, president of global services for the Climate Solutions sector of Ingersoll Rand, plus a panel discussion and tours of three locations in New York City that utilize Trane's High Performance Buildings offering.

### "Whole Building, Whole Lifecycle"

In his keynote speech, Larry G. Wash, president of global services for the Climate Solutions sector of Ingersoll Rand, outlined the Trane High Performance Buildings approach. The goal is to enhance operation effectiveness by taking a "whole building, whole lifecycle" approach to building automation. Walsh said, "Buildings account for 71 percent of US electricity consumption. Adopting high performance building concepts can reduce energy and operating expenses by 30 to 50 percent over the course of a building's life cycle." The presentation highlighted Trane's High Performance Buildings offering and included a number of case studies to highlight the effectiveness of this building automation approach.

Brian Gardner's presentation highlighted the results of a survey the Economist Intelligence unit conducted in October 2010. The presentation offered insights into the effectiveness of corporate energy programs, as well as gaps and executive-level requirements that need to be addressed to achieve success. The key take away from this survey is that "energy efficiency" is indeed a growing market, but the building automation market as a whole has to do a better job making a strong business case for improving energy efficiency and getting buy-in from CEOs.

### The Need for a Better Business Case

The panel discussion included Vatsal Bhatt, senior policy advisor of Brookhaven National Lab, Department of Energy; Deane M. Evans, director of the Center for Building Knowledge, New Jersey Institute of Technology; Greg Hale, senior financial policy specialist, National Resources Defense Council's (NRDC) Center for Market Innovation; Jeff

Meaney, senior vice president and head of Security, Corporate Services & BCP, TIAA-CREF; Karen W. Penafiel, vice president of advocacy, BOMA International; and Louis J. Ronsivalli, Jr., global Trane service offer development leader. The theme of the panel was the need to and difficulty of developing a strong business case for encouraging investment in smart buildings. The panel agreed that better incentives - such as tax breaks or guaranteed access to loans - need to be put in place to stimulate growth in the high performance building market and better and more transparent benchmarking data are needed. Ms. Penafiel also provided some insights into possible government incentives that may help promote increased public investment in smart buildings.

### **AXA Equitable Building Increases Overall Cooling Capacity While Maintaining Same HVAC Footprint**

Following the panel discussion, attendees toured three Trane customer locations in New York City. Buildings toured included: AXA Equitable Building (787 Seventh Avenue), TIAA-CREF (730 Third Avenue), and Rockefeller Center (30 Rockefeller Plaza). In the case of the 1.8 million square foot, 54-story AXA Equitable Building, the new plant increases overall cooling capacity by 340 tons while maintaining the same electrical and machinery footprint. Trane estimates this energy conservation helps reduce the building's carbon emissions by 2.4 million pounds per year, the equivalent of removing 220 cars from the road annually or planting 325 acres of trees.

### **Trane's High Performance Program Helps TIAA-CREF Save \$765,000 in Annual Operating Expenses**

In the case of the TIAA-CREF building, Trane's High Performance Program helped TIAA-CREF save \$765,000 in annual operating expenses, resulting in a 25 percent internal rate of return on the investment in the high performance systems. The project was completed in two phases. Phase one involved removing the existing steam absorption chillers and replacing them with a 1,000-ton, high-efficiency CentraVac electric chiller, a 900-ton dual duty CentraVac electric chiller, and a thermal ice storage system, which includes 30 ice tanks provided by CALMAC. These ice tanks represent 6,000 ton-hours of thermal storage capacity. During phase two of the project, the existing cooling towers were replaced and the ice-tanks installed at the top of the building. A steel structure was constructed to support the cooling tower and ice tanks, which weigh nearly one million pounds.

The project also qualified for a \$219,000 rebate from the New York State Energy Research and Development Authority (NYSERDA). The efficiency improvements help TIAA-CREF avoid releasing 6.1 million pounds of carbon dioxide emissions into the air -- the equivalent of removing 560 cars from the road or planting 828 acres of trees.

### **Trane Saves Rockefeller Center Approximately \$2 Million in Annual Energy and Operation Costs**

Rockefeller Center consists of 12 buildings and approximately 6.5 million square feet of rentable space. The upgraded HVAC system at Rockefeller Center is saving approximately \$2 million in annual energy and operation costs. Trane installed a system that utilizes 41 CALMAC thermal storage tanks, providing 8,600 ton-hours of thermal storage. This allows

the system to shift peak cooling loads to off-peak hours by producing ice at night to take advantage of the significantly lower energy prices. The ice is used the next day for cooling during peak hours.

Trane estimates that energy conservation provided by the upgrade reduces Rockefeller Center's carbon emissions by 3.3 million pounds per year, equivalent to taking 300 cars off the road each year or planting 450 acres of trees. Tishman Speyer also received \$311,000 from the New York State Energy Research and Development Authority (NYSERDA) to help support the installation of energy-efficient technology. Estimates suggest that the Trane system has far exceeded initial savings projections.

## **Conclusion**

It was clear listening to the presentations and panel discussion that considerable opportunities are available for building owners and facilities managers to improve the energy efficiency of their buildings significantly, if there is commitment to make the investments required. The AXA Equitable Building, TIAA-CREF, and Rockefeller Center, are just a few examples of what building owners can achieve through reasonable investments in upgraded HVAC systems. Unfortunately, the most recent economic crisis put many plans for HVAC upgrades on the back burner as companies struggled to cut costs in line with diminished demand. As the global economic picture brightens, however, building owners and facilities managers should once again consider looking into HVAC upgrades to optimize their buildings' energy efficiencies.