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Trane High Performance Building Solutions Drive Efficiency and Savings for the Unique Needs of Financial Institutions

Financial institutions handle critical data every day – data that requires specialized environments to ensure that information is processed without interruption. If a data center goes down for even 15 minutes, an organization could lose millions of dollars in information. Data centers have significant and specialized cooling needs in order to handle the heat loads associated with computational processes. Hot spots and inadequate cooling can cause costly disruptions and are daily concerns.

Mission critical operations are happening at financial institutions 24/7, with increased demands on thermal management, airflow, cooling and humidity control. Reliable, efficient and capable heating, ventilation and air conditioning (HVAC) systems are critical to achieving optimal performance. Server density continues to increase to meet the demands of global organizations and their data storage requirements.

The Department of Energy estimates that cooling and humidification control accounts for 40 to 60 percent of a data center's physical operating costs, making efficiency a primary concern. Financial institutions and data centers are growing and consolidating rapidly and depend on uninterrupted operations to move at the speed of the global economy.

High Performance Financial Institutions

[Trane](#), a leading global provider of indoor comfort solutions and services and a brand of Ingersoll Rand, works with financial institutions and data centers around the world to provide solutions to their unique heating and cooling needs.

Trane works with facilities to design systems to specifically handle the unique conditions that occur in the financial environment. They make sure that the building is operated and maintained to continuously meet the needs of the facility and maintain a consistent indoor environment that supports the critical business mission.

By taking a systems approach, Trane helps financial institutions understand how the requirements of financial data processing impact building performance as well as how to manage downtime and keep systems running 24/7. By tying all of the building systems together, Trane can help financial institutions increase their efficiency while saving dollars.

Systems like the Tracer™ XT help data centers manage risk. By combining building controls system with GE Intelligent Platforms' Proficy® Software platform, building operators can visualize, analyze, model, monitor and diagnose systems. These tools provide intelligence to manage data centers efficiently and productively, providing security and redundancy for organizations.

Example: Trane Solutions Increase Operational and Energy Efficiency at Intesa Sanpaolo Data Center

Intesa Sanpaolo, one of the top banks in the Euro Zone, upgraded the infrastructure at its data center in Parma, Italy, to increase energy and operational efficiency. Recent energy savings improvements provide reliable, efficient and capable cooling critical to the data center environment. The upgrades also meet sustainability standards and are part of the Intesa Sanpaolo commitment to environmental stewardship and the journey to reach a high performance building outcome.

Trane experts started with a two-month study of the data center buildings, monitoring temperatures and chiller load. The audit revealed that cooling system operations was not optimized for efficiency, leading the chillers to operate at 50 percent load. Based on these results, bank leaders selected energy conservation measures that met their needs while improving energy efficiency and sustainability.

Upgrades included replacing two low-efficiency 400 kilowatt (kW) air-cooled chillers with one high-efficiency 1,000 kW water-cooled system. A Tracer Summit™ chiller plant management system was installed to control 7,500 kW of cooling production and distribution. The control system reduced the number of chillers required to efficiently operate the chiller plant.

Intesa Sanpaolo leaders also introduced an ongoing maintenance contract in addition to predictive and preventative services provided by an offering called Trane Care™. The implemented maintenance and service programs help ensure that the energy-efficient and environmentally responsible systems keep running at optimum performance.

The improvements, completed in 2011, are expected to have a three-year payback period. The system upgrade also provides reliable, efficient and capable cooling critical to the data center environment. The improvements to the facility's chilled water plant are expected to increase energy efficiency by 16 percent.

Example: Financial Statement Services, Inc. Saves Money with Energy Conservation Measures

Financial Statement Services, Inc. (FSSI) is a full-service print and mail leader

specializing in the design, production and delivery of high-impact statements, letters, notices and other time-critical consumer communications. With the help of Trane, FSSI completed energy conservation measures (ECMs) expected to save nearly \$72,000 a year at its 168,000 square-foot corporate headquarters.

Improvements were completed to increase energy and operational efficiency in a competitive industry, reduce operating costs, and maximize system reliability to maintain customer confidence. The upgrades also improved employee comfort and productivity.

Upgrades included replacing lighting throughout the building with high-efficiency fixtures. This significantly reduced energy consumption, while improving the working environment for FSSI employees and enhancing the company's productivity. In one production area, for example, overall lighting was increased 38 percent, while energy demand fell 40 percent.

FSSI also implemented high-occupancy sensors in its warehouse that are activated only when forklifts are operating on a particular hallway. Other upgrades included enhancing control optimization on an existing high efficiency chilled water system to increase energy and operational efficiency.

The upgrades at FSSI include an evaluation of the potential benefits of intelligent building services. Using advanced technology and analytics, Trane Intelligent Services will continuously collect, interpret and act upon data compiled from building systems and other sources. If operating anomalies are detected, Trane automatically responds or recommends steps the company can take to keep the building operating efficiently and within the predetermined performance parameters.

Example: Infrastructure Upgrades at TIAA-CREF Headquarters Save Energy and Operating Costs

TIAA-CREF is one of the largest institutional real estate investors in the United States. They have completed energy efficiency initiatives at their Manhattan headquarters that are anticipated to save \$765,000 annually in energy and operating costs.

TIAA-CREF asked the energy services group at Trane to conduct an energy analysis of their headquarters. Based on the results, TIAA-CREF selected a chilled water system for ice production during off-peak hours and a 30-tank thermal storage system, which provides 6,000 ton hours of thermal storage. The system shifts peak cooling loads to off-peak periods by producing ice at night that provides cooling the next day during peak hours.

Leaders at TIAA-CREF also directed the addition of a two-megawatt emergency generator and a new heat rejection solution to provide enhanced redundancy for crucial areas like the building's data center and trading floors.

High performance buildings help owners and occupants achieve their business missions by using design and operating standards that are created, measured and continually validated to obtain desired outcomes within specified tolerances.

Trane experts are available for interviews to provide insights about high performance buildings solutions to improve efficiency and reduce the operating cost of financial and data centers.

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About Ingersoll Rand

Ingersoll Rand (NYSE:IR) advances the quality of life by creating and sustaining safe, comfortable and efficient environments. Our people and our family of brands—including [Club Car](#)[®], [Ingersoll Rand](#), [Schlage](#)[®], [Thermo King](#)[®] and [Trane](#)[®]—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; secure homes and commercial properties; and increase industrial productivity and efficiency. Trane solutions optimize indoor environments with a broad portfolio of energy efficient heating, ventilating and air conditioning systems, building and contracting services, parts support and advanced control. Ingersoll Rand is a \$14 billion global business committed to a world of sustainable progress and enduring results. For more information, visit ingersollrand.com or trane.com.

Trane High Performance Buildings

Trane creates innovative high performance buildings using unique methodology that combines financial, operating and energy analysis with specialized service offers and available financing. High performance buildings are safe, comfortable and efficient. They meet specific standards for energy and water use, system reliability and uptime, environmental compliance, occupant comfort and safety, and other success factors. High performance buildings help owners and occupants be more productive and achieve their business missions by using design and operating standards that are created, measured and continually validated to deliver established outcomes within specified tolerances. For more information about high performance buildings, visit www.trane.com/highperformancebuildings.

PHOTOS: The following photos can be included in articles; however, please cite 'Courtesy of Trane.' If you are looking for a particular photo of something you don't see listed below, please contact Joan Schimml.

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Upgrades at FSSI's 168,000 square-foot corporate headquarters are expected to save \$72,000 per year.



Upon completion of the upgrades, FSSI received a rebate of nearly \$53,000 from Southern California Edison, one of the nation's largest utilities. Pictured are (left to right) Jon Dietz, FSSI chief



Gene Archer, technical services manager for FSSI, demonstrates the Trane Tracer Summit™ Building Automation System (BAS).



The 168,000 square-foot FSSI headquarters uses two Trane chillers to handle cooling, including a 400-ton Trane centrifugal water-cooled chiller and a 100-ton Trane Series R™

executive officer and founder; Jennifer Dietz, president of FSSI; and Dave Regnery, president of Trane North America.



FSSI replaced lighting throughout the headquarters building with high-efficiency fixtures, significantly reducing energy consumption while improving the working environment for FSSI employees and enhancing their productivity.

water-cooled chiller.



Pictured is the Tracer Summit™ Building Automation System (BAS). FSSI benefits from advanced technology and analytics called Trane Intelligent Services (TIS) that continuously collects, interprets and acts upon data compiled from building systems and other sources. If operating anomalies are detected, Trane automatically responds or recommends steps the company can take to keep the building operating efficiently and within the predetermined performance parameters.



In production areas at FSSI, overall lighting was increased by 38 percent while energy demand fell 40 percent.



Upgrades at Intesa Sanpaolo included replacing two low-efficiency 400 kilowatt (kW) air-cooled chillers with one high-efficiency 1,000 kW water-cooled system.



This high-efficiency 1,000 kW water-cooled chiller system replaced two low-efficiency 400 kilowatt (kW) air-cooled chillers at the Intesa Sanpaolo data center.



At Intesa Sanpaolo's Parma, Italy, data center, a Tracer Summit™ chiller plant management system controls 7,500 kW of cooling production and distribution. The control system reduces the number of chillers required to efficiently operate the chiller plant.



Paolo Costantino, BAS project engineer for Trane Italy, demonstrates the Trane Summit™ chiller plant management system at Intesa Sanpaolo's data center in Parma, Italy.



Tracer AdaptiView™ controls are installed on all three Trane CenTraVac™ chillers at TIAA-CREF headquarters in New York City. A Trane cooling tower optimization system and variable flow chilled water pumping were integrated into the building operations to maximize the efficiency of the new CenTraVac™ CVHF chilled water system and overall system.



The 6,000 ton-hour thermal storage ice tank farm on the 29th floor roof of the TIAA-CREF building in Manhattan produces ice at night for cooling the next day during peak hours.



The TIAA-CREF building in New York City houses one 1,000-ton Trane CenTraVac™ high efficiency chilled water system and one Trane CenTraVac™ 900-ton dual duty glycol chiller used to make ice at night in a 6,000 ton-hour thermal storage system.



A Trane Centravac CVHF 1,000-ton chilled water system and local Tracer AdaptiView™ control panel were selected for efficient cooling after an energy audit at the TIAA-CREF building in Manhattan.



The TIAA-CREF building, located at 730 Third Avenue in New York City, anticipates savings of \$765,000 annually in energy and operating costs after energy efficiency upgrades from Trane.



Paul Ramoino, project developer, Trane demonstrates a Tracer AdaptiView™ control panel which was retrofitted on the new Trane CenTraVac™ CVHF chillers in the TIAA-CREF building in New York City.



Scott Lewin, operations manager, Trane discusses the 6,000 ton-hour thermal storage system and new four (4) cell cooling tower installed on the 29th floor roof of the TIAA CREF building at 730 Third Avenue in New York City.