Geisinger Hughes

CUSTOMER STORY

Challenge

Each floor of the four-story Geisinger Hughes Center North building provides 19,100 sq ft of space for the Geisinger insurance company offices and telecommunication operations. With the building approximately twenty-years old when it was purchased, operation of its original Trane equipment and controls had been extended beyond life expectancies. In addition, the primary heating source was electric duct heaters, which was resulting in high energy costs.

Geisinger sought to upgrade its systems, improve satisfaction for facility occupants, tighten its building envelope, modernize controls, increase energy efficiency, and improve sustainability.

Solution

A long-standing business relationship, bolstered by a service agreement and a trusted rapport with their Trane service technician, sparked Geisinger to engage in conversations with Trane regarding the building's deteriorating comfort and system reliability, as well as limitations of the outdated controls system. Trane proposed replacing the building's aging rooftop units and upgrading controls to improve overall building performance. Based on Trane's recommendations, Geisinger moved forward with a turnkey project.

Increasing efficiency, enhancing comfort

Trane initiated design of new packaged rooftop units, evaluating multiple options and making calculated adjustments to create an optimal configuration for the replacement system. Two large Trane® IntelliPak® VAV rooftop units were selected for the upgrade, with each unit responsible for providing reliable, efficient multi-zone heating, cooling and ventilation for two floors of the building.

The IntelliPak systems offer energy saving options, quiet operation, and reliability to deliver a low total cost of ownership, enhance the work environment, and lower operating costs. Trane eFlex™ variable-speed compressor technology used by the IntelliPak ensures system operation matches required load for efficiency at all load levels. The IntelliPak's Unit Control Module (UCM), with Human Interface Panel, provides a high degree of control, superior monitoring capability, and unmatched diagnostics to reduce troubleshooting time. With the UCM installed at the factory, on-site installation time and labor costs were reduced.

Geisinger Hughes Center North
Danville, PA

PROJECT HIGHLIGHTS

CHALLENGE

Aging systems

Outdated controls

High energy costs

SOLUTION

Turnkey upgrade

IntelliPak rooftops

VAV terminal units

Tracer® SC BAS

Retro-commissioning

RESULTS

50 percent reduction in energy use

kWh reduced by 1.8 MM+

$50,000/yr energy cost savings

Avoided 347 metric tons of CO2 emissions

TRANE TECHNOLOGIES

Geisinger Hughes

CUSTOMER STORY

Upgrading technology

Trane worked with Geisinger to upgrade 135 aging VariTrane™ variable air volume (VAV) terminal boxes with a round-in/round-out retrofit and new controllers. The retrofit product simplified the upgrade of the existing old-style units to direct digital controls (DDC). It includes an 18-gauge cylinder with a Trane patented flow-sensing ring for unmatched airflow measurement accuracy, and DDC controller optimized for performance and integration to the building automation system. Control strategies, including ventilation reset, static pressure optimization, night setback, occupied/unoccupied settings, and demand-controlled ventilation were pre-programmed into the VAV controller to improve operations.

Optimizing operations, simplifying system control

A Trane® Tracer® SC building automation system (BAS) replaced the outdated controls system to improve efficiencies, increase comfort, and reduce energy costs. Building managers use the BAS to monitor systems, perform daily tasks, establish setpoints, troubleshoot issues and respond to alarms. The web-based Tracer SC allows building operators to manage performance onsite or remotely with convenient access to systems via a mobile device, such as a smartphone or tablet.

> "Ultimately, Trane and Envinity had the same goal and that was to save Geisinger on energy bills."
>
> - **Jim Pivirotto,** Account Manager, Envinity, Inc.

Realizing deeper energy savings

With equipment upgrades completed, Geisinger engaged Envinity, Inc., a commissioning specialist focused on energy conservation, efficiency and sustainability. Envinity performed retro-commissioning of the building systems, developed strategies, and worked with Trane to implement controls sequencing, custom setups, ventilation engineering, and airflow specifications to realize deeper energy savings.

"It was a collaborative effort working with Trane," said Jim Pivirotto, Account Manager, Envinity, Inc. "We each had ideas on how we could improve building operations."

"We initiated improvements to optimize our energy spend," said Matt Rooke, Project Manager, Envinity, Inc. "Working together with Trane, we rolled out and tested occupied/unoccupied modes, made modifications to airflow rates for the zone VAV, and implemented a variety of other energy saving strategies."

Results

> With the turnkey upgrade and retro-commissioning, Geisinger Hughes Center North Building is the most energy efficient in the Geisinger portfolio, boasting the lowest BTUs per sq ft.

Working together, Trane and Envinity implemented a turnkey equipment and controls upgrade, and retro-commissioning at the Geisinger Hughes Center North Building. The project met building performance objectives and provided facility managers with more efficient equipment and a state-of-the-art, easier-to-use controls system. The project achieved an overall reduction in energy consumption of 50 percent, for approximately $50,000 a year savings compared to baseline energy costs. With the upgrades, the Geisinger Hughes Center North Building has also improved sustainability, avoiding 347 metric tons of carbon dioxide, 893 lbs of sulfur dioxide, and 689 lbs of nitrogen oxide emissions, helping to reduce medical incident costs by more than $313,000.

"We have fewer hot/cold calls and our maintenance costs have been reduced," said Bradd Mertz, Operations Manager/Maintenance, Geisinger. "The energy savings can be attributed to the combination of high-efficiency equipment and strategic controls strategies, with about 25 percent a result of the Trane equipment upgrades and the other 25 percent a result of the Envinity retro-commissioning."

About Geisinger

Geisinger is committed to making better health easier for the 1.5 million+ consumers it serves. Founded more than 100 years ago by Abigail Geisinger, the system has expanded to meet regional needs and implement innovative national programs. The healthcare system includes thirteen hospital campuses, a 600,000-member health plan, two research centers and the Geisinger Commonwealth School of Medicine. Geisinger boasts 32,000 employees and 1,800 physicians in New Jersey and Pennsylvania. The Geisinger Hughes North building is part of a two-tower complex owned by the healthcare system.

TRANE

Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit *trane.com* or *tranetechnologies.com*.

CASE-SLX547-EN
01/06/2021