Bellefonte Pavilion

CASE STUDY

Chiller upgrade reduces energy consumption an average of 40 percent in hot summer months; improves marketability of rental space; aligns with sustainability efforts.

Challenge

How do you modernize an outdated HVAC system to better serve your tenants? This was the challenge faced by Our Lady of Bellefonte Hospital, part of the Bon Secours Health System, when they took ownership of the Bellefonte Pavilion property. With one chiller not operating and the other not large enough to effectively cool the building, facility managers were constantly fighting comfort issues. The hospital sought to upgrade its systems to improve capacity, comfort, energy efficiency, and marketability of rental space in the building.

> "The building was aging and the equipment, from elevators to HVAC systems, was becoming obsolete. The comfort issues made trying to lease space in the building difficult. We lost some opportunities."
>
> - **David Hall,** Director of Facilities, Our Lady of Bellefonte Hospital

Solution

Bon Secours sought out the help of Sal-Tronics LLC, a design build mechanical and controls contractor that had previously conducted energy efficiency studies for the hospital. Sal-Tronics presented a proposal for building improvements, and after being awarded the project, consulted with its trusted partner, Trane, regarding mechanical system upgrades. "We've had a long-term relationship with Sal-Tronics," said Hall. "We also have a lot of Trane equipment in our facilities, so we are very familiar with them as well."

Evaluating chiller options

Trane and Sal-Tronics worked with Bon Secours to determine the chiller replacement options, taking into account efficiency and sustainability efforts. The team analyzed four choices, which included both constant speed and variable speed chillers, using low pressure R-123 and R-514A refrigerants.

Aligning with sustainability efforts

Reducing emissions is priority one in achieving sustainability goals. And since low pressure refrigerants operate in a vacuum, leaks are virtually eliminated enabling near-zero emissions. Couple this with the use of the next generation R-514A refrigerant, which is a non-ozone depleting, low global warming potential (GWP) refrigerant, and you have a home run. R-514A offers excellent capacity and energy efficiency. The team's recommendation to use the R-514A maximized chiller performance and aligned with the hospital's sustainability efforts.

Bellefonte Pavilion

Russell, Kentucky

PROJECT HIGHLIGHTS

CHALLENGE

Expand chiller capacity

Improve comfort and marketability of tenant space

Increase energy efficiency

SOLUTION

Trane® CenTraVac® Chillers

R-514A Refrigerant

RESULTS

Increased comfort and energy savings

Improved marketability of rental space

Enhanced sustainability efforts

Bellefonte Pavilion

CASE STUDY

Selecting the right chiller
Having used Trane low-pressure chillers for years, the hospital was familiar with their performance. After reviewing the chiller analysis, two high-efficiency 300ton Trane® CenTraVac® water-cooled centrifugal chillers with variable frequency drives were selected.

The CenTraVac's simple, robust direct-drive design offers the industry's highest full- and part-load efficiency and reliable operation to keep facility occupants comfortable. Incorporating R-514A refrigerant provided the sustainability benefits the hospital was seeking. Additionally, the chillers will provide redundancy for the partially leased building and enable expansion to accommodate additional tenants. The building improvements also included upgraded lighting and chiller plant controls, as well as variable frequency drives for the cooling towers, condenser, evaporator and boiler pumps.

About Bon Secours Mercy Health
The 188,000 sq ft Bellefonte Pavilion, located on the Russell, Kentucky, hospital campus, serves primarily as an office building. The facility houses office space for hospital IT operations and medical records storage, as well as the ground-floor Firm Fitness center for hospital employees and the community. The pavilion also leases space to outside companies.

Results

Comfort, reliability, energy savings, and efficiency were major drivers as Bon Secours sought to replace the aging mechanical systems serving the needs of its Bellefonte Pavilion. Working with Sal-Tronics and Trane to implement system upgrades, the hospital achieved its goals, **reducing kWh by an average of 40 percent in the hot months of June, July and August for a savings of nearly $10,000 per month.** The upgrades are also making the space more marketable, opening up greater leasing opportunities.

"A large aluminum plant is being built in the county," said Hall. "There will be additional businesses coming in associated with the plant, and there is talk of other companies also considering moving to this area. With the upgrades, we now have more to offer these new businesses. Our building is more comfortable and more marketable."

About Bon Secours Mercy Health

In September 2018, Bon Secours Health System and Mercy Health combined to become the United States' fifth largest Catholic health care ministry and one of the nation's 20 largest health care systems, boasting 43 hospitals, 1,000 care sites, and more than 57,000 employees. The health care system serves communities along the east coast and in Ohio and Kentucky.

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*.

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