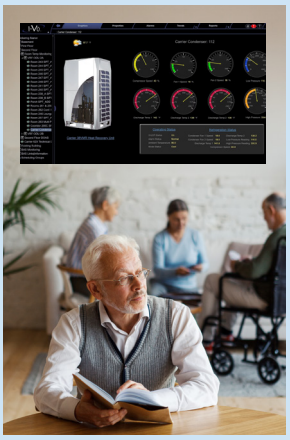
CASE STUDY

Pickering Manor

CARRIER I-VU® BAS AND VRF SYSTEM COMBINE FOR COMFORT, CONTROL, AND EFFICIENCY

THE I-VU® BAS DELIVERS PRECISE COMFORT, EFFICIENT EQUIPMENT OPERATION, AND REMOTE ACCESS



By adding the Carrier i-Vu building management system, Pickering Manor's staff now has centralized control of their entire HVAC system—including a brand new Carrier VRF system—which helps lower energy costs while keeping residents and visitors comfortable.

Project Objectives

Pickering Manor is a premier, non-profit senior living community located in historic Newtown, Pennsylvania. Their mission is to support the people of their community to achieve the highest levels of independence, personal fulfillment and continued quality of life. A recently constructed addition identified the need for new HVAC equipment, while a renovation of Pickering's existing facility identified the need for a control system that would provide staff with more precise management of their entire heating, ventilating and air-conditioning (HVAC) system.

"With i-Vu, the system visibility and control we have now is great, but to me, knowing that I'll get an immediate warning whenever something goes out of its operating ranges is priceless."

– Chris Rotanz
Facility Engineer
Pickering Manor

The Solution

To meet all the HVAC controls and equipment requirements for the new and renovated facilities, HighTec HVAC— Pickering's contractor—partnered with local Carrier distributor Peirce-Phelps to recommend a Carrier system solution.

For the renovation, Peirce Phelps proposed the addition of the Carrier i-Vu® building automation system (BAS) to integrate and manage the existing Carrier fan coils, heat pumps, an AHU, and Carrier 62X dedicated outdoor air (DOAS) units. Beyond the precise control of all HVAC components, the new i-Vu system allows both HighTec HVAC and Pickering's staff to easily monitor, adjust, receive alarms and manage their HVAC system from any location in real time.

For the new addition, Peirce Phelps proposed a Carrier variable refrigerant flow (VRF) system, based on its flexibility, ease of installation, and the ability to be managed remotely using the new i-Vu building automation system.

Upon successful completion and turnover of the new Carrier system to Pickering Manor, HighTec submitted this project for the 2021 ABC Award of Excellence for Mechanical Systems and was honored with the Eagle Award for "Best Mechanical System" in the $1 - $5m category.

Synopsis

Maintaining a comfortable environment for the residents of Pickering Manor—a premier center for senior living located in historic Newtown, Pennsylvania—was paramount to helping them achieve the highest levels of independence, personal fulfillment and continued quality of life. Recently, a new building construction and renovation project presented the opportunity to implement a controls system strategy and HVAC equipment upgrade which would provide enhanced management, performance, and efficiency.

Prior to the project's construction phase, Tim Lawless, BAS Controls Sales Manager for Peirce Phelps—Carrier's local distributor—was giving a presentation on the i-Vu® building automation system at a local tradeshow. In the audience was Ed DeAngelis, President of HighTec HVAC, who happened to be Pickering Manor's HVAC contractor. Realizing that he had a project which would benefit from i-Vu's capabilities, DeAngelis wanted to pursue a Carrier system solution. "With the impending new construction and renovations, this seemed like the ideal time to implement i-Vu and Carrier equipment,"DeAngelis said.

To that end, a meeting was arranged between Peirce Phelps, HighTec HVAC, and Pickering's construction contractor to talk about the complete Carrier solution. "After our meeting, we felt that Carrier controls and a Carrier VRF system, combined with the expertise of Peirce Phelps, was the best fit for our team and the Pickering project," DeAngelis concluded.

Throughout the project, Peirce Phelps served as a trusted advisor, educating HighTec on Carrier products, VRF systems, and the i-Vu BAS. "I knew that Pickering couldn't see all of their [HVAC] system's components," commented Tim Lawless. "It was important for [HighTec] to understand that if you can't see everything, at once, in real time, it really isn't much of a system."

A Carrier VRF system was chosen for many reasons. From the system options to the ability to connect several indoor units to a single outdoor unit with minimal piping, they provide flexibility and ease of installation to accommodate almost any building requirement. And, system performance is significantly enhanced because of the heat transfer properties of refrigerant over other mediums, while energy savings are realized from moving conditioned refrigerant only to the needed indoor units. "Once the VRF system was in place, what impressed me was that every time we monitored the VRF performance with the i-Vu system, they were running at 50 percent capacity or less, even on a design day... which is helping Pickering contain their energy-related costs," DeAngelis said.

With a need for precise zoning, VRF was also a natural fit. Medium static-ducted VRF fan coils were used in certain areas to support the need for high grade MERV 13 filtration. There was also a unique need to have occupancy sensors for certain zones, which easily tied into the VRF fan coils for ultimate control and comfort.

The addition of the i-Vu BAS and a VRF system have enabled Pickering Manor to have one fully-integrated system which delivers precise comfort control, efficient equipment performance, and peace of mind for Pickering's staff. "With i-Vu, the system control we have now is great, but to me, knowing that I'll get an immediate warning whenever something goes out of its operating range is priceless," remarked Chris Rotanz, Pickering's Facility Engineer. "I have literally had my cell go off in the middle of the night and was able to immediately identify and correct the issue," he stated.

As a direct result of their experience with Peirce Phelps and the Carrier system at Pickering Manor, HighTec HVAC is currently underway with plans to construct their own new building... complete with the i-Vu BAS and Carrier equipment.

Project Summary

LOCATION: Newtown, PA

PROJECT TYPE: New construction and retrofit

FACILITY USAGE: Senior Living and Nursing

OBJECTIVES: Implement a controls system strategy and HVAC equipment upgrade that would provide enhanced management, performance, and efficiency.

EQUIPMENT: Carrier fan coils, four Carrier 62X DOAS units, Carrier VRF: 132 Tons

TOTAL COOLING TONS: <400

CONTROLS: i-Vu Plus, i-Vu XT Link BACnet® Interface, Equipment Touch, i-Vu Open Controllers, and ZS Temperature Sensors

MAJOR DECISION DRIVERS: Provide a flexible and efficient HVAC solution for the new addition. View and manage Pickering's entire HVAC system from anywhere using PCs, tablets, and mobile devices. Graphically configure and view schedules, setpoints, trends, alarms, and reports. Increase energy efficiency while ensuring occupant comfort.

INSTALLATION DATE: 2020

For more information, contact your Carrier representative, call **1.800.CARRIER** or visit **carrier.com/commercial**