

Vanderbilt University

The Challenge

In the spring of 2011, Vanderbilt University Medical Center sought to update HVAC equipment for a 17,000 sq. ft. research facility within its 800,000 sq. ft. Medical Center North building on its Nashville, Tenn. campus. The existing air handling unit had begun to fail and was no longer providing adequate air flow throughout the facility.



Students Walking Under Autumn Colors
Photo: Vanderbilt University

Mechanical systems engineers at the university were primarily concerned with completing the project as quickly as possible, and ideally over the course of a single weekend, as the facility itself supported important ongoing research. Disruptions from prolonged HVAC system downtime and/or an extended construction timeline could present notable and costly setbacks, and the mechanical team became



Medical Center North
Photo: Steve Green | Vanderbilt University

responsible for identifying a solution that would ensure neither issue occurred.

To keep within this project timeline while also minimizing need for demolition to existing infrastructure, Vanderbilt University's mechanical team additionally hoped to retrofit a system that could be assembled onsite, with parts that could be lifted via crane through a 6-ft. wide opening in the 65-ft. by 82-ft. rooftop penthouse.

The Solution

The mechanical contractor, Nashville Machine, accepted the project bid, which was designed by Smith Seckman Reid (SSR) of Nashville. Michael Gable, PE CEM, a mechanical engineer at Vanderbilt and his staff were encouraged by the firm's inclusion of a 100% OA, 34,500 CFM ClimateCraft® ACCESS™ knock-down air handling unit, engineered specifically for final assembly at the job site.

"The new air handler provided increased load capacity compared to the existing unit," said Gable. "We were glad to now have built-in redundancy, and the vertical discharge design made management of a non-hazardous odor control issue via a high-velocity plume more efficient."

According to Craig Barbee, PE, senior mechanical engineer at SSR, the ClimateCraft ACCESS process of custom engineering and manufacturing factory-fabricated, field-assembled air handling units was the reason why the firm identified it as an ideal retrofit solution for the Vanderbilt University project.

“We were looking at a situation in which the customer wanted minimal disruption to the surrounding infrastructure, with an ideal goal of the only deconstruction being that of the HVAC system we were replacing,” Barbee said.

“The ClimateCraft ACCESS system has been built on a solid foundation of knowledge resulting from many successful installations in the field, and particularly those in which air handler replacement might have been otherwise impossible without major renovation to the surrounding infrastructure,” said Gina Cottrell, vice president of sales and marketing at ClimateCraft, Inc. “The ACCESS support services we provide also represent our best practices in ‘thinking like the contractor’ to save time and money at the jobsite through training, advance planning, and on-the-job support.”



Kirkland Hall
Photo: Neil Brake Vanderbilt | University

The Benefit

Coy Gilland, superintendent at mechanical contracting firm Nashville Machine Co., attests to the ClimateCraft ACCESS program’s inclusion of the same high-quality assembly procedures and techniques as those executed at the factory.

“Overall, the assembly and installation went smoothly, and the result was a tight, sturdy unit that was up and running ahead of schedule. We also estimate that with the way packaging was coordinated to support the staging of components, we saved an additional 10 percent on labor costs.”

“We started on a Friday at about 3:00 p.m. By Sunday night at 7:00 p.m., after running around the clock, we had completed 450 hours of assembly and installation, and were ready to get the system up and running. This was considerably ahead of the game, as the factory estimated the job would finish Monday or Tuesday.”

Gilland shared that an advance factory tour and training at ClimateCraft’s headquarters facility, as well as on-site support from ClimateCraft technicians, contributed to the considerable time savings during installation.

“When looking at all aspects of the project, ClimateCraft ACCESS was definitely the best choice we could have made,” said Barbee. “The trainings and ongoing support provided by the company were top-notch, and everyone was very responsive to any questions or issues we had along the way.

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