
CASE STUDY

Innovative Training Center Relies On Flexible Self-Contained Air Conditioning System

PricewaterhouseCoopers didn't become the world's largest professional services organization by simply resting on their reputation. To compete for the best and the brightest new college graduates, PricewaterhouseCoopers takes nothing for granted. That is why the firm built a \$52 million Learning and Professional Development Center in Tampa, FL. This facility serves as the first stop for new employees from around the world and is located on a lush 23 acre campus that includes a suite style hotel to house students. New recruits arrive for a 12-week introduction to the company and instruction in a curriculum concentrating on the latest technologies and business methodologies.

First impressions are lasting, so all aspects of this facility are designed to create a favorable impact—from its high tech interior to its mechanical systems. Todd Wilson P.E., associate mechanical engineer with Brady & Anglin Consulting Engineers of Florida, was charged with specifying a reliable air conditioning system to keep the students comfortable in Florida's warm, humid climate, and also to protect high technology equipment from temperature extremes. However, from a practical standpoint, Wilson realized PricewaterhouseCoopers did not

grow to be the world's largest CPA firm by ignoring the bottom line, so he knew it was important to specify an efficient and economical air conditioning system as well.

Despite such stringent bottom line considerations, the choice of system wasn't difficult. Although the four-story tilt wall building was atypical candidate for an air-cooled screw chiller, this atypical client's exacting needs required something more. That is why Wilson specified a vertical self-contained system manufactured by McQuay International. He was confident the water-cooled floor-by-floor system could make the cut at PricewaterhouseCoopers.



"I have used McQuay self-contained systems before with excellent results, and I knew the solution would work well at the Learning and Professional Development Center," said Wilson. "One of the most important factors I take into account when specifying a system is how the building will be used. In the case of the center, it is not a straight nine to five facility. Because training sessions might occur at night or on weekends, the air conditioning system had to be flexible. With the self-contained system, it's possible to cool one floor at a time as needed, which is much more economical than operating a chiller and cooling the entire building."



The flexibility of the self-contained system also makes it a perfect fit for the building itself, which encompasses within its 132,000 square feet a variety of spaces used for different purposes. Included are five conference rooms, each large enough to accommodate 110 trainees and several boardrooms designed to simulate the students' work environment. All of these spaces incorporate the latest in technology, such as up-to-date audiovisual equipment, sound systems and computers. In addition to instruction spaces, the facility also features a cafeteria and a large common area, much like a student union, where trainees meet informally and network with their new co-workers.

"With two units per floor and each with four independent scroll compressors, the self-contained system easily meets all these varying demands," said Wilson. "Plus, if needs change and demand increases, the system can be expanded by adding capacity to the cooling tower."

The self-contained concept offers another important advantage that affects the building's bottom line, according to Wilson. Because they take up less space than standard chilled water air handling units, self-contained systems reduce the required size of machine rooms and allow for more usable square footage in the building.

When he specified the equipment for the Center, Wilson also knew he would be working with Carroll Air

in Tampa, the local independent McQuay sales representative. "I like working with the Carroll Air team," says Wilson. "They have a commitment to customer satisfaction, and I know that my clients will get good service from them."

Like Wilson, project manager John Reyes with Southeast Mechanical in Tampa has also had experience working with self-contained systems. "They are very easy to install because everything is all in one unit," Reyes said. "You don't have to make sure all the pieces are there, put them together and get the system running."

The units arrived at PricewaterhouseCoopers with factory made plenums to connect with the building's ductwork. Installation involved simply connecting the ducts, piping and wiring. "Once these units have power, they can be started up and tested," Reyes said. "The MicroTech™ DDC digital controller that come with the units have a keypad and English language display that is easy to read and follow, which is very helpful for troubleshooting. Because the entire system is there, you don't even have to wait for the building automation system to be in place before running the units. Once it's time to hook up the BAS, these units feature Open Protocol™ and easily connect to most any automation system."

"There are other advantages of a self-contained system over a chiller

system," says Reyes. One of the most important is cost. With a chiller system, the regular maintenance cost will be greater, and so will the up-front installation cost. In fact, first cost installed savings of \$1.00 to \$2.50 per square foot compared with chiller systems is common. Redundancy is the other benefit. With four compressors, these units have built-in back up if any one compressor fails. Plus they provide excellent part-load efficiency," he said.

When a building is under almost continual use, completing routine maintenance and service can be a problem. Reyes is confident, however, that this won't be the case at PricewaterhouseCoopers as the units are designed so that all major components are out of the supply air stream. This makes it possible to perform standard measurements and adjustments while the unit is operating. "And from an education perspective, students probably won't realize the air conditioning system is even operating," Reyes notes. "That's how quietly it runs."

With the facility in full operation, PricewaterhouseCoopers is prepared for as many as 6,000 new recruits a year. The bottom-line? Every new employee will be trained in an environment that is as well suited for learning as it is comfortable.