



Vermont Information Processing's three-story building contains office space as well as a data center located on the third-floor.

CASE STUDY

Office Building

Facility at a glance

Name

Vermont Information Processing

Location

Colchester, Vermont USA

Building size

40,000 sq ft

Issue

Incorporating energy-efficient WSHPs and geothermal system to lessen costs and environmental impact

Solution

2 Daikin large capacity Enfinity® vertical WSHPs with hot gas reheat
31 Daikin SmartSource® horizontal WSHPs

Software company in the U.S.'s greenest HVAC state selects Daikin Applied WSHPs - again

Issues

Vermont leads the nation in using energy-efficient HVAC systems. Geothermal HVAC systems and water source heat pumps (WSHPs) are some of the most commonly found HVAC applications in the region. So when it came time to expand an office building owned by Vermont Information Processing (VIP), a national provider of software solutions for beverage distributors and suppliers, geothermal and WSHPs were the natural choice.

"We set the baselines that we wanted efficiency from a cost perspective and from an environmental one," says Tom Yasewicz, facilities manager at VIP. The three-story building opened in December 2014 and is attached to VIP's original 1989-built facility by a second-floor skyway. VIP also required efficient cooling for its data center located on the third floor of the new building.

Design engineering firm LN Consulting worked with Colin Lindberg Architects to specify the HVAC system for the new building. "We selected Daikin Applied WSHPs based on energy efficiency and quiet operation compared to standard heat pumps. Daikin's extended-range heat pumps operate with the geothermal energy-exchange system which includes an energy-recovery ventilator on the building's rooftop. The system gains efficiency from the geothermal earth-coupled closed loop heat exchanger around the property, while maintaining a water source loop temperature above 30 degrees with a glycol solution," says Wayne Nelson, president of LN Consulting.

Solution

Daikin Applied supplied 31 horizontal SmartSource WSHP units ranging in capacity from .6 to 4 tons which serve the general office space, in

addition to two large capacity 10-ton vertical units customized with hot gas reheat for the 1,300 ft² data center. "Keeping all the equipment as WSHP was a more efficient design than having to go to CRAC (computer room air conditioning) units," says Jason Hudspath, LEED AP, project manager and Daikin Applied representative with Thermal Environment Sales, Inc.

"Hot gas reheat was essential to ensure we could protect the server room equipment and allow for dehumidification. A heat recovery system uses the rejected heat from the data center cooling to heat other areas of the building," Hudspath says.

Thermal Environment closely coordinated with Daikin Applied on the manufacturing specifications and worked with mechanical contractor New England Air Systems on the installations that happened during building construction. Final completion occurred late 2014.



Two large capacity WSHPs with hot gas reheat provided solutions for VIP's data center space requirements.

Outcome

"Based on customer feedback to this special offering for hot gas reheat functionality in large-capacity WSHPs, we have now made this a standard offering," says Maryann Stojkovski, Daikin Applied product planning manager, noting WSHPs are offered in 6 to 10 ton capacities for horizontal units, and in 6 to 25 ton capacities for vertical units.

VIP is pleased with the HVAC in the new building that includes the data center and a fitness facility with locker rooms which are also subject to high humidity levels. "I was impressed by the way the system is zoned with heat pumps to keep temperatures and comfort levels consistent," Yasewicz says, noting the new building features southern exposures and greater use of glass than the original building.

Based on the customer's past experience with the longevity of the WSHPs made by Daikin Applied (formerly known as McQuay International) in the first building, VIP looks forward to reliable service with the new WSHPs. "Of the 25 total units in our first building, we have had to make very few replacements over the years," Yasewicz says. The new WSHPs were integrated into the building automation system (BAS) that serves both buildings. VIP made an upgrade to its BAS a few years ago along with adding variable speed motors on the original WSHPs to reduce its operational costs.



VIP also incorporated Daikin Enfinity console WSHPs for supplemental heating and cooling in specific areas in the new building.