

Daikin's VRV Heat Recovery Systems Meet Many Demands at Idaho Panhandle Dental Office

The Challenge

A tight budget, building constraints, cold winters and the need for multiple zones contribute to a demanding HVAC renovation for an Idaho Periodontist.

Daikin's Solution

Daikin's Heat Recovery VRV[®] provides simultaneous heating and cooling, heating capacity, energy efficient zoning and fit perfectly into the limited space.

Application:
Commercial

Location:
Post Falls, Idaho

Winters in the Idaho Panhandle can get downright frigid. In fact, the average mean temperature from December to March is about 32°F, and daily day-night temperatures during those months swing an average of 18°F.

So when the owners of Post Falls Periodontics wanted to turn the bottom level of their three-story office building into a new office space, they needed a HVAC system that would allow their staff and patients to be completely comfortable at all times.

The 25,000-square-foot building, located in Post Falls, Idaho, was originally built in 2005. In early 2007, Post Falls Specialty Dental Building decided to lease the 3,400-square-foot basement floor, which is partly underground with ground level windows on one side, to Dr. Giardino with Post Falls Periodontics. Dr. Giardino's tenant improvement project would include multiple exam rooms, a reception area, offices, and designated exhaust systems to handle practice-related odors. Polin & Young Construction Inc., of Coeur d'Alene, Idaho, was



When the Post Falls Specialty Dental Building decided to lease the 3,400-square-foot basement floor, Daikin's intelligent heating and cooling systems offered a high efficiency and comfortable solution for the new tenants.

hired as the general contractor to “design-build” the project. They turned the HVAC aspect of the design over to TYKO Mechanical LLC, of nearby Hayden, Idaho. With the rest of the building’s mechanical, electrical, plumbing, (MEP) and medical gas lines previously established and limited space outside the building, TYKO and the other team members had their work cut out for them.

CONSIDERING ALL THE OPTIONS

Wayne Kovash, owner/president of TYKO, explained that a tight budget and the existing constraints of the building forced the team to consider all available options. “The challenge was how to condition the space with limited ceiling heights and the existing MEP roughed in already, creating a nightmare to install any kind of ducted HVAC system. Simply put, there was no room for a conventional HVAC ducted system,” says Kovash.

The team also had to account for the fact that the tenant might need simultaneous heating and cooling in the space (for

Daikin’s VRV® Heat Recovery (REYQ96MTJU) fit into the tight installation space and provided a key component for the system’s energy efficient design.

example, the exam room might need cooling, while the reception area needed heating). “It required a condenser to handle both heating and cooling at the same time, and a conventional system would have required multiple condensers, but there was only room for one condenser,” Kovash said. A built-up chiller or fan coil system would have worked for the application, but didn’t fit within the budget.

TYKO and the project’s engineering team, L&S Engineers turned to local HVAC vendors for information about any product lines that would work in this

“I would recommend the Daikin system to anyone that needs a highly efficient system that installs very quickly, installs in very limited space requirements and performs as advertised.”

Wayne Kovash, owner/president, TYKO Mechanical LLC,



situation. After careful consideration, the team selected Daikin and its local representative, the Spokane office of VEMCO.

EFFICIENCY, LOCAL HELP, AND A SMALL FOOTPRINT

Tyler Morton, Post Falls Specialty Dental, building manager, explained that energy efficiency and quiet operation were the top two system requirements. “With several tenants in the building, we didn’t want to have a system that caused problems. We also wanted a system that was quiet and very efficient.”

According to Kovash, there were a number of reasons Daikin was specified for the job. The Daikin Variable Refrigerant Volume system they selected,





The entire Daikin system, which stands completely alone from the rest of the building's MEP systems, is controlled via Daikin remote sensors and 7-day programmable controllers.



were also part of the design. The unique REFNET design increases system reliability and optimizes refrigerant flow. The entire Daikin system, which stands completely alone from the rest of the building's MEP systems, is controlled via Daikin remote sensors and individual controllers.

In addition to the energy efficiency and design features offered by Daikin, Kovash explained that the local

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“AS ADVERTISED”

TYKO, with the help of VEMCO, started the installation in late December 2007. The installation proceeded extremely smoothly. “Installing the refrigeration lines from the outdoor unit to the fan coils was very quick and easy, which was good because of the limited space we had to work with,” Kovash said. He added: “And the system operates as advertised. We checked all pressures and air flow and had very little noise from the fan coils. The system operates perfectly.”

offered simultaneous heating and cooling and a heat recovery option for their condenser – a key component for energy efficiency.

Kovash said the heat recovery outdoor unit allowed them to install three large fan coils all fed by the single condenser. “This was a very important aspect, because the project did not allow us room for more than one condenser onsite since there was very limited space outdoors.”

Three Branch Selector units and two REFNET piping fittings

representation being readily available to assist with design was another deciding factor. Kevin Treend, outside salesman for VEMCO, explained that the Daikin system was an ideal fit for the job. While the heat recovery was a bit more expensive up front, the system's payback was quickly achieved.

“The system is extremely energy efficient – it takes heat from where it's not needed and puts it where it is, and the heat recovery unit is also very quiet,” Treend said. “We could have

Since the building has only been operating a year, Morton said it's tough to quantify the system's energy savings. However, he added, “We haven't had issues with dependability and we have been able to maintain a comfortable temperature during all types of weather extremes. Since we are located in the basement, the operation is pretty quiet as well.”

Additional Information

Product Profile

Daikin Equipment

(1) REYMQ96MTJU	Heat Recovery VRV M R-410A - 96,000 Btu/h
(1) FXSQ24MVJU	Concealed Slim Duct 24K Btu/h
(2) FXMQ48MVJU	Concealed Ceiling Unit 48K Btu/h
(3) BRC1D71	7-day Programmable Controller
(3) BSVQ36PVJU	Branch Selector Boxes
(2) KHRP26A22T	3-pipe REFNET™ Branch Piping Kits

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About Daikin AC

Daikin AC offers North America intelligent heating and cooling solutions with superior energy performance and sophisticated design. These advanced systems fall under the Daikin Altherma, Quaternity™, VRV®, VRV-S® and SkyAir product names. The company located in Carrollton, Texas, is owned by the Japanese-based Daikin Industries, Ltd. For more information, call 866-4DAIKIN or visit www.daikinac.com.

