



CASE STUDY

Healthcare

Facility at a Glance

Name

Robert C. Hudson Memorial Building

Location

Gainesville, Florida

Owner

AvMed Health Plans

Building Size

60,000 ft², two stories

Issue

Inefficient and unreliable chiller originally installed in 1998

Solution

New premium efficiency chiller

Result

31% annual energy savings

AvMed's Prognosis: Dramatic Energy Savings and Improved Employee Comfort with the Daikin McQuay Pathfinder™ Air Cooled Chiller

The Robert C. Hudson building, one of two AvMed facilities on the Health Park campus in Gainesville, primarily accommodates Member Services, Claims and Medical Departments for the healthcare organization. Approximately 10,000 ft² of the two-story 60,000 ft² building operates 24/7, supporting AvMed on-call nurses. "Our utility bills were high and our employee comfort zone was poor," says Pete Lieffers, manager of facilities services for AvMed Health Plans in Gainesville.

W.W. Gay Mechanical, Inc. specified the Daikin McQuay 280-ton Pathfinder premium-efficiency chiller to reduce energy costs and improve employee comfort. "We've worked with AvMed previously on other buildings and knew this was the right solution for a replacement chiller," says Tom Easom, vice president of W.W. Gay Mechanical in Gainesville. "The significant energy savings offered by the Pathfinder and the rebate program by Gainesville Regional Utilities really sold the chiller."

The Daikin McQuay Pathfinder chiller offers advanced technologies to help healthcare providers build a better healing environment. Easom noted that the Pathfinder unit has unmatched reliability for its screw compressor technology. "We specified the variable frequency drive (VFD) for this unit to have proportional load control."

Lieffers adds that the excellent part-load capabilities of the premium-efficiency Pathfinder chiller with VFD was a criteria for AvMed's purchase: "The Pathfinder unit cycles on slowly so you don't spike your load with excess energy costs. The slow ramp up means you don't exceed peak demand usage."

"Once we saw the efficiency specifications of the Pathfinder and the projected energy savings, it was a compelling project. There was no reason not to act. In fact, time was money because of the efficiencies we had to gain given our higher utilities, repairs and maintenance with the original chiller."



Caring Environment

The energy efficient performance of the chiller can contribute multiple points toward Leadership in Energy and Environmental Design (LEED®) certification from the U.S. Green Building Council.

Kay Ayers, senior vice president of Member Services, Human Resources and Facilities at AvMed, says the Pathfinder chiller fits into the organization's goal to provide a safe and attractive working environment for employees. "Part of this commitment includes comfortable air temperature within our buildings, adequate lighting, efficient use of water internally and externally for our landscaping, as well as overall pleasant surroundings," Ayers says.

"We're working towards LEED certification and we have implemented several projects to assist us in increasing our energy efficiency and reducing consumption. The recent installation of the new Pathfinder chiller is one of the major steps that will assist us in achieving these goals. The savings generated will enable us to continue to focus on becoming a much greener organization."



AvMed employees also enjoy the quiet comfort provided by the Pathfinder chiller. "The old unit was so loud you could hear it at a nearby building when it came on. We've already been complimented on the noise reduction. You don't even know it's there," Lieffers says.

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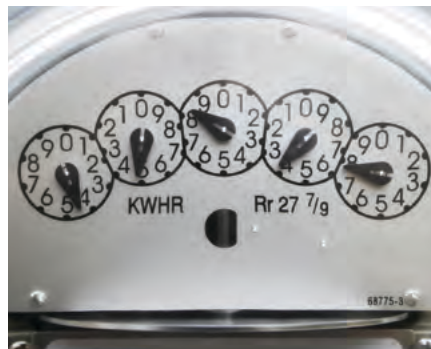
— Pete Lieffers, Manager of Facilities Services

Financial Return on Investment

Clarke Story, P.E., McQuay representative at Brooks Air Systems, Inc. in Jacksonville made initial projections of the energy usage and savings provided by the Pathfinder chiller replacement using the McQuay Chiller Economic Energy Analysis calculator. Analysis showed that selecting the premium-efficiency version of the screw chiller produced the largest payback. "The energy savings of the Pathfinder chiller as well as the rebate provided by the utility ensures the customer receives a lifetime of energy savings," Story says.

To validate the projected savings for the utility rebate, Gainesville-based Campbell Engineering of North Florida, Inc. was called in for further energy study. "This one was a home run," says Kevin Spellicy, LEED AP BD+C, mechanical engineer at Campbell Engineering. "The part-load efficiency of the McQuay equipment is excellent. In our climate, we experience full load conditions for maybe one percent of

Energy Savings



Annual Energy Use Before Chiller Replacement 1.250 kW/ton

Annual Energy Use After Replacement 1.091 kW/ton

Annual Energy Savings \$39,000

Utility Rebate Received \$24,478

the year. The rest of the time we are at some off-peak condition and the chiller is unloaded. This is even more true when, as in this case, the equipment is somewhat oversized for redundancy. The emphasis by McQuay to focus on improving the part-load efficiencies really made this a nice application.”

Campbell Engineering calculated a whopping 31 percent in annual energy savings provided by the McQuay Pathfinder chiller at the AvMed building compared to the former chiller, which equates to average energy savings of \$39,000 annually and an 11 energy efficiency ratio (EER). “Return on investment comes quickly when you factor in the rebate,” Spellicy says.

Kik Koppitch, senior account executive with Gainesville Regional Utilities (GRU) says AvMed received a rebate in the amount of \$24,478 on the purchase of the chiller through GRU’s custom business rebate program which started in 2007. “The program is available to our business customers who make energy-efficient retrofits to their buildings and we pay money based on efficiency upgrades per kilowatt hour (kWh),” Koppitch says. “Our formula is eight cents per kWh saved on an annual basis. The rebate for AvMed was based on the total kWh saved which was a significant upgrade in efficiency with the new McQuay replacement chiller.”

The Building Team



Facilities Manager Peter Lieffers,
AvMed Health Plans

Mechanical Engineer Tom Easom,
W.W. Gay Mechanical, Gainesville

Energy Analyst Kevin Spellicy,
Campbell Engineering, Gainesville

Mechanical Contractor
W.W. Gay Mechanical

Chiller Supplier
McQuay International

Equipment Representative
Brooks Air Systems, Jacksonville



Installation: A Breeze

The Pathfinder chiller was easily installed by W.W. Gay Mechanical over a weekend in January 2011 to avoid service disruption to AvMed employees. On a Saturday morning, the new chiller was lifted into place and attached to water piping and power. By Sunday morning electrical work was complete and the unit was started.

In anticipation of the chiller replacement, AvMed replaced its building automation system with KMC Controls. W.W. Gay Mechanical installed the new system which communicates using BACnet® open standard protocol. “Pete Lieffers and other AvMed facilities professionals have anywhere-anytime access to the system through their own computer network,” Easom says. Lieffers notes that the automation system and equipment integration greatly improved the ability to adequately address various zone cooling needs of the large building, resulting in greater employee comfort.

