



The Challenge

As the leading provider of internet-based business services for physician practices, Athenahealth, Inc. was interested in finding ways to reduce their energy consumption, thereby reducing their operating expenses for their offices in Belfast, Maine. They needed a solution that aligned facility capital spending with sustainable, long-term organizational objectives.

Our Findings

- A 30% reduction in annual energy costs resulting in a savings of approximately \$106,899 annually
- Predicted return on investment of 9 months
- Efficiency Maine awarded athenahealth, Inc. \$62,350 to purchase and install the VFDs
- Decreased maintenance costs
- Reduced environmental impact
- Extended service life of facility assets

The Solution

Athenahealth, Inc. requested that Cordjia Capital Projects Group (“Cordjia”) review ways to reduce their energy consumption. One of the recommendations was to install variable frequency drives (“VFDs”) on two closed loop systems that currently support the heating and cooling plant for Athenahealth’s 132,000 square feet of Class A office space in Belfast, Maine. The project included the addition of 200 solenoid valves, 100 on each heat pump to control the flow of water. The VFDs are controlled with the existing Alerton Direct Digital Control system monitoring differential pressure and increasing or decreasing the speed of the pumps to maintain set point.

Heat Pump Loop System

Prior to the installation of the VFDs, the existing two main circulation pumps supplied 2,490 gallons per minute (“gpm”) through the four buildings. The heat pump loop system supports 200 McQuay water source heat pumps and 6 Liebert 5-ton HVAC units. After the installation of the VFDs, the water flow through the buildings was reduced to 1,020 gpm.

Hot Water System

Before the VFDs were installed, the existing two circulation pumps supplied 580 gpm through the four buildings. The hot water system supports 16 preheat coils on the outside air heat pumps and 14 reheat coils on the atrium heat pumps. The installation of the VFDs reduced the water flow through the buildings to 309 gpm.

FINANCIAL HIGHLIGHTS

- Total Implementation Cost: \$142,350
- Efficiency Maine Incentive: (\$62,350)
- Cost to athenahealth, Inc. \$80,000
- Annual Energy Savings: **\$106,899**
- Return on Investment: **9 months**

Additional Project Benefits

- In addition to the electrical savings of approximately \$106,899 annually, there will be a proportionate reduction in heating oil consumption in the hot water loop
- Decreased maintenance costs
- Provides significant contribution toward Athenahealth’s energy efficiency and sustainability focus

Environmental Impact

The environmental impact of these improvements is equivalent to an annual reduction of around 389 tons of CO₂ emissions, which is equivalent to the annual CO₂ emissions of 90 compact cars.

