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Case Study – Gorsline Building

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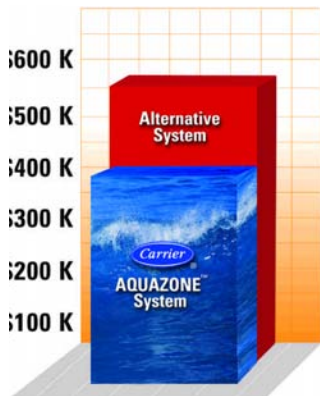


Unique Solution Preserves History and Saves \$175,000 in Installed and Operating Costs

Project Objectives

The 200-year-old Gorsline Building in Rochester, NY, originally a hydro-powered flour mill, was destined to become a high-tech office building – if its historic integrity and aesthetics could be preserved on a tight budget. A cost-effective HVAC system was needed that could meet the building’s unusual multi-zone needs and comply with stringent visual and acoustical restrictions. Construction could not compromise the architectural integrity of the historic structure, and the owner wanted to preserve the many windows that would afford tenants natural light and views of the adjacent waterfalls.

Cost Comparison



Solution

Carrier was able to offer a unique solution which met all requirements, saving a total of \$175,000 – including installed costs and a 20% reduction in utility expenses. A Carrier AQUAZONE™ water source heat pump system was chosen for its multiple-zone diversity and quiet operation. Major aesthetic and cost barriers were overcome by eliminating the need for outdoor cooling towers and condensing units. The biggest financial gain came from the mechanical contractor’s initial suggestion that an existing water chase running through the building be used to carry river water for heat rejection. Carrier controls ensured precise regulation of the entire system, adding to its economical operation.

Carrier, Kenron Industrial Air Conditioning, Inc. and Pathfinder Engineers worked together to develop a unique solution that met the unusual requirements and cut project costs.



Case Study – Gorsline Building *continued*

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"Carrier's non-proprietary controls made it easy for us to install and program the units without the need for an outside controls contractor. The process was excellent for us and for the budget. With the installed equipment and operating cost savings, and the low visual and acoustical impact, the advantages of going with Carrier just mounted. The decision was easy – and the system works extremely well."

Ron Maier,
president,
Kenron Industrial Air
Conditioning, Inc

Project Synopsis

The Gorsline Building in Rochester, NY, originally a hydro-powered flour mill, is situated adjacent to High Falls on the Genesee River – a scenic spot that draws many tourists each year, and is a popular site for outdoor public events. Ben Kendig, High Falls Development, the owner of the 200-year-old historic landmark, planned to create a unique office building, where tenants could enjoy natural lighting and beautiful views.

The budget was extremely tight, but there were several potentially costly restrictions on the project. The building's architectural integrity and the aesthetics of the surrounding property had to be preserved, and the public space shielded from noise. This meant that any outdoor components would need visual and acoustic barriers. Sound levels inside the building had to be below NC-30. The building's stone and mortar construction made coring for ductwork impossible in many areas. As for the interior, the long, narrow building was broken up into multiple zones whose heating and cooling needs could vary widely.

A Carrier AQUAZONE™ water source heat pump system controlled with the Carrier Comfort Network® (CCN) was the best choice to meet the diversity of needs. But a packaged fluid cooler would be needed for heat rejection. Not only would this exceed the project budget, but finding a location for it was problematic. An engineering and financial breakthrough was achieved when mechanical contractor Kenron's president, Ron Maier, suggested using an existing water chase to instead run river water through the building for heat rejection.

This creative solution saved a total of \$175,000 on installed equipment costs. In addition to the heat rejection solution, outdoor components were eliminated, as well as the costs to aesthetically and acoustically enhance them. And the Carrier direct digital controls (DDC), with non-proprietary protocols, were easily programmed by Kenron personnel, with no need for an outside controls contractor. Not only is the Carrier system extremely quiet, but it operates more economically than competitive products, and is estimated to save over 20% in utility costs.

"The project presented many unique challenges," said Tim Goetzman, Carrier Enterprises sales engineer. "It took several brainstorming sessions to determine the best system for the job, and one very big idea to make it all work within the budget."

Project Summary

Location: Rochester, NY

Building Age: 200 years

Project Type: Retrofit

Building Type/Size:
Stone and mortar; seven stories;
50,000 sq. ft.

Building Usage: Offices

Objectives: Provide multi-zone heating/cooling on tight budget; preserve historic building integrity/aesthetics; quiet operation

Major Decision Drivers:
Cost; aesthetic and acoustic impact; non-proprietary controls

Design Considerations:
Historic/tourist restrictions; economic water supply; multi-zone, open space plan with differing conditions

Total Cooling (tons): 104

HVAC Equipment: 13 model 50HOA horizontal water source heat pumps w/Complete Plus control boards; model CC6400 loop water controller, using CCN and ComfortWORKS®.

Unique Features: Used original water chase; historic building with challenging configuration

Project Cost Range:
\$100,000 to \$500,000

Installation Date: September, 2000

Consulting Engineer:
Pathfinder Engineers

Contractor: Kenron Industrial Air Conditioning, Inc.

For more information, contact your nearest Carrier Representative, call 1.800.CARRIER or visit our web site at www.carrier.com