Case Study: South High Community School

Replacement Rooftop Units Pay Big Dividends for South High Community School

Background
After numerous water leaks, compressor failures, and damper control problems, it was time for South High Community School in Worcester, MA to replace their 30 year old HVAC rooftop units. Not only had the units outlasted their expected mechanical life, but the ability to deliver fresh outdoor air and maintain comfortable heating and cooling conditions became increasingly difficult and expensive. To specify a state-of-the-art replacement HVAC rooftop system, the energy and environmentally conscious school district enlisted the services of a local engineering firm.

Design Challenge
Director of Facilities Jeff Lassey met with engineer Mike Lescarbeau of Lindgren & Sharples, P.C. to establish new system design requirements. Electric heat would need to be replaced with a lower cost energy source. To avoid altering the recently installed rubber roof, the new replacement units would need to utilize existing roof curbs and ductwork.

Because the replacement units would also be supplying outdoor air to meet the schools IAQ requirements, Lassey wanted to include energy recovery ventilation (ERV) technology to minimize this energy load. Lassey had utilized the technology on a neighboring high school three years earlier to successfully lower operating costs.

ERV Technology Specified
To meet the new design challenge, Lescarbeau specified a total of (19) gas/electric rooftop units with integrated state-of-the-art Airxchange energy recovery wheels to replace the all electric units.

Without energy recovery ventilation, HVAC systems waste energy contained in building exhaust air while consuming new energy to precondition code-driven fresh air requirements. By contrast, sys-

Key Statistics

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|Location: Worcester, MA
|School Size: 1500 Students
|Project Scope: Replacement
|HVAC System: Packaged Gas/Electric Rooftop Units with Integrated Energy Recovery Wheels

Impact of Energy Recovery Wheels

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|Heating Capacity Saved: 4,727,000 Btu/hr
|Cooling Capacity Saved: 115 Tons
|Net Capital Expenditure (Wheel Based DX Units): $55,000
|Annual Energy Savings: $60,000

“We wanted the most energy efficient rooftop HVAC system available to minimize operating cost, protect against future energy prices and reduce CO2 emissions.”

Jeff Lassey
Director of Facilities
Worcester Public Schools
About Airxchange

Established in 1982 Airxchange has extensive experience in the design, manufacture, sale, and support of energy recovery ventilation components to manufacturers of Heating, Ventilating and Air Conditioning (HVAC) equipment. The company played a pioneering role in the formation of industry standards and third party performance certification programs, which validate their transformative technology. Airxchange technology is now widely available through leading HVAC manufacturers.

For more information about Airxchange, please visit www.airxchange.com.