



Energy Efficiency Case Study

Brought to you by National Grid

Airxchange, Inc.

Rockland, MA

An industry leader since 1980, Airxchange is advancing Energy Recovery Ventilation (ERV) technology to bridge the gap between healthy indoor environments and energy consumption. Its patented energy recovery wheel technology reduces energy requirements for conditioning outdoor air by up to 80% and is available from most HVAC manufacturers in a variety of configurations. Airxchange technology is widely used in commercial, educational, institutional, and industrial applications.

Project Summary

In support of a growing demand for its energy recovery wheels, Airxchange completed a 62,000 sq. ft. manufacturing/warehouse expansion in Rockland, MA. Working with National Grid, numerous enhancements were built into the design to optimize energy efficiency.

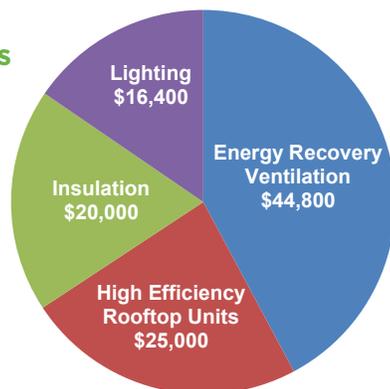
HVAC System

The system was designed to provide 30% more outdoor air than required by the building code. Airxchange wheels were specified in 8 of 10 packaged rooftop units and 2 standalone energy recovery ventilators. Transferring 72% of the outdoor air load from the mechanical system to the energy recovery wheels reduced the air-conditioning load by 38 tons and the heating load by 1.2 million BTU/hour. Downsizing the mechanical system allowed for downsizing the supply fan and electrical system (additional first cost savings). The downsizing, along with the utility gas incentive of \$44,000, made the energy recovery wheels a 1.8 year payback. Several rooftop units and energy recovery wheels are instrumented to monitor performance and energy savings.

Mass Save Sponsor Incentives

In addition to energy recovery, incentives were earned for using high efficiency rooftop units, extra insulation, and optimized lighting.

In total, electric and gas incentives amounted to \$106,200 as shown to the right.



Total: \$106,200

Need

Expand manufacturing and warehouse space to satisfy increased demand for energy recovery ventilator wheels.

Solution

Working together with National Grid to optimize energy efficiency using Energy Recovery Ventilation (ERV), high efficiency HVAC rooftop units, increased insulation, and optimal lighting.

Air-Conditioning Load Reduction

38 tons

Heating Load Reduction

1.2 million BTU/hour

Energy Recovery Ventilation Investment

1.8 year payback

Mass Save Sponsor Incentive

\$106,200

Outdoor Air Ventilation

30% above minimum required

Annual Energy Cost Savings

\$45,800

About Mass Save:

Together, we make good happen for Massachusetts: Berkshire Gas, Cape Light Compact, Eversource, Liberty Utilities, National Grid and Unitil. As one, we form Mass Save®, with the common goal of helping residents and businesses across Massachusetts save money and energy, leading our state to a clean and energy efficient future.

WE ARE MASS SAVE®:

