



HOUSE OF BLUES

CASE STUDY

Boston Music Venue Turns up the Volume on ERV Maintenance

With help from celebrity investors like Dan Aykroyd and Aerosmith, House of Blues has been an iconic franchise in live music since 1992. The popular Boston location that opened in 2009 next to Fenway Park is a prime spot for concerts and private events. A packed schedule that leaves little downtime for repair of the club's HVAC equipment means that reliability and ease of maintenance are extremely important factors when making purchasing decisions.

In 2016, energy recovery wheels in two rooftop air-handlers became blocked after six years of exposure to airborne particulates. Although efforts were made to unclog the damaged wheels, cleaning in place was not an option due to concerns that water and cleaning fluids could damage the ductwork and ceilings below.

Without working energy recovery wheels, the heating and cooling systems were forced to work overtime, at increased cost, to provide a comfortable indoor environment for the 2000-plus concert goers. The building's service contractor, Cullen Mechanical, determined that the wheels were beyond repair and needed to be replaced.

A Better Wheel Solution

Cullen's engineers knew from past experience that simply replacing the wheels without solving the cleaning problem would invite the same undesirable maintenance situation. At House of Blues, airborne particles from the large crowds, special effects vapors, and confetti would continue to clog the new wheels if the energy



transfer matrix could not be periodically maintained. When selecting replacement wheels, Cullen prioritized both ease of installation and the ability to clean or replace the energy recovery matrix once the units were in operation. As they've done in the past, Cullen chose Airxchange Aftermarket replacement energy recovery wheels as the best solution moving forward.

Airxchange offers a unique wheel design that allows a single person to remove pie-shaped energy transfer segments with basic hand tools to be cleaned outside of the cabinet. The refresh-capability of Airxchange wheels means that they can be cleaned as often as the application dictates and counted on to last for the life of the HVAC system.

Designed for the Real World

In contrast to Airxchange wheels, the only cleaning or repair solution for the original wheels at House of Blues was to replace the entire wheel structure every 5-6 years, at great time and expense to the building owner.

After an onsite visit, an engineer from Airxchange presented Cullen Mechanical with a 6-8 hour wheel replacement plan that minimized HVAC system downtime, ensuring that the two units would be operational for the start of that evening's show.

Because of constraints of the air-handler designs, which blocked the removal or installation of fully assembled wheels, Cullen selected replacement wheel kits from Airxchange. These replacement kits could be easily carried through the theater and up the stairs to be quickly assembled within the cabinet of the rooftop air-handling units.

In contrast, bringing any other manufacturer's similarly sized wheel to the same rooftop would invite the cost and complexity of having a police detail shut down the sidewalk on Boston's busy Lansdowne Street in order to operate a crane.

The replacement wheels were fully assembled and tested at the factory before being partially dismantled to fit into the unique access points of the air-handlers. Once the old wheels were removed by the service contractor, the two Airxchange wheels were assembled inside of the cabinets in less than four hours.



Planning Ahead with Extra Segments

Recognizing that entertainment venues often require more frequent cleanings than traditional HVAC comfort applications, Cullen took additional steps to reduce their client's energy costs and potential HVAC system downtime. In addition to installing a fully-serviceable wheel, they also ordered a complete set of replacement segments for each unit. With a spare segment set on hand, operators can save time and maintenance costs by completely restoring the performance of any wheel in *about 15 minutes*

Value of New Energy Recovery Wheels at House of Blues

Location: Boston, MA
 Project Date: 2016
 Project Scope: 2 Replacement Energy Recovery Wheels

Measurement	With Working ERV Wheels*	Without Working ERV Wheels*
Total Outdoor Air (CFM)	16,000	16,000
Mechanical Load - Cooling (tons)	7.61	22.73
Mechanical Load - Heating (BTU/Hour)	249,956	717,488

Once removed, dirty segments can be restored and prepared for the next cleaning cycle by soaking overnight in a cleaning solution.

After the first successful winter in operation Cullen reports that the replacement wheels have lived up to the Airxchange *Replacement Solutions* motto; "Restore, Replace, Relax."

And though there may be plenty of sad songs performed on their stage, the facility crew at House of Blues can now whistle a happy tune when it comes to maintaining their new energy recovery wheels.

Visit www.Airxchange.com/case-studies to see our complete collection of case studies.

About Airxchange

Airxchange has 35 years of extensive experience in the energy recovery industry. Our mission is to design and manufacture high quality products that perform reliably and effectively for the life of the HVAC system, reduce energy consumption, and improve indoor air quality. The addition of high-tech materials and innovative designs to a technology based on fundamental scientific principles has earned us the trust of our valued OEM customers. We will continue to innovate and support our customers to meet evolving market demands for energy recovery ventilation technology. Visit airxchange.com for more info.