



AIRXCHANGE®

partnering with industry for sustainable energy recycling technology

Case Study:

Drury Hotel Brands find an ERV Partner for Replacement and Retrofit Projects

Drury Southwest is a Missouri-based, family-owned and operated hotel system with more than 130 hotels in 21 states. Founded in 1973, the Drury brands include Drury Inn & Suites®, Drury Inn®, Drury Plaza Hotel®, Drury Suites®, Pear Tree Inn by Drury®, and other brands.

The company’s focus on exceptional customer service, spotless rooms, and best-in-class value earned the company a JD Power and Associates ranking of “Highest in Guest Satisfaction” award from 2006-2014.

High Ventilation Rates Contribute to Guest Satisfaction

Exceptional indoor air quality (IAQ) has long been a highlight of the guest experience at any Drury Hotel. Many hotels simply ventilate hallways and rely on bathroom exhaust fans to ventilate rooms by drawing fresh air through undercut doors. In contrast, Drury has delivered fresh outside air directly into each guest room for more than three decades. At the same time, return vents continually extract and exhaust stale air from each room.

The management of Drury Southwest, currently headed by company president Dennis Vollink, believes that entering a room that smells and feels fresh is a key to guest satisfaction and repeat business. “We believe that our strategy of bringing fresh air directly into our customer rooms and ventilating appropriately contributed to our winning of the JD Power and Associates Award for Guest Satisfaction, year over year,” shares Vollink. “We feel that mold and humidity control is also an important factor in maintaining our buildings,” adds Gregg Mrzlak, the Mechanical Project Manager for new constructions and renovations at Drury Southwest.

Making Fresh Air Affordable

The challenge of prioritizing IAQ and using high ventilation rates is to cost effectively treat the fresh outdoor air for temperature and humidity. For the past fifteen years, Drury Southwest has utilized rotary energy recovery wheels manufactured by Airxchange, Inc. in new hotel constructions and HVAC system renovations of older buildings. Using an energy recovery wheel to recycle up to 80 percent of the energy in room exhaust air provides “free” conditioning of the fresh outdoor air.

For hotels located in humid climates, energy recovery wheels can be configured with desiccant that momentarily

Value of Replacement Energy Recovery Wheels at Drury Southwest Cleveland Board of Education Building

Location: Cleveland, OH
Project Dates: 2015
Project Scope: HVAC System Renovation

Measurement	With ERV Wheel	Without ERV Wheel
Total Outdoor Air (CFM)	16,315	16,315
Mechanical Load - Cooling (tons)	26	55
Mechanical Load - Heating (BTU/Hour)	744,584	1,518,329
Demand Reduction (KW)	35	0
Estimated Annual Operating Savings	\$16,696*	0

*To study the impact of energy recovery wheels in any space, visit airxchange.com for a variety of simulation and design software tools.

extracts water molecules from the incoming airstream and deposits them into the exhaust airstream, greatly decreasing the moisture load for building dehumidifiers. “ERV’s make it affordable to bring in the ever increasing large amounts of



Selection of Airxchange Cassettes

outside air required by both codes (ASHRAE 62.2) and our own in house standards,” notes Mrzlak.

An Ongoing Partnership

A pair of similar projects spanning a decade show how Airxchange wheels can be of particular use in the renovation of HVAC systems within the older buildings that are frequently refurbished and converted to Drury hotels.

San Antonio - 2006

Airxchange used by the Drury design team in 2006 at the Alamo Bank Building in San Antonio, which was converted into a 370-room Drury Plaza Hotel. As part of the HVAC design, Dennis Vollink, acting as the principal mechanical engineer in addition to his role as company president, specified Airxchange cassettes. Long an advocate of using ERV technology to enable high ventilation rates, he was also faced with installation challenges and access limitations for the 100 year old building.

The HVAC system would be located in a small attic and needed to be brought into the space through normal doorways and stairwells. With flexibility in mind, Vollink selected an Airxchange’s “split-wheel,” also known as the Field Assembled Cassette, that could be assembled on-site. The energy recovery surface is a durable and innovative polymer material that has proven to last for over 30 years in comfort HVAC applications. The polymer is formed into a matrix and segmented for easy removal or installation from the rigid stainless steel frame, making Airxchange wheels both light and serviceable. “Without Airxchange’s split wheel design, we would have had a very difficult time finding a way to install the ERV system,” offers Gregg Mrzlak. “Drury uses ERVs in every project, whether it is a new build or a historic renovation. The historic renovations are usually quite challenging as we have had to design and specify units that have to be brought into the building in pieces, with the largest piece small enough to fit into an elevator and then assembled in place.”

The Drury team’s innovation at the Alamo Bank conversion did not stop with use of the split-wheel design. Drury decided to implement a unique strategy for providing heat, deciding to implement a central electric heater downstream from the Airxchange wheel. The effective pre-conditioning by the wheel minimized the required heating load enough that only supplemental heating was required. This design proved to have a lower first cost and Drury Hotels found it to be an efficient and practical solution.

Cleveland – 2015

A similar theme is evident in one of Drury’s latest renovation projects, the 2015 transformation of the historic Board of Education building into a 180-room Drury Plaza Hotel. Working in tandem with the Cleveland Landmarks Commission to preserve the ornate appearance of the East Sixth Street building, Drury is initiating a complete internal renovation, including the installation of a new HVAC system.



Plan for Cleveland Board of Education Building

Air handling units were recently purchased from an original equipment manufacturer (OEM) that met their exact specifications, with one exception: Drury specifically requested that the energy recovery wheels that are normally included with those units be replaced with Airxchange wheels, which Mrzlak describes as “cost effective and easy to maintain. We really like the easy way the pie pieces can be removed and cleaned.”

With a wide range of sizes available and decades of experience working with OEMs, an exact match for replacing the competitor’s product was easily specified.

“This is another tricky project in which the equipment is located in an existing attic with limited access,” adds Mrzlak. “All equipment must be disassembled at the jobsite, moved up into the attic through an opening no larger than 60x48, and then reassembled all under the supervision of the factory or a factory authorized service representative.”

The Drury Plaza on East Sixth Street will be completed in 2016. A similar project is also scheduled for 2016 in Pittsburgh.

To see the design impact of the Airxchange wheels being used on the Cleveland project, see the “Impact of Energy Recovery Wheels” section on the first page of this case study.

About Airxchange

Established in the early 1980’s, Airxchange has extensive experience in the design, manufacture, sale, and support of energy recovery ventilation components to manufacturers of 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.