



Upping the Ante on Fresh Air Ventilation: Casino Reduces Ventilation Costs by Over \$400,000 with Airxchange Energy Recovery Technology

CASE STUDY



Indoor air quality and affordable building ventilation are increasingly important for businesses fighting to stay open and operable during and after the COVID-19 pandemic. Casinos, with their 24/7 operating schedules and high levels of tobacco smoke and other indoor air contaminants, face a unique challenge to maintain optimum indoor air quality at an affordable cost. Airxchange energy recovery wheel technology was specifically designed to operate in demanding casino environments to deliver improved fresh air ventilation and dramatically reduced energy costs.

The well-known casino sought a fresh solution to improve ventilation and indoor air quality at its 400,000-square-foot gaming vessel. The property had an original HVAC system designed with energy recovery wheels to offset the long heating season, control humidity in the summer, and improve indoor air quality with clean outdoor air year-round. However, after 12 years of continuous operation, the system's original aluminum wheels became plugged with tar and contaminants and routine

maintenance became ineffective and inefficient. The casino's management was in dire need of a maintainable and affordable long-term solution to provide fresh, clean air for the patrons who ultimately drive the casino's bottom line.



The Airxchange Advantage

The casino partnered with Airxchange to replace the original 10 ft. diameter wheels with a practical energy recovery wheel solution to ensure easy maintenance, durability, and uninterrupted operation to match the casino's 24/7 schedule.

Airxchange's rugged polymer energy transfer media is fully segmented and removeable for cleaning as needed. No special equipment or training is required to clean the energy recovery media making it possible for on-site facility teams to maintain factory-level wheel performance, airflows, and energy savings for the life of the equipment.

An additional set of segments limits downtime to under an hour per routine cleaning schedule.



The casino's original energy recovery wheels were seized with tar and contaminant because the system could not be effectively cleaned or maintained.

Airxchange's stainless steel wheel design alleviated corrosion concerns associated with the property's unique location on a lake. The field assembled frame and wheel design was compact enough for barge transport without the need for heavy machinery. Airxchange provided on-site assistance and on-going customer service to ensure the energy recovery wheels were built and operating to factory specification while adhering to the property's operational requirements.



Airxchange's cleanable, segmented wheel design allows for easy maintenance and long-term reliability in a demanding casino environment.

Proven Results

Airxchange's reliable, service friendly wheel design answered the casino's call for an affordable fresh air solution. Tobacco smoke and odors are eliminated at the source for a more comfortable customer experience, and the rooftop HVAC units operate

Value of New Energy Recovery Wheels

Project Date:	2019-2020
Total OA CFM:	480,000
Peak Cooling Reduction:	966 Tons
Peak Heating Reduction:	19,308,384 BTU/hr
*Estimated Annual Operating Savings:	\$418,920
Simple Payback:	1-2 Years
Hrs of Operation	24/7
Estimated 20 Year Savings:	\$8,378,800

*Based on the following assumptions: 84% Heating Efficiency @ \$0.80 therm & \$0.08 kWh / 0.8 kW/Ton Cooling Efficiency @ \$0.08 perf kWh & \$8.00 per kW Demand Charge.

more efficiently to dramatically reduce energy costs. A follow-up air quality study recorded the lowest CO₂ values on record which can now be maintained thanks to the cleanable wheel design and higher airflows not achieved with the original wheels.

Impressed with the results, energy payback, and exceptional customer service provided throughout the project, the casino has implemented Airxchange's unique energy recovery wheel solution in several other properties nationwide.

About Airxchange

Airxchange has over 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.