RenewAire
Energy Recovery Ventilation

ERV Case Study
Avon Old Farms School

Boarding **School** Takes on COVID-19 and **Reopens with RenewAire ERVs**

AT A GLANCE

OVERVIEW:

- **Project:** Avon Old Farms School, an all-boys private boarding high school in Avon, CT
- **Building type:** Historic campus founded in 1927
- **RenewAire ERVs installed:**
  - 14 EV450IN units
  - 6 HE1XINH units
  - 3 EV200 units

RESULTS:

- **Enhanced IAQ**
- **Safeguarded the school against COVID-19**
- **Successful and safe school reopening with the project completed in just seven weeks**
- **Building infrastructure remained intact**
- **Simple installation and maintenance**
- **Energy savings of 53% (summer) and 68% (winter) compared to conventional equipment**

OBJECTIVES

It was the summer of 2020 and Avon Old Farms School needed a new ventilation system. The goal was to enhance indoor air quality (IAQ) and take on COVID-19 to prepare for reopening in the fall. The solution had to be effective and efficient, as well as simple to install, operate and maintain. A quick turn around was also necessary since the first day of classes was fast approaching.

The school needed a new ventilation system to enhance IAQ for students, teachers and staff. Due to the buildings' historic nature and no previous ventilation being in place, serious challenges existed.

CHALLENGES

Installing new ventilation in time for the school's reopening created many challenges:

- **Enhance IAQ in older buildings without previous ventilation:** Cleaner indoor air was a necessity to fight against COVID-19 and support occupant health. However, without any previous ventilation in place, the team had to start from scratch.
- **Ensure all buildings remain intact:** As a historic campus founded in 1927, all of the school's buildings had to remain intact. Any changes made had to be completely reversible, and hiding the equipment wasn't an option.
- **Achieve comfortable indoor temperatures year-round:** With the school's location in the northeastern U.S., keeping the indoors warm can be difficult, especially in winter.
- **Meet a tight deadline:** In the summer of 2020, the school's fall reopening was near, so the project had to move quickly.
- **Minimize energy use:** The school needed the ventilation system to be as energy-efficient and sustainable as possible.

RenewAire ERVs used in this project:

EV450IN ERV

EV200 ERV

HE1XINH ERV

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SOLUTIONS

The team got to work and implemented the following solutions:

- **Install RenewAire ERVs:** van Zelm Engineers and Air Equipment, LLC calculated appropriate ventilation rates and laid out airdistribution systems featuring RenewAire ERVs. They then contacted RST Thermal to ensure an on-time delivery of the ERVs. RenewAire's IAQ leadership and long track record of efficiency, effectiveness, reliability and sustainability were the main reasons for its selection.
- **Work within existing building infrastructure:** RenewAire ERVs maximize flexibility, and installation is straightforward. In fact, the school's facility staff set everything up and kept the building infrastructure intact with minimal changes. The team placed the intake and exhaust vents in windows (at least 10 feet apart) and ductwork on the ceiling. All work is reversible, just in case for any future updates.
- **Operate the ERVs continuously:** The facility staff turns on the ERVs two hours ahead of classes and sets them to run for 12 hours using a timer. This ensures the ERVs operate continuously until two hours after classes end for successful pre- and post-purge.
- **Utilize heating coils:** Placing heating coils downstream from the ERV fans provides supplemental heat for wintertime. The coils can run 24/7 so there's no risk of freezing, even during the coldest months.
- **Work quickly:** The whole team worked fast to make sure the school was ready for reopening.

RESULTS

Installing RenewAire ERVs achieved the below results:

- **Cleaner and healthier indoor air:** Students, teachers and staff alike are now breathing in high-quality indoor air.
- **Safeguarding the school against COVID-19:** RenewAire ERVs use balanced airflows to replace equal parts of stale indoor air with fresh and filtered outdoor air. This removes indoor air contaminants, such as viruses, bacteria, mold and VOCs, thus protecting occupant health.
- **Ready to reopen:** With the new ERV system in place, the school could safely and successfully reopen.
- **Building infrastructure intact:** The simple ERV installation didn't alter the historic buildings.
- **Completed on time:** The ease of ERV installation also meant a fast project completion—in just seven weeks.

RenewAire ERVs recover and reuse otherwise expended total energy to **condition outdoor air** coming inside. This process **removes indoor air contaminants** and **optimizes energy efficiency**.

The team placed intake/exhaust vents in windows to maintain the building infrastructure. RenewAire ERVs are simple and flexible to install, and can adapt to space restraints.

The ceiling was the installation location for the ERVs and ductwork to keep them out of the way.

- **Easy maintenance and upkeep:** Going forward, the school's facility staff will enjoy simple ERV upkeep. The only requirement is to change the filters every three months, and that's it.
- **Energy-efficient ERV operations:** RenewAire ERVs reduce energy use on average by 53% in the summer and 68% in the winter compared to conventional equipment.

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Watch video of RenewAire ERVs installation at the Avon Old Farms School by RST Thermal.

For more than 35 years, RenewAire®, Waunakee, Wis., has been an HVAC industry pioneer for improving human health, cognitive function, productivity and wellbeing by enhancing indoor air quality (IAQ) via energy recovery ventilation (ERV) technologies. This is accomplished energy-efficiently, cost-effectively and sustainably with fifth generation static plate enthalpy core energy recovery ventilators and dedicated outdoor air systems (DOAS). RenewAire was recently recognized as a Top Workplace–2019 and 2020 by the Wisconsin State Journal newspaper for providing an optimum employee environment, which is conditioned with (IAQ) by its own DOAS and ERV equipment. For more information, visit www.renewaire.com, email: ramarketing@renewaire.com or call (800) 627-4499.

View RenewAire's COVID-19 Response

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