

# School uses 40% less energy with RenewAire ERV

## AT A GLANCE

### OVERVIEW:

- ◆ Project: Birdville High School in North Richland Hills, Texas
- ◆ Building Type: K-12 School
- ◆ RenewAire ERV Units: 105
- ◆ Design Student Occupancy: 2,200
- ◆ Total Ventilation Rate: 75,000 CFM
- ◆ Total A/C Capacity: 1,000 Tons

### RESULTS:

- ◆ School is Operating at 40% Less Energy Costs
- ◆ Consistent 25–30% Reduction in Energy Costs
- ◆ Ventilation A/C Demand with RenewAire: 175 Tons
- ◆ A/C Downsizing with RenewAire: 125 Tons

## CHALLENGES

- ◆ Provide increased ventilation for improved [indoor air quality \(IAQ\)](#)
- ◆ Reduce energy and operating expenses

## OVERVIEW

In general, the [largest energy use](#) in schools comes from heating, ventilation, and air conditioning (HVAC) systems. These high energy costs can impact school budgets by reducing the funds available for other needs. Because of this, schools try to cut operational costs, which can lead to fewer educational resources, and deferred maintenance.

To improve IAQ, schools need to increase ventilation, but using conventional HVAC systems can waste energy and therefore leads to higher costs. With a RenewAire [energy recovery ventilator \(ERV\)](#), schools can reduce energy loads and choose to increase airflow in classrooms for better air quality. ERVs [work](#) by exchanging stale room air with fresh outdoor air while recovering energy from the outgoing exhaust airstream. With the use of a RenewAire ERV, like the [HE-10](#), schools can lower their [energy costs by up to 65%](#).

Birdville School faced several challenges when they upgraded their HVAC. One of the challenges was the sheer size of the facility. At over 300,000 square feet, the school had classrooms, science labs, an auditorium, a gym, and an atrium, and each space required different amounts of ventilation. Sourcing a quite system that wouldn't disturb students and staff was another concern for the school. Finally, they needed their HVAC systems to be a cost and energy-saving solution. This is why the [Birdville School District](#) partnered with Don Penn Consulting Engineers (Penn) to renovate their HVAC system.

## THE SOLUTION

When it came to installing a ventilation system, Penn paired their [Trane](#) system alongside of [Renewaire ERVs](#) because ERVs recover energy that would otherwise be lost in conventional ventilation processes. After installing the ERVs, Birdville School found that their energy costs were 40% less when compared to similar campuses.

## RESULTS

With RenewAire's energy recovery technology, the Birdville School experienced the following benefits:

- ◆ Lower energy costs and reduced noise
- ◆ By doubling the ventilation rate, the school improved indoor air quality for students and staff.
- ◆ Awarded Outstanding Use of Technology Systems by the [National School Boards Association](#).

## THE RENEWAIRE DIFFERENCE

According to the team at Don Penn Consulting Engineers, when they use RenewAire ERVs on their commercial projects, they "consistently see a 25–30% reduction in energy costs." In addition to being "friendly to the environment, the system pays off every time you use it."

## RenewAire ERVs Used in Schools and Libraries



EV Premium X ERV



HE10 ERV



DOAS Series