

# School Application Brochure

Designing ventilation systems  
in schools



#HealthyLiving



# School Applications: Challenges and Solutions for Schools

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**Healthy indoor air quality:** Students spend a minimum of seven hours each weekday at school, with many spending up to twelve hours on days when extracurricular activities are involved. Teachers and other staff spend even more. Studies show that indoor air in a typical classroom is up to eight times more polluted than outdoor air. If schools are not adequately ventilated, students suffer from fatigue which impacts learning.

**Quiet operation:** With an average teacher/student ratio of 1 to 30 keeping students' attention is more difficult than ever. A noisy ventilation system that muffles communication or introduces distracting sounds can be a barrier to student learning. American Aldes products are built for quiet operation with features such as vibration-isolating springs to keep moving parts quiet. Teachers and students benefit from an effective ventilation system that quietly delivers fresh, healthy air.

**Minimize the effects of odor and humidity-causing activities:** Activities vary widely throughout the space, creating different levels of humidity and odors. Some students are hard at play in the gym while others study quietly in the library, and still others are practicing music or conducting scientific experiments. On university campuses, some classrooms may be unoccupied for several hours at a time, then suddenly filled with hundreds of students. Different spaces require different ventilation rates, and those rates can vary from hour to hour and day to day. Demand-controlled ventilation, the ability to boost ventilation when it's needed and minimize or turn it off when not needed, can have a major impact on occupant comfort and energy efficiency.

**Durable, low maintenance systems:** Double-wall, heavy-gauge steel cabinets come standard in all American Aldes HRVs and ERVs, so every unit is built to withstand the rigors of heavy use. Long warranties on recovery cores/wheels and components provide years of worry-free use. School districts appreciate the low maintenance costs, reliability, and long life expectancy from each unit.

**Recovering energy costs:** One of the biggest facilities-related expenses schools face is the cost to heat and cool the building. In warm climates, air conditioning may run most of the year, keeping occupants cool while preventing mildew and mold. In northern parts of the country, cold weather means heating systems are necessary to keep occupants comfortable and keep pipes from freezing. Heating and cooling are not optional, but the cost to run these systems while maintaining fresh indoor air can be minimized with heat or energy recovery ventilators.

## Code Compliance and Best Practices for Schools

American Aldes works with a variety of schools and districts, each with their own regulations in addition to those at the national, state, and local levels. At Aldes, we understand the difficulty of complying with many levels of regulations and we work with engineers to ensure all requirements are met. Our systems are designed to be flexible and scale-able, so we address concerns about energy, maintenance, health, first and ongoing costs, reliability and more at competitive prices.

Models can be installed indoors or outdoors; include multiple frost-control options; can be tailor-made to specifications and are designed to integrate with building equipment for total HVAC synergy.

Rest assured, American Aldes products meet ASHRAE 62 standards and are UL, ETL and AHRI certified where applicable. We take safety, performance and certification requirements seriously and stay at the forefront of standards as they evolve to address changing technology and best practices.



# Aldes Heat and Energy Recovery Ventilators are Ideal for Schools

## Heat and Energy Recovery Ventilators

Bringing in fresh air and then heating or cooling that air to make it comfortable for occupants can be costly. Aldes' line of HRV/ERVs reduce the cost to heat ventilated air in the winter by transferring heat from the warm inside air being exhausted to the fresh (but cold) supply air, and by controlling the relative humidity. In the summer, the inside air cools the warmer supply air to reduce ventilation cooling costs and lower the moisture content of the incoming air. Aldes wide range of HRV/ERV solutions makes it easy to align the scope of your project with the perfect unit.



## Advanced Commercial Units for Centralized Systems

To ventilate an entire building or a large zone within a building, choose Aldes commercial HRV/ERV units. Each unit is built from the inside out with standard double-wall heavy-gauge steel cabinets and engineered to endure the rigors of day-to-day use for years without fail. They are designed to integrate with building equipment for total HVAC synergy. Models can be installed indoors or outdoors and everything is wired for simple, safe electrical connections. Long warranties on recovery cores and components provide years of worry-free use.

## Commercial Unit Options\*

### Cores:

- Aluminum
- Polypropylene
- Enthalpic
- Desiccant

### Defrost:

- Fan Exhaust Defrost
- Recirculation Defrost

### Heating Coils:

- Electric Post-Heating Coils
- Hot Water Post-Heating Coils

### Cooling Coils:

- Cold Water Cooling Coils
- DX Cooling Coils

\*See spec sheets for additional options and details

## Light Commercial Units for De-Centralized Systems

To ventilate individual classrooms separately, choose an Aldes light commercial HRV or ERV. Compact and durable, these units add zoning capabilities. When each classroom or zone has its own unit, the building becomes available to more versatile uses since some units can be completely shut down when not in use, while others are running at maximum airflow. The 650 and 1100 series are just 24" high and, in many applications, can easily fit in the ceiling above each classroom. Additionally, if maintenance or repair is ever required, ventilation is only impacted in one room rather than the entire building.



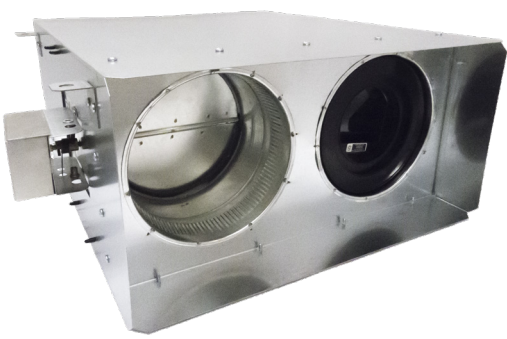
# Aldes Airflow Controls Provide Ease and Flexibility Without Expensive Equipment

## Zone Register Terminals (ZRT-PDIL)

American Aldes patent-pending Parallel Damper In-line Zone Register Terminals (ZRT-PDIL) are designed to introduce flexibility and dynamic control to central supply or exhaust ventilation systems. Used in both large and small systems, the ZRT-PDIL regulates ventilation without the need for individual fans or traditional variable air volume terminal units.

Each ZRT-PDIL is a two-position pressure-independent terminal with a control damper to regulate high limit on-demand airflow control and integral passive regulators for automatic air balancing of the minimum and maximum setpoints. This unique combination provides flexible control schemes without the need for expensive pneumatic, electronic, or direct digital control systems.

The ZRT-PDIL is primarily used for combination low-flow indoor air quality ventilation or make-up air—such as in unoccupied classrooms—and on-demand high-flow spot ventilation—such as occupied classrooms or even bathroom exhaust fans—using the same central exhaust or supply fan system.



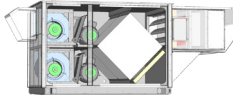
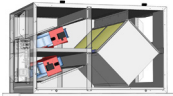
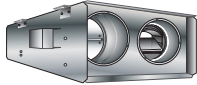

## MR MAX

The model MR MAX Constant Airflow Regulator is a modulating orifice that automatically regulates airflows in duct systems to constant levels regardless of the variations affecting the ductwork, and without the use of electric or pneumatic sensors or controls.

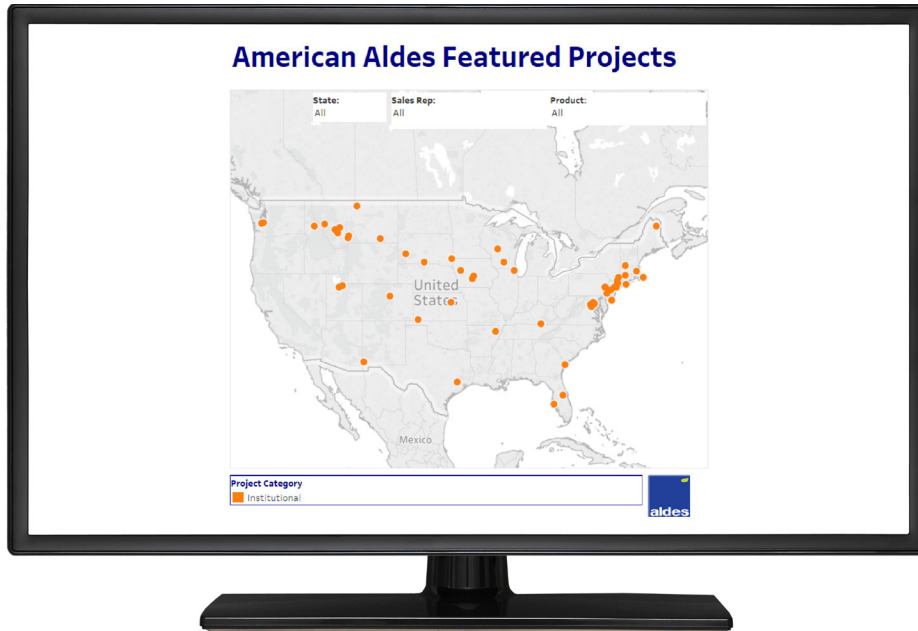
The MR MAX can easily be inserted between two sections of round ductwork to maintain a reliably constant airflow over a wide range of differential pressure. The MR MAX is an ideal solution for meeting rooms, classrooms, and concert halls. The MR MAX will regulate airflow in supply, return, or exhaust duct systems in both low- and high-pressure installations.

MR MAX is available in a variety of sizes with airflow range from 40 to 2355 CFM to meet a wide range of airflow requirements.

## Ventilation Products for Schools: Quick-Reference Chart

PRODUCT		KEY BENEFITS AND USES
	Commercial Heat or Energy Recovery Ventilator	Use in centralized systems; provides fresh air and recovers energy that would have otherwise been exhausted
	Light Commercial Heat or Energy Recovery Ventilator	Use in de-centralized systems; provides fresh air, recovers energy that would have otherwise been exhausted, allows each classroom or zone to be managed specifically for its own use
	Zone Register Terminals — ZRT-PDIL	Use in centralized systems; allows on-demand high-flow spot ventilation and low-flow ventilation without the need for expensive control systems
	MR MAX	Use in centralized systems; automatically regulates airflow regardless of other actions occurring in the system, airflow can be reliably maintained over a wide range of pressure, no need for expensive sensors or controls

# Recent Educational Facility Projects



Search our projects map at [www.aldes.us](http://www.aldes.us) to find school districts, universities and colleges across the country that have recently installed American Aldes products.

American Aldes products are in use in hundreds of school districts, universities and colleges across the country. Our products are saving districts money on energy and maintenance costs while providing healthy indoor air for students, but don't just take our word for it. Our growing list of satisfied customers is a testament not only to the products themselves but also to our dedication, high quality customer service and follow through.

Take a look the list below or visit our website to see a sampling of the schools that have installed Aldes products recently. On page 7, read more about a Texas school district that recently selected 173 light commercial energy recovery ventilators for four new buildings.

- CREC Magnet Schools - Connecticut
- Waunakee Community School District - Wisconsin
- District of Columbia Public Schools - Washington, DC
- Orange County Public Schools - Florida
- Community Consolidated School District #46 - Illinois
- Van Meter Community School District - Iowa
- McCreary County School District - Kentucky
- Lame Deer School District - Montana
- Bozeman School District - Montana
- Monforton School District - Montana
- Valley Christian School - Montana
- Ocean City School District – New Jersey
- Lordsburg Municipal School District – New Mexico
- Ossining Union Free School District – New York
- Bronxville Union Free School District – New York
- St. Mary's School – New York
- Pawling Central School District – New York
- Lehigh Valley Charter High School for the Arts- Pennsylvania
- Granite School District - Utah
- Prince William County Public Schools - Virginia
- Tumwater School District - Washington
- Pittsville School District - Wisconsin
- Lake and Peninsula School District - Alaska
- North Slope Borough School District - Alaska
- Ringling College of Art & Design - Florida
- Western Dakota Tech – South Dakota
- Princeton University – New Jersey
- Drexel University - Pennsylvania
- Prairie View A&M University - Texas
- Marlboro College - Vermont
- Frisco Intermediate School District – Texas
- Hampton Bays Public Schools – New York



# American Aldes: Experience You Can Trust

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American Aldes takes a proactive approach to providing ventilation for schools of all sizes. By working with American Aldes, building designers can specify ventilation systems that meet codes and standards, provides school districts with high quality products that align with their budgets, and ensures students breathe healthy indoor air.

Since 1983 American Aldes has been providing ventilation solutions for residential and commercial buildings, including a variety of educational settings from elementary schools through university campuses. We do more than provide systems for construction; we work with engineers on renovation projects, with the capability of providing custom retrofit solutions tailored to each project's unique situation. We're a member of the US Green Building Council, the Home Ventilating Institute and are an ENERGY STAR® partner.

American Aldes understands the challenges engineers and contractors face in providing ventilation that meets code requirements. Our experts are on hand to answer your questions and help you select the right products for your projects..

We're committed to providing you with the tools and information you need. From brochures and spec sheets to installation manuals and warranties, we stand behind our products from specification to installation and beyond.



# Project Reference

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## Prestigious Texas School District Selects American Aldes to Provide 173 Commercial ERVs

American Aldes secured sales of 173 Energy Recovery Ventilators serving four schools in the Frisco Intermediate School District. Frisco, Texas is located just north of Dallas, and is one of the nation's fastest growing cities in the United States, coming in fourth with a population growth of 6.3% between 2014 and 2015 according to the U.S. Census Bureau.



The Frisco Intermediate School District is also undergoing tremendous growth with thousands of new students coming into the school district every year. Business expansion and corporate relocations to the area, resulting in new jobs in several sectors and a boom in residential housing have contributed to population growth and the need for more schools.

To accommodate the growing student population, the district is adding several new schools across four campuses. The E650 and E1100 series light commercial energy recovery ventilators are being installed in the new Memorial High School (85 ERVs); Lawler Middle School (36 ERVs); Tally Elementary School (26 ERVs); and Liscano Elementary School (26 ERVs).

Part of the challenge was customizing the standard light commercial ERVs to meet the unique design criteria found in each school. American Aldes' in-house team of engineers ensured all the requirements were met to exact specifications.





**[www.aldes.us](http://www.aldes.us)**

To find out more about other related products visit  
**[www.aldes.us](http://www.aldes.us)**

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