

# Installing Proven Solutions to Provide Clean Air in K-12 Classrooms

Modine Manufacturing Company



Having a comfortable classroom setting is one of the many keys to K-12 student success. One important aspect for creating that space is mechanical HVAC solutions. These solutions provide clean, properly conditioned air for students to breathe. In fact, the need for clean air is so important that President Joe Biden launched an effort to improve school air quality in 2022. According to a 2020 [report](#) from the Government Accountability Office, 53% of schools need to upgrade or replace multiple building systems, including HVACs. When it's time to replace those units, what should facility managers consider?

## Why improved indoor air quality is so important for K-12 schools

- **Improved Learning Environment** – According to reports from the [American Lung Association](#), improving IAQ can help improve student performance including addition skills, number comparison, and reading and comprehension.
- **Reduced absenteeism due to airborne pathogens and chronic lung diseases** – Poor air quality can contribute to ongoing sicknesses and absenteeism for students in K-12 facilities. The [American Lung Association](#) states that asthma is one of the leading causes of school absenteeism causing roughly 13.8 million lost school days in students ages 5-17. In addition to chronic illnesses, airborne illnesses can also be easily spread if there isn't a solution in place to prevent it. According to [ABC News](#), school districts in Kentucky and Texas were forced to cancel classes early in the 2023-24 school year because of widespread illness that included COVID-19.
- **Minimize early school closures due to extreme temperatures** – Just as important as clean air is the ability to control the temperature inside a facility. As stated in [Time Magazine](#), in September 2023, schools in states including Michigan, Maryland, Pennsylvania, New Jersey and Virginia cited inadequate air conditioning for cutting days short during the week of Sept. 6. Temperatures were in the 90s.



## Choosing the Right HVAC Solution

For schools, selecting the right unit is paramount. There are several things to consider when choosing an HVAC unit for a K-12 facility.

- **Solutions provided within the unit** – Not all HVAC units are built the same. Three of the most important solutions K-12 schools need are ventilation, filtration, and dehumidification. Each one of these aspects plays a vital role in developing superior IAQ.
- **Noise level demonstrated by the machine** – Students need to be able to hear teachers talk while also needing minimal noise while trying to study. How much noise a unit makes can be a difference-maker inside a classroom.
- **Prevents spread of airborne pathogens** – HVAC units need to provide adequate filtration solutions to prevent the spread of airborne illnesses or allergens to minimize sickness within a school.

# Installing Proven Solutions to Provide Clean Air in K-12 Classrooms

## Airedale's Single-Packaged Vertical Unit Ventilators

When it comes to Airedale's single-packaged vertical unit ventilator (SPVU), the unit is designed to blend in with the architectural integrity of a school. Whether the installation is new or a retrofit, single-packaged vertical unit ventilators are designed for greater efficiency, less noise, and ease of installation and service.



Unit ventilators offer several system advantages including:

- Elimination of cross-contamination due to no return air being circulated from room to room.
- Ease of retrofit.
- Easy to service in comparison to other systems.
- Redundancy in the system compared to central equipment that can take an entire building down.
- Individual zone control for each classroom
- Relatively low installation cost
- All components are internal to the building, which helps avoid weather issues and vandalism.

The single-packaged vertical units also have multiple advantages over their horizontal counterparts. Those advantages include:

- Quieter than traditional horizontal units – even when a compressor is installed.
- Energy recovery wheel is available for extra savings.
- Dehumidification control – hot gas reheat is used on packaged units.
- SPVUs don't overcool spaces as can happen with centralized systems.
- Mitigate mold and mildew growth.
- Full economizer is available with energy recovery.
- Better air distribution.
- Takes up less space in the room than horizontal units.



## Long-term benefits

When installing an SPVU, you are providing a solution that can create an optimal learning environment for students. These units possess filtration, ventilation, and dehumidification capabilities that create clean, comfortable air to breathe. Since these units are installed in a single classroom, it prevents the spread of contaminants throughout an entire facility. In addition, due to individual zone controls, facility managers are able to create the perfect atmosphere for each individual classroom based on their needs. In addition to providing clean air, these units are also quieter than many of their counterparts, making it easier for students to concentrate on schoolwork, creating long-term benefits that can last a lifetime.

### References

1. [Biden administration launches effort to improve school air quality | K-12 Dive \(k12dive.com\)](#)
2. [Indoor Air Quality in Schools Guide | American Lung Association \(lung.org\)](#)
3. [School districts in Kentucky, Texas cancel classes amid 'surge' of illnesses including COVID | ABC News \(abcnews.go.com\)](#)
4. [Extreme Heat Forces Schools Across Northeastern U.S. to Close Early | Time Magazine \(time.com\)](#)