Building Performance Equipment, Inc.®

Sustainable, Reliable, and Energy Efficient Ventilation Systems

ENERGY STAR PARTNER

Clean Energy HVAC Can Save School Districts Heaps of Money and Frustration.

Attention School Leaders!

Ensuring healthy school facilities goes a long way toward easing the physical and mental beating our nation's students and teachers have taken over the last couple of years. One of the best ways to achieve normalcy—and even more productive school communities—is to evaluate, then modify, the HVAC systems in your facilities.

Did you know …

- 36,000 schools nationwide need HVAC upgrades (1). **How many geriatric systems operate in your district?**
- At least five of the Harvard T.H. Chan School of Public Health's *Nine Foundations of a Healthy Building* relate to HVAC systems. **How do the ventilation, air quality, moisture, thermal comfort, and dust/allergen levels rate in your school buildings?**
- Poor ventilation in schools is associated with student fatigue, lower attention span, and loss of concentration. In fact, a study of 75,000 high school students in New York City found that students were 12.3% more likely to fail an exam on a 90°F day versus a 75°F day (2). **Could your district's academic scores improve with better, cleaner HVAC technology?**

Consider this: The aforementioned statistics were issues *before* COVID-19 struck. Now, you have to tame an airborne virus as well.

KEY TAKEAWAY: There will never be a better time, other than yesterday, to upgrade your school buildings with cleaner, more efficient HVAC systems. Meeting ASHRAE Standard 62.1 and maximizing air filtration can *keep* school communities open, healthy, and productive during future health emergencies.

From schools, to airlines, to office environments, we can ask folks to mask up, wash their hands, and make wise decisions to lower contagion, but regardless of compliance there is still one heck of an elephant in the room. Our CEO, Klas Haglid, P.E., R.A., CEM, NCEES, puts it like this: "Although building codes and laws have mandated higher ventilation rates in buildings since 2004, well over 80% of the buildings in North America have little or no ventilation air."

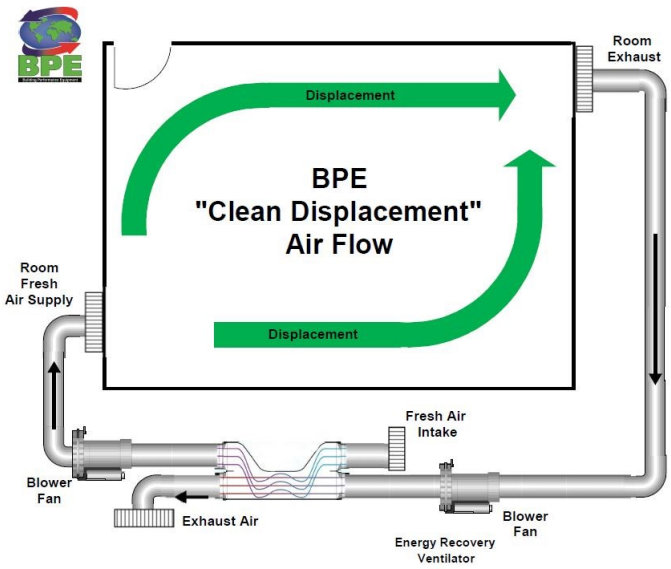
If you work in a school building that doesn't meet code, you likely know it.

What's the solution? ASHRAE's ideal recommendation for coping with infectious aerosols says, "Dilution and extraction ventilation, pressurization, airflow distribution and optimization, mechanical filtration, ultraviolet germicidal irradiation (UVGI), and humidity control are effective strategies for reducing the risk of dissemination of infectious aerosols in buildings and transportation environments."(3)

But it all begins with improved indoor air quality. Lower risk of contracting COVID-19 can be achieved through highly efficient mechanical ventilation that introduces outdoor air and exhausts stale, contaminated indoor air—a reasonable, yet often overlooked concept. Simply put, entering a well-ventilated space, you are far less likely to experience heavy viral loads than you are in a space that recirculates contaminated air.

KEY TAKEAWAY: Haglid Engineering & Associates, Inc.® and Building Performance Equipment, Inc.® have the expertise and technology to retrofit school buildings with ventilation systems that offer thermal comfort and refreshing air, while keeping COVID-19 viral loads to a minimum. After all, the dose makes the poison.

In our experience, *displacement* works better than dilution at ridding a room of contaminants. The key is placing super high-efficiency Energy Recovery Ventilators (ERVs) such as BPE's 'Long Ass ERVs' at the heart of your HVAC system. These air-to-air, fixed-plate, direct counter-flow units, capable of tending to a single room on up to your entire building, can create an effect that is much like pushing a row of books off the end of a shelf. The units remove stale, contaminated air in a clean sweep to make room for the outdoor air on its way in.



Haglid Engineering has conducted energy audits and brainstormed conservation plans for hundreds of commercial building owners. Using various methods of achieving energy reduction

and recovery, including the incorporation of BPE's patented, 'Long Ass' energy recovery ventilators, Haglid Engineering won an EBie Award from New York's Urban Green Council for retrofitting a gas-guzzling 680,000-sq.ft. industrial complex to net zero.

Haglid Engineering along with BPE's product line are at the heart of Dedicated Outdoor Air System (DOAS) solutions for the toughest indoor spaces such as garages, salons, hot yoga studios, dental offices, indoor pools, and even elevators. Such environments are often underserved by conventional—and sometimes geriatric HVAC—a common school building issue.

KEY TAKEAWAY: You can create healthy, comfortable indoor spaces in the toughest environments by relying on thorough energy audits and by retrofitting your HVAC with the most efficient energy recovery technology in the business.

Haglid Engineering is dedicated to using sustainable engineering that aids the planet, enhancing human health, and slashing energy budgets along the way. And we're rather proud of how our innovative ventilation systems remove the equivalent of 798,000 car years' worth of emissions off the road every year. So, helping districts 'green-up' their schools aligns naturally with our mission: Solving Tomorrow's Problems Today!

You'll find our ventilation expertise in the over 1,000 classrooms we transformed into healthy, comfortable learning environments. Depending on a facility's needs, we run energy audits and modeling before pinpointing solutions such as solar energy systems, building envelope adjustments, high-efficiency HVAC, configuring lighting systems, and introducing Building Management Systems (BMS). In fact, Freehold Township, NJ brought us on as Team Energy Consultant in retrofitting many of its high school buildings. Among the upgrades, many classrooms received their own DOAS system.

We excel in retrofitting buildings to meet ENERGY STAR® and LEED standards such as was done through an energy audit of **Whitehouse School of Readington Township, NJ**. In the end, the district saved approximately $421,000 in energy costs over 54 months.

Hunterdon Regional High School, NJ runs BPE-XE-MIR-2000 ERVs for marked improvement in Indoor Air Quality (IAQ), enhanced productivity, and overall quality of life in 34 classrooms. Overall energy consumption decreased by 26.7 percent.

Retrofits at **Hopewell Valley Regional District, NJ** resulted in a 30 to 40 percent reduction in heating and cooling loads with a two-year ROI on the new demand-side ventilation. Electricity consumption came down 25 percent.

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This is your opportunity to get things right for your district's future!

And consider this: The money your school district saves on energy can float new programs and staff salaries.

Give us a call to discover what we can do for your district! **201.722-1233**

Resources:

Building Performance Equipment, Inc. School Ventilation Guidebook

Take advantage of the American Rescue Plan / Elementary and Secondary School Emergency Relief Fun (ESSER). The U.S. Department of Education encourages using a portion for improving ventilation and IAQ in schools.

NJ Clean Energy School and Small Business Energy Efficiency Stimulus Program

The EPA's School IAQ Assessment Mobile App

ASHRAE Epidemic Task Force Schools & Universities

Tips to Improve Ventilation in Child Care Centers

Footnotes

1. United States Government Accountability Office (GAO)
2. Harvard T.H. Chan School of Public Health
3. ASHRAE Position Document on Infectious Aerosols