Ventilation FAQ'S

I hear the virus is airborne. What is the district doing about filtration?

Auburn Enlarged City School District (AECSD) has determined that the current system meets or exceeds NYS Code and SED guidelines as confirmed by our architects. Additionally, we have made several recommendations that we are implementing, including:

- Upgraded air filters installed throughout the district
- Updating the HVAC operating software (Alerton Controls) for better management and monitoring of the system
- Modifying exhaust airflow from Health Offices to redirect outside
- Increase outside air to the maximum extent possible for each system (30-40%), an increase from 20%

How do I know the district's ventilation (HVAC) systems are compliant with standards?

Unlike other public buildings, school buildings and related mechanical infrastructure are under the oversight of the NYS Education Department Office of Facilities Planning (OFP). For decades, OFP has held high standards of air quality far above airports, malls, churches, etc. Of particular focus to OFP has been "make-up air," which is the mixing of a ratio of fresh air to the tempered (heated/cooled) air coming into the classroom. OFP requires an extraordinarily high make-up air for schools. The OFP approves plans and specifications of HVAC system design prior to construction and it is usual for them to make significant costly changes or add scope to a project. OFP also reviews "as built drawing" and certification that the system is working as designed or better, far exceeding any other entity.

What is Fresh or Make-up Air and what does it mean in our buildings?

Make-up air is introduced through HVAC systems to provide Code and OFP required ventilation. The quantity of make-up air is determined based on the size of the room served by the specific system and the maximum number of occupants within the space. In general, most HVAC systems are designed to introduce 10-15% of make-up air in relation to their total airflow capacity. The outside air change rate for a typical classroom is approximately 3-4 times per hour.

How many air exchanges per hour does the ventilation system provide?

"Air exchanges per hour" is not a term used in K-12 building design. The ventilation rate and overall airflow rate are determined as a function of the occupancy and square footage. The term "air exchanges" is used predominantly in healthcare, and it is based on how the requirements are presented in healthcare codes and standards. The Code does not dictate air change rates for educational systems. We can calculate these values, but the Code-required calculations are based on room square footage and occupancy. In a typical classroom application, the outside air change rate is 3-4 times per hour.

Can the District just upgrade its filters?

Per the OFP, we already have OFP approved and Code compliant filters with many areas at the maximum. As previously mentioned, OFP approves our system design and the filter is just one variable in the air quality formula. The OFP has determined the current systems and operations meet or exceed required Code. The NYSED Re-open Guidance Document cautions districts on upgrading filters or modifying system design or operating specifications because they are not approved by OFP, the filters will likely reduce air flow, stress the HVAC systems to the point of being inoperative, thus causing a far more concerning air quality result. Our systems use a MERV 8 to MERV 9A filters based on evaluations by engineers. To increase beyond a MERV 9A filter will negatively impact performance of the equipment and cause damage. Changing filters to MERV 13 or higher will result in increased static pressure and a decrease in overall performance.

Why can't the District implement HEPA Filters District Wide?

Our schools' HVAC equipment does not have the space or static pressure drops/airflow that HEPA filters require. We have looked into this and if we were to try to install HEPA filters our unit fans/blowers wouldn't be able to handle the static pressure. There are special holding frames and tracks for HEPA filters so that air leakage is kept to a minimum and if we tried to put a HEPA filter into a normal filter frame the leakage would outweigh the benefits of the HEPA filter. All of our classrooms or large spaces have either a MERV 8 or MERV 9A installed and are changed out as per the recommendation of ASHRAE.

How does the District know if the systems are working properly?

Through the capital project and EPC (Energy Performance Contract) Project being performed this summer, the District installed and upgraded the Direct Digital Controls (DDC) of our HVAC systems that allow us to continually monitor and adjust the systems. Every building throughout the district can be adjusted and monitored with warnings and alarm capability to the Facilities Department Office.

If the air quality is "compliant" why is my room uncomfortable or I feel little/a lot of air coming out of my vents?

Temperature is not the same as air quality and a balance of filtration and make-up air. Too much of one will lessen the other. Ventilation compliance is not indicative of proper temperature control or the amount of air delivered to a space. Correct air quantity does not mean the vent needs to be blasting air, or a lack of flow does not mean insufficient air is getting to your room. The amount of supply air into a room, depending on the system type, varies based on maintaining the room setpoint temperature. If a room is uncomfortable, or not maintaining the setpoint temperature, heating and/or cooling adjustments may be required. These changes are independent of the ventilation air quantity.

I work in an interior space with no windows, is that a compliant location?

Yes. The OFP is extremely particular of such spaces, especially if the utilization includes students. The same standards apply and the HVAC system is designed, and we have confirmed, meets or exceeds design specifications.

Are individual fans allowed?

CDC and NYSED state "make sure fans do not blow from one person onto another as this will potentially transfer the virus". We are not allowing staff individual fans except to exhaust the air from a window (blowing out).

If a hallway does not have a mechanical ventilation system in the corridor, how does the air get recirculated?

The overall ventilation quantity within a building is based on the number of occupants at full occupancy. The central air handling systems provide the required ventilation air during all occupied hours of the day. This is referred to as "mechanical ventilation". The ventilation air is not directly introduced or recirculated within the

corridors, but the corridors are open (and interconnected) to exterior doors, which provide natural ventilation. With classroom doors open, either during class sessions or between academic periods, the ventilation air in the classrooms will migrate to the corridors. At the time of design and construction of the Elementary schools, the HVAC systems met the applicable Codes and Standards, and the designs were approved by the NYS Education Department.

Can I bring a portable HEPA filter air purifier in to use in my classroom or workspace?

In theory, the High Efficiency Particulate Air (HEPA) filters are known for removing dust, pollen and bacteria from the air. Equipment with the proper filter to capture the COVID-19 virus can be effective. Evidence-based claims of effectiveness and unit sizing for the square footage of the space is critical. What makes this question hard to answer is we don't know how effective the HEPA air purifier will be, and most importantly, how do we assure that air will not be blown from one person onto another? CDC and NYSED state "make sure fans do not blow from one person onto another as this will potentially transfer the virus". We are not allowing staff to use their own air purifiers.