



HVAC Frequently Asked Questions – August 2020

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

A 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 work as designed. The District’s ventilations systems meet and exceed the OFP’s high standards.

Q Why are the data and info confusing?

A HVAC systems are complex and need to be in balance. Turning something up is not necessarily going to achieve the desired result in one space or throughout the system. It may disrupt a balance in the entire system making something worse further down the line. HVAC has its own pressure system constantly seeking balance. For example, a room with a MERV C filter may have less air quality than MERV A because airflow and other factors come into play.

Q What is Fresh or Makeup Air and what does it mean in our buildings?

A Makeup air is the Fresh Air being pulled in from the outside to be mixed with the heated air as it is forced into an interior space with exit return vents to circulate the airflow through the space. Our buildings are at least 20% makeup air and since the 2015 capital project that was heavy in HVAC work in all 9 buildings, general makeup air in student occupied spaces exceeds code for such spaces at 30-40% and a turnover rate of 3-4 times per hour.

Q Why are other public buildings NOT subject to these high standards?

A It is very inefficient system, with high-powered fans, heat pumps, etc. Think of a winter day where it is 20 degrees and 25 mph wind outside and how hard your home furnace works to keep your home at 68 degrees. What do you think would happen to your furnace if you asked it to keep your home at 68 degrees and 40% of the air you were feeding it was 20 degrees to be heated to 80 degrees or more so you could get sufficient heat through the ductwork and into your rooms. That is precisely what the schools systems are being asked to do. It is extremely energy

inefficient, systems are costly because they are oversized, work harder and so useful life is shorter. Because private sector and municipal public buildings are not held to the higher air quality standards, they do not invest the capital to attain them.

Q Can the District just upgrade its filters?

A Per the OFP, we already have OFP approved and code compliant filters with many areas at the maximum. Remember 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 operation meet or exceed required code. The NYSED Re-open Guidance Document cautions districts against 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.

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

A Through the capital projects over the last twenty years, the District has been installing and upgrading the Direct Digital Controls (DDC) of our HVAC systems that allows us to monitor and adjust the systems remotely. We are currently in the process of updating software and some control hardware so even more can be adjusted and monitored with warnings and alarm capability to Buildings and Grounds smart phones.

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

A Temperature is not the same as air quality and a balance of filtration and makeup air. Too much of one will lessen the other. Correct air quality 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. If the ventilation has an appreciable force of air entering the room it is likely more temperature driven than air quality. The system is working, perhaps even struggling to maintain a programmed temperature. Remember the 20-degree day example.

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

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