

# **OLMSTED ENVIRONMENTAL SERVICES, INC.**

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Subject: **Ventilation System Screening**  
**School 45, 1445 Clifford Ave, Rochester, NY**

On Tuesday December 22, 2020, Ed Olmsted and Jennifer Long as well as Margaret Sergent, representing the Rochester NY Teachers Association inspected representative classrooms, and the ventilation systems at School 45 in Rochester, NY. The survey team included representatives of the Rochester City School District (RCSD) including Stacie Darby, Environmental Health and Safety, Matthew Seeger, Schools Facilities Management, and Tom Keysa of Schools Facilities Management. The ventilation survey was done as part of the exposure control program for pandemic SARS-CoV-2. The Rochester City Schools District instituted many exposure control measures for the coming year including mandatory wearing of masks, distancing of occupants (reduced occupancy), enhanced cleaning, operating the ventilation systems with a maximum fraction of outside air, and installation of ASHRAE MERV 13 filters, where the HVAC units can accommodate them. Each school will temperature screen entrants and have a nurse's office. Students with symptoms or suspected of having COVID-19 will be isolated in an isolation room.

School 45 is located at 1445 Clifford Avenue in Rochester. The school was recently renovated and is of modern construction. The school building has a glass and masonry exterior and is of concrete and steel construction. The building is served by a central ventilation system that consists of supply air fans that can provide heating or cooling. There is also a return fan associated with each supply fan that draws return air from a duct riser serving all floors. Return air is drawn back through a ceiling plenum above the drop ceiling. The supply fans provide a mixture of outside air and return air modulated by dampers. Mixed air is filtered through MERV 13 filters and heated or cooled in fan coils in the unit. The ventilation supply system is ducted and has variable air volume dampers (VAV) with re-heat coils. VAVs modulate the supply of air to a zone based on the temperature requirements. The building is on a central BMS controls system. Air is delivered through ceiling

mounted supply diffusers. The space above the drop ceiling serves as a return air plenum. The fan units are all fairly new and are in generally good condition. Classrooms have windows, but only the Rescue windows can be opened for outside air. However opening windows is not necessary and is discouraged since the mechanical ventilation system delivers outside air that is heated and filtered. There are also exhaust fans on the roof that serve the bathrooms. There is one area that was an open classroom area that was divided in the last few years using sheetrock partition walls. The classrooms in this area have univents.

The building will be utilized this January for in-school classes starting with special education students and phasing in elementary and middle school students. This inspection was requested prior to the students return. The survey was done on December 22, 2020 and included the following:

1. A visual inspection of a number of representative classrooms, nurse's office and isolation room as well as the mechanical room;
2. Taking airflow measurement at supply outlets, return/exhaust grilles, univents, and open windows using a TSI 9515 VelociCalc Air Velocity Meter (anemometer); and,
3. A visual inspection of the building ventilation system(s).

The findings include:

1. The supply fans and the return / exhaust fan were inspected. The supply air units are operating and have MERV 13 filters. These are recommended by ASHRAE for infection prevention. The air handlers were delivering outside air mixed with return air.
2. The exhaust fan ventilation was found to be operating.
3. Air velocity measurements were taken in the nurse's office suite area (office numbers 147 and 148). The supply outlets did not have any measurable airflow. It is likely a VAV damper is hung up in the closed position. This was being further investigated at the time of this survey.
4. The supply vents in the hallway and lobby area had good airflow.
5. Classroom 166 had good airflow from the 2 supply vents located in the wall soffit by the ceiling. The bathroom exhaust was also working.
6. Classroom 170 also had good airflow from the 2 supply vents located in the wall soffit by the ceiling. The bathroom exhaust was also working in this room.
7. The univents were working properly in the open classroom area. These units have pleated filters that provide the highest efficiency possible for univents.
8. Classroom 241 had good airflow from the 2 supply vents located in the wall soffit by the ceiling. The bathroom exhaust was also working.
9. Classroom 240 had good airflow from the 2 supply vents located in the wall soffit by the ceiling. The bathroom exhaust was also working.
10. Classroom 130 had good airflow from the 2 supply vents located in the wall soffit by the ceiling. The bathroom exhaust had minimal flow and is to be investigated.
11. Room 175 is ventilated via a standalone univent.

## **CONCLUSIONS**

The school has a central mechanical ventilation system with MERV 13 filters and that provides a mixture of outside air taken from the roof and return air. All air is filtered and heated. The return and supply fans were all working. The exhaust fans were also mostly all working. Temperature readings indicate the heating system is working in each classroom. The school is ready for occupancy. The ventilation system filters all supply air through MERV 13 filters and mixes outside air. The ventilation system in combination with wearing of masks, screening students, social distancing and sanitizing of surfaces as well as other controls provide a sufficient level of infection prevention. The VAVs in the ventilation system serving the nurses office suite should be investigated and repaired so that there is sufficient airflow in this suite.



Supply vent in a typical classroom