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Subject: **Ventilation Screening**
Pinnacle School No. 35
194 Field St, Rochester, NY 14620

On Wednesday, February 25, 2021, Ed Olmsted and Margaret Sergent, representing the Rochester, NY Teachers Association (RTA) inspected representative classrooms at School No. 35 at 194 Field St, Rochester. The survey team also included a representative of the Rochester City School District (RCSD), Matthew Seeger, Schools Facilities Management.

The survey was done as part of the exposure control program for pandemic SARS-CoV-2. RCSD instituted many exposure control measures for the coming year including mandatory wearing of masks, distancing of occupants (reduced occupancy), enhanced cleaning, in-school COVID-19 testing, operating the ventilation systems with a maximum fraction of outside air, installation of ASHRAE MERV 13 filters, where the HVAC units can accommodate them, and the provision of air purifiers to all occupied spaces. 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. More information on the RCSD reopening plans can be found on the [RCSD website](#).

The building is intended to be utilized in the Phase 3 February reopening for blended and in-school classes in middle and high schools. This inspection was requested prior to the staff and students' return and conducted after their return. The survey included the following:

1. A visual inspection of a number of representative classrooms;
2. A visual inspection of the building ventilation system(s); and
3. Taking airflow measurement at supply outlets, and return/exhaust grilles using a TSI 9515 VelociCalc Air Velocity Meter (anemometer).

The findings include:

1. School No. 35 has a central heating ventilation system that serves all classrooms. The classrooms are also heated by radiant ceiling heating. The air handler units are located in mechanical spaces in the basement level. These central air handler units are designed to take outside air and distribute a filtered mixture of outside air and return air to each occupied space. Each supply fan has an associated return fan. Mixed air is filtered through MERV 14 filters and heated in fan coils in the unit. Filters with MERV-13 or higher ratings are recommended for HVAC systems due to their ability to filter smaller particles, including viruses. Filters with MERV-13 or higher ratings can trap smaller particles, including viruses. As such, upgrades to a MERV-13 rated filter, or the highest-rated filter in HVAC systems have been recommended by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) as a method to reduce the transmission of the SARS-CoV-2 virus in recirculated air.¹
2. From these air handler units, that tempered and filtered air is distributed via a system of ductwork. The ductwork then terminates in an occupiable space at rectangle supply grilles typically located on a soffit above the student closets. In addition, passive return grilles were also observed in classrooms usually inside the student closet.
3. All the above-mentioned components of the school's central mechanical ventilation systems were examined and found to be working.
4. Not all rooms could be inspected but a representative number was included in the inspection. These rooms included Rooms 111, 112 (Isolation room), 124, 150, Nurses' office, and 209. The supply outlets were screened with a thermal anemometer to determine whether supply air was discharging from the outlet. There was measurable flow at each supply air vent in the rooms visited.
5. Levels of carbon dioxide were measured in the building and found to range from 500 to 520 parts per million (ppm). This suggests a good outdoor air exchange rate.

CONCLUSIONS

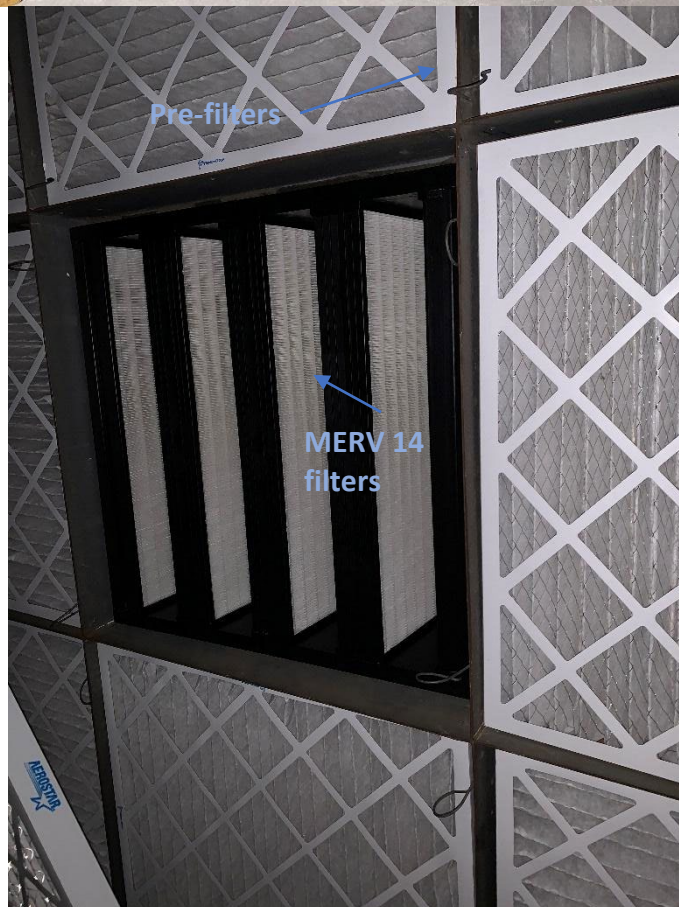
Overall, the school's ventilation can help reduce the risk of exposure to SARs-CoV-2 and meets the published guidelines. The mechanical ventilation system is capable of providing at MERV 13 filtered mixture of outside air and return air. In addition, most classrooms also have operable windows that can be used to provide natural ventilation. Where possible and if necessary, teachers can open two windows in each room to an opening of two inches. This will provide natural ventilation without causing the room to become cold and will provide 4 to 5 supplemental air changes per hour. Lastly, ensure other safety and health precautions, such as mask-wearing, social distancing, cleaning/sanitization, and routine handwashing, are also practiced to prevent the transmission of SARS-CoV-2.

REFERENCE

1. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Reopening of Schools and Universities. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). 2020. Available at: <https://www.ashrae.org/technical-resources/reopening-of-schools-and-universities>.



Typical mechanical ventilation setup in classrooms with (1) supply air vents on the soffit above the student closets and (2) a return located inside the student closet.



MERV 14 filter behind bank of pre-filters in air handler units