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Subject: **Ventilation Screening**  
**Northwest Junior High at Douglass & Northeast College High School**  
**940 Fernwood Park, Rochester, NY 14609**

On Wednesday, February 25, 2021, Ed Olmsted and Margaret Sergent, representing the Rochester, NY Teachers Association (RTA) inspected representative classrooms at Northwest Junior High School at 940 Fernwood Park, 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. The Douglass Campus has a central heating and air conditioning ventilation system that serves all classrooms. Each floor is served by an air handler unit located in a mechanical room on each floor. Some of the building's occupiable spaces have operable windows but there are also interior rooms that rely solely on the mechanical ventilation and are in use for the Phase 3 reopening.
2. The central air handler units are designed to provide a mixture of outside air and return air modulated by dampers. Each supply fan has an associated return fan. Mixed air is filtered through a pre-filter and then MERV 13 filters and heated or cooled 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.
3. From these air handler units, that tempered and filtered air is distributed via a system of ductwork. The ductwork terminates in an occupiable space at square supply diffusers located on the ceiling or in rectangle supply grilles located on soffits near the ceiling. In addition, the space above the drop ceiling serves as a return air plenum.
4. All the above-mentioned components of the school's central mechanical ventilation systems were examined and found to be working.
5. Exhaust ventilation was also found to be working.
6. Levels of carbon dioxide were measured in the school and found to range between 470 and 500 parts per million (ppm). This suggests a good exchange rate of outside air.
7. Not all rooms could be inspected but a representative number was included in the inspection. These rooms included Rooms C139 (isolation room), the Nurses' office, 249, 309, and 322. The supply outlets were screened with a thermal anemometer to determine whether supply air was discharging from the outlet. The style of outlets varies between square ceiling mounted diffusers and rectangle grilles on a soffit near the ceiling. There was measurable flow at each supply air vent in the rooms visited.

## **CONCLUSIONS**

Overall, the school's ventilation can help reduce the risk of exposure to SARs-CoV-2 and meets the published guidelines. Though some classrooms and offices in the Douglass do not have operable windows, the mechanical ventilation system when operational is capable of providing a MERV-13 filtered mixture of outside air and return air. 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 extremely cold and will provide 4 to 5 supplemental air changes per hour. However, again, the building's mechanical ventilation system is also capable of delivering filtered and tempered outside air. Lastly, ensure other safety and health precautions, such as mask-wearing, social distancing, cleaning/sanitization, and routine handwashing, are also practiced in addition to providing effective ventilation to prevent the transmission of SARS-COV-2.



MERV13 bag filters inside central air handler unit



Boxes of new MERV 13 filters



Rectangle supply grille located in soffit near the ceiling.