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Date: December 27, 2020

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Subject: **Ventilation System Screening**
RISE School 106
279 W Ridge Rd, 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 RISE School located at 279 West Ridge Rd, 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.

RISE School is located at 279 West Ridge Rd in Rochester, NY and is of pre-war construction. The school utilizes steam radiators for heating and have operable windows. The school building has a masonry exterior and is of concrete construction. The building also has two air handler fan blower units for supplemental heating and ventilation. The supply blower fans provide 100% outside air, which is heated by steam fan coils in the unit. The outside air is filtered through pleated filters. The ventilation supply system is ducted and supply air is delivered through diffusers on the wall of those classrooms served by the units. All classrooms have windows that can be opened for outside air. Most classrooms also have a supply vent served by the fan blowers and an exhaust grill in the closets and connected to the house exhaust fans. One wing has univents that provide outside

air through the exterior wall and have steam heating coils. There are also exhaust fans that serve the bathrooms.

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 blowers were inspected and were found to be running and providing outside air. The two supply air units have pleated filters. It was reported that MERV 13 filters will be installed, however these are not required since the system provides 100% outside air.
2. Each classroom in the wings served by the blowers have a supply vent in the wall that provides all outside air from one of the two house supply fans in the basement. The classrooms also have an exhaust grill in the coat closet that are connected to the rooftop vents. These appear to be passive exhaust. The classrooms also have radiators for steam heat and operable windows. When windows were opened 2 inches the velocity measurements at the open window were 1,000 feet per minute. This is a significant amount of outside air being drawn into the rooms due to the exhaust ventilation. This provides a significant amount of outside air.
3. In the newer wing the classrooms are served by univents that provide outside through a sleeve that penetrates the exterior wall. These classrooms also have operable windows and passive exhaust vents in the coat closets.
4. Air velocity measurements were taken at the supply vents in classrooms 222, 223 and 118 and the vents had good airflow.
5. The univents were working in the classrooms inspected and the exhaust vents had a flow rate of 200 fpm through a 1 square foot vent. Univents and exhaust vents were inspected in rooms 204A, 204B, 304, 305, 306 and 214.
6. Air velocity measurements were also made at a window open 2 inches and found to have 1,000 feet per minute through the window into the room. This is drawn in by the exhaust ventilation and provides good air exchange.
7. In the nurse's office the supply of outside air through the 1 square foot vent was 70 feet per minute. Since this is 100% outside air it provides sufficient ventilation. The nurse's office also has a large exhaust grill that draws 120 fpm through a 4 square foot grill. This provides additional air changes in the room.

CONCLUSIONS

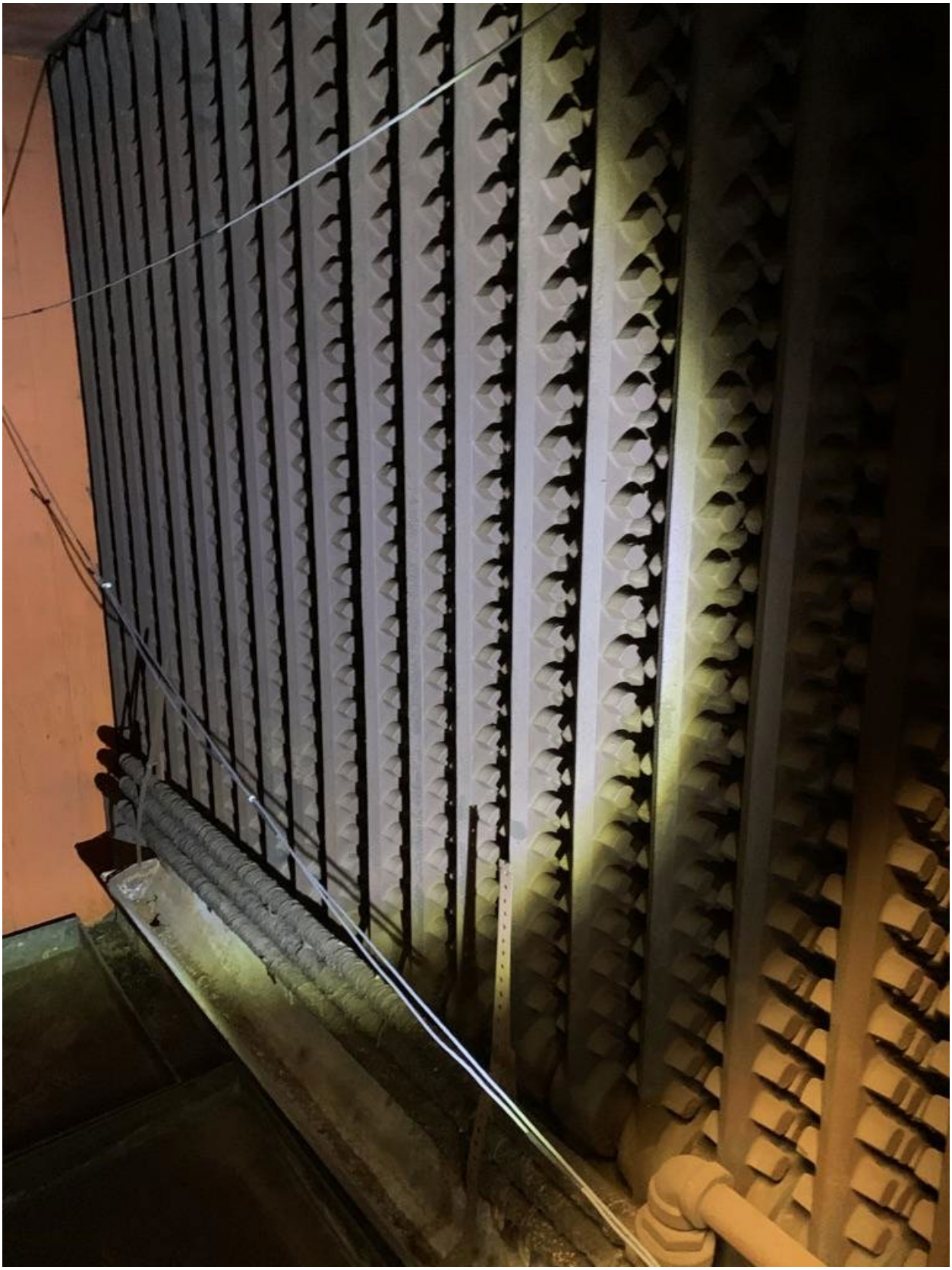
The school has two large air handlers that provide 100% outside air and have pleated filters. All air is filtered and heated and each classroom that is served by the ventilation units and also have operable windows and exhaust vents. Classrooms in the newer wing have univents that also supply

outside air and return air. The operable windows and 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.

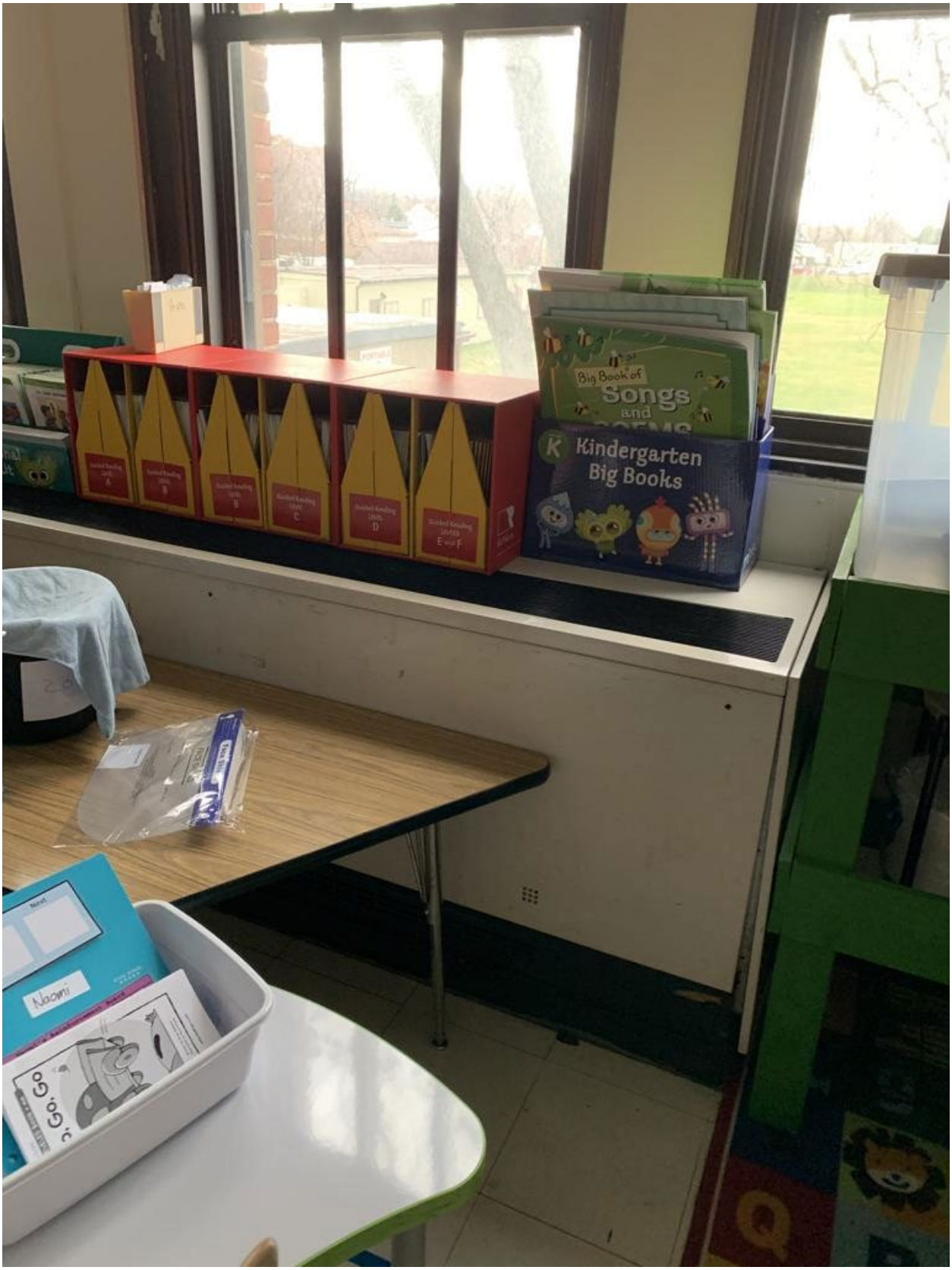
Exhaust vents in the coat closets

Passive exhaust vents discharge to the roof

Exhaust plenum above the coat closets



Inside blower unit steam coil



Univent in classroom