

OLMSTED ENVIRONMENTAL SERVICES, INC.

1992 Route 9, Garrison NY 10524

phone 845 424 4077 • fax 845 424 3482 • email Olmsted.mac@me.com

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Report for: Margaret Sergent
Second Vice-President
Health and Safety Chairperson
30 North Union Street, Suite 301
Rochester, New York 14607

Email: mmsergent@rochesterteachers.com

Prepared by : Ed Olmsted, CIH, CSP

Subject: **Ventilation System Screening**
School of The Arts (SOTA), 45 Prince Street Rochester, NY

On Thursday, January 28th, 2021 Ed Olmsted and Margaret Sergent, representing the Rochester NY Teachers Association and Matthew Seeger, representing the Rochester City School District Facilities Management office, inspected representative classrooms, and the ventilation systems at the School of the Arts (SOTA) located at 45 Prince Street in Rochester, NY

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.

The building will be utilized for in-school classes for elementary school students. This inspection was requested prior to the students return in mid-February 2021. The survey included the following:

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

Rooms inspected include the attic mechanical room, many classrooms, the main office and dance studios. Observations and measurements are summarized below:

1. SOTA is a pre-war landmark building and has been partially renovated over the years. The school building has a masonry exterior and is of concrete, wood and steel construction. The attic has wood roof trusses and a wood deck. There is a mechanical room in the attic that houses the exhaust fans and outside air supply fans. The outside air fans deliver fresh air throughout the building to the fan power boxes located in each room and common hallways. Fresh air is ducted to each of the fan power boxes. The fan power boxes have a supply duct that distributes air throughout the classroom. Each classroom has an exhaust grill connected to one of the exhaust fans in the attic. All exhaust air is discharged to the roof. Each classroom has operable windows that can be opened for outside air. The fresh air fans in the attic have MERV 8 filters. These units provide all outside air and higher efficiency filters are not required. The fan power boxes also have MERV 8 filters, which will be upgraded to MERV 13.
2. There is a perimeter heating system that provides heating that is supplemented by the fan power boxes.
3. Fan power boxes were found to be off in most of the rooms inspected. Facilities Management indicated that the fan power boxes will all be serviced and MERV 13 filters installed before the school is opened for occupancy.
4. Two exhaust fans were not working in the attic mechanical room. The units were being worked on at the time of this survey.
5. Windows were opened in each classroom and found to be working.
6. Rooms 422, 420 and 419 – These rooms all had fan power boxes and operable windows. The exhaust vents were working.
7. Room 335 – This room has a fan powered box that was turned on at the time of this survey. There is also an exhaust vent. The two supply grills had flows of 390 and 460 feet per minute (fpm). The windows are operable and airflow was measured at one window opened to a height of 4 inches. The flow of outside air through the window is 1400 cubic feet per minute. This calculates to 14 air changes per hour with outside air.
8. Room A338 - The fan power box was working and the supply vents were moving air and working. Three supply vents were tested and had flowrates of 1,200, 200 and 340 fpm. There are also three exhaust grills that were working.
9. Nurse's Room– This office has a working supply vent that is served by the central ventilation. The air handler serving the nurses office is being serviced and was not running at the time of this survey. There is a HEPA air cleaner running in the nurse's office. The exhaust vent in the bathroom was working.
10. Dance Studios – Three dance studios were inspected including M318, M319, and M320. These rooms have operable windows and exhaust vents as well as a central supply of ventilation air. The supply vents are at the ceiling, which is 20 feet in height. The exhaust vents were found to be working and providing air.
11. Main Office – The main office is served by the central system and has ceiling vents and slot diffusers. The system was not operating at the time of this survey.

CONCLUSIONS

The school has a central ventilation system that provides 100% outside air and no recirculated air. The fan power boxes receive the outside air, mix it with return air and filter the air. Some of the fan power boxes were not working and currently they have MERV 8 filters. Opening a window a

few inches was found to provide significant ventilation through natural ventilation. The school is ready for occupancy. The following steps should be taken:

1. Service all the fan power boxes and operate them.
2. Install MERV 13 filters in the fan power boxes.
3. Repair the broken exhaust fans in the attic.



Fan power box in the classroom



Outside air fan with MERV 8 filters



Supply vent from the fan power box



Fan power box in the common hallway