O'Reilly, Talbot & Okun
ENGINEERING ASSOCIATES

March 25, 2021
J0949-67-03

Mr. Patrick Sullivan
City of Springfield
200 Trafton Road
Springfield, Massachusetts 01108

Subject: Springfield Schools
Response to Questions
Email Dated March 24, 2021

Dear Mr. Sullivan:

The following is our response to the questions from Springfield School personnel regarding the industrial hygiene assessment of the school buildings. The questions were copied directly from the email followed by our response. Some questions were more appropriate for school administration and/or facility personnel and were referred.

1. What is the difference between ASHRA 62 and ASHRAE 62.2 and 62.1?

ASHRAE 62 is the general standard for ventilation. ASHRAE 62.1, Ventilation for Acceptable Indoor Air Quality is for schools and all commercial buildings. ASHRAE 62.2, Ventilation and Acceptable Indoor Air Quality in Low Rise Residential Buildings is limited to residential occupancies.

2. The report only shows a sample room or 2 in each building, how do we know that the correct settings are in place for each room?

OTO performed the industrial hygiene ventilation assessment throughout the school buildings. The HVAC system for the building was evaluated. Specific classrooms were further evaluated to ensure the building system was operating according to design. The HVAC computerized data management system was used to evaluate each room/area to document operation according to design.

3. Does the computer system allow you to monitor the ventilation system in every space in the Schools including basement rooms, offices, cafeterias, gyms, etc.…

Yes. I would refer specifics regarding the monitoring system to Facility personnel.

4. What happens when the room in the non-air conditioned schools gets about the above the 78% temperature recommendation or higher or lower than the recommended relative humidity of 40-60%?

ASHRAE-55, Thermal Environmental Conditions for Human Occupancy has established temperature and relative humidity ranges for thermal comfort. The objective of ASHRAE-55 is to achieve thermal comfort for 80% of the occupancy. These temperature and relative humidity ranges are primarily for thermal comfort and do not have a significant effect on the potential for Covid-19 transmission. These ranges are referenced for thermal comfort and to avoid extreme conditions (i.e., opening windows in extreme cold conditions

5. Can we use fans in classrooms?

Yes

6. Were ventilation systems in offices checked as well as classrooms?

Yes

7. Will rooms without windows be used for children's activities (counselling, T, etc.…), or offices? If so do they all have proper ventilation?

Schools that utilize a central HVAC system (i.e., air-handling unit, roof top unit, etc.) provide appropriate volumes to ventilation and do not require windows or windows that operate. We have recommended that Schools that do not utilize a central HVAC system or have operable windows to limit use or not use these rooms.

8. Could visual inspection of vents show dirt/dust/mold and still be considered disinfected, i.e. could fogging disinfectant be effective without vents appearing "clean")

I assume the vents being referenced are the HVAC air diffusers. Discoloration surrounding the diffusers is common and associated with air erosion and impaction of particulate within the room. This discoloration is not related to the air being distributed from the system. Disinfecting is related to building or content surfaces. To properly disinfect a surface the surface must be clean.

9. Are there spaces that have been cleared where teachers can set up a workspace outside of their classroom for prep and to eat lunch?

This question should be referred to School administration.

10. Should people collect pictures and reports of anything broken, anything they believe to be unsatisfactory (COVID related or other cleaning related, broken parts of anything ventilation related, mice/ other infestations)

We recommend staff report any broken, damaged item or condition that is unsatisfactory.

11. What does it mean where the report chart says that the "Gravity exhaust is non-operable"? in schools with univents? In schools with "natural" ventilation? Or "exhaust vents to roof non-operable" as at Duggan or Springfield Alternative Campus,? Or Wheel driven exhaust, non-operable as at Kensington??

There are various types of building exhaust systems in place throughout the Springfield Public Schools. Some of these systems are obsolete because of HVAC system upgrades and/or modifications. We identified the type of local exhaust system for the building and if it was operation at the time of the assessment. In some cases, the building exhaust ventilation system was not in operation since the building was vacant. The status and condition were reviewed with facility personnel.

12. At Springfield Conservatory of the Arts what are the implications for ventilation when "none observed" for exhaust? What about at Springfield Public Day Elementary?

The Springfield Conservatory of the Arts ventilation system is being modified by the Owner in coordination with the Springfield Building Department. At the time of the assessment these buildings did not have provisions for building exhaust.

13. In the buildings that are listed as having natural ventilation – will the windows needs to be kept open? How will temperature and humidity be controlled?

It is recommended that buildings with natural ventilation periodically use the windows for fresh air ventilation. The frequency and duration should be based on the ambient conditions to maintain thermal comfort. See answer to question #4. We recommend an initial flush, and daily flush of fresh air by periodically opening windows.

14. Do the large rooms (auditoriums and gyms for example) that have Air Handling Units all have IWave air purifiers added?

IWave air purifiers have been installed in all large air handling units.

15. In the October presentation to the school committee it was said that it was determined that the uninvent systems can achieve 6 air changes per hour in every room by checking a sample classroom in each building – how do you know this?

The design criteria for the unit ventilators were reviewed including the size of the motors and fans. The air velocity and volume were measured on representative units and compared to the design criteria. The results were compared to the computerized HVAC management system and confirmed the unit ventilators can achieve 6 air changes per hour.

16. Which schools are monitored by the facility HVAC program, can we visit the facility to see what is capable of? Might be easier to tell us which schools are not monitored.

All Springfield Schools, except for the Liberty Preparatory school which is a building leased by the City are monitored by the HVAC computerized management program. The controls and capability of the management system will vary and are dependent upon the type of HVAC system in the school.

In summary, all Springfield Schools have been evaluated by OTO personnel and meet or exceed the Massachusetts Department of Elementary and Secondary Education (DESE), Center of Disease Control (CDC), and the American Society of Heating, Ventilation and Air-Conditioning Engineers (ASHRAE) Covid-19 Guidance documents for returning to in person classroom education.

Please call if you have any questions.

Sincerely,
O'Reilly, Talbot & Okun Associates, Inc.

Robert F. Kirchherr, CSP
Principal