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Keith Baldinger
Public Building Division Manager
Town of Shrewsbury
100 Maple Street
Shrewsbury, MA 01545

RE: Spring St and Paton Schools HVAC Systems Review

Dear Keith,

As requested, the following is a summary of our HVAC ventilation and controls review/inspection. This study is in support of Shrewsbury's efforts to review the schools' HVAC system's ventilation and outside air capabilities.

Based upon our review of HVAC drawings, Building Automation Systems (BAS) control drawings, site visits and information provided by your staff and HVAC contractors, we provide the following notes:

Spring St School

1. Roof Top Units (RTU-1 Auditorium and RTU-2 Gym)
 - a. RTU-1 Auditorium has a heat recovery unit with exhaust and outside air intake fans
 - b. RTU-2 Gym has a power exhaust fan
 - c. Each unit's supply fan, make-up air and exhaust fans were running providing ventilation and outside air
2. Roof Top Units (RTU-3 thru RTU-8)
 - a. All units were running while in the occupied mode except RTU-5, which was cycling on/off based on internal controls. This unit should be serviced to confirm proper operation.
 - b. The outside air dampers on each unit were operational and open to provide outside air intake during occupied operation
3. Unit Ventilators (UV-1 thru U-17)
 - a. All unit ventilators were inspected during a commissioning project earlier this year and found to be fully operational.
 - b. All UV fans were running during the site visit
 - c. The outside air intake on the first floor UV's (UV-1 to 8) were surveyed to confirm outside air intake
4. Exhaust Fans (EF-1 thru EF-4, ILF-1 and KEF-1)
 - a. All fans (EF-1 thru EF-4 and KEF-1) were running continuously during occupancy

- b. In-line fan (ILF-1) provides outside make-air to the VRF system terminal units. The fan and related dampers were functional.

Paton School

1. Roof Top Unit (RTU-1 and EF-1 Cafetorium)
 - a. The unit's supply and exhaust fans have VFD's and were running at 50% and 40% speed respectively.
 - b. Outdoor and return air dampers were fully functional.
2. Roof Top Units (RTU-1 thru RTU-3)
 - a. All RTU supply fans run when in occupied mode
 - b. Each unit has a heat recovery wheel with separate make-up air and exhaust fans.
 - c. The heat recovery units on RTU-1 & 2 were not operating. The heat recovery unit on RTU-3 was operational
 - d. All heat recovery units should be cleaned and serviced.
3. Fan Coil Unit (FC-9 Basement Copy Area)
 - a. Supply fan was running.
 - b. Outside air is provided by manually adjustable return air and outside air dampers
 - c. The dampers regulating outside air and return air need to be adjusted to ensure proper outside air flow.
4. Unit Ventilators (UV-1 thru UV-18)
 - a. All UV fans were running during the site visit
 - b. A sample of the outside air intakes on the Unit Ventilators were checked to confirm the outside air intake.
5. . Exhaust Fans (EF-2 thru EF-6 and ILF-1 & 2)
 - a. EF-2, 5, 6 are toilet exhaust fans and found to be running.
 - b. EF-3 & 4 were found to be off on VFD fault. The VFD was reset, and the fans are now operating.
 - c. In-line fans (ILF-1 & 2) provides outside make-air to the VRF system terminal units. Both fans were found to be off due to control wiring issues. The controls on ILF-1 were repaired and the fan is operating. The controls on ILF-2 also need to be serviced.

Let us know what assistance you may need to follow-up on any of the above items. Thank you for the opportunity to work with Shrewsbury on this effort.

Sincerely,

Kevin Keena

Kevin Keena
Sr Project Manager
B2Q Associates