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

RE: Coolidge and Floral 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:

Coolidge School

1. Roof Top Units 1-4 (Modular Classrooms)
 - a. All units have fixed dampers which bring in OA when running
 - b. RTU-1, 2 & 3 units operated on/off based on room thermostat setpoint
 - c. RTU-4 was not running and is scheduled for service
 - d. Units should be set to run continuously during the occupied periods
2. Roof Top Unit (Library)
 - a. RTU in good operating condition.
3. AHU's (Classroom, Cafeteria, Gymnasium)
 - a. Classroom AHU supply and return fans operating with damper position in full return air mode. Dampers controls (actuators) need to be serviced
 - b. Kitchen Exh & MUA units run when turned on. Units typically not run due to change in kitchen operation (ie: no cooking)
 - c. Gymnasium AHU supply and return fans are operating and the OA & RA dampers are functioning.
4. . Exhaust Fans (Qty 10)
 - a. Most exhaust fans were running continuously during occupancy
 - b. There is one (1) classroom exhaust off and the exhaust fan over the cafeteria stage is off.

- c. There are 2 exhaust fans in the kitchen area that are off, they serve an electric room and a storage room.
- 5. Unit Ventilators 9 & 10 (Cafetorium)
 - a. UV 9 supply fan and dampers are operating correctly
 - b. UV 10 supply fan and dampers operating, but electric heat is being called on due to a programming issue. The unit is off and needs service.
- 6. Unit Ventilators (Classrooms - qty 23)
 - a. The UV fans and dampers (5) were visually inspected and in good operating condition
 - b. A sample of the outside air intakes on the Unit Ventilators (6) for the first floor were checked to confirm the outside air flow.
 - c. The remaining UV's fan status indicators showed On.

Floral School

- 1. Air Handlers Unit (ACU-1 thru 5)
 - a. ACU's 1 & 2 (Administration) supply fans and outside air dampers are operational
 - b. ACU's 3 & 4 (Classroom) supply fans and outside air dampers are operational. Units are temporarily off for service of the heating and cooling equipment
 - c. ACU-5 (Media Center) supply fans and outside air dampers are operational
- 2. Heating and Ventilating Units (HV-1 thru HV-5)
 - a. HV-1 East and West (Gymnasium) supply fans run when in occupied mode
 - i. The dampers on HV-1 East are fully operational
 - ii. The dampers on HV-1 West are stuck in the full return air position with OA dampers at min position
 - b. HV-2 (Cafeteria) the supply fan, return fan and dampers are in good operating condition
 - c. HV-3 (Kitchen MUA) The supply fan runs when commanded on. It is interlocked with the kitchen hood exhaust fan (KEF). Neither unit is operated due to changes in kitchen operation (ie: limited cooking)
 - d. HV-4 (Boiler Room MUA) The unit supplies 100% outside air to the boilers during operation and is operational
 - e. HV-5 (SPED? Classrooms) the supply fan is operational, but the unit has a leaking coil which is scheduled for repair. The outside air dampers operate but have limited travel and should be serviced.
- 3. Classroom Unit Ventilators (Total quantity ~55)
 - a. All unit ventilators were checked through the Building Automation System (BAS)
 - b. Most UV supply fans were found running based on fan status indicators.

- c. Twelve (12) unit ventilators with Off status were found to be switched off by the local disconnect. The unit switches were turned on and the UV's were operational
 - d. A sample of the outside air intakes on the Unit Ventilators (14) on the 1st and 2nd floors were checked to confirm the units were taking in outside air. Rooms 105 & 106 were found to be off and should be checked.
4. . Exhaust Fans 1 & 2 (Kitchen)
- a. EF-1 & 2 serve the kitchen exhaust hood and dishwasher exhaust. Both are operational but seldom used due to limited cooking needs.
5. Exhaust Fans (General spaces)
- a. Most of the exhaust fans in this building are in-line type fans (CIF-1 thru 6). These units were checked through the BAS and confirmed to be operating through their fan status indicators.

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