



Juliet W. Long School – HVAC Upgrades Project Scope
July 10, 2024

Existing Conditions:

1. The school is made up of two classroom wings, a Gymnasium (used as Cafeteria) and a small office area.
2. The classroom areas are currently ventilated with operable windows and heated with hot water finned tube radiation.
3. The Gymnasium is ventilated and heated with floor mounted unit ventilators.
4. An exhaust fan and louver in the Gymnasium is used for fresh air ventilation.
5. The Office area is heated and cooled with a gas fired packaged rooftop air conditioning unit.
6. Building hot water is generated by two gas-fired boilers located in basement mechanical room.

HVAC Improvements:

1. Classrooms will be ventilated with two roof mounted DOA (Dedicated Outdoor Air) units with gas-heating, DX (Direct Expansion) Cooling and Heat recovery, located on the roof.
2. Roof mounted insulated supply ductwork will drop down into new ceiling soffit area to serve the room with fresh air.
3. Classroom exhaust air will drop into basement tunnel and once manifolded, will rise into the DOA units.
4. Classrooms will be heated and cooled with new VRF (Variable Refrigerant Flow) heat pumps. The Hot water fin tube radiation will remain for supplemental heating when outdoor temps are below 40F.
5. New classroom ceiling soffits will be located from the corridor wall to first exposed steel beam and will contain the VRF fan coil units and ductwork in a dropped ceiling cavity.
6. Existing restrooms are currently exhausted by roof mounted exhaust fans. Existing fans will be removed and DOA unit will exhaust via roof mounted ductwork. Energy will be recovered from the restroom exhaust via a rotary heat exchanger (enthalpy wheel) located in the DOA unit.
7. The Gymnasium will be heated, cooled and ventilated with new gas-fired packaged DX RTU (Rooftop Unit).
8. The Office area RTU will be replaced with new gas-fired packaged DX RTU.
9. New RTUs will be equipped with demand control ventilation which adjusts fresh air to spaces based on occupancy and reduces energy cost.
10. New RTUs will be equipped with HGRH (Hot Gas Reheat) for improved dehumidification control.
11. All existing Pneumatic controls shall be replaced with new digital controls. All new controls shall be BacNet and will tie into new DDC (Direct Digital Control) system.

Other:

1. Electrical work including powering of all new equipment and new lighting in classroom soffits.
2. Architectural work including ceilings, miscellaneous roof work and penetrations.
3. Minor structural work to support new mechanical equipment.

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