



ARLINGTON SCIENCE FOCUS ELEMENTARY SCHOOL – DIRT ROOM RENOVATIONS

FPME Narrative

HVAC:

The building is primarily heated and cooled by a four-pipe HW/CHW system serving air handling units and unit ventilators. Three 1900 MBH Thermifac gas-fired boilers and one Trane air-cooled chiller provide hot and chilled water, respectively. The boiler system may have ample capacity to serve a classroom/ support space area expansion of approximately 8,000 sf (Option A) to 10,000 sf (Option B). However, it is unlikely that the chilled water system can support the additional space (estimated load of about 30 - 40 tons) – and thus expansion of the chiller system may be required. The new rooms could be served by either unit ventilators or air handling units with outdoor air intakes for ventilation.

If it is determined that the existing boiler and/or chiller systems cannot satisfy the additional loads of the new classrooms or expansion of the HW and CHW systems is impractical, then dedicated split-system heating / cooling units should be considered for these spaces. These systems would have indoor air handling / fan coil units and outdoor (rooftop) condensing units. Three such systems are described below:

- If boiler capacity is available but chiller capacity is not: Fan coil units with hot water coils and a split-system, outdoor condenser unit for cooling.
- Variable refrigerant flow (VRF) system. Terminal VRF fan coil units served by new VRF compressor / condenser unit.
- Split-system heat pump units. Terminal air handling units with auxiliary electric heat served by exterior heat pump compressor / condenser units.

Electrical:

Current service is 2000A @ 480V, serving the existing 68,127 sf building. Based upon electrical data we have received for other APS elementary schools of fairly similar size or slightly larger (Ashlawn, Nottingham, Jamestown, Glebe, McKinley), it appears that there is sufficient capacity to serve the 8,000 – 10,000 sf expansion.

New panelboards will most likely be required to serve the additional rooms. LED lighting fixtures are recommended. Types of fixtures to be coordinated with architect and owner. Typical intercom, clock and data expansion expected.

Plumbing:

The expansion should not require new water or sanitary utility service. The Art Room addition will most likely require domestic cold and hot water service, sinks and associated fixtures. Architect to specify number of and types of sinks.

Fire Protection:

The building is protected with a wet-pipe fire suppression system, and an expansion of this system with branch piping and sprinkler heads to the new areas will be required. Expansion of existing fire alarm system and an updated annunciator panel will also be required.