

Top 10 – Plumbing/Mechanical Review Comments

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1. **Facility Design Guidelines [FDG 1.1]:** University of Virginia Facilities Design Guidelines [FDG] shall apply to all design projects unless specifically waived by the Chief Facilities Officer. Read the FDGs – notably Chapter 7 for Plumbing and Mechanical Systems.
2. **Design Coordination and Quality Assurance [HECOM 9.1.1, 9.1.2]:** The Construction Documents submitted shall represent a reasonable and cost effective Architectural & Engineering solution for the scope of Work. The A/E shall perform a quality assurance review for both the technical accuracy and discipline coordination.
3. **Drawing Standards for All Projects [FDG 1.1.3]:** Show rated assemblies on all floorplans for all disciplines.
4. **Coordinate & Show Service Access [VMC 306.1, FDG 7.1.1]:** HVAC system components that utilize energy shall be accessible for inspection, service, repair, and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, venting systems or any other piping or ducts not connected to the appliance being inspected, serviced, repaired, or replaced. Where equipment, valves, and components that require maintenance are installed above a ceiling, they shall be installed as low as practical. Show the service access on the floorplans/sections during design and avoid costly rework in the field.
5. **Energy Efficiency [FDG 7.1.1]:** Heating ventilation and air conditioning (HVAC) equipment, electrical systems, and building equipment shall be as energy efficient as possible. University buildings shall be designed for at least a 40-year life with minimum life cycle cost rather than low first cost. The requirements for CHW/HW coil sizing and fan HP sizing are based on life cycle savings.
6. **Domestic Water Service Entrance [FDG 7.3.1.1]:** Pressure reducing valves (PRV) shall be provided in all buildings at the domestic water entrance just downstream of the meter. On the domestic water service entrance provide a strainer, meter with bypass loop, PRV with bypass loop, and then two parallel full size back flow preventers. Isolation valves shall be installed so that either BFP can be removed. Back flow preventers shall be mounted a maximum of 5'-0" above the floor & shall be readily accessible for maintenance.
7. **Pressure Independent Control [PIC] Valves [FDG 7.4.4.3, 7.4.6.3, 7.4.3.3]:** HW & CHW control valves shall be two-way industrial grade PIC valves. Separate flow control devices such as circuit setters, balancing valves, etc. should not be used. Triple duty valves are not acceptable on variable volume pumps.

8. **Ventilation** [*FDG 7.4.5.1, VMC 403.3.1.1, FDG 8.1.2.4*]: Mechanical plans shall include a ventilation matrix documenting ventilation calculations & set points required by ASHRAE 62.1/VMC. No outside air should be provided to spaces during scheduled unoccupied times.
9. **Follow UVA Building Automation System Standards** [*FDG 7.7.3*]: Locate the Sequences of Operation on the control drawings. The sequence shall be on the same sheet as the control schematic, space permitting.
10. **Edit Specifications to the Project** [*HECOM 8.3.1.3, HECOM 8.3.12, FDG 7.7.1*]: All Specification sections shall be written/edited to apply specifically to the Project and shall not include materials, standards, requirements, or data not pertaining to the Project. Minimize the use of cross references. Locate Plumbing specifications in Division 22, Mechanical specifications in Division 23, and Building Automation System specifications in Division 25.

END OF DOCUMENT

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