

## MECHANICAL GENERAL REQUIREMENTS

### PROJECT NARRATIVE

1. Engineer of record shall prepare a Mechanical Project Narrative with:
  - a. General description
  - b. Building type.
  - c. Occupancy type.
  - d. HVAC system design parameters as appropriate.
  - e. HVAC capacity and redundancy.
  - f. The Mechanical Project Narrative description block shall be provided on the bid documents and shall include the information listed above.
2. WUSM Project Manager to review and approve.

### DESIGN TEMPERATURES

1. Chilled Water
  - a. Building cooling coils shall be designed for a minimum 14°F  $\Delta T$ .
  - b. Campus loop connections shall be designed for a 12°F  $\Delta T$ .
2. Building Heating Water
  - a. Building heating coils shall be designed with 140°F entering water temperature or less.

### DESIGN AIRFLOW

1. Laboratories shall have:
  - a. Minimum of 6 AC/H for occupied and 4 AC/H for unoccupied occupancies.
  - b. 24/7 operation.
  - c. No AC/H setback or diversity allowed below the minimum AC/H listed above.
2. Vivarium's
  - a. No AC/H setback or diversity allowed.
3. BSL3
  - a. No AC/H setback or diversity allowed.
4. Offices
  - a. AC/H setback allowed.

### PRESSURE DROP IN SYSTEMS

1. Provide  $\Delta P$  gages across all filters, strainers, pumps, triple duty valves, etc.

#### SERVICE AND CLEARANCE

1. All equipment and controls shall be designed for service and clearance.

#### AIR INLETS AND OUTLETS

1. Krueger
2. Titus TDC

#### SEISMIC / VIBRATION ISOLATION

1. Provide seismic isolation code block summary on Mechanical drawings.

#### TERMINAL HEAT TRANSFER UNITS/RADIANT HEAT

1. No radiant heat.

#### NATURAL GAS

1. Natural gas piping servicing Laboratories shall be type "L" with hard soldered joints.
2. Do not use black-iron pipe and fittings for any piping two (2) inch and below.

#### SUMP PUMPS

1. Engineer should design out of the project.
2. WUSM prefers not to have any sump pumps unless absolutely needed. See plumbing standard, "Equipment" section for additional information.

#### HUMIDIFICATION

1. Humidification requirements to be assessed on a project basis and used only when requested by the Owner.
2. Design
  - a. Shall be located in an access section with a drain pan located up stream of the cooling coil.
  - b. The humidifier grid shall have upstream and downstream clearance for inspection and cleaning.
  - c. Provide unions on each side of control valve. Dielectric unions not allowable.
  - d. Trim of humidifier located in the ductwork shall have drain pans installed 2 times the absorption distance downstream of the humidifier.
  - e. Duct mounted humidifiers shall have drainable, stainless steel duct sections 36" in length on the upstream and downstream the duct mounted humidifier grid.
  - f. Provide access to humidifiers in duct.
  - g. Humidifier grids to be located in an accessible location and coordinate with all other trades for manufacturers required maintenance clearances.

3. Approved Manufacturer shall be Armstrong model HC600

#### ASBESTOS

1. ACM survey will be by WUSM.
2. ACM survey will be coordinated by a WUSM Project Manager.

#### EQUIPMENT PADS

1. Floor mounted equipment shall be located on concrete housekeeping pads. Typical height of 3-1/2 inches with chamfered edges and corners.
2. Equipment pad size shall include required edge spacing for anchor bolts and seismic forces. Reinforcing shall be designed in accordance with ASHRAE Practical Guide to Seismic Restraint or designed by a structural engineer.
3. Concrete pads shall be designed for a minimum of 2'-6" between pads for access. If this minimum spacing can not be met, then provide continuous pad in that area.

#### ANY EQUIPMENT WITH BEARINGS:

1. Specification of any bearings that require greasing at intervals less than three months shall not be specified.
2. It is the University desire to grease bearings every three months via a Preventative Maintenance Schedule.
3. The University frowns on automatic greasing equipment.

END OF SECTION

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