230000-H: SUPPLEMENTAL BASIC MECHANICAL REQUIREMENTS (15010-H)

Related Sections

Basis Guideline: 23000000 - “Basic Mechanical Requirements”
  1.0 – “Codes and Regulatory Agencies”
  5.4.1 – “UMHHC - Telecommunication Rooms”
  5.13 – “UMHHC - Healthcare Procedure Room Infection Control Types and Requirements”

Master Specification sections:
MS220500 - "Common Work Results for Mechanical"

The UM Master Specifications may be used as a reference and/or basis, but the A/E is completely responsible for contract specifications (meeting the intent of the UMHHC Guidelines and Preferred Manufacturers List) that are used in UMHHC projects.

General

University of Michigan Hospitals and Health Centers (UMHHC) Design Guidelines are applicable to projects in facilities owned, operated or leased by UMHHC. The Architect/Engineer (A/E) shall adhere to UMHHC Design Guidelines for all design work in these facilities. Deviations to the UMHHC Mechanical Guidelines shall be reviewed and approved by the UMHHC Mechanical Engineer prior to incorporating into the documents. The Architect/Engineer (A/E) shall be responsible for the professional quality, technical accuracy, code compliance and the coordination of all design, drawings, specifications and calculations.

Compliance with these guidelines shall include compliance with all UMHHC “front-end” sections, i.e. “Special Instructions to Designers” (SID’s) as well as “Special Building Areas” (SBA’s). Of special concern and relevance mechanically are 1.0, 5.4.1 and 5.13.

Design Requirements - Maintenance Accessibility

Ladders, stairs, catwalks and platforms shall be provided to areas where access is required for inspection or maintenance. Of particular importance is access to fans, pumps, balancing and flow control dampers, steam traps, sanitary clean-outs, and sensors located high above suspended ceilings. Do not rely on walking across ductwork/piping to reach these components.

In mechanical rooms, arrange ceiling suspended fans with clearance below to allow access from catwalks or ladder.

Provide hinged access doors to all maintainable equipment (i.e. VAV boxes, fans, valves, dampers, etc) located behind walls or above permanent non lay-in type ceilings. Access door shall be large enough for shoulder clearance (i.e. 24”x24” min.) or equipment removal, except where only hand access is required (i.e. balancing damper).

Each new piping connection to an existing main or branch pipe shall have a new shut-off valve installed as part of each project.

Warranty

All work shall carry a minimum one year parts and labor warranty with the exception of HVAC and air compressors which shall be specified with a 5 year parts and labor warranty.
Utility Sources

The use of central utilities rather than stand-alone systems is encouraged. The A/E must closely communicate with the University/Health Systems’ Project Manager early in the design phase of the project to determine the best probable sources of central services. The UMH Mechanical Engineer will approve sources prior to schematic design.

As part of investigation report/ schematic design, the A/E must demonstrate that the project under design will not adversely affect utility availability for other spaces and not utilize inordinate amounts of future capacity for all utilities.

Determination of capacity and verification of pressure or temperature must be made early enough for funds to be allocated within the renovation project (i.e. in the investigative report phase).

Existing Code Violations/ Deficiencies

As a part of investigative report phase, the A/E will receive the listing of any outstanding code violations (i.e. Facilities Conditions Assessment or FCA list) in areas to be renovated for incorporation into the project. Items uncovered during surveys and site visits are to be brought to the attention of the University/Health System Project Manager who will seek funding for incorporation of such items into the project.

All (existing and new) openings in fire and acoustical separations are to be patched at end of the project.

Utility Shutdowns

During Construction:
Where new infrastructure is required to connect into existing infrastructure, or when existing infrastructure needs to be relocated, the contractor shall be required to follow UMH’s shut-down procedures, and receive approvals for the shutdown, prior to the infrastructure tie-in is started.

While means exist in the industry for infrastructure hot-taps, and/or performing certain electrical tie-ins while energized, UMH has strict policies on both of these. Those policies are in large part reflected in the shutdown request form. UMH does not as a general rule allow live electrical connections, and does not allow saddle-type fittings inherent in piping hot-taps.

In lieu of this, UMH infrastructure systems are often isolated and shut-down to make the necessary tie-ins. Coordinating these shut-downs can be very labor intensive for UMH staff, and can be disruptive to patient care.

Processing these shutdown requests often takes weeks of preparation and coordination, utilizing extensive levels of resources and often present high levels of risk for the hospital. For these reasons the contractor is requested to combine multiple similar shutdowns, whenever possible, into one shutdown. The contractor is also strongly encouraged to submit the shutdown requests as early as possible

During Design:
When preparing their designs the A/E needs to be aware of the difficulty of scheduling and performing shut-downs in a hospital environment. And, where shut-downs are required under the A/E's design, the A/E shall have a general understanding of the areas and services that will be impacted by the proposed shut-down.

Infrastructure tie-ins shall be designed to limit the impact of the shut-down on the overall facility while accomplishing the project’s capacity requirements of the tie-in.

The A/E shall be responsible for investigating shut-down impacts thru coordination with the assigned UMH Engineers, and thru the use of UMH Master Riser Schematics and Record Drawings. In addition, the A/E shall make provisions in their infrastructure designs to facilitate future tie-ins, whether anticipated or not, thru the means of isolatable connection points (i.e. line-size valve and caps).