
Topic: 50% CD Owner Review Comments – MEP and IT/AV
Location: Power Plant Conference Room
Time: 8:00 am – 5:00 pm
Present: See attached Attendance Sheet

Introductions were made and the agenda discussed.

A. Mechanical Review

- The **CMU Building Committee Review – Comments and Request – 50% Review** spreadsheet and marked up 50% owner review drawings were explained and discussed. The following comments were made in addition to the previously mentioned documents:
 - I. DSA to review CFD model with ARUP and confirm that no additional air diffusers are needed at front of auditorium.
 - II. DSA to send cut sheets of floor diffusers and displacement ventilation diffusers to CMU.
 - III. DSA to review PBA comments and identify any comments that impact the current scope of work.
 - IV. The project specifications will indicate that the VFD's will be provided and installed by the mechanical contractor and the electrical contractor will make the final power connections. The fan and pump schedule will refer to the project specifications.
 - V. DSA to review size of equipment components in penthouse and verify that they fit within the elevator.
 - VI. DSA to revise ductwork and coordination of new tunnel from AHU to auditorium underfloor HVAC ductwork.
 - VII. Review level of testing and balancing and simplify where possible.
 - VIII. Compile a submittal list of equipment to be included in the front end. CMU stressed their concern to let the GC know exactly of their submittal requests. CMU stated that it is not necessary for them to review every submittal as long as the GC is strictly adhering to the materials list.

B. Plumbing Review

- The **CMU Building Committee Review – Comments and Request – 50% Review** spreadsheet and marked up 50% owner review drawings were explained and discussed.

C. Electrical, Power and Lighting Review

- The **CMU Building Committee Review – Comments and Request – 50% Review** spreadsheet and marked up 50% owner review drawings were explained and discussed. The following comments were made in addition to the previously mentioned documents:
 - I. Reviewed CMU drawing comments. There were no concerns with the comments and they will be addressed in the documents.
 - II. There were no comments to electrical specifications.
 - III. DSA to review PBA comments and ID if any affect current scope of work.
 - IV. Delete electrical manhole for secondary feeders. Use sealed pipe and/or double-walled pipe and pressure test for water leaks from outdoor transformers to electrical room in basement. CMU would prefer routing underneath building slab and eliminating concrete encasement under the slab areas. The basement switchboards should be fed from overhead.
 - V. DSA to verify that an electrical contractor can replace primary switch in 48 hours. Include double shifts and premium time in contract documents to make sure the cutover happens in time.
 - VI. DSA to provide one duplex receptacle on each wall of the janitor closets; provide two 20 amp circuits per janitor closet, or two receptacles per circuit. These janitor closet receptacles are intended for charging various battery devices.
 - VII. Add receptacles in mud rooms.
 - VIII. Provide general receptacles on 40'-0" centers maximum.
 - IX. Plasma televisions may be future equipment, but the receptacles and data need to be designed now.
 - X. DSA to review options of how to control task lighting from occupancy sensor. Integrated sensors within task lighting or integrated sensors within plug strips should be explored. Utilizing the office sensors is not an option because CMU wants the task lighting to be portable rather than hard-wired.
 - XI. Lighting strategy was reviewed to identify fixture and lamp types used. Some changes are required in fixture and lamp types.

- The lighting in various typical spaces were explained in detail, demonstrating the tasks to be illuminated, the lamp types best suited for such lighting, and the delicate balance between energy Codes and foot-candle levels.
 - I. Delete lighting on exterior building signage.
 - II. Lighting under the south canopy shall be surface mounted type and not pendant mounted type.

- III. DSA to provide outdoor lighting plan for garden area. CMU will advise whether site lighting needs to be added to outdoor learning center; DSA to provide only future conduits at this time.
- IV. The west tunnel will be sealed off as a vault; delete lighting and power.
- V. Lighting in observation rooms was discussed. DSA strongly recommends dimmable lighting as opposed to dual switching. Dimmable incandescent MR16s will be explored, but there is a concern over the energy density and lamp life.
- VI. CMU does not desire any dimmable fluorescents due to replacement ballast costs. CMU approved the use of dimmable incandescents.
- VII. Suite corridors shall be illuminated with 2x2 indirect basket fixtures rather than downlights. CMU accepted the use of an additional lamp type to accomplish this lighting (17 watt T8 lamp).
- VIII. Closets and storage areas will switch from 40 watt biax lamps to 17 watt T8 lamps.
- IX. CMU shall confirm whether lighting is needed within display cases.
- X. Einstein Bros. Bagels may have special lighting requirements. CMU to confirm.
- XI. Fixture type F16 will be replaced with a more durable fixture. Toilet Rooms will be revised from downlights to 2x2 recessed fixtures.
- XII. In the Lecture Hall, an interface is required between the lighting controls and the Crestron room control system. The electrical contractor shall program the lighting controls.
- XIII. For fixture type F20 ("No Fruit"), DSA will investigate lamp maintenance accessibility.
- XIV. DSA will investigate accessibility issues with the light well fixture type M2 (possibly mounting them on a safety rail or from pendants above).
- XV. The specifications will require unit price adds and deducts for all lighting fixtures.
 - In general, the FFE package should specify pre-wired furniture.
 - Stand-alone lighting control is acceptable. This does not need to be single sourced to building automated controls contractor. No interface is required. DSA to review if there are potential alarm points that can be beneficial for interface to DDC system.

- For panelboards, it is desired to have 20% spare breakers with the remaining positions being spaces.
- Until CMU can provide a short circuit value at the primary service point, DSA will assume an infinite bus. DSA advised that assuming an infinite bus may or may not give reliable values for arc flash calculations.
- CMU will advise DSA of the kVA and secondary voltage ratings of the existing transformer southeast of building Q of the Washington Apartments.
- Compile a submittal list of equipment to include in front end.
- Compile a list of electrical testing requirements for CMU to review.

D. IT/AV Review

- The **CMU Building Committee Review – Comments and Request – 50% Review** spreadsheet and marked up 50% owner review drawings were explained and discussed. The following comments were made in addition to the previously mentioned documents:
 - i. The technology drawings will be incorporated into the architectural and electrical drawings.
 - ii. CMU requested supplemental outlets to be provided in the CALI Lab ceiling.
 - iii. CMU requested that a privacy switch be provided at the CDC. This switch shall be mounted at a height above a child's reach.
 - iv. Video conferencing conduit needs to be provided.

E. Structural Review

- The **CMU Building Committee Review – Comments and Request – 50% Review** spreadsheet and marked up 50% owner review drawings were explained and discussed.
 - i. DSA will comply with such comments unless noted otherwise on the response to the **CMU Building Committee Review – Comments and Request – 50% Review** spreadsheet.



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