FIELD REPORT-Mechanical

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TO: Frank John di Stefano, ADG
CC: Cecilia Vaniman, MSU
Don Platisha, CMS

Date of Visit: 3/21/12
Project: MSU Cooley Lab Renovation
GDP Job No.: 100104
Location: Bozeman, MT
Contractor: Dick Anderson Construction, Tri-County Mechanical, Williams P&H, Electro Controls
Present at Site: Cecilia Vaniman (MSU), Frank John diStefano (ADG), Don Platisha (CMS), Tim Tholt (DAC), Greg Schermele (DAC), Kirk Scheel (DAC), Ray Wagner (Williams), Larry (TCME), Dave Broquist (GPD), Brad Kauffman (GPD)

Purpose of Visit:
The purpose of the visit was to check on construction progress, meet the contractors, conduct a brief walkthrough, and see if there were any new mechanical issues. Additionally,

Project Status:

- The basement level slab is mostly complete. New waste and vent piping has been installed and backfilled. The three isolation slabs for the laser lab tables have been placed. The centrifugal chiller has been placed on its vibration isolators. The thickened slab for the heat pump is not yet placed but rebar is being tied. Most block walls have erected. Framing for partition walls is mostly complete.
- Additional ductwork has been installed in the laser labs and ductwork in those rooms is approximately 50% - 60% complete. In the mechanical room the heat pump is in place but not mounted on isolators yet. The base mounted pumps for heating water, chilled water and condenser water have been mounted on their concrete inertia bases. The heating water heat exchangers have not yet arrived. Minimal piping has been done in the main mechanical room.
- The piping mains have been assembled down the hallway on all floors including, now, the basement and most branch piping appears to be in place as well. Most or all walls have been framed throughout the building. Most ductwork is very nearly complete on floors one through four. The hydronic booster coils are being installed and approximately 70% or more were noted to have been installed.
- The air handling units and heat recovery coils have been situated and are awaiting placement of the specified neoprene isolation pad under their bases. The exhaust fans are in the penthouse but are not yet mounted. It seems that equipment is being protected from damage, dirt and mis-use.
- The main overhead stainless steel exhaust duct is being assembled in place. Alignment and interference issues are being encountered and worked through.

- The overhead portions of the clean steam, chilled water and heating water piping mains have been placed. Pipe fitters are now engaged in fabricating the heating and chilled water drops to serve the west bank of coils in AHU-1.
- Overall progress of the mechanical systems appears to be keeping pace with balance of the project.

Items of Discussion:

- Following the construction meeting a meeting with MSU personnel was held for the select purpose of discussing fire/smoke damper installation as it pertains to features, access, testing methods and aspects of system operation such as how it is reset following a power outage. Separate minutes will be issued for that meeting.
- We discussed that it would be good for the commissioning agent to make a visit to the site to gauge progress and make note of any potential issues he sees.
- The desired airflow orientation (air moving inward or outward) at room 208, the old bioinformatics server room, should be confirmed. The original orientation is outward towards the corridor as created by an oversupply condition. Depending upon the intended use for this room, there may be a desire to have and inward airflow orientation instead.
- The placement of the ductwork in the basement laser labs, and especially that of the exhaust ducts above the tables, should be reviewed with the potential users. It should be insured that the overhead equipment racks are still intended and that the exhaust duct locations will not conflict with these.
- In the penthouse, the sprinkler lines above the heat recovery coils and the air handling unit fresh air intake ducts need to be modified or relocated to accommodate the ductwork first. These are high velocity ducts and streamlining of the airflow is not to be jeopardized to allow ease of sprinkler pipe routing.

Items Requiring Attention or Correction:

- The finished appearance of ductwork is still a primary concern. This is common knowledge and will be addressed prior to project completion in the manner described above.
- The radiused elbows with turning vanes at the inlet of the heat recovery coil sections are required as shown on Detail 3, Sheet M2.5. Their centerline bend radius needs to be as large as the structure allows. The intent is to have a centerline bend radius of at least one duct diameter/height- in our case 24”, meaning an inside bend radius of 12”. The sound attenuators just upstream of these elbows will need to ramp upward away from the main duct in order to avoid interference with the main piping runs and gain the necessary height to accommodate an elbow with an acceptable sweep. This will necessitate an elbow with a bend exceeding 90 degrees for connection to the heat recovery coil section casings.
- The piping arrangement for the coil supplies on the west side of AHU-1 has left the heating water isolation valves very difficult to access. This condition needs to be rectified. The preferred approach is to move a portion of the clean steam line so that the valves can be accessed from directly below with a ladder.
- In the same location, the chilled water piping was offset at an elevation that will block the top heating coil from pulling directly outward should it need to be replaced. I have asked S. Conley Sales, the supplier of the unit, to verify with the factory that the top coil could be moved forward, dropped down and then pulled out from the unit. Until they or

the contractor can confirm this, it is important to note that this piping may have to be altered.

- Only specified and approved type gaskets should be utilized. Typical paper gaskets were noticed on site but it is not known if these were being installed or simply came with a flange set and were being set aside.

END REPORT