

Date: October 23, 2009

Time: 8:30 A.M.

Location: Lock Haven University
East Campus Conference Room

Purpose: Facilities Engineering/Energy Goals Preliminary
Design Meeting

Project: DGS 409-62 – Renovation
and Construction of a
Science and Math Center,
East Campus, Lock Haven
University

HA PN: 2009-230

M i n u t e s o f M e e t i n g

Attendees:

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Discussion:

Item No.	Discussion	Action
1.	<p><u>Mechanical</u></p> <p>a. Heating medium shall utilize Gas heat. University phasing out oil. Boilers to be low NOx.</p> <p>b. Indoor Design Temperatures: 73F cool/70F heat +/- 2 F.</p> <p>c. Energy goal is 70K BTU's per SF per year. This constraint must be met.</p> <p>d. Controls to be Bacnet protocol with communication over the internet (Web Based System). Preferably Automated Logic. No direct thermostat control is to be used within each zone/room/space. Temperature sensors to be used with maximum +/- 2 degree adjustment by the user.</p> <p>e. Water source heat pump HVAC System is preferred.</p> <ul style="list-style-type: none"> • Geothermal may be considered. Analysis needed to determine pay back and then University to Evaluate/Decide. • Boiler Room could go on an upper floor. • Make up air can be gas fired. • Physical clearance around the unit is essential for maintenance (trumps locations that are remote from teaching space). • Water Furnace is the preferred heat pump manufacturer, McQuay the second choice. Trane and FHP is not preferred. <p>f. No water based cooling tower (water use moves them into a permit requirement). Closed loop cooling towers to be used if heat rejection is required.</p> <p>g. Facility Management System, Building Controls and Automation</p> <ul style="list-style-type: none"> • Campus currently upgrading existing campus system to Automated Logic controls through Esco/Performance Contract. • Current performance contract Rep is 'Radius' from the Philadelphia/Harrisburg area. • Walk in cooler and refrigerators must have temperature monitoring. • Electrical and gas usage data needs to be monitored through the controls system. Sub metering to be included within the project. No water sub metering is required. • Controls should cover fume hoods, heat pumps, lighting, and temperature by room. 	

- Occupancy sensors for lighting and temperature control. Utilize CO₂ sensors for ventilation control.
 - System design should investigate all options for energy conservation.
 - System design should include the use of Variable Frequency Drives on equipment when possible to achieve energy savings.
- h. Honeywell performing an Esco/Performance Contract currently.
- i. Prefer to have a fume hood system that does not result in all going down if a fan fails (chemical storage that occurs in the fume hoods must then be moved to the central ventilated Chemical Storage Room). One Exhaust fan for entire hood system is unacceptable.
- Design should investigate a multi-fan system for redundancy.
2. Electrical/IT
- a. Data drops are needed. The entire building will be wireless, but the data drops are needed.
- Offices need 1 data drop per each wall for flexibility.
 - Teachers stations need 6 data drops. Labs, etc. to be determined.
 - Provide data drops for Controls System Interface at Head-End panels.
- b. Highland to provide Cat 6A 568B, 500 MH cable to drops.
- c. One Data Room per floor with network cable/fiber cable provided by Highland as extended from Gymnasium Building Data Room. Electrical backup, generator or otherwise, needs to keep the Gymnasium Data Room up as well as the Science Building systems.
- d. No more than 25 laptops per wireless device, so multiple units if higher capacity space. May need three in a room.
- e. IEES standard light levels, 50+ foot-candles in classrooms.
- f. Lighting design to minimize glare on computers.
- g. Light switch sequence front to back in classrooms.
- h. Daylight harvesting in coordination with front of room lighting control.
- i. Smart tech for teaching stations. Smart cart in front of room (make elevator big enough to carry it). Controls and connects with the projector, smart board, speakers, electric projection screens in larger rooms, and coax TV. Highland to provide projector mount hardware (ceiling grid fitting, shock isolated), electrical outlets, and empty conduits to wall outlet (by Smart cart).

- j. In rooms with over 100 person capacity, there should be touch pad/low voltage lighting controls. (Crestron controller)
 - k. Pyrotronics fire alarms need to be connected to central location. University to get a proprietary product waiver from DGS.
 - Will require a leased pair from Verizon since railroad right of way is between East and Main Campuses and alarm needs to be tied back to a central location.
 - Head end is the Junior High Building now, but it does not tie back to the central location.
 - Verizon demarcation point is in High School basement.
 - l. Card access exterior door only by Johnson Controls.
 - ADA/card access operation logic needs to be reviewed and verified with the University, and coordinated amongst primes. Separate expansion panel and other requirements. Key access for ADA after hours. Push pads have home runs to expansion panels. Locking on doors with electrified panics or astragal post electric strikes.
 - m. Emergency phone in back by parking lot.
 - n. No security cameras.
 - o. Back up (natural gas fired) generator for lighting, heating, fire alarm, pumps, data rooms. Outside generator. List of generator requirements needed from University. Also need the department/lab requirements for generator backup, from the departments.
 - p. Electrical sub-meter required for the building. Electrical and gas usage data needs to be fed to the controls system.
 - q. Electrical panels in the building need expansion capacity.
 - r. There is not policy or requirement for lighting protection.
 - s. Clock system that is self setting. Networked or possibly wireless.
 - t. One existing pole mount transformer serves the entire block.
 - u. Service to the new building will be underground.
 - v. Solar panels are not part of the project. Infrastructure (room and equipment) needs to be in place under the project. Not tying into the grid under this project.
 - w. Each data room to have (6) multi-mode and (6) single mode fiber
3. General
- a. Best lock cylinders campus wide.
 - b. University to clarify door hardware manufacturer preferences.

- c. DGS requires three sources/non-proprietary specs.
- d. See IT for door electrical requirements.
- e. No flat roof. May not be able to avoid it depending on the equipment that has to go on the roof.
- f. Don't specify sanitary napkin dispensers or disposal (verify no disposal).
- g. Need proper access to roof equipment that might be on a sloped roof.
- h. If a Penthouse then elevator to roof.

4. Plumbing

- a. Water service enters in the High School building and is a combination domestic water and fire protection. There is no need to provide any additional metering. A water source flow test will need to be conducted in order to establish the available flows and pressures. Two separate services should be brought into the renovated building.
- b. American Standard or Eljer fixtures preferred. Sloan flush valves preferred.
- c. Wolverine or American Standard sink/lav. trim preferred.
- d. Low flow fixtures.
- e. Battery operated faucets.
- f. A natural gas fired condensing type water heater with recirculation loop is preferred.
 - And/or existing domestic hot water heater in the Jr Hg has capacity for the Gym Locker Rooms, which are not used. Shift capacity to the new building and University will add capacity later if it is ever needed for the lockers.
- g. Incorporate sediment traps for lab sinks.
- h. Make sure that the acid neutralization tanks have maintenance access.
- i. There is one natural gas meter for the entire "East Campus" located on the Jr. High building. Incorporate a sub-meter for the renovated building.
- j. The emergency generator shall be natural gas fired.
- k. The local water quality is good and water treatment is therefore not expected.

5. Civil

- a. Needs breakdown of local permitting requirements.

- b. New meter pit.
- c. Existing building system is combination Sanitary/Storm system. Project to separate the sanitary and storm services.
- d. Bike racks to University standards.
- e. Benches to University standards.
- f. Exterior lights to University standards.
- g. Accessible path necessary from parking. Accessible path is existing from the trolley drop off.

These minutes have been prepared to the recollection of the A/E. If there are any discrepancies in these minutes as per your knowledge, please contact our office within three (3) days of receipt; otherwise, these minutes shall stand as issued.

Submitted By:

Avery Gretton AIA, NCARB

AG:ca

Cc: Attendees, M. Wolf, W:_2009\09-230\mtgmin\10-23-09.doc

Attachments: Heery Commissioning Agent Summary dated October 23, 2009