

Fremont City Schools  
HVAC MEETING  
Thursday, May 21, 2009  
2:00 p.m.

**Attending:**

Dave Chambers  
Dave Saller

Curt South  
Matt Sudhoff

Dr. Kim Theller

1. The purpose of the meeting was to run through the schematic design to insure the intent is being met (see attached).
2. Ceiling mount chilled beam to be used in the 3-story academic wing and the office area; floor mount in other areas where ceiling height is higher (over 14'): media center, vocal and instrumental rooms. Question posed whether to consider another air system in vocal and instrumental rooms other than floor mount.
3. VAV will be used in areas where chilled beam is not recommended: kitchen/cafeteria, gymnasium, locker rooms, and the tech ed rooms (due to location).
4. The cost estimate is in line with previous thoughts.
5. There is only one manufacturer for the floor mount; will ask OSFC for bid guidance.
6. It was agreed that a specification for the chilled beam manufacturers will be those with assembly plants in the U.S.
7. The chilled beam system will have dry coils which will require vacuum cleaning every 1-3 years. The system has a chilled pipe in and out and a duct mounted hot water coil will be included in the design (one thermostat per room).
8. Outdoor and indoor condensing units were reviewed. Chilled beam needs tempered, low humidity air. Outdoor Dx control is easier; indoor is a more efficient unit but takes up a whole mechanical room. Indoor would be housed in mechanical rooms on the first and third floors of the academic wing; duct work and piping would run up and out (intake and relief hoods on roof). The installation cost of both systems is the same, with a possibly lower cost for indoor. Indoor condensing units were agreed upon.
9. There will be two boilers sized at 2/3 load which will serve both VAV and chilled beams. The gymnasium will have its own air handling unit on the mechanical deck (12' up, concrete floor). All fans will be inside; 2 chillers in the mechanical yard.
10. Condenser boilers (capable of more efficiency) versus flexible water tube boilers: will need to decide which as this decision determines floor space in the design phase. This decision will be needed before the temperature controls meeting.

11. Gymnasium duct work: fabric (10 year warranty) versus metal? Advantage to fabric: cheaper installation, no damage from basketballs (dents, rust). Most new installs have been fabric (neutral color for replacement ease).

12. Dave Reinbolt and Dave Saller will review and select three Temperature Control manufacturers to be interviewed. District attendees for interviews: Dave Chambers, Rhonda Schmidt, Dr. Theller, and Tony White. Also to be determined that day is pump, boiler and chiller manufacturers.

1 Atch – Power Point Presentation

cc: BOE

# FANNING HOWEY

**OWNER/ARCHITECT MEETING**  
FREMONT CITY SCHOOLS  
Fremont, Ohio

Date: May 21, 2009 (*Revised June 5, 2009*)

Re: New Middle School  
Fremont City Schools  
Fremont, OH  
Project No. 208064.01  
OSFC Grant No. 379

To: Dr. Traci McCaudy, Superintendent  
Following is a report of our meeting on the above date. If you find anything with which you disagree, please inform us, in writing, within ten calendar days of receipt.

Present: Dr. Kimberly K. Theller, *Director of Facilities and Operations*; and Dave Chambers, Treasurer; and Dave Saller, Maintenance; all Fremont City Schools; Matthew N. Sudhoff and Curt W. South; both of Fanning Howey

Purpose: Review of Schematic Design Layout - Chilled Beams, DOAS Units, Equipment Manufacturers, and Temperature Controls Interviews

The following items were discussed regarding the Schematic Design layout:

1. The Schematic Design heating, ventilation, and air conditioning (HVAC) cost estimate was reviewed.
  - a. The cost estimate was consistent with the pre-design meeting cost estimates and Clyde-Green Springs bid.
2. The Schematic Design HVAC equipment layout was discussed.
  - a. Floor-mounted displacement ventilation units are to be shown in the media center, vocal room, and instrumental room only.
  - b. Ceiling-mounted units are to be used in all other chilled beam areas.
  - c. Variable air volume (VAV) with reheat system is to be used in the auditoria, locker rooms, and kitchen.
    - .1 The 2 production labs and 2 art rooms were discussed as having either VAV or chilled beams. Due to their distance from the chilled beam air-handling units, it was decided that VAV is to be used in those areas.
  - d. It was decided that duct-mounted hot water coils are to be used to provide heating to each individual classroom, in lieu of hot water coils in each chilled beam.
    - .1 It was decided that each classroom is to have an independent hot water coil and control valve.

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- e. The 3-story academic wing mechanical room was discussed in detail.
  - .1 It was decided that the intermediate suspended floor in the mechanical room can be steel grating, in lieu of concrete.
  
- f. The dedicated outdoor air-handling units for the academic wing were discussed in detail.
  - .1 The condensing unit location was discussed. No suitable location could be selected.
    - .a It was discussed that Munters DryCool ERV units do not require outdoor condensing units on either the ground or on the roof.
    - .b Cost, efficiency, and maintenance of the units was discussed versus chilled water units and units with remote condensing units.
    - .c It was decided that units without outdoor condensing units, Munters DryCool ERV, should be used in the academic wing. A total of 2 units will serve the 3-story wing.
  
- g. Hot water boilers were discussed.
  - .1 Condensing boilers and water-tube boilers were discussed.
    - .a It was explained that the initial cost was neutral between the 2 types.
    - .b Energy efficiency was discussed between the 2 boiler types. It was noted that the condensing boiler efficiency was superior to water-tube boilers when return water temperature was decreased in shoulder seasons or part-load conditions.
    - .c No decision was reached on the boiler type. Discussion will continue within the school district. This item will be reviewed again during temperature control interviews.
  
- h. Pumps were briefly discussed.
  - .1 No decision was reached on pump type. A discussion is to continue within the school district. This item will be reviewed again during temperature control interviews.
  
- i. Fabric ductwork in the gymnasium was discussed.
  - .1 It was decided that fabric ductwork will be used in the gymnasium.
    - .a It was discussed that this particular decision could be reviewed again at a later date. This item will be discussed again during temperature control interviews.
  
- j. Training of maintenance staff for the new systems was a concern throughout the discussion.
  - .1 It was noted that the temperature controls Contractor is to provide 5 days of tuition free schooling for 2 Owner selected operators.
    - .a Also, 4-hour training sessions will be held at the building site after the system is in full operation.
    - .b In addition, 2-hour training sessions will be given quarterly during the first 12 months of operation.
  - .2 Training for the air-handling units, pumps, chillers, and boilers were also a concern.

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- .a It was noted that a factory service representative will provide training to adjust, operate, and maintain aforementioned equipment.
- .3 Temperature Control Contractors were discussed.
  - .a It was decided to schedule the meetings during the week of June 22-26, 2009.
  - .b Fanning Howey is to check on Siemens and Honeywell brands to see if a local representative is available. An invitation will be dependant upon the proximity to the school district.
- .4 Items to be reviewed on the same day as temperature control interviews include:
  - .a Boilers – Condensing or water-tube
  - .b Pumps – Base-mounted or In-line
  - .c Chillers – Manufacturers
  - .d Fabric Ductwork - Gymnasium
  - .e Equipment Manufacturer's for Basis-of-Design
  - .f This meeting will take place independent of the on-going temperature control interviews.

Matthew N. Sudhoff  
Mechanical Designer/Associate

mns/jmg

c: Chris Moore, Touchstone CPM, Inc.  
Madison Dowlen, Ohio School Facilities Commission