

Fremont City Schools
Fremont Middle School Construction Project
Educational Technology Meeting
Thursday, April 30, 2009
4:00 p.m.

Attending:

Ken Clarkson	Dr. Traci McCaudy
Laurie Godfrey	Rhonda Schmidt
Andrew Poignon	Curt South

Ken Clarkson, Educational Technology Consultant with Fanning-Howey presented the Technology Basic Design (see attached).

- Cabling will be included in the beginning of the project and classroom equipment purchasing will be included toward the end.
- Every port in the classrooms goes to the closet (new standard).
- A pathway to North Street will be needed for any possible future planning.
- The main tech closet will be near the media center with access from the hallway. An additional small tech closet will be on the first floor and third closet on the second floor of the educational space which will be able to serve all three floors.
- Prox key cards will be used on exterior doors and keyed locks on interior doors.
- Projectors are included in every instructional space.
- The teacher station location is set in the educational spaces and determines the video input location.
- Discussion was held on the number of drops in to the classrooms and extended learning areas and the use of mobile technology carts (case work for storage and charging locations). The need for extra drops can be discussed in the future.
- Three electrical circuits are included in the design; the need for a fourth circuit was questioned which would be above the budget allocation.
- There are limited drops planned in the science classrooms (wireless technology available).
- The location of the PCs in the media center will need to be reviewed at the next meeting.

- A file server is included in the building budget.
- A minimum of 4 Smartboards are OSFC funded per building; may look to a variance or consider Smartboards in the extended learning areas.
- OSFC guidelines include a telephone in each classroom. Fanning-Howey will need more information on the district's current phone system to include a parts list and line list.
- Rhonda will check on Channel 1 and the needs of the district
- Door security will be a topic of discussion at the next meeting.

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cc: BOE

Chris Moore, Touchstone

Madison Dowlen, OSFC

FANNING HOWEY

OWNER/ARCHITECT MEETING

FREMONT CITY SCHOOLS

Fremont, Ohio

Date: April 30, 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. Traci McCaudy, Superintendent; Rhonda L. Schmidt, Director of Technology; Andrew Poignon, Technology Assistant; Laurie Godfrey, Director of Curriculum; all of Fremont City Schools; and Kenneth H. Clarkson and Curt W. South; both of Fanning Howey

Purpose: Educational Technology Meeting to discuss Technology Basic Design (attached)

1. Cabling will be included in the beginning of the project and classroom equipment purchasing will be included toward the end. This is done to ensure that current models of equipment are still being provided due to the rapid change in technology equipment.
2. Every data port in the classrooms will be routed to the nearest technology closet. The current topology in place at the existing buildings has a cable to each classroom which is then connected to a small switch in each classroom that is shared by up to 8 users. This was the standard design protocol that was used by the School Net wiring installation several years ago. The existing fiber-optic cable that was installed at that time is currently not being used. The new standard has each cable routed directly to the nearest technology closet with all switching equipment at a centralized location.
3. It is intended that laptop carts will be utilized to provide mobile computer labs to individual classrooms. It was discussed that the Extended Learning Areas (ELA) could be utilized for this type of function. If mobile carts are to be used, charging locations with 2 AC power circuits will be needed. The ELA would be a likely choice to park the mobile carts for charging. If every classroom is to be equipped with a charging location, an additional power circuit (4 instead of the 3 allocated by the Ohio School Facilities Commission (OSFC)) would be required in each instructional space.
4. The school district currently utilizes 3Com data switching equipment. The **school district** currently **utilizes** 10/100 megabit (Mb) switches whereas the new equipment will be 10/100/1000 Mb switches. **Any new switches that will be purchased for upgrade purposes will be 10/100/100 Mb switches.**

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5. A Cisco router is currently installed at each building. Each building routes back to the **administration building and then to the** Data Acquisition Site (DA-Site). The middle school should route back to the administration building, through the router in that building, and then to the DA-Site. **Provisions at the middle school will be made to facilitate the connection of the middle school to the high school that would provide the capability to have one connection to the DA-Site for both buildings if desired.**
6. There is an existing voice quality T-1 line at the existing **high** school. The New Middle School can attach to the administration building or high school.
7. A pathway to North Street will be needed for any possible future planning. In addition, a connection to the high school will be installed to prepare for relocating services to the high school and New Middle School in the event that the current administration building would not be used by the school district.
8. The main technology closet will be near the media center with access from the hallway. An additional smaller technology closet will be on the first floor near the music rooms and the third closet will be on the second floor of the educational space. These locations will be able to serve all 3 floors in the educational wing.
9. Proximity key cards will be used on the exterior doors, and keyed locks will be used on interior doors. The school district would prefer to utilize a key fob and continue with their current ID badges that are not proximity cards.
10. Projectors are included in every instructional space, **and should be ceiling mounted.**
11. The teacher station location is set in the educational spaces and determines the video input location.
12. Discussion was held on the number of drops into the classrooms and extended learning areas and the use of mobile technology carts (casework for storage and charging locations). The need for extra drops can be discussed in the future. It is the school district's desire to have technology drops in each wall. Ken Clarkson discussed the fact that many of the walls are utilized by casework and may not allow for drops on all walls. Further review of this topic will occur once the casework plans have developed with the school district's input.
13. Three electrical circuits are included in the design; the need for a fourth circuit was questioned which would be above the budget allocation.
14. There are limited drops planned in the science classrooms (wireless technology will be available).
15. The location of personal computers (PC) in the media center will need to be reviewed at the next meeting.
16. A file server is included in the building budget.

O/A Meeting (04/30/09) (**Revised 06/05/09**)

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Fremont City Schools

Fremont, OH

Project No. 208064.01

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17. A minimum of 4 interactive whiteboards are OSFC funded per building; consideration may be given to a variance or interactive whiteboards in each of the ELAs.
18. OSFC guidelines include a telephone in each classroom. Fanning/Howey Associates, Inc. will need more information on the school district's current telephone system to include a parts list and line list. This is needed to determine if it will be advantageous to expand the existing system or whether it would be better to install a new system that could be expanded.
19. Rhonda Schmidt will check on Channel One programming and the needs of the school district.
20. Door security will be a topic of discussion at the next meeting. Mr. Clarkson will provide a preliminary layout of the access doors which can be modified at the security meeting. Camera locations will also be discussed.
21. The intercom system will need at least 10 different schedules since each learning community will have a different bell schedule throughout the day.

Kenneth H. Clarkson, RCDD, Associate
Educational Technology Designer

khc/jmg/lal

attachment

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

FANNING HOWEY

Technology Basic Design

DIVISION 27 TECHNOLOGY

The Educational Technology Summary of Work will include the following:

A. Cabling Infrastructure for Voice, Video and Data

1. Technology drawings indicate the communication outlet locations. The Room Matrix Schedule will show quantities of each voice, video, and data outlet in each room and the location from which they are served.
2. The building design will utilize Category 5e copper 4Pr unshielded twisted pair horizontal plenum rated cable.
3. Technology cabling should be issued as a separate Bid Package to maintain the lowest pricing with the best quality of work.
4. The building design will utilize multi-pair (25Pr, 50Pr, 100Pr) Category 3 copper backbone from the Main Cross Connect/Equipment Room (MC/ER) to each Telecommunication Room (TR) for the telephone backbone.
5. The building design will utilize 50 micron multi-mode fiber optic backbone cable from the Main Cross Connect/Equipment Room (MC/ER) to each Telecommunication Room (TR) for the local area network backbone.
6. Interconnection between buildings should be made via fiber optic cable.
7. Fiber optic cable would be 50/125 micron, laser optimized fiber (10 gigabit).
8. The industry standard type "SC" style fiber connectors will be specified throughout. (If there is existing fiber on campus using "ST" style connectors, fiber adapter cables will need to be specified.)
9. Each office will have 2 drops for voice and data.
10. Each staff workspace will have 2 drops for voice and data.
11. Each teacher location will have 2 drops for voice and data.
12. Each educational area (classroom) will have 4 to 8 student data drops.
13. A typical classroom space will have three electrical circuits. One will be located at the teacher location and 2 will be located at the student location with 4 plugs per PC.
14. Each computer laboratory, business laboratory, CADD laboratory, language laboratory, writing laboratory, and Laboratory 2000 will have 2 teacher and 24 to 36 student drops for data and voice.
15. If a portable wireless computer lab (cart) is to be shared, a central location will need to be designated to provide power for a charging location. A 12 to 15 PC cart will require one circuit. (2 carts will require 2 circuits). The wireless range is approximately 75 feet.

16. Each science laboratory will have 8 to 16 data drops.
17. Each music room, band room, and choir room will have 4 to 8 data drops.
18. The media center will have 12 to 24 data drops.
19. The cafeteria will have 6 to 12 data drops.
20. The kitchen will have data drops at each cash register.
21. All 4PR unshielded twisted pair shall terminate on RJ45 jacks located in the office, classrooms, and work rooms and on patch panels in the Telecommunication Rooms and in the Main Cross Connect/Equipment Rooms.
22. The Telecommunication Rooms shall utilize 7-foot racks and the Main Cross Connect/Equipment Rooms shall utilize 7-foot cabinets to house the voice, video, and data equipment.
23. All coax backbone cable shall be RG11 up to 500 feet and .500-inch hard-line coax above 500 feet from the MC/ER to each TR for video distribution.
24. All coax horizontal cables shall be RG6 from each television location to the nearest TR or MC/ER.
25. The building design will utilize one coax (RG6) from each teacher's location, teaching space, office, media center etc., to the Telecommunication Rooms or the Main Cross Connect/Equipment Rooms.
26. Video Projectors in each classroom shall be connected to the teacher location (local input) with S-Video, VGA, 2 audio cables, and one composite video cable.
27. The building design will utilize television brackets, supports, VCR/DVD brackets, and desk swivels for each television location as required.
28. Spaces such as the computer laboratory, cafeteria, auditorium, and large group instructional areas will have cabling for high lumen video projectors.
29. Each Telecommunication Room shall utilize 2 equipment racks to house patch panels, wire management, switches, UPS etc.
30. The Main Cross Connect/Equipment Room shall utilize 3 to 6 equipment cabinets to house patch panels, wire management, switches, chassis, UPS, etc.
31. The Telecommunication Rooms shall be exhausted with continuous air circulation.
32. The Main Cross Connect/Equipment Rooms shall have their own independent air conditioning unit.
33. The Telecommunication Rooms shall have (1) 30 A, 120 volt circuit and (1) 20 A, 120 volt circuit.
34. The MC/ER shall have (2) 30 A, 120 volt circuits and (3) 20 A, 120 volt circuits.

35. The Telecommunications Rooms shall be bonded with No. 4 ground wire to each equipment rack or cabinet.
36. The MC/ER shall be bonded with No. 4 ground wire to each equipment cabinet.
37. Each classroom shall have provisions for an electronic white board.
38. Each classroom shall be wired for room sound reinforcement system.

B. Telephone System

1. The building design will utilize digital telephone systems located in the Main Cross Connect/Equipment Room.
2. The building design will utilize 4 / 8 / 12 (Elementary, Middle School, High School) port voice-mail system, integrated with the telephone system. The voice mail system is capable of being used for a homework hotline system.
3. Each office and workspace will have a digital display telephone with full-duplex speaker functionality.
4. Each teaching space will have a digital display telephone with full-duplex speaker functionality.
5. The main administrative receptionist will have a telephone with a display console showing all extension numbers. This will allow calls to be transferred pressing fewer buttons.
6. Each building will have one emergency phone located in the principal's office.
7. Each building will have at least one wireless telephone located in the principal's office.
8. If a VOIP (Voice Over Internet Protocol) telephone system is desired, the system will be specified as a true VOIP system.
9. Existing service agreements for the current number of telephone lines will be gathered and reviewed to confirm that the number of lines is appropriate for the new services that will be provided. The end date of the current service contract will need to be confirmed. How many lines are currently in use? How many are really needed?
10. If fiber optic cable is connected between the buildings, all systems can be connected as one large system allowing calls to be transferred directly to extensions or voice mailboxes. In addition, a group or all call voice-mails could be easily distributed.
11. The telephone system will be connected to the Central Sound (Intercom) system to allow paging from any phone location.
12. The telephone system will be protected by an online UPS system.

C. Video Distribution System

1. The building will utilize the video distribution headend in the Main Cross Connect/Equipment Room. The following source equipment will be provided:
 - a. Cable tuners (12)
 - b. DVD Recorder (2)
 - c. Text message generator (1)
 - d. Modulators for each source device
2. The video distribution system shall be housed in 3 equipment cabinets in the Main Cross Connect/Equipment Room.
3. Each classroom will utilize either a 3000 lumens video projector or a 42-inch LCD Television (split rooms).
4. Classrooms will have a DVD recorder that will act as the tuner for the video projector.
5. If the video projectors are used, these units will be mounted ± 10 feet from the projection screen.
6. Some offices and conference rooms will have 26/32-inch televisions. Most offices will have a video cable with the intention of using a PC video card for viewing RF signals.
7. Video projectors will be provided in the computer labs, large group instruction areas, cafeteria, auditorium, and any other large instructional spaces as requested by the Owner.
8. Some loose equipment such as document scanners, television cameras, digital camcorders, visual presenters, etc., will be provided.
9. The building design will utilize a cable television feed or satellite dish system, and Channel One if desired.
10. The building design will utilize 1 or 2 video remote origination carts with camera, microphone, audio amplifier and a 15-inch LCD monitor. A remote origination camera cart will allow a video camera to broadcast the video signal across the school campus and allowing viewing from all classrooms connected within that building.
11. Each classroom PC will be able to display the PC image on the classroom video projector or monitor via a local input video wall plate connection.
12. VGA and S-Video DA amplifiers will be provided for teaching spaces.
13. Each classroom will have provisions for an electronic whiteboard
14. Each classroom will have a sound reinforcement system.

D. Computer Network Electronics

1. The building design will utilize 24 or 48 port 10/100 Ethernet switches in each Telecommunication Rooms and Main Cross Connect/Equipment Room.
2. The building design will utilize 1 Gigabit GBIC's or 10 Gigabit GBIC's for uplink from each Telecommunication Room and Main Cross Connect/Equipment Room.
3. The building design will have 100% activation of the data ports within the building. .
4. Computers and printers are not part of the Project and must be provided by the District.
5. The building will have wireless access points 120 feet apart.
6. The building will have a KVM switch for the file servers.

E. Wide Area Network –(If needed)

1. The building design shall utilize 4-inch conduit with innerducts between buildings with pull-boxes approximately 500 - 600 feet apart.
2. The building design shall utilize multi-mode or single mode, 50 micron fiber optic outdoor cables between buildings.
3. The building design shall utilize Category 3 multi-pair copper backbone outdoor cables between buildings.
4. The building design shall utilize RG-11, 1/2-inch or 3/4-inch hard-line video backbone cables between buildings determined by the distance between locations.
5. The Wide Area Network is typically an LFI and is not always provided under the OSFC guidelines. Only the backbone that is within each of the buildings is covered.

F. Sound Reinforcement System

1. Wireless microphones
2. Channel receiver and amplifier
3. Infrared receivers
4. Speakers
5. Cabling

G. Access Control System

1. Proximity Reader
2. Key Pad
3. Key Fob
4. Proximity ID card

5. Identify Handicap entrance locations and the doors that will be motorized including the pushbutton actuator locations.
6. Proximity readers can be programmed so that they will only disarm a particular zone while the main reader locations can disarm the entire building.
7. The playground entrances should have a reader that would only operate during school hours.
8. Identify type and quantity of proximity devices.
9. Will the district require the front office to "buzz" visitors into the school office from the vestibule?
10. How will delivery personnel gain access to the building for early morning deliveries (i.e. food service providers)? Daytime deliveries?

H. Intrusion Detection

1. Door Contacts to be located on all exterior door locations.
2. Motion Detectors
3. Identify Intrusion detection zones to allow disarming of zones during particular events.
4. Identify rooms with valuable items that have exterior window access that would require motion detectors.
5. Identify walk paths that would monitor an intruder who has gained access to the building.

I. Video Surveillance

1. Interior fixed mini dome cameras
2. Exterior fixed mini dome cameras
3. Exterior Pan/Tilt/Zoom cameras
4. Identify areas to be monitored.
5. Identify areas that will require greater resolution or quality definition
6. Identify security risks due to potential theft of valuable items or equipment.
7. Images shall be recorded for approximately 45 days depending on the quantity of cameras, frame rate and video quality.
8. There will be a monitor (32 or 42 inch) in the receptionist area to display some of the camera views. Additional monitoring can be done by the school administrators from their office.

Training

1. The training will be included with each system installed. Training will be provided for 3 different levels of users including administrators, teachers, and technical support staff. There will be 12 to 15 people in each training group. Training will be done during prep times or with substitute teachers filling in for the staff during training. The connection of a PC to the monitor will be demonstrated. Software applications will not be part of the training.

O/A Meeting (04/30/09) (**Revised 06/05/09**)

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Fremont City Schools
Fremont, OH
Project No. 208064.01
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 Fremont City Schools

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