

## **Banks Middle School Design Meeting #3**

### **SUMMARY**

**Wednesday, August 15, 2012**

**3:30 – 6:00**

#### **Attendees:**

Not recorded

Facilitated by Richard Higgins

Engineers Present: Chris Narramore (mechanical), Oana Stephens (electrical), and Diana Brown (structural)

#### **Mechanical System Discussion:**

- Displacement Ventilation (DV) system for cooling and ventilation is proposed for the classrooms due the energy saving, occupant comfort and indoor air quality. The supply grilles on the interior wall or teaching wall are approximately 3 ft x 5 ft in size (2 per classroom). The exterior wall is heated with a fin-tube radiant heater during heating mode.
- The DV system is the same system as seen at Scappoose Elementary.
- The radiant heating fin-tube was built into the casework or benches where practical. The Client team requests the same approach for BJH.
- The Client team requests follow-up information (Chris) regarding the displacement ventilation system at the next meeting:
  - Photos of supply grille in classrooms at Scappoose or Joseph Gale.
  - Energy saving analysis of DV versus ceiling, forced air HVAC
- The offices spaces and smaller, more confined rooms will be designed with ceiling distribution, standard forced –air system.
- The option of providing a single chiller plant for the Middle School and High School as part of the BHS mechanical system replacement was discussed. This option will NOT be pursued due to the uncertain future of the high school facility.
- The performance characteristics of HVAC system would be impacted in the situation where exterior windows were opened while in operation. At a premium cost, micro-switches could be installed on windows that were linked with the HVAC to shutdown the system when windows were opened.

#### **Electrical System Discussion:**

- The building has a 1200 amp main switchgear panel but only a utility service feed of 800 amps. The school currently has a load of 400 amps (with code factors), so can only add another 400 amps. At this time that looks work-able, but will continue to work through calculations. Worst case is the utility will have to increase the service, but the main school switchgear will not have to be upsized
- Will need temporary connections for all low voltage – fire, security, and communications during construction as those panels are in the demolished wing.

- The existing fire alarm system is “SIMPLEX”, but based on discussions with the District will change to Silent Knight.
- Lighting systems:
  - A combination of Direct/indirect pendants will be provided in classrooms.
  - The lamp choices are T-8's (what you have now), T-5HO's (Scappoose) or LED(current trending technology.
  - LED provides longer lamp life and are ceiling mounted only
  - Day-lighting photocells (code) and occupancy sensors (optional) are included in the lighting controls system.
- The Client team requests follow-up information (Oana) regarding the lighting systems at the next meeting:
  - Initial cost, life, and energy usage of lamp options
  - Pictures of lighting fixtures in school applications
- The existing generator is 20Kva and undersized for the additional loads required with the Middle School replacement.
  - Design team will review options with code enforcement.
  - Design team will review options and cost with BSD.
- The state required allocation of 1.5% of construction budget for alternative energy was discussed. The options discussed included solar water heating or power generation – though the direction favored power generation.
- The Client team requests follow-up information (Oana) regarding the alternative energy at the next meeting:
  - Initial costs and energy production for both system
  - Operation and maintenance requirements for both systems.

**Structural System Discussion:**

- The proposed approach is tilt-up concrete exterior wall, wood & concrete topping 2” slab framing for second floor and roof framing. The exterior finish would be mostly brick with some metal panels over the concrete tilt.
- The Client team wants exposed concrete floor on the upper level hallways like Joseph Gale. The wood framing and 2” topping slab is not suitable for exposing and grinding of the concrete (it will crack a lot). It will have to go to 4” of concrete on a metal composite deck.
  - The Client team requests follow-up information (Diana) regarding the cost premium for the steel framing and metal/concrete deck system.
- The framing of the Media Center is intended to be similar to the library at Scappoose Elementary – exposed glu-lam beams, exposed ductwork, direct/indirect lighting and exposed underside of roof deck.

## **Architectural Design**

GENERAL: The next development of the floor plan was shared based on the approval of the "Connected" scheme from last time. Comments were as follows:

- The Waiting Area may be oversized. A reduced area could be traded for additional storage in the Administration area or corridor width.
- The additional storage requirements (cabinets) will be measured by BSD and shared with the Design team.
- The Health Room wall facing the Reception Desk needs glass to see through and a door added to the room for audible control.
- Up to 300 lockers are needed, which can be double-tiered. Discussion was had regarding putting cubbies in the 6<sup>th</sup> grade rooms in lieu of lockers for that grade level, but this takes up floor space in the classroom. Lockers should be placed such that they are not across from each other and narrow down the corridor..
- The Planning room (10' x 10') needs to be swapped for 2 unisex student toilet rooms on the first floor. It was deemed that the restrooms near the cafeteria were too far of a walk for students. This may allow reduction in the size of restrooms on the upper floor. DLR Group to check code.
- The Media Center layout will be delineated in the next iteration of the plan.
- The south wall of the Media Center will take advantage of the abundance of easily controlled day-lighting. Exterior sun-control shades, upward sloping ceiling to increase the surface area of the south wall and light shelves could be incorporated.
- Ports and power for a printer and copier need to be provided in the upper level Planning room.
- The Client team requests follow-up information regarding ALL interior finishes at the appropriate future meeting .
  - Initial costs, durability and maintenance costs
  - Acoustical properties – absorption and isolation
  - Colors and finishes
  - Pictures of school applications where possible

Exterior elevation studies of the west wall were presented. The following comments were recorded:

- The "Blue Water Banks" option appears corporate and trendy.
- The "Shade Trees in Banks" option incorporates classic elements of solid base (dark brown brick) and horizontal banding (single row of brick at regular intervals).
- The vertical sun-control fins would not obstruct the view out of the classroom while shading the glass from western sun in the afternoon.
- The retention of the existing trees on the westside of the existing school should not drive the design.
- The Design team explained the design intent as follows:
  - The west elevation is very long and expansive.
    - The window openings add variety and interest to the elevation.

- The design of the window openings is offset by one window module to create movement to the north where the front door is located. At the north end the windows are stacked vertically as you reach the end of the elevation.
    - The window layout is derived from the interior space uses; so, the single window opening provides windows in spaces that are not part of a regular rhythm.
    - The horizontal lines add movement and reduce the building scale to a more residential size.
  - The window treatment is specifically designed to shade the windows on the west elevation.
    - The vertical fins shade the window to the north of the panel.
    - The adjacent window opening (shown as green) is an opaque panel that would not be shaded by a fin. The added width of the opening reduces the visual mass of the solid wall area.
- A detail for introducing day-lighting into the west classrooms from the roof/back of parapet was discussed. Development will depend on first rough cost estimates.
- The Design team will continue development of the “Shade Trees at Banks” concept.

**Next Steps:**

DLR Group will provide further refinement to the floor plan to finalize wall placement by the end of the next meeting. Data for follow up items identified above will be provided for discussion and recommendation. The plans will be provided for approval by the Board at the September 10<sup>th</sup> Board Meeting.

Next Meeting: Wednesday, August 29, 2012  
 Banks District Board Room  
 3:30 – 5:30

**END OF SUMMARY**