

Building Dialogue

Swinney Elementary School

11/15/2006

Year Open: 1915 Additions: 1928

Square Footage: 54373 Acreage: 360

FACILITY MANAGEMENT SYSTEM

Date Dialogue**10/5/2006 Mechanical : Cost Estimate for Proposed HVAC Improvements**

The cost estimates are based on rules of thumb for the building size, age, condition and types of usage. Any requirements of asbestos removal are not included in the following costs:

1. Install two 3500 MBH hot water boilers - \$200,000.
2. Install 250 Ton chilled water system with chiller, remote evaporator, pumps and accessories - \$250,000.
5. Install new 4-pipe unit ventilators for other areas including piping - \$450,000.
6. New DDC controls with WEB based Lonworks protocol - \$180,000.
7. Demolition and removal allowance - \$80,000.

9/18/2006 Asphalt/Concrete : Asphalt

Parking lot and driveway have some cracks to fill and seal. Parking striping are very faint and needs to be redone.

9/18/2006 Asphalt/Concrete : Concrete

Multiple stairs at the school are cracked, chipped, and spalling off. These need to be repaired. No handrail is provided at the northeast or northwest stairs. Cohesive sealant failure at horizontal connection between sidewalk and adjacent building needs to be replaced.

9/18/2006 Asphalt/Concrete : Play Equipment

Soft play area materials needs to be replaced. Hard play areas need cracks filled and sealed and paint play lines. The south plaza area also needs to be filled and sealed. Wood ramps from building to playground are useable for the near future but long term these need to be replaced with brick, stone, or concrete.

9/18/2006 Doors: Exterior Entrances

Hollow metal doors and frames- some of these have rust on them and need to be cleaned and painted. Hardware does need to be replaced at some doors.

9/18/2006 Windows: Windows

Aluminum replacement windows are single pane plexiglass. This building is fully air conditioned but has only single pane glazing. These need to be replaced with insulated window units for energy efficiency. Some hardware is defective and vertical aluminum snap trim is missing. Plexiglass 2x2 and 4x4 units at new stair tower curtain window walls and conference room are cracked at edges. Typically, these need to be replaced and again with insulated glazing units. Clean and paint all metal lintels on all elevations.

9/18/2006 Walls : Exterior Walls

Exterior is made up of brick, stone, cast stone, architectural terra-cotta, and EIFS (on most recent addition). Some of brick and stone need to be repointed. Some of the cast stone parapet cap and window sills need repair. EIFS walls at cooling tower trash enclosure are in very poor condition and these need to be replaced with brick, metal panel or other durable surface building material wood. Soffit near room #300- Science Room, needs to be cleaned and repainted. At east entry doors, near boiler room, terra-cotta is cracked at soffit and there may be damage to the hidden metal support. If so, support will need to be replaced and a portion of brick above reinstalled and terra cotta repaired. Interior wood flooring at the existing auditorium seating has warped and buckled, this is a trip hazard and needs to be repaired.

9/8/2006 Mechanical : Existing HVAC System

Two low pressure steam boilers produce steam which in turn produce heating hot water in the steam to hot water heat exchangers. The hot water then is circulated by two pumps to all over the building for heating.

The building has two-pipe system. The same pumps circulate chilled water in cooling season to provide cooling within the building. So, the two pipe system is used to provide either heating or cooling in the building.

One "Trane" make air cooled reciprocating chiller of 150 Ton capacity was installed outside the building to provide cooling in 1987. Due to complaint of being noisy from neighbours walls were built around it to reduce the noise level. Then the unit did not operate properly and used to shut off on high temperature alarm as the condenser could not dissipate the heat properly. Louvers on the side wall were added to improve the situation, but it did not do much. So, a water pipe with nozzles spraying water on the two side of the fins of condenser was added to make the unit work. See photo M11 and M12. Two floor standing fan also helps to dissipate the heat from the condenser fins. This arrangement help the unit run presently but that led to another problem at site. The water sprayed on the fins of the chiller drains through the generator room on the west side of the chiller to the 47th street. So, the generator is now sitting in constant water flow and considerable amount of algae forms on the driveway, west of the generator room and that need regular maintenance effort from school maintenance staffs. See photo M13.

The gymnasium and dining area is heated and cooled by air handling units. All the other areas are served by unit ventilators. All the unit ventilators are designed for two-pipe system.

9/8/2006 Mechanical : Recommendations for renovation of HVAC System

Two steam boilers shall be replaced by two new hot water boilers. The existing 150 Ton reciprocating chiller is at the end of its useful service life and also creating operation problem as mentioned earlier. So, it is proposed to install a new 250 Ton chilled water system for the building. The existing chiller can be removed then. The new package chiller shall be installed on the roof and the remote evaporator shall be installed in the boiler room after the removal of steam boilers. The fan unit in the fan room shall also be removed.

Two more pipes shall be added and the existing two-pipe system throughout the building shall be changed to four-pipe system. Additional pumps shall also be installed in the boiler room to operate the four-pipe system.

The existing unit ventilators shall be replaced with new unit ventilators, suitable for four-pipe system. These new unit ventilators shall provide cooling with chilled water and heating with hot water.

8/30/2006 Electrical : General Description

The 49,430 square foot building constructed in 1915 has a 1600A, 208/120V, 3-Phase, 4-wire electrical service, being fed from 3X100KVA KCP&L pole mounted transformer. Electrical service metering is found outside the building with and meter serial no. of 02036579 for the Main School. The Main entrance panelboard is located in the Electrical Room just beside the Chiller Room. The building has a Back-up Emergency Generator to back up mainly the egress and emergency lighting. TVSS is not found as a part of the electrical system. A second 200A, 208/120V, 3-Phase, 4-wire electrical service is found from the same 300KVA Pole mounted transformer to feed the Mobile Classrooms. The meter is mounted on a unistrut outside the Mobile classroom. The meter serial no. is 02036579. The equipment spacing and clearances did comply with National Electrical Code. It is obvious that the present electrical service needs to be upgraded to a new 480V service with new HVAC and other misc. addition/alteration from the present situation.

In general the lighting in classrooms, Labs, other similar rooms, and auditorium lighting are done with pendant 34W 4-lamp T8 acrylic prismatic lensed wraparound troffers. They seem to live their useful life already. Lens looks dirty and cumulates huge dirt depreciation factor. Those fixtures needs to be demolished and replaced by 3-lamp energy efficient T8 lensed wraparounds and electronic ballasts. Corridors generally have 4-lamp wraparounds. They are required to be substituted with new 3-lamp T8 wraparounds. Some of the incandescent cans found in the corridor and elevator lobby areas needs to be replaced by compact flourescent can lights. Lighting in Conference Rooms with 4-lamp 18-cell parabolic fixtures looks adequate. Light fixtures in the office areas need to be upgraded with the same to reduce glare. Incandescent Lighting in gymnasium needs to be upgraded with either rapid start metal halide fixtures or T5HOs. Lens replacement is necessary in fixtures at the restrooms. In general, all the light fixtures are controlled by Toggle Switch. Application of occupancy sensors are required all over the place to comply with the latest codes and standards. Semi-cut off exterior lighting needs to be upgraded with full-cut off, photocell-timer-sensor controlled lighting.