

Building Dialogue

Marlborough Elementary School

11/20/2006

Year Open: Additions:

Square Footage: Acreage:

FACILITY MANAGEMENT TEAM

Date Dialogue**10/17/2006 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, pumps and accessories - \$240,000.
2. Install 250 Ton chilled water systems with chiller(s), pumps and accessories - \$250,000.
3. Install a new 10 Ton AHU for gymnasium and ductwork - \$30,000.
4. replace the DX coils of the existing AHU of Auditorium with chilled water coil - \$5,000.
5. Install new 4-pipe unit ventilators for other areas including piping as required - \$425,000.
6. New DDC controls with WEB based Lonworks protocol - \$180,000.
7. Demolition and removal allowance - \$80,000.
8. Miscellaneous and architectural allowance - \$150,000.

10/16/2006 Mechanical : Recommendation for Renovation of HVAC System

Most of the classrooms are setup for perimeter heat and the steam and condensate pipe runs to all the unit ventilators in the classrooms throughout the building perimeter. The steam piping shall be reused as much as possible and the steam system shall be replaced with hot water system. Two steam boilers shall be replaced with new hot water boilers.

A new central chilled water system of 250 Ton capacity is proposed for the building. The chiller(s) and the chilled water pumps can be installed in the boiler room and the remote air-cooled condenser unit shall be installed on the roof. The unit ventilators in the classrooms shall be replaced with new unit ventilators. The existing condensing units on the roof providing DX cooling to the existing unit ventilators shall also be removed. The new unit ventilators shall be designed for four-pipe system to provide hot water heating and chilled water cooling in the classrooms. The chilled water produced by the chillers shall be circulated to the new unit ventilators through a new pair of chilled water piping. The DX coils of the AHU for auditorium shall also be replaced with chilled water coils and the condensing unit on the roof shall be removed. The fan unit of the gymnasium shall be replaced with a new air handling unit complete with chilled water coil and hot water coil.

10/5/2006 Mechanical : Existing HVAC System

Two(2) boiler provide low pressure steam for heating throughout the building. Two(2) AHU"s with steam heating coil provide ventilation air to the gymnasium. One rooftop unit provide cooling and gas heating in auditorium stage area. One separate split system serves the rest of auditorium area. The air-cooled condensing unit for the auditorium is located on the roof.

Unit ventilators with DX cooling and steam heating capability provide air-conditioning in all classrooms and administrative office. These unit ventilators are served by the air-cooled condensing units located on the roof to produce cooling in the spaces.

9/25/2006 Asphalt/Concrete : Asphalt

The asphalt areas include the north parking lot, west drive, west playground, and the south playground. The west drive should be replaced with new asphalt paving. The other locations have biogrowth to be removed and cracks repaired. The entire area to be sealcoated.

9/25/2006 Asphalt/Concrete : Concrete

The concrete walk at the east entrance is damaged and needs to be replaced. Steps need repair.

9/25/2006 Asphalt/Concrete : Play Equipment

There are two pieces of play equipment located at the north side of the building setting on grass. This is not the same quality as other schools equipment.

9/25/2006 Doors: Exterior Entrance

The exterior entrances are hollow metal doors and frames. The door and frame at the southeast corner of the building should be replaced. Three entrances need to be refinished.

9/25/2006 Windows: Windows

The windows are aluminum with plexiglass. One unit is broken in the stairway and needs to be replaced. The windows typically are in good condition.

9/25/2006 Walls : Wall

The walls are brick with cut stone and terra cotta. There are some cracks to repair and joints to reseal in the stone sills. The glass block on the south elevation has a open joint to be resealed. It appears the brick has been recently tuckpointed.

8/28/2006 Electrical :

This building is in relatively good repair electrically, although it has be reorganized to serve an office rather than a school function.

The predominant light fixture is the 4 lite T12 recessed fluorescent fixture, one per 64 square foot. This provides an opportunity for energy savings byetrofitting 4 light fixtures with 4 T8 lamps and two ballasts where spaced on 64 square feet and replacing with 2 T8 lamps and internal specular reflectors where on 48 square feet such as rooms 217,218,219. There are approximately 150 fixtures to replace under this scenario.

The electrical system is 1200 A 480Y/277V with three mains, 600A and (2)400A. If additional mechanical equipment is installed, an additional switch could