

GENERAL CONSTRUCTION SYSTEMS

I. EXISTING CONDITIONS

A. ORIGINAL BUILDING

Date of Construction	:	1939.
Construction Classification	:	A (Fire resistive/Noncombustible).
Total Floor Area	:	58,372 sf.
Number of Floors	:	Three; basement, ground, second.
Structural System	:	Masonry bearing wall.
Floor Construction	:	Reinforced concrete.
Roof Construction	:	Reinforced concrete (assumed).
Exterior Wall Construction	:	Coursed ashler.
Interior Wall Construction	:	Plaster, painted masonry.
Windows	:	Wood sash/frame, single glazed.
Exterior Doors	:	Wood doors and frames.

II. CODE REQUIREMENTS

*	\$	0	1.	Rescue Window: Emergency egress windows must be identifiable at all times from both inside and out to promote rapid egress and rescue. Although no problems with signs were noted in this school, it would be prudent to review signage throughout school and correct where necessary.
	\$	0		TOTAL - CODE REQUIREMENTS WORK

III. ARCHITECT'S AND ENGINEER'S RECOMMENDATIONS

III.A. HEALTH AND SAFETY IMPROVEMENTS


	\$	76,000	1.	Closets: Pivot type coat closets remain in many classrooms. These are undesirable for several reasons. The pivoting doors allow the two adjacent leaves to close tightly and abruptly which can result in hand or finger injuries. Pivoting door operation results in wasted space. Maintenance of closet hardware is becoming a burden and replacement parts are no longer available. Additionally, some school districts have found that not segregating coats, hats, etc. inside the closet provides an avenue for the spread of lice that affects an estimated 25% of children in grades K-6. Consider replacing closets with individual cubbies and open wardrobes.
	\$	3,200	2.	Closers: Newly constructed, unsprinklered buildings require door closers on all doors that open onto a corridor in order to maintain exit corridor fire separation rating. Most rooms have closers. Cost here to replace damaged units and provide for those rooms that may not have closers.

_____	\$	10,800	3.	Doors - Assembly: Existing wood door from the Playroom/Cafeteria discharging to the corridor is in very poor condition. This door should also have panic hardware. At a minimum this door should be replaced with new solid core door/frame with closer and panic hardware. Primary recommendation (and reflected in cost), is to replace with a double door, each leaf with closers and panic hardware. The double door will allow for increased exit capacity in the event of an emergency.
_____	\$	0	4.	Emergency Evacuation: Special consideration should be given to evacuation of non-ambulatory persons from floors above or below the level of exit discharge. The district should adopt a written plan that includes: <ul style="list-style-type: none"> a. A listing of non-ambulatory persons typically in the building; b. Staff, parents, fire service personnel responsible for responding to an emergency incident; c. Provisions for practicing emergency evacuation with fire service personnel and other responsible parties. No cost impact.
_____	\$	21,500	5.	Stair Enclosure: All stairways in new construction shall be fully enclosed with fire resistive materials and closed off at each floor by 1-hour construction to effectively obstruct the passage of smoke and fumes. Enclose two corridor end stairways on second level. Note: stairways already have door enclosures on the first level.
_____	\$	7,500	6.	Wall Pads: Unprotected surfaces in the Gymnasium are potential sources of injury from accidental contact. Cover exposed wall and door surfaces with pads. Cost includes wall fastening system and assumes fire retardant liner.
_____	\$	119,000	TOTAL - HEALTH AND SAFETY IMPROVEMENTS	

III.B. FACILITY IMPROVEMENTS

INTERIOR

_____	\$	46,700	1.	Ceilings: Replace old 12" adhered ceiling systems in corridors and Playroom with suspended ceiling system.
_____	\$	100,000	2.	Ceilings/Mechanical Work: Most rooms have plaster ceilings. Provide new suspended ceilings in all perimeter rooms to facilitate heating system replacement.
_____	\$	34,500	3.	Chalk/ Marker boards: Many chalk and tackboards throughout are worn, scratched, faded, and at the end of their utility. Cost provides for replacement of primary boards in most classrooms with new chalk or marker boards. Note: Cost also provides for option to install a steel (marker board) skin over existing chalkboards, replacement of chalkboards with markerboards or combination of the above.
_____	\$	11,250	4.	Doors – Interior: Wood and wood veneer door finishes are worn, damaged and unsightly. Refurbish doors and paint frames in Original Building.

_____ \$	15,700	5. Finishes - Miscellaneous: Consider the following in response to observed damage or deterioration: a. Paint walls in Main Office; b. Upgrade finishes in B/G Rooms; c. Repaint walls in Cafeteria, including concrete columns; d. Paint corridor walls above wainscot. Options include painting entire area, or a horizontal band to breakup monotonic appearance.
_____ \$	3,000	6. Floor - Stage: Refinish Stage and Stage apron hardwood floor, sand and seal hardwood floor backstage.
_____ \$	243,000	7. Flooring: Floor coverings throughout are worn, damaged, and unsightly. Replace as follows: a. VAT - vinyl asbestos floor tile throughout the building is in very poor condition. Primary recommendation is to remove and replace. Cost includes abatement; b. Parquet – deterioration appears to be such that replacement as opposed to refinishing is necessary. Replace with resilient flooring. Cost assumes asbestos mastic is present and requires abatement. Note: at a minimum, some ACBM abatement will be necessary to facilitate heating system replacement. See Mechanical Work section III.B.
_____ \$	10,000	8. Kindergarten: Update to include new finishes and casework.
_____ \$	37,500	9. Stage Curtains: Replace old main and mid-stage curtains and valances to improve appearance and upgrade production quality.
_____ \$	6,000	10. Toilet Stalls: Marble partitions are in good condition however most stalls doors are not. Replace stall doors in B/G toilet rooms with high-density polyethylene (HDPE) resin units.
_____ \$	7,500	11. Wall Tile: Corridors walls are experiencing some movement resulting in horizontal cracking in the glazed block wainscotting. This is an unusual defect but not considered serious since the blocks are not a structural building component. Remove damaged block and replace with new or salvaged block matching original as closely as possible. Note: a bid package for repairing walls was being prepared by the District at the time of this evaluation.
		
		<u>EXTERIOR</u>
_____ \$	7,800	12. Fascia/Soffits/Gable: Existing wood soffits, fascia, and gable are weathered. Remove loose paint and recoat.
_____ \$	<u>522,950</u>	TOTAL – FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

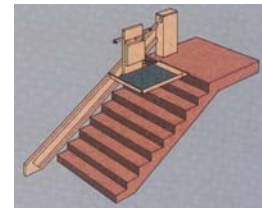
_____ \$	445,000	1. Windows: Original building windows have never been upgraded. Wood sash/frame, single glazed windows provide poor thermal and air resistance. Units are heavy and difficult to operate. Primary recommendation would be to replace with a thermally broken dual glazed aluminum framed system to improve energy efficiency, appearance, and to bring rescue windows up to current SED standards. We realize that SHPO will likely not approve their replacement. Several alternatives follow: a. Wrap the existing wood frames with aluminum panning on the exterior. Install new aluminum wrapped wood sashes on the exterior, and maintain a wood interior. b. Completely restore existing windows and install an interior storm window in the interior.
_____ \$	445,000	TOTAL - ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

Our evaluation and recommendations are based on the design and site criteria established by the State Education Department and the Rehabilitation Act of 1973, Public Law 93-112, Section 504. Our proposal will benefit, in our opinion, most disabled individuals requiring building and program accessibility. We believe that in addition to general accessibility, the District may need to further implement building and programmatic modifications in response to an individual's specific and unique needs as provided under the legislative intent of aforementioned law as well as the ADA. The Americans with Disabilities Act (ADA), signed into law on July 26, 1990 mandates that all public and private accommodations be accessible to people with disabilities, and that employers make reasonable accommodations to facilitate the employment of people with disabilities.

BUILDING ENTRY

_____ \$	12,500	1. Entrance: The only at grade entrance to the building is at the basement level Playroom/Cafeteria. This is obviously not an ideal situation. Several options to improve handicapped access include: a. Stair lift at the northernmost entrance. A lift occupies little room when not in use however this stair is a required means of egress and the State Education Department may object to any impediment in a required exit path. This option is <u>not</u> included in cost at left. b. Creating new entrance in the basement between the Art Room and the Transformer/Electric Rooms. This will remove an instructional space however it is near the parking area and will also be near the proposed elevator (see below). Cost assumes this option.
----------	--------	---



INTERIOR ROUTES

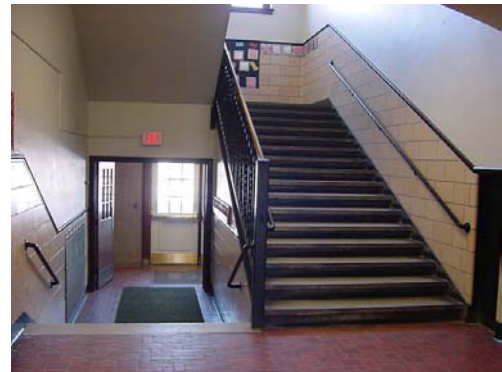
_____ \$	233,750	2. Interior Routes – Elevator: Installing an elevator although difficult appears possible. The most appropriate location for an elevator appears to be off the main corridor on the east (front) side of the building. This would be located within the storage area in the basement but would annex program area on the first and second floors.
----------	---------	--

- * _____ \$ 3,650 3. **Signage:** The interior accessible route, spaces, and elements within the school should be clearly identified.
 - a. Provide directional signage throughout;
 - b. Provide raised letter and brailled signage at classrooms and other interior spaces to include assembly areas, offices, and designated accessible spaces.

INTERIOR ELEMENTS

- _____ \$ 6,250 4. **Door Hardware:** Many, but not all, doors have knob type handles. Replace remaining knobs with leversets.

- _____ \$ 5,400 5. **Stairs:** To improve stairway safety and promote access by ambulatory disabled persons, designate one stairway to be the main accessible stairway and provide the following:
 - a. Abrasive or tactile strips at the top of each stairway and landing;
 - b. Contrasting colors and materials can help visually and tactilely orient the user. Paint treads and risers or use color strips on nosing and paint stairwell walls with two color system;
 - c. Provide additional handrail so that at least one handrail is continuous throughout its length (uninterrupted gripping surface), and handrails extends 12” beyond top and bottom riser.



INTERIOR SPACES

- _____ \$ 32,250 6. **Toilet Rooms – Student:** This recommendation assumes that an elevator will be installed providing access to each floor level. Substantially accessible toilet rooms are present in the basement level. The following will provide accessible toilets on first and second levels:
 - a. Relocate urinals and toilets as necessary to provide minimum clear floor space in front of accessible urinals, lavatories, and toilets;
 - b. Replace urinal with elongated rim wall hung unit;
 - c. Reconfigure entrances to meet accessibility standards for width and pullside clearance;
 - d. Provide accessible stall and accessories in each toilet room.

- _____ \$ 12,250 7. **Toilet Rooms - Kindergarten:** Toilet facilities for early intervention should be designed for their exclusive use, handicapped accessible and configured to insure privacy. Renovate and enlarge Kindergarten Room toilet room, to provide full accessibility and provide accessibility.

_____ \$ **306,050** **TOTAL – HANDICAPPED ACCESSIBILITY**

III.E. RECOMMENDED STUDIES AND TESTING

_____	None.
\$ 0	TOTAL - RECOMMENDED STUDIES AND TESTING

IV. DISTRICT REQUESTS

_____	None.
\$ 0	TOTAL - DISTRICT REQUESTS
\$ 1,393,000	TOTAL - GENERAL CONSTRUCTION SYSTEMS

SITE WORK

I. EXISTING CONDITIONS

The Violet Avenue Elementary School site is accessed from Violet Avenue, on a tiered property that slopes up from south to north. Along the road at the school property is an attractive stone wall. In front of the school to the east is a large loop with an expanse of lawn, to the south is a playing field, to the rear is a maintenance area, and to the north is a large parking lot. The historic front entrance is complemented by bluestone paving at the main entry doors.

New asphalt paving, asphalt topcourse and new concrete curbing are recommended to improve the function and appearance of the drives and parking lots. Other site improvements include upgrades to the asphalt playground and turf play fields.

II. CODE REQUIREMENTS

_____ None.
\$ 0 TOTAL - CODE REQUIREMENTS WORK

III. ARCHITECT'S AND ENGINEER'S RECOMMENDATIONS

III.A. HEALTH AND SAFETY IMPROVEMENTS

_____ None.
\$ 0 TOTAL - HEALTH AND SAFETY IMPROVEMENTS

III.B. FACILITY IMPROVEMENTS

- | | | |
|----------|--------|--|
| _____ \$ | 45,000 | 1. Main Entrance Drive: Remove and replace asphalt at entry loop. Repair drainage problem at northern entrance to site. Repair bluestone paving at flagpole. |
| _____ \$ | 20,000 | 2. New Concrete Curbs: Provide new curbing at entry loop to prevent damage to adjacent lawn and improve maintenance and appearance. Provide drainage as required. |
| _____ \$ | 50,400 | 3. Existing Asphalt Pavement at Parking and Playground: Power wash, fill cracks, provide paving fabric and asphalt topcourse. Remove and replace approximately 20% of pavement that is too deteriorated to repair. Provide new line striping and symbols. |
| _____ \$ | 22,000 | 4. Existing Asphalt at Service Area: Remove and replace existing asphalt at rear service area. |
| _____ \$ | 4,000 | 5. Dumpster Pad: Remove existing asphalt and provide concrete pad for dumpster. |

_____	\$	5,000	6. Playground: Pea gravel surfacing to be removed and replaced by 12” depth of engineered wood fiber surfacing with underdrainage. All play equipment over ten years old to be inspected by a certified playground safety inspector for compliance with current playground safety codes.
_____	\$	25,000	7. Site Lighting: Provide additional security lighting.
_____	\$	40,500	8. Playing Field: Smooth out grades in turf playing area by removing high and low spots. Correct drainage problems. Rehabilitate turf by aerating, topdressing, fertilizing and overseeding.
	\$	211,900	TOTAL - FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

_____		None.
\$	0	TOTAL - ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

_____	\$	8,000	1. Accessibility to Playground: Provide Handicapped Accessible route to playground.
\$	8,000	TOTAL - HANDICAPPED ACCESSIBILITY	

III.E. RECOMMENDED STUDIES AND TESTING

_____	\$	2,500	1. Geotechnical Pavement Borings.
\$	2,500	TOTAL - RECOMMENDED STUDIES AND TESTING	

IV. DISTRICT REQUESTS

*	_____	\$	1,000	1. New Concrete Curb Cuts: Provide two new curb cuts across entrance drive to parking lot.
\$	1,000	TOTAL - DISTRICT REQUESTS		
\$	223,400	TOTAL – SITE WORK		

MECHANICAL SYSTEMS

I. EXISTING CONDITIONS

A. Primary Systems:

1. Heating System:
 - a. Boilers : Two (2) Cleaver Brooks, fire tube steam boilers are used to produce steam. Each boiler has a rated output of 2678 MBH and is original to the building.
 - b. Burners : Two (2) No. 2 oil fired burners rated at 24 GPH input. Each burner is capable of firing both oil and natural gas.
2. Distribution System : Steam is distributed throughout the building to air handling units, unit ventilators and cast iron radiators.
3. Fuel : The main fuel source is No. 2 fuel oil.
4. Controls : Original pneumatic control system is the main means of control. A new digital control system has been install but does not control the majority of the building.

B. Secondary Systems

1. Classrooms:
 - a. Heating : Unit ventilators and cast iron radiators under windows.
 - b. Cooling : None.
 - c. Ventilation : Operable windows.
 - d. Relief Air : Via corridors and rooftop hoods.
2. Library:
 - a. Heating : Unit ventilators and cast iron radiators under windows.
 - b. Cooling : None.
 - c. Ventilation : Operable windows and outside air intake louvers at unit ventilators.
 - d. Relief Air : Via corridors and rooftop hoods.

3. Nurses Area:
 - a. Heating : Cast iron radiator.
 - b. Cooling : Window air conditioning unit.
 - c. Ventilation : Operable window.
 - d. Relief Air : Relief air through air handling unit.

4. Corridors and Vestibules:
 - a. Heating : Cast iron radiators.
 - b. Cooling : None.
 - c. Ventilation : None.
 - d. Relief Air : Via rooftop hoods.

5. Toilets:
 - a. Heating : Cast iron radiators.
 - b. Cooling : None.
 - c. Ventilation : Exhaust air drawn from corridor through door grilles.
 - d. Exhaust Air : Exhaust air exits the building through a power roof exhauster.

6. Music Area:
 - a. Heating : Ceiling mounted unit ventilator.
 - b. Cooling : Dehumidification serves music and art rooms.
 - c. Ventilation : Outside air intake at unit ventilator.
 - d. Relief Air : Via corridors and rooftop hoods.

7. Gymnasium/Auditorium:
 - a. Heating : Perimeter cast iron radiators.
 - b. Cooling : None.
 - c. Ventilation : Operable windows.
 - d. Relief Air : Via rooftop hoods.

8. Cafeteria:
 - a. Heating : Cast iron radiators.
 - b. Cooling : None.
 - c. Ventilation : Central exhaust system.
 - d. Relief Air : Transfer air into Kitchen and exhausted through Kitchen hoods and roof exhaust fan.

9. Kitchen:
 - a. Heating : Cast iron radiation.
 - b. Cooling : None.
 - c. Ventilation : Transfer air from Cafeteria.
 - d. Exhaust Air : Grease hood serves cooking equipment.
 - e. Fire suppression : Grease hood supplied with fire protection system.

10. Main Office Area:
 - a. Heating : Perimeter cast iron radiators under windows.
 - b. Cooling : Window air conditioning units.
 - c. Ventilation : Operable windows and a central exhaust system.
 - d. Relief Air : Via corridors and rooftop hoods.

II. CODE REQUIREMENTS

_____ None.
\$ 0 TOTAL - CODE REQUIREMENTS WORK

III. ARCHITECT'S AND ENGINEER'S RECOMMENDATIONS

III.A. HEALTH AND SAFETY IMPROVEMENTS

_____ \$ 0 1. **Ventilation:** Many classrooms and office spaces currently haven't any means of positive tempered ventilation. Either the space has no equipment that can provide the ventilation, or the existing equipment is no longer capable of producing this tempered ventilation. Provide positive ventilation by installing unit ventilators and/or central air handling units ducted to these spaces. Equipment will be designed to deliver tempered air quantities as recommended by ASHRAE Standard 62 continuously during the building occupied times. Note: specific recommendations concerning ventilation to all spaces are addressed under various items in Section III.B. Facility Improvements (below).
_____ \$ 0 TOTAL - HEALTH AND SAFETY IMPROVEMENTS

III.B. FACILITY IMPROVEMENTS

_____ \$ 1,600,000 1. **Heating System Replacement:** Boilers are 37 years old. In addition, as noted in Section III.A. Health and Safety Improvements many of the classroom and office spaces haven't any means of providing tempered ventilation. The temperature control system, although has new direct digital controls installed in various parts of the building, the majority of the building remains on the original pneumatic control system with broken or leaky air tubing.

The general removal of the heating and ventilation system and replacement with new efficient hot water heating, ventilation and the extension of the existing direct digital control system is therefore recommended. This system will offer many advantages over the existing, including better control, simplicity, efficiency and flexibility to incorporate future changes.

The proposed hot water heating system would include the complete removal of the existing and installation of new efficient hydronic boilers, pumps, piping distribution system and radiation. Pumping would include variable speed drives so energy use would track load. Boilers and pumps would have redundancy for insured heat during service. Piping and radiation would be of institutional grade for long and easily maintained service life.

The proposed ventilation system changes would, in general, bring all school spaces up to current ventilation code standards. This would include replacement of or upgrade to all supply air ventilation equipment with new hydronic heat units with economizer (100% outside air) cooling capability. Some ductwork may be able to be re-used – scope would include certified cleaning and sanitizing of all duct to remain in service, supply *and* exhaust. Entire building ventilation system is included. Classroom return and relief air pathways are currently non-compliant and inadequate, and would be upgraded to current standards. Corridor ventilation system would be separated from the classroom system as required by current code. Relief hoods would be replaced where indicated. Replacement or rebuilding of all power exhaust fans is included, while again, some serviceable duct would remain.

The cost listed includes miscellaneous electrical work, and other modest incidental related work, but does not include substantial upgrades to systems other than HVAC, which may be desired concurrently. It was noted during the building walk-through, numerous window air conditioning units are installed throughout the building. The cost associated with this Heating System Replacement item includes air conditioning of the Main Office area, Nurses area and designated Computer Labs. It does not include air conditioning of every space.

Note: See also General Construction Systems III.B. Ceilings/Mechanical Work for related recommendation.

_____ \$	0	2.	Boiler Replacement: If the entire Heating System Replacement is not chosen, given the age of the existing boilers and the fact that they are past their design life, replacement is recommended. Cost of (\$200,000) to implement this recommendation is not included in total. See III.B. Heating System Replacement for primary recommendation.
_____ \$	0	3.	Unit Ventilator Replacement: Replace existing unit ventilators throughout the entire building. The units are past their design life, outside air dampers are not all functioning and replacement parts are becoming difficult to obtain. Cost of (\$300,000) to implement this recommendation is not included in total. See III.B. Heating System Replacement for primary recommendation.
_____ \$	0	4.	Exhaust Fan Replacement: Given the age of the existing exhaust fans and to insure that the building is receiving the adequate amount of air exchange, the replacement of all exhaust fans throughout the entire building is recommended. Cost of (\$100,000) to implement this recommendation is not included in total. See III.B. Heating System Replacement for primary recommendation.
_____ \$	0	5.	Air Handling Unit Replacement: Replace existing air handling units throughout the entire building. The units are past their design life, outside air dampers are not all functioning and replacement parts are becoming difficult to obtain. Cost of (\$75,000) to implement this recommendation is not included in total. See III.B. Heating System Replacement for primary recommendation.
<u> </u> \$			
\$ 1,600,000			TOTAL - FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

_____ \$	0	1. Temperature Controls: Included with the Heating System Replacement listed above, the existing direct digital temperature controls systems will be extended. The control system would incorporate direct digital control logic and electronic actuation. The control system will be capable of controlling the equipment more efficiently and the building temperatures to tighter tolerances thus saving operating costs. The cost associated with the energy management system and controls is covered under Item III.B. Heating System Replacement (above). It would not be prudent to install the energy management system without replacing the heating terminal units and heating plant.
_____ \$	0	2. Variable Speed Drive Pumping: Variable speed drive pumping saves roughly \$1,000 per Hp per year, offering positive cash flow for most financed installations. This would only apply if the Heating System Replacement in Section III. B. above was chosen.
_____ \$	0	TOTAL - ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

_____ \$	None.	
_____ \$	0	TOTAL - HANDICAPPED ACCESSIBILITY

III.E. RECOMMENDED STUDIES AND TESTING

_____ \$	None.	
_____ \$	0	TOTAL - RECOMMENDED STUDIES AND TESTING

IV. DISTRICT REQUESTS

_____ \$	None.	
_____ \$	0	TOTAL - DISTRICT REQUESTS
_____ \$	1,600,000	TOTAL - MECHANICAL SYSTEMS

PLUMBING SYSTEMS

I. EXISTING CONDITIONS

A. ORIGINAL BUILDING:

1. Water Supply:
 - a. Source : Provided from municipal water system. Dutchess County Water District.
2. Sewage Disposal:
 - a. Method : On-site septic tanks system.
3. Fuel Oil:
 - a. Provided For : Boiler and water heater use.
 - c. Tank Size/Location : 10,000 gallon above ground tank.
4. Domestic Hot Water:
 - a. Provided By : Tank type oil fired water heater.
 - b. Temperature : Approximately 140° F (averaged). A thermostatic mixing valve tempers it down to 120° to the general building, 140° F for kitchen use.
5. Toilet Rooms:
 - a. Gang : Three sets; B/G.
 - b. Individual : Separate toilet facilities are provided for the Health Room and for staff use.
6. Drinking Water:
 - a. Provided By : Electric water coolers and drinking fountains.
 - b. Location : Corridors.
7. Fire Suppression System:
 - a. Fire Standpipe : None.
 - b. Sprinkler System : In clock tower.
 - c. Kitchen Range Hood : Automatic wet chemical fire suppression system.
8. Portable Fire Extinguishers:
 - a. Type : ABC and H2O.
 - b. Location : In cabinets in corridors or in individual rooms.

II. CODE REQUIREMENTS

_____ None.
\$ 0 TOTAL - CODE REQUIREMENTS WORK

III. ARCHITECT'S AND ENGINEER'S RECOMMENDATIONS

III.A. HEALTH AND SAFETY IMPROVEMENTS

_____ None.
\$ 0 TOTAL – HEALTH AND SAFETY IMPROVEMENTS

III.B. FACILITY IMPROVEMENTS

_____ \$ 1,000 1. **Art Room Sink:** Provide a new plaster trap for the Art Room sink to replace the existing outdated unit and to prevent potentially clogging materials from entering the waste water drainage system.

_____ \$ 1,500 2. **Boiler Room Sump:** Replace sump pump system, which has reached the end of its useful life.

_____ \$ 1,000 3. **Plaster Traps:** Provide plaster traps for the sinks in the Art Room to prevent clogging of the waste water piping system.

_____ \$ 75,000 4. **Plumbing Fixtures:** Replace outdated plumbing fixtures and related piping throughout building to improve operation, appearance and serviceability.

_____ \$ 6,000 5. **Water Coolers:** Replace outdated drinking fountains with surface mounted water coolers throughout building to improve operation, appearance and serviceability and to provide access to the physically handicapped. (Total of 4).

_____ \$ 84,500 TOTAL – FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

_____ None.
\$ 0 TOTAL – ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

_____ \$ 250 1. **Lavatory Insulation:** Install handicapped lavatory insulation on existing lavatories located in the basement level.

_____ \$ 250 TOTAL - HANDICAPPED ACCESSIBILITY

III.E. RECOMMENDED STUDIES AND TESTING

_____ \$ 2,000 1. **Central Vacuum System:** Provide a pressure test of the vacuum piping system as well as evaluation of the vacuum receiver and other equipment located in the boiler room.

_____ \$ 2,000 TOTAL - RECOMMENDED STUDIES AND TESTING

IV. DISTRICT REQUESTS

	<u> </u>	None.
\$	<u> 0</u>	TOTAL - DISTRICT REQUESTS
\$	86,750	TOTAL - PLUMBING SYSTEMS

ELECTRICAL/TECHNOLOGY SYSTEMS

I. EXISTING CONDITIONS

A. ORIGINAL BUILDING:

1. Service and Distribution:
 - a. Service Entrance : Underground, Primary.
 - b. Metering : Secondary.
 - c. Voltages : 120/208, 3PH.
 - d. Size : 800 amperes.
 - e. Main Dist. Panel : Circuit breaker.
 - f. Local Panels : Circuit breaker.

2. General Wiring:
 - a. Majority of wiring does meet the National Electrical Code.
 - b. Location and quantity of convenience receptacles is adequate.
 - c. Majority of convenience receptacles are of the grounded type.
 - d. Location and quantity of light switches is adequate.

3. Fire Alarm System:
 - a. Make : Simplex.
 - b. Equipment : Stations, bells, smoke detectors, thermal detectors, municipal connection, fan shut down, door holders, drill switch, remote annunciator, trouble light.

4. Clock and Program System:
 - a. Make : Simplex.
 - b. Master : Electronic.
 - c. Program : Bells.
 - d. Secondary Clocks : Surface.

5. Intercom/Sound System:
 - a. Make : AiPhone.
 - b. Equipment:
 - (1) Console : Intercom channel, amplifier.
 - (2) Classrooms : Intercom telephones, wall speakers.
 - (3) Stage : Speaker jack, microphone jack.
 - (4) Gymnasium : Ceiling speakers.

6. Emergency Lighting/Power:

	<u>Local</u>	<u>Remote</u>	<u>Generator</u>	<u>Sufficient</u>	
	<u>Batts.</u>	<u>Batts.</u>	<u>Connect.</u>	<u>Yes</u>	<u>No</u>
(1) Auditorium/Gymnasium	X	X		X	X
(2) Corridors	X	X		X	X
(3) Cafe/Playroom	X			X	X

II. CODE REQUIREMENTS

* _____	\$	1,300	1.	Exit Lights: Install exit lights to more clearly define the path of egress in the following locations: a. Stair #2; b. Exit to exterior in Art Room.
* _____	\$	500	2.	Fire Alarm Pull Stations: Install new fire alarm pull stations to improve safety at Stair #2.
	\$	1,800		TOTAL - CODE REQUIREMENTS WORK

III. ARCHITECT'S AND ENGINEER'S RECOMMENDATIONS

III.A. HEALTH AND SAFETY IMPROVEMENTS

_____	\$	68,300	1.	Emergency Generator: Install a new 125KW emergency generator in the building and install new emergency lighting in all areas of assembly and all corridors. Also, generator shall be connected to heating plant and circulating pumps, kitchen refrigeration equipment, sound system, fire alarm system, telephone system and all exit lights in the building.
_____	\$	13,800	2.	Smoke Detection: Install smoke detection to improve safety in the following locations: a. Most corridors (additional); b. Auditorium/Gymnasium; c. Café/Playroom (additional).
_____	\$	800	3.	Heat Detection: Install heat detection to improve safety in the following locations: a. Faculty Lounge; b. Some storage rooms.
	\$	82,900		TOTAL - HEALTH AND SAFETY IMPROVEMENTS

III.B. FACILITY IMPROVEMENTS

_____	\$	64,800	1.	Fire Alarm System: Replace existing fire alarm system including all detectors, bells, pull stations and all associated wiring with new addressable system including all necessary ADA upgrades.
_____	\$	39,400	2.	Sound System: Replace existing building main PA/sound system with new microprocessor based system including the replacement of all existing rooms speakers and the replacement of all existing wiring in the system.
_____	\$	12,500	3.	Auditorium/Gymnasium Sound System: Provide new sound system for Auditorium/Gymnasium including new professional quality speakers, sound amplifiers, equalizer, wireless microphone system and assistive listening system.
_____	\$	6,100	4.	Music Room Sound System: Provide new sound system for the music room including new speakers, sound amplifiers, equalizer, wireless microphone system, CD player/Recorder.

_____ \$	6,700	5. Exterior Lighting: Replace existing exterior lighting and provide additional vandal resistant metal halide exterior lighting to increase building security. Also install new lighting poles at parking lot.
_____ \$	49,900	6. Power Panels & Circuit Wiring: Install additional power panels, with TVSS (transient voltage surge suppression), in each classroom wing to handle the additional circuit loads associated with new computers, televisions and similar electrical devices. Provide two additional branch circuits per classroom and one per office.
_____ \$	43,600	7. Wiring for HVAC Motors: Provide new power panels in each wing on the building and provide all new wiring to all new HVAC equipment as required for HVAC work.
_____ \$	32,200	8. Convenience Receptacles: Provide additional convenience receptacles in most classrooms to discourage the use of adapters and extension cords.
_____ \$	14,500	9. Entry Doors CCTV System: Provide new closed circuit television system for up to four locations matching locations where keyless entry system is installed. System to consist of color IP cameras tied to a digital video recorder (DVR), which can be monitored over the district's current computer network.
_____ \$	37,800	10. Building Wide CCTV System: Provide new closed circuit television system for the entire building including cameras in all corridors, computer rooms, lobbies and on the exterior of the building. System to consist of color IP cameras tied to digital video recorder(s) (DVR) which can be monitored over the districts current computer network.
_____ \$	68,200	11. Computer Network Hardware: Provide all new 100baseT switches with 1000baseF backbone electronics in each telecommunications closet and to support existing network cabling infrastructure. Network electronic to include a core chassis in MDF and new edge switches in all IDF's.
_____ \$	20,000	12. Computer Network Wiring: Provide four (4) new category 6 UTP computer drops in all classrooms with associated raceways and power to accommodate new VOIP telephone system and teachers computer.
_____ \$	43,500	13. Telephone System: Replace the existing administrative telephone system with a new Voice Over IP (VOIP) system with voice mail, including new full feature telephones for all offices and classrooms. The telephones shall have the capability of being programmed with different levels of restriction from the new VOIP call manager, while still having transparent communication for features such as voice mail and district wide four digit dialing plan. The telephone system will be run over the existing district's LAN in the building. Price includes all required network switches, uninterruptible power supplies and assumes using existing network wiring.

_____	\$ 273,400	14.	Video on Demand System: Provide new broad band video on demand system which would allow either networked computers or hand held infrared remotes to control a centrally located digital video server which will house all existing district media, and any other audio/video sources desired from each classroom or office in the building. The signal would be distributed over the new television distribution system. Price includes 42" plasma display televisions with associated mounting brackets for all classrooms and also a teacher's computer for each classroom to be used as a system control device.
_____	18,400	15.	Television System: Replace existing cable distribution system with a new broadband cable television distribution system throughout the building. The new system will include distribution equipment with amplifiers, splitters, tapoffs and RG-6 & RG-11 coaxial cable with new television outlets in all classrooms. This system also includes control cabling to all television jack locations to support a future video on demand system.
\$	731,000	TOTAL – FACILITY IMPROVEMENTS	

III.C. ENERGY CONSERVATION

_____			None.
\$	0	TOTAL - ENERGY CONSERVATION MEASURES	

III.D. HANDICAPPED ACCESSIBILITY

_____	\$ 17,300	1.	Fire Alarm Bells: Replace all existing fire alarm bells with new bell strobes and relocated to 80-96" AFF in order to comply with ADA Guidelines.
_____	5,300	2.	Fire Alarm Strobes: Install new fire alarm strobe lights in all toilet rooms, practice rooms and special education rooms and Auditorium in order to comply with ADA Guidelines.
\$	22,600	TOTAL - HANDICAPPED ACCESSIBILITY	

III.E. RECOMMENDED STUDIES AND TESTING

_____			None.
\$	0	TOTAL - RECOMMENDED STUDIES AND TESTING	

IV. DISTRICT REQUESTS

_____			None.
\$	0	TOTAL - DISTRICT REQUESTS	
\$	838,300	TOTAL - ELECTRICAL SYSTEMS	