

GENERAL CONSTRUCTION SYSTEMS

I. EXISTING CONDITIONS

A. ORIGINAL BUILDING

Date of Construction	:	1953.
Construction Classification	:	A (Fire resistive/Noncombustible).
Total Floor Area	:	39,190 sf.
Number of Floors	:	Two; ground, second, partial basement.
Structural System	:	Steel beam and laminated wood beam in Gym.
Floor Construction	:	Reinforced concrete.
Roof Construction	:	Single-ply membrane.
Exterior Wall Construction	:	Stone and brick face with masonry back up.
Interior Wall Construction	:	Painted masonry.
Windows	:	Aluminum sash/frame, dual glazed.
Exterior Doors	:	Hollow metal doors and frames.

B. ADDITION

Date of Construction	:	1966.
Construction Classification	:	A (Fire resistive/Noncombustible).
Total Floor Area	:	11,000 sf.
Number of Floors	:	One; ground.
Structural System	:	Steel beam.
Floor Construction	:	Reinforced concrete.
Roof Construction	:	Single-ply membrane.
Exterior Wall Construction	:	Stone face, masonry back up.
Interior Wall Construction	:	Painted masonry.
Windows	:	Aluminum sash/frame, dual glazed.
Exterior Doors	:	Hollow metal doors and frames.

II. CODE REQUIREMENTS

- * _____ \$ 42,000 1. **Dead End Corridor:** A dead-end condition exists in the lower level corridor. Dead-end corridors are defined as having a pocket that exceeds 1 and 1/2 times its width. Completely fixing the exiting in the lower level would be difficult however the following will improve the condition:
- Replace entrance to Multi-Purpose Room. New doors to swing into the room. This will remedy the dead-end corridor. It however creates an additional problem; exiting through another space is also not permitted, and now only one legitimate exit is available from the Multi-Purpose Room;
 - Install two exterior exits, one on each side of the Multi-Purpose Room so that two remote exits from the Multi-Purpose Room are available even if the partition is closed. New exits to be double doors to maximize exiting capacity. Cost includes ramped exterior landing.

* _____	\$	0	2. 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. Note: required only in those rooms without doors directly to the exterior.
	\$	42,000	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

INTERIOR

_____	\$	35,400	1. Ceilings: Except for a few spaces, ceilings are in fairly good condition. Replace 12” adhered tile ceilings with new suspended ceiling system in the following spaces: a. Library; b. Original Building corridors; c. Room 44.
_____	\$	128,000	2. Ceilings/Mechanical Work: Replace all adhered spline ceilings in classrooms/offices not listed above to facilitate heating system replacement
_____	\$	2,400	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 Original Building 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.
_____	\$	42,500	4. Miscellaneous Finishes: a. Refinish Gymnasium wood bench seating and Stage risers; b. Refinish Auditorium doors; c. Refinish or paint classroom and other doors/frames that open to a main corridor. d. Repair and paint Kitchen walls; e. Upgrade wall finishes in Kindergarten Rooms. f. Refinish corridor lockers.



- _____ \$ 378,000 5. **Floor Tile - Vinyl Asbestos:** This ACBM is prevalent throughout the facility. Most is in poor to marginal condition. Primary recommendation is to abate and replace with resilient flooring throughout the facility. Note: 9" tile floors are typically asbestos containing. Replacement would require abatement and is included in the cost above. Resurfacing these floors with welded seam sheet vinyl is a viable option that the district may wish to entertain. This option effectively encapsulates the ACBM and thus does not require an abatement project. Cost includes replacing Multi-Purpose Room floor with more appropriate synthetic athletic surface. Note: at a minimum, some VAT abatement will be necessary to facilitate heating system replacement. See Mechanical Work section III.B.
- _____ \$ 200,000 6. **Furnishings/Casework:**
Classroom upgrade to include:
- a. New base cabinet with handicapped accessible sink;
 - b. Casework: storage cabinets, cubbies.
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- _____ \$ 70,000 7. **Library:** The Library as a core facility, and an important part of the educational experience, should be dedicated to providing an accessible, active learning center in addition to maintaining the facilities for the storage, control, and dissemination of audiovisual equipment used for other programs.
- a. Provide carpet. Assumes VAT to be removed per above recommendation;
 - b. Acoustical lay-in ceiling system with 2x2 parabolic light fixtures;
 - c. Circulation desk;
 - d. New casework. Consider some smaller workstations and tables to foster individualized study (space dependent);
 - e. Update finishes;
 - f. Provide segregated computer space.
- _____ \$ 61,500 8. **Locker Rooms:** B/G Locker Rooms are being used exclusively for storage. Renovate to support this use, and also provide a P.E. Office with shower and toiler room. See also III.D. Interior Routes – Elevator (below) for related recommendation.

_____	\$	15,000	9.	Nurse: This space is not configured well. Problems include access only through the Main Office and the Nurse does not have visual access to the bed area. A more suitable area should be explored. If this space is to be maintained, consider the following: <ol style="list-style-type: none"> a. Provide door to corridor; b. Remove door to Main Office, recover space for a storage closet; c. Provide window between office and bed area; d. Enlarge toilet room door (currently only 24" wide), and provide lever door handle; e. Provide grab bars in toilet room.
_____	\$	1,500	10.	Toilet Partition: Partitions and stall doors are damaged, not fastened to floor, and absent in some rooms. Replace stall partitions in all toilet rooms with high-density polyethylene (HDPE) resin units as follows: <ol style="list-style-type: none"> a. Stall doors in B/G gang toilet rooms (marble partitions to remain); b. M/W Room near art room. Cost not included here, see III.D. Toilet Rooms – Staff for preferred recommendation.
_____	\$	23,000	11.	Window Treatment: Replace curtains with blinds or shades.
	\$	957,300		TOTAL – FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

_____	\$	128,200	1.	Exterior Doors: Exterior hollow metal doors are in poor condition. Replace entrance doors and frames throughout, including doors from classrooms, Auditorium, Receiving, Library, with new insulated weatherstripped doors to upgrade reliability and energy efficiency. Cost includes panic hardware, continuous hinges and closers.
	\$	128,200		TOTAL - ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

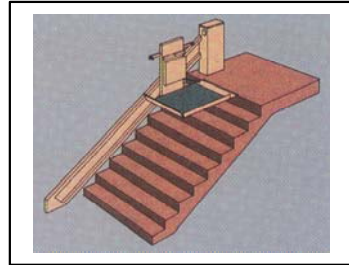
Our evaluation and recommendations are based on the design and site criteria established by the State Education Department and the Rehabilitation Act of 1973, Public Law 93-112, Section 504. Our proposal will benefit, in our opinion, most disabled individuals requiring building and program accessibility. 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

*	\$	560	1.	Entrances: Install exterior signage directing persons to the accessible entrances.
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INTERIOR ROUTES

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| * _____ \$ | 128,000 | 2. Interior Routes - Elevator: It may be possible to install an interior elevator to serve the ground and second levels. Tentative site is in present location of Storage Room 12-L (see plan), on ground level, extending through Girl's Room 13 on second floor. The displaced girl's room could be relocated adjacent to the boy's room on the opposite side of the hall. This would also displace a storage room and P.E. Office. See III.B. Locker Rooms above to address those issues.
Cost includes 2-stop elevator, further investigation to ascertain structural feasibility, and construction of a new girl's toilet room. |
| * _____ \$ | 10,000 | 3. Interior Routes – Stair Lift:
Provide a stair-lift at the stair from the Lobby to the second level. A lift occupies little room when not in use however the State Education Department may still object to any impediment in a required exit path. |
| * _____ \$ | 6,500 | 4. Area of Refuge: Areas of Refuge are required in new construction on all accessible levels other than the exit discharge. Designate the north stairway on the second floor as an Area of Refuge. Provide signage and two-way voice communication. |
| * _____ \$ | 3,800 | 5. Signage: The interior accessible route, spaces, and elements within the school should be clearly identified. <ol style="list-style-type: none"> 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; c. Provide signage to include the international symbol of accessibility at accessible toilet rooms; d. Provide signage on the second level directing persons to Area of Refuge. |



INTERIOR ELEMENTS

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|----------|-------|--|
| _____ \$ | 5,400 | 6. Stair Handrails: To improve stairway safety and promote access by ambulatory disabled persons, provide the following at the stair off the Main Lobby: <ol style="list-style-type: none"> a. 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 wall with two color system; b. Replace wall mounted handrail with handrail that complies with current accessibility standards: rounded gripping surface, 12” extension beyond top and bottom risers. |
|----------|-------|--|

\$	9,400	7.	Assembly:	<ul style="list-style-type: none"> a. The rake of the Auditorium floor creates a ramp condition. Install handrails on the corridor-side wall, the full length of the wall. b. Install wheelchair accessible seating in several sections. Remove three fixed seats from an aisle row and install "removable" seats. Removable seats are conventional seats in most respects except that they can be removed when needed to accommodate wheelchair patrons. Level floor in and provide signage indicating designated accessible areas.
\$	8,600	8.	Toilet Rooms - Student:	<p>This recommendation assumes that an elevator will be installed and new fully accessible girl's toilet room will be constructed as part of that recommendation. See III.D. Interior Routes – Elevator (above). The following addresses existing Boy's Toilet Room 12:</p> <ul style="list-style-type: none"> a. Relocate urinal and toilets as necessary to provide minimum clear floor space in front of accessible urinals, lavatories and toilets; b. Replace one urinal with elongated rim wall hung units; c. Install one accessible stall with accessible water closet; d. Provide required grab bars, toilet accessories and mirrors in response to the above; e. Provide audible and visual fire alarm.
\$	25,000	9.	Toilet Rooms - Kindergarten:	<p>Toilet facilities for early intervention should be designed for their exclusive use, handicapped accessible and configured to insure privacy. Renovate and enlarge toilet rooms in each Kindergarten Room (2), to provide full accessibility and provide accessibility.</p>
\$	3,800	10.	Toilet Rooms - Staff:	<p>The M/F toilet rooms in the 1966 Addition are fairly large and could be fully accessible if made single user. Renovate to single user and install accessible features;</p> <ul style="list-style-type: none"> a. Water closet, grab bars, accessories; b. Lever handle on doors.
\$	201,060	TOTAL - HANDICAPPED ACCESSIBILITY		

III.E. RECOMMENDED STUDIES AND TESTING

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

IV. DISTRICT REQUESTS

* _____	\$	12,000	1. Auditorium Seating: Recondition Auditorium seats to include new upholstery.
* _____	\$	2,800	2. Kitchen Wall: Remove partition wall in Kitchen. Wall obstructs air flow throughout the space.
* _____	\$	3,100	3. Office/Lobby: Remove office located in Main Lobby and restore Lobby to include refinishing or painting wood paneling.
	\$	<u>17,900</u>	TOTAL - DISTRICT REQUESTS
	\$	1,346,460	TOTAL - GENERAL CONSTRUCTION SYSTEMS

SITE WORK

I. EXISTING CONDITIONS

The Ralph R. Smith Elementary School site is accessed from Route 9G, along a drive that passes other properties before reaching the school. The existing signage at 9G is difficult to see; therefore new school signage at 9G is recommended. In front of the school to the northwest is a drive entry loop and an expanse of lawn, to the east of the school is a parking lot and the bus maintenance facility beyond, to the south are the middle school fields, and to the west is the playground and lawn play area. The main entry to the school building is inviting, with its broad canopy and fieldstone facade.

There is a large glacial moraine adjacent to the school entrance. Interpretive signage at the moraine is recommended to increase the educational value of the landform for the students as well as the community.

Asphalt topcourse of all existing asphalt is recommended to extend the life of the pavement and improve its appearance. New curbing along some portions of the drives is suggested, particularly at the curves, to protect the lawn adjacent to the paving and to ease maintenance. Additional handicapped parking to meet current ADA requirements is also recommended. New asphalt and concrete walks are suggested in areas where the lawn has become bare due to pedestrian traffic. Other site improvements include upgrades to the playgrounds and play field areas.

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

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|----------|--------|---|
| _____ \$ | 8,000 | 1. Entry Drive Signage: Provide new attractive and more visible signage at Route 9G and landscaping to “announce” entrance. |
| _____ \$ | 15,000 | 2. New Concrete Curbs: Provide new curbing at existing drives in areas where adjacent lawn is being damaged, particularly at the flagpole island across from the main entrance and along the entry drive on the side that currently does not have curbing. |
| _____ \$ | 3,000 | 3. New Concrete Walk and Landscaping at Flagpole Island: Provide new walk to flagpole. Spruce up appearance of island with lawn repair, new mulch at existing plantings and new low plantings to compliment building entry area. |

_____	\$	5,000	4. Interpretive Signage at Glacial Moraine: Provide signage with graphics and brief text explaining the historical significance of the landform.
_____	\$	190,300	5. Existing Asphalt Pavement: At existing pavement, including asphalt play areas, power wash, fill cracks, provide paving fabric and asphalt topcourse. Remove and replace approximately 30% of pavement that is too deteriorated to repair. Provide new line striping and symbols.
_____	\$	3,000	6. Screening at Bus Garage: Provide shrub planting buffer along fencing at bus garage.
_____	\$	4,000	7. Fencing: Remove and replace deteriorated fence along parking lot.
_____	\$	25,000	8. Site Lighting: Provide additional security lighting.
_____	\$	35,000	9. Playgrounds: All 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.
_____	\$	15,000	10. Curbed Islands: Provide new curbed islands to define and improve parking lot to north of building.
	\$	303,300	TOTAL - FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

_____		None.
\$	0	TOTAL - ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

_____		None.
\$	0	TOTAL - HANDICAPPED ACCESSIBILITY

III.E. RECOMMENDED STUDIES AND TESTING

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

IV. DISTRICT REQUESTS

* _____	\$	1,000	1. Drainage: Correct drainage problem at entry canopy producing ice on walk at entrance.
* _____	\$	15,000	2. New Asphalt Walks: Provide new walks in areas that are bare due to pedestrian traffic, particularly in playground area.
	\$	<u>16,000</u>	TOTAL - DISTRICT REQUESTS
	\$	321,800	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 2008 MBH.
 - b. Burners : Two (2) No. 2 oil fired burners rated at 18.0 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 perimeter fin tube radiation.
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 installed but does not control the majority of the building.

B. Secondary Systems

1. Classrooms:
 - a. Heating : Unit ventilators and perimeter fin tube radiation under windows.
 - b. Cooling : None.
 - c. Ventilation : Outside air intake at unit ventilators.
 - d. Relief Air : Via corridors and rooftop hoods.
2. Library :
 - a. Heating : Unit ventilators under windows and perimeter fin tube radiation.
 - b. Cooling : None.
 - c. Ventilation : Outside air intake louvers at unit ventilators.
 - d. Relief Air : Via corridors and rooftop hoods.

3. Nurses Area:
 - a. Heating : Fin tube radiation along perimeter.
 - b. Cooling : Window air conditioning unit.
 - c. Ventilation : Operable windows.
 - d. Relief Air : Via corridors and roof top hoods.

4. Corridors and Vestibules:
 - a. Heating : Steam cabinet heaters and convectors.
 - b. Cooling : None.
 - c. Ventilation : None.
 - d. Relief Air : Via rooftop hoods.

5. Locker Rooms:
 - a. Heating : Perimeter fin tube radiation.
 - b. Cooling : None.
 - c. Ventilation : Transfer air from adjacent Gymnasium.
 - d. Exhaust Air : Exhaust air exits the building through power roof fans.

6. Gymnasium:
 - a. Heating : Perimeter fin tube radiation and ceiling mounted unit heaters.
 - b. Cooling : None.
 - c. Ventilation : Operable windows.
 - d. Relief Air : Air is transferred to locker room and exhausted via roof fan.

7. Auditorium:
 - a. Heating : Indoor central air handling units with steam heating coil.
 - b. Cooling : None.
 - c. Ventilation : Outside air intake at central air handler.
 - d. Relief Air : Relief air via Auditorium air handler.

8. Cafeteria:
 - a. Heating : Ceiling hung unit ventilator with steam heating coil.
 - b. Cooling : None.
 - c. Ventilation : Outside air intake louver at unit ventilators.
 - d. Relief Air : Transfer air into Kitchen and exhausted through Kitchen hoods and roof exhaust fan.

9. Kitchen:
 - a. Heating : Perimeter fin tube radiation.
 - b. Cooling : None.
 - c. Ventilation : Transfer air from Cafeteria.
 - d. Exhaust Air : Grease hood serves cooking equipment. A power roof fan provides additional Kitchen exhaust.
 - e. Fire suppression : Grease hood supplied with fire protection system

- 10. Office Areas:
 - a. Heating : Perimeter fin tube radiation 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 (Nurses Area), 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

_____ \$ 1,400,000 1. **Heating System Replacement:** Steam heating systems, although in existence for many years, does not offer many advantages over hot water heating systems. Hot water systems offer better control, simplicity, efficiency and flexibility to incorporate future changes. Therefore it is recommended to convert the existing steam heating system to a hot water system. Since the boilers are 18 years old, they have remaining life expectancy in them, they could be converted to produce hot water.

The proposed hot water heating system would include the complete removal of the existing and installation of 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. Cost of (\$1,320,000) to implement this recommendation is not included in total. See III.B. Heating System Replacement for primary recommendation.

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

- _____ \$ 0 2. **Condensate Receiver and Boiler Feed Tank Replacement:** The existing steam condensate receiver is original to the building (1953) and is past its design life, replacement is recommended. Cost of (\$20,000) 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. As noted above in Section III.A. This equipment will be designed to deliver tempered air quantities as recommend by ASHRAE Standard 62 continuously during the building occupied times. 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 unit. Serving the Auditorium. This unit is past its design life, outside air dampers are not all functioning and replacement parts are becoming difficult to obtain. In addition provide air handling equipment to serve the Gymnasium which currently has none. As noted above in Section III.A. This equipment will be designed to deliver tempered air quantities as recommend by ASHRAE Standard 62 continuously during the building occupied times. Cost of (\$50,000) to implement this recommendation is not included in total. See III.B. Heating System Replacement for primary recommendation.
		\$	1,400,000	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	TOTAL - ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

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

III.E. RECOMMENDED STUDIES AND TESTING

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

IV. DISTRICT REQUESTS

	<u> </u>	None.
\$	<u> 0</u>	TOTAL - DISTRICT REQUESTS
\$	1,400,000	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 systems.
3. Fuel Oil:
 - a. Provided For : Boilers and water heaters.
 - c. Tank Size/Location : 10,000 gallon above ground tank.
4. Domestic Hot Water:
 - a. Provided By : Non-ASME tank type, oil fired water heater.
 - b. Temperature : Approximately 120° F (averaged).
5. Toilet Rooms:
 - a. Gang : Two sets; B/G.
 - b. Individual : Some classrooms have individual toilets. Separate toilet facilities are provided for the Health Room and for staff use.
 - c. Locker Rooms : Toilet and shower facilities for student use has been converted to storage rooms.
6. Drinking Water:
 - a. Provided By : Electric water coolers and drinking fountains.
 - b. Location : Corridors. Some classrooms have sinks/bubbler units.
7. Fire Suppression System:
 - a. Fire Standpipe : None.
 - b. Sprinkler System : None.
 - c. Kitchen Range Hood : Automatic wet chemical fire suppression system .
8. Portable Fire Extinguishers:
 - a. Type : ABC.
 - b. Location : In lockers or cabinets in corridors or in individual rooms on wall hooks.

II. CODE REQUIREMENTS

_____ None.
\$ 0 TOTAL - CODE REQUIREMENTS WORK

III. ARCHITECT'S AND ENGINEER'S RECOMMENDATIONS

III.A. HEALTH AND SAFETY IMPROVEMENTS

_____ \$	1,500	1. Backflow Preventor: Provide a reduced pressure zone (RPZ) backflow prevention device on the makeup water connection to the boilers to guard against contamination of the potable (building) water system.
_____ \$	45,000	2. Classroom Sinks: Classroom sinks have bubblers, which is contrary to current sanitary standards. Replace sinks to include a separate bubbler to provide required separation distance between sink and bubbler.
_____ \$	10,000	3. Domestic Hot Water Heater: Replace the non-ASME rated water heater. SED Manual of Planning standards requires that all pressure vessels, including water heaters, carry the ASME rating.
_____ \$	10,000	4. Well Abandonment: Properly abandon two existing wells located in the basement. Work to include filling the casing with concrete slurry and capping the existing well casings.
_____ \$	400	5. Wrist Blades: Provide a "hands-free" type faucet for the handwashing sink in the Kitchen to improve handwashing sanitation.
_____ \$	400	6. Vacuum Breakers: Provide vacuum breakers on Science Room faucets to guard against back-siphonage into the potable water supply. (Total of 20).
_____ \$	<u>67,300</u>	TOTAL – HEALTH AND SAFETY IMPROVEMENTS

III.B. FACILITY IMPROVEMENTS

_____ \$	7,500	1. Grease Removal System: Provide an automatically activated grease removal system for the Kitchen pot sink to replace the present grease trap and thereby improve the removal of grease and oils from the waste water stream to prevent downstream piping stoppages.
_____ \$	3,000	2. Boiler Room Sump: Replace sump pump system, which has reached the end of its useful life.
_____ \$	100,000	3. Plumbing Fixtures: Replace outdated plumbing in the toilet rooms to improve operation, appearance and serviceability.
_____ \$	4,000	4. Shower Rooms: Remove all plumbing fixtures from the locker rooms. The rooms currently serve as storage and removal of the fixtures will allow for additional storage space.
_____ \$	3,000	5. Water Coolers: Replace outdated drinking fountains with water coolers in the basement to improve operation, appearance and serviceability and to provide access to the physically handicapped (2 units).

_____	\$	250,000	6. Water Piping Replacement: Replace water distribution piping. It is reported that there are leaking locations with galvanized and copper piping systems interconnected.
_____	\$	5,000	7. Art Room Sink Replacement: Replace outdated sinks located in the Art Room. New sinks to include plaster traps to prevent solids from entering the sanitary line and potentially clogging the piping system.
	\$	<u>372,500</u>	TOTAL – FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

_____		None.
\$	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.
\$	<u>0</u>	TOTAL - DISTRICT REQUESTS
\$	439,800	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 : 1600 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 4001.
 - 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 : Dukane.
 - b. Equipment:
 - (1) Console : Intercom channel, program channel, amplifier.
 - (2) Classrooms : Intercom telephone, wall speakers.
 - (3) Stage : Speaker jack, microphone jack.
 - (4) Gymnasium : Ceiling speakers.

6. Emergency Lighting/Power:
 a. Lighting:

	Local <u>Batts.</u>	Remote <u>Batts.</u>	Generator <u>Connect.</u>	Sufficient Lighting	
				<u>Yes</u>	<u>No</u>
(1) Gymnasium	X			X	
(2) Corridors	X				X
(3) Cafetorium	X				X
(4) Auditorium	X			X	
(5) Library	X				X

II. CODE REQUIREMENTS

* _____ \$	1,000	1. Exit Lights: Install exit lights to more clearly define the path of egress in the following locations: a. Exit to Large Group Classroom; b. Exit to Library; c. Exit to Art Room.
* _____ \$	1,400	2. Emergency Lights: Install new emergency lights to improve safety at the following locations: a. Most corridors (additional); b. Cafetorium (additional); c. Library.
<u> </u> \$	2,400	TOTAL - CODE REQUIREMENTS WORK

III. ARCHITECT'S AND ENGINEER'S RECOMMENDATIONS

III.A. HEALTH AND SAFETY IMPROVEMENTS

_____ \$	65,200	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.
_____ \$	15,400	2. Smoke Detection: Install heat detection to improve safety in the following locations: a. Most corridors (additional in some cases); b. Auditorium (additional); c. Library; d. Gymnasium (additional); e. Cafeteria (additional); f. Computer Rooms.
_____ \$	2,200	3. Heat Detection: Install heat detection to improve safety in the following locations: a. Teachers lounge; b. Storage rooms; c. Janitor's closets.
<u> </u> \$	82,800	TOTAL - HEALTH AND SAFETY IMPROVEMENTS

III.B. FACILITY IMPROVEMENTS

_____ \$	63,800	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.
_____ \$	12,600	2. Clock System: Replace existing clock system including all secondary clocks and all associated wiring.
_____ \$	5,400	3. Exterior Lighting: Replace existing exterior lighting and provide additional vandal resistant metal halide exterior lighting to increase building security.
_____ \$	34,700	4. 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.
_____ \$	41,600	5. 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.
_____ \$	46,900	6. Convenience Receptacles: Provide additional convenience receptacles in most classrooms to discourage the use of adapters and extension cords.
_____ \$	14,400	7. Keyless Entry System: Provide new keyless entry system for up to four doors in the building including control panel, printer, sensors at doors, electronic door hardware and key-phobs for staff.
_____ \$	16,500	8. 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.
_____ \$	47,500	9. 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 district's current computer network.
_____ \$	78,100	10. 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.
_____ \$	38,000	11. 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 teacher's computer.

_____	\$	59,600	12. 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.
_____	\$	310,300	13. 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.
_____	\$	23,200	14. 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.
	\$	792,600	TOTAL – FACILITY IMPROVEMENTS

III.C. ENERGY CONSERVATION

_____			None.
	\$	0	TOTAL - ENERGY CONSERVATION MEASURES

III.D. HANDICAPPED ACCESSIBILITY

_____	\$	5,500	1. Assistive Listening System: Provide an assistive listening system for the Auditorium.
_____	\$	17,300	2. 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.
_____	\$	5,900	3. Fire Alarm Strobes: Install new fire alarm strobe lights in all toilet rooms, practice rooms and special education rooms, auditorium and within 15' of all exit and smoke doors in order to comply with ADA Guidelines.
	\$	28,700	TOTAL - HANDICAPPED ACCESSIBILITY

III.E. RECOMMENDED STUDIES AND TESTING

	<u> </u>	None.
\$	0	TOTAL - RECOMMENDED STUDIES AND TESTING

IV. DISTRICT REQUESTS

	<u> </u>	None.
\$	<u>0</u>	TOTAL - DISTRICT REQUESTS
\$	906,500	TOTAL - ELECTRICAL SYSTEMS