FACILITY ENGINEERING ASSOCIATES

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Draft Report of

Condition Assessment

P.R. Harris Education Center

Washington, DC

FEA Project No.: R01.2008.005662

June 16, 2008

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FEA

June 25, 2008

Office of Property Management
Office of Construction
District of Columbia Government
2000 14th Street, NW, 8th Floor
Washington, DC 20002

Attention: **Mr. Amar Singh**

SUBJECT: **Report of Facility Condition Assessment**
District Elementary & Middle Schools (Cluster II) – P.R. Harris Education Center
Washington, D.C.
FEA Project No. R01. 2008.005662

Dear Mr. Amar:

Facility Engineering Associates, P.C. (FEA) has completed our Facility Condition Assessment for P.R. Harris Education Center in Washington, DC. This report provides a written summary of our assessment and our projection of expenditures that may be required at the school over the next six years. Our services were performed in accordance with FEA's proposal (P01.2008.005662) and contract document (Contract No. POAM-2004-C-0044-27) dated May 13, 2008.

Thank you for the opportunity of working with you. We hope to work with you again soon.

Very truly yours,
FACILITY ENGINEERING ASSOCIATES, P.C.

Mayra Portalatin
Project Engineer

Paul G. Swanson, P.E.
Principal

T A B L E O F C O N T E N T S

EXECUTIVE SUMMARY

P.R. Harris Education Center ('the Property") is located at 4600 Livingston Road in southeast Washington, D.C. The property consists of a three-story educational building built in 1976. The 348,700 square-foot building is located within a 3.36 acre site bound by South Capital Street and Livingston Road.

On June 3 and 4, 2008, Paul Swanson, Mayra Portalatin, Greg Hughel, Mike Thompson, and Natasha Jurakhan of FEA visited the site to observe and document the condition of the building and site components. FEA was assisted by the following specialty sub consultants working under contract to FEA:

- Richard Shaffer – Atlantic Elevator (Atlantic) – Conveyance Systems Consultant
- Lisa Vanbuskirk – Rolf, Jensen & Associates, Inc. (RJA) – Fire and Life Safety Consultant
- Dan Zito – SAI Engineering, Inc. (SAI) – Mechanical, Electrical and Plumbing Consultant

The substructure was observed to be in generally in good condition. We observed the walls, foundation, and roof framing elements of the building that were accessible. Observed cracking, deflection, or deterioration of structural elements was noted to be minor. No excessive movement of the building foundation was observed.

The building's shell was observed to be in generally fair to good condition. The building roof systems appeared to be in good condition with no appreciable damage noted. The brick masonry exterior was observed to be in fair condition. A significant amount of tuckpointing has been identified as a deferred maintenance item. The windows are in generally good condition; however, some of the glass block lights require replacement. Many of the exterior doors require painting.

The interior finishes were observed to be in overall fair to poor condition. We have recommended replacement projects based on estimated useful lives of the finishes and aesthetic preferences. Major recommendations include replacement of the entire acoustic tile ceiling due to serve stains and damages, and replacement of major sections of vinyl composite tile that was observed to be missing, cracked or broken. It was also recommended that all ceramic tiles in the restrooms are replaced due to heavy staining and deterioration.

The building's services were generally in fair condition. The existing geared-traction elevator system had been properly maintained and was fully operational; however the systems have not been modernized. The elevator was not compliant with accessibility requirements, contained many obsolete components.

The existing Fire Alarm System was in a Trouble condition and showed two fire alarm zones in an Alarm condition. The audible and visual notification functions of the fire alarm system did not meet current code requirements. Only the Trash Room is currently provided with automatic sprinkler protection. Some exit doors and fire resistance rated doors require maintenance and changes to hardware.

The HVAC system is a constant volume system with eight zones supplied by the air handling units adjacent to the stairways at each level of the building. The existing system has reached the end of the predicted service life. The building was designed to condition a relatively "open" floor system. The construction of interior divider walls may cause areas of the building to become uncomfortable. A VAV system would be applicable to a divided work space environment.

Equipment (i.e. vending machines, office equipment, library equipment, stage curtains, music equipment, and audiovisual equipment) and furnishings within the building were in fair condition. Due to the

condition of most of the lockers, it was recommended that all lockers are replaced as a capital expenditure.

The site systems for the building were limited to those elements located on the property and were generally in fair to good condition. The asphalt pavement in the staff parking lot on the south side of the building and the remote parking lot on the north side of the building require some full-depth pavement repairs and sealcoating. The concrete elements such as sidewalks and stairways were in generally good condition although some repairs to the railing systems is required. The playground equipment was in generally good condition. The tennis courts and associated fencing was in poor condition and requires replacement.

In general quantitative terms, the building posed several significant barriers to accessibility. We have recommended installing compliant signage throughout the building, replacing door hardware to provide accessible clearance and installing grab bars in accessible restrooms.

Hazardous materials, such as asbestos-containing materials (ACM) were identified while lead-based paints (LBP) and polychlorinated biphenyls (PCB) were assumed to be present. In general, these materials were in fair condition. These materials shall be abated prior to any renovation or demolition activities by a licensed abatement contractor. Remaining ACM and LBP should be maintained in good condition under an Operations & Maintenance (O&M) Plan.

Capital Expenditure Forecasting

A capital expenditure forecast has been prepared for a 6-year study period. The capital expenditure forecast does not include minor repair or routine maintenance items, which would typically be included as part of the existing operating budget.

Table 1.0 Summary of Projected Capital Expenditures

System	Expenditure
Substructure	$0
Shell	$3,213,702
Interiors	$2,654,610
Services	$7,258,800
Equipment & Furnishings	$350,000
Special Construction & Demolition	$0
Site Improvements	$291,630
Accessibility	$5,460
Hazardous Materials	$2,267,250
Environmental Analysis	$188,900
Total	**$16,230,352**
CRV	**$44,160,366***
FCI	**0.37**

* Based on RS Means Values

Breakdowns of costs for each system are summarized in the individual report sections and are presented in the 6-year capital expenditure forecast table in Appendix A.

SCOPE OF SERVICES & DOCUMENT REVIEW

The District of Columbia Office of Property Management (DCOPM) is engaged in an effort to develop a full understanding of the physical status of the school. The scope of work for this assessment was divided into six general areas of concentration:

1. A visual condition assessment of the property.
2. Determination of maintenance and upgrade issues.
3. A preliminary assessment of the feasibility for the building to attain LEED Silver Certification.
4. Identification of opportunities to make the building energy efficient.
5. Development of long-term capital repair/renewal project and associated opinions of cost.
6. Development of a preventative maintenance program and identification of deferred maintenance items.

The final use for the Property has yet to be determined; however, for the purposes of this study, we have assumed that the building components will be either maintained or components to be replaced will be similar in capacity and function.

Condition Assessment

FEA performed a visual assessment of the interior and exterior components of the building. The following major components and systems were included:

- **Substructure:** FEA observed the building for visible signs of structural distress (wall cracking, displacement, etc.) from the exterior and from accessible locations on the interior (stairwells, mechanical rooms, etc.). No building drawings were available for our review. We observed the interior floors for evidence of displacement that may indicate movement or settlement issues. Our scope of services did not include any type of structural analyses or calculations to confirm the existing design adequacy of the structural systems in place. Specifically as it relates to green roof feasibility.

- **Shell:** FEA observed the condition of the exterior walls, windows, and door systems, as well as the roofing system. Façade observations included identifying any evidence of cracking, staining, scaling, efflorescence, or other indications of deterioration or water intrusion. In addition, FEA observed the building's sealants and window gaskets and seals (where accessible) for estimated age and observed conditions. Roof observations included edge or cap conditions for obvious leak locations into wall cavities or other hidden or inaccessible locations. As part of our assessment, Our observations of the façade and roofing/waterproofing systems were made from accessible low-slope areas and/or from the ground.

- **Interiors:** FEA performed a visual assessment of interior finishes such as walls, ceilings, floors, and doors.
- **Services:** Our team evaluated condition of conveying, plumbing, HVAC, fire protection, electrical, safety, security, and access control systems throughout the property. Drawings of the building systems were not available. Our evaluation was based on discussions with building personnel and visual observations.

- **Equipment & Furnishings**: Observations were made of the existing fixed furnishings and equipment. Furnishings and equipment that were not physically attached to the facility were not considered.
- **Site Improvements:** Our assessment included the evaluation of current condition of landscaped areas adjacent to the building, sidewalks, pavements, connecting passages, and entrances to the building.
- **Accessibility:** FEA conducted a cursory level site reconnaissance to observe major systems that may not comply with the applicable accessibility requirements. We will also reviewed site accessibility from points of access to the building.
- **Hazardous Materials:** FEA reviewed the hazardous waste management plan. During our site observations, condition of the various hazardous materials present were noted.
- **Environmental Analysis:** FEA performed a pre-requisite assessment to determine the feasibility to attain LEED® for Existing Buildings Silver Level Certification under the most current rating system (Operations & Maintenance). Our assessment included a review of current operational practices and policies of the facility through interviews with property management and site observations.

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A. SUBSTRUCTURE

A10 FOUNDATIONS

Description

Item	Description
Building Name	P.R. Harris Education Center
Foundations	
Type	Cast-in-place concrete; shallow spread footings (structural drawings not available
Footings	Spread footings (dimensions unknown)
Exterior Footing Depth	Varies
Bearing Capacity	Unknown
Other	Not Applicable

Condition

Item	Condition
Building Name	P.R. Harris Education Center
Foundations	
Type	Cast-in-place concrete – No settlement or heave observed. No spalling of the concrete observed. No leakage into the building reported or observed.
Footings	Spread footings – No settlement or heave observed.
Exterior Footing Depth	Adequate for the load and frost conditions.
Bearing Capacity	No failure observed.
Other	Not Applicable

Recommendations

Capital Expenditure

a. No capital expenditures anticipated during the study period.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

A20 BASEMENT CONSTRUCTION

Description

Item	Description
Building Name	P.R. Harris Education Center
Slabs-on-grade	
Construction, Joints, etc.	Cast-in-place concrete smooth finish in central plant. Slab-on-grade elsewhere in building is concealed by finishes.
Basement Excavations/Walls	
Exterior Walls	Visible only in central plant. Cast-in-place construction. Thickness unknown.

Condition

Item	Condition
Building Name	P.R. Harris Education Center
Slabs-on-grade	
Construction, Joints, etc.	Cracking was observed to be minimal in central plant. No obvious displacement noted in finished areas.
Basement Excavations/Walls	
Exterior Walls	Cracking was observed to be minimal. No leakage observed or reported.

Recommendations

Capital Expenditure

a. No capital expenditures anticipated during the study period.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

B. SHELL

B10 SUPERSTRUCTURE

Description

Item	Description
Building Name	P.R. Harris Education Center
Floor Framing	
Floor Deck	Cast-in-place reinforced concrete (thickness and spacing of reinforcement unknown).
Structure	Structural design of column unknown. Column spacing is generally 30 feet on center.
Roof Framing	
Roof Deck	Cast-in-place reinforced concrete over main building area. Metal decking over gymnasium areas.
Structure	Cast-in-place concrete beams and columns. Load-bearing exterior masonry walls.
Typical Bay Size (approximate)	30' x 30'
Other Features	
Stairs	Cast-in-place concrete
Fireproofing	Not Applicable

Condition

Item	Condition
Building Name	P.R. Harris Education Center
Floor Framing	
Floor Deck	No cracking or displacement observed. No reported deflection or vibration issues.
Roof Framing	
Roof Deck	No issues observed or reported. No active leakage problems reported
Structural Framing	No issues observed or reported.
Other Features	
Stairs	Good condition.
Fireproofing	Not Applicable

Recommendations

Capital Expenditure

a. No capital expenditures anticipated during the study period.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

B20 EXTERIOR ENCLOSURE

Description

Item	Description
Building Name	P.R. Harris Education Center
Walls	
Primary exterior walls (all levels)	Large brick masonry units with occasional glass block lights (58,760 SF).
Portion southeast (first level)	Fluted CMU (4,080 SF).
Over door entries (basement and first level), along stair entries, and cooling tower enclosure, over columns at basement and first level	Pre-cast concrete panels (8,740 SF).
Air handler room at main stair towers	Metal louver units (1,640 SF).
Windows	
Main entry	Storefront with fixed glazing (2.5’ x 8’ 40 units, 2’ x 7’ 14 units, 2’ x 5’ 4 units, 3.5’ x 8’ 8 units, 3’ x 2’ 4 units)
South side basement level	Fixed wire-reinforced glazing (6.2’ by 3.5’ 32 units)
West side first level	Plexiglas (2.5’ x 8’ 40 units, 2’ x 5’ 2 units, 2’ x 7.5’ 12 units)
Glass block side lights	Located along the sides of several entry doors (8” x 6.8’ 120 units, 8” x 7.3’ 64 units, 8” x 8’ 12 units) with painted wire security screens.
Doors	
Entry doors throughout (all levels)	Painted metal with metal frames and no lights (3’ x 7’ 32 units, 4’ x 7.8’ 8 units, 3.3’ x 6.8’ 2 units, 2.8’ x 6.5’ 1 unit, 4’ x 8’ 6 units, 3’ x 6.5’ 15 units, 3.3’ x 7’ 23 units)
South side second level	Painted metal with metal frames and no lights (4’ x 4’ 2 units)
West side basement level	Painted metal overhead with no lights (10’ x 10’ 1 unit)

Condition

Item	Condition
Building Name	P.R. Harris Education Center
Walls	
Brick masonry walls	Generally poor condition. Significant tuckpointing of masonry joints required (approximately 60% of exposed surface area). Water intrusion and efflorescence noted below most of cap units at roof level.
Fluted CMU	Generally good condition
Precast concrete panels	Minor spalling and significant water staining noted at entries. One panel at northeast first level entry significantly displaced and requires immediate repair. Panel joints are cracked and require replacement. Approximately 10 precast concrete column covers were noted to be displaced from the original constructed position.
Metal louvers	Generally in fair condition. All units require painting and removal of animal nesting debris.
Windows	
Storefront units	Generally in fair condition. All of the units require cleaning of the glazing and frames.
Plexiglas units	Fair condition with no apparent leakage.
Glass block side lights	Security screens require painting. Approximately 10 units are either damaged or dislodged and require replacement.
Doors	
Metal entry doors	Generally in poor condition except for main entry. Several doors and frames were corroded or damaged. All required painting.
Access doors (second level)	Fair condition.
Overhead rollup door	Good condition.

Recommendations

Capital Expenditure

a. General tuckpointing and joint repair of brick masonry exterior to include 35,250 square feet of exposure. Our opinion of the cost to perform this work is **$564,000**.

b. Joint replacement of the precast concrete panels to include approximately 4,000 linear feet of joint replacement. Our opinion of the cost to perform this work is **$16,000**.

c. Repair of concrete spalls in the precast concrete panels to include approximately 50 square feet of repair. Our opinion of the cost to perform this work is **$3,750**.

d. Reset precast concrete column covers. Investigate possible cause of movement. Our opinion of the cost to perform this work is **$7,500**.

e. Replace glass block side light units to include 10 11-block units. Our opinion of the cost to perform this work is **$8,000**.

f. Replace metal entry doors and frames to include 40 units. Our opinion of cost to perform this work is **$43,200**.

Maintenance Expenditure

a. Clean and repaint all air intake louvers at stairways. Our opinion of the cost to perform this work is **$5,200**.

b. Clean and repaint all storefront windows and frames. Our opinion of the cost to perform this work is **$10,044**.

c. Repaint metal entry doors and frames to include 40 units. Our opinion of the cost to perform this work is **$3,620**.

B30 ROOFING

Description

Item	Description
Building Name	P.R. Harris Education Center
Roof Covering	
Main Roof	Modified bitumen with mineral-surfaced cap sheet (93,970 SF). Tapered insulation to internal drain system. Reinforced aluminum stripping plys sealed into reglet at brick parapet walls. No warranty information available. The roof installation date is assumed to be 1994.
Large gymnasium	Same roof system as main roof (10,840 SF).
Small gymnasium	Same roof system as main roof (5,270 SF).
Auditorium	Same roof system as main roof (10,840 SF).
Terrace	Concrete pavers, waterproofing system unknown (2,850 SF)
Exit stairways	Steep-sloped standing seam metal with gutter drains (3,900 SF). Installation date unknown.
Roof Openings	
Exhaust fans	Curb-mounted units (32 units)
Expansion joint	Metal capped expansion joint oriented east-west at building centerline.
Other	
Access ladders	Wall-mounted metal ladders that access air handler penthouse roofs.

Condition

Item	Condition
Building Name	P.R. Harris Education Center
Roof Covering	
Main roof	Fair condition. No active leaks reported. No blisters or seam separations observed. Drains clear and functional. Perimeter stripping plys in poor to fair condition. Many previous repairs observed. Mortar joints of brick masonry units that cap the parapet wall are a source of continuous leakage.
Large gymnasium	Same condition as main roof.
Small gymnasium	Same condition as main roof.
Auditorium	Same condition as main roof.
Terrace	Condition unknown
Exit stairways	Good condition.
Roof Openings	
Exhaust fans	Stripping plys are in poor to fair condition.
Other	
Access ladders	Significant surface corrosion observed.

Recommendations

Capital Expenditure

a. Replace main roof at the end of the predicted useful life, estimated to be in five years. Our opinion of the cost to perform this work is **$1,127,640**.

b. Replace large gymnasium roof at the end of the predicted useful life, estimated to be in five years. Our opinion of the cost to perform this work is **$130,080**.

c. Replace small gymnasium roof at the end of the predicted useful life, estimated to be in five years. Our opinion of the cost to perform this work is **$63,240**.

d. Replace auditorium roof at the end of the predicted useful life, estimated to be in five years. Our opinion of the cost to perform this work is **$130,080**.

e. Install metal cap flashing atop all parapet walls (estimated to be 4,400 linear feet). Requires removal and re-attachment of existing electrical conduit and security lighting. Our opinion of the cost to perform this work is **$52,800**.

Maintenance Expenditure

a. Allowance **$10,000** for annual maintenance of perimeter and curb flashing elements and general roof repairs until replacement of roof systems.

b. Re-painting of roof access ladders. Our opinion of the cost to perform this work is **$1,500**.

C. INTERIORS

C10 INTERIOR CONSTRUCTION

Description

Item	Description
Building Name	P.R Harris Educational Center
Partitions	
Partition 1	Concrete masonry unit (CMU)
Partition 2	Drywall
Doors	
Door 1	Hollow-metal doors (52 units 3.5’ by 80”; 9 units 3.5’ by 80” with light; 88 units 39” by 80” with light; 2 units 40” by 93”with light; 4 units 3’ by 7’; 18 fire doors 31” by 80”; 5 units 37” by 93”; 12 units 29” by 93”; 16 units 5’ by 2’; 8 units 40” by 92”
Door 2	Steel vault doors (5 units 38” by 82”; 1 unit 3’ by 81”)
Door 3	Hollow-wood doors (82 units 3’ by 80”; 59 units 3’ by 7’ with 26”by 5” light)
Fittings	
Not Applicable	Not Applicable
Other	
Not Applicable	Not Applicable

Condition

Overall, the construction in the building was in fair condition. Below is a brief summary of the condition of the interior construction.

Item	Condition
Building Name	P.R. Harris Educational Center
Partitions	
Partition 1	Good to fair condition; no observed failure.
Partition 2	Fair condition; minor instances of holes in drywall.
Doors	
Door 1	Fair to poor condition; some doors had graffiti, or were scratched and dented.
Door 2	Fair to poor condition; some doors had graffiti, or were scratched and dented.
Door 3	Fair to poor condition; most doors had graffiti, or were scratched and dented.
Fittings	
Not Applicable	Not Applicable
Other	
Not Applicable	Not Applicable

Recommendations

Capital Expenditure

a. It is recommended that all hollow-metal doors are stripped, patched and repainted. Opinion of cost is **$16,800**.

b. It is recommended that all steel vault doors are stripped, patched and repainted. Opinion of cost is **$550**.

c. It is assumed that 20% of all hollow wood doors are damaged beyond repair based on our observation. It is recommended that these doors are replaced. Opinion of cost is **$17,500**.

d. It is recommended that the remaining 80% of doors are stripped, patched and repainted. Opinion of cost is **$6,000**.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

C20 STAIRS

Description

Item	Description
Building Name	P.R. Harris Educational Center
Stair Construction	
Stairwells (all)	Reinforced concrete construction
Stair Finishes	
Finish 1	Vinyl composite tile
Finish 2	Slip-resistance metal nosing
Finish 3	Painted concrete
Other	
Stair railing	2-1/2” diameter metal railing at 33” high; painted

Condition

Overall, the stairs in the building were in fair condition. Below is a brief summary of the condition of the interior stairs.

Item	Condition
Building Name	P.R. Harris Educational Center
Stair Construction	
Stairwells (all)	Good condition; no observed structural failure.
Stair Finishes	
Finish 1	Fair to poor condition; instances of dislodged, cracked and broken tiles.
Finish 2	Fair condition; minor instances where nosing was not fastened securely causing potential trip hazard.
Finish 3	Good condition; observed minor peeling.
Other	
Stair railing	Good condition; no observed significant damage or failures.

Recommendations

Capital Expenditure

a. No capital expenditures are recommended for interior stairs.

Maintenance Expenditure

a. It is assumed that 10% of the total surface area of VCT on the stairwell is dislodged, cracked or broken based on observation. Therefore, it is recommended that 10% of the VCT are replaced. This cost of replacement is included in the cost of replacing damaged VCT in the Interior Finishes section under capital expenditures.

b. It is recommended that loose metal nosing are fastened. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

C30 INTERIOR FINISHES

Description

Interior finishes varied through the building. Below is a brief summary of the finishes.

Item	Description
Building Name	P.R. Harris Educational Center
Wall Finishes	
Finish 1	Painted concrete masonry unit (CMU)
Finish 2	Painted drywall
Finish 3	Unfinished CMU
Finish 4	Vinyl baseboard
Floor Finishes	
Finish 1	Vinyl composite tile (VCT)
Finish 2	Ceramic tile
Finish 3	Carpet

Item	Description
Building Name	P.R. Harris Educational Center
Ceiling Finishes	
Finish 1	Acoustic tile ceiling (ATC)
Other	
Not Applicable	Not Applicable

Condition

Overall, the interior finishes in the building were in fair to poor condition. Below is a brief summary of the condition of the interior finishes.

Item	Condition
Building Name	P.R. Harris Educational Center
Wall Finishes	
Finish 1	Good to fair condition; minor instances of cracked, stained, peeled and discoloration of paint.
Finish 2	Fair to poor; instances of graffiti, and scratched paint.
Finish 3	Fair condition; observed stained areas.
Finish 4	Fair condition; many instances of missing sections.
Floor Finishes	
Finish 1	Fair to poor condition; instances of missing, cracked or broken tiles.
Finish 2	Poor condition; major discoloration of grout and tiles.
Finish 3	Good to fair condition; minor stains.
Ceiling Finishes	
Finish 1	Poor condition; heavy stains and discoloration of majority of tiles, some holes were also observed.
Other	
Not Applicable	Not Applicable

Recommendations

Capital Expenditure

a. Based on observation, it is assumed that 30% of the total surface area of the drywall contains scratches or graffiti. It is recommended that this area is repainted. Opinion of cost is **$ 55,000**.

b. Based on our observations, it is assumed that approximately 40% of VCT flooring is missing, cracked, or broken. It is recommended that the damaged VCT is replaced. Opinion of cost is **$600,500**. This cost does not include tiles that must be replaced due to asbestos content.

c. It is recommended that all ceramic tiles be replaced. Opinion of cost is **$340,800**.

d. It is recommended that the acoustic tile ceiling be replaced. Opinion of cost is **$865,000**.

Maintenance Expenditure

a. It is assumed that 20% of the total surface area of the CMU interior walls contain cracked, peeled or discolored paint. Therefore, it is recommended this area of the CMU walls be repainted. Opinion of cost is **$22,000**.

b. It is recommended that the all interior CMU partition walls are cleaned to remove existing stains. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

c. Based on observation, it is assumed that 10% of the total surface area of exposed CMU walls are stained. It is recommended that this area is cleaned. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

d. It is assumed that about 200 linear feet is damaged or unsecured. It is recommended that these baseboard sections are replaced. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

e. Based on our observation, it is assumed that 5% of the carpet is stained. It is recommended that this area is steam cleaned. Opinion of cost is **$2,500**.

D. SERVICES

D10 CONVEYING

Description

Item	Condition
Elevator #1	Geared Traction
Control	Relay Logic, Montgomery, Simplex Collective
Machines	Original General Elevator
Controllers Installed	Original to Building
Door equipment	GAL Car and Hoistway; keyed cab operation
ADA compliance	None with the exception of jamb Braille plates.

Condition

Item	Condition
Elevator #1	Average overall
Control	Average
Machines	Average
Controllers Installed	Below average
Door equipment	Below average
ADA compliance	Below average

Recommendations

Capital Expenditure

a. The existing geared-traction elevator system included numerous obsolete components. Specific examples of this would be the controller and controller relays etc. which are no longer manufactured. The elevator was not compliant with accessibility requirements and would be difficult for a handicapped person to use. The existing elevator lacked several life safety devices required on modern elevators. Specific examples would be door restrictors devices, ascending car protection, and unintended car movement.

   The system had an estimated useful life of twenty years when it was originally installed and has now surpassed that time. The elevator should be modernized within twelve months. Our opinion of the cost to perform this work is **$210,000** total including the code required building system upgrades.

Maintenance Expenditure

a. Continue normal preventative maintenance procedures until the elevator is modernized.

D20 PLUMBING

Description

Item	Description
Building Name	P.R. Harris Educational Center
Domestic Water	
	The building is supplied with a 6-inch metered water service. Water is supplied to each plumbing fitment via galvanized and copper piping system.
Domestic Hot Water	
	A gas-fired water heater generates the domestic hot water for the building. The heater is a Lochivar Mod. CWN 0985PM with an input capacity of 985 MBH. The 4,000 gallon tank from the original storage heater is used for hot water storage.
Sanitary Drainage	
	A cast iron piping system is used for the sanitary drainage. Most of the system drains by gravity. The system includes a duplex pumping system in the ground floor central plant.
Storm Water Drainage	
	Roof drains pipe to horizontal down spouts via cast iron piping. Down spouts are collected on the ground floor and exit the building via a gravity piping system.
Plumbing Fixtures	
	Typical vitreous china fixtures. Bathrooms are not ADA compliant.

Condition

Item	Condition
Building Name	P.R. Harris Educational Center
Domestic Water	
	No leaks noted. Piping for the most part is copper. The large sizes above 3-inch appeared to be galvanized. There is concern with the galvanized pipe condition given its age. No backflow prevention at incoming water service as required by code.
Domestic Hot Water	
	Heater is in good condition. Less than 5 years old.
Sanitary Drainage	
Restrooms & Kitchen	No leaks noted. Piping in fair to good condition.
Storm Water	
Roof Drains	No leaks noted. Piping in fair condition.
Plumbing Fixtures	
Restrooms	Fixtures on the first and second floors appear to be in fair condition. The fixtures on the basement level are in poor condition. These restrooms are not being maintained nor are useable except for two that were bused by UDC.

Recommendations

Capital Expenditure

a. Provide backflow preventor to incoming 6-inch water service to meet code. Our opinion of cost to provide a new backflow preventor is **$12,000**.

b. Budget to replace the galvanized domestic water piping over the next 5 years. Our opinion of cost to replace the domestic water piping is **$150,000**.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

D30 HVAC

Description

Item	Description
Building Name	P.R. Harris Educational Center
Chilled Water System	
Chillers	Chilled water was generated by two Multistack water-cooled chillers. Each included eight 30-ton modules. An insulated steel piping system is used to supply chilled water to the AHU's. The distribution system includes two primary pumps and a secondary pump in each of the eight ground floor AHU rooms.
Condenser Water	
Cooling tower	Condenser water system includes a 3-cell cross-flow cooling tower with a 600-ton nominal capacity. Two 30-HP split-case pumps circulate the condenser water between the chiller and cooling tower via a steel piping system.
Air Handling Units	
	There was a packaged constant-volume single-zone air handler unit with chilled and hot water coils located at each level in each of the eight air handler rooms, plus two units behind the stage that serve the auditorium. These units range in size from 12,000 cfm to 18,000 cfm.
Gym's Ventilation System	
	Each of the two gyms was heated and ventilated by two ceiling-suspended air handlers with a hot water heating coil. Capacity appeared to be about 7,000 cfm each.
Exhaust System	
Kitchen Hood Exhaust	A roof curb-mounted utility-style fan with a capacity of about 7,000-8,000 cfm is used for the kitchen hood exhaust. The exhaust duct from the hood to fan is black steel.
Toilet & General Exhaust	There were about 18 roof curb-mounted fans used for general and toilet exhaust. Exhaust to these fans was via sheet metal ductwork.
Controls	

Item	Description
Building Name	P.R. Harris Educational Center
	The building uses a Siemens automation system. Many of the valves and actuators were pneumatic that were controlled by the DDC system.
Heating Water System	
	Includes three 265 BHP gas-fired tube hot water boilers and one 79-HP gas-fired hot water boiler. The distribution system included a primary pump and a secondary pump in each of the eight ground floor AHU rooms.

Condition

Item	Condition
Building Name	P.R. Harris Educational Center
Chilled Water System	
	Chillers appeared new, less than five years old, and in good condition. The chilled water pumps were in fair to good operating condition. The piping was sound; no leaks noted.
Condenser Water	
	The tower was new, only a year old, and in excellent condition. The condenser water pumps were also updated at this time. Piping was sound and in good condition.
Air Handler Units	
	The AHU's were the original equipment installed in 1976 and are reaching the end of their useful lives. Except for the auditorium units, the system looked to have been well maintained. The auditorium units were not operational and need to be refurbished or replaced.
Gym's Ventilation System	
	The HV units were in fair operating condition. Original equipment was reaching the end of the predicted service live.
Exhaust System	
Kitchen Hood	Fan looks old and worn. The system did not include grease drain/collection
Toilet/General Exhaust	Many fans were not operating due to motor failure or belt failures. These fans need to be refurbished or replaced.
Controls	
	No complaints were reported.
Heating Water System	
	Boilers were being maintained during our visit. The boilers were opened up for tube inspection and replacement. The burners looked to have been replaced within the last 10 years.

Recommendations

Capital Expenditure

a. The air handler units have been in service for over 25 years and are reaching the end of their service life. Replacement and/or refurbishment should be anticipated within the next 5 years. Our opinion of cost to replace and/or refurbish the air handler units is **$960,000**.

b. The current HVAC system was originally designed to serve large open areas. Excluding the gym and auditorium, each floor includes eight temperature control zones. On the first floor, the floor plan has been segmented into classrooms and offices. The temperature in each classroom and office is not individually controlled. Changing the current constant volume systems to VAV systems that include VAV terminals with hot water coils that modulate to control space temperature would improve temperature control in each individual classroom and office. Estimated cost to change the first floor systems to VAV systems is **$1,650,000**.

c. The auditorium air handler system needs to be replaced. The estimated cost is **$75,000**.

Maintenance Expenditure

a. One third of the roof-mounted exhaust fans were not operating. It is our understanding that a maintenance program to repair these fans was started but suspended. Estimated cost to repair these fans is **$12,000**.

D40 FIRE PROTECTION

Description

Item	Description
Building Name	P.R. Harris Education Center
CONSTRUCTION	
Occupancy	1st - Assembly (A3), Business (B), Education (E). Assembly is considered an accessory use. 2nd – Education (E). Basement - Education (E), Business (B), Assembly (A), Storage/Mechanical (S). Assembly is considered an accessory use.
Footprint Area	126,220 square feet
Height	35 feet
Total Area	348,700 square feet
Exterior Walls	Brick masonry and pre-cast concrete
Interior Walls	CMU
Shafts	N/A
Floor Slabs	Cast-in-place concrete
Ceiling	Acoustical tile
Roof	Cast-in-place concrete; metal (gymnasium)
Interior Finish	CMU & gypsum wall board
Corridors	CMU
North Exposure	N/A
East Exposure	N/A
South Exposure	N/A
West Exposure	N/A
Common Hazards	N/A
Special Hazards	N/A
FIRE PROTECTION SYSTEMS	
Fire Alarm Model	Standard Electric Time (SET) 700 (installed ~1976) and Fire-Lite MS 521 OUD (installed ~2002) located Transformer Room. Remote annunciators provided at the Main Office and Stair 7 building entrance.
Addressable (Y/N)	No (Hard wire)
Power source	24 volts and emergency generator
Notification Appliances	Bells on First and Basement Floor. Some horns and strobes on the Second Floor.
ADA Compliant (Y/N)	No
Pull Stations (Y/N)	Yes
Waterflow (Y/N)	Yes
Tampers Device (Y/N)	No. Main sprinkler valve had chain and lock to maintain it in an open position.
HVAC Detection (Y/N)	Yes in ductwork of main air handler rooms
Elevator Recall (Y/N)	No
Elevator Shutdown (Y/N)	No

Item	Description		
Building Name	P.R. Harris Education Center		
Smoke Detection (locations)	None		
Heat Detection (locations)	None		
Public Address System	Two PA systems. One system is for Basement and First Floor and is controlled at Main Office. The PA system for the Second Floor is controlled on the Second Floor. The two systems are not interconnected.		
Sprinkler System	Trash room only. Tested May 2008.		
Combination System (Y/N)	No		
Water Main	8" to city municipal		
Static Pressure	55 psi		
Fire Dept Connection	No		
Ball Drip	No		
Dry System	No		
Standpipe System	No		
Hose Connection Locations	None		
Nozzle Sizes	N/A		
Fire Extinguishers	ABC extinguishers in each cabinet. Checked September 2007.		
Special Extinguishing Systems	Ansul Kitchen Hood Exhaust System in Kitchen. Tested June 2007.		
Emergency Generator	90KW/112 KVA. Approximately 2 years old. Reportedly powers exit signs, fire alarm system, and some emergency lighting.		
LIFE SAFETY SYSTEM			
Stair Width (44")	48" min		
Stair Rise (4"-8")	7"		
Stair Run (9")	11"		
Door Width (32")	38" min		
Door Latching (Y/N)	Some doors not latching, most doors latched.		
Door Self-closing (Y/N)	Yes		
Handrail Height (32")	32"		
Discharge	All exit stairs discharged to exterior of the building.		
Corridor Width	8 to 12 feet		
Dead Ends (20')	None		
Travel Distance (200'-300')	< 200'		
Housekeeping	Generally good		
Obstructions	N/A		
Combustibles	Some partitions and finishes		
Hazardous Area	Rated Enclosure	Self-closing	Latching
Transformer Room	2-HR rated walls, 90-minute doors	No	No
Telecom room	Unknown, UL label painted over	No	No
Janitor's Closet in Kitchen	Unknown, UL label painted over	No	No

Item	Description		
Building Name	P.R. Harris Education Center		
Hazardous Area (Cont.)	Rated Enclosure	Self-closing	Latching
Kitchen	Unknown, UL label painted over	Yes	Yes
Boiler Room	2-HR rated walls, 90 minute doors	Yes	Yes
Exit Signs	Corridor distribution generally acceptable, some classrooms require additional exit signs		
Emergency Lighting	Some lights reportedly supplied by emergency generator.		
Emergency Plan	Unknown.		

Condition

Item	Description
Building Name	P.R. Harris Education Center
FIRE PROTECTION SYSTEMS	
Fire Alarm Model	The existing Fire Alarm System was in a Trouble condition and showed two fire alarm zones in an Alarm condition.
Public Address System	The audible and visual notification functions of the fire alarm system did not meet current code requirements.
Sprinkler System	Inspection up to date.
Fire Extinguishers	Inspection up to date.
Special Extinguishing Systems	Ansul kitchen hood annual inspection due.
Emergency Generator	Good Condition
LIFE SAFETY SYSTEM	
Doors	Some exit doors and fire resistance rated doors require maintenance and changes to hardware.

The building code used for the construction of P.R. Harris Education Center is unknown. However, based on our review of the building codes used during the same era as construction of the school, an automatic sprinkler system was not required in the mid-1970's. However, the District of Columbia's Existing Building Code (DCMR 12J) would have required that at a minimum, automatic sprinkler should have been installed in 2002 on the Second Floor during renovations (Section 604.2.2 DCMR 12J). Automatic sprinkler protection was not installed at that time.

If this building is converted from Education to Business occupancy, DCMR 12J would consider it a change in occupancy. During this change of occupancy, the existing Assembly occupancies would no longer be considered accessory to the primary Education occupancy, but if no new Assembly spaces were added in the conversion (i.e. the addition of conference rooms) then the existing Assembly spaces would stay as Use Group A, and therefore not considered a change in occupancy. Since Business occupancies are considered a lesser hazard then Education occupancies in DCMR 12J, the conversion of the school building to a business use building would not constitute a change to a higher hazard classification per DCMR 12J Chapter 8. Therefore, upgrades to fire and life safety systems would only be required if any renovation work was included as part of the change in occupancy. If so, sprinkler protection may be required depending on the extent of renovations per DCMR 12J 604.2.4.

If any additions are planned for the buildings, the building code referenced for new construction is the 2006 International Building Code (IBC) since the District of Columbia is in the process of adopting this edition of the code. New Education occupancies require sprinkler protection throughout if the fire area is

more than 20,000 square feet. New Business occupancies do not require sprinkler protection. New Assembly occupancies with more than 300 people (such as the auditorium) or more than 12,000 square feet, require automatic sprinkler protection throughout the building. New Education, Business, and Assembly occupancies require a manual fire alarm system. The building is currently provided with a manual fire alarm system. The existing fire alarm system however, is deficient in certain areas, as described below.

Recommendations

a. Fire Alarm System

1. One of the two fire alarm control panels is original to building construction (1976). The second fire alarm panel was installed in approximately 2002 when the Second Floor was renovated. Though not required by code, it is recommended that the obsolete hard-wired manual fire alarm system be replaced with a new addressable system.

2. Inadequate audible fire alarm devices and no visual fire alarm devices were provided on the Basement and First Floor. If the fire alarm system is replaced, provide Americans with Disabilities Act (ADA) and NFPA 72, Fire Alarm Code, compliant audible and visual notification throughout building. This would include horns and strobes in classrooms and offices, as well as the corridors.

3. On the Second Floor, the corridors and interior classrooms created during renovations in 2002 were provided with some audible/visual notification appliances. Classrooms along the perimeter of the building on the 2nd floor were lacking in notification appliances though. The adequacy and candela rating of newer audible and visual notification devices along the Second Floor corridor should be confirmed and additional notification appliances added as required.

4. Relocate all manual pull stations to 48 inches above finished floor in accordance with NFPA 72, ADAAG, and International Building Code. Although newer pull stations appeared to have been installed in 2002, they appear to have been mounted too high.

5. Signs at the manual pull stations in the school corridors state that pulling the device will not notify the fire department. Confirm system operation and if these signs are incorrect, remove signs. If activation of manual pull station does not automatically notify the fire department, provide a fire alarm system that does notify the appropriate authorities per NFPA 72.

6. A trouble condition was shown on main fire alarm panel at the time of the survey. Two fire zones were also in alarm on both remote annunciator panels. Correct all troubles and alarm conditions.

7. It is recommended that smoke detection be provided at elevator lobby area and elevator machine room for elevator recall and shutdown.

b. Automatic Sprinkler System –It is recommended that automatic sprinklers be installed throughout the building, as fire areas exceed 20,000 square feet and the installation of sprinklers will provide greater flexibility in the future uses of the building. A fire pump may be necessary to achieve the necessary water flow rate and pressure. If an electric fire pump is used, the emergency generator

size may need to be increased. Alternatively, a diesel fire pump could be used, but would require the storage of diesel fuel.

c. Exit Signs – The distribution of exit signs within the corridors was generally acceptable. However, in rooms with two exits, exit signs at each exit are required. Rooms that only require one exit do not require exit signs. Not all rooms with two exits are provided with exit signs. Rooms with two exits that lack exit signage include the Library, Homemaking Lab, and Main Office. Provide additional exit signs in these areas and all other rooms with two means of egress that lack exit signs.

d. Door Hardware – Replace existing door hardware on exit doors from exterior Jr. High Cafeteria seating area and Jr. High Gymnasium with panic or fire exit door hardware.

e. Classroom Doors – Corridors in non-sprinkler protected Education and Business occupancies require 1-hour rated corridors and 20-minute rated doors. These doors must also be self closing and latching.

1. Section 8.3.4.4 of NFPA 101, *Life Safety Code*, recognizes that existing 1¾ inch solid-bonded wood core doors in existing buildings may be permitted to remain, when 20-minute fire resistance rated doors would otherwise be required. The International Building Code does not contain such code language. It appeared that the existing corridor doors meet NFPA 101's description of wood doors. It should be discussed with the Authorities Having Jurisdiction if the existing wood doors are acceptable, as permitted under NFPA 101 (note: NFPA 101 is not applicable in DC). If the existing doors are acceptable, provide self-closing and latching door hardware for all corridor doors, as the corridor doors lacked appropriate hardware.

2. If the existing doors are not acceptable, then replace all corridor doors with 20-minute rated doors with self-closing and latching door hardware

f. Rated Doors – Remove paint from Underwriters Laboratory labels from doors. This includes stair doors, kitchen doors, janitor's closet door in the kitchen, and telecom room door.

g. Rated Doors – All rated doors should be self closing and not propped open. Some closers had been removed. Remove door stops from all rated doors or place doors on hold-open devices connected to the fire alarm system.

h. Stair Doors – Confirm all stair doors latch when they close. Some doors did not appear to fully latch.

i. Stair 3 Basement Level – Replace missing glass from rated stair door.

j. Egress Paths – Maintain egress paths clear and unobstructed. For instance, on the First Floor, adjacent to Stair 4, trash cans obstruct access to exit door. Once occupants pass through the exit door, they must transit down exterior exit stairs which are obstructed by broken chairs and other debris. At the bottom of the stair, the gate is locked shut.

k. Deadbolts – Remove all deadbolts on exit and stair doors, as they are not permitted by code.

D50 ELECTRICAL

Description

Item	Description
Building Name	P.R. Harris Educational Center
Electrical Services and Distribution	
	The building is supplied by two 3000-amp 480V/3 phase/4 wire services that each supply a 3000-amp switchgear that are connected via a tie breaker. Power requirements for the building can be supplied from either 3000-amp service. This switchgear supplies the Motor Control Centers, panelboards and the major equipment throughout the building via copper conductors in conduit.
Emergency Power	
	A 125-kW diesel driven emergency generator was the source of emergency power for the building. Power from the generator via a transfer switch supplied backup power to egress lighting and fire alarm system (i.e., life safety systems) during a power failure.
Lighting Systems	
	Lighting on the first and second floors was upgraded to the more efficient and environmental friendly T-8 fluorescents with electronic ballast. The ground floor still includes T-12 fluorescents with magnetic ballasts. Most exit signs have been updated to the energy efficient LED type.

Condition

Item	Condition
Building Name	P.R. Harris Educational Center
Electrical Services and Distribution	
	The system was sound and in good condition, no damage from overloads or short circuits were noted. The switchgear does not include code required ground fault protection.
Emergency Power	
	The generator was in good operating condition and should provide reliable service over the next 10 years.
Lighting System	
	The lighting system throughout the building looked to be adequate. The ground floor fixtures should be replaced to the more efficient T-8 fluorescents. The lighting within the air handler rooms did not work. Tubes need to be replaced.

Recommendations

Capital Expenditure

a. Ground fault protection should be added to the switchgear to meet current NEC code. Our opinion of the cost to perform this work is **$80,000**.

b. Continue with the lighting upgrade on the ground floor. Change all lighting to T-8 fluorescent with electronic ballast. Our opinion of the cost to perform this work is **$225,000**..

Maintenance Expenditure

a. A preventive maintenance program that includes the thermographic testing, the retorqueing of connections, cleaning and lubricating of the electrical gear, panelboards, distribution boards and MLC should be implemented and done every 3 years. The estimated cost is **$30,000** for the first year and **$20,000** every third year.

D60 SAFETY, SECURITY & ACCESS CONTROL

Description

Item	Description
Building Name	P.R. Harris Educational Center
Safety	
Metal Detectors	Metal detectors are present at the two main entrances on the first level.
X-Ray Scanning	One X-Ray scanning unit is present at one of the main entrances on the first level.
Security	
CCTV	Close-circuit cameras are located at main entrances on the first level and on the northwest and southwest sides of the building. The cameras are monitored from a single video unit near the southeast security station.
Access	
Main entrance	Access is restricted to the main entrances to the building on the first level. All other entrance doors require key access at all times.

Condition

Item	Description
Building Name	P.R. Harris Educational Center
Safety	
Metal Detectors X-Ray scanning	Functional and in serviceable condition. Functional and in serviceable condition.
Security	
CCTV	Functional and in serviceable condition.
Access	
Entrance doors	Several doors and hardware are in poor condition.

Recommendations

Capital Expenditure

a. No capital expenditures anticipated during the study period.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

E. EQUIPMENT AND FURNISHINGS

E10 EQUIPMENT

Description

Item	Description
Building Name	P.R. Harris Education Center
Commercial Equipment	
	Not Applicable
Institutional Equipment	
Exhaust Hood	Exhaust hood in kitchen area on the first floor level approximately 10’ by 20’
Freezers	Five walk-in freezer units located in the kitchen area on the first floor level ranging in size from 25 SF to 600 SF.
Vehicular Equipment	
	Not Applicable

Condition

Item	Condition
Building Name	P.R. Harris Education Center
Commercial Equipment	
	Not Applicable
Institutional Equipment	
Exhaust Hood	Assumed serviceable condition; not operating during survey.
Freezers	Assumed serviceable condition; not operating during survey.
Vehicular Equipment	
	Not Applicable

Recommendations

Capital Expenditure

a. No capital expenditures anticipated during the study period.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period

E20 FURNISHINGS

Description

Item	Description
Building Name	P.R. Harris Educational Center
Fixed Furnishings	
Lockers	Single-tier lockers
Wall Units	Wood with glass doors and shelves

Condition

Item	Description
Building Name	P.R. Harris Educational Center
Fixed Furnishings	
Lockers	Poor condition; many instances of warped locker frames and paint was scratched or peeled.
Wall Units	Good condition; no observed damages

Recommendations

Capital Expenditure

a. It is assumed that approximately 50% of all lockers were damaged beyond repair. It is recommended that all damaged single-tier lockers are replaced. Opinion of cost is **$250,000**.

Maintenance Expenditure

a. No maintenance expenditures are recommended for furnishings.

F. SPECIAL CONSTRUCTION & DEMOLITION

F10 SPECIAL CONSTRUCTION

Description

Item	Description
Building Name	P.R. Education Center
Special Structures	
	Not Applicable
Special Facilities	
	Not Applicable

Condition

Item	Condition
Building Name	P.R. Education Center
Special Structures	
	Not Applicable
Special Facilities	
	Not Applicable

G. SITE IMPROVEMENTS

G10 SITE SYSTEMS

Description

Item	Description
Building Name	P.R. Harris Educational Center
Roadways	
	Not Applicable
Parking Lots	
Staff parking	The staff parking lot is located on the southeast side of the building (1,770 SY). There are 56 parking spaces including one space marked as handicap accessible. The surface is asphaltic concrete with concrete curb and gutter around the perimeter and precast concrete wheel stops at each space on the west side of the lot (714 LF).
Remote parking	An asphalt-surfaced parking lot located on the north side of the building adjacent to the loading dock area provided 16 parking spaces 1,815 SY). Concrete curb and gutter is present around the perimeter of the lot (762 LF).
Pedestrian Paving	
Entrances	Concrete sidewalks of various widths are present at all the building entrances (18,100 SF). Several concrete stairways with the sidewalks areas connect grade changes. Generally, the stairs are cast-in-place with tubular steel rails with support posts cast into the concrete steps.
South Playground	Concrete surface (14,970 SF)
West Playground	Asphalt Surface (3,525 SY)
Site Development	
Tennis Courts	Two tennis courts with associated fencing located on the north side of the building.
Exterior Assembly Area	An open paved area is located on the northeast side of the building (9,150 SF). The base of the area is at the basement level with grassed slopes on three sides that rise to the sidewalk at the first level.
Play/exercise stations	Three play/exercise areas are present on the south and west sides of the building. The areas are constructed over a rubberized surface. The equipment is plastic coated and includes climbing and other play activities.
Landscaping	
Concrete planters	Several planters are located with the pedestrian sidewalk areas on the east side of the building and within the playground areas on the west and south sides of the building.
Other	
Site fencing	6-foot chain link fencing boarders the site perimeter (1,005 LF).
Walkway fencing	4-foot chain link fencing boarders many of the concrete sidewalks (867 lf).

Condition

Item	Condition
Building Name	P.R. Harris Educational Center
Roadways	
	Not Applicable
Parking Lots	
Staff parking	The asphalt surface is in fair condition. Full-depth repairs are required over 20% of the surface area. The wheel stops on the west side of the lot have been damaged or displaced. Signage and stripping for the handicap parking space is inadequate. Curb and gutter elements are in generally good condition.
Remote parking	The asphalt surface is in fair condition. Full-depth repairs are required over 13% of the surface area. Curb and gutter elements are in generally good condition.
Pedestrian Paving	
Entrances	Concrete sidewalk elements are in generally good condition. Some sidewalk sections are cracked; however, no trip hazards were noted.
South playground	Concrete is in fair to good condition.
West playground	Asphalt surface is in fair to poor condition. Vegetation is growing through cracked areas
Site Development	
Tennis courts	The court surface and the surrounding fencing is in poor condition.
Exterior assembly area	The asphalt surface at the base of the area is in poor condition. The condition of the drain at the center of the area is unknown. The grass slopes surround the area are in good condition.
Play/exercise stations	Good condition.
Landscaping	
Concrete planters	The concrete planters are in generally good condition. Most of the plantings need replacement.
Other	
Site fencing	The site fencing is generally in fair to poor condition.
Walkway fencing	The fencing along the sidewalk area is in fair to good condition.

Recommendations

Capital Expenditure

a. The staff parking area requires approximately 408 SY of full-depth repair. Our opinion of the cost to perform this work is **$14,280**.

b. The remote parking area requires approximately 232 SY of full-depth repair. Our opinion of the cost to perform this work is **$8,128**.

c. Replace 25 wheel stops in staff parking area. Our opinion of the cost to perform this work is **$1,875**.

d. Overlay west playground asphalt surface. Our opinion of the cost to perform this work is **$42,304**.

e. Replace two tennis courts and associated fencing. Our opinion of the cost to perform this work is **$65,000**.

f. Allowance for rehabilitation of exterior assembly area to include removal of existing asphalt surface, repair of field drain, and re-establishment of grass surface. Our opinion of the cost to perform this work is **$30,000**.

g. Allowance for re-establishment of plantings through the site. Our opinion of the cost to perform this work is **$20,000**.

h. Replacement of site perimeter chain link fencing. Our opinion of the cost to perform this work is **$25,125**.

Maintenance Expenditure

a. Crack seal and sealcoat the staff parking lot asphalt pavement. Our opinion of the cost to perform this work is **$2,296**.

b. Crack seal and sealcoat the remote parking lot asphalt pavement. Our opinion of the cost to perform this work is **$2,358**.

c. Replace 10% concrete curb and gutter elements every three years. Our opinion of the cost to perform this work is **$4,398**.

d. Replace 10% concrete pavement and sidewalk elements every three years. Our opinion of the cost to perform this work is **$23,143**.

H. ACCESSIBILITY

H10 ACCESSIBILITY

The Americans with Disabilities Act (ADA), which became law in 1990, is essentially a civil rights statute that prohibits discrimination against disabled people. The protection afforded to disabled people is comparable to the protection given to women, minorities, and other groups, under the Civil Rights Act of 1964.

Two areas of the Americans with Disabilities Act (ADA) have significant effect on the physical aspects of the subject property; Title I: Employment; and Title III: Public Accommodations. Title II: State and Local Government Services and Title IV: Telecommunications are not considered to be relevant to this study.

Title I bars employment discrimination and requires that employers provide reasonable accommodation in recruiting, hiring, employing, promoting, and training qualified workers with disabilities. Regard is given to the employer's judgment as to what functions of a job are 'essential,' and to what level of accommodation is required/achievable without significant difficulty or expense to the employer. The ADA takes an across-the-board approach to anti-discrimination and requires that employers make "reasonable accommodations" for disabled employees, including making existing facilities readily accessible.

Title III expressly prohibits discrimination, on the basis of disability, in the full and equal enjoyment of goods, services, facilities, privileges, advantages, or accommodations, of any place of public accommodation and services and exists essentially to provide equality between disabled and non-disabled persons in the built environment. Facilities occupied on or after January 26, 1992 have to be accessible unless it is structurally impossible to make them so. Newly altered portions of existing facilities must also be accessible according to ADA.

The Property appeared to contain both public accommodation and a place of employment. As a result, both Title I and Title III of the ADA may apply. The ADA also provides a benchmark for measuring accessibility that primarily targets new construction projects. This benchmark, the Americans with Disabilities Act- Accessibility Guidelines (ADA-AG), also provides guidance on the modification of existing buildings to eliminate barriers to access. Initially written by the Architectural and Transportation Barriers Compliance Board (ATBCB), and titled the 'Minimum Guidelines and Requirements for Accessible Design' (MGRAD), the ADA-AG were issued in their present form on July 26, 1991. the stated purpose of the guidelines is to "…..ensure that newly constructed and altered portions of building and facilities covered by Title III of the ADA are readily accessible to disabled individuals". FEA's on-site identification of existing barriers to access was undertaken in accordance with the ADA-AG.

Regulatory implementation of the ADA includes the following prioritization for the barrier removal in existing facilities:

1. Accessible Entrances. Providing access from public sidewalks, parking or public transportation that enables disabled individuals to enter the Property.

2. Access to Goods and Services. Providing access to areas where goods and services are made available to the public.

3. Usability of Rest Rooms. Providing access to restroom facilities.

4. Remaining Barriers. Providing access to the goods, services, facilities, privileges, advantages, or accommodations (e.g., telephones, drinking fountains, and mail slots).

The ADA's requirement on barrier removal from existing facilities is dependent upon date of occupancy. Facilities designed and constructed for occupancy on or after January 26, 1992, commonly known as new facilities, must be accessible in accordance with the ADA. Facilities constructed and occupied prior to January 26, 1992, become subject to ADA legislation when building alterations are undertaken. Any altered portions of these buildings must be made fully accessible. It is also worth noting that when alterations are made to any primary function area, an accessible path of travel must be provided. Restrooms, telephones, and drinking fountains serving this altered area must also become accessible, to the extent that the added accessibility costs are not disproportionate to the overall alteration costs.

The ADA is legally enforced in the same manner as cases falling under the jurisdiction of the Civil Rights Act of 1964. A court may order an entity to make facilities accessible, provide auxiliary aids or services, modify policies, and pay attorney's fees, should successful action be brought against the facility owner(s) by a disabled building user, occupant, visitor, or employee. Barrier removal need be accomplished only when it is "readily achievable", or "easily accomplishable and able to be carried out without too much difficulty or expense". The definition of "readily achievable" will be subject to interpretation, and programming of work is a matter of judgment. This is due to enforcement of the Act being through civil suits brought by affected parties. We therefore recommend that any specific determination of what work can and should be done be determined with advice of legal counsel.

Description

Item	Description	ADA Measure
Building Name	P.R. Harris Educational Center	
Route of Travel		
Width	Compliant	Min. 36"
Protruding Objects	Compliant	27" from ground
Hanging/Mounted Objects	Compliant	80" head room
Ramps		
School entrance does not have a barrier-free ramp; the grade gradually slopes up toward entrance. Therefore, there is no need for a ramp leading to the entrance.		
Slope	Compliant – The gradual slop toward entrance is less than 1:12	1:12
Railings at Either Side	Not Applicable	Min 6'
Railings	Not Applicable	Sturdy
Width Between Railings	Not Applicable	Min 36"
Non-Slip	Not Applicable	
Level Landing	Not Applicable	5' Long
Ramp Rise	Not Applicable	Max 30"
Parking and Drop-Off Areas		
Number of Accessible Parking Spots	None	Not Applicable
Width of Spaces	Not Applicable	Min 8'
Access Isles	Not Applicable	Min 8'
Van Accessible Spaces	Not Applicable	1 for every 8

Item	Description	ADA Measure
Building Name	P.R. Harris Educational Center	
Signs	Not Applicable	Spaces Marked
Parking Enforcement	Not Applicable	Violations Enforced
Entrance		
Signs	Compliant - There are no signs that lead to accessible entrance because all entrances are accessible.	Lead to Accessible Entrance
Alternative Entrance	Compliant – Alternative entrance can be independently used.	Used Independently
Door Clearance	Compliant – Door clearance measure at 37”	Min. 32”
Wall Clearance	Compliant – There is a minimum wall clearance of 18”.	Min. 18”
Threshold Edge	Compliant – Threshold has a beveled edge and is less than ¾” high.	¼” Max. ¾” Max. (Beveled)
Carpeting or Mats	Compliant – a rubber mat at entrance is less than ½” high.	½” Max.
Door Handle	Compliant – Door handles measure between 26-40” high.	48” Max.
Accessible Handle	Complaint – Door force measures less than 5lbf.	Max. 5lbf
Door Closer	Compliant – The door with closers close within range of compliance.	Min. 3 sec
Access to Goods and Services		
Horizontal Circulation	Compliant – The accessible entrance provides direct access to the main floor.	Direct to Main Floor
Public Spaces	Compliant – All public spaces are on an accessible route of travel.	Accessible Route
Accessible Route	Compliant – The accessible route to all public spaces exceeds 36” wide.	Min. 36”
Wheelchair Turn Radius	Compliant – Accessible route allows for a sufficient turning radius and/or T-shaped space to reverse direction.	Min. 5’ Circle or T-Shape
Doors		
Door Clearance	Not Compliant – Most doors have a clearance of less than 32”.	Min. 32”
Wall Clearance	Compliant – There is a minimum wall clearance of 18”.	Min. 18”
Accessible Handle	Compliant – Door force measures less than 5lbf.	
Door Handle	Compliant – Door handles are less than 48” high.	Max. 48”
Threshold Edge	Compliant – Threshold has a beveled edge and is less than ¾” high.	¼” Max. ¾” Max. (Beveled)
Rooms and Spaces		
Accessible Route	Compliant – Accessible routes have a width of at least 36” wide.	Min. 36”
Wheelchair Turn Radius	Compliant – Accessible route allows for a	Min. 5’ Circle or

Item	Description	ADA Measure
Building Name	P.R. Harris Educational Center	
	sufficient turning radius and/or T-shaped space to reverse direction.	T-Shape
Carpeting	Compliant – Carpet is low, tightly woven and secure.	Low, Tightly Woven, Secure
Protrusions/Obstacles	Compliant – Protrusions are within accessible limits.	27-80" High, 4" from Wall
Emergency Egress		
Audible or Visible Signs	Not Compliant – Emergency signs are not lit and/or broken.	Flashing/ Audible Signals
Signage for Goods and Services		
Signs and Room Numbers	Not Compliant – Door signs on the 3rd floor are complaint. The main and lower levels are not complaint.	Centerline 60" from Floor
Mounted on Wall Adjacent to Latch Side of Door	Not Compliant – Door signs on the 3rd floor are complaint. The main and lower levels are not complaint.	As Close as Possible
Raised Characters	Not Compliant – Door signs on the 3rd floor are complaint. The main and lower levels are not complaint.	5/8"-2"
Brailed Text	Not Compliant – Door signs on the 3rd floor are complaint. The main and lower levels are not complaint.	-
Pictogram	Not Compliant – Door signs on the 3rd floor are complaint. The main and lower levels are not complaint.	Characters and Braille
Directional and Informational Signage		
Letter Height	Compliant – Letter heights are at least 3" high.	Min. 3"
Legible	Compliant - Lettering is at lease 3" high.	-
Controls		
Accessible Height	Not Applicable	54" Max- Side
Operable	Not Applicable	48" Max.- Front
Seats, Tables, and Counters		
Aisle Width Between Fixed Sitting	Not Compliant – Aisles, for the most part, are not greater than 36" wide.	Min. 36"
Wheelchair Seating	Compliant – Wheelchair seating is distributed throughout.	Distributed Throughout
Tops of Tables or Counters	Compliant – Table tops at 28-1/2" high.	28-34" High
Knee Space at Tables	Compliant – Knee space at tables are within the regulations of ADA.	Min. 27" High Min. 30" Wide Min. 19" Deep
Cashier Counter Height	Not Applicable	Max. 36"
Food Ordering Counter Height	Not Applicable	Max. 36"
Vertical Circulation		
Ramps, Lifts or Elevators	Compliant – The elevator is accessible from the	Available to

Item	Description	ADA Measure
Building Name	P.R. Harris Educational Center	
	public level.	Public Levels
Accessible Route if Stairs	Compliant – One elevator can be used for an alternative to stairs.	-
Stairs		
Non-Slip Surface on Treads	Compliant – Slip-resistance material on stairs.	-
Continuous Rails on Both Sides	Compliant – Rails are located on both sides of stairs.	-
Elevators		
Visible and Verbal (Audible) Indicators	Not Compliant – There are door closing or floor indicators.	-
Call Button Height	Not Compliant –The call button height exceeds the maximum height.	Max. 42”
Braille Lettering	Not Compliant – There is no Braille lettering on elevator signage.	-
Signs on Door Jambs	Not Compliant – No signs identifying the floor number in Braille or raised letters.	Raise & Braille Letters
Emergency Intercom	Not Applicable	Useable w/o Voice
Emergency Intercom	Not Applicable	Identified w/ Braille/Raised Letters
Lifts		
Assistance Required	Not Applicable	Used w/o Assistance
Clearance Space to Controls	Not Applicable	30”-48” to Reach
Control Height	Not Applicable	15”-48” to high
Restrooms		
Location	Compliant – Two accessible restrooms (one female and one male restroom).	At least one accessible
Signage	Not Compliant – No signs showing where accessible restroom are located.	Directions
Doorway/Passages	Not Compliant – Doorways for restrooms are less than 32” wide.	32” Wide
Accessible Handles	Compliant – Handle height is located at 35” high.	Max 48” High
Easily Opened	Compliant – The doors are opened with a force less than 5lbf.	Max 5lbf
Access Path	Not Compliant – Door width to fixture is 31” wide.	Min 36”
Stalls		
Wheelchair accessible stall.	Not applicable	Min Area 5’ x 5’
Grab Bars	Not Complaint – No grab bars provided.	42” Long – Side 24” Long – Back
Toilet Seat	Compliant – Toilet is 17” high.	17-19” High
Lavatories (Sinks)		

Item	Description	ADA Measure
Building Name	P.R. Harris Educational Center	
Lavatory Clearance Space	Compliant – There is sufficient clearance space under lavatories.	30" wide x 48" deep
Depth Under Lavatory	Compliant – The depth under the lavatory is 18" deep.	Max 19"
Height Beneath Rim	Compliant – The height beneath the rim is 28".	Max 34"
Height of Lavatory Apron	Compliant – The height of the lavatory apron is less than 29".	Max 29"
Faucet Operation	Compliant – The faucet can be operated with one closed-fist.	Closed-Fist
Soap and Other Dispensers (such as Hand Dryers)	Compliant – The soap and paper towel dispensers can be operated with one closed-fist.	Closed-Fist
Mirror Mount Edge	Not Compliant – The mirror mount edge height is 45".	Max 40"
Wheelchair Turning Space	Compliant – There is a sufficient turning radius with the accessible restrooms.	Min. 5' Circle or T-Shape
Urinals	Not Applicable – There are no urinals in accessible restrooms.	17" Max Height
Other		
Drinking Fountains		
Clearance	Compliant – There is adequate foot space that meet ADA regulation.	30" high x 48" deep
Spout	Compliant – The spout is less than 36" high.	Max 36" High
Controls	Compliant – Controls are located at the front or sides of the drinking fountains.	Location Closed-Fist
Height	Compliant – This fountain height is 25".	Max 27"
Protrusion	Compliant – Protrusion is within accessible limits.	Max 4"

Recommendations

Capital Expenditures

a. It is recommended that the existing hinges with offset (swing-clear) door hinges on all hollow wood doors are replaced to create an allowable clearance. Opinion of cost of hinges is **$3,900** (Installation of hinges are assumed to be a normal operating expense and is not included in this cost).

Maintenance Expenditures

b. It is recommended that the lights are replaced on unlit exit signs. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

c. It is recommended that damaged exit signs are replaced. It was observed that one exit sign was damaged beyond repair. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

d. It is recommended that signs on doors on the main- and lower-level floors provide signs have raised letters, Grade II Braille, and meet all other requirements for permanent room signage. Opinion of cost of signs is **$2,000** (installation of signs are assumed to be a normal operating expense and is not included in this cost).

e. It is recommended that the rooms with complaint room signage (3rd level rooms) are uninstalled and remounted with centerline 60 inches from the floor. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

f. It is recommended that the chairs and tables within classrooms are rearranged to provide a minimum of 36-inch aisles. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

g. It is recommended that visible and verbal or audible signals in elevator are installed. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

h. It is recommended that the call buttons near elevator are lowered. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

i. It is recommended that signage with raised lettering and Braille text be installed next to elevator buttons. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

j. It is recommended that accessible signs are installed to indicate the direction to accessible restrooms. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

k. It is recommended that grab bars are installed in both female and male accessible restrooms. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

l. It is recommended that mirrors in accessible restrooms are lowered to a height that does not exceed 40”. This is a nominal cost and should not be an additional item to the maintenance expenditures. This item is assumed to be included in normal operating expenses.

I. HAZARDOUS MATERIALS

FEA did not perform any environmental studies as part of this scope of work. FEA was provided the school's asbestos management plan for review:

- Asbestos Management Plan prepared by Environmental Design and Construction/Tidewater, Inc. Joint Venture dated August 2000.
- Last periodic inspection of asbestos-containing materials (ACM) was performed on December 28, 2006. The next periodic inspection is due on July 14, 2007.
- Last three-year inspection of ACM was performed on October 30, 2007 by JCMCS. The next three-year inspection is due on 10/30/2010.

No other environmental reports were provided to FEA.

I10 HAZARDOUS MATERIALS

Description

Item	Description
Building Name:	P.R. Harris Education Center
Building Materials	
Suspect Asbestos Containing Building Material (ACBM)	• 12" x 12" white with gray streak vinyl floor tiles and mastic. • 12" x 12" beige with brown and white streaks vinyl floor tiles and mastic. • 12" x 12" beige with gray, tan, and white specks vinyl floor tiles and mastic. • 12" x 12" brown, tan, and white speckled vinyl floor tiles and mastic. • 12" x 12" beige with brown and white markings vinyl floor tiles and mastic. • 12" x 12" dark beige with cream and brown markings vinyl floor tiles and mastic. • 12" x 12" tan with white specks vinyl floor tiles and mastic. • 12" x 12" tan with light and dark specks vinyl floor tiles and mastic. • Mastic associated with non-ACM 12" x 12" white with gray specks vinyl floor tiles. • Black insulation under sinks. • Gray caulking around sinks. • Gray caulking. • Transite panels on fume hoods. • White, endcap sealant. • Off-white sealant on fiberglass duct insulation. • Off-white textured plaster. • 3' x 7' Fire Doors (Assumed ACM) • 3' x 7' Vault-Type Fire Doors (Assumed ACM) • 3' x 8' Metal Fire Doors (Assumed ACM) • Mastic behind bulletin boards. (Assumed ACM)

Item	Description
Building Name:	P.R. Harris Education Center
	• Interior of Boilers (Assumed ACM)
Fuel and Chemical Storage	
	Not Applicable
Other Materials	
Lead-based paint	Based on the age of the building, which was constructed prior to the ban on the use of lead in residential paint, the presence of LBP is suspected. • Interior painted surfaces with suspect LBP included metal lockers, metal doors and door frames, metal railings, stair stringers and risers, heater unit covers, painted murals, CMU walls, painted partitions, and painted elevator doors and door frames. • Porcelain restroom fixtures and ceramic tiles should be assumed to contain lead. • Exterior painted surfaces with suspect LBP included metal louvers, metal ladders, and metal doors and door frames.
PCB-containing light ballasts	Based on the age of the buildings, the existence of polychlorinated biphenyl (PCB) compounds were suspected within the light ballasts.
Transformers	Dry-Type Cutler-Hammer Transformer – Not suspected to contain PCB.

Condition

Item	Condition
Building Name	P.R. Harris Education Center
Building Materials	
Suspect Asbestos Containing Building Material (ACBM)	• ACM vinyl floor tiles and associated mastic were generally in fair to good condition. In some areas, tile was missing. • Some of the textured ACM plaster on the stairwells was observed to be damaged. • A number of fire doors (assumed to be ACM) were observed to be damaged.
Fuel and Chemical Storage	
	Not Applicable
Other Materials	
Lead-based paint	All painted surfaces in the building should be assumed to be LBP until testing proves otherwise. The majority of suspect LBP was in fair condition. LBP in poor condition should be stabilized by a licensed abatement contractor prior to re-paining. LBP in good condition does not represent a hazard as long as it is maintained in good condition and is not disturbed. All construction work on lead painted surfaces whether above the regulatory level or at minimally detectable levels is regulated

Item	Condition
Building Name	P.R. Harris Education Center by the Occupational Safety and Health Act (OSHA) Lead Exposure in Construction; Interim Final Rule, May 1993 (29 CFR Part 1926.62). The employers of construction personnel who are disturbing lead-containing paint are required to follow the requirements of this rule, which include air monitoring, personal protection equipment, and health monitoring of employees.
PCB-containing light ballasts	Light ballasts were generally in good condition.
Transformers	The dry-type transformer was observed to be in good condition.

Recommendations

Capital Expenditure:

a. Asbestos abatement. All friable ACM is required to be removed prior to demolition or renovation activities under the Federal National Emissions Standards for Hazardous Air Pollutants (NESHAP). All abatement work must be performed by a licensed abatement contractor. Non-friable asbestos-containing vinyl floor tile in good condition and roof mastics are not required under NESHAP to be removed prior to demolition or renovation, but must be maintained in a non-friable state during these activities. Below is a table with approximate unit pricing on asbestos abatement of some of the suspect materials identified in this report.

Material	Cost/Unit
Vinyl Floor Tiles and Mastic.	$7 / SF
White Endcap Sealant	$7 / SF
Off-White Textured Plaster	$25 / SF
Transite Panels	$5 / SF
Black Insulation (Under Sinks)	$4.50 / SF
Bulletin Board Mastic	$4.50 / SF
Caulking	$9 / LF
Fire Doors	$125/Door

b. A full LBP survey to identify suspect LBP is recommended prior to any renovation activities. Our opinion of cost to perform an LBP survey is **$10,000**.

c. Perform a thorough PCB assessment. Our opinion of cost to perform the assessment is **$5,000**.

d. Since the actual extent of hazardous materials is not known at this time, an exact estimated opinion of cost for abatement or remediation cannot be provided. At the end of this section there is an approximated general order of magnitude cost for removing the hazardous materials based on the assumption that all observed suspected materials were hazardous. Quantities of hazardous materials were also approximated and based on an assumption that the materials were used through out the buildings. The cost is for abatement only and assumes full and unencumbered access to the materials. The cost does not address encapsulation, the replacement of the hazardous materials, coordination with other ongoing building requirements, or supplemental/temporary services.

Abate all hazardous materials. Our opinion of cost to perform this work may range from approximately **$1,000,000** to **$1,500,000**. Cost to address the hazardous material requirements of other specific report recommendations should be developed with a scope in anticipation of performing those recommendations and included as an additional cost to each recommendation.

Maintenance Expenditure:

a. Three year re-inspection is due on 2010. The last re-inspection was performed in October of 2007. Our opinion of cost to perform an asbestos three year re-inspection is **$5,000.**

b. Suspect ACM observed to be in good condition can and should be maintained in good condition under an Operations & Maintenance (O&M) Plan. The management plan should be updated following the three year re-inspection. Our opinion of cost to update the management plan is **$2,500**.

c. Suspect LBP observed to be in good condition can and should be maintained in good condition under an Operations & Maintenance (O&M) Plan. All of the suspect LBP should be assumed to be LBP until sampling proves otherwise. Our opinion of cost to develop the O&M Plan based on the suspect LBP identified is **$5,000**.

J. ENVIRONMENTAL ANALYSIS

Description

FEA reviewed the school's prerequisite status relative to the US Green Building Council's LEED® for Existing Building Rating Operation & Maintenance System, 2008 Version. Each prerequisite and point was evaluated with the following criteria:

- "Points Achieved" – The building currently meets the prerequisite or point.
- "Not Achievable Points" – The building does not meet the prerequisite or point and they are not within reasonable reach
- Potential Points – The building does not currently meet the prerequisite or point, but they are within reach with the identified level of anticipated feasibility. For each "High Feasibility Potential" prerequisite or point, FEA has identified a project DCOPM would need to implement to meet the requirements.

We are in the initial stage of determining the eligibility of the building to meet the credits in the rating system. We have provided a summary based on information obtained to date, but additional information is needed to complete our analysis. Additionally, the status of certain points is dependent on additional information to be provided or verified by DCOPM. The categorization of these points must be considered a rough estimation and subject to change upon receipt of required information.

Status

Water Efficiency Category

The LEED – EB Water Efficiency category encourages practices that reduce the potable water use in buildings.

The prerequisite in this category requires a reduction in fixture potable water usage to a level equal to or below the water use baseline. The water baseline is calculated as 160% of the water usage that would result if 100% of the buildings fixtures were outfitted with plumbing fixtures that meet the 2006 Uniform Plumbing Codes (UPC) or the 2006 International Plumbing Codes (IPC) performance requirements. FEA has calculated the water use baseline case and the water use design case which is the actual water usage for the building. The results of the calculations are summarized below.

Water Efficiency	P.R. Harris Education Center
Water Use Baseline Case (gallons/year)	2,816,424
Water Use Design Case (gallons/year)	2,133,027

The results of the calculations are based on the fixture ratings below.

Fixture	Rating
Water Closet (gpf)	1.6
Urinal (gpf)	1.0
Shower (gpm)	2.5
Faucets (gpm) – Lavatory	2.2
Faucets (gpm) – Kitchen Sink	2.5

Calculations based on fixture information obtained by FEA during our site assessment resulted in this prerequisite being met. P.R. Harris was 24.3% below the water usage baseline case. Water efficiency baseline calculations were based on FEA's assessment of fixture ratings calculated while on site and the assumption that the majority of the fixtures were installed prior to 1994. DCOPM will have to confirm that the fixture ratings utilized are correct to ensure the validity of the calculation. If the reported ratings are incorrect, and the building no longer meets the baseline, replacement of fixtures would be necessary to achieve this prerequisite.

Prerequisite	Status
Prerequisite 1: Minimum Water Efficiency	Achieved

Energy & Atmosphere Category

The LEED – EB Energy & Atmosphere category encourages practices that reduce energy use in buildings.

Prerequisite 1 requires the development of a building operations plan and an ASHRAE Level I walk-through assessment (preliminary energy audit). To FEA's knowledge, the building neither has a written building operations plan and it has not had a preliminary energy audit performed in over 5 years. Therefore, the school currently does not meet this prerequisite.

The second prerequisite requires a minimum energy efficiency performance that requires an EPA Energy Star score of 69. Based on utility bills provided to FEA for the past 12 months, the building's Energy Star Score was 31. The Energy Star score was calculated based on the following assumptions:

Parameter	Assumption
Gross Floor Area (ft^2)	348,700
Number of Students	1,062
Number of PCs	107
Operating Hours/Week	77
Cooking Facility (Y/N)	Y
% Air-Conditioned	90
% Heated	100
Ventilated (Y/N)	Y

Based on the calculated Energy Star score, the building will not meet the prerequisite requirement.

The third prerequisite requires the elimination of all CFCs in base building HVAC&R systems. The building chillers are using R-22 refrigerant which contains CFCs. Based on a simple payback of 10-years, USGBC will grant an exemption from this requirement if a third party verifies that it is not economically feasible to replace the chillers to eliminate the CFCs within the building. Based on the fact that the chillers were recently replaced, replacement of the chillers to non-CFC chillers will likely not be deemed economically feasible in the next ten years and therefore it is likely the existing chillers will meet the exemption requirements for Prerequisite 3. However, this has to be verified by a third party. To meet the third prerequisite the school will also need to provide documentation showing compliance with the EPA Clean Air Act, Title VI, Rule 608 governing refrigerant management and reporting. In addition, the school will need to provide documentation showing that the annual refrigerant leakage rate is below 5% and the leakage over the remainder of the unit life is being maintained below 30%

Prerequisite	Status
Prerequisite 1: Energy Efficiency Best Management Practices - Planning, Documentation & Opportunity Assessment	Potential
Prerequisite 2: Minimum Energy Performance	Potential
Prerequisite 3: Ozone Protection	Potential

Materials and Resources Category

The LEED – EB Materials & Resources category encourages practices that reduce the quantity of waste in the building and improve the environment through responsible purchasing policies.

The first prerequisite in this category is the existence or establishment of a sustainable purchasing policy. The intent is to reduce the environmental impacts of materials acquired for use in the operations, maintenance, and upgrades to the building. To FEA's knowledge, the building currently does not have a sustainable purchasing policy. Therefore, the school currently does not meet this prerequisite; however, it is within reach.

The second prerequisite requires the existence or establishment of a solid waste management policy that would facilitate the reduction of waste and toxins generated by building occupants and building operations of those materials hauled to and disposed of in landfills or incineration facilities. This includes establishing a policy that would address:

- Solid waste management of ongoing consumables such as paper, toner cartridges, glass, plastics, cardboard, metals, and batteries.
- Solid waste management of durable goods such as office equipment, external power adapters, televisions, and other audio-visual equipment.
- Solid waste management of facility alterations and additions which would divert construction and demolition waste from landfills or incineration facilities into recycling facilities or used for future building retrofit, renovation, or modifications.
- Mercury-containing lamp recycling which would include a policy covering the diversion and recycling of all mercury-containing lamps that enter the building's waste stream.

The building currently does not have a solid waste management policy and therefore does not meet prerequisite 2. However, the prerequisite can be easily achieved through the establishment and implementation of said policy.

Prerequisite	Status
Prerequisite 1: Sustainable Purchasing Policy	Potential
Prerequisite 2: Solid Waste Management Policy	Potential

Indoor Environmental Quality Category

The LEED – EB Indoor Environmental Quality category encourages practices that optimize the environmental quality of the occupants of the building. With the intent of improving the environmental quality of the occupants, many of the points focus on individual control, and some of the points may be counter productive with regard to energy conservation.

Because there were no drawings available for review or information that would allow FEA to perform the necessary calculations, it is unknown whether or not the building meets the requirements of Prerequisite 1 to maintain existing building outside-air ventilation rates in accordance with ASHRAE 62.1-2004. However, verification of outdoor air ventilation rates can be determined through measurements taken at the system level.

The school building does not allow smoking inside the building. Designated exterior smoking areas are located over 25-feet from the building entrances. Therefore, the building currently satisfies the requirements of Prerequisite 2.

Prerequisite 3 requires the existence or development of a green cleaning policy. The intent of this prerequisite is to reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological, and particulate contaminants which adversely impact air quality, human health, building finishes, building systems, and the environment. To FEA's knowledge, the building currently does not have a green cleaning policy and therefore does not meet this prerequisite.

Prerequisite	Status
Prerequisite 1: Outdoor Air Introduction and Exhaust Systems	Potential
Prerequisite 2: Environmental Tobacco Smoke (ETS) Control	Achieved
Prerequisite 3: Green Cleaning Policy	Potential

In summary, the building currently meets two of the nine prerequisites for the LEED-EB rating system. However, most of the prerequisites not met can be achieved through the development and implementation of no cost/low cost policies. The main hurdle will be the raising of the Energy Star Score from the estimated 31 to 69. To raise the score, high cost projects may be necessary.

The following chart illustrates the status of the prerequisite requirements per category:

LEED®-EB: O&M Prerequisites	Prerequisites Met	Prerequisites Not Met	Prerequisites Requiring Further Information
Sustainable Sites	No Prerequisites		
Water Efficiency	1	0	1
Energy & Atmosphere	0	3	3
Materials & Resources	0	2	0
Indoor Environmental Quality	1	2	1
Totals	2	7	5

Recommendations

Based on our findings, in order to meet the requirements of the prerequisites in the LEED® – EB O&M rating system, DCOPM would have to complete the projects outlined below.

LEED®-EB: O&M Prerequisite	Action Necessary to Meet Prerequisite	Opinion of Cost
EA Prerequisite 1	Develop a Building Operating Plan	$8,000
	Conduct ASHRAE Level I Audit	$10,000
EA Prerequisite 2	Develop Commissioning Plan and Perform Commissioning	$60,000
EA Prerequisite 3	Provide Documentation Concerning Feasibility of Replacing Chillers	$3,000
MR Prerequisite 1	Develop Sustainable Purchasing Policy	$2,500
MR Prerequisite 2	Develop & Implement a Solid Waste Management Policy	$2,500
EQ Prerequisite 1	Verification of Outside Air Ventilation Rates	$10,000
EQ Prerequisite 3	Establish Green Cleaning Policy	$2,500

The opinions of cost are based upon the anticipated costs for the current year and are based on FEA knowledge of previous projects. Please note that other points will have financial implications other than capital expenditures.

J20 GREEN ROOF FEASIBILITY

Description

The main roof at the P.R. Harris Educational Center consisted of a modified bitumen roof system over a cast-in-place concrete deck. No structural drawings were available to review the design load conditions for the main roof deck; therefore, the structural design capacity of the roof is unknown. The area of the main roof was 93,970 square feet. The roof deck was approximately 25 to 35 feet above ground level due to the sloped grading of the site.

Condition

The primary consideration of this site to support a green roof is the available structural capacity of the roof to support the added weight of a green roof system. Typically, green roof systems add a dead load of about 17 psf to 60 psf due to the weight of the plantings, retained water, and growth media to support the plantings. The special green roof systems available that add as little as 17 psf additional loading require a certain base area (>10,000 sf) and must be installed in applications below 35 feet. The lighter systems often require special anchoring techniques to resist design wind loads.

The cost of a green roof system is additive to the cost of the normal roof installation since a traditional roof system must be installed beneath the green roof to provide a water tight seal. The advantage of the green roof is added insulation capacity during the cooling season which normally results in energy savings. The green roof in not a good insulator in the heating season and may in fact reduce energy savings during that time frame. Another advantage of green roof systems is that the underlying roof system is placed in a protected membrane configuration. Manufacturers of green roof systems claim that the protective nature of a green roof extends the service life of the underlying traditional roof system. The percentage of service life extension has not been sufficiently documented to predict the savings for various roof types, although it is generally accepted in the industry that a protected membrane assembly roof has a longer service life than comparable systems that are exposed to the environment.

A green roof system is not "maintenance free". Most systems require the engagement of a landscape firm during the initial months after installation to ensure establishment of the vegetative growth. Regular maintenance is required thereafter to maintain the health and functionality of the system.

The main roof at P.R. Harris Educational Center is a possible candidate for a green roof system. The initial step in determining feasibility is to perform a structural evaluation of the roof deck to determine available load capacity. The existing roof membrane system is nearing the end of its useful service life and should not be considered as the waterproofing membrane for a new green roof system. With the installation of a new waterproofing system, (estimated to be in approximately five years), various cost factors should be considered to determine the cost and possible savings for incorporating a green roof system into a new waterproofing system.

The installation of a green roof system could provide as many as three credits toward LEED certification. The reduction of the heat island effect and reduction of storm water runoff each qualify for a point. Another point may be possible for recycle content of materials used in the installation of the selected roof system.

Recommendations

Capital Expenditure

a. Perform a structural evaluation of the existing main roof. Due to the lack of structural information, the evaluation would require determining the thickness of the deck, the weight and material strength, and the amount, size, and pattern of the deck reinforcement. Our opinion of the cost to perform this work is **$15,000**.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

J30 ENERGY EFFICIENCY

Description

The P.R. Harris Educational Center has some energy efficient aspects to the facility design. The facility has relatively few windows and the few windows that are present are inoperable allowing for a more controlled environment. The air handlers are capable of bypassing chilled water in favor of outside air if outside ambient temperatures are favorable. The existing roof membrane is light colored which aids in the roof's ability to reflect heat gain from sun light although the reflectance of the existing modified bitumen roof may not meet the performance standard for a "cool" roof under the Cool Roof Rating Council's (CRRC) rating system.

Condition

The first and second floor of the P.R. Harris Educational Center have undergone a lighting retrofit program. The basement level of the facility was still illuminated with T-12 fixtures utilizing magnetic ballasts. Completing the lighting retrofit on the basement level to the more efficient T-8 fluorescent fixtures with electronic ballasts typically results in a simple payback period of 6 to 8 years.

A system of lighting controls should be considered under any new or continued use of the facility. The controls could be configured to eliminate large percentages of common lighting during certain hours. The lighting could be reset manually as required by occupants. Common use areas such as restrooms could be controlled by motion detectors.

The facility has the Apogee Building Automation System as manufactured by Siemens. We were not advised as to the current extent that the building automation system controls the mechanical systems. The system should be capable of applying various operational strategies such as staging chiller run time based on set points. The space temperature setpoint can be set at a certain temperature throughout the building. The thermostatic set points can be managed such that when the peak load is approaching on warm days, they raise the setpoint of 25% of the thermostats in the building by 2°F. If the peak load continues to climb, they adjust the next 25% of the thermostats by 2°F and so forth until all thermostat setpoints have been raised. If the load is still not satisfied, another chiller section or chiller is brought on line.

Consideration should be given to installing variable-speed drives on the secondary water pumps in each of the eight air handling rooms. The addition of VFDs on the pumps allows for the energy usage to track the temperature demand throughout the day.

Recommendations

Capital Expenditure

a. Perform an ASHRAE Level II energy audit. This level of audit allows for a more in-depth evaluation of the energy-saving opportunities.

Maintenance Expenditure

a. No maintenance expenditures anticipated during the study period.

APPENDIX A
6-YEAR CAPITAL EXPENDITURE FORECAST

	ITEM	EUL	RUL	Quantity	Unit	Unit Cost	Priority (1-4)	Repair/PM	Replace	New Construction	A/E Services	DCOPM PM	GCOH	Contingency	2008	2009	2010	2011	2012	2013	Total
A	**SUBSTRUCTURE**																				
A10	**FOUNDATIONS**																				
a	No Capital Expenditures Anticipated																				
A20	**BASEMENT CONSTRUCTION**																				
a	No Capital Expenditures Anticipated																				
B	**SHELL**																				
B10	**SUPERSTRUCTURE**																				
a	No Capital Expenditures Anticipated																				
B20	**EXTERIOR CLOSURE**																				
a	Façade Repair Project (Tuckpointing, & Joint Repair)	15	3	35,250	sq. ft.	$16	3	x			$56,400	$84,600	$84,600	$56,400				$564,000			$846,000
b	Joint Replacement on Precast Concrete Panels	10	2	4,000	ln. ft.	$4.00	3	x				$2,400	$2,400	$1,600			$16,000				$22,400
c	Repair Concrete Spalls on Precast Concrete Panels	10	2	50	sq. ft.	$75	3	x				$563	$563	$375			$3,750				$5,250
d	Reset Precast Concrete Column Covers	10	2	1	lump sum	$7,500	3	x				$1,125	$1,125	$750			$7,500				$10,500
e	Replace Glass Block Units	25	1	1	lump sum	$8,000	2		x			$1,200	$1,200	$800		$8,000					$11,200
f	Replace Metal Entry Doors and Frames	20	1	40	each	$1,080	2		x			$6,480	$6,480	$4,320		$43,200					$60,480
B30	**ROOFING**																				
a	Replace Main Roof	20	5	93,970	sq. ft.	$12	3		x		$112,764	$169,146	$169,146	$112,764						$1,127,640	$1,691,460
b	Replace Large Gymnasium Roof	20	5	10,840	sq. ft.	$12	3				$13,008	$19,512.00	$19,512.00	$13,008.00						$130,080	$195,120
c	Replace Small Gymnasium Roof	20	5	5,270	sq. ft.	$12	3				$6,324	$9,486.00	$9,486.00	$6,324.00						$63,240	$94,860
e	Replace Auditorium Roof	20	5	10,840	sq. ft.	$12	3				$13,008	$19,512	$19,512	$13,008						$130,080	$195,120
f	Install Metal Cap Flashing atop Parapet Walls	25	5	4,400	ln. ft.	$13	3					$8,712	$8,712	$5,808						$58,080	$81,312
C	**INTERIORS**																				
C10	**INTERIOR CONSTRUCTION**																				
a	Strip, Patch, and Repaint Hollow-Metal Doors	7	3	1	lump sum	$16,800	3					$2,520	$2,520	$1,680				$16,800			$23,520
b	Strip, Patch, and Repaint Steel Vault Doors	7	3	1	lump sum	$550	3					$83	$83	$55				$550			$770
c	Replace Damaged Wood Doors	10	1	1	lump sum	$17,500	2					$2,625	$2,625	$1,750		$17,500					$24,500
C20	**STAIRS**																				
a	No Capital Expenditures Anticipated																				
C30	**INTERIOR FINISHES**																				
a	Paint Drywall	10	2	1	lump sum	$55,000	3	x				$8,250	$8,250	$5,500			$55,000				$77,000
b	Replace Damaged or Missing Vinyl Floor Tiles	15	1	1	lump sum	$600,500	2					$90,075	$90,075	$60,050		$600,500					$840,700
c	Replace Ceramic Tiles	50	5	1	lump sum	$340,800	4					$51,120	$51,120	$34,080						$340,800	$477,120
c	Replace Acoustical Ceiling Tiles	20	5	1	lump sum	$865,000	4					$129,750	$129,750	$86,500						$865,000	$1,211,000
D	**SERVICES**																				
D10	**CONVEYING**																				
a	Elevator Modernization	20	1	1	lump sum	$210,000	1	x			$21,000	$31,500	$31,500	$21,000		$210,000					$315,000
D20	**PLUMBING**																				
a	Install Backflow Preventor	35		1	lump sum	$12,000	1					$1,800	$1,800	$1,200	$12,000						$16,800
b	Replace Galvanized Domestic Water Piping	20	5	1	lump sum	$15,000.00	4	x				$2,250	$2,250	$1,500						$15,000	$21,000
D30	**HVAC**																				
a	Replace HVAC Units	25	5	1	lump sum	$960,000	3		x		$96,000	$144,000	$144,000	$96,000						$960,000	$1,440,000
b	Change 1st Floor Constant Volume HVAC to VAV System	25	1	1	lump sum	$1,650,000	2			x	$165,000	$247,500	$247,500	$165,000		$1,650,000					$2,475,000
c	Replace Auditorium HVAC	25		1	lump sum	$75,000						$11,250	$11,250	$7,500	$75,000						$105,000
D40	**FIRE PROTECTION**																				
a	Replace and Upgrade Fire Alarm System	20	1	1	lump sum	$500,000	2		x		$50,000	$75,000	$75,000	$50,000		$500,000					$750,000
b	Install Automatic Sprinkler System	20	2	1	lump sum	$1,000,000	3				$100,000	$150,000	$150,000	$100,000			$1,000,000				$1,500,000
c	Provide Additional Exit Signs	10		10	each	$100	1								$1,000						$1,000
d	Replace Door Hardware with Panic or Fire Exit Door Hardware	10		10	each	$200	1		x						$2,000						$2,000
e	Rated Corridor and Doors	10	1	200	each	$1,000	2		x							$200,000					$200,000
f	Remove Paint over UL Labels on Fire Rated Doors			10	each	$50	1	x							$500						$500
g	Re-Install Self-Closing Mechanism on Fire Rated Doors	15		10	each	$200	1	x							$2,000						$2,000
h	Repair Stair Door Latches (Not Latching Upon Closure)	25		20	each	$100	1	x							$2,000						$2,000
i	Install Missing Glass Door on Stair 3 (Basement Level)	25		1	lump sum	$500	1	x							$500						$500
k	Remove Deadbolts			100	each	$10	1	x							$1,000						$1,000
D50	**ELECTRICAL**																				
a	Add Ground Fault Protection to Switchgear	35		1	lump sum	$80,000	1					$12,000	$12,000	$8,000	$80,000						$112,000
b	Lighting Upgrade on 1st Floor	25	2	1	lump sum	$225,000.00	3		x			$33,750	$33,750	$22,500			$225,000				$315,000
D60	**SAFETY, SECURITY, & ACCESS CONTROL**																				
a	No Capital Expenditures Anticipated																				
E	**EQUIPMENT & FURNISHINGS**																				
E10	**EQUIPMENT**																				
a	No Capital Expenditures Anticipated																				
E20	**FURNISHINGS**																				
a	Replace Damaged Single-Tier Lockers	15	2	1	lump sum	$250,000	3		x			$37,500	$37,500	$25,000			$250,000				$350,000
F	**SPECIAL CONSTRUCTION & DEMOLITION**																				
F10	**SPECIAL CONSTRUCTION**																				
a	Not Applicable																				
G	**SITE IMPROVEMENTS**																				
G10	**SITE SYSTEMS**																				
a	Asphalt Full-Depth Repairs - Staff Parking Area	5	1	408	sq. yd.	$35	2	x				$2,142	$2,142	$1,428		$14,280					$19,992
b	Asphalt Full-Depth Repairs - Remote Parking Area	5	1	232	sq. yd.	$35	2	x				$1,218	$1,218	$812		$8,120					$11,368
c	Replace Wheel Stops - Staff Parking Area	15	1	25	each	$75	2		x							$1,875					$1,875
d	Asphalt Overlay - West Playground	20	1	3,525	sq. yd.	$12	2	x				$6,345	$6,345	$4,230		$42,300					$59,220
e	Replace Tennis Courts and Associated Fencing	15	1	2	each	$32,500	2		x			$9,750	$9,750	$6,500		$65,000					$91,000
f	Allowance for Rehabilitation of Exterior Assembly Area	20	5	1	lump sum	$30,000	4	x			$3,000	$4,500	$4,500	$3,000						$30,000	$45,000
g	Allowance for Re-establishment of Plantings	10	5	1	lump sum	$20,000	4		x			$3,000	$3,000	$2,000						$20,000	$28,000
h	Replace Perimeter Chain Link Fencing	40	4	1	lump sum	$25,125	3		x			$3,769	$3,769	$2,513					$25,125		$35,175
H	**ACCESSIBILITY**																				
H10	**ACCESSIBILITY**																				
a	Replace Door Hinges	10		1	lump sum	$3,900	1		x			$585	$585	$390	$3,900						$5,460

	ITEM	EUL	RUL	Quantity	Unit	Unit Cost	Priority (1-4)	Repair/PM	Replace	New Construction	A/E Services	DCOPM PM	GCOH	Contingency	2008	2009	2010	2011	2012	2013	Total
I	**HAZARDOUS MATERIALS**																				
I10	**HAZARDOUS MATERIALS**																				
b	Lead Based Paint (LBP) Survey		1	1	lump sum	$10,000	2					$1,500				$10,000					$11,500
c	Polychlorinated biphenyl (PCB) Assessment		1	1	lump sum	$5,000	2					$750				$5,000					$5,750
d	Full Hazardous Materials Abatement (Estimate)		2	1	lump sum	$1,500,000	3				$150,000	$225,000	$225,000	$150,000			$1,500,000				$2,250,000
J	**ENVIRONMENTAL ANALYSIS**																				
J10	**LEED ANALYSIS**																				
a	Develop Building Operating Plan		2	1	lump sum	$8,000	3					$1,200	$1,200	$800			$8,000				$11,200
b	Conduct ASHRAE Level I Audit		1	1	lump sum	$10,000	2					$1,500	$1,500	$1,000		$10,000					$14,000
c	Develop Commissioning Plan & Perform Commissioning		2	1	lump sum	$60,000	3					$9,000	$9,000	$6,000			$60,000				$84,000
d	Provide Documentation Concerning Chiller Replacement Feasibility		2	1	lump sum	$3,000	3					$450	$450	$300			$3,000				$4,200
e	Develop Sustainable Purchasing Policy		2	1	lump sum	$2,500	3					$375	$375	$250			$2,500				$3,500
f	Develop & Implement a Solid Waste Management Policy		2	1	lump sum	$2,500	3					$375	$375	$250			$2,500				$3,500
g	Outside Air Verification Study		2	1	lump sum	$10,000	3					$1,500	$1,500	$1,000			$10,000				$14,000
h	Establish Green Cleaning Policy		2	1	lump sum	$2,500.00	3					$375	$375	$250			$2,500				$3,500
J20	**GREEN ROOF FEASABILITY**																				
a	Perform Roof Study		3	1	lump sum	$15,000	3					$2,250	$2,250	$1,500				$15,000			$21,000
J30	**ENERGY EFFICIENCY**																				
a	Conduct ASHRAE Level II Audit		2	1	lump sum	$30,000	3										$30,000				$30,000
	P.R. Harris Education Center Totals										**$786,504**	**$1,629,292**	**$1,627,042**	**$1,084,695**	**$179,900**	**$3,385,775**	**$3,175,750**	**$596,350**	**$25,125**	**$3,739,920**	**$16,230,352**

APPENDIX B
6-YEAR MAINTENANCE EXPENDITURE FORECAST

	ITEM	EUL	RUL	Quantity	Unit	Unit Cost	Priority (1-4)	Repair/PM	Replace	New Construction	A/E Services	DCOPM PM	GCOH	Contingency	2008	2009	2010	2011	2012	2013	Total
A	**SUBSTRUCTURE**																				
A10	**FOUNDATIONS**																				
a	No Maintenance Expenditures Anticipated																				
A20	**BASEMENT CONSTRUCTION**																				
a	No Maintenance Expenditures Anticipated																				
B	**SHELL**																				
B10	**SUPERSTRUCTURE**																				
a	No Maintenance Expenditures Anticipated																				
B20	**EXTERIOR CLOSURE**																				
a	Clean and Repaint Air Intake Louvers at Stairways	7		1	lump sum	$5,200		x				$780	$780	$520	$5,200						$7,280
b	Clean and Repaint Storefront Windows and Frames	7		1	lump sum	$10,044		x				$1,507	$1,507	$1,004	$10,044						$14,062
c	Repaint Metal Entry Doors and Frames	7		40	each	$91		x				$543	$543	$362	$3,620						$5,068
B30	**ROOFING**																				
a	Allowance for Perimeter and Curb Flashing	1		1	lump sum	$10,000	2	x				$1,500	$1,500	$1,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$74,000
b	Repaint Roof Acces Ladders	7		1	lump sum	$1,500.00	3	x				$225.00	$225.00	$150.00	$1,500						$2,100
C	**INTERIORS**																				
C10	**INTERIOR CONSTRUCTION**																				
a	Strip, Patch, and Repaint Wood Doors (80%)	7		1	lump sum	$6,000									$6,000						$6,000
C20	**STAIRS**																				
a	No Maintenance Expenditures Anticipated																				
C30	**INTERIOR FINISHES**																				
a	Paint CMU Walls	10	1	1	lump sum	$22,000		x				$3,300	$3,300	$2,200		$22,000					$30,800
e	Steam Clean Stained Carpet			1	lump sum	$2,500.00	3	x							$2,500						$2,500
D	**SERVICES**																				
D10	**CONVEYING**																				
a	No Maintenance Expenditures Anticipated																				
D20	**PLUMBING**																				
a	No Maintenance Expenditures Anticipated																				
D30	**HVAC**																				
a	Repair Non-Operating Roof-Mounted Exhaust Fans	20	1	1	lump sum	$12,000	2	x				$1,800	$1,800	$1,200		$12,000					$16,800
D40	**FIRE PROTECTION**																				
a	No Maintenance Expenditures Anticipated																				
D50	**ELECTRICAL**																				
a	Preventative Maintenance Program - 1st Year Cost			1	lump sum	$30,000	3	x				$4,500	$4,500	$3,000	$30,000						$42,000
b	Preventative Maintenance Program - Annual Cost	3	1	1	lump sum	$20,000	3	x				$3,000	$3,000	$2,000		$20,000			$20,000		$56,000
D60	**SAFETY, SECURITY, & ACCESS CONTROL**																				
a	No Maintenance Expenditures Anticipated																				
E	**EQUIPMENT & FURNISHINGS**																				
E10	**EQUIPMENT**																				
a	No Maintenance Expenditures Anticipated																				
E20	**FURNISHINGS**																				
a	No Maintenance Expenditures Anticipated																				
F	**SPECIAL CONSTRUCTION & DEMOLITION**																				
F10	**SPECIAL CONSTRUCTION**																				
a	Not Applicable																				
G	**SITE IMPROVEMENTS**																				
G10	**SITE SYSTEMS**																				
a	Crack Seal and Sealcoat Asphalt - Staff Parking Lot	5		1	lump sum	$2,296	2	x				$344	$344	$230	$2,296					$2,296	$6,429
b	Crack Seal and Sealcoat Asphalt - Remote Parking Lot	5		1	lump sum	$2,358	2	x				$354	$354	$236	$2,358					$2,358	$6,602
c	Allowance for Concrete Curb and Gutter Replacements	3		1	lump sum	$4,308	3	x				$646	$646	$431	$4,308			$4,308			$16,370
d	Allowance for Concrete Sidewalk Replacements	3		1	lump sum	$23,143	3	x				$3,471	$3,471	$2,314	$23,143			$23,143			$87,943
H	**ACCESSIBILITY**																				
H10	**ACCESSIBILITY**																				
c	Install Signs to Meet Permanent Room Signage Requirements			1	lump sum	$2,000	2		x			$300	$300	$200	$2,000						$2,800
I	**HAZARDOUS MATERIALS**																				
I10	**HAZARDOUS MATERIALS**																				
b	Asbestos Three-Year Re-Inspection		2	1	sq. yd.	$5,000	2					$750					$5,000				$5,750
c	Asbestos O&M Plan Revision		2	1	sq. yd.	$2,500	2					$375					$2,500				$2,875
d	Lead Based Paint (LBP) O&M Plan		1	1	sq. yd.	$5,000	3					$750				$5,000					$5,750
J	**ENVIRONMENTAL ANALYSIS**																				
J10	**LEED ANALYSIS**																				
a	No Maintenance Expenditures Anticipated																				
J20	**GREEN ROOF FEASABILITY**																				
a	No Maintenance Expenditures Anticipated																				
J30	**ENERGY EFFICIENCY**																				
a	No Maintenance Expenditures Anticipated																				
	P.R. Harris Education Center Totals															**$69,000**	**$17,500**	**$37,451**	**$30,000**	**$14,654**	**$391,130**

APPENDIX C
PHOTOGRAPHS

PHOTOGRAPH 2.1:
Typical Exterior Finishes - Brick & Pre-Cast Concrete Panels

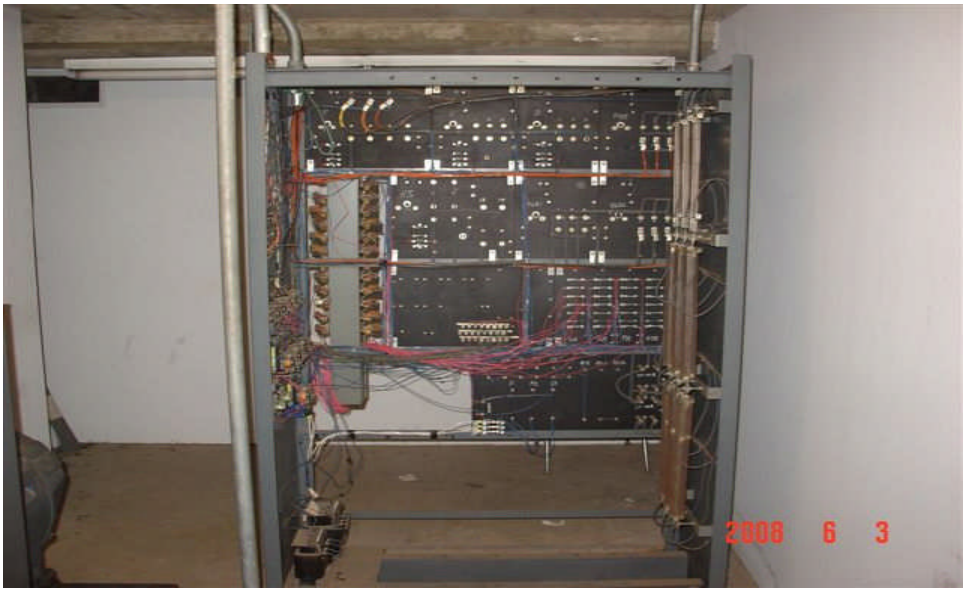
PHOTOGRAPH 2.2:
Warped Exterior Wall System

PHOTOGRAPH 2.3:
Glass Block "Window" System - Missing Block in Several Areas

PHOTOGRAPH 2.4:
Roof Membrane - Fair Condition

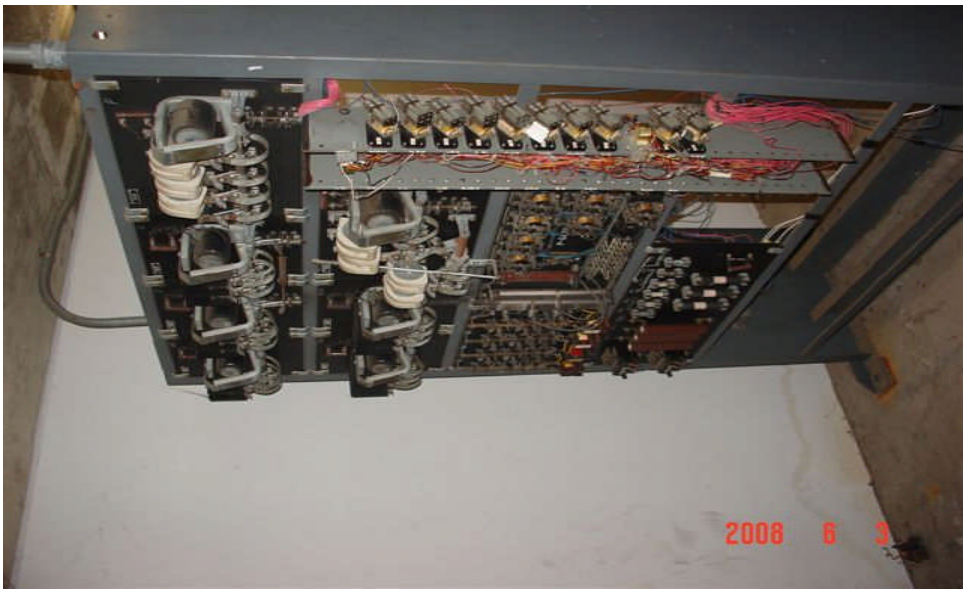
PHOTOGRAPH 2.5:
Typical Roof Conditions

PHOTOGRAPH 2.6:
Roof Parapet/Flashing Termination - Inadequate Termination Continues to Cause Leaks



PHOTOGRAPH 4.1:
Elevator Controller (Rear View)

PHOTOGRAPH 4.2:
Elevator Machine



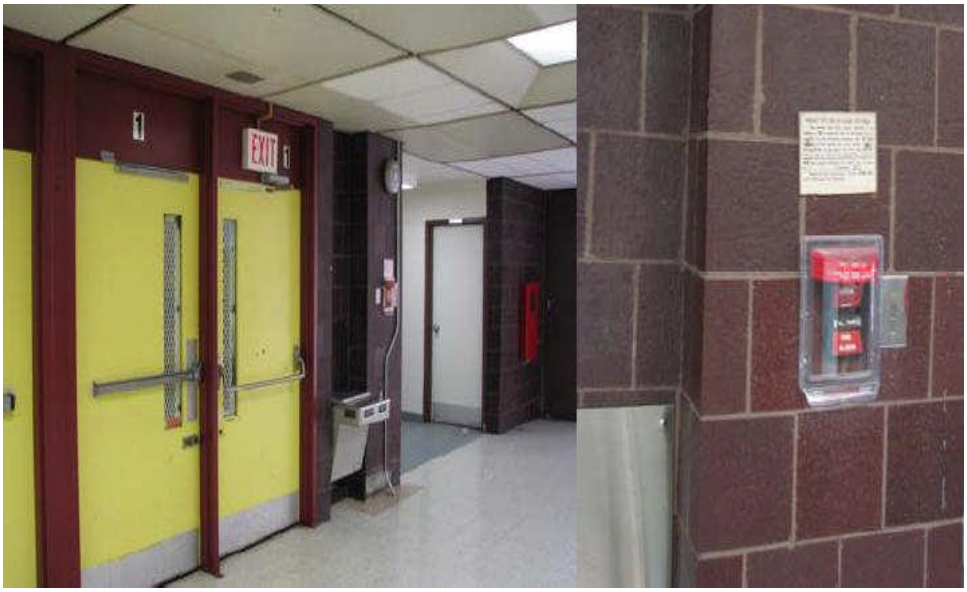
PHOTOGRAPH 4.3:
Elevator Controller (Front View)

PHOTOGRAPH 4.4:
Elevator Car Operating Panel andPhone (Non-ADA)

PHOTOGRAPH 4.5:
Elevator Hall Call Button - Key Operated (Non-ADA)

PHOTOGRAPH 4.6:
Elevator Pit

PHOTOGRAPH 4.7:
Obsolete Fire Alarm System - Replace



PHOTOGRAPH 4.8:
Typical Pull Stations - Lower

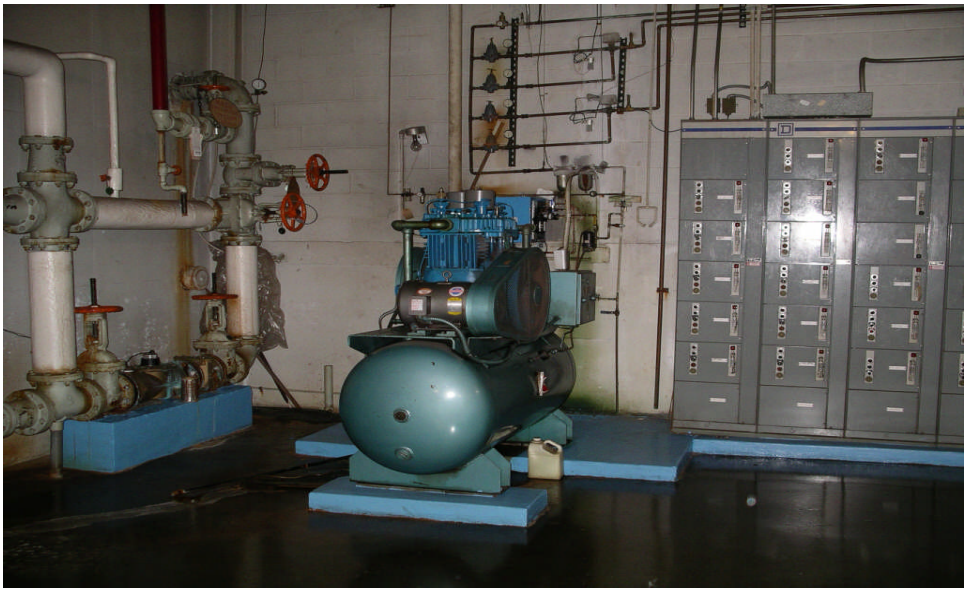
PHOTOGRAPH 4.9:
Only Sprinkler System in the Building Located in the Trash Room

PHOTOGRAPH 4.10:
Typical Dead Bolts on Exit Doors - Remove

PHOTOGRAPH 4.11:
Obstructed Fire Egress - Clear Exit

PHOTOGRAPH 4.12:
Painted Fire Rated Door Plates - Remove Paint

PHOTOGRAPH 4.13:
Cooling Tower on Roof



PHOTOGRAPH 4.14:
New Chiller (Less than 5 Years Old)

PHOTOGRAPH 4.15:
Motor Control Center

PHOTOGRAPH 4.16:
Boilers - Maintenance Ongoing During Visit

PHOTOGRAPH 4.17:
Tank for Hot Water Storage

PHOTOGRAPH 4.18:
Duplex Pumping System

PHOTOGRAPH 5.1:
Damaged Metal Lockers

PHOTOGRAPH 5.2:
Wood Cases Along Hallway

PHOTOGRAPH 7.1:
Front Entry

PHOTOGRAPH 7.2:
Front Unused Lot - Severely Damaged Asphalt

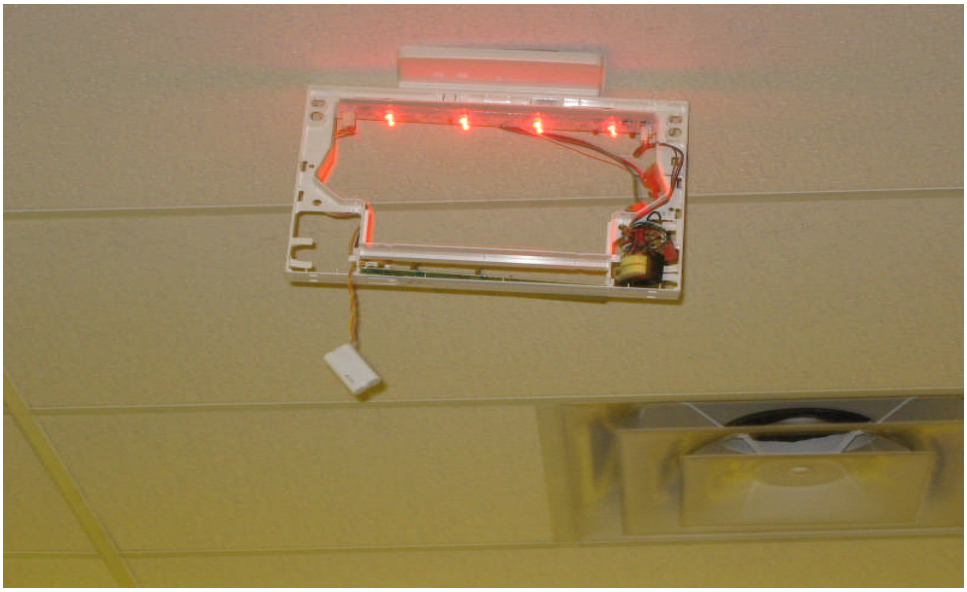
PHOTOGRAPH 7.3:
Parking Lot Near Loading Dock

PHOTOGRAPH 7.4:
Damaged Asphalt and Wheel Stop

PHOTOGRAPH 7.5:
Typical Playground Conditions

PHOTOGRAPH 7.6:
Tennis Courts - Poor Condition

PHOTOGRAPH 8.1:
Typical Construction - CMU Walls



PHOTOGRAPH 8.1:
Broken Exit Sign

PHOTOGRAPH 8.2:
Non-Compliant Doorway (Limited Clearance)

PHOTOGRAPH 8.2:
Typical Construction - Drywall Walls

PHOTOGRAPH 8.3:
Handicapped Stall

PHOTOGRAPH 8.3:
Typical Floor Finish - Vinyl Floor Tile

PHOTOGRAPH 8.4:
Typical Restroom Floor Finish - Ceramic Floor Tile

PHOTOGRAPH 8.5:
Typical Ceiling Finish - Acoustical Tile

PHOTOGRAPH 8.6:
Typical Stairwell

PHOTOGRAPH 8.7:
Missing Tile from Stairwell

APPENDIX D
ASSET INVENTORY

EQUIPMENT INVENTORY
PR HARRIS EDUCATIONAL CENTER

Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Air Compressor	NA	Quincy	NA	The air compressor was served by two 7.5 HP Baldor motors.	NA	(2) 7.5 HP Motors	Boiler Room
Air Handling Unit	Air Handling Unit 1	Trane	1976	Air handling unit 1 is a Trane Climate Changer.	NA	5 HP Supply Fan	Mechanical Room 1
Air Handling Unit	Air Handling Unit 2	Trane	1976	Air handling unit 2 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 2
Air Handling Unit	Air Handling Unit 3	Trane	1976	Air handling unit 3 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 3
Air Handling Unit	Air Handling Unit 4	Trane	1976	Air handling unit 4 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 4
Air Handling Unit	Air Handling Unit 5	Trane	1976	Air handling unit 5 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 5
Air Handling Unit	Air Handling Unit 6	Trane	1976	Air handling unit 6 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 6
Air Handling Unit	Air Handling Unit 7	Trane	1976	Air handling unit 7 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 7
Air Handling Unit	Air Handling Unit 8	Trane	1976	Air handling unit 8 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 8
Air Handling Unit	Air Handling Unit 9	Trane	1976	Air handling unit 9 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 9
Air Handling Unit	Air Handling Unit 10	Trane	1976	Air handling unit 10 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 10
Air Handling Unit	Air Handling Unit 11	Trane	1976	Air handling unit 11 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 11
Air Handling Unit	Air Handling Unit 12	Trane	1976	Air handling unit 12 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 12
Air Handling Unit	Air Handling Unit 13	Trane	1976	Air handling unit 13 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 13
Air Handling Unit	Air Handling Unit 14	Trane	1976	Air handling unit 14 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 14
Air Handling Unit	Air Handling Unit 15	Trane	1976	Air handling unit 15 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 15
Air Handling Unit	Air Handling Unit 16	Trane	1976	Air handling unit 16 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 16
Air Handling Unit	Air Handling Unit 17	Trane	1976	Air handling unit 17 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 17
Air Handling Unit	Air Handling Unit 18	Trane	1976	Air handling unit 18 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 18
Air Handling Unit	Air Handling Unit 19	Trane	1976	Air handling unit 19 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 19
Air Handling Unit	Air Handling Unit 20	Trane	1976	Air handling unit 20 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 20
Air Handling Unit	Air Handling Unit 21	Trane	1976	Air handling unit 21 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 21
Air Handling Unit	Air Handling Unit 22	Trane	1976	Air handling unit 22 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 22
Air Handling Unit	Air Handling Unit 23	Trane	1976	Air handling unit 23 is a Trane Climate Changer and is approximately 17,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 23
Air Handling Unit	Air Handling Unit 24	Trane	1976	Air handling unit 24 is a Trane Climate Changer and is approximately 18,000 CFM.	NA	15 HP Supply Fan	Mechanical Room 24
Air Handling Unit	Air Handling Unit 25	Trane	1976	Air handling unit 25 is a Trane Climate Changer that serves the auditorium and is located in one of the auditorium mechanical rooms.	NA	15 HP Supply Fan	Auditorium Mechanical Room

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Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Air Handling Unit	Air Handling Unit 26	Trane	1976	Air handling unit 26 is a Trane Climate Changer that serves the auditorium and is located in one of the auditorium mechanical rooms.	NA	15 HP Supply Fan	Auditorium Mechanical Room
Air Handling Unit	Air Handling Unit 27	Trane	1976	Air handling unit 27 provides heating and ventilation to the primary gymnasium.	NA	3 HP Supply Fan	Primary Gymnasium
Air Handling Unit	Air Handling Unit 28	Trane	1976	Air handling unit 28 provides heating and ventilation to the primary gymnasium.	NA	3 HP Supply Fan	Primary Gymnasium
Air Handling Unit	Air Handling Unit 29	Trane	1976	Air handling unit 29 provides heating and ventilation to the secondary gym storage room.	NA	1.5 HP Supply Fan	Secondary Gym Storage Room
Air Handling Unit	Air Handling Unit 30	Trane	1976	Air handling unit 30 provides heating and ventilation to the secondary gym storage room.	NA	1.5 HP Supply Fan	Secondary Gym Storage Room
Air Handling Unit	Air Handling Unit 31	Trane	1976	Air handling unit 31 provides heating and ventilation to the secondary gym.	NA	3 HP Supply Fan	Secondary Gym
Air Handling Unit	Air Handling Unit 32	Trane	1976	Air handling unit 32 provides heating and ventilation to the secondary gym.	NA	3 HP Supply Fan	Secondary Gym
Air Handling Unit	Air Handling Unit 33	Trane	1976	Air handling unit 33 provides heating and ventilation to the secondary gym.	NA	3 HP Supply Fan	Secondary Gym
Air Handling Unit	Air Handling Unit 34	Trane	1976	Air handling unit 34 provides heating and ventilation to the secondary gym.	NA	3 HP Supply Fan	Secondary Gym
Air Handling Unit	Air Handling Unit 35	Trane	1976	Air handling unit 35 serves the boiler room.	NA	7.5 HP Supply Fan Motor	Boiler Room
Boiler	Boiler 1	Kewanee Boiler	1976	Boiler 1 is a hot water boiler that is original to the building but has had a burner replacement.	NA	8,857 MBH	Boiler Room
Boiler	Boiler 2	Kewanee Boiler	1976	Boiler 2 is a hot water boiler that is original to the building but has had a burner replacement.	NA	8,857 MBH	Boiler Room
Boiler	Boiler 3	Kewanee Boiler	1976	Boiler 3 is a hot water boiler that is original to the building but has had a burner replacement.	NA	8,857 MBH	Boiler Room
Boiler	Boiler 4	Kewanee Boiler	1976	Boiler 4 is a hot water boiler that is original to the building but has had a burner replacement.	NA	2,658 MBH	Boiler Room
Chilled Water Expansion Tank	NA	NA	1976	The chilled water expansion tank is located next to the chilled water pump in the boiler room.	NA	70 Gallons	Boiler Room
Chilled Water Pump	NA	Bell & Gossett	2006	This is the main chilled water pump for the building.	T661	40 HP	Boiler Room
Chilled Water Pump	NA	Taco	1976	Chilled water pump supplies AHU-10, AHU-11, and AHU-12.	TB4008742C5B2	5 HP, 275 GPM	Mechanical Room 10
Chilled Water Pump	NA	Taco	1976	Chilled water pump supplies AHU-7, AHU-8, and AHU-9.	TB4008742C5B2	5 HP, 275 GPM	Mechanical Room 7
Chilled Water Pump	Pump 10	Taco	1976	Chilled water pump supplies AHU-4, AHU-5, and AHU-6.	TB4008742C5B2	5 HP, 275 GPM	Mechanical Room 4
Chilled Water Pump	Pump 8	Taco	1976	Chilled water pump supplies AHU-1, AHU-2, and AHU-3.	BB400659B5B2D2T	3 HP	Mechanical Room 1
Chilled Water Pump	NA	Taco	1976	Chilled water pump supplies AHU-13, AHU-14, and AHU-15.	TB4008742C5B2	5 HP, 275 GPM	Mechanical Room 13
Chilled Water Pump	NA	Taco	1976	Chilled water pump supplies AHU-16, AHU-17, and AHU-18.	TB4008742C5B2	5 HP, 275 GPM	Mechanical Room 16
Chilled Water Pump	NA	Taco	1976	Chilled water pump supplies AHU-19, AHU-20, and AHU-21.	TB4008742C5B2	5 HP, 275 GPM	Mechanical Room 19
Chilled Water Pump	NA	Taco	1976	Chilled water pump supplies AHU-22, AHU-23, and AHU-24.	TB4008742C5B2	5 HP, 275 GPM	Mechanical Room 22
Chiller	Chiller 1	Multistack	2006	Chiller 1 is responsible for supplying the building with chilled water.	MS50Z6H2W	550 Tons	Boiler Room
Chiller	Chiller 2	Multistack	2006	Chiller 2 is responsible for supplying the building with chilled water.	MS50Z6H2W	550 Tons	Boiler Room

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Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Condensate Pump	NA	Marathon	NA	Condensate pump serving the condensate tank located in boiler room.	56C34F 5547H	1 HP	Boiler Room
Condensate Pump	NA	Marathon	NA	Condensate pump serving the condensate tank located in boiler room.	56C34F 5547H	1 HP	Boiler Room
Condensate Tank	NA	NA	NA	Condensate tank is being served by two condensate pumps.		140 Gallons	Boiler Room
Condenser Water Pump	NA	Bell & Gossett	NA	The condenser water pump is responsible for circulating the condenser water between the cooling tower and chillers.	HSC3 150	40 HP	Boiler Room
Condenser Water Pump	NA	Bell & Gossett	NA	The condenser water pump is responsible for circulating the condenser water between the cooling tower and chillers.	HSC3 150	40 HP	Boiler Room
Cooling Tower	NA	BAC	2006	The cooling tower is a three cell cross flow tower that supplies both chillers with condenser water.	5325-3	1,100 Tons	Roof
Emergency Generator	NA	Elliott Magne Tek Power Systems	2004	The natural gas emergency generator is located in a room that needs to be accessed through the main electrical room.	90 RN	90 KW	Generator Room
Exhaust Fan	NA	NA	1976	Exhaust fan has a 10 HP motor and serves the boiler room.	NA	10 HP	Boiler Room
Exhaust Fan	Exhaust Fan 46	NA	1976	Exhaust fan 46 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 66	NA	1976	Exhaust fan 66 has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 1	Cook	1998	Exhaust fan 1 has a 30" x 30" base and is approximately 3' in diameter.	180C11D	3/4 HP, 1140 CFM	Roof
Exhaust Fan	NA	NA	1998	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 45	NA	1976	Exhaust fan 45 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 34	Cook	1998	Exhaust fan 34 has a 30" x 30" base and is approximately 3' in diameter.	180C11D	3/4 HP, 1140 CFM	Roof
Exhaust Fan	Exhaust Fan 53	NA	1976	Exhaust fan 53 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	Cook	1998	The exhaust fan has a 30" x 30" base and is approximately 3' in diameter.	180C11D	3/4 HP, 1140 CFM	Roof
Exhaust Fan	Exhaust Fan 44	NA	1976	Exhaust fan 44 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 64	Dayton	1998	Exhaust fan 64 has a 22" x 22" base and is approximately 2' in diameter.	4HZ22	1/12 HP	Roof
Exhaust Fan	NA	Cook	1998	The exhaust fan has a 30" x 30" base and is approximately 3' in diameter.	180C11D	3/4 HP, 1140 CFM	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 57	NA	1976	Exhaust fan 57 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 42	NA	1976	Exhaust fan 42 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 62	Dayton	1998	Exhaust fan 64 has a 22" x 22" base and is approximately 2' in diameter.	4HZ22	1/12 HP	Roof

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Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Exhaust Fan	NA	Cook	1998	The exhaust fan has a 30" x 30" base and is approximately 3' in diameter.	180C11D	3/4 HP, 1140 CFM	Roof
Exhaust Fan	NA	Dayton	1998	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	4HZ22	1/12 HP	Roof
Exhaust Fan	Exhaust Fan 29	Cook	1998	Exhaust fan 29 has a 30" x 30" base and is approximately 3' in diameter.	180C11D	3/4 HP, 1140 CFM	Roof
Exhaust Fan	Exhaust Fan 61	NA	1976	Exhaust fan 61 has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 41	NA	1976	Exhaust fan 41 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 38A	NA	1976	Exhaust fan 38A has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 37	NA	1976	Exhaust fan 37 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 38B	NA	1976	Exhaust fan 38B has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 40	NA	1976	Exhaust fan 40 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 60	NA	1976	Exhaust fan 60 has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 28	NA	1976	Exhaust fan 28 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 36" x 36" base and is approximately 3.5' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 59	NA	1976	Exhaust fan 59 has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 39	NA	1976	Exhaust fan 39 has a 30" x 30" base and is approximately 3' in diameter.	NA	NA	Roof
Exhaust Fan	Exhaust Fan 50	NA	1976	Exhaust fan 50 has a 36" x 36" base and is approximately 3.5' in diameter.	NA	NA	Roof
Exhaust Fan	NA	Cook	1998	The exhaust fan has a 30" x 30" base and is approximately 3' in diameter.	180C11D	3/4 HP, 1140 CFM	Roof
Exhaust Fan	Exhaust Fan 25	NA	1976	Exhaust fan 25 has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	NA	1976	The exhaust fan has a 22" x 22" base and is approximately 2' in diameter.	NA	NA	Roof
Exhaust Fan	NA	Capital Fan	1976	This exhaust fan serves the cafeteria and is approximately 12,000 CFM.	NA	5 HP	Roof
Exhaust Fan Hood	NA	NA	NA	The exhaust fan hood provides ventilation to the kitchen and is approximately 20' long and 10' wide. The fan hood is equipped with a wet chemical fire suppression system.	NA	NA	Kitchen
Expansion Tank	NA	NA	NA	The expansion tank is located in the boiler room.	NA	1,100 Gallons	Boiler Room

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Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Expansion Tank	NA	NA	NA	The expansion tank is located in the boiler room.	NA	1,100 Gallons	Boiler Room
Expansion Tank	NA	NA	NA	The expansion tank is located in the boiler room.	NA	650 Gallons	Boiler Room
Expansion Tank	NA	NA	NA	The expansion tank is located in the boiler room.	NA	650 Gallons	Boiler Room
Freezer	General Storage 1	Tafco	1976	The freezer is approximately 150 SF and consists of two cooling fans.	NA	NA	Kitchen
Freezer	General Storage 2	Tafco	1976	The freezer is approximately 225 SF and the number of cooling fans was not available.	NA	NA	Kitchen
Freezer	General Storage 3	Tafco	1976	The freezer is approximately 600 SF and consists of seven cooling fans.	NA	NA	Kitchen
Freezer	NA	Norlake	1976	The freezer is approximately 25 SF and the number of cooling fans was not available.	NA	NA	Kitchen
Freezer	NA	Vulcan	1976	The freezer is approximately 25 SF and the number of cooling fans was not available.	NA	NA	Kitchen
Hot Water Expansion Tank	NA	NA	1976	The hot water expansion tank is located in the boiler room	NA	70 Gallons	Boiler Room
Hot Water Pump	NA	Bell & Gossett	2006	This is the main hot water pump for the building.	T661	40 HP	Boiler Room
Hot Water Pump	NA	Taco	1976	Hot water pump supplies AHU-10, AHU-11, and AHU-12.	BB40066425B5B2D2T	3 HP, 195 GPM	Mechanical Room 10
Hot Water Pump	NA	Taco	1976	Hot water pump supplies AHU-7, AHU-8, and AHU-9.	BB40066425B5B2D2T	3 HP, 195 GPM	Mechanical Room 7
Hot Water Pump	Pump 11	Taco	1976	Hot water pump supplies AHU-4, AHU-5, and AHU-6.	BB40066425B5B2D2T	3 HP, 195 GPM	Mechanical Room 4
Hot Water Pump	Pump 9	Taco	1976	Hot water pump supplies AHU-1, AHU-2, and AHU-3.	BB300656A5B2C21	1.5 HP	Mechanical Room 1
Hot Water Pump	NA	Taco	1976	Hot water pump supplies AHU-13, AHU-14, and AHU-15.	BB40066425B5B2D2T	3 HP, 195 GPM	Mechanical Room 13
Hot Water Pump	NA	Taco	1976	Hot water pump supplies AHU-16, AHU-17, and AHU-18.	BB40066425B5B2D2T	3 HP, 195 GPM	Mechanical Room 16
Hot Water Pump	NA	Taco	1976	Hot water pump supplies AHU-19, AHU-20, and AHU-21.	BB40066425B5B2D2T	3 HP, 195 GPM	Mechanical Room 19
Hot Water Pump	NA	Taco	1976	Hot water pump supplies AHU-22, AHU-23, and AHU-24.	BB40066425B5B2D2T	3 HP, 195 GPM	Mechanical Room 22
Hot Water Tank	NA	NA	1976	The hot water tank is located in the boiler room.	NA	3,000 Gallons	Boiler Room
HVAC Control System	NA	Siemens	NA	The Siemens Apogee HVAC control system is responsible for controlling and monitoring most of the air handling units and mechanical equipment in the building. There are Siemens control boxes in each of the mechanical towers located in the eight stairwells.	NA	NA	Entrance
Kitchen Fan	NA	Bar-Brook	1976	The Bar-Brook Breeze Builder serves the kitchen and is designed to provide additional ventilation to the kitchen area	NA	3 HP	Kitchen
Metal Detector	NA	Garrett	NA	The Garrett MT 5500 Magnascanner is a metal detector located near one of the school's entrances.	NA	NA	Entrance
Metal Detector	NA	Garrett	NA	The Garrett MT 5500 Magnascanner is a metal detector located near one of the school's entrances.	NA	NA	Entrance
Motor Control Center	NA	Square D	1976	The motor control center is located in the boiler room and operates equipment within that room.	NA	65,000 amp	Boiler Room
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-10, AHU-11, and AHU-12 along with some exhaust fans	NA	NA	Mechanical Room 12

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Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-7, AHU-8, and AHU-9 along with some exhaust fans	NA	NA	Mechanical Room 9
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-4, AHU-5, and AHU-6 along with some exhaust fans	NA	NA	Mechanical Room 6
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-1, AHU-2, and AHU-3 along with some exhaust fans	NA	NA	Mechanical Room 3
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-13, AHU-14, and AHU-15 along with some exhaust fans	NA	NA	Mechanical Room 15
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-16, AHU-17, and AHU-18 along with some exhaust fans	NA	NA	Mechanical Room 18
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-19, AHU-20, and AHU-21 along with some exhaust fans	NA	NA	Mechanical Room 21
Motor Control Center	NA	Square D	1976	The motor control center operates AHU-22, AHU-23, and AHU-24 along with some exhaust fans	NA	NA	Mechanical Room 24
Panelboard	EMERG. LTG. PNL. 460V	Square D	NA	The panelboard serves the emergency lighting for the building.	NA	600 amp	Main Electrical Room
Panelboard	MDP L1 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 11.	NA	400 amp	Mechanical Room 11
Panelboard	MDP H1 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 11.	NA	800 amp	Mechanical Room 11
Panelboard	MDP L2 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 8.	NA	400 amp	Mechanical Room 8
Panelboard	MDP H2 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 8.	NA	800 amp	Mechanical Room 8
Panelboard	MDP L3 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 5.	NA	400 amp	Mechanical Room 5
Panelboard	MDP H3 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 5.	NA	800 amp	Mechanical Room 5
Panelboard	MDP L4 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 2.	NA	400 amp	Mechanical Room 2
Panelboard	MDP H4 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 2.	NA	800 amp	Mechanical Room 2
Panelboard	MDP L8 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 14.	NA	400 amp	Mechanical Room 14
Panelboard	MDP H8 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 14.	NA	800 amp	Mechanical Room 14
Panelboard	MDP L7 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 17.	NA	400 amp	Mechanical Room 17
Panelboard	MDP H7 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 17.	NA	800 amp	Mechanical Room 17
Panelboard	MDP L6 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 20.	NA	400 amp	Mechanical Room 20
Panelboard	MDP H6 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 20.	NA	800 amp	Mechanical Room 20
Panelboard	MDP L5 208V	Square D	1976	The panelboard is a low voltage (208) panel located in mechanical room 23.	NA	400 amp	Mechanical Room 23
Panelboard	MDP H5 460V	Square D	1976	The panelboard is a high voltage (460) panel located in mechanical room 23.	NA	800 amp	Mechanical Room 23
Safety Switches	NA	Square D	2006	The safety switch is one of two switches that serves Chiller 1.	NA	400 amp	Boiler Room
Safety Switches	NA	Square D	2006	The safety switch is one of two switches that serves Chiller 1.	NA	400 amp	Boiler Room

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Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Safety Switches	NA	Square D	2006	The safety switch is one of two switches that serves Chiller 2.	NA	400 amp	Boiler Room
Safety Switches	NA	Square D	2006	The safety switch is one of two switches that serves Chiller 2.	NA	400 amp	Boiler Room
Safety Switches	NA	General Electric	NA	The heavy duty safety switch serves the ground floor panel 1 and 2.	NA	200 amp	Main Electrical Room
Safety Switches	NA	General Electric	NA	The heavy duty safety switch serves the first floor panel 3 and 4.	NA	200 amp	Main Electrical Room
Safety Switches	NA	General Electric	NA	The heavy duty safety switch serves the second floor panel 5 and 6.	NA	200 amp	Main Electrical Room
Stage Lighting Control	NA	Major	1976	The stage lighting control equipment is located next to the stage and is responsible for controlling the auditorium's stage lighting.	NA	NA	Entrance
Stand-by Water Pump	NA	Bell & Gossett	2006	The stand-by water pump is operated when another pump is down for maintenance	T661	40 HP	Boiler Room
Strainer	NA	Thompson Strainer	2006	The strainer provides filtration for the condenser water loop.	NA	NA	Boiler Room
Strainer	NA	Thompson Strainer	2006	The strainer provides filtration for the condenser water loop.	NA	NA	Boiler Room
Strainer	NA	Thompson Strainer	2006	The strainer provides filtration for the chilled water loop.	NA	NA	Boiler Room
Strainer	NA	Thompson Strainer	2006	The strainer provides filtration for the chilled water loop.	NA	NA	Boiler Room
Switchboard	NA	Square D	NA	The Square D power style switchboard is located in the main electrical room. The switchboard serves chiller 1 & 2, MCC-9, Elevators, and other electrical panels and equipment.	NA	3000 amp	Main Electrical Room
Switchboard	NA	Square D	NA	The Square D power style switchboard is located in the main electrical room. The switchboard serves the building's main distribution panelboards (MDP-H1 through MDP-H8) and other electrical panels.	NA	3000 amp	Main Electrical Room
Transfer Switch	NA	ASCO	NA	The ASCO emergency automatic transfer switch serves emergency and stand-by systems.	NA	150 amp	Main Electrical Room
Transformer	Transformer 1A	Cutler Hammer	NA	Transformer 1A is located in the main electrical room.	NA	150 KVA	Main Electrical Room
Transformer	Transformer 1	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 11.	NA	112.5 KVA	Mechanical Room 11
Transformer	Transformer 2	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 8.	NA	112.5 KVA	Mechanical Room 8
Transformer	Transformer 3	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 5.	NA	112.5 KVA	Mechanical Room 5
Transformer	Transformer 4	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 2.	NA	150 KVA	Mechanical Room 2
Transformer	Transformer 5	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 23.	NA	112.5 KVA	Mechanical Room 23
Transformer	Transformer 6	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 20.	NA	112.5 KVA	Mechanical Room 20
Transformer	Transformer 7	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 17.	NA	112.5 KVA	Mechanical Room 17
Transformer	Transformer 8	Sorgel	1976	The dry-type transformer serves the panelboards located in mechanical room 14.	NA	112.5 KVA	Mechanical Room 14
Transformer	Transformer 11	Sorgel	NA	The dry-type transformer serves the emergency lighting panelboard.	NA	600 amp	Main Electrical Room
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 11.	NA	NA	Mechanical Room 11

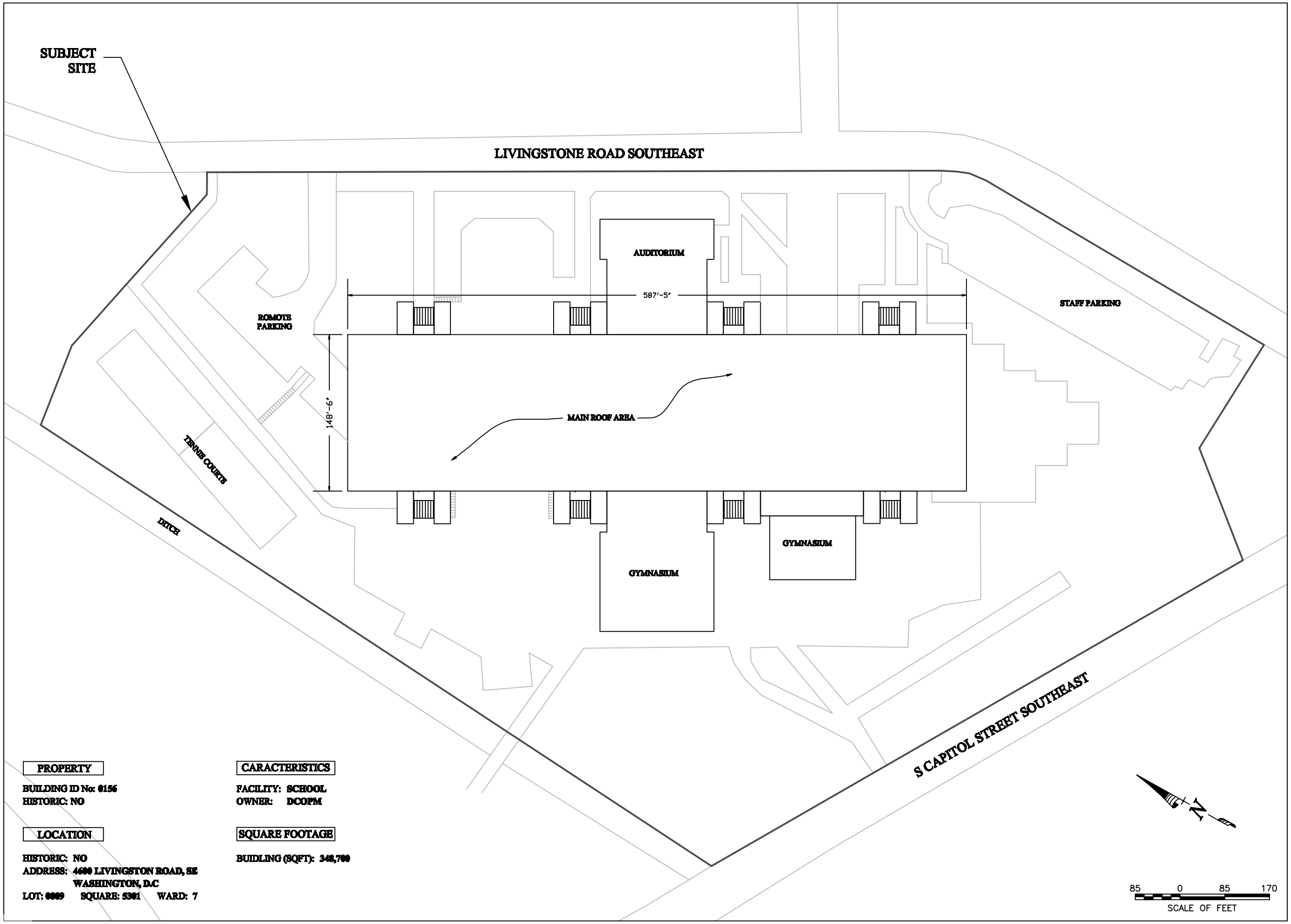
EQUIPMENT INVENTORY
PR HARRIS EDUCATIONAL CENTER

Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 10.	NA	NA	Mechanical Room 10
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 12.	NA	NA	Mechanical Room 12
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 8.	NA	NA	Mechanical Room 8
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 7.	NA	NA	Mechanical Room 7
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 9.	NA	NA	Mechanical Room 9
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 5.	NA	NA	Mechanical Room 5
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 4.	NA	NA	Mechanical Room 4
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 6.	NA	NA	Mechanical Room 6
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 2.	NA	NA	Mechanical Room 2
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 1.	NA	NA	Mechanical Room 1
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 3.	NA	NA	Mechanical Room 3
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 14.	NA	NA	Mechanical Room 14
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 13.	NA	NA	Mechanical Room 13
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 15.	NA	NA	Mechanical Room 15
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 17.	NA	NA	Mechanical Room 17
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 16.	NA	NA	Mechanical Room 16
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 18.	NA	NA	Mechanical Room 18
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 20.	NA	NA	Mechanical Room 20
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 19.	NA	NA	Mechanical Room 19
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 21.	NA	NA	Mechanical Room 21
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 23.	NA	NA	Mechanical Room 23
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 22.	NA	NA	Mechanical Room 22
Unit Heater	NA	Trane	1976	The electric unit heater is located in mechanical room 24.	NA	NA	Mechanical Room 24
Unit Heater	NA	Trane	1976	The electric unit heater is located in one of the auditorium mechanical rooms.	NA	NA	Auditorium Mechanical Room
Unit Heater	NA	Trane	1976	The electric unit heater is located in one of the auditorium mechanical rooms.	NA	NA	Auditorium Mechanical Room
Water Heater	NA	Lochinvar	NA	The water heater is a tankless water heater that is not original to the building.	CWN0985PM	985,000 BTU	Boiler Room

EQUIPMENT INVENTORY
PR HARRIS EDUCATIONAL CENTER

Component	Local Name	Manufacturer	Install Year	General Description	Model Number	Rating/ Capacity	Location
X-Ray Machine	NA	Rapisco	NA	The Rapisco x-ray machine is located near one of the school's entrances.	NA	NA	Entrance

APPENDIX E
FLOOR PLANS



PROPERTY

BUILDING ID No: 0156
HISTORIC: NO

LOCATION

HISTORIC: NO
ADDRESS: 4600 LIVINGSTON ROAD, SE
WASHINGTON, D.C
LOT: 0009 SQUARE: 5301 WARD: 7

CARACTERISTICS

FACILITY: SCHOOL
OWNER: DCOPM

SQUARE FOOTAGE

BUILDING (SQFT): 348,700

FEA
FACILITY ENGINEERING ASSOCIATES, P.C.
11001 LEE HIGHWAY, SUITE D
FAIRFAX, VIRGINIA 22030

REVISIONS

NO.	DATE	

SITE PLAN
P.R. HARRIS EDUCATION CENTER

PROJECT
FACILITY CONDITION ASSESSMENT
DISTRICT ELEMENTARY & MIDDLE SCHOOL
(CLUSTER II)

CLIENT
DISTRICT OF COLUMBIA GOVERNMENT
2000 14TH STREET, NW, 8TH FLOOR
WASHINGTON DC, 20002

PROFESSIONAL SEAL

DESIGNED	NA
DRAWN	MF
CHECKED	MDP
APPROVED	PGS
DATE	06/13/08
SCALE	1":85'
PROJECT NO.	R01.2008.005662
CADD FILE	001

WRITTEN DIMENSIONS, WHERE PROVIDED, GOVERN OVER SCALED DIMENSIONS. THE INFORMATION IN THIS PLAN SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF ANY NEW CONSTRUCTION OR THE FABRICATION OF ANY NEW MATERIALS. THE CONTRACTOR SHALL NOTIFY THE OWNER AND FACILITY ENGINEERING ASSOCIATES, P.C. UPON DISCOVERY OF ANY DISCREPANCIES.

SHEET
1OF1

APPENDIX F
OTHER DOCUMENTATION

P.R. Harris
Water Usage Calculation

Table 1. Water Use Baseline - LEED-EB: O&M					
Fixture	Daily Uses	Flowrate (gpf)	Duration (Flush)	Occupants	Water Use (gal)
WC (Male)	1	1.6	1	531	850
WC (Female)	3	1.6	1	531	2549
Urinal	2	1.0	1	531	1062
Fixture	Daily Uses	Flowrate (gpm)	Duration (sec)	Occupants	Water Use (gal)
Lavatory	3	0.5	15	1062	398
Kitchen Sink	1	2.2	15	1062	584
Shower	0.1	2.5	300	1062	1328
				Total Daily Volume (gal)	6,770
				Annual Work Days	260
				Total Annual Volume (gal)	1,760,265
				Multiply by 160%	1.6
				Calculated Water Use Baseline (gal)	**2,816,424**

Table 2. PR Harris Building Estimated Water Use					
Fixture	Daily Uses	Flowrate (gpf)	Duration (Flush)	Occupants	Water Use (gal)
WC (Male)	1	1.6	1	531	850
WC (Female)	3	1.6	1	531	2549
Urinal	2	1.0	1	531	1062
Fixture	Daily Uses	Flowrate (gpm)	Duration (sec)	Occupants	Water Use (gal)
Lavatory	3	2.2	15	1062	1752
Kitchen Sink	1	2.5	15	1062	664
Shower	0.1	2.5	300	1062	1328
			Total Daily Volume (gal)		8,204
				Annual Work Days	260
				Total Estimated Annual Volume (gal)	**2,133,027**
				Total Estimated Annual Volume (ccf)	**285,145**

Water Use Summary		
Total Annual Fixture Volume	2,133,027	Gallons
Total Annual Graywater Fixture Volume	0	Gallons
Total Annual Potable Fixture Volume	2,133,027	Gallons
Calculated Water Use Baseline	2,816,424	Gallons
Building Fixtures		
Flow Rate of Water Closets	1.6	GPF
Flow Rate of Urinals	1.0	GPF
Flow Rate of Lavatory Faucets	2.2	GPM
Flow Rate of Kitchen Sinks	2.5	GPM
Flow Rate of Showers	2.5	GPM
LEED Metrics		
Building Floor Area	348,700	SF
Number of Building Occupants	1,062	FTE
Total Water Used per Occupant	2008.5	Gal/Occ
Total Water Used per Square Foot	6.12	Gal/SF
LEED Credits		
WE Credit 2.1, 10% Reduction	2,534,782	Gallons
WE Credit 2.2, 20% Reduction	2,253,139	Gallons
WE Credit 2.3, 30% Reduction	1,802,511	Gallons

WE Prerequisite 1 - Achieved

24.3% Percent below baseline based on calculations (Table 2)

Statement of Energy Performance
FACILITY SUMMARY REPORT
P.R. Harris Education Center

For 12-month Period Ending: April 30, 2008
Date Generated: June 13, 2008

This document was generated using EPA's Portfolio Manager system. All information shown is based on data provided by the Portfolio Manager account holder. Depending on the use of the SEP Facility Summary, building owners or managers may want to have a professional engineer (PE) verify that the underlying data is accurate. Blank space has been left intentionally on the SEP Facility Summary for a PE stamp.

4600 Livingston Road SE
Washington, DC 20032

Year Built: 1976
Gross Floor Area: (ft²) 348,700

Facility Space Use Summary

K-12 School

Space Name	Gross Floor Area (ft2)	Number of Students	Number of PCs	Operating Hours/Week	Cooking Facility	% Air-Conditioned	% Heated	Months	Ventilated
General School Area	348,700	1,062	107	77	Y	90	100	12	Y

Energy Performance Comparison

Results	Current (04/30/2008)	Baseline (04/30/2008)	Delta	Target	Industry Average	ENERGY STAR
Energy Performance Rating	**31**	**31**	**0**		**50**	**75**
Energy Intensity (kBtu/ft2)						
Site	43	43	0		37	29
Source	143	143	0		123	97
Energy Cost						
$/year	0	0	0		0	0
$/ft2/year	0.00	0.00	0.00		0.00	0.00
CO_2 Emissions (tons/year)	2404	2404	0		2068	1629

More than 50% of your building is defined as K-12 School. Please note that your rating accounts for all of the spaces listed. If you cannot see a rating, you will be compared to the national average of K-12 School.

APPENDIX G
PREVENTATIVE MAINTENANCE PROCEDURES

AIR HANDLING UNIT	**AHU**
BACKFLOW PREVENTER	**BFP**
BOILER, HOT WATER	**BLR-1**
BOILER, STEAM	**BLR-2**
BRANCH FEEDER	**BF**
CHILLER	**CHL**
COOLING TOWER	**CTR**
DRAINS, AREAWAY, STORM, DRIVEWAY	**DRN**
DUPLEX AIR COMPRESSOR	**CMP**
ELECTRIC WATER COOLER, DRINKING FOUNTAIN	**EWC**
ELEVATORS, HYDRAULIC	**ELV**
ELECTRICAL PANELBOARD	**EPB**
EXHAUST FANS	**EXF**
FAN, AXIAL UP TO 5000 CFM	**FAN-1**
FAN, CENTRIFUGAL	**FAN-2**
FIRE ALARM ANNUNCIATOR SYSTEM	**FAA**
EMERGENCY GENERATOR	**GEN**
HEAT EXCHANGER	**HEX**
LIGHTING	**LTS**
MOTOR CONTROL CENTER, SYSTEM	**MCC**
PORTABLE FIRE EXTINGUISHERS	**FEX**
PUMPS	**PMP**
ROOF INSPECTION	**ROF**
STEAM HUMIDIFICATION SYSTEMS	**SHS**
TRANSFORMERS (Dry Type)	**DTT**
UNIT HEATER	**UHE**
VACUUM CLEANERS	**VCL**
WATER HEATER	**WH**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

AHU-1

PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Air Handling Unit - Self Contained						
1. Check with operating or area personnel for deficiences.	.035			✔	✔	✔
2. Check controls and unit for proper operation	.033			✔	✔	✔
3. Check for unusual noise or vibration	.033			✔	✔	✔
4. Check tension, condition and alignment of belts, adjust as necessary	.029			✔	✔	✔
5. Clean coils , evaporator drain pan, blower motor & drain piping as req.	.38					✔
6. Lubricate shaft and motor bearings.	.047			✔	✔	✔
7. Replace air filters.	.078			✔	✔	✔
8. Inspect exterior piping and valves for leaks; tighten connectors as req.	.077			✔	✔	✔
9. Clean area around equipment	.066			✔	✔	✔
10. Fill out maintenance checklist and report deficiencies.	.022			✔	✔	✔
Total Labor-Hours / period				.420	.420	.800
Total Labor-Hours / year				.840	.420	.800
Total Annual Hours						**2.060**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

BPD-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Backflow Prevention Device							
1.	Test and calibrate check valve operation of backflow prevention device with test set.	.191					✔
2.	Bleed air from backflow preventer	.047					✔
3.	Inspect for leaks under pressure	.007					✔
4.	Clean backflow preventer and surrounding area	.066					✔
5.	Fill out maintenance checklist and report deficiencies	.022					✔
	Total Labor-Hours / period						.333
	Total Labor-Hours / year						.333
	Total Annual Hours						**0.333**

ANNUAL MAINTENANCE BUDGET

(man-hrs)
By Equipment

BLR-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Boiler, Hot Water							
1.	Check combustion chamber for air or gas leaks.	.077					✔
2.	Inspect and clean oil burner and ignition assembly.	.658					✔
3.	Inspect fuel system for leaks and change fuel filter element.	.098					✔
4.	Check fuel lines and connections for damage.	.023		✔	✔	✔	✔
5.	Check for proper operational response of burner to thermostat.	.133			✔	✔	✔
6.	Check and lubricate burner and blower motors.	.079			✔	✔	✔
7.	Check main flame failure protection and main flame detection scanner.	.124		✔	✔	✔	✔
8.	Check electrical wiring to burner controls and blower.	.079					✔
9.	Clean firebox (sweep and vacuum).	.577					✔
10.	Check operation of mecury control switches.	.143		✔	✔	✔	✔
11.	Check operation and condition of safety pressure relief valve.	.030		✔	✔	✔	✔
12.	Check operation of boiler low water cut off devices.	.056		✔	✔	✔	✔
13.	Check hot water pressure gauges.	.073		✔	✔	✔	✔
14.	Inspect and clean water column sight glass (or replace).	.127		✔	✔	✔	✔
15.	Clean fire side of water jacket boiler.	.433					✔
16.	Check condition of flue pipe, damper and exhaust stack.	.147			✔	✔	✔
17.	Check boiler operation through complete cycle.	.650					✔
18.	Check fuel level with gauge pole for oil burning boilers	.046					
19.	Clean area around equipment.	.066		✔	✔	✔	✔
20.	Fill out maintenance checklist and report deficiencies	.022		✔	✔	✔	✔
	Total Labor-Hours / period			0.664	1.023	1.023	3.595
	Total Labor-Hours / year			5.312	2.046	1.023	3.595
	Total Annual Hours						**11.976**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

BLR-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Boiler, Steam							
1.	Inspect fuel system for leaks or damage.	.098		✔	✔	✔	✔
2.	Change fuel filter element and clean strainer; repair leaks, where applicable	.581					✔
3.	Check main flame failure protection, positive fuel shutoff and main flame detection scanner on boiler equipped with spark ignition (oil burner).	.124		✔	✔	✔	✔
4.	Check for proper operational response of burner to thermostat controls.	.133			✔	✔	✔
5.	Inspect all gas, steam and water lines, valves, connections for leaks or damage; repair as necessary.	.195			✔	✔	✔
6.	Check feedwater system and feedwater makeup control and pump.	.056		✔	✔	✔	✔
7.	Check and lubricate burner and blower motors as required.	.083			✔	✔	✔
8.	Check operation and condition of safety pressure relief valve.	.030		✔	✔	✔	✔
9.	Check combustion controls, combustion blower and damper modulation control.	.133					✔
10.	Check all indicator lamps and water/steam pressure gauges.	.073		✔	✔	✔	✔
11.	Check electrical panels and wiring to burner, blowers and other components.	.079			✔	✔	✔
12.	Clean blower air-intake dampers, if required.	.055			✔	✔	✔
13.	Check condition of flue pipe, damper and exhaust stack.	.147		✔	✔	✔	✔
14.	Check boiler operation through complete cycle, up to 30 minutes.	.650			✔	✔	✔
15.	Check water column sight glass and water level system; clean or replace sight glass if required.	.127		✔	✔	✔	✔
16.	Clean firebox (sweep and vacuum)	.577					✔
17.	Check fuel level with gauge pole for oil burning boilers	.046					
18.	Inspect and clean oil burner gun and ignition assembly where applicable.	.650					✔
19.	Clean area around equipment.	.066		✔	✔	✔	✔
20.	Fill out maintenance checklist and report deficiencies	.022		✔	✔	✔	✔
	Total Labor-Hours / period			0.743	1.938	1.938	3.879
	Total Labor-Hours / year			5.944	3.876	1.938	3.879
	Total Annual Hours						**15.637**

ANNUAL MAINTENANCE BUDGET

BF-1

(man-hrs)

By Equipment

PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Branch Feeder						
1. Check with operating or area personnel for deficiencies.	.066					✔
2. Check for excessive heat, odors, noise, and vibrations	.239					✔
3. Clean and check general condition of panel.	.114					✔
4. Fill out maintenance checklist and report deficiencies..	.022					✔
Total Labor-Hours / period						.441
Total Labor-Hours / year						.441
Total Annual Hours						**0.441**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

CHL-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Chiller							
1.	Check unit for proper operation, excessive noise or vibration.	.033		✔	✔	✔	✔
2.	Run system diagnostics test.	.325		✔	✔	✔	✔
3.	Check oil level and oil temperature; add oil as necessary.	.022		✔	✔	✔	✔
4.	Check refrigerant pressures; add as necessary.	.272		✔	✔	✔	✔
5.	Replace oil filters and oil; add as necessary.	.081				✔	✔
6.	Check contactors, sensors and mechanical safety limits.	.094				✔	✔
7.	Perform spectrochemical analysis of compressor oil.	.039				✔	✔
8.	Check electrical wiring and connections; tighten loose connections	.120				✔	✔
9.	Inspect cooler and condenser for corrosion.	5.200					✔
10.	Check evaporator and condenser for corrosion.	.026					✔
11.	Clean chiller and area around equipment.	.066		✔	✔	✔	✔
12.	Fill out maintenance checklist and report deficiencies	.022		✔	✔	✔	✔
	Total Labor-Hours / period			.740	.740	1.074	6.300
	Total Labor-Hours / year			5.920	1.480	1.074	6.300
	Total Annual Hours						**14.774**

ANNUAL MAINTENANCE BUDGET

(man-hrs)
By Equipment

CTR-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Cooling Tower							
1.	Check with operating or area personnel for deficiencies	.109				✔	✔
2.	Check operation of unit for water leaks, noise or vibration	.239				✔	✔
3.	Clean and inspect hot water basin	.488				✔	✔
4.	Remove access panel	.151				✔	✔
5.	Check electrical wiring and connections; make appropriate adjustments	.374				✔	✔
6.	Lubricate all motor and fan bearings	.147				✔	✔
7.	Check fan blades or blowers for imbalance and tip clearance	.302				✔	✔
8.	Check belt for wear, tension and alignment; adjust as required	.22				✔	✔
9.	Drain and flush cold water sump and clean strainer	.464				✔	✔
10.	Clean inside of water tower using water hose; scrape, brush and wipe as required; heavy deposits of scale should be removed with scale removing compound	2.259				✔	✔
11.	Refill with water, check make-up water assembly for leakage, adjust float if necessary.	6.578				✔	✔
12.	Replace access panel	.117				✔	✔
13.	Remove, clean and reinstall conductivity and pH electrodes in chemical water treatment system.	1.222				✔	✔
14.	Inspect and clean around cooling tower.	.172				✔	✔
15.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					12.864	12.864
	Total Labor-Hours / year					12.864	12.864
	Total Annual Hours						**25.728**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Drains, Areaway, Storm, Driveway (per Section)							
1.	Remove grate if it exists.	.022					✔
2.	Clean drain and area leading to drain.	.083					✔
3.	Remove debris and trash, and dispose of properly.	.042					✔
4.	Test drain for free water flow by flushing with hose.	.083					✔
5.	Replace grate if removed in step 1.	.022					✔
	Total Labor-Hours / period						.252
	Total Labor-Hours / year						.252
	Total Annual Hours						**0.252**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Duplex Air Compressor							
1.	Replace compressor oil	.341			✔	✔	✔
2.	Perform operation check of compressor system and adjust as required.	.221			✔	✔	✔
3.	Check motor operation for excessive vibration, noise and overheating; lubricate motor.	.042			✔	✔	✔
4.	Check operation of pressure release valve.	.043			✔	✔	✔
5.	Clean cooling fans and air cooler compressor.	.023					
6.	Check tension, condition, and alignment of V-belts; adjust as necessary.	.030			✔	✔	✔
7.	Drian moisture from air storage tank and check low pressure cut-in; while draining, check discharge for indication of interior corrosion.	.059			✔	✔	✔
8.	Clean air intake filter on compressor.	.177			✔	✔	✔
9.	Clean oil and water tap.	.19			✔	✔	✔
10.	Clean compressor and surrounding area.	.066			✔	✔	✔
11.	Fill out maintenance checklist and report deficiencies.	.022			✔	✔	✔
	Total Labor-Hours / period				1.214	1.214	1.214
	Total Labor-Hours / year				2.428	1.214	1.214
	Total Annual Hours						**4.856**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

EWC-1

PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Electric Water Cooler, Drinking Fountain						
1. Check with operating or area personnel for deficiences.	.035			✔	✔	✔
2. Check controls and unit for proper operation	.033			✔	✔	✔
3. Check for unusual noise or vibration	.033			✔	✔	✔
4. Check tension, condition and alignment of belts, adjust as necessary	.029			✔	✔	✔
5. Clean coils, evaporator drain pan, blower motor & drain piping as req.	.38					✔
6. Lubricate shaft and motor bearings.	.047			✔	✔	✔
7. Replace air filters.	.078			✔	✔	✔
8. Inspect exterior piping and valves for leaks; tighten connectors as req.	.077			✔	✔	✔
9. Clean area around equipment	.066			✔	✔	✔
10. Fill out maintenance checklist and report deficiencies.	.022			✔	✔	✔
Total Labor-Hours / period				.420	.420	.800
Total Labor-Hours / year				.840	.420	.800
Total Annual Hours						**2.060**

ANNUAL MAINTENANCE BUDGET
(man-hrs)
By Equipment

ELV - 1

PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Elevators, Hydraulic						
1. Ride car, check for any unusual noise or operation	.052		✔	✔	✔	✔
2. In car:						✔
A) inspect and clean fixtures and signal in operating panel and car position and direction indicator.	.103		✔	✔	✔	✔
B) Check operation of emergency lights and bell.	.020		✔	✔	✔	✔
C) Check handrails, ceiling panels and hang on panels for tightness.	.027		✔	✔	✔	✔
D) Check for tripping hazards.	.012		✔	✔	✔	✔
3. Inspect and lubricate rails of hoistway.	.094		✔	✔	✔	✔
4. Hallway corridor:						✔
A) inspect hall buttons, signal lamps, lanterns and hall posistion indicator.	.046		✔	✔	✔	✔
B) inspect starter station, key operation and lamps.	.069		✔	✔	✔	
5. Motor room:						
A) inspect machine room equipment.	.077		✔	✔	✔	
B) lockout and log record.	.022		✔	✔	✔	✔
C) inspect tank oil level.	.012		✔	✔	✔	✔
D) inspect and adjust controller contacts; main operating contactors and switches	.196			✔	✔	✔
E) inspect pump and valve unit for leaks	.051			✔	✔	✔
F) inspect and adjust controller overloads; set timers.	.049					✔
G) tighten connections and clean controller fuses and holders.	.020					✔
H) inspect and lubricate pump motor bearings.	.099					✔
6. Hatch:						✔
A) check hoistway car rails, brackets and fish plates.	.103					✔
B) inspect/lubricate overhead hatch switches and cams.	.070					✔

ANNUAL MAINTENANCE BUDGET
(man-hrs)
By Equipment

ELV - 1

PREVENTATIVE MAINTENANCE COMPONENTS			LABOR-HOURS	W	M	Q	S	A
Elevators, Hydraulic								
		C) inspect/clean/lubricate hatch doors, locks, rollers, tracks, upthrusts, relating cables, racks, sight guards and closers, motors, gear boxes, limit and zone switches.	.096					✔
		D) inspect door gibs and fastening.	.022					✔
		E) inspect/clean/lubricate cab top guides, steading devices, safety switches, inductors, leveling devices, selector tape, switches, hitches and fan motor.	.068					✔
		F) Check travelling cables for wear.	.070					✔
		G) inspect/clean/lubricate door operator roller tracks, upthrusts, related cables, clutch, retiring cam and door gib.	.078					✔
		H) inspect door operator; clean and lubricate chain and belt tension.	.052			✔	✔	✔
		I) inspect door, clean and adjust safety edge, limit ray and cables.	.103			✔	✔	✔
		J) clean and adjust proximity devices on door.	.068			✔	✔	✔
	7.	Inspect pit gland packing.	.010			✔	✔	✔
	8.	Inspect/clean/lubricate under car guides, selector tape, travelling cable, switches and platen plate assembly.	.068					✔
	9.	Clean equipment and surrounding area.	.074		✔	✔	✔	✔
	10.	Fill out maintenance checklist.	.022		✔	✔	✔	✔
		Total Labor-Hours / period			.630	1.110	1.110	1.853
		Total Labor-Hours / year			5.040	2.220	1.110	1.853
		Total Annual Hours						**10.223**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

PNB-1

PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Electrical Panelboard						
1. Check with operating or area personnel for deficiencies.	.066					✔
2. Check for excessive heat, odors, noise, and vibrations	.239					✔
3. Clean and check general condition of panel.	.114					✔
4. Fill out maintenance checklist and report deficiencies..	.022					✔
Total Labor-Hours / period						.441
Total Labor-Hours / year						.441
Total Annual Hours						**0.441**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

EXF-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Exhaust Fans							
1.	Start and stop fan with local switch.	.012				✔	✔
2.	Check motor and fan shaft bearings for noise, vibration, overheating; lubricate bearings.	.325				✔	✔
3.	Check belts for wear, tension, and alignment, if applicable; adjust as required.	.057				✔	✔
4.	Check blower intake dampers, lubricate; if applicable.	.029				✔	✔
5.	Check electrical wiring and connections; tighten loose connections.	.057				✔	✔
6.	Clean fan and surrounding area.	.066				✔	✔
7.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					.568	.568
	Total Labor-Hours / year					.568	.568
	Total Annual Hours						**1.136**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Fan, Axial, up to 5000 CFM							
1.	Start and stop fan with local switch.	.012				✔	✔
2.	Check fan for noise and vibration.	.091				✔	✔
3.	Check electrical wiring and connections; tighten loose connections.	.029				✔	✔
4.	Check motor and fan shaft bearings for noise, vibration, overheating.	.325				✔	✔
5.	Clean area around fan.	.143				✔	✔
6.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					.622	.622
	Total Labor-Hours / year					.622	.622
	Total Annual Hours						**1.244**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
CENTRIFUGAL FAN							
1.	Start and stop fan with local switch.	.012				✔	✔
2.	Check motor and fan shaft bearings for noise, vibration, overheating; lubricate bearings.	.325				✔	✔
3.	Check belts for wear, tension, an alignment, if applicable; adjust as required.	.057				✔	✔
4.	Check blower intake dampers, lubricate; if applicable.	.029				✔	✔
5.	Check electrical wiring and connections; tigthen loose connections.	.029				✔	✔
6.	Clean fan and surrounding area.	.066				✔	✔
7.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					.540	.540
	Total Labor-Hours / year					.540	.540
	Total Annual Hours						**1.080**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

FAS-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Fire Alarm System							
1.	Visually inspect all alarm equipment for obstructions or physical damage, clean dirt and dust from interior of panel/pull boxes, tighten loose connections	.222		✔	✔	✔	✔
2.	Notify cogniant personnel prior to testing	.112		✔	✔	✔	✔
3.	Conduct operational test initiating and signal transmitting devices in populated buildings by building zone/area; for those circuits which do not operate properly, check detectors, control units, and annunciators for dust on defective components; make minor adjustements as required.	.112		✔	✔	✔	✔
4.	Check battery voltages where installed; replace as required	.012		✔	✔	✔	✔
5.	Conduct operational test of 10% of total number of spot type heat detectors and all smoke detectors; for those circuits which do not operate properly, check to determine if problem relates to circuit, device, or control unit, make minor adjustments as required; if detector is defective but no replacement is immediately available, remove detector, re-establish initiating circuit and tag location until a replacement detector is installed.	2.171				✔	✔
6.	Restore system to proper operating condition and notify personnel upon completion of tests	.079		✔	✔	✔	✔
7.	Fill out maintenance checklist and report deficiencies.	.022		✔	✔	✔	✔
	Total Labor-Hours / period			.559	.559	2.73	2.73
	Total Labor-Hours / year			4.472	1.118	2.73	2.73
	Total Annual Hours						**11.050**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
EMERGENCY GENERATOR							
1.	Check with the operating or area personnel for any obvious deficiencies.	.044		✔	✔	✔	✔
2.	Check engine oil leel, add as required.	.010		✔	✔	✔	✔
3.	Change engine oil and oil filter.	.511		✔	✔	✔	✔
4.	Check battery charge and electrolyte specific gravity, add water as required; check terminals for corrosion, clean as required.	.241		✔	✔	✔	✔
5.	Check belts for wear and proper tension; adjust as necessary.	.012		✔	✔	✔	✔
6.	Check that crank case heater is operating.	.038		✔	✔	✔	✔
7.	Check engine air filter; change as required.	.042		✔	✔	✔	✔
8.	Check wiring, connections, switches, etc. Adjust as required.	.036		✔	✔	✔	✔
9.	Check spark plug or injector nozzle condition; service or replace as required.	.281		✔	✔	✔	✔
10.	Perform 30 minute generator test run; check for proper operation.	.650		✔	✔	✔	✔
11.	Check fuel level with gauge pole, add as required.	.046		✔	✔	✔	✔
12.	Wipe dust and dirt from engine and generator	.109		✔	✔	✔	✔
13.	Clean area around generator.	.066		✔	✔	✔	✔
14.	Fill out maintenance checklist and report deficiencies.	.025		✔	✔	✔	✔
	Total Labor-Hours / period			1.277	1.277	1.277	2.111
	Total Labor-Hours / year			10.216	2.554	1.277	2.111
	Total Annual Hours						**16.158**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Heat Exchanger							
1.	Check with operating or area personnel for deficiencies.	.035				✔	✔
2.	Check temperature gauges for proper operating temperatures.	.091				✔	✔
3.	Check steam modulating valve and steam condensate trap for proper operation.	.101				✔	✔
4.	Inspect heat exchanger and adjacent piping for torn or deteriorated insulation.	.147				✔	✔
5.	Clean heat exchanger and surrounding area.	.066				✔	✔
7.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					.462	.462
	Total Labor-Hours / year					.462	.462
	Total Annual Hours						**0.924**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

LTS-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Lighting							
1.	Open and tag switch.	.013				✔	✔
2.	Remove old lamp and clean fixture including reflector, refractor, and globes.	.083				✔	✔
3.	Inspect condition of wiring, contacts, terminals and sockets. Look for evidence of overheating.	.026				✔	✔
4.	Install new lamp and assemble checking gaskets for proper seat.	.013				✔	✔
5.	Test operation of automatic switches.	.013				✔	✔
6.	Inspect lamp standards and mounting devices.	.026				✔	✔
7.	Clean up work area and remove all trash.	.022				✔	✔
	Total Labor-Hours / period					0.074	.074
	Total Labor-Hours / year					0.074	.074
	Total Annual Hours						**0.148**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

MCC-1

PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Motor Control Center, System						
1. Check with operting or area personannel for deficiencies	.044					✔
2. Check starter lights, replace if required	.018					✔
3. Check for excessive heat, odors, noise, and vibration	.239					✔
4. Clean motor control center exterior and surrounding area	.066					✔
5. Fill out maintenance checklist and report deficiencies	.022					✔
Total Labor-Hours / period						.389
Total Labor-Hours / year						.389
Total Annual Hours						**0.389**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Portable Fire Extinguishers							
1.	Check that the extinguisher is in its designated place.	.018		✔	✔	✔	✔
2.	Check that the extinguisher has not been actuated or tampered with.	.022		✔	✔	✔	✔
3.	Check the extinguisher for physical damage or condition that would prevent operation.	.043		✔	✔	✔	✔
	Total Labor-Hours / period			.083	.083	.083	.083
	Total Labor-Hours / year			0.664	0.166	.083	.083
	Total Annual Hours						**0.996**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

PMP-1

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
PUMPS - Heat, Hot Water, Chill Water, Condensor, Domestic Hot Water							
1.	Check with operating or area personnel for deficiencies.	.035				✔	✔
2.	Check for proper operation.	.022				✔	✔
3.	Check for leaks on suction and discharge piping, seals, packing glands, etc.; make minor adjustments as required.	.077				✔	✔
4.	Check pump and motor operation for excessive vibration, noise and overheating.	.022				✔	✔
5.	Check pump controller for proper operation.	.26					✔
6.	Lubricate pumps and motors.	.099				✔	✔
7.	Clean condensate return unit and surrounding area.	.096				✔	✔
8.	Fill out maintenance checklist and report deficiencies	.022				✔	✔
	Total Labor-Hours / period					.633	.633
	Total Labor-Hours / year					.633	.633
	Total Annual Hours						**1.266**

ANNUAL MAINTENANCE BUDGET

R2

(man-hrs)
By Equipment

	PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Roof Inspection							
1.	General Appearance - check for cans, bottles, leaves, rags, and equipment that may have been left from a job on or near the roof. Dispose of appropriately.	.25				✔	✔
2.	Water Tightness - check for presence of leaks, and historical information for leaks during long-continued rain, leaks occurring every rain, etc.	.3				✔	✔
3.	Check exposed nails that have worked loose from seams, shingles and flashings.	.166				✔	✔
4.	Check for wrinkles, bubbles, buckles and sponginess on built up roofing.	.166				✔	✔
5.	Check exposure of bituminous coating due to loose or missing gravel or slag.	.166				✔	✔
6.	Check seams on built up roofing.	.3				✔	✔
7.	Check for water ponding.	.166				✔	✔
8.	Check all flashing for wind damage, loss of bituminous coating, loose seams and edges, damaged caulking and curling, and exposed edges. Check flashing fasteners for looseness and deterioration. Note any fibrous material that might be asbestos. Report information on any asbestos material to the asbestos program.	.166				✔	✔
9.	Inspect all pitch pockets for cracking, proper filling, flashing, and metal damage.	.166				✔	✔
	Total Labor-Hours / period					1.846	1.846
	Total Labor-Hours / year					1.846	1.846
	Total Annual Hours						**3.692**

PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
Steam Humidification Systems						
1. Operate humidistat through its throttling range to verify activation and deactivation.	.117				✔	✔
2. Inspect steam trap for proper operation.	.117				✔	✔
3. Turn off steam supply.	.065				✔	✔
4. Secure electrical service before servicing humidification unit.	.065				✔	✔
5. Clean strainer.	.195				✔	✔
6. Clean and/or replace water/steam nozzles as necessary.	.455				✔	✔
7. Inspect pneumatic controller for air leaks.	.039				✔	✔
8. Inspect steam lines for leaks and corrosion and repair leaks	.195				✔	✔
9. Fill out maintenance checklist and report deficiencies.	.022				✔	✔
Total Labor-Hours / period					1.270	1.270
Total Labor-Hours / year					1.270	1.270
Total Annual hours						**2.540**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Transformers (Dry type)							
1.	Examine the exterior of the transformer for any damage	.06					✔
2.	Remove the covers or open the doors	.196					✔
3.	Check for signs of moisture or overheating	.059					✔
4.	Check for voltage creeping over insulated surfaces, such as evidenced by tracking or carbonization	.018					✔
5.	Check fans, motors and other auxilliary devices for proper operation; where applicable	.049					✔
6.	Check the condition of the ground system	.17					✔
7.	Replace the covers or close the doors	.196					
8.	Fill out maintenance checklist and report deficiencies.	.022					✔
	Total Labor-Hours / period						.77
	Total Labor-Hours / year						.77
	Total Annual hours						**.770**

ANNUAL MAINTENANCE BUDGET

(man-hrs)

By Equipment

UHE-2

	PREVENTATIVE MAINTENANCE COMPONENTS	LABOR-HOURS	W	M	Q	S	A
UNIT HEATER - Wall, Door, Gate and Baggage Door Heater.							
1.	Turn off electrical service to equipment and follow recognized lock out and tag out procedures and safety procedures.	.026				✔	✔
2.	Check appearance and position of fan blades.	.013				✔	✔
3.	Check condition of connections and heater and relay contacts. If contacts appear pitted or burned, replace the contactor/relay.	.254				✔	✔
4.	Check electrical wires and leads for fraying, splicing or inadequate support.	.120				✔	✔
5.	Check for noise and vibration during operation.	.013				✔	✔
6.	Blow out, vacuum or brush out dirt and dust from unit casing, fan and motor. Any rust spots should be cleaned and re-painted.	.120				✔	✔
7.	Clean and adjust magnetick starters, controller, as required.	.052				✔	✔
8.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					0.620	0.620
	Total Labor-Hours / year					0.620	0.620
	Total Annual Hours						**1.240**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
Vacuum Cleaner							
1.	Check with operating or area personnel for deficiencies.	.035				✔	✔
2.	Check for leaks on suction and discharge piping, seals, etc.	.077				✔	✔
3.	Check pump and motor operation for excessive vibration, noise and overheating.	.022				✔	✔
4.	Check alignment and clearances of shaft and coupler.	.260				✔	✔
5.	Tighten or replace loose, missing, or damaged nuts, bolts and screws.	.005				✔	✔
6.	Lubricate pump and motor as required.	.099				✔	✔
7.	Clean pump, motor and surrounding area.	.096				✔	✔
8.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					.616	.616
	Total Labor-Hours / year					.616	.616
	Total Annual Hours						**1.232**

PREVENTATIVE MAINTENANCE COMPONENTS		LABOR-HOURS	W	M	Q	S	A
WATER HEATER UP TO 120 GALLONS							
1.	Check with operating or area personnel for deficiencies	.035				✔	✔
2.	Check for water leaks to tank piping. Check for fuel system leaks.	.077				✔	✔
3.	Check gas burner and pilot for proper flame; adjust if required.	.118				✔	✔
4.	Check operation and condition of pressure relief valve.	.010				✔	✔
5.	Check automatic controls for proper operation (temperature regulators, thermostatic devices, automatic ful shut off valve etc.)	.094				✔	✔
6.	Check draft diverter and cler openings, if clogged.	.027				✔	✔
7.	Check electrical wiring for frayingand loose connections on oil burner.	.072				✔	✔
8.	Check for proper water temperature setting; adjust as required.	.029				✔	✔
9.	Check condition of flue pipe, and chimmney.	.147				✔	✔
10.	Drain sediment from tank.	.325				✔	✔
11.	Clean up area around unit.	.066				✔	✔
12.	Fill out maintenance checklist and report deficiencies.	.022				✔	✔
	Total Labor-Hours / period					0.697	1.022
	Total Labor-Hours / year					0.697	1.022
	Total Annual Hours						**1.719**