Facility Condition Assessment Summary Report

This report provides a summary of the Facility Condition Index (FCI) value of a school facility and select major building systems. The FCI calculation represents the cost of needed repairs divided by the replacement value. The FCI is a numerical value of condition and helps to identify the need for renewal or replacement of specific parts of the facility. The FCI is particularly useful when comparing similar facilities within the same portfolio.

Peirce, TM School

Governance	DISTRICT	Report Type	Elementary
Address	2300 W. Cambria St.	Enrollment	488
	Philadelphia, Pa 19132	Grade Range	'00-06'
Phone/Fax	215-227-4411 / 215-227-4599	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Tmpeirce	Turnaround Model	N/A

Building/System FCI Tiers

Facility Condition Index (FCI) = Cost of Assessed Deficiencies / Replacement Value

< 15%	15 to 25%	25 to 45%	45 to 60%	> 60%
Buildings				
Minimal Current Capital Funding Required	Refurbish Systems in building	Replace Systems in building.	Building should be considered for major renovation.	Building should be considered for closing/replacement.
Systems				
Perform routine maintenance on system	System requires minor repairs	System should be studied to determine repair vs. replacement.	System is nearing end of its life expectancy and should be considered for replacement	System should be replaced as part of the Capital Program

Building and Grounds

	FCI	Repair Costs	Replacement Cost
Overall	**61.04%**	**$18,843,451**	**$30,870,406**
Building	62.02 %	$18,843,451	$30,380,560
Grounds	00.00 %	$0	$489,846

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	89.59 %	$508,230	$567,300
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$2,288,420
Windows (Shows functionality of exterior windows)	123.13 %	$1,374,852	$1,116,620
Exterior Doors (Shows condition of exterior doors)	180.11 %	$161,922	$89,900
Interior Doors (Classroom doors)	241.14 %	$524,765	$217,620
Interior Walls (Paint and Finishes)	34.49 %	$338,694	$982,080
Plumbing Fixtures	05.43 %	$45,475	$838,240
Boilers	37.09 %	$429,293	$1,157,540
Chillers/Cooling Towers	65.60 %	$995,696	$1,517,760
Radiators/Unit Ventilators/HVAC	143.01 %	$3,811,868	$2,665,380
Heating/Cooling Controls	158.90 %	$1,330,032	$837,000
Electrical Service and Distribution	157.18 %	$945,292	$601,400
Lighting	55.71 %	$1,197,763	$2,150,160
Communications and Security (Cameras, Pa System and Fire Alarm)	55.80 %	$449,430	$805,380

Please note that some FCIs may be over 100% because there are times when replacing a building system requires that other building systems be upgraded to complete the installation. A FCI of 0.0% represents that there are no current deficiencies with the associated system.

School District of Philadelphia

S438001;Peirce, T M

Final

Site Assessment Report

January 30, 2017

PARSONS

Table of Contents

Site Executive Summary

The organization of this report, as displayed in the Table of Contents, follows the structure of the associated eCOMET database. The overall node for each school campus begins with the letter "S", which indicates the "Site" label. Each Site is comprised of separate "Building" and "Grounds" nodes; their asset names begin with the letters "B" and "G" respectively. Information rolls up to the Site node from the Building and Grounds nodes. This Site report combines facility information with subsections for the Buildings And Grounds nodes.

The basis for the evaluation of condition is the functional systems and elements of a building and grounds organized according to the UNIFORMAT II Elemental Classification. The grouping of these systems and elements and applying a current replacement value to them develops a representative building cost model. Cost Models are typically developed for similar building types and functions. Evaluation of systems and their elements takes into account their current replacement values, life cycles, installation dates and next renewal dates. Systems and their elements that are within their useful lives are further evaluated to identify current deficient conditions that may have a significant impact on a system's or element's remaining service life, and to determine if they are beyond their predicted expected life. The system's or element's current replacement value is based on RS Means Commercial Cost Data.

Following are the cost model's system details for this facility. The Replacement Value is the amount needed to replace the property of the same present value. The Current Repair Amount, also known as Condition Needs, represents the budgeted contractor installed costs plus owner's soft costs for the repair, replacement or renewal for a component or system level deficiency. It excludes contributing costs for other components or systems that might also be associated with the corrective actions due to packaging the work. Facility Condition Index (FCI) is an industry-standard measurement calculated as the ratio of the repair costs to correct a facility's deficiencies to the facility's Current Replacement Value. Condition Index (CI) for a system is calculated as the sum of a the deficiencies divided by the sum of a system's Replacement Value (both values include soft-cost) expressed as a percentage ranging from 0% 100%.

Gross Area (SF):	62,000
Year Built:	1908
Last Renovation:	
Replacement Value:	$30,870,406
Repair Cost:	$18,843,450.88
Total FCI:	61.04 %
Total RSLI:	61.67 %

Description:

Facility Assessment

December 2015

School District of Philadelphia

T M Peirce Elementary School

2300 W Cambria St.

Philadelphia, PA 19132

62,000 SF / 656 Students / LN 04

GENERAL

The Peirce School is one of the older schools in service to the Philadelphia communities and has a dedication plaque to the name sake

Thomas May Peirce in the hallway. This school is identified as B438001. This facility is located at 2300 W Cambria St, Philadelphia, PA. The late Gothic Revival design of the rectangular-shaped, concrete and steel-framed building includes brick facades with a concrete foundation. Constructed in 1908 the school has had no additions.

The main entrance faces the Northern exterior facing the drop off drive area on North Twenty-third. There is no general parking and street side parking is limited. This School serves students in grades K to 6 and has a basement with three stories consisting of a total gross square footage of 62,000 GSF.

This school has several classrooms, a library, (Hasty) kitchen and student commons, a Mini Gym, and a cafeteria modified from two existing classrooms, with supporting administrative spaces.

The information for this report was collected during a site visit on December 4, 2015.

Mr. Larry Dabney, Building Engineer, accompanied the assessment team on a tour of the school and provided detailed information on the building systems and maintenance history. Mr. Anthony Gordon, Principal, also shared information about the school with the assessment team.

Architectural / Structural Systems

Foundations are concrete and appear to be in good condition. The superstructure is concrete and steel framed with masonry support and likewise in good condition. Basement walls are concrete and brick that appear to be in good condition. The superstructure is steel and masonry constructed. Floor construction is concrete.

During the time of the inspection the exterior walls were under renovation for a completed point and tuck effort. With this in mind there are no recommendations required at this time for the exterior walls.

Exterior windows are a mix of single pane industrial grade metal and aluminum framed single pane windows. Windows are in good to poor condition based on the year of installation or last renovation. The single pane metal-framed, double hung windows have been replaced in the last twenty years. The original steel-framed, multi-light windows are original have exceeded their useful service life. The exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features. This universal upgrade is expected to be completed as part of an overall renovation effort to eliminate dual efforts.

The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. The doors are in fair condition but are aging at a faster rate than expected based on traffic and condition. The exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

Special consideration for those that may be physically challenged was not a main factor in the construction of this school. Currently there are no compliant entrances at grade. The path of travel is clear from this access points as the interior path of travel is limited by the lack of interior ramps, elevator, compliant signage, restrooms amities, compliant door hardware, hand rails and guard rails to meet the needs of the physically challenged.

There are a number of roof sections and different roof elevations ranging from the main roof to the mechanical roof. The built up application was reported to have been installed in the early 1990'S. Considering the age and condition of the roofing systems, universal upgrades are recommended.

Interior partitions include CMU, glazed block, plaster, moveable partitions, and glazed openings.

The stair and corridor doors were compliant during the time of the construction of the school in 1908. However a large portion of the interior corridor exit stair doors are not code compliant. Several doors are typically metal in metal frames with transom lites or sidelights, glass glazing. The older doors are generally in poor condition considering the age of the application. To restore the door finishes, universal upgrades are required for the older door applications. Remove and replace original corridor door systems with new code compliant fire rated door system.

There are several transom lites and sidelights constructed into hallway wall systems. It is recommended that the lites and sidelights be removed and replaced with a fire rated wall construction. The deficiency provides a budgetary consideration to correct the hallway, transoms, lites and sidelights.

There are several movable partitions that remain in classrooms. These wall systems are no longer used and in most cases cannot be used due to damage or wall modifications to support classroom needs. This deficiency provides a budgetary consideration to remove and replace the wall systems with universal removal of the existing movable partitions and upgrades to a permeate wall systems.

Interior doors are typically wood in wood frames with transom lites, sidelights, wired glass glazing. Other interior doors include wooden glass pane doors with original wooden pane frames, hollow metal in hollow metal frames at stairwells and exit ways. Doors are generally in poor condition considering the age of the application. Universal upgrades are required for the interior door systems it is recommended that the interior doors system be removed and replaced with a new modern metal framed hollow metal door system with consideration for ADA compliance.

Fittings include: chalkboards; marker boards; tack boards; interior signage; metal lockers; toilet accessories and wood/metal/marble toilet partitions; fixed storage shelving.

There are several tack boards in the hallways for student displays. The systems are damaged and beyond the expected service life for this application. Remove and replace tack boards is recommended.

There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

Some of the classroom chalk boards are original to the buildings construction. This system is damaged and beyond its expected life, universal upgrades are warranted. Remove and upgrade damaged chalk boards to new marker board systems.

There are student restrooms on each floor that appear to be original with original fixtures. Each restroom is limited by the design of the time that did not include options for those that may be physically challenged. These restrooms warrant unique renovations to restore the systems to modern operations options and service to the school. Accessibility legislation requires that goods, amenities, and services offered in buildings, such as restrooms, be generally accessible to all people. There are no compliant restrooms located in this school. A unisex, compliant restroom should be added on each of the floors. Recommended modifications include the construction of new single occupancy restrooms in existing academic areas to accommodate requirements. This involves adding two new partitions to enclose 50 square feet of area and installing a door with hardware, ceramic tile and plaster surfaces, suspended ceilings, plumbing fixtures, electrical fixtures, piping, HVAC equipment, and accessories for each new restroom. Also, the renovation of the existing restrooms and modification to new layouts and floor plans to support modern designs and requirements for ADA legislation.

Stair construction is concrete. Stair treads and landings are finished with concrete. Current requirements for stairs indicate that they have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future efforts should include comprehensive stair railing removal and replacement upgrades.

There are painted walls, trim, brick and some painted ceilings in this building. In sections of the building, some textured concrete surfaces have been painted while in the new section they are not. The interior finishes are in fair to poor condition and will require an almost continuous program of renewal of the applied finishes to maintain an acceptable appearance. Cyclical painting should be considered for a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Repairs should be completed before work begins. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts.

There are painted walls, trim, brick and some painted ceilings in this building. Sections of the building, some textured concrete surfaces have been painted while in the new section they are not. The interior finishes are in fair to poor condition and will require an almost continuous program of renewal of the applied finishes to maintain an acceptable appearance. Cyclical painting should be considered for a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Repairs should be completed before work begins. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts.

The floor finish for this school is a combination of newly installed carpet in the IMC and administrative area, tile in the kitchen and service line areas, wooden classrooms with concrete hallways and vinyl stirs finishes and a 12x12 and 9x9 vinyl tile finish. The vinyl tile finish is a 9 x 9 application and is suspect to contain asbestos. The 9x9 vinyl finish is recommended for upgrade to a new 12 x 12

vinyl tile application. Suspected asbestos containing materials (ACM) are believed to be limited to the original vinyl floor tile and mastic. While currently sound and manageable in place, future renovation efforts should include provision to test and abate any and all ACM.

The classrooms and auditorium in this school have a wooden floor finish that appears to be from original construction. The system is showing signs of age such as the effects of sanding and refinishing with yearly cleaning and waxing with some repairs. The floor finish is in fair condition however, the finish is beyond its expected life cycle. It is recommended that the damaged wood floor finish be removed and replaced with an in kind finish.

The ceiling finish is a mix of 12 x 12 ceiling grid, painted and 2 x 4 Acoustical tile finish. Ceilings have been repaired in several areas and are in good condition considering the age of the application and the current condition of the school. The ceiling finish is expected to require upgrades to support the recommended efforts in this report prior to re-opening. This deficiency provides a budgetary consideration for removal and replacement of the current ceiling finish to a new acoustical tile finish. Considering the recommended mechanical and electrical upgrades this effort should be completed as part of an overall renewal program for the school. No work should be considered until after the recommended exterior efforts are complete.

There is no elevator that services this school. Goods, services, and amenities offered in public buildings are generally required to be available to all persons. To assist those that may be physically challenged and to meet current accessibility legislation to provide wheelchair access to the upper floors of this facility, the installation of a new hydraulic elevator has been recommended on the exterior elevation of the building or at another suitable location. The new installation should blend as much as possible with the overall appearance of this historic structure and include all required ADA features, such as audible jewels and gongs, an accessible control panel, etc.

Institutional equipment includes: library equipment; instrumental equipment; A/V equipment; and gym equipment – basketball backstops. Other equipment includes kitchen equipment; loading dock bumpers.

During the time of the inspection it was noted that the kitchen construction was in the basement main hallway. This hasty kitchen provides an obstruction to the egress path and care should be taken to consider constructing an exterior area for the kitchen as to not block egress.

Furnishings include: fixed casework and window shades. There were no issues that surfaced during the time of the inspection; therefore no recommendations are required at this time.

MECHANICAL SYSTEMS

PLUMBING- Plumbing fixtures are standard china commercial quality with wall mounted lavatories, urinals and water closets. Lavatories have dual wheel handle faucets and urinals and water closets have recessed manual flush valves with lever operators. Custodial areas have cast iron service sinks or mop basins. Drinking fountains are china with no refrigeration. Water is heated by one Bradford White seventy five gallon gas water heater in the basement mechanical room with a small inline circulating pump, installed in 2012. A duplex sump pump in the mechanical room removes ground water. The mechanical room contains an abandoned pressure booster system with two pumps and a storage tank.

Water piping has been replaced since the original installation but may contain lead solder based on age. Sanitary, waste, vent and rainwater piping is original installation hub and spigot cast iron. The building water service is a four inch line into the mechanical room. Gas service is a six inch line and meter with a pressure boost unit located in the mechanical room. Gas piping is welded black steel. Gas and water service are connected at W. Cambria St.

The cast iron piping has exceeded the anticipated service life. Rainwater and vent piping should continue functioning, but the sanitary and waste piping should be inspected to determine condition and replace damaged portions. Plumbing fixtures except the corridor drinking fountains appear to have been replaced within the past ten years and should be serviceable twenty five more years. The domestic water supply piping should be replaced based on age.

HVAC-Heating is generated by two HB Smith Mills 450 one hundred ten hp sectional cast iron low pressure steam boilers in the basement mechanical room. The boilers are gas/ oil fired with Power Flame burners with separate oil pumps, installed in 1988. One boiler is inoperable with damaged breeching pulled away from the unit. There is a Shipco boiler feed pump/ condensate receiver with three 1 hp pumps. A chemical feed system treats make up water. There are combustion air louvers with dampers and a field fabricated boiler vent into a brick chimney. Oil is stored in a twelve thousand gallon underground tank. A duplex fuel oil pump system in an adjacent room provides circulation. Fuel oil piping is galvanized steel with screwed fittings.

The building is heated by steam radiators. Piping is insulated welded black steel. Two built up house fan systems in the basement provide heat and ventilation through central ductwork and vertical shafts. One of the systems is inoperable. There are three small cafeteria areas and a small gymnasium. There are no radiators in most classrooms. Heat is provided in the corridors and by the house fan systems.

There is no central air conditioning. Some areas have window air conditioners and the IT room has a ductless split system. There is no kitchen hood or cooking equipment, and no mechanical toilet exhaust.

There are older pneumatic controls with a control air compressor in the mechanical room but no digital controls or building automation system.

The steam system including piping and radiators is from the original construction and has exceeded the service life. The boiler feed system is in bad condition and should be replaced. The boilers have signs of age but should remain serviceable ten more years.

FIRE PROTECTION - There is no fire protection system in this building.

ELECTRICAL SYSTEMS

Electrical Service-- The building is served by PECO Energy Company with an overhead 120/240V, 2 phase, 5 wire service drop to a weatherhead on the east side of the Visitor Entrance. Service is routed to a 600A, fused main service disconnecting means in Basement Mechanical Room B11 via a current transformer cabinet with electric meter. The main switch feeds a 400A knife blade fusible panelboard and a 75 kVA phase change transformer that supplies 225A, 208/120V, 3 phase, 4 wire Panelboard BR. There is also a 200A safety switch and 50 kVA, 240V, 2 to 3 phase change transformer that serves the convection oven. The 400A panelboard also feeds a total of (15) 120/240V panelboards in the building. All of this distribution system equipment is beyond its useful service life. Replacement is recommended within 2 to 3 years.

Since the electrical distribution system does not have adequate capacity to supply central air conditioning equipment if the system was added to the building, or the addition of a hydraulic elevator, a 750 kVA, 13.2 kV-208/120V, 3 phase, 4 wire load center unit substation with 2500A main switchboard, should be considered, and located in Mechanical Room 011 in the Basement. The switchboard would feed all panelboards in the building. The 75 kVA and 50 kVA phase change transformers would no longer be necessary.

Receptacles-- Most of the classrooms are provided with only a few duplex receptacles, which is not adequate for today's classroom. An additional 6 to 8 duplex receptacles should be provided in each of the 35 classrooms using a surface metal raceway system. Replacement of all duplex receptacles in the building is included in this report due to their age and condition (estimate 124 duplex receptacles to be replaced).

Lighting--Most of the fluorescent lighting fixtures in the building are 2x4 recessed fluorescent grid troffers with acrylic prismatic lenses and T12 lamps, including classrooms, IMC, corridors, offices and support rooms. Classrooms have two wall switches for controlling lighting fixtures. Mechanical spaces typically have 4 foot industrial fluorescent fixtures. Lighting fixtures in the Basement corridor, gymnasiums, restrooms and stairwells are surface or stem mounted 4 foot fluorescent wraparound fixtures with acrylic lenses and (2) T12 lamps. Both Lunchrooms A and B have T8 lamps and are in good condition.

Exterior floodlighting fixtures are located at the roof level around the perimeter of the building. Fixtures appear to be in good condition with a remaining life extending beyond this report. There are no lighting fixtures above the doors at the exit discharges.

Fire Alarm System-- The fire alarm system is an obsolete 120V wired system that includes only manual pull stations and bell notification appliances. The fire alarm control panel (FACP) is by S.H. Couch Company, and is located in the Basement. Pull station mounting heights exceed ADA requirements. There are no visual notification appliances in the building. A Simplex 4001 FACP was added in the Boy's Restroom in the Basement, but does not comply with current code. The entire fire alarm system needs to be replaced with an addressable type to meet current NFPA codes and ADA requirements.

Telephone/LAN--The telephone distribution system is located in the Main Distribution Frame Room 015A. A data outlet and telephone is provided in each classroom. Wireless access points are provided in classrooms, gymnasium and lunchrooms for Wi-Fi service throughout the entire school.

Intercom/Paging/Sound Systems-- The paging system is accessed through the telephone system. A paging amplifier is located in MDF Room 015A to provide paging interface with the telephone system. Each classroom has a wall mounted clock speaker assembly and a ceiling recessed paging speaker. There are also ceiling recessed ceiling speakers in the corridors. The obsolete wall mounted speakers

have been abandoned in place. This system appears to be in good condition with an estimated remaining life extending beyond this report. An Aiphone intercom station is located at the Visitor Entrance.

Clock and Program System--The Simplex Master Time Clock system is located in Room 012A. Wall mounted clock/speaker assemblies and ceiling recessed speakers are provided in the building for paging and program. The clock system has reached the end of its useful service life and needs to be replaced within the next 3 to 4 years. It is recommended that all clocks be replaced with battery operated synchronized clocks controlled by a wireless GPS master clock system.

Television System-- There is no television system in this school.

Video Surveillance and Security Systems-- There are a total of 16 video surveillance cameras, including three (3) exterior cameras. The video surveillance equipment cabinet with monitor and digital video recorder (DVR) is located in Room 011. There is also one monitor located in the Main Office. Cameras are located in corridors and stairwells. There are no recommendations at this time.

Exterior and stairwell doors are provided with magnetic door contacts. Security motion sensors are located in the corridors at stairwells. A security keypad is located at one of the doors to arm/disarm the system.

Emergency Power System-- There is no standby generator in this building. This report includes adding a standby generator system with capacity to power egress lighting and exit signs and a hydraulic elevator addition.

Emergency Lighting System / Exit Lighting-- Emergency egress lighting is provided by wall mounted, battery-operated emergency lighting units (ELUs). The number and spacing of the ELUs is not adequate to provide at least a 1 footcandle illumination level at the floor in the path of egress, as required by NFPA 101, Life Safety Code, Article 7.8. There is no emergency lighting in the gymnasiums, lunchrooms and in some corridors. Additional ELUs would be needed to meet the minimum illumination level in the path of egress. Consideration should be given to supplying emergency egress lighting fixtures using a standby generator system. In the interim, additional ELUs should be provided within the next year.

Exit signs are provided with battery backup. Exit signs are in good condition and have a remaining life extending beyond this report. Exit signs should be connected to the emergency power source when a standby generator is provided.

Lightning Protection System-- A lightning protection system was being installed with the new roofing project at the time of this assessment.

Conveying Systems-- The building does not have an elevator. Refer to Architectural / Structural Systems narrative for elevator recommendations.

GROUNDS

This is a very limited urban site with no landscaping or parking. The sidewak system is on a continuous program of renewal and it was reported that approximately 200 gsf of sidewalk is replaced on a yearly basis. No recommendations are warranted at this time for the sidewalk, paving or landscaping at this time.

The side was a construction zone during the inspection as the point and tuck work was well under way. The existing picket fence system that surround the school appeared to be in good condition and it was reported that the fence has an existing project funded to repair minor areas and repaint the finish. No recommendations are required at this time.

The trash dumpster is located near the southwestern fence open to the students and to the public. The exterior services are not protected. Upgrades to protect the exterior services and trash area are recommended.

Site Lighting-- Site lighting is provided by HID floodlighting fixtures mounted at the roof level on the north, east and south sides of the building. There are no building mounted floodlighting fixtures along N. Twenty-Third Street. Exterior lighting fixtures appear to be in good condition. There are no recommendations at this time.

Site video surveillance system-- There are three (3) exterior cameras located on the building that provide video surveillance coverage of the north, east and south sides of the building. The cameras appear to be in good condition; the age of the cameras is not known. There are no recommendations at this time.

RECOMMENDATIONS

- Upgrade Exterior doors
- Upgrade Exterior windows
- Upgrade Roof
- Upgrade fire doors
- Build fire wall system
- Upgrade interior doors
- Remove and replace movable partitions
- Remove and replace tack boards
- Remove and replace chalk boards
- Remove and replace signage
- Upgrade stair hand rails
- Paint and repair interior wall finish
- Remove and replace wood floor finish
- Remove and replace vinyl floor finish
- Repair and replace ceiling finish
- Install elevator
- Restroom renovations
- Construct dumpster enclosure
- Provide a one hundred eighty ton chilled water system with air cooled package chiller on the roof with pumps, piping and controls. Connect to new air handling units and fan coil units.
- Install NFPA wet pipe automatic sprinkler system in entire building, including fire service, piping sprinkler heads, standpipes and fire pump if required.
- Inspect old cast iron sanitary piping including camera observation and replace damaged sections.
- Replace domestic water supply piping with new insulated rigid copper tubing with valves, fittings and hangers.
- Install new direct digital control system and building automation system with remote computer control capability and graphics package.
- Replace older china drinking fountains in corridors.
- Provide mechanical toilet exhaust systems in rest rooms with fans, louvers, ductwork and grills. Include controls and electrical connections.
- Replace inoperable damaged boiler with new similar unit.
- Provide a four pipe fan coil system with roof mounted outside air system ducted to each fan coil unit. Provide a fan coil unit for each classroom and separate area. Include new heat exchanger, pumps for hot water, piping, control valves and controls, to replace steam heating system.
- Replace boiler feed /condensate return system.
- Remove the 400A, 120/240V, 2 phase, 5 wire service disconnecting means, metering cabinet, 400A main panelboard, and 75 kVA and 50 kVA phase change transformers and provide a 750 kVA load center unit substation with 2500A, 208/120V, 3 phase, 4 wire main switchboard with main circuit breaker and feeder circuit breakers to serve the existing building loads, and capacity to serve central air conditioning equipment, an elevator addition, and a fire pump (if required).
- Replace 225A Panelboard BR in Boiler Room B14 and (15) 120/240V panelboards in the building, including their feeder conductors. Panelboards are to be rated 208/120V, 3 phase, 4 wire and sized with adequate branch circuit breakers for additional receptacle circuits for classrooms.
- Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 35 classrooms.
- Replace all existing duplex receptacles throughout the building with new devices due to their age and condition (estimate 124 duplex receptacles to be replaced).
- Replace fluorescent lighting systems and branch circuit wiring throughout the building (classrooms and IMC 24,900 SF; Administration, Support, Restrooms, Dining and Circulation 27,540 SF; Gymnasiums 1,577 SF; Mechanical and storage 5,127 SF).
- Add a LED lighting fixture, wired on emergency power, above door at each exit discharge (total of 6 fixtures).
- Replace fire alarm system with an addressable type system meeting current NFPA Codes and ADA requirements.
- Remove all clocks and provide wireless GPS master clock system with battery operated synchronized clocks.
- Provide a standby power system, including generator, automatic transfer switches and panelboard. Size generator to supply all emergency egress and exit lighting, with capacity for a hydraulic elevator addition (estimated size is 100 kW).
- If a standby power system is not provided in the school as a severe priority, then provide emergency lighting units (ELUs) in all corridors, gymnasiums, lunchrooms, restrooms and IMC as an interim solution to meet NFPA 101 Life Safety Code for emergency lighting (estimate 43 ELUs).

Site Assessment Report - S438001;Peirce, T M

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 5 / Tm 1
Status:	Accepted by SDP	Team:	Tm 1
Site ID:	S438001		

Site Condition Summary

The Table below shows the CI and FCI for each major system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

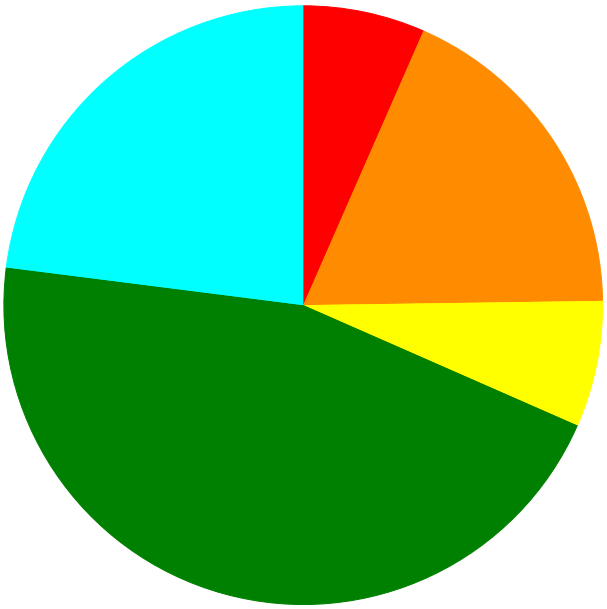
Current Investment Requirement and Condition by Uniformat Classification

UNIFORMAT Classification	RSLI%	FCI %	Current Repair
A10 - Foundations	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	35.05 %	43.97 %	$1,536,773.67
B30 - Roofing	60.00 %	89.59 %	$508,230.16
C10 - Interior Construction	35.11 %	127.81 %	$1,944,563.88
C20 - Stairs	37.00 %	347.69 %	$303,953.04
C30 - Interior Finishes	66.11 %	78.67 %	$2,591,554.05
D10 - Conveying	105.71 %	325.34 %	$1,012,601.25
D20 - Plumbing	75.30 %	52.43 %	$663,808.33
D30 - HVAC	82.40 %	95.22 %	$6,566,889.31
D40 - Fire Protection	92.47 %	177.49 %	$886,936.25
D50 - Electrical	107.16 %	77.60 %	$2,828,140.94
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	0.00 %	$0.00
G20 - Site Improvements	34.71 %	0.00 %	$0.00
G40 - Site Electrical Utilities	40.00 %	0.00 %	$0.00
Totals:	**61.67 %**	**61.04 %**	**$18,843,450.88**

Condition Deficiency Priority

Facility Name	Gross Area (S.F.)	FCI %	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)
B438001;Peirce, T M	62,000	62.02	$1,239,198.14	$3,429,089.92	$1,283,414.08	$8,559,592.33	$4,332,156.41
G438001;Grounds	21,800	0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total:		**61.04**	**$1,239,198.14**	**$3,429,089.92**	**$1,283,414.08**	**$8,559,592.33**	**$4,332,156.41**

Deficiencies By Priority



- 1 - Response Time (< 2 yr) - $1,239,198.14
- 2 - Response Time (2-3 yrs) - $3,429,089.92
- 3 - Response Time (3-4 yrs) - $1,283,414.08
- 4 - Response Time (4-5 yrs) - $8,559,592.33
- 5 - Response Time (> 5 yrs) - $4,332,156.41

Budget Estimate Total: $18,843,450.88

Executive Summary

Building condition is evaluated based on the functional systems and elements of a building and organized according to the UNIFORMAT II Elemental Classification. The grouping of these systems and elements and applying a current replacement value to them develops a representative building cost model. Cost Models are developed for similar building types and functions. Systems and their elements are evaluated based on their current replacement values, life cycles, installation dates and next renewal dates. Systems and their elements that are within their useful lives are further evaluated to identify current deficient conditions that may have a significant impact on a system's or element's remaining service life, and to determine if they are beyond their predicted expected life. The system's or element's current replacement value is based on RS Means Commercial Cost Data.

Following are the cost model's system details for this facility. The Replacement Value is the amount needed to replace the property of the same present value. The Current Repair Amount, also known as Condition Needs, represents the budgeted contractor installed costs plus owner's soft costs for the repair, replacement or renewal for a component or system level deficiency. It excludes contributing costs for other components or systems that might also be associated with the corrective actions due to packaging the work. Facility Condition Index (FCI) FCI is an industry-standard measurement of facility condition calculated as the ratio of the costs to correct a facility's deficiencies to the facility's Current Replacement Value. It ranges from 0% (new) to 100% (very poor). Condition Index (CI) is calculated as the sum of a renewable system's Remaining Service Life (RSL) divided by the sum of a system's Replacement Value (both values exclude soft-cost to simplify calculation updates) expressed as a percentage ranging from 100% (new) to 0% (expired).

Function:	Elementary School
Gross Area (SF):	62,000
Year Built:	1908
Last Renovation:	
Replacement Value:	$30,380,560
Repair Cost:	$18,843,450.88
Total FCI:	62.02 %
Total RSLI:	62.08 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B438001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S438001		

Condition Summary

The Table below shows the CI and FCI for each major building system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
A10 - Foundations	37.00 %	0.00 %	$0.00
A20 - Basement Construction	37.00 %	0.00 %	$0.00
B10 - Superstructure	37.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	35.05 %	43.97 %	$1,536,773.67
B30 - Roofing	60.00 %	89.59 %	$508,230.16
C10 - Interior Construction	35.11 %	127.81 %	$1,944,563.88
C20 - Stairs	37.00 %	347.69 %	$303,953.04
C30 - Interior Finishes	66.11 %	78.67 %	$2,591,554.05
D10 - Conveying	105.71 %	325.34 %	$1,012,601.25
D20 - Plumbing	75.30 %	52.43 %	$663,808.33
D30 - HVAC	82.40 %	95.22 %	$6,566,889.31
D40 - Fire Protection	92.47 %	177.49 %	$886,936.25
D50 - Electrical	107.16 %	77.60 %	$2,828,140.94
E10 - Equipment	34.29 %	0.00 %	$0.00
E20 - Furnishings	30.00 %	0.00 %	$0.00
Totals:	**62.08 %**	**62.02 %**	**$18,843,450.88**

Condition Detail

This section of the report contains results of the Facility Condition Assessment. The building is separated into system components based on UNIFORMAT II classification. The columns in the System Listing table below represent the following:

1. System Code: A code that identifies the system.
2. System Description: A brief description of a system present in the building.
3. Unit Price $: The unit price of the system.
4. UoM: The unit of measure for of the system.
5. Qty: The quantity for the system
6. Life: anticipated service life for thesystem based on Building Owners and Managers Association (BOMA) recommendations.
7. Year Installed: The date of system installation.
8. Calc Next Renewal Year: The date of system expiration based on the life, NR stands for non renewable.
9. Next Renewal Year: The suggested system expiration date by the assessor based on visual inspection.
10. CI: The Condition Index of the system.
11. FCI: The Facility Condition Index of the system.
12. RSL: Remaining Service Life.
13. eCR: eCOMET Condition Rating (not used).
14. Deficiency $: The financial investment to repair/replace system.

System Listing

The System Listing table below lists each of the systems organized by their UNIFORMAT II classification. The assessment team was tasked with recording the most recent replacement year of each system, determining the remaining service life based on the theoretical life, and evaluating the condition to confirm the forecast next replacement year. The system listing is the basis for all data contained in the Building Assessment Report.

Additionally, a condition rating (eCR) based on the following guidelines is provided as observed at the time of the assessment.

- Excellent (E) - No noticeable distress or damage. The entire system is free from observable defect.
- Very Good (VG) - Overall no serviceability reduction for the entire system. No degradation of critical components and minor distress and defect noticeable for some but not non critical components within the system.
- Good (G) - Slight or no serviceability reduction for the entire system. There may be noticeable defects for some non critical components and slight noticeable degradation of the critical components.
- Fair (F) - Overall serviceability is degraded but adequate. There may be moderate deterioration for very few of the critical components and few of the non critical components may have severe degradation.
- Marginal (MA) - Overall serviceability and reliability loss. Most if not all of the non critical components suffer from severe degradation and a few of the critical component may have severe degradation.
- Moderate (MO) - Overall a significant serviceability loss. Most if not all the components have severe degradation with the reminder of the component showing visible distress.
- Very Poor (VP) - Overall the system is barely functional. All of the components are severely degraded.
- Non-Functional (NF) - Overall the system does not function with all the components having no serviceability and suffer from severe degradation.

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	62,000	100	1908	2008	2052	37.00 %	0.00 %	37			$1,140,800
A1030	Slab on Grade	$7.73	S.F.	62,000	100	1908	2008	2052	37.00 %	0.00 %	37			$479,260
A2010	Basement Excavation	$6.55	S.F.	62,000	100	1908	2008	2052	37.00 %	0.00 %	37			$406,100
A2020	Basement Walls	$12.70	S.F.	62,000	100	1908	2008	2052	37.00 %	0.00 %	37			$787,400
B1010	Floor Construction	$75.10	S.F.	62,000	100	1908	2008	2052	37.00 %	0.00 %	37			$4,656,200
B1020	Roof Construction	$13.88	S.F.	15,000	100	1908	2008	2052	37.00 %	0.00 %	37			$208,200
B2010	Exterior Walls	$36.91	S.F.	62,000	100	1908	2008	2052	37.00 %	0.00 %	37			$2,288,420
B2020	Exterior Windows	$18.01	S.F.	62,000	40	1908	1948	2027	30.00 %	123.13 %	12		$1,374,852.06	$1,116,620
B2030	Exterior Doors	$1.45	S.F.	62,000	25	1908	1933	2027	48.00 %	180.11 %	12		$161,921.61	$89,900
B3010105	Built-Up	$37.76	S.F.	15,000	20	1990	2010	2027	60.00 %	89.73 %	12		$508,230.16	$566,400
B3020	Roof Openings	$0.06	S.F.	15,000	20	1990	2010	2027	60.00 %	0.00 %	12			$900
C1010	Partitions	$17.91	S.F.	62,000	100	1908	2008	2052	37.00 %	117.43 %	37		$1,303,946.09	$1,110,420
C1020	Interior Doors	$3.51	S.F.	62,000	40	1908	1948	2027	30.00 %	241.14 %	12		$524,764.58	$217,620
C1030	Fittings	$3.12	S.F.	62,000	40	1908	1948	2027	30.00 %	59.89 %	12		$115,853.21	$193,440
C2010	Stair Construction	$1.41	S.F.	62,000	100	1908	2008	2052	37.00 %	347.69 %	37		$303,953.04	$87,420
C3010230	Paint & Covering	$13.21	S.F.	62,000	10	1908	1918	2027	120.00 %	41.35 %	12		$338,693.85	$819,020
C3010232	Wall Tile	$2.63	S.F.	62,000	30	1908	1938	2027	40.00 %	0.00 %	12			$163,060
C3020411	Carpet	$7.30	S.F.	2,000	10	1908	1918	2027	120.00 %	0.00 %	12			$14,600

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System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3020413	Vinyl Flooring	$9.68	S.F.	10,000	20	1908	1928	2027	60.00 %	156.68 %	12		$151,666.68	$96,800
C3020414	Wood Flooring	$22.27	S.F.	40,000	25	1908	1933	2027	48.00 %	130.90 %	12		$1,166,082.84	$890,800
C3020415	Concrete Floor Finishes	$0.97	S.F.	10,000	50	1908	1958	2027	24.00 %	0.00 %	12			$9,700
C3030	Ceiling Finishes	$20.97	S.F.	62,000	25	1908	1933	2027	48.00 %	71.92 %	12		$935,110.68	$1,300,140
D1010	Elevators and Lifts	$5.02	S.F.	62,000	35	1908	1943	2052	105.71 %	325.34 %	37		$1,012,601.25	$311,240
D2010	Plumbing Fixtures	$13.52	S.F.	62,000	35	2005	2040		71.43 %	5.43 %	25		$45,475.14	$838,240
D2020	Domestic Water Distribution	$1.68	S.F.	62,000	25	1908	1933	2042	108.00 %	301.63 %	27		$314,176.68	$104,160
D2030	Sanitary Waste	$2.90	S.F.	62,000	25	1908	1933	2042	108.00 %	169.16 %	27		$304,156.51	$179,800
D2040	Rain Water Drainage	$2.32	S.F.	62,000	30	1908	1938	2025	33.33 %	0.00 %	10			$143,840
D3020	Heat Generating Systems	$18.67	S.F.	62,000	35	1988	2023		22.86 %	37.09 %	8		$429,292.61	$1,157,540
D3030	Cooling Generating Systems	$24.48	S.F.	62,000	30			2047	106.67 %	65.60 %	32		$995,696.15	$1,517,760
D3040	Distribution Systems	$42.99	S.F.	62,000	25	1908	1933	2042	108.00 %	143.01 %	27		$3,811,868.37	$2,665,380
D3050	Terminal & Package Units	$11.60	S.F.	62,000	20				0.00 %	0.00 %				$719,200
D3060	Controls & Instrumentation	$13.50	S.F.	62,000	20	1908	1928	2037	110.00 %	158.90 %	22		$1,330,032.18	$837,000
D4010	Sprinklers	$7.05	S.F.	62,000	35			2052	105.71 %	202.91 %	37		$886,936.25	$437,100
D4020	Standpipes	$1.01	S.F.	62,000	35				0.00 %	0.00 %				$62,620
D5010	Electrical Service/Distribution	$9.70	S.F.	62,000	30	1908	1938	2047	106.67 %	157.18 %	32		$945,291.52	$601,400
D5020	Lighting and Branch Wiring	$34.68	S.F.	62,000	20	1908	1928	2037	110.00 %	55.71 %	22		$1,197,763.24	$2,150,160
D5030	Communications and Security	$12.99	S.F.	62,000	15	1908	1923	2030	100.00 %	55.80 %	15		$449,430.43	$805,380
D5090	Other Electrical Systems	$1.41	S.F.	62,000	30	1908	1938	2047	106.67 %	269.57 %	32		$235,655.75	$87,420
E1020	Institutional Equipment	$4.82	S.F.	62,000	35	1908	1943	2027	34.29 %	0.00 %	12			$298,840
E1090	Other Equipment	$11.10	S.F.	62,000	35	1908	1943	2027	34.29 %	0.00 %	12			$688,200
E2010	Fixed Furnishings	$2.13	S.F.	62,000	40	1908	1948	2027	30.00 %	0.00 %	12			$132,060
								Total	**62.08 %**	**62.02 %**			**$18,843,450.88**	**$30,380,560**

System Notes

The facility description in the site executive summary contains an overview of each system. The notes listed below provide additional information on select systems found within the facility.

System: C3010 - Wall Finishes — This system contains no images

Note: Brick 20%
Painted plaster 80%

System: C3020 - Floor Finishes — This system contains no images

Note: Carpet 4%
Vinyl 16%
Wood 64%
Concrete 16%

System: D1010 - Elevators and Lifts — This system contains no images

Note: There is no existing elevator in this building.

System: D5010 - Electrical Service/Distribution — This system contains no images

Note: There are two (2) secondary phase changer transformers, as follows:
(1) 75 kVA, 240V-208/120V, 3 phase, 4 wire.
(1) 50 kVA, 240V, 2 phase - 240V, 3 phase

Renewal Schedule

eCOMET forecasts future Capital Renewal funding needed to address expiring systems based on the Next Renewal year found in the Cost Models. A 3% annual inflation factor is applied to the costs for systems expiring in future years. The table below reflects recommended Capital Renewal funding needs over the next 10 years. Note: Cells with a zero value indicate systems for which renewal is not scheduled in that year.

Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$18,843,451**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,612,971**	**$0**	**$212,640**	**$20,669,061**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A10 - Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A20 - Basement Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2020 - Exterior Windows	$1,374,852	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,374,852**
B2030 - Exterior Doors	$161,922	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$161,922**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$508,230	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$508,230**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$1,303,946	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,303,946**
C1020 - Interior Doors	$524,765	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$524,765**
C1030 - Fittings	$115,853	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$115,853**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

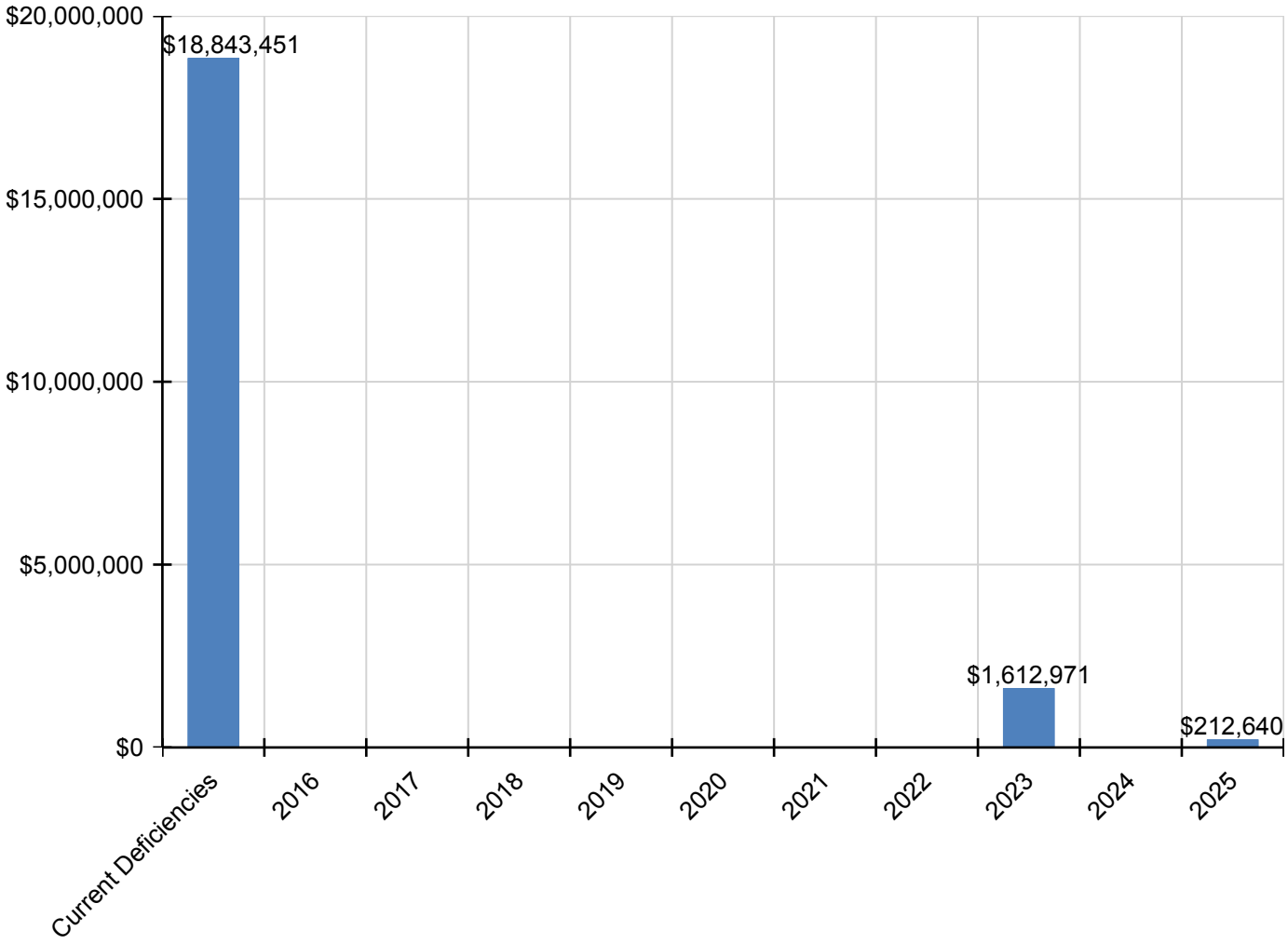
C2010 - Stair Construction	$303,953	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$303,953**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$338,694	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$338,694**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$151,667	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$151,667**
C3020414 - Wood Flooring	$1,166,083	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,166,083**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$935,111	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$935,111**
D - Services	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D10 - Conveying	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D1010 - Elevators and Lifts	$1,012,601	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,012,601**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$45,475	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$45,475**
D2020 - Domestic Water Distribution	$314,177	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$314,177**
D2030 - Sanitary Waste	$304,157	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$304,157**
D2040 - Rain Water Drainage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$212,640	**$212,640**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$429,293	$0	$0	$0	$0	$0	$0	$0	$1,612,971	$0	$0	**$2,042,263**
D3030 - Cooling Generating Systems	$995,696	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$995,696**
D3040 - Distribution Systems	$3,811,868	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,811,868**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,330,032	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,330,032**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$886,936	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$886,936**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$945,292	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$945,292**
D5020 - Lighting and Branch Wiring	$1,197,763	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,197,763**
D5030 - Communications and Security	$449,430	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$449,430**
D5090 - Other Electrical Systems	$235,656	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$235,656**

E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

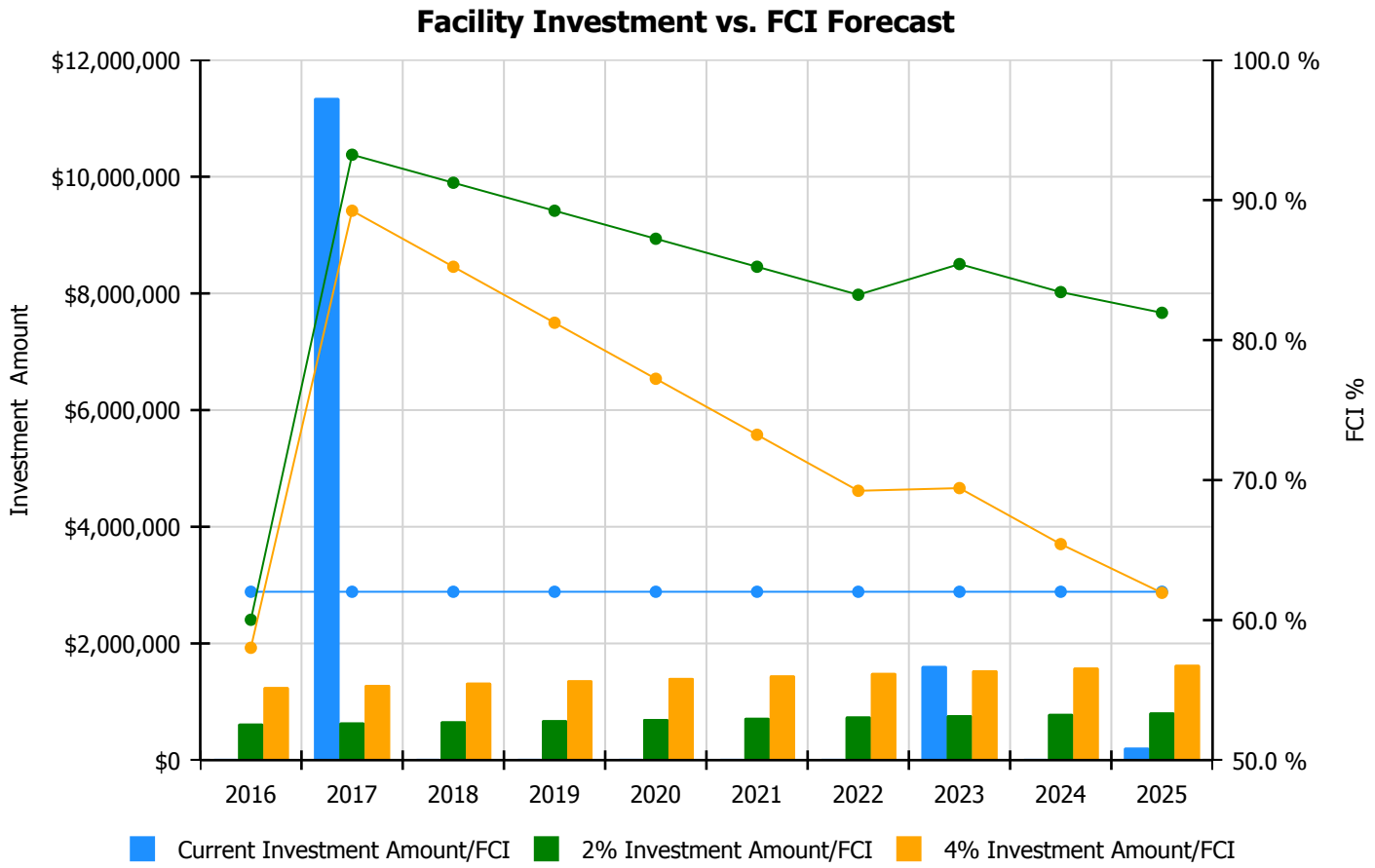
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

The chart below illustrates the effect of various investment levels on the building FCI for the next 10 years. The levels of investment shown below include:

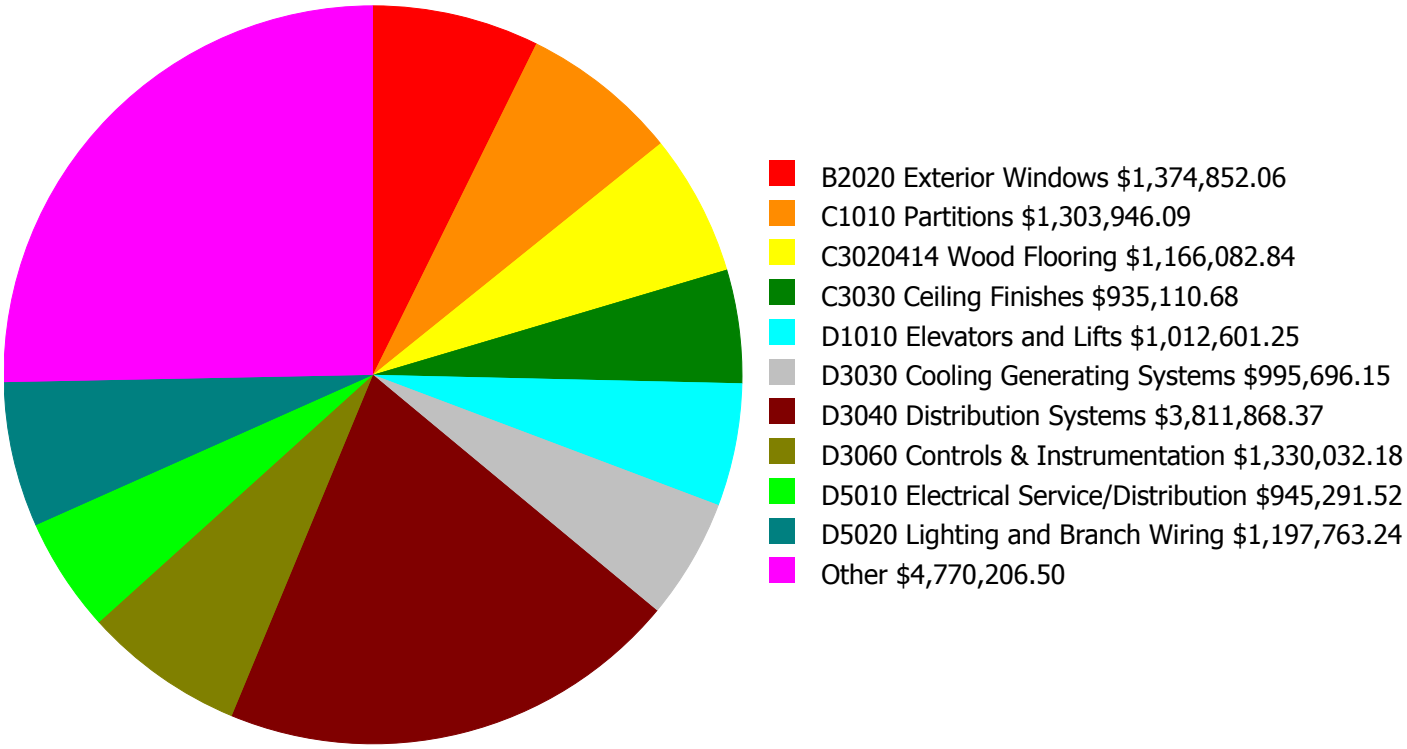
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value of the building, escalated for inflation



Year	Investment Amount Current FCI - 62.02%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$625,840.00	60.02 %	$1,251,679.00	58.02 %
2017	$11,349,024	$644,615.00	93.24 %	$1,289,229.00	89.24 %
2018	$0	$663,953.00	91.24 %	$1,327,906.00	85.24 %
2019	$0	$683,872.00	89.24 %	$1,367,744.00	81.24 %
2020	$0	$704,388.00	87.24 %	$1,408,776.00	77.24 %
2021	$0	$725,520.00	85.24 %	$1,451,039.00	73.24 %
2022	$0	$747,285.00	83.24 %	$1,494,570.00	69.24 %
2023	$1,612,971	$769,704.00	85.43 %	$1,539,407.00	69.43 %
2024	$0	$792,795.00	83.43 %	$1,585,590.00	65.43 %
2025	$212,640	$816,579.00	81.95 %	$1,633,157.00	61.95 %
Total:	**$13,174,635**	**$7,174,551.00**		**$14,349,097.00**	

Deficiency Summary by System

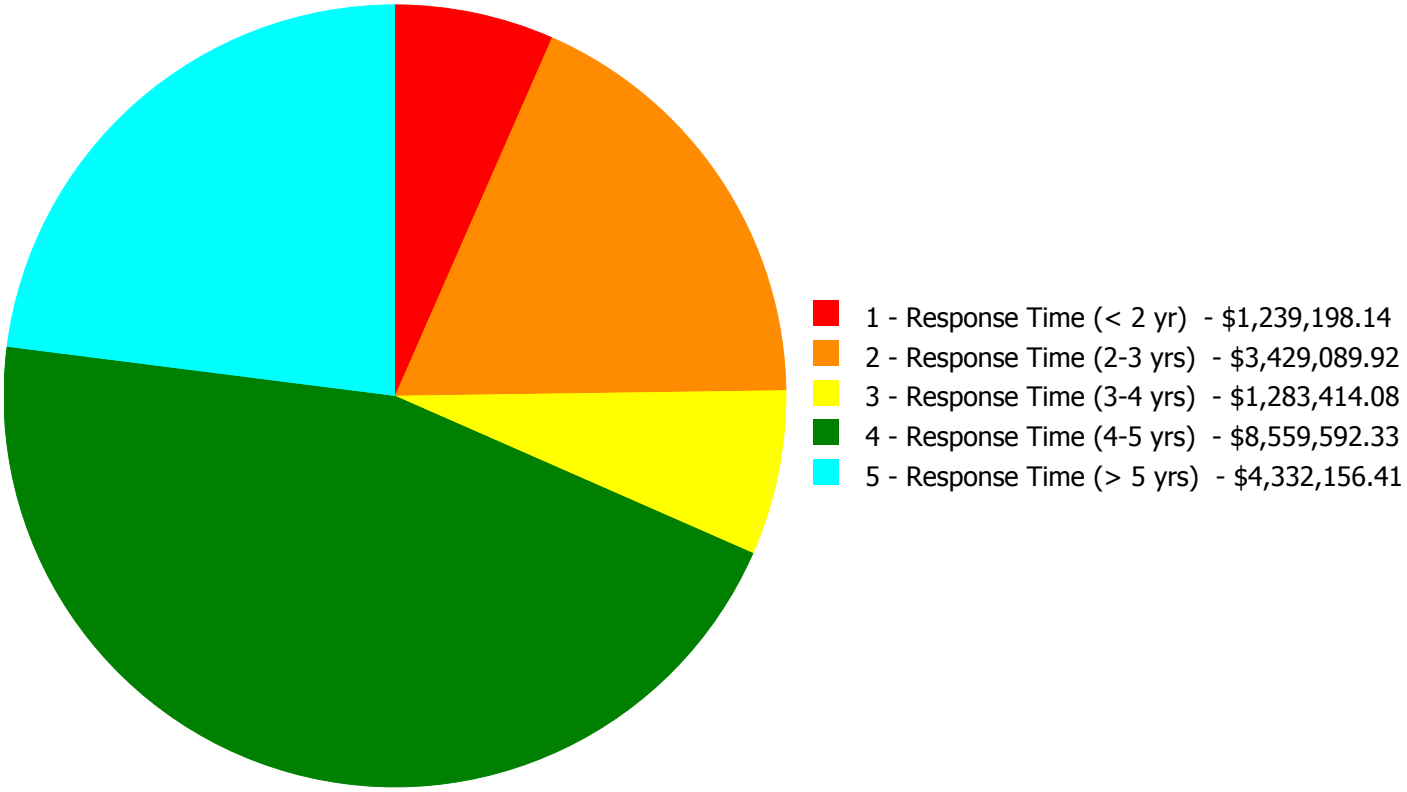
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart lists all current deficiencies associated with this facility.



Budget Estimate Total: $18,843,450.88

Deficiency Summary by Priority

The following chart shows the total repair costs broken down by priority. Assessors assigned deficiencies within eCOMET to one of the following priority categories:



Budget Estimate Total: $18,843,450.88

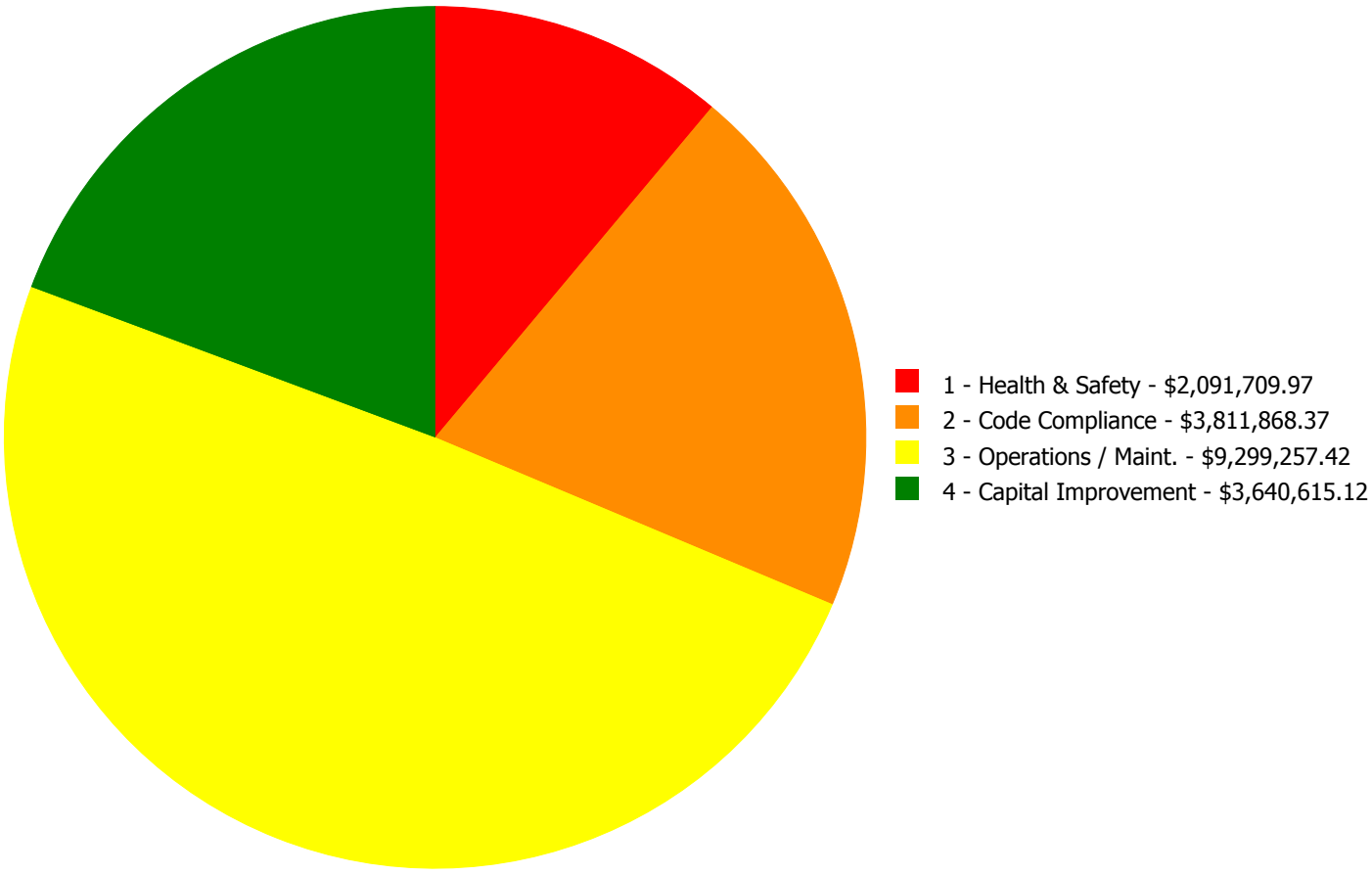
Deficiency By Priority Investment Table

The table below shows the current investment cost grouped by deficiency priority and building system.

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
B2020	Exterior Windows	$0.00	$0.00	$0.00	$1,374,852.06	$0.00	$1,374,852.06
B2030	Exterior Doors	$0.00	$0.00	$0.00	$161,921.61	$0.00	$161,921.61
B3010105	Built-Up	$508,230.16	$0.00	$0.00	$0.00	$0.00	$508,230.16
C1010	Partitions	$150,750.13	$147,086.47	$0.00	$0.00	$1,006,109.49	$1,303,946.09
C1020	Interior Doors	$0.00	$524,764.58	$0.00	$0.00	$0.00	$524,764.58
C1030	Fittings	$0.00	$115,853.21	$0.00	$0.00	$0.00	$115,853.21
C2010	Stair Construction	$0.00	$0.00	$303,953.04	$0.00	$0.00	$303,953.04
C3010230	Paint & Covering	$0.00	$338,693.85	$0.00	$0.00	$0.00	$338,693.85
C3020413	Vinyl Flooring	$0.00	$0.00	$0.00	$0.00	$151,666.68	$151,666.68
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$0.00	$1,166,082.84	$1,166,082.84
C3030	Ceiling Finishes	$0.00	$935,110.68	$0.00	$0.00	$0.00	$935,110.68
D1010	Elevators and Lifts	$0.00	$0.00	$0.00	$0.00	$1,012,601.25	$1,012,601.25
D2010	Plumbing Fixtures	$0.00	$0.00	$0.00	$45,475.14	$0.00	$45,475.14
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$314,176.68	$0.00	$314,176.68
D2030	Sanitary Waste	$0.00	$0.00	$0.00	$304,156.51	$0.00	$304,156.51
D3020	Heat Generating Systems	$327,898.44	$0.00	$0.00	$101,394.17	$0.00	$429,292.61
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$995,696.15	$995,696.15
D3040	Distribution Systems	$0.00	$0.00	$0.00	$3,811,868.37	$0.00	$3,811,868.37
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$1,330,032.18	$0.00	$1,330,032.18
D4010	Sprinklers	$0.00	$0.00	$0.00	$886,936.25	$0.00	$886,936.25
D5010	Electrical Service/Distribution	$0.00	$945,291.52	$0.00	$0.00	$0.00	$945,291.52
D5020	Lighting and Branch Wiring	$16,663.66	$0.00	$979,461.04	$201,638.54	$0.00	$1,197,763.24
D5030	Communications and Security	$0.00	$422,289.61	$0.00	$27,140.82	$0.00	$449,430.43
D5090	Other Electrical Systems	$235,655.75	$0.00	$0.00	$0.00	$0.00	$235,655.75
	Total:	$1,239,198.14	$3,429,089.92	$1,283,414.08	$8,559,592.33	$4,332,156.41	$18,843,450.88

Deficiency Summary by Category

The following chart shows the total repair costs broken down by deficiency categories. Assessors assigned deficiencies to one of the following categories:



Budget Estimate Total: $18,843,450.88

Deficiency Details by Priority

The deficiency detail notes listed below provide additional information on identified deficiencies found within the facility.

Priority 1 - Response Time (< 2 yr):

System: B3010105 - Built-Up

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Remove and Replace Built Up Roof

Qty: 15,000.00

Unit of Measure: S.F.

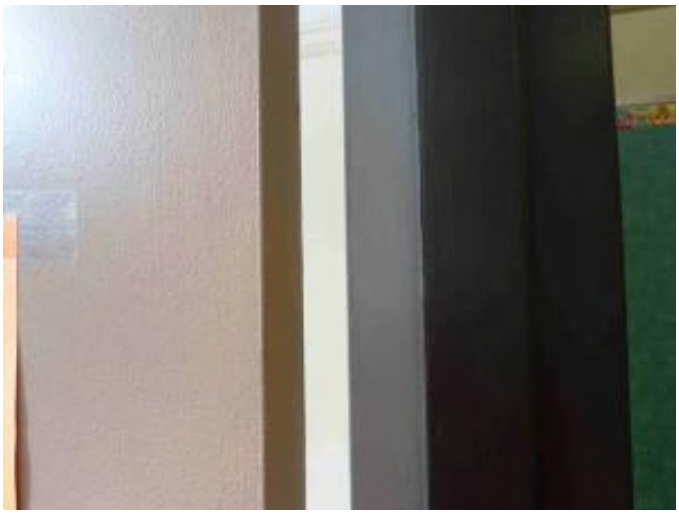
Estimate: $508,230.16

Assessor Name: System

Date Created: 02/08/2016

Notes: There are a number of roof sections and different roof elevations ranging from the main roof to the mechanical roof. The built up application was reported to have been installed in the early 1990'S. Considering the age and condition of the roofing systems, universal upgrades are recommended.

System: C1010 - Partitions



Location: Corridor doors

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Install fire rated walls and door where required - insert number of doors

Qty: 30.00

Unit of Measure: S.F.

Estimate: $150,750.13

Assessor Name: System

Date Created: 02/08/2016

Notes: The stair and corridor doors were compliant during the time of the construction of the school in 1908. However a large portion of the interior corridor, exit stair doors are not code compliant. Several doors are typically metal in metal frames with transom lites or sidelights, glass glazing. The older doors are generally in poor condition considering the age of the application. To restore the door finishes, universal upgrades are required for the older door applications. Remove and replace original corridor door systems with new code compliant fire rated door system.

System: D3020 - Heat Generating Systems

Location: mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace boiler, cast iron sectional (100 HP)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $327,898.44

Assessor Name: System

Date Created: 02/08/2016

Notes: Replace inoperable damaged boiler with new similar unit.

System: D5020 - Lighting and Branch Wiring

Location: Exit discharges
Distress: Health Hazard / Risk
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Add Lighting Fixtures
Qty: 6.00
Unit of Measure: Ea.
Estimate: $16,663.66
Assessor Name: System
Date Created: 01/27/2016

Notes: Add a LED lighting fixture, wired on emergency power, above door at each exit discharge (total of 6 fixtures).

System: D5090 - Other Electrical Systems

This deficiency has no image.

Location: Basement
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 1 - Response Time (< 2 yr)
Correction: Add Standby Generator System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $156,453.13
Assessor Name: System
Date Created: 01/27/2016

Notes: Provide a standby power system, including generator, automatic transfer switches and panelboard. Size generator to supply all emergency egress and exit lighting, with capacity for a hydraulic elevator addition (estimated size is 100 kW). NO PHOTO.

System: D5090 - Other Electrical Systems

Location: Building wide

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Add Emergency/Exit Lighting

Qty: 43.00

Unit of Measure: Ea.

Estimate: $79,202.62

Assessor Name: System

Date Created: 01/27/2016

Notes: If a standby power system is not provided in the school as a severe priority, then provide emergency lighting units (ELUs) in all corridors, gymnasiums, lunchrooms, restrooms and IMC as an interim solution to meet NFPA 101 Life Safety Code for emergency lighting (estimate 43 ELUs).

Priority 2 - Response Time (2-3 yrs):

System: C1010 - Partitions

Location: Hallway

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 2 - Response Time (2-3 yrs)

Correction: Remove non-rated interior glass panels and replace with studs, gypsum board, paint (E) wall

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $80,247.98

Assessor Name: System

Date Created: 02/08/2016

Notes: There are several transom lites and sidelights constructed into hallway wall systems. It is recommended that the lites and sidelights be removed and replaced with a fire rated wall construction. The deficiency provides a budgetary consideration to correct the hallway, transoms, lites and sidelights.

System: C1010 - Partitions

Location: Classroom

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Remove folding wood partitions; replace with metal studs and gypsum board painted

Qty: 3,000.00

Unit of Measure: S.F.

Estimate: $66,838.49

Assessor Name: System

Date Created: 02/08/2016

Notes: There are several movable partitions that remain in classrooms. These wall systems are no longer used and in most cases cannot be used due to damage or wall modifications to support classroom needs. This deficiency provides a budgetary consideration to remove and replace the wall systems with universal removal of the existing movable partitions and upgrades to a permeate wall systems.

System: C1020 - Interior Doors

Location: Building WIde

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Remove and replace interior doors - wood doors with hollow metal frames - per leaf

Qty: 110.00

Unit of Measure: Ea.

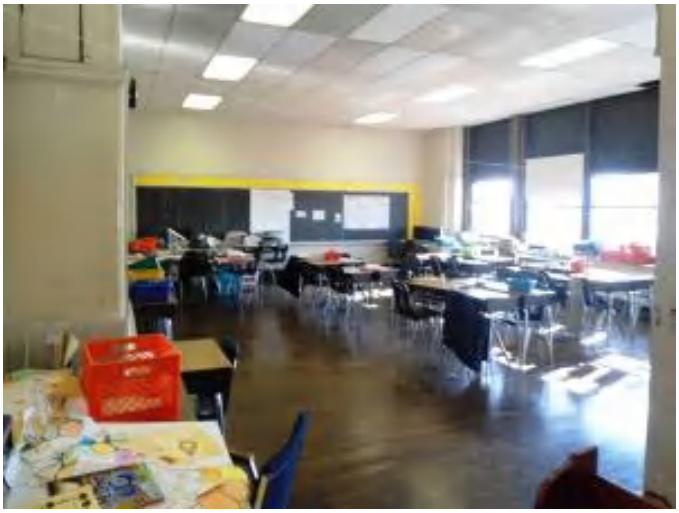
Estimate: $524,764.58

Assessor Name: System

Date Created: 02/08/2016

Notes: Interior doors are typically wood in wood frames with transom lites, sidelights, wired glass glazing. Other interior doors include wooden glass pane doors with original wooden pane frames, hollow metal in hollow metal frames at stairwells and exit ways. Doors are generally in poor condition considering the age of the application. Universal upgrades are required for the interior door systems it is recommended that the interior doors system be removed and replaced with a new modern metal framed hollow metal door system with consideration for ADA compliance.

System: C1030 - Fittings



Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Replace blackboards with marker boards - pick the appropriate size and insert the quantities

Qty: 60.00

Unit of Measure: Ea.

Estimate: $64,579.95

Assessor Name: System

Date Created: 02/08/2016

Notes: Some of the classroom chalk boards are original to the buildings construction. This system is damaged and beyond its expected life, universal upgrades are warranted. Remove and upgrade damaged chalk boards to new marker board systems.

System: C1030 - Fittings

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Replace missing or damaged signage - insert the number of rooms

Qty: 160.00

Unit of Measure: Ea.

Estimate: $43,346.00

Assessor Name: System

Date Created: 02/08/2016

Notes: There is no directional signage and room signage is a custom design in places and scarce or painted with no consistency in others. Accessibility signage criteria have been established for the physically challenged. These include mounting heights, contrast and finish, raised and Braille characters and pictograms, and character proportions and heights. It is recommended that compliant signage be installed throughout the building.

System: C1030 - Fittings

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Remove and replace tackboards - select size

Qty: 10.00

Unit of Measure: Ea.

Estimate: $7,927.26

Assessor Name: System

Date Created: 02/08/2016

Notes: There are several tack boards in the hallways for student displays. The systems are damaged and beyond the expected service life for this application. Remove and replace tack boards is recommended.

System: C3010230 - Paint & Covering

Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Repair and repaint all interior walls - SF of wall surface

Qty: 50,000.00

Unit of Measure: S.F.

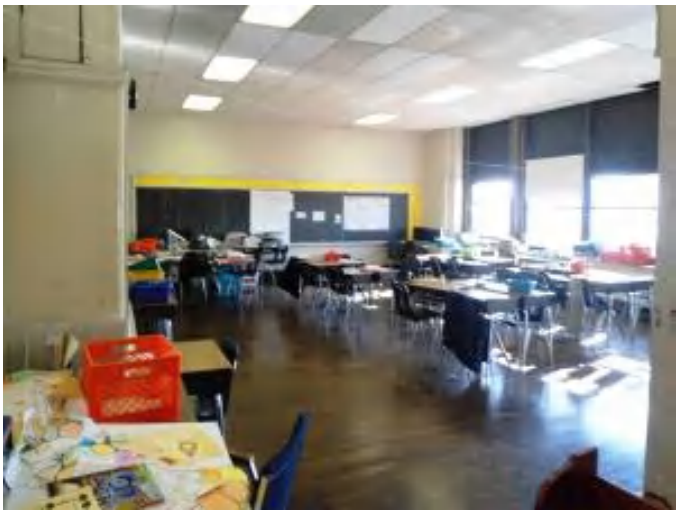
Estimate: $338,693.85

Assessor Name: System

Date Created: 02/08/2016

Notes: There are painted walls, trim, brick and some painted ceilings in this building. Sections of the building, some textured concrete surfaces have been painted, while in the new section they are not. The interior finishes are in fair to poor condition and will require an almost continuous program of renewal of the applied finishes to maintain an acceptable appearance. Cyclical painting should be considered for a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Repairs should be completed before work begins. This effort is expected to be coordinated with other mechanical electrical efforts in order to prevent overlapping efforts.

System: C3030 - Ceiling Finishes



Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Remove and replace suspended acoustic ceilings - lighting not included

Qty: 62,000.00

Unit of Measure: S.F.

Estimate: $935,110.68

Assessor Name: System

Date Created: 02/08/2016

Notes: The ceiling finish is a mix of 12 x 12 ceiling grid, painted and 2 x 4 Acoustical tile finish. Ceilings have been repaired in several areas and is in good condition considering the age of the application and the current condition of the school. The ceiling finish is expected to require upgrades to support the recommended efforts in this report prior to re-opening. This deficiency provides a budgetary consideration for removal and replacement of the current ceiling finish to a new acoustical tile finish. Considering the recommended mechanical and electrical upgrades this effort should be completed as part of an overall renewal program for the school. No work should be considered until after the recommended exterior efforts are complete.

System: D5010 - Electrical Service/Distribution

Location: Mechanical Room B11

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Replace Electrical Distribution System (U)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $584,129.56

Assessor Name: System

Date Created: 01/27/2016

Notes: Remove the 400A, 120/240V, 2 phase, 5 wire service disconnecting means, metering cabinet, 400A main panelboard, and 75 kVA and 50 kVA phase change transformers and provide a 750 kVA load center unit substation with 2500A, 208/120V, 3 phase, 4 wire main switchboard with main circuit breaker and feeder circuit breakers to serve the existing building loads, and capacity to serve central air conditioning equipment, an elevator addition, and a fire pump (if required).

System: D5010 - Electrical Service/Distribution

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 2 - Response Time (2-3 yrs)

Correction: Replace Panelboard

Qty: 16.00

Unit of Measure: Ea.

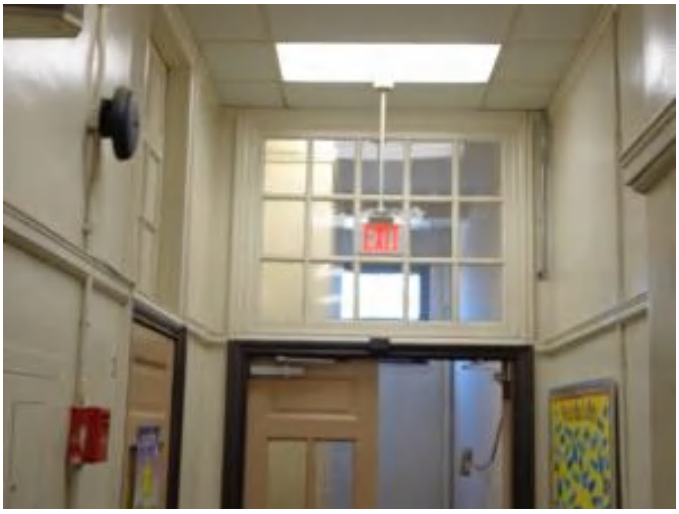
Estimate: $361,161.96

Assessor Name: System

Date Created: 01/27/2016

Notes: Replace 225A Panelboard BR in Boiler Room B14 and (15) 120/240V panelboards in the building, including their feeder conductors. Panelboards are to be rated 208/120V, 3 phase, 4 wire and sized with adequate branch circuit breakers for additional receptacle circuits for classrooms.

System: D5030 - Communications and Security



Location: Building wide

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 2 - Response Time (2-3 yrs)

Correction: Replace fire alarm system

Qty: 62,000.00

Unit of Measure: S.F.

Estimate: $422,289.61

Assessor Name: System

Date Created: 01/27/2016

Notes: Replace fire alarm system with an addressable type system meeting current NFPA Codes and ADA requirements.

Priority 3 - Response Time (3-4 yrs):

System: C2010 - Stair Construction

Location: Stairs

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 3 - Response Time (3-4 yrs)

Correction: Replace inadequate or install proper stair railing - select appropriate material

Qty: 1,800.00

Unit of Measure: L.F.

Estimate: $303,953.04

Assessor Name: System

Date Created: 02/08/2016

Notes: Current requirements for stairs indicate that they have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards. Future efforts should include comprehensive stair railing removal and replacement upgrades.

System: D5020 - Lighting and Branch Wiring

Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 yrs)

Correction: Replace Lighting Fixtures (SF)

Qty: 59,144.00

Unit of Measure: S.F.

Estimate: $979,461.04

Assessor Name: System

Date Created: 01/27/2016

Notes: Replace fluorescent lighting systems and branch circuit wiring throughout the building (classrooms and IMC 24,900 SF; Administration, Support, Restrooms, Dining and Circulation 27,540 SF; Gymnasiums 1,577 SF; Mechanical and storage 5,127 SF).

Priority 4 - Response Time (4-5 yrs):

System: B2020 - Exterior Windows

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Remove and replace aluminum windows - pick the appropriate size and style and insert the number of units

Qty: 250.00

Unit of Measure: Ea.

Estimate: $1,374,852.06

Assessor Name: System

Date Created: 02/08/2016

Notes: Exterior windows are a mix of single pane industrial grade metal and aluminum framed single pane windows. Windows are in good to poor condition based on the year of installation or last renovation. The single pane metal-framed, double hung windows have been replaced in the last twenty years. The original steel-framed, multi-light windows are original have exceeded their useful service life. The exterior window system is recommended to be replaced with units that retain their dimensions and profiles, but that incorporate updated energy-efficient features. This universal upgrade is expected to be completed as part of an overall renovation effort to eliminate dual efforts.

System: B2030 - Exterior Doors

Location: Exterior Elevation

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Remove and replace exterior doors - per leaf

Qty: 20.00

Unit of Measure: Ea.

Estimate: $161,921.61

Assessor Name: System

Date Created: 02/08/2016

Notes: The exterior doors are metal applications with metal frames. The exterior door system for this school is a very high traffic system. The doors are in fair condition but are aging at a faster rate than expected based on traffic and condition. The exterior door system and service doors are recommended for upgrade. The new doors are expected to retain their dimensions and profiles, but that incorporate updated energy-efficient features.

System: D2010 - Plumbing Fixtures

Location: corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Remove and Replace Water Fountains - without ADA new recessed alcove

Qty: 6.00

Unit of Measure: Ea.

Estimate: $45,475.14

Assessor Name: System

Date Created: 02/08/2016

Notes: Replace older china drinking fountains in corridors.

System: D2020 - Domestic Water Distribution

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Replace domestic water piping (75 KSF)

Qty: 62,000.00

Unit of Measure: S.F.

Estimate: $314,176.68

Assessor Name: System

Date Created: 02/08/2016

Notes: Replace domestic water supply piping with new insulated rigid copper tubing with valves, fittings and hangers.

System: D2030 - Sanitary Waste

Location: entire building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Inspect sanitary waste piping and replace damaged sections. (+50KSF)

Qty: 62,000.00

Unit of Measure: S.F.

Estimate: $304,156.51

Assessor Name: System

Date Created: 02/08/2016

Notes: Inspect old cast iron sanitary piping including camera observation and replace damaged sections.

System: D3020 - Heat Generating Systems

Location: mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Replace boiler feed pump (duplex) and surge tank

Qty: 1.00

Unit of Measure: Ea.

Estimate: $101,394.17

Assessor Name: System

Date Created: 02/08/2016

Notes: Replace boiler feed /condensate return system.

System: D3040 - Distribution Systems

Location: entire building

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide classroom FC units and dedicated OA ventilation system. (20 clsrms)

Qty: 44.00

Unit of Measure: C

Estimate: $3,654,683.48

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide a four pipe fan coil system with roof mounted outside air system ducted to each fan coil unit. Provide a fan coil unit for each classroom and other separate area. Include new heat exchanger, pumps for hot water, piping, control valves and controls, to replace steam heating system.

System: D3040 - Distribution Systems

Location: toilet rooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide inline centrifugal fan and wall outlet louver for restroom exhaust (4 plbg fixtures)

Qty: 6.00

Unit of Measure: Ea.

Estimate: $103,242.25

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide mechanical toilet exhaust systems in rest rooms with fans, louvers, ductwork and grills. Include controls and electrical connections.

System: D3040 - Distribution Systems

Location: toilet rooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide inline centrifugal fan and wall outlet louver for restroom exhaust (8 plbg fixtures)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $53,942.64

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide mechanical toilet exhaust systems in rest rooms with fans, louvers, ductwork and grills. Include controls and electrical connections.

System: D3060 - Controls & Instrumentation

Location: entire building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 4 - Response Time (4-5 yrs)

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 62,000.00

Unit of Measure: S.F.

Estimate: $1,330,032.18

Assessor Name: System

Date Created: 02/08/2016

Notes: Install new direct digital control system and building automation system with remote computer control capability and graphics package.

System: D4010 - Sprinklers

Location: entire building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 4 - Response Time (4-5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 62,000.00

Unit of Measure: S.F.

Estimate: $886,936.25

Assessor Name: System

Date Created: 02/08/2016

Notes: Install NFPA wet pipe automatic sprinkler system in entire building, including fire service, piping sprinkler heads, standpipes and fire pump if required.

System: D5020 - Lighting and Branch Wiring

Location: Classrooms

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide surface raceway system and wiring devices

Qty: 1,050.00

Unit of Measure: L.F.

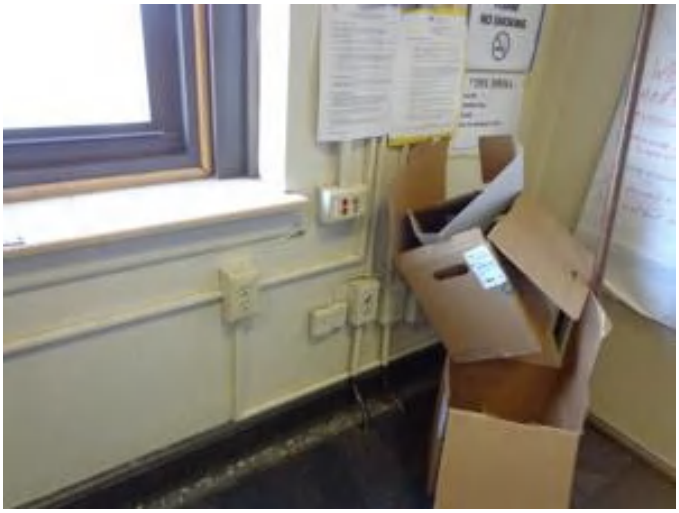
Estimate: $145,832.41

Assessor Name: System

Date Created: 01/27/2016

Notes: Provide surface metal raceway system with 6 to 8 duplex receptacles in each of 35 classrooms.

System: D5020 - Lighting and Branch Wiring



Location: Building wide

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Replace Wiring Device

Qty: 124.00

Unit of Measure: Ea.

Estimate: $55,806.13

Assessor Name: System

Date Created: 01/27/2016

Notes: Replace all existing duplex receptacles throughout the building with new devices due to their age and condition (estimate 124 duplex receptacles to be replaced).

System: D5030 - Communications and Security

Location: Building wide

Distress: Failing

Category: 3 - Operations / Maint.

Priority: 4 - Response Time (4-5 yrs)

Correction: Provide wireless GPS clock system

Qty: 1.00

Unit of Measure: LS

Estimate: $27,140.82

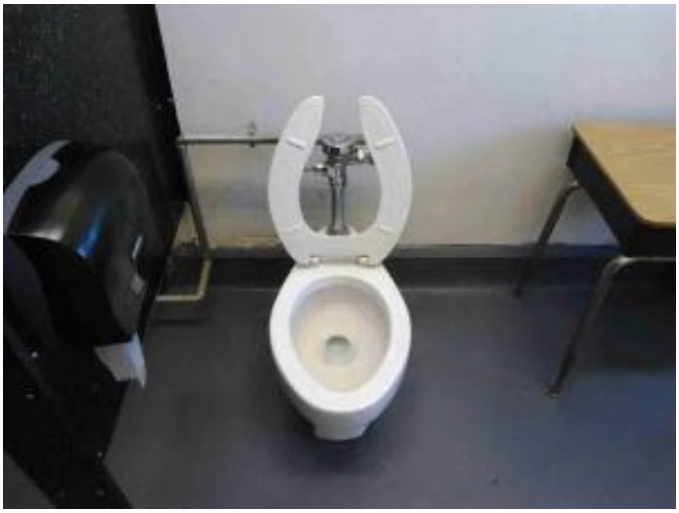
Assessor Name: System

Date Created: 01/27/2016

Notes: Remove all clocks and provide wireless GPS master clock system with battery operated synchronized clocks.

Priority 5 - Response Time (> 5 yrs):

System: C1010 - Partitions



Location: Restrooms

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Build new gang restroom to meet code or occupant needs - select type and number of fixtures and toilet partitions for mens or womens

Qty: 6.00

Unit of Measure: Ea.

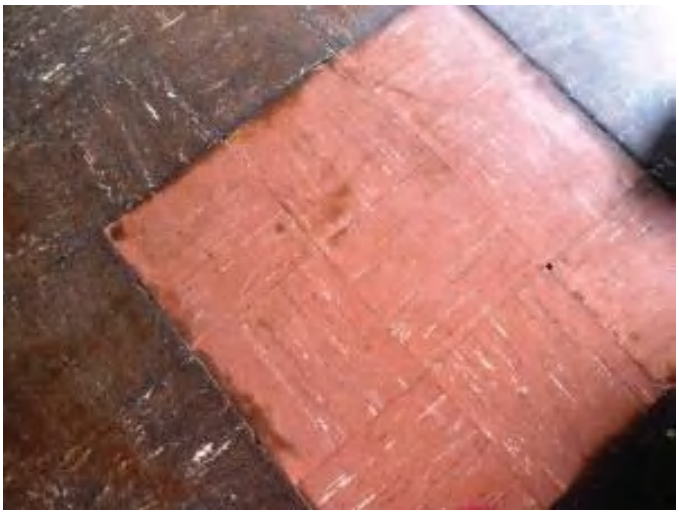
Estimate: $1,006,109.49

Assessor Name: System

Date Created: 02/08/2016

Notes: There are student restrooms on each floor that appear to be original with original fixtures. Each restroom is limited by the design of the time that did not include options for those that may be physically challenged. These restrooms warrant unique renovations to restore the systems to modern operations options and service to the school. Accessibility legislation requires that goods, amenities, and services offered in buildings, such as restrooms, be generally accessible to all people. There are no compliant restrooms located in this school. A unisex, compliant restroom should be added on each of the floors. Recommended modifications include the construction of new single occupancy restrooms in existing academic areas to accommodate requirements. This involves adding two new partitions to enclose 50 square feet of area and installing a door with hardware, ceramic tile and plaster surfaces, suspended ceilings, plumbing fixtures, electrical fixtures, piping, HVAC equipment, and accessories for each new restroom. Also, the renovation of the existing restrooms and modification to new layouts and floor plans to support modern designs and requirements for ADA legislation.

System: C3020413 - Vinyl Flooring



Location: Classrooms

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove VAT and replace with VCT - SF of area

Qty: 10,000.00

Unit of Measure: S.F.

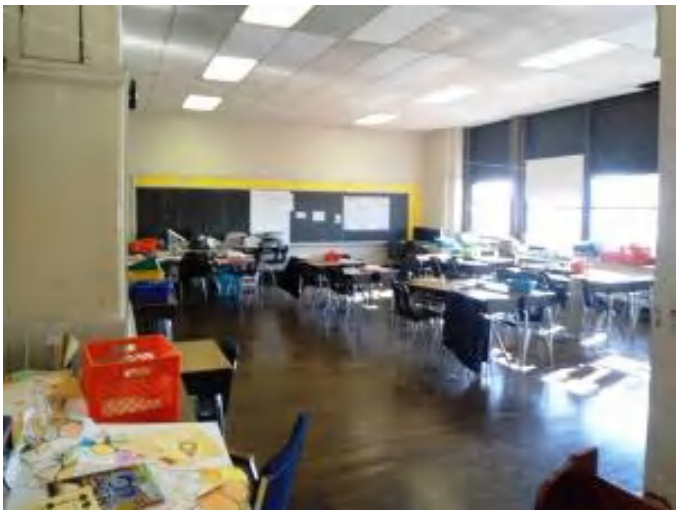
Estimate: $151,666.68

Assessor Name: System

Date Created: 02/08/2016

Notes: The floor finish for this school is a combination of newly installed carpet in the IMC and administrative area, tile in the kitchen and service line areas, wooden classrooms with concrete hallways and vinyl stirs finishes and a 12x12 and 9x9 vinyl tile finish. The vinyl tile finish is a 9 x 9 application and is suspect to contain asbestos. The 9x9 vinyl finish is recommended for upgrade to a new 12 x 12 vinyl tile application.

System: C3020414 - Wood Flooring



Location: Building Wide

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace wood flooring

Qty: 40,000.00

Unit of Measure: S.F.

Estimate: $1,166,082.84

Assessor Name: System

Date Created: 02/08/2016

Notes: The classrooms and auditorium in this school have a wooden floor finish that appears to be from original construction. The system is showing signs of age such as the effects of sanding and refinishing with yearly cleaning and waxing with some repairs. The floor finish is in fair condition however, the finish is beyond its expected life cycle. It is recommended that the damaged wood floor finish be removed and replaced with an in kind finish.

System: D1010 - Elevators and Lifts

Location: Building Wide

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Add external 4 stop elevator - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

Estimate: $1,012,601.25

Assessor Name: System

Date Created: 02/08/2016

Notes: There is no elevator that services this school. Goods, services, and amenities offered in public buildings are generally required to be available to all persons. To assist those that may be physically challenged and to meet current accessibility legislation to provide wheelchair access to the upper floors of this facility, the installation of a new hydraulic elevator has been recommended on the exterior elevation of the building or at another suitable location. The new installation should blend as much as possible with the overall appearance of this historic structure and include all required ADA features, such as audible jewels and gongs, an accessible control panel, etc.

System: D3030 - Cooling Generating Systems

Location: roof, mechanical room

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Install chilled water system with distribution piping and pumps. (+75KSF)

Qty: 62,000.00

Unit of Measure: S.F.

Estimate: $995,696.15

Assessor Name: System

Date Created: 02/08/2016

Notes: Provide a one hundred eighty ton chilled water system with air cooled package chiller on the roof with pumps, piping and controls. Connect to new air handling units and fan coil units.

Equipment Inventory

The following table represents the inventory details of the inventory found in the building, which fall under the following subsystems:

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, steam, gross output, 3770 MBH, includes burners, controls and insulated jacket, packaged	2.00	Ea.	mechanical room	hb smith	mills 450			35	1988	2023	$101,088.50	$222,394.70
D5010 Electrical Service/Distribution	Panelboard, 4 wire w/conductor & conduit, NQOD, 120/208 V, 400 A, 5 stories, 50' horizontal	1.00	Ea.	Mechanical Room 011	Pelham Electric Mfg. Corp.	NA	NA		30			$20,524.05	$22,576.46
												Total:	**$244,971.16**

Executive Summary

Building condition is evaluated based on the functional systems and elements of a building and organized according to the UNIFORMAT II Elemental Classification. The grouping of these systems and elements and applying a current replacement value to them develops a representative building cost model. Cost Models are developed for similar building types and functions. Systems and their elements are evaluated based on their current replacement values, life cycles, installation dates and next renewal dates. Systems and their elements that are within their useful lives are further evaluated to identify current deficient conditions that may have a significant impact on a system's or element's remaining service life, and to determine if they are beyond their predicted expected life. The system's or element's current replacement value is based on RS Means Commercial Cost Data.

Following are the cost model's system details for this facility. The Replacement Value is the amount needed to replace the property of the same present value. The Current Repair Amount, also known as Condition Needs, represents the budgeted contractor installed costs plus owner's soft costs for the repair, replacement or renewal for a component or system level deficiency. It excludes contributing costs for other components or systems that might also be associated with the corrective actions due to packaging the work. Facility Condition Index (FCI) FCI is an industry-standard measurement of facility condition calculated as the ratio of the costs to correct a facility's deficiencies to the facility's Current Replacement Value. It ranges from 0% (new) to 100% (very poor). Condition Index (CI) is calculated as the sum of a renewable system's Remaining Service Life (RSL) divided by the sum of a system's Replacement Value (both values exclude soft-cost to simplify calculation updates) expressed as a percentage ranging from 100% (new) to 0% (expired).

Function:	
Gross Area (SF):	21,800
Year Built:	1908
Last Renovation:	
Replacement Value:	$489,846
Repair Cost:	$0.00
Total FCI:	0.00 %
Total RSLI:	36.08 %

Description:

Attributes:

General Attributes:

Bldg ID:	S438001	Site ID:	S438001

Condition Summary

The Table below shows the CI and FCI for each major building system shown at the UNIFORMAT classification Level II. Note that Systems with lower FCIs require less investment than systems with higher FCIs.

UNIFORMAT Classification	RSLI %	FCI %	Current Repair Cost
G20 - Site Improvements	34.71 %	0.00 %	$0.00
G40 - Site Electrical Utilities	40.00 %	0.00 %	$0.00
Totals:	**36.08 %**	**0.00 %**	**$0.00**

Condition Detail

This section of the report contains results of the Facility Condition Assessment. The building is separated into system components based on UNIFORMAT II classification. The columns in the System Listing table below represent the following:

1. System Code: A code that identifies the system.
2. System Description: A brief description of a system present in the building.
3. Unit Price $: The unit price of the system.
4. UoM: The unit of measure for of the system.
5. Qty: The quantity for the system
6. Life: anticipated service life for thesystem based on Building Owners and Managers Association (BOMA) recommendations.
7. Year Installed: The date of system installation.
8. Calc Next Renewal Year: The date of system expiration based on the life, NR stands for non renewable.
9. Next Renewal Year: The suggested system expiration date by the assessor based on visual inspection.
10. CI: The Condition Index of the system.
11. FCI: The Facility Condition Index of the system.
12. RSL: Remaining Service Life.
13. eCR: eCOMET Condition Rating (not used).
14. Deficiency $: The financial investment to repair/replace system.

System Listing

The System Listing table below lists each of the systems organized by their UNIFORMAT II classification. The assessment team was tasked with recording the most recent replacement year of each system, determining the remaining service life based on the theoretical life, and evaluating the condition to confirm the forecast next replacement year. The system listing is the basis for all data contained in the Building Assessment Report.

Additionally, a condition rating (eCR) based on the following guidelines is provided as observed at the time of the assessment.

- Excellent (E) - No noticeable distress or damage. The entire system is free from observable defect.
- Very Good (VG) - Overall no serviceability reduction for the entire system. No degradation of critical components and minor distress and defect noticeable for some but not non critical components within the system.
- Good (G) - Slight or no serviceability reduction for the entire system. There may be noticeable defects for some non critical components and slight noticeable degradation of the critical components.
- Fair (F) - Overall serviceability is degraded but adequate. There may be moderate deterioration for very few of the critical components and few of the non critical components may have severe degradation.
- Marginal (MA) - Overall serviceability and reliability loss. Most if not all of the non critical components suffer from severe degradation and a few of the critical component may have severe degradation.
- Moderate (MO) - Overall a significant serviceability loss. Most if not all the components have severe degradation with the reminder of the component showing visible distress.
- Very Poor (VP) - Overall the system is barely functional. All of the components are severely degraded.
- Non-Functional (NF) - Overall the system does not function with all the components having no serviceability and suffer from severe degradation.

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2030	Pedestrian Paving	$12.30	S.F.	21,800	40	1908	1948	2027	30.00 %	0.00 %	12			$268,140
G2040	Site Development	$4.36	S.F.	21,800	25	1908	1933	2027	48.00 %	0.00 %	12			$95,048
G4020	Site Lighting	$4.84	S.F.	21,800	30	1908	1938	2027	40.00 %	0.00 %	12			$105,512
G4030	Site Communications & Security	$0.97	S.F.	21,800	30	1908	1938	2027	40.00 %	0.00 %	12			$21,146
								Total	**36.08 %**					**$489,846**

System Notes

The facility description in the site executive summary contains an overview of each system. The notes listed below provide additional information on select systems found within the facility.

No data found for this asset

Renewal Schedule

eCOMET forecasts future Capital Renewal funding needed to address expiring systems based on the Next Renewal year found in the Cost Models. A 3% annual inflation factor is applied to the costs for systems expiring in future years. The table below reflects recommended Capital Renewal funding needs over the next 10 years. Note: Cells with a zero value indicate systems for which renewal is not scheduled in that year.

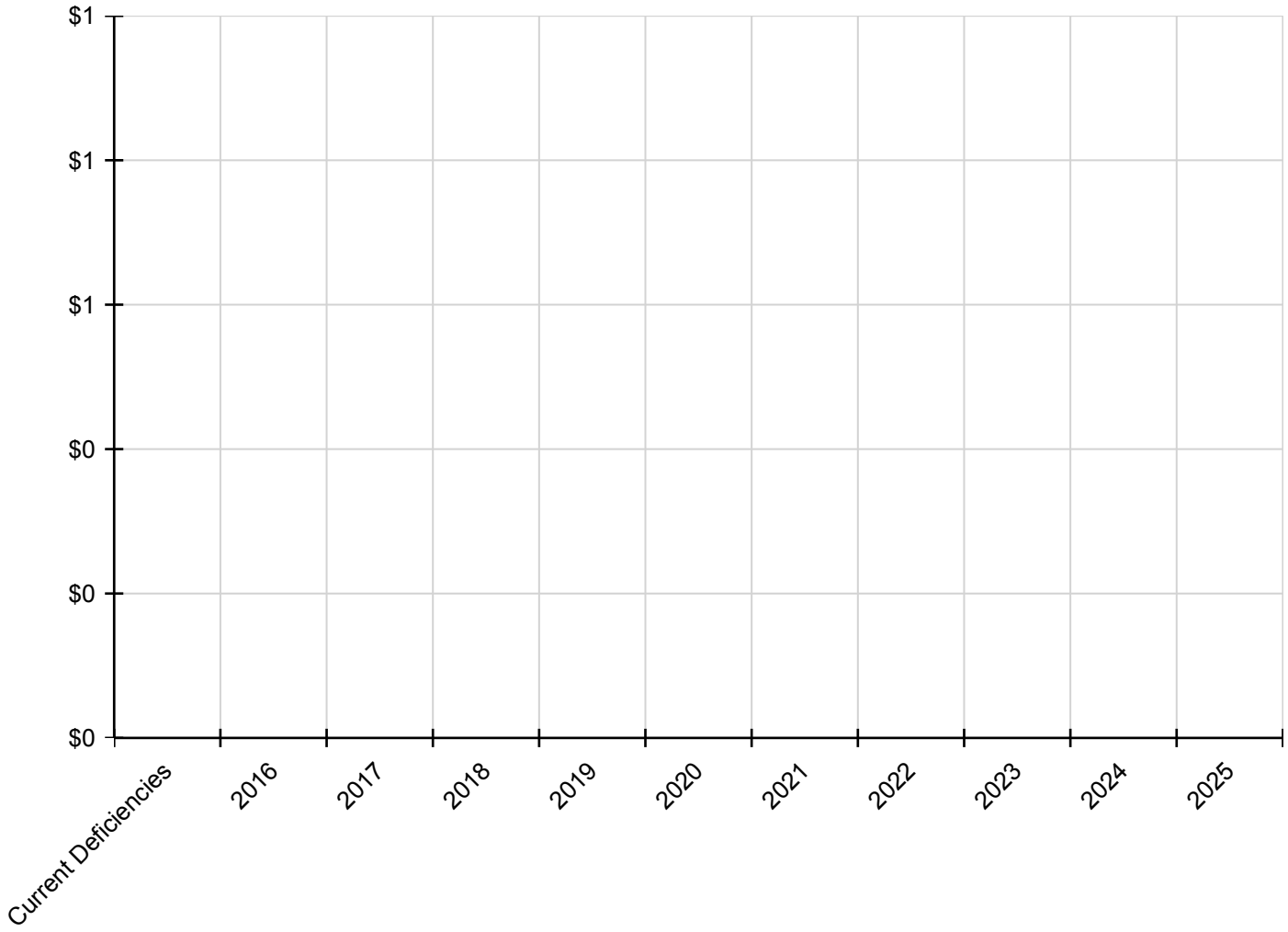
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2030 - Pedestrian Paving	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2040 - Site Development	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

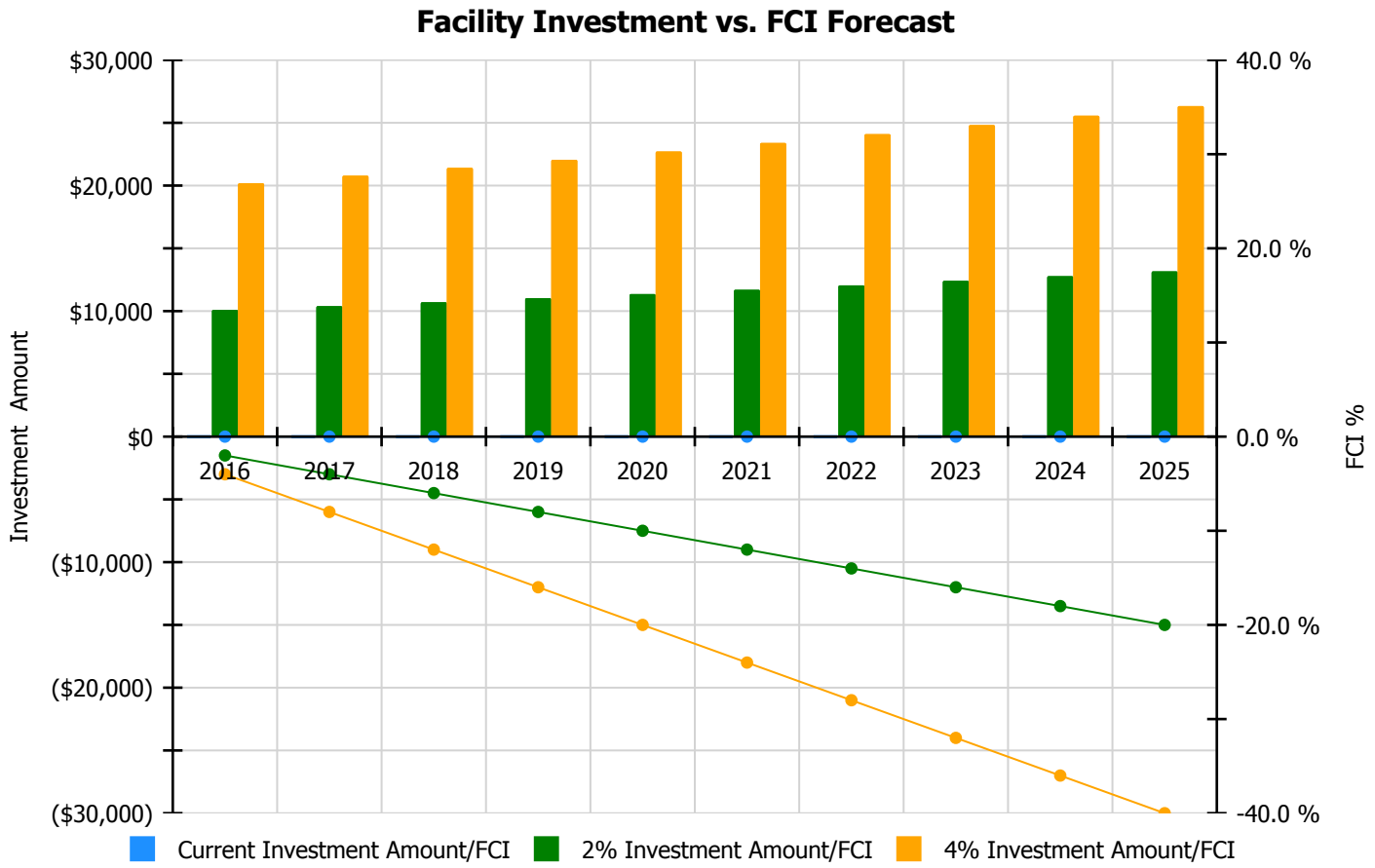
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

The chart below illustrates the effect of various investment levels on the building FCI for the next 10 years. The levels of investment shown below include:

- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value of the building, escalated for inflation



Year	Investment Amount Current FCI - 0%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$10,091.00	-2.00 %	$20,182.00	-4.00 %
2017	$0	$10,394.00	-4.00 %	$20,787.00	-8.00 %
2018	$0	$10,705.00	-6.00 %	$21,411.00	-12.00 %
2019	$0	$11,027.00	-8.00 %	$22,053.00	-16.00 %
2020	$0	$11,357.00	-10.00 %	$22,715.00	-20.00 %
2021	$0	$11,698.00	-12.00 %	$23,396.00	-24.00 %
2022	$0	$12,049.00	-14.00 %	$24,098.00	-28.00 %
2023	$0	$12,410.00	-16.00 %	$24,821.00	-32.00 %
2024	$0	$12,783.00	-18.00 %	$25,566.00	-36.00 %
2025	$0	$13,166.00	-20.00 %	$26,332.00	-40.00 %
Total:	**$0**	**$115,680.00**		**$231,361.00**	

Deficiency Summary by System

Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart lists all current deficiencies associated with this facility.

No data found for this asset

Deficiency Summary by Priority

The following chart shows the total repair costs broken down by priority. Assessors assigned deficiencies within eCOMET to one of the following priority categories:

No data found for this asset

Deficiency By Priority Investment Table

The table below shows the current investment cost grouped by deficiency priority and building system.

No data found for this asset

Deficiency Summary by Category

The following chart shows the total repair costs broken down by deficiency categories. Assessors assigned deficiencies to one of the following categories:

No data found for this asset

Deficiency Details by Priority

The deficiency detail notes listed below provide additional information on identified deficiencies found within the facility.

No data found for this asset

Equipment Inventory

The following table represents the inventory details of the inventory found in the building, which fall under the following subsystems:

No data found for this asset

Glossary

ABMA	American Boiler Manufacturers Association http://www.abma.com/
ACEEE	American Council for an Energy-Efficient Economy
ACGIH	American Council of Governmental and Industrial Hygienists
AEE	Association of Energy Engineers
AFD	Adjustable Frequency Drive
AFTC	After Tax Cash Flow
AGA	American Gas Association
AHU	Air Handling Unit
Amp	Ampere
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASD	Adjustable Speed Drive
ASHRAE	American Society of Heating Refrigerating and Air-Conditioning Engineers Inc.
ASME	American Society of Mechanical Engineers
Assessment	Visual survey of a facility to determine its condition. It involves looking at the age of systems reviewing information from local sources and visual evidence of potential problems to assign a condition rating. It does not include destructive testing of materials or testing of systems or equipment for functionality.
ATS	After Tax Savings
AW	Annual worth
BACNET	Building Automation Control Network
BAS	Building Automation System
BCR	Benefit Cost Ratio
BEP	Business Energy Professional (AEE)
BF	Ballast Factor
BHP	Boiler Horsepower (boilers)
BHP	Brake Horsepower (motors)
BLCC	Building Life Cycle Cost analysis program (FEMP)
BOCA	Building Officials and Code Administrators
BTCF	Before Tax Cash Flow

BTS	Before Tax Savings
Btu	British thermal unit
Building Addition	An area space or component of a building added to a building after the original building's year built date.
CAA	Clean Air Act
CAAA-90	Clean Air Act Amendments of 1990
CABO	Council of American Building Officials
CAC	Conventional Air Conditioning
CADDET	Center for the Analysis and Dissemination of Demonstrated Energy Technologies
Calculated Next Renewal	The year a system or element would be expected to expire based solely on the date it was installed and the expected useful lifetime for that kind of system.
Capital Renewal	Capital renewal is condition work (excluding suitability and energy audit work) that includes the replacement of building systems or elements (as they become obsolete or beyond their useful life) not normally included in an annual operating budget. Calculated next renewal The year a system or element would be expected to expire based solely on the date it was installed and the expected useful lifetime for that kind of system. Next renewal The assessor adjusted expected useful life of a system or element based on on-site inspection.
CDD	Cooling Degree Days
CDGP	Certified Distributed Generation Professional
CEC	California Energy Commission
CEM	Certified Energy Manager
CEP	Certified Energy Procurement Professional
CFC	Chlorofluorocarbon
CFD	Cash Flow Diagram
CFL	Compact Fluorescent Light
CFM cfm	Cubic Feet per Minute
CHP	Combined Heat and Power (a.k.a. cogeneration)
CHW	Chilled Water
Condition	Condition refers to the state of physical fitness or readiness of a facility system or system element for its intended use.
COP	Coefficient of Performance
Cp	Heat Capacity of Material
CPUC	California Public Utility Commission
CRI	Color Rendering Index
CRT	Cathode Ray Tube VDT HMI

CTC	Competitive Transition Charge
Cu	Coefficient of Utilization
Current Replacement Value (CRV)	CRV represents the hypothetical total cost of rebuilding or replacing an existing facility in current dollars to its optimal condition (excluding auxiliary facilities) under current codes and construction standards.
Cv	Value Coefficient
CWS	Chilled Water System
D d	Distance (usually feet)
DB	Dry Bulb
DCV	Demand Control Ventilation
DD	Degree Day
DDB	Double Declining Balance
DDC	Direct Digital Controls
Deferred maintenance	Deferred maintenance is condition work (excluding suitability and energy audit needs) deferred on a planned or unplanned basis to a future budget cycle or postponed until funds are available.
Deficiency	A deficiency is a repair item that is damaged missing inadequate or insufficient for an intended purpose.
Delta	Difference
Delta P	Pressure Difference
Delta T	Temperature Difference
DG	Distributed Generation
DOE	Department of Energy
DP	Dew Point
DR	Demand Response
DX	Direct Expansion Air Conditioner
EA	Energy Audit
EBITDA	Earnings before Interest Taxes Depreciation and Amortization
ECI	Energy Cost Index
ECM	Energy Conservation Measure
ECO	Energy Conservation Opportunity
ECPA	Energy Conservation and Production Act
ECR	Energy Conservation Recommendation
ECS	Energy Control System

EER	Energy Efficiency Ratio
EERE	Energy Efficiency and Renewable Energy division of US DOE
EIA	Energy Information Agency
EIS	Energy Information System
EMCS	Energy Management Computer System
EMO	Energy Management Opportunity
EMP	Energy Management Project
EMR	Energy Management Recommendation
EMS	Energy Management System
Energy Utilization Index (EUI)	EUI is the measure of total energy consumed in the cooling or heating of a building in a period expressed as British thermal unit (BTU) per (cooled or heated) gross square foot.
EO	Executive Order
EPA	Environmental Protection Agency
EPACT	Energy Policy Act of 1992
EPCA	Energy Production and Conservation Act of 1975
EPRI	Electric Power Research Institute
EREN	Efficiency and Renewable Energy (Division of USDOE)
ERV	Energy Recovery Ventilator
ESCO	Energy Service Company
ESPC	Energy Savings Performance Contract
EUI	Energy Use Index
EWG	Exempt Wholesale Generators
Extended Facility Condition Index (EFCI)	EFCI is calculated as the condition needs for the current year plus facility system renewal needs going out to a set time in the future divided by Current Replacement Value.
f	Frequency
F	Fahrenheit
Facility	A facility refers to site(s) building(s) or building addition(s) or combinations thereof that provide a particular service.
Facility Condition Assessment (FCA)	FCA is a process for evaluating the condition of buildings and facilities for programming and budgetary purposes through an on site inspection and evaluation process.
Facility Condition Index (FCI)	FCI is an industry-standard measurement of a facility's condition that is the ratio of the cost to correct a facility's deficiencies to the Current Replacement Value of the facilities. The higher the FCI the poorer the condition of a facility. After an FCI is established for all buildings within a portfolio a building's condition can be ranked relative to other buildings. The FCI may also represent the condition of a portfolio based on the cumulative FCIs of the portfolio's facilities.

FC	Footcandle
FCA	Fuel Cost Adjustment
FEMIA	Federal Energy Management Improvement Act of 1988
FEMP	Federal Energy Management Program
FERC	Federal Energy Regulatory Commission
FESR	Fuel Energy Savings Ratio
FLA	Full Load Amps
FLF	Facility Load Factor (usually monthly)
FLRPM	Full Load Revolutions per Minute
FMS	Facility Management System
FPM fpm	Feet per Minute (velocity)
FSEC	Florida Solar Energy Center
Ft	Foot
GPM gpm	Gallons per Minute
GRI	Gas Research Institute
Gross Square Feet (GSF)	The size of the enclosed floor space of a building in square feet measured to the outside face of the enclosing wall.
GUI	Graphical User Interface
H h	Enthalpy Btu/lb
HCFC	Hydrochlorofluorocarbons
HDD	Heating Degree days
HFC	Hydrofluorocarbons
HHV	Higher Heating Value
HID	High Intensity Discharge (lamp)
HMI	Human Machine Interface
HMMI	Human Man Machine Interface
HO	High Output (lamp)
HP Hp hp	Horsepower
HPS	High Pressure Sodium (lamp)
HR	Humidity Ratio
Hr hr	Hour

HRU	Heat Recovery Unit
HVAC	Heating Ventilation and Air-Conditioning
Hz	Hertz
I	Intensity (lumen output of lamp)
I i	Interest rate or Discount rate
IAQ	Indoor Air Quality
ICA	International Cogeneration Alliance
ICBO	International Conference of Buildings Officials
ICC	International Code Council
ICP	Institutional Conservation Program
IECC	International Energy Conservation Code
IEEE	Institute of Electrical and Electronic Engineers
IESNA	Illuminating Engineering Society of North America
Install year	The year a building or system was built or the most recent major renovation date (where a minimum of 70 of the system?s Current Replacement Value (CRV) was replaced).
IRP	Integrated Resource Planning
IRR	Internal Rate of Return
ISO	Independent System Operator
ITA	Independent Tariff Administrator
k	Kilo multiple of thousands in SI system
K	Kelvins (color temperature of lamp)
K k	Thermal Conductivity of Material
KVA	Kilovolt Ampere
KVAR	Kilovolt Ampere Reactive
kW	kiloWatt
kWh	kiloWatt hour
L	Length (usually feet)
LCC	Life Cycle Costing
LDC	Local Distribution Company
LEED	Leadership in Energy and Environmental Design
LEED EB	LEED for Existing Buildings

LEED NC	LEED for new construction
LF	Load Factor
LHV	Lower Heating Value
Life cycle	The period of time that a building or site system or element can be expected to adequately serve its intended function.
LPS	Low Pressure Sodium (lamp)
Lu	Lumen Output of a Lamp or Fixture
M	Mega multiple of millions in SI system
M&V	Measurement and Verification
MACRS	Modified Accelerated Cost Recovery System
MARR	Minimum Attractive Rate of Return
Mbtu	Thousand Btu
MCF	Thousand Cubic Feet (usually of gas)
MEC	Model Energy Code
Mm	Multiple of Thousands in I/P System
MMBtu	Million Btu
MMCS	Maintenance Management Computer System
MMI	Man Machine Interface
MMS	Maintenance Management System
MSE 2000	Management System for Energy 2000 (ANSI Georgia Tech Univ)
MW	MegaWatt
MWH MWh	MegaWatt hour
NAAQS	National Ambient Air Quality Standards
NAESCO	National Association of Energy Service Companies
NAIMA	North American Insulation Manufacturers Association
NEA	National Energy Act of 1978
NECPA	National Energy Conservation Policy Act
NEMA	National Electrical Manufacturer's Association
NERC	North American Electric Reliability Council
Next Renewal	The Next Renewal date is an override of the 'Calculated Next Renewal' date and is based upon the assessor?s visual inspection.

NFPA	National Fire Protection Association
NGPA	National Gas Policy Act of 1978
NLRPM	No Load Revolutions per Minute (speed)
Nn	Equipment or Project lifetime in economic analysis
NOPR	Notice of Proposed Rule Making from FERC
NOx	Nitrogen Oxide Compounds
NPV	Net present value in economic analysis
NREL	National Renewable Energy Laboratory
NUG	Non-Utility Generator
O&M	Operation and Maintenance
OA	Outside Air
ODP	Ozone Depletion Potential
OPAC	Off-Peak Air Conditioning
P	Present value in economic analysis
PBR	Performance Based Rates
PEA	Preliminary Energy Audit
PF	Power Factor
PID	Proportional plus integral plus derivative (control system)
PM	Portfolio Manager in Energy Star rating system
PM	Preventive Maintenance
PoolCo	Power Pool Company or Organization
POU	Point of Use
PQ	Power Quality
PSC	Public Service Commission
PSIA psia	Pounds per square inch absolute (pressure)
PSIG psig	Pounds per square inch gauge (pressure)
PUC	Public Utility Commission
PUHCA	Public Utilities Holding Company Act of 1935
PURPA	Public Utilities Regulatory Policies of 1978
PV	Photovotaic system

PV	Present Value
PW	Present Worth
PX	Power Exchange
q	Rate of heat flow in Btu per hour
Q	Heat load due to conduction using degree days
QF	Qualifying Facility
R	Electrical resistance
R	Thermal Resistance
RC	Remote controller
RCR	Room Cavity Ratio
RCRA	Resource Conservation and Recovery Act
Remaining Service Life (RSL)	RSL is the number of years service remaining for a system or equipment item. It is automatically calculated based on the difference between the current year and the 'Calculated Next Renewal' date or the 'Next Renewal' date whichever one is the later date.
Remaining Service Life Index (RSLI)	RSLI is defined as a percentage ratio of the remaining service life of a system. It usually ranges from 0 to 100
REMR	Repair Evaluation Maintenance Rehabilitation (REMR) is a scale used to objectively rank systems based on their condition
Renewal Schedule	A timeline that provides the items that need repair the year in which the repair is needed and the estimated price of the renewal.
RH	Relative Humidity
RLA	Running Load Amps
RMS	Root Mean Square
RO	Reverse Osmosis
ROI	Return on Investment
RPM	Revolutions Per Minute
RTG	Regional Transmission Group
RTO	Regional Transmission Organization
RTP	Real Time Pricing
SBCCI	Southern Building Code Congress International
SC	Scheduling Coordinator
SC	Shading Coefficient
SCADA	Supervisory Control and Data Acquisition Systems

SEER	Seasonal Energy Efficiency Ratio
SHR	Sensible Heat Ratio
Site	The grounds and utilities roadways landscaping fencing and other typical land improvements needed to support the facility.
Soft Cost	An expense item that is not considered direct construction cost. Soft cost includes architectural engineering financing legal fees and other pre-and-post construction expenses.
SOx	Sulfur Oxide Compounds
SP	Static Pressure
SP SPB	Simple Payback
SPP	Simple Payback Period
SPP	Small Power Producers
STR	Stack Temperature Rise
SV	Specific Volume
System	System refers to building and related site work elements as described by ASTM Uniformat II Classification for Building Elements (E1557-97) a format for classifying major facility elements common to most buildings. Elements usually perform a given function regardless of the design specification construction method or materials used. See also Uniformat II.
T	Temperature
T	Tubular (lamps)
TAA	Technical Assistance Audit
TCP/IP	Transmission Control Protocol/Internet Protocol
TES	Thermal Energy Storage
THD	Total Harmonic Distortion
TOD	Time of Day
TOU	Time of Use
TQM	Total Quality Management
TransCo	Transmission Company
U	Thermal Conductance
UDC	Utility Distribution Company
UL	Underwriters Laboratories
UNIFORMAT II	The ASTM UNIFORMAT II Classification for Building Elements (E1557-97) a format for classifying major facility components common to most buildings.
USGBC	US Green Building Council
v	Specific Volume

V	Volts Voltage
V	Volume
VAV	Variable Air Volume
VDT	Video Display Terminal
VFD	Variable Frequency Drive
VHO	Very High Output
VSD	Variable Speed Drive
W	Watts
W	Width
WB	Wet bulb
WH Wh	Watt Hours
Year built	The year that a building or addition was originally built based on substantial completion or occupancy.
Z	Electrical Impedance