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.

Masterman School

Governance	DISTRICT	Report Type	Middlehigh
Address	1699 Spring Garden St.	Enrollment	1189
	Philadelphia, Pa 19130	Grade Range	'05-12'
Phone/Fax	215-299-4661 / 215-299-3425	Admissions Category	Special Admit
Website	Www.Philasd.Org/Schools/Masterman	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	**40.64%**	**$22,526,950**	**$55,433,107**
Building	39.54 %	$21,641,107	$54,726,279
Grounds	125.33 %	$885,843	$706,828

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	128.21 %	$1,201,040	$936,753
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.00 %	$0	$4,596,900
Windows (Shows functionality of exterior windows)	00.00 %	$0	$2,247,000
Exterior Doors (Shows condition of exterior doors)	00.00 %	$0	$152,250
Interior Doors (Classroom doors)	27.48 %	$101,296	$368,550
Interior Walls (Paint and Finishes)	72.53 %	$1,280,263	$1,765,050
Plumbing Fixtures	03.20 %	$45,475	$1,419,600
Boilers	00.00 %	$0	$1,960,350
Chillers/Cooling Towers	61.11 %	$1,570,742	$2,570,400
Radiators/Unit Ventilators/HVAC	157.13 %	$7,092,918	$4,513,950
Heating/Cooling Controls	158.90 %	$2,252,470	$1,417,500
Electrical Service and Distribution	105.69 %	$1,076,434	$1,018,500
Lighting	34.16 %	$1,243,982	$3,641,400
Communications and Security (Cameras, Pa System and Fire Alarm)	58.02 %	$791,418	$1,363,950

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

S214001;Masterman

Final

Site Assessment Report

February 2, 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):	105,000
Year Built:	1933
Last Renovation:	2014
Replacement Value:	$55,433,107
Repair Cost:	$22,526,950.14
Total FCI:	40.64 %
Total RSLI:	58.79 %

Description:

Facility Assessment
September 2015

School District of Philadelphia
Masterman Middle Secondary School
1699 Spring Garden Street
Philadelphia, PA 19130

105,000 SF / 806 Students / LN 03

The Masterman School building is located at 1699 Spring Garden Street in Philadelphia, PA. The 5 story, 105,000 square foot building was originally constructed in 1932. The building has a basement partially above ground and penthouses on the roof. Portion of the 5th floor is an open terrace enclosed with a wire mesh structure and serves as an outdoor gym. A major renovation was performed in 2000 and 2014 consisting of toilets for ADA accessibility and façade renovations.

Mr. Dave Loftus, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned renovation projects. Mr. Eddie Davis, building engineer, accompanied us on our tour of the school and provided us with detailed

information on the building systems and recent maintenance history. School principal, Ms. Jessica Brown provided additional information about school's condition.

ARCHITECTURE/STRUCTURAL SYSTEMS

The building typically rests on concrete foundations and bearing walls that are not showing signs of settlement or water penetration. Foundation walls do not show signs of deterioration. The mold build-up is not evident in mechanical spaces. The basement slab does not show signs of heaving.

The main structure consists typically of cast-in-place concrete columns, beams and one-way concrete slabs. Long slab spans are supported with steel truss girders. The floor slabs and superstructure are generally in good condition.

The roof structure is typically similar to floor construction. The outdoor gym on the 5th floor is enclosed with wire mesh netting supported by pipe framing. The structure is deteriorating and rusty.

The building envelope is typically masonry with face brick with decorative stone friezes and quoining. Main entrance is accentuated with stone columns and a tympanum at the roof level. In general, masonry is in good condition; masonry restoration (tuck pointing) was performed in 2014.

The original building windows were retrofitted in 1990's with extruded aluminum double hung windows single glazed with acrylic glazing; original wood frames are left in place. Basement windows are fitted with galvanized steel security screens. All windows are generally in good condition.

Roofing is typically built-up. All roofing and flashing is typically in poor condition with deterioration of the built-up system including water ponding and soft spots; leaks have been reported. The outdoor gym terrace is covered with cement topping; some deterioration is evident, leaks have been reported.

Exterior doors are typically hollow metal in good condition, weather-stripping is installed.

INTERIORS - Partition wall types include plastered ceramic hollow blocks and painted CMU. Corridors and stairways have marble wainscot.

The interior wall finishes are generally painted plaster or CMU and some painted brick. Walls in toilets are covered with ceramic tile installed in 2000. Generally, paint is in fair condition with some deterioration in auditorium, stairways and other spaces.

Most ceilings are painted plaster in classrooms, auditorium and gym; some water damage has been observed. 2x4 suspended acoustical panels are installed in some classrooms (mainly 4th floor), offices and library; cafeteria and kitchen has 1x1 perforated metal tiles with concealed grid in poor condition and deteriorating.

Flooring in classrooms, and auditorium and gym is generally hardwood, (30% requires refinishing); and terrazzo in most corridors and cafeteria. Some classrooms have VCT installed in mid 1990's; approximately 20% is in poor condition. Floor in toilets is typically ceramic tile installed in 2000. Office spaces floor is VAT. Main entrance hallway floor has a combination of terrazzo and marble finish in good condition. A new carpet was installed in the library in 2014.

Interior doors are generally rail and stile wood doors, most glazed, in wood frames with transoms and solid core in hollow metal frames. Doors are typically in good condition. Most doors are fitted with door knobs and are not ADA compliant.

Fittings include original chalk boards, generally in poor condition. Toilet partitions and accessories in are in very good condition, installed in 2000 and ADA compliant; handrails, generally in good condition. Interior identifying signage is typically directly painted on wall or door surfaces generally in poor condition.

Stair construction is generally concrete with terrazzo treads and stringers, in good condition.

Furnishings include fixed casework in classrooms, corridors and library, generally in good condition; window shades/blinds, generally in good condition; fixed auditorium seating is original, generally in fair condition. Lockers are built-in along corridor walls and in good condition.

MECHANICAL SYSTEMS

CONVEYING SYSTEMS - The building has two 3000 lb. traction elevators serving 5 floors and the basement. Frequent break-downs have been reported.

Plumbing Fixtures - Many of the original plumbing fixtures were replaced within the last fifteen years according to the Building Engineer. Fixtures in the restrooms on each floor consist of wall mounted flush valve water closets, wall hung urinals, and lavatories with wheel handle faucets. These fixtures should provide reliable service for the next 10-15 years.

Drinking fountains in the corridors consist of new handicap accessible wall hung fixtures with integral refrigerated coolers and older non-accessible wall hung fixtures with integral refrigerated coolers. The older units are well beyond their service life and should be replaced.

A mop basin is available in a janitor closet in the corridor on each floor for use by the janitorial staff.

The Kitchen, located on the 4th floor, has two sinks; one two-compartment stainless steel prep sink with lever operated faucets and one three-compartment stainless steel sink with lever operated faucets. Both sinks are equipped with grease traps. Chemicals are injected manually into the sanitizing basins of each sink.

Domestic Water Distribution - A 4" city water service enters the building from N. Seventeenth Street. The 4" meter and valves are located in the basement mechanical room on the west side of the building. Two reduced pressure backflow preventers are installed in parallel. Duplex base mounted 7.5HP Armstrong domestic pressure booster pumps are installed on the domestic water line to ensure adequate pressure throughout the system. The original domestic hot and cold water distribution piping was replaced with copper piping and sweat fittings. The maintenance staff reports no significant problems with scale build up in the domestic piping and the supply is adequate to the fixtures, but the piping has been in use for an unknown amount of time and should be inspected and replaced by a qualified contractor.

Three (3) Paloma gas fired instant hot water heaters with associated circulating pumps supply hot water for domestic use. The units are located in a mechanical room on the basement level on the south side of the building. The installation dates of the units are unknown. The hot water heaters are equipped with T&P relief valves. The domestic hot water heaters are most likely reaching the end of their service lives and should be replaced in the next 1-3 years.

Sanitary Waste - The original sanitary sewer piping is still in use and is a mixture of threaded galvanized piping and cast iron with hub and spigot fittings. Some repairs have been made with steel piping with no-hub fittings.

A sewage ejector pit located in the basement mechanical room on the south side of the building receives water from the basement area and condensate return pit. It has a single pump that is covered in rust but was operational at the time of the site visit. The pump system should be replaced to prevent flooding of the basement. The pit is not sealed, but should be.

The maintenance staff reported mostly minor problems with the sanitary waste piping systems. The original sewer piping has been in service for over 80 years and will require more frequent attention from the maintenance staff as time passes. The District should hire a qualified contractor to examine the sanitary waste piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

Rain Water Drainage - Rain water drains from the roof are routed through mechanical chases in the building and appear to be original. Some of the original galvanized piping has been repaired with steel piping and no-hub fittings. The rain leaders have been in use beyond their service life and the District should hire a qualified contractor to examine the rain water drainage piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

MECHANICAL SYSTEMS

Energy Supply - A 3" city gas service enters the building in the basement from N. Seventeenth Street, the meter is 2". Gas is used only for the kitchen equipment at this time.

Heat Generating Systems - High pressure steam is purchased from Trigen; there are no boilers in the building. The 1 ½" high pressure steam line enters the building in the basement from Spring Garden Street and goes through two pressure reducing valves. The Building Engineer reported that he typically runs the building at 4-5psi. The Building Engineer must throttle the steam valve to control the temperature within the building. The condensate receiver tank, located in the basement mechanical room, is in poor condition and covered in rust. This tank should be replaced.

Distribution Systems - Steam piping is black steel with welded fittings. The condensate piping is black steel with threaded fittings.

Steam and condensate piping mains from the basement level run up through the building to the fin tube radiators on all five floors. The distribution piping has been in use well beyond its service life and will require more frequent attention from the maintenance staff to address pipe/valve failures as time passes. The District should hire a qualified contractor to examine the steam and condensate piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

Two pipe fin tube radiators provide heating for the majority of classrooms, offices, and hallways in the school. The original radiators were replaced at some point with fin tube radiators, which are well beyond their service life and should be replaced. Ventilation for most of the original building is provided by gravity ventilators and opening windows, which does not meet current codes for outdoor air ventilation. A new heating system should be installed to meet ventilation requirements and achieve more efficient operation. The new units should be designed for quiet operation and equipped with hot water coils, chilled water coils, and integral heat exchangers, where applicable, to introduce outdoor air to the building.

A kitchen hood with an integral Ansul fire suppression system is installed above the gas fired cooking equipment. The system does not have a gas fired makeup air unit serving the hood and one should be installed. An automatic gas shutoff valve is not installed with the kitchen hood equipment. The equipment is estimated to be within its service life.

The school has limited mechanical ventilation, only in the restrooms via exhaust fans. The existing house fan provided ventilation system is inoperable as the house fan is decommissioned. Ventilation should be provided for the Gymnasium by a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in the window openings. Similar units could be installed for the Administration offices. Ventilation should be provided for the Auditorium and Cafeteria by installing constant volume air handling units with distribution ductwork and registers. These units would be equipped with hot water heating coils and chilled water cooling coils. Steam converters would be installed in the existing boiler room with circulating pumps, distribution piping and controls to provide heating hot water for the new coils.

Ventilation for the restrooms is provided by exhaust fans located in mechanical rooms in penthouses on the 5th floor. Many of the fans look beyond their service life and should be replaced; the Building Engineer did not know the year they were installed. Many of the fan motors did not have OSHA required belt guards installed.

Terminal & Package Units - Several of the classrooms in the school building have window air conditioning units that have an anticipated service life of only 10 years. Installing a 275 ton air-cooled chiller with pumps located in a mechanical room and chilled water distribution piping would supply more reliable air conditioning for the building with a much longer service life.

A Mitsubishi split system air conditioning system provides cooling to the LAN room located on the first floor on the West side of the building. The installation date of this unit is unknown; the anticipated service life of a split system air conditioner is 15 years. The district should budget to replace this unit within the next 7-10 years.

Controls & Instrumentation - The original pneumatic systems provide no control functions. Pneumatic room thermostats are intended to control the steam radiator control valves. In reality the radiator control valves are wide open and heating control is achieved via the incoming steam line. Pneumatic control air is supposed to be supplied from a Champion compressor and Hankison air dryer, but there are leaks in the control air lines and the Building Engineer no longer runs the air compressor. The pneumatic systems are beyond their service life and no longer function as intended. The original control valves and pneumatic actuators are beyond their service life and should be rebuilt or replaced. These controls should be converted to DDC.

A new building automation system (BAS) with modern DDC modules and communications network should be installed to serve the HVAC systems in this building to improve reliability and energy efficiency. An interface should be provided with the preferred system in use throughout the District.

Sprinklers - The school building is NOT covered by an automatic sprinkler system. Installing a sprinkler system with quick response type heads should reduce insurance costs by providing protection for the property investment. A fire pump may be required depending on the available city water pressure. The building does have standpipe in the stairwells.

The building does have fire stand pipes located next to the elevator on each of the five floors.

ELECTRICAL SYSTEMS

Site electrical service – This school has two electrical services.

The first service has a primary power at 2400V from the street power pole which goes underground and feeds two transformer (total

500 KVA, 2400V – 120V/208V, 3 Phase) in a vault near the electrical room. The main disconnect is rated at 1200A, 120V/208V, 3 phase, and is located in main electrical room. The PECO meter (PECO 82 750 101) is also located inside the electrical room. The service entrance and the main building electrical distribution systems are old and have reached the end of their useful service life. They provide power for lighting and receptacles of the building, and not the HVAC System.

A second electrical service is installed to provide power for the mechanical loads and IT System. The second service also has a primary power at 2400V from the street power pole which goes underground and feeds a transformer (250 KVA, 2400V – 480V/227V, 3 Phase) in the same vault. The second electrical service is fairly new and has not reached the end of its useful service. The new switchboard and PECO meter (PECO 83 043 194) is also located inside the electrical room adjacent to the first PECO meter.

Distribution system - The electrical distribution is accomplished with a 120V/208V, 3 phase distribution switchboards. Switchboard feeds the 120V panels throughout the building (two in each floor). These panels are in poor condition and have reached the end of their useful service. However the HVAC and IT panels are in good condition.

Receptacles - There is not enough receptacles in classrooms, computer rooms, libraries, and other areas. There should be minimum of two receptacles on each wall of the classrooms, and other areas

Lighting - Interior building is illuminated by various types of fixtures. They include fluorescent lighting (with T-12 & T-8 lamp) in majority of the areas, including; classrooms, corridor, offices, and the Kitchen. Surface or pendant mounted industrial fluorescent fixtures are used in mechanical and electrical rooms. Auditorium, hallways and Library have new fixtures. The Gymnasium also has new HID fixtures. However, the majority of interior lighting fixtures (50%) is in a poor condition and has reached the end of their useful service.

Fire alarm - The present Fire Alarm system is old and is not automatic/addressable, and is not in compliance with safety codes. There are manual pulls stations throughout the building. However, there are insufficient number of horns/strobes installed in the classrooms, corridors, offices and other areas in the school.

Telephone/LAN - The school telephone and data systems are new and working adequately. A main distribution frame (MDF) along with a telephone PBX system is providing the necessary communication function of the building. School is also equipped with Wi-Fi system.

Public Address - Separate PA system does not exist. School uses the telephone systems for public announcement. The present Intercom System is functioning fine. Each class room is provided with intercom telephone service. The system allows paging and intercom communication between main office to classrooms, and vice versa (classrooms to main office). The system also allows communication between classrooms to classrooms.

Clock and Program system – Clocks and program systems are old and not in a good working condition. Classrooms are provided with 12-inch wall mounted round clocks; however they are not properly controlled by the central master control panel.

Television System - Television system is not provided in the school. Most classes are equipped with smart boards having the ability to connect to computers and internet.

Security Systems, access control, and video surveillance - The school does not have a functioning video surveillance system. There are not sufficient cameras at exit doors, corridors, exterior, and other critical areas. The school principal expressed desire to have a video surveillance system. The new cameras should be controlled by a Closed Circuit Television system (CCTV).

Emergency Power System - School has a new 100 KW emergency generator (2010) which feeds elevators, emergency lighting and other emergency loads. The Generator is correctly sized with ample capacity.

Emergency lighting system, including exit lighting - There are insufficient emergency lighting fixtures in corridors and other exit ways. Exit signs and emergency fixtures are old and have reached the end of their useful service.

Lightning Protection System - There is inadequate lightning protection system in the school. The roof has lightning rods; however they are not properly connected to the ground. The stranded aluminum cables are broken.

Grounding - The present grounding system is adequate. All equipment is correctly bonded to the ground.

Site Lighting - The school grounds and building perimeters are not adequately lighted for safety of the people and security of property.

Site Paging - The present Site paging System is not adequate. There is insufficient number of speaker on building's exterior walls.

GROUNDS (SITE):

There is no parking lot at the site; staff parking is located on a separate lot north of Brandywine Street. Pavement is in very poor condition, striping is deteriorated with no accessible stalls or signage.

A small courtyard separates the main entrance from Spring Garden St. Its pavement is deteriorated, granite steps need resetting. There is no playground at the site. There is no landscaping, except a narrow strip of shrubs along south façade, in good condition.

ACCESSIBILITY - The building does have accessible entrance and accessible route. Ramps have been installed throughout the building where floors change elevation. The toilets are equipped with accessible fixtures, partitions and accessories, such as grab bars. Most doors in the building do not have ADA required door handles.

RECOMMENDATIONS:

- Refurbish wire mesh structure enclosing outdoor gym on 4th floor; clean and paint framing, install new wire mesh
- Replace topping on outdoor gym floor, install new waterproofing membrane
- Install all new roofing system including insulation; tear-down existing roofing; install flashing, counter flashing and reglets
- Replace damaged VCT
- Replace all VAT tile in office spaces
- Repair (10%) & refinish hardwood flooring (50%)
- Repair (15%) and repaint all walls
- Repair (10%) and repaint all ceilings
- Replace acoustic tile in cafeteria and kitchen
- Install new signage throughout
- Provide ADA compliant hardware on interior doors
- Refurbish elevator cabins and provide new controls (2 elevators)
- Replace courtyard paving, re-set stone steps
- Replace chain link fence
- Resurface and restripe parking, replace wheel stops
- Replace six (6) wall hung drinking fountains and integral refrigerated coolers in the corridors. These units are well beyond their service life and are NOT accessible type.
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for an unknown amount of time, and replace any damaged piping.
- Replace existing three (3) Paloma gas fired instant hot water heaters which are approaching the end of their service lives with new gas fired hot water heaters.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Hire a qualified contractor to perform a detailed examination of the rain water drainage piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Replace existing sewage ejector pump system and piping in the basement as it is beyond its service life and was not functional during the site visit.
- Hire a qualified contractor to examine the steam piping, in service for nearly 80 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.
- Conduct a steam trap survey to identify and replace failed traps passing live steam into the condensate piping system and to ensure proper function of the vacuum condensate return system.
- Remove the existing fin tube steam radiators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.
- Replace the existing vacuum condensate receiver tank in the basement mechanical room, which is damaged from rust and does not function properly.
- Remove the window air conditioning units and install a 275 ton air-cooled chiller with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.
- Provide ventilation for the Administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.
- Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.
- Provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

- Install a gas fired make-up air unit in the Kitchen to allow conditioned fresh air makeup for when the kitchen hood is in use.
- Replace four (4) exhaust fans, in use beyond their service life, in the penthouses on the 5th floor with new fans.
- Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.
- Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure
- Install new Site electrical service 1500KVA, 480V, 3 Phase to feed the HVAC Loads (480V), as well as, the lighting and receptacle loads (120V).
- Install a new 480V, 3 phase switchgear.
- Install a new 120V/208V, 3 phase switchgear.
- Install new 120V panelboards throughout the building for lighting, and receptacles loads.
- Install new receptacles in all classrooms and other areas (minimum two receptacles on each wall).
- Install new a lighting system for most of building, except the Gym, the library, the auditorium and other updated areas (50%).
- Install new emergency exit signs & emergency lights.
- Install a new automated FA System
- Install a new Clock System.
- Install a new security system with cameras and monitor (CCTV).
- Install new site lighting for safety of the people and security of property.
- Install new site paging on building exterior walls.

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 3 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S214001		

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	18.00 %	0.00 %	$0.00
A20 - Basement Construction	18.00 %	0.00 %	$0.00
B10 - Superstructure	18.00 %	2.80 %	$280,370.01
B20 - Exterior Enclosure	28.32 %	0.00 %	$0.00
B30 - Roofing	110.00 %	128.21 %	$1,201,040.37
C10 - Interior Construction	36.10 %	3.93 %	$101,295.64
C20 - Stairs	18.00 %	0.00 %	$0.00
C30 - Interior Finishes	73.44 %	29.28 %	$1,969,719.82
D10 - Conveying	105.71 %	471.61 %	$757,643.62
D20 - Plumbing	73.37 %	75.71 %	$1,593,163.45
D30 - HVAC	89.30 %	93.46 %	$10,916,128.89
D40 - Fire Protection	96.05 %	177.49 %	$1,502,071.88
D50 - Electrical	110.11 %	53.79 %	$3,319,673.29
E10 - Equipment	19.92 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	0.00 %	$0.00
G20 - Site Improvements	106.19 %	130.66 %	$674,373.69
G40 - Site Electrical Utilities	106.67 %	110.88 %	$211,469.48
Totals:	**58.79 %**	**40.64 %**	**$22,526,950.14**

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)
B214001;Masterman	105,000	39.54	$1,151,137.00	$1,077,806.32	$5,287,508.24	$3,165,493.68	$10,959,161.73
G214001;Grounds	13,800	125.33	$0.00	$141,679.76	$674,373.69	$69,789.72	$0.00
Total:		**40.64**	**$1,151,137.00**	**$1,219,486.08**	**$5,961,881.93**	**$3,235,283.40**	**$10,959,161.73**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $1,151,137.00
- 2 - Response Time (2-3 yrs) - $1,219,486.08
- 3 - Response Time (3-4 yrs) - $5,961,881.93
- 4 - Response Time (4-5 yrs) - $3,235,283.40
- 5 - Response Time (> 5 yrs) - $10,959,161.73

Budget Estimate Total: $22,526,950.14

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:	Middle School
Gross Area (SF):	105,000
Year Built:	1933
Last Renovation:	
Replacement Value:	$54,726,279
Repair Cost:	$21,641,106.97
Total FCI:	39.54 %
Total RSLI:	58.17 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B214001
Sewage Ejector:	Yes	Status:	Accepted by SDP
Site ID:	S214001		

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	18.00 %	0.00 %	$0.00
A20 - Basement Construction	18.00 %	0.00 %	$0.00
B10 - Superstructure	18.00 %	2.80 %	$280,370.01
B20 - Exterior Enclosure	28.32 %	0.00 %	$0.00
B30 - Roofing	110.00 %	128.21 %	$1,201,040.37
C10 - Interior Construction	36.10 %	3.93 %	$101,295.64
C20 - Stairs	18.00 %	0.00 %	$0.00
C30 - Interior Finishes	73.44 %	29.28 %	$1,969,719.82
D10 - Conveying	105.71 %	471.61 %	$757,643.62
D20 - Plumbing	73.37 %	75.71 %	$1,593,163.45
D30 - HVAC	89.30 %	93.46 %	$10,916,128.89
D40 - Fire Protection	96.05 %	177.49 %	$1,502,071.88
D50 - Electrical	110.11 %	53.79 %	$3,319,673.29
E10 - Equipment	19.92 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	0.00 %	$0.00
Totals:	**58.17 %**	**39.54 %**	**$21,641,106.97**

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	$23.16	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$2,431,800
A1030	Slab on Grade	$5.17	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$542,850
A2010	Basement Excavation	$4.36	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$457,800
A2020	Basement Walls	$10.05	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$1,055,250
B1010	Floor Construction	$85.94	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$9,023,700
B1020	Roof Construction	$9.26	S.F.	105,000	100	1933	2033		18.00 %	28.84 %	18		$280,370.01	$972,300
B2010	Exterior Walls	$43.78	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$4,596,900
B2020	Exterior Windows	$21.40	S.F.	105,000	40	1995	2035		50.00 %	0.00 %	20			$2,247,000
B2030	Exterior Doors	$1.45	S.F.	105,000	25	1995	2020		20.00 %	0.00 %	5			$152,250
B3010105	Built-Up	$37.76	S.F.	16,500	20	1933	1953	2037	110.00 %	107.68 %	22		$670,863.83	$623,040
B3010120	Single Ply Membrane	$38.73	S.F.	8,100	20	1933	1953	2037	110.00 %	169.00 %	22		$530,176.54	$313,713
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	0	30				0.00 %	0.00 %				$0
C1010	Partitions	$17.91	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$1,880,550
C1020	Interior Doors	$3.51	S.F.	105,000	40	1933	1973	2057	105.00 %	27.48 %	42		$101,295.64	$368,550
C1030	Fittings	$3.12	S.F.	105,000	40	2000	2040		62.50 %	0.00 %	25			$327,600
C2010	Stair Construction	$1.41	S.F.	105,000	100	1933	2033		18.00 %	0.00 %	18			$148,050

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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 $
C3010230	Paint & Covering	$13.21	S.F.	105,000	10	2000	2010	2027	120.00 %	92.30 %	12		$1,280,262.75	$1,387,050
C3010231	Vinyl Wall Covering	$0.97	S.F.	105,000	15				0.00 %	0.00 %				$101,850
C3010232	Wall Tile	$2.63	S.F.	105,000	30	2000	2030		50.00 %	0.00 %	15			$276,150
C3020411	Carpet	$7.30	S.F.	2,640	10	2014	2024		90.00 %	0.00 %	9			$19,272
C3020412	Terrazzo & Tile	$75.52	S.F.	25,200	50	2000	2050		70.00 %	0.00 %	35			$1,903,104
C3020413	Vinyl Flooring	$9.68	S.F.	11,600	20	1995	2015	2037	110.00 %	50.05 %	22		$56,199.98	$112,288
C3020414	Wood Flooring	$22.27	S.F.	32,000	25	1933	1958	2042	108.00 %	24.17 %	27		$172,271.04	$712,640
C3020415	Concrete Floor Finishes	$0.97	S.F.	12,600	50	1933	1983	2072	114.00 %	0.00 %	57			$12,222
C3030	Ceiling Finishes	$20.97	S.F.	105,000	25	2000	2025		40.00 %	20.94 %	10		$460,986.05	$2,201,850
D1010	Elevators and Lifts	$1.53	S.F.	105,000	35	1933	1968	2052	105.71 %	471.61 %	37		$757,643.62	$160,650
D2010	Plumbing Fixtures	$13.52	S.F.	105,000	35	2000	2035	2035	57.14 %	3.20 %	20		$45,475.14	$1,419,600
D2020	Domestic Water Distribution	$1.68	S.F.	105,000	25	1980	2005	2042	108.00 %	343.25 %	27		$605,493.42	$176,400
D2030	Sanitary Waste	$2.52	S.F.	105,000	30	1933	1963	2047	106.67 %	180.11 %	32		$476,579.73	$264,600
D2040	Rain Water Drainage	$2.32	S.F.	105,000	30	1933	1963	2047	106.67 %	191.14 %	32		$465,615.16	$243,600
D3020	Heat Generating Systems	$18.67	S.F.	105,000	35	1990	2025		28.57 %	0.00 %	10			$1,960,350
D3030	Cooling Generating Systems	$24.48	S.F.	105,000	20			2037	110.00 %	61.11 %	22		$1,570,741.74	$2,570,400
D3040	Distribution Systems	$42.99	S.F.	105,000	25	1933	1958	2042	108.00 %	157.13 %	27		$7,092,917.57	$4,513,950
D3050	Terminal & Package Units	$11.60	S.F.	105,000	20	2005	2025		50.00 %	0.00 %	10			$1,218,000
D3060	Controls & Instrumentation	$13.50	S.F.	105,000	20	1990	2010	2037	110.00 %	158.90 %	22		$2,252,469.58	$1,417,500
D4010	Sprinklers	$7.05	S.F.	105,000	35			2052	105.71 %	202.91 %	37		$1,502,071.88	$740,250
D4020	Standpipes	$1.01	S.F.	105,000	35	1990	2025		28.57 %	0.00 %	10			$106,050
D5010	Electrical Service/Distribution	$9.70	S.F.	105,000	30	1933	1963	2047	106.67 %	105.69 %	32		$1,076,434.29	$1,018,500
D5020	Lighting and Branch Wiring	$34.68	S.F.	105,000	20	1933	1953	2037	110.00 %	34.16 %	22		$1,243,982.43	$3,641,400
D5030	Communications and Security	$12.99	S.F.	105,000	15	1933	1948	2032	113.33 %	58.02 %	17		$791,417.83	$1,363,950
D5090	Other Electrical Systems	$1.41	S.F.	105,000	30	1933	1963	2047	106.67 %	140.38 %	32		$207,838.74	$148,050
E1020	Institutional Equipment	$4.82	S.F.	105,000	35				0.00 %	0.00 %				$506,100
E1090	Other Equipment	$11.10	S.F.	105,000	35	1990	2025		28.57 %	0.00 %	10			$1,165,500
E2010	Fixed Furnishings	$2.13	S.F.	105,000	40	1933	1973	2057	105.00 %	0.00 %	42			$223,650
								Total	**58.17 %**	**39.54 %**			**$21,641,106.97**	**$54,726,279**

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: Paint 80%
Tile 20%

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

Note: Hardwood 38%
Terrazzo 24%
Ceramic tile 6%
Carpet 3%
VCT/VAT 14%
Concrete 15%

System: C3030 - Ceiling Finishes — This system contains no images

Note: ACT 20%
Exposed/plaster, painted 80%

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:	**$21,641,107**	**$0**	**$0**	**$0**	**$0**	**$194,149**	**$0**	**$0**	**$0**	**$27,660**	**$9,833,335**	**$31,696,252**
*** 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	$280,370	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$280,370**
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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2030 - Exterior Doors	$0	$0	$0	$0	$0	$194,149	$0	$0	$0	$0	$0	**$194,149**
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	$670,864	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$670,864**
B3010120 - Single Ply Membrane	$530,177	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$530,177**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

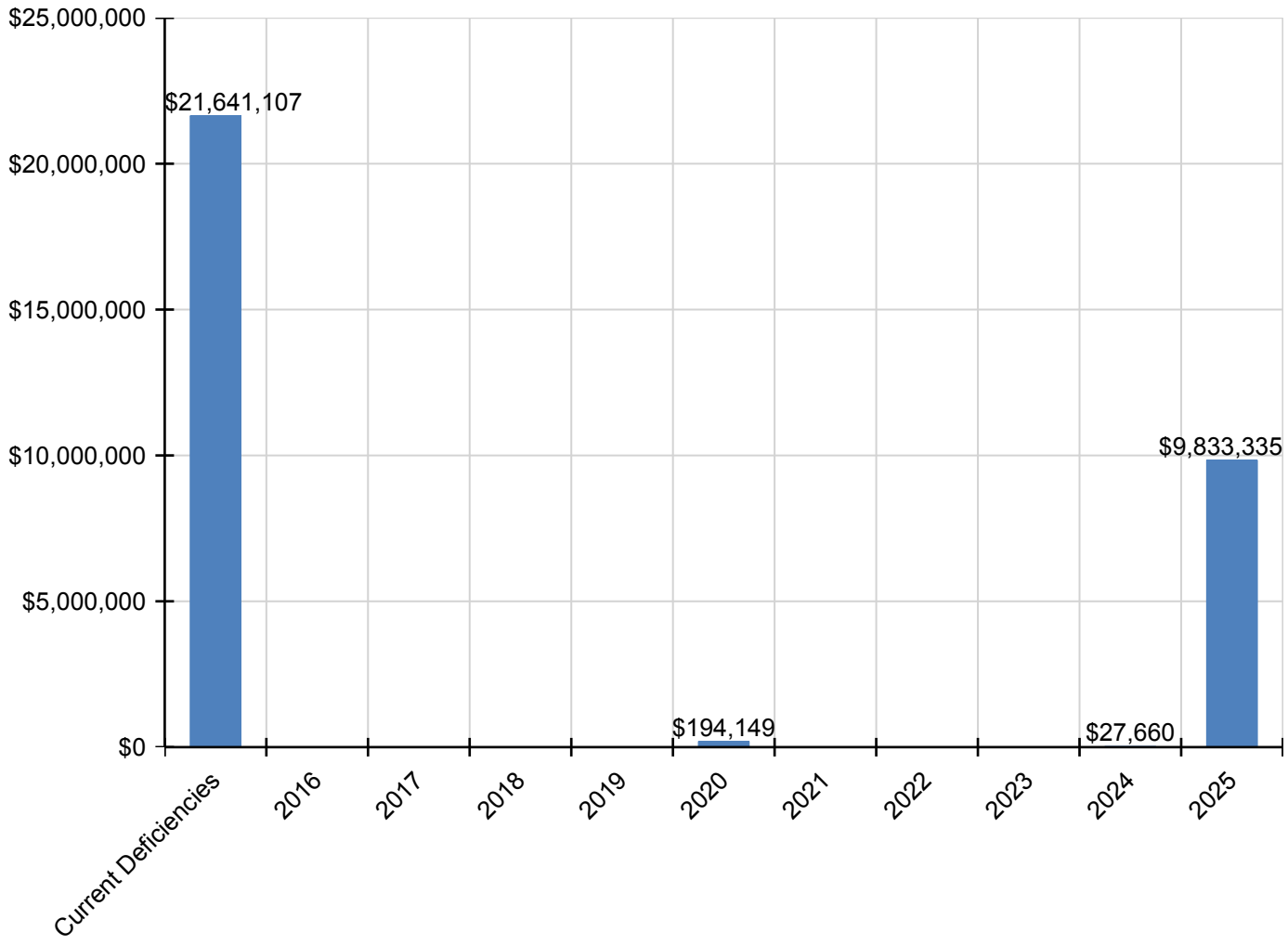
C1020 - Interior Doors	$101,296	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$101,296**
C1030 - Fittings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$1,280,263	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,280,263**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$27,660	$0	**$27,660**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$56,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$56,200**
C3020414 - Wood Flooring	$172,271	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$172,271**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$460,986	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,255,013	**$3,715,999**
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	$757,644	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$757,644**
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	$605,493	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$605,493**
D2030 - Sanitary Waste	$476,580	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$476,580**
D2040 - Rain Water Drainage	$465,615	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$465,615**
D30 - HVAC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3020 - Heat Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,898,001	**$2,898,001**
D3030 - Cooling Generating Systems	$1,570,742	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,570,742**
D3040 - Distribution Systems	$7,092,918	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$7,092,918**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,800,579	**$1,800,579**
D3060 - Controls & Instrumentation	$2,252,470	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,252,470**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,502,072	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,502,072**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$156,775	**$156,775**

D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$1,076,434	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,076,434**
D5020 - Lighting and Branch Wiring	$1,243,982	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,243,982**
D5030 - Communications and Security	$791,418	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$791,418**
D5090 - Other Electrical Systems	$207,839	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$207,839**
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	$1,722,968	**$1,722,968**
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

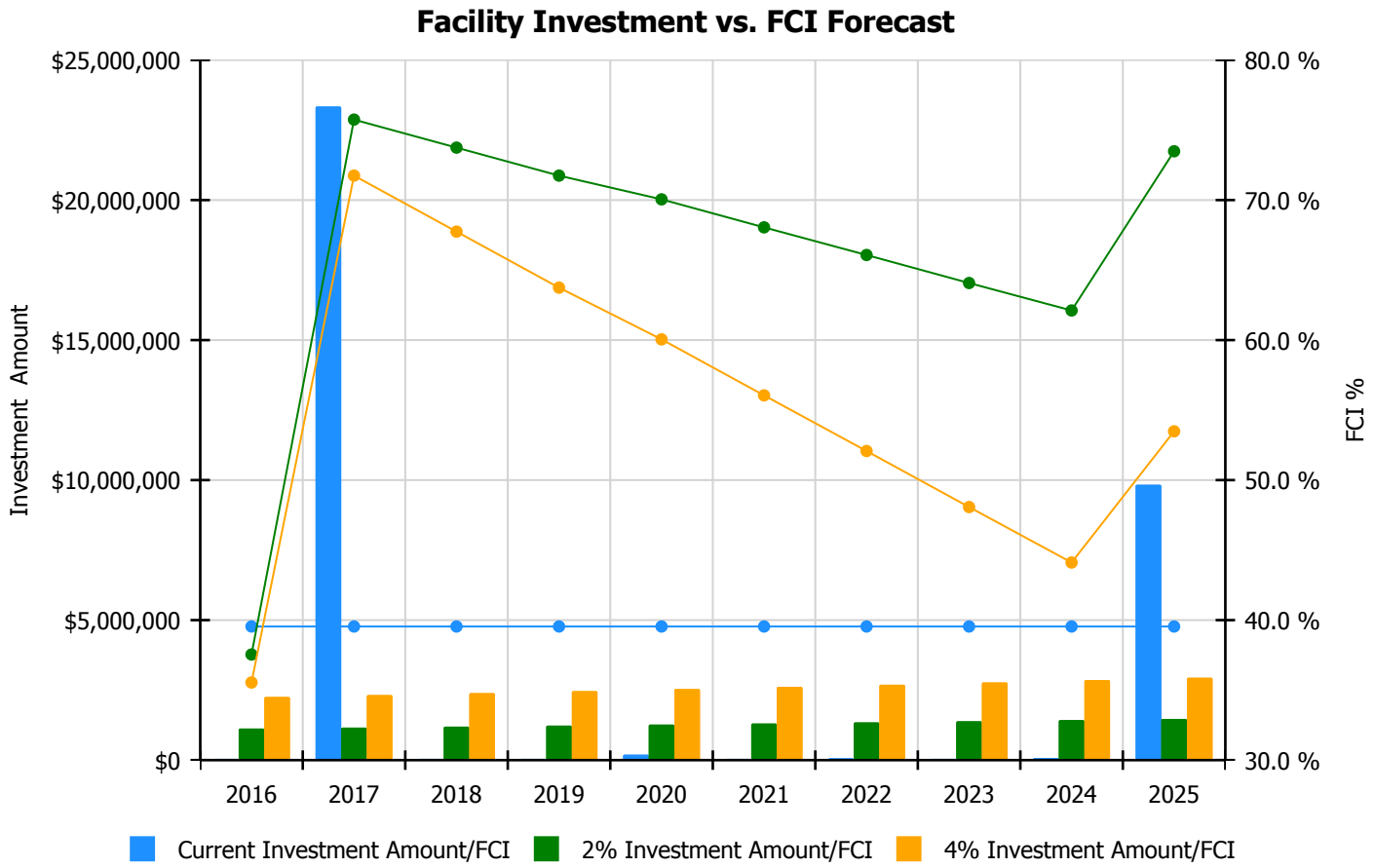
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

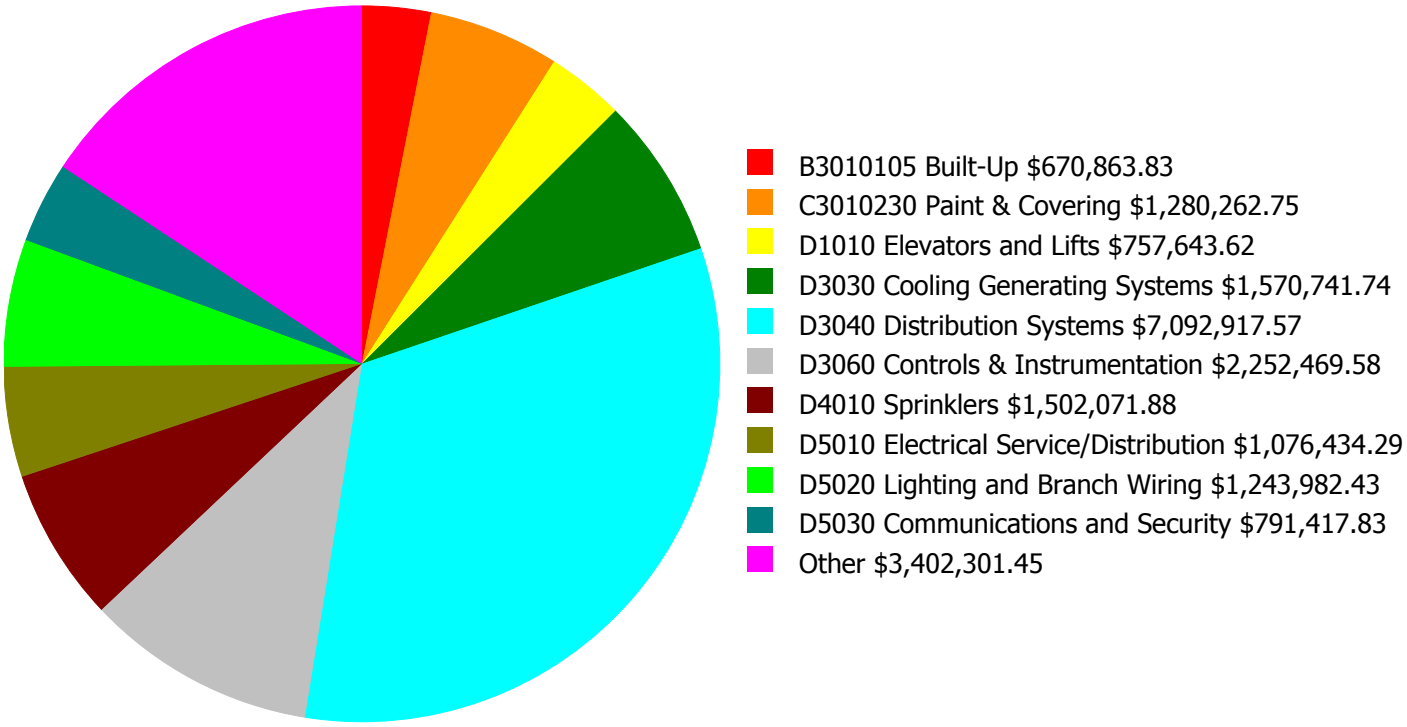
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 39.54%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$1,127,361.00	37.54 %	$2,254,723.00	35.54 %
2017	$23,340,011	$1,161,182.00	75.74 %	$2,322,364.00	71.74 %
2018	$0	$1,196,018.00	73.74 %	$2,392,035.00	67.74 %
2019	$0	$1,231,898.00	71.74 %	$2,463,796.00	63.74 %
2020	$194,149	$1,268,855.00	70.05 %	$2,537,710.00	60.05 %
2021	$0	$1,306,921.00	68.05 %	$2,613,842.00	56.05 %
2022	$16,534	$1,346,128.00	66.08 %	$2,692,257.00	52.08 %
2023	$0	$1,386,512.00	64.08 %	$2,773,025.00	48.08 %
2024	$27,660	$1,428,108.00	62.11 %	$2,856,215.00	44.11 %
2025	$9,833,335	$1,470,951.00	73.48 %	$2,941,902.00	53.48 %
Total:	**$33,411,690**	**$12,923,934.00**		**$25,847,869.00**	

Deficiency Summary by System

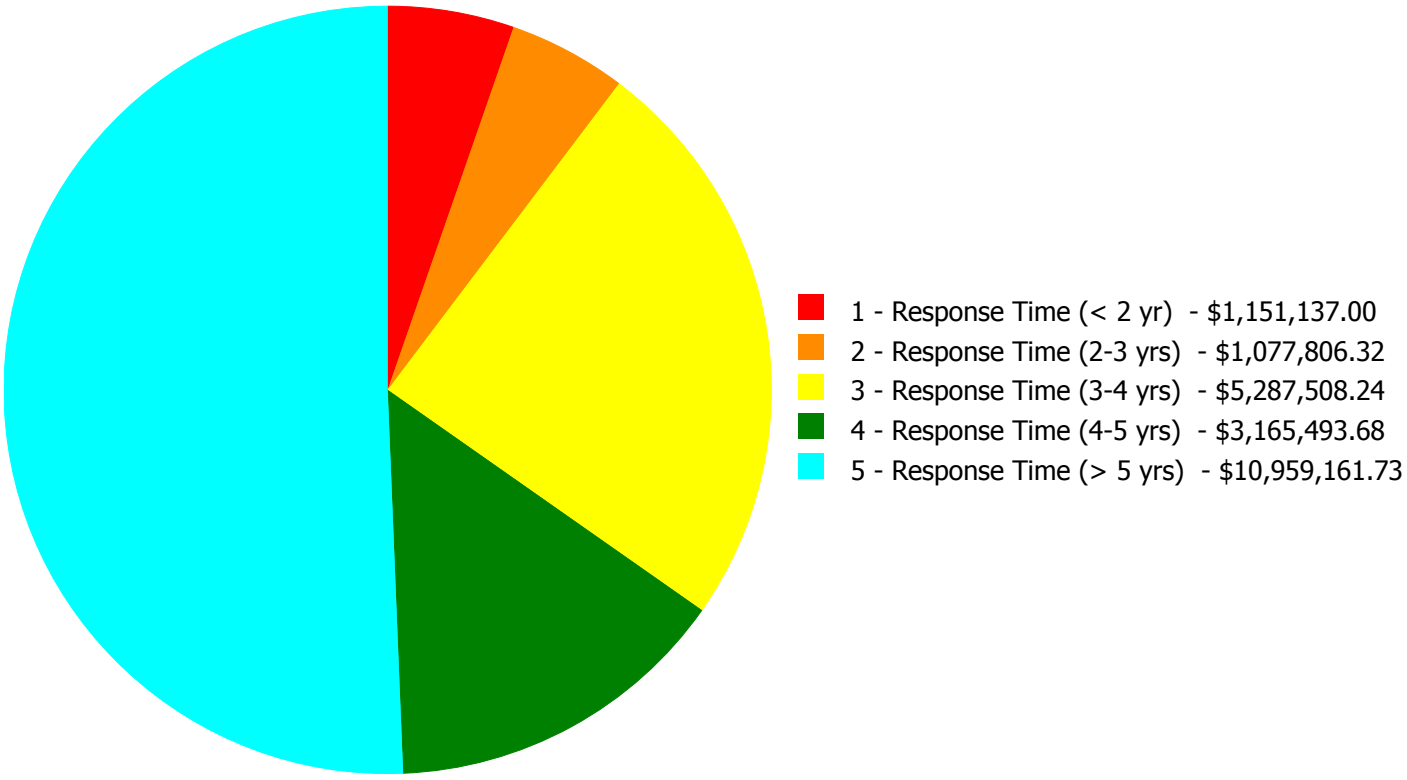
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $21,641,106.97

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: $21,641,106.97

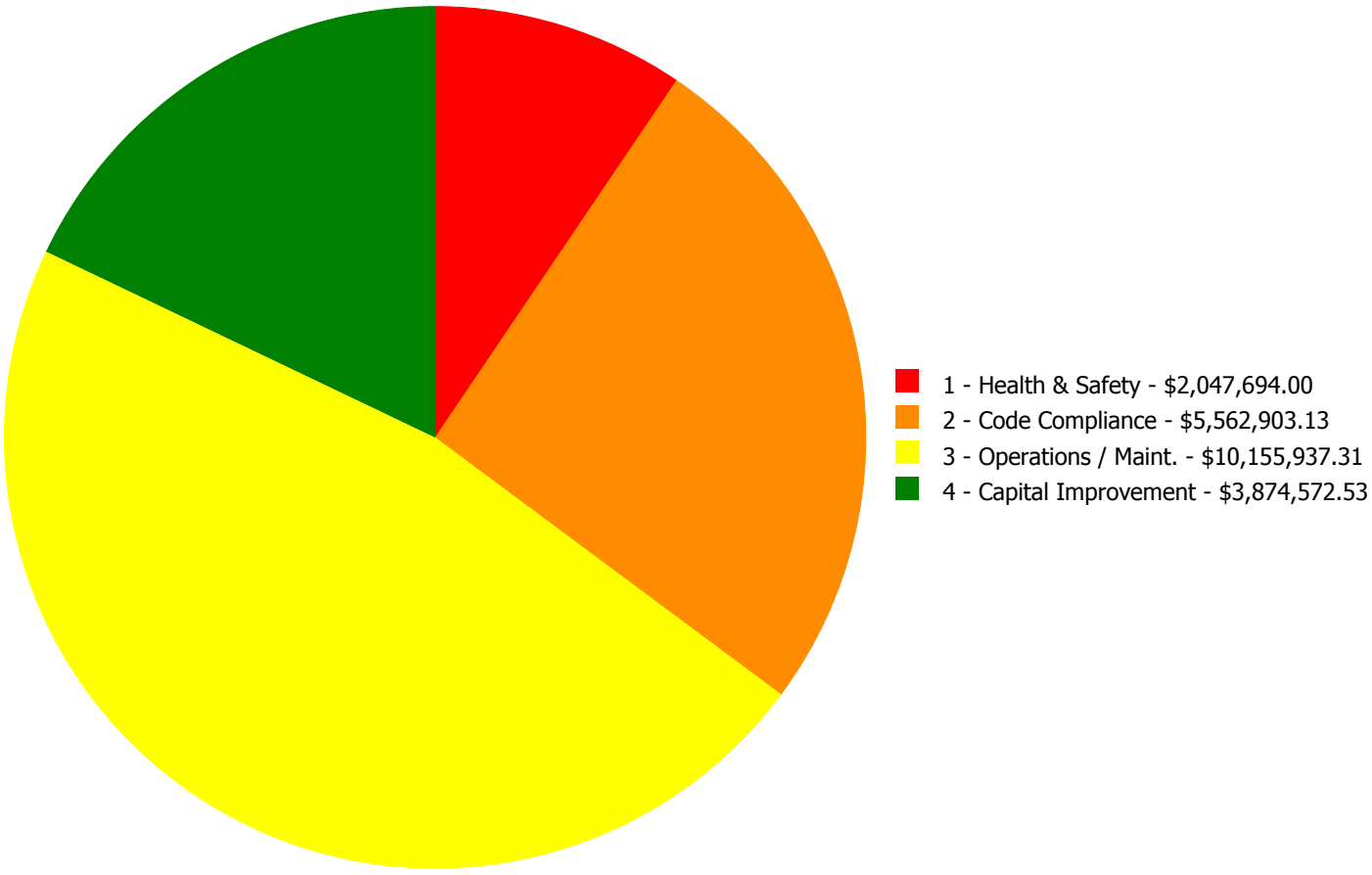
Deficiency By Priority Investment Table

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
B1020	Roof Construction	$0.00	$0.00	$280,370.01	$0.00	$0.00	$280,370.01
B3010105	Built-Up	$670,863.83	$0.00	$0.00	$0.00	$0.00	$670,863.83
B3010120	Single Ply Membrane	$0.00	$530,176.54	$0.00	$0.00	$0.00	$530,176.54
C1020	Interior Doors	$0.00	$0.00	$101,295.64	$0.00	$0.00	$101,295.64
C3010230	Paint & Covering	$0.00	$0.00	$0.00	$1,280,262.75	$0.00	$1,280,262.75
C3020413	Vinyl Flooring	$0.00	$22,833.31	$0.00	$33,366.67	$0.00	$56,199.98
C3020414	Wood Flooring	$0.00	$0.00	$0.00	$0.00	$172,271.04	$172,271.04
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$460,986.05	$0.00	$460,986.05
D1010	Elevators and Lifts	$0.00	$0.00	$757,643.62	$0.00	$0.00	$757,643.62
D2010	Plumbing Fixtures	$0.00	$0.00	$45,475.14	$0.00	$0.00	$45,475.14
D2020	Domestic Water Distribution	$0.00	$0.00	$73,420.64	$532,072.78	$0.00	$605,493.42
D2030	Sanitary Waste	$0.00	$30,685.95	$445,893.78	$0.00	$0.00	$476,579.73
D2040	Rain Water Drainage	$0.00	$0.00	$465,615.16	$0.00	$0.00	$465,615.16
D3030	Cooling Generating Systems	$0.00	$0.00	$0.00	$0.00	$1,570,741.74	$1,570,741.74
D3040	Distribution Systems	$480,273.17	$0.00	$1,151,036.91	$0.00	$5,461,607.49	$7,092,917.57
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$2,252,469.58	$2,252,469.58
D4010	Sprinklers	$0.00	$0.00	$0.00	$0.00	$1,502,071.88	$1,502,071.88
D5010	Electrical Service/Distribution	$0.00	$494,110.52	$0.00	$582,323.77	$0.00	$1,076,434.29
D5020	Lighting and Branch Wiring	$0.00	$0.00	$1,243,982.43	$0.00	$0.00	$1,243,982.43
D5030	Communications and Security	$0.00	$0.00	$514,936.17	$276,481.66	$0.00	$791,417.83
D5090	Other Electrical Systems	$0.00	$0.00	$207,838.74	$0.00	$0.00	$207,838.74
	Total:	$1,151,137.00	$1,077,806.32	$5,287,508.24	$3,165,493.68	$10,959,161.73	$21,641,106.97

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: $21,641,106.97

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: Exterior
Distress: Building Envelope Integrity
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 19,800.00
Unit of Measure: S.F.
Estimate: $670,863.83
Assessor Name: System
Date Created: 01/09/2016

Notes: Install all new roofing system including insulation; tear-down existing roofing; install flashing, counter flashing and reglets

System: D3040 - Distribution Systems

This deficiency has no image.

Location: Throughout building
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Conduct a steam trap survey and replace failed units.
Qty: 105,000.00
Unit of Measure: S.F.
Estimate: $344,516.62
Assessor Name: System
Date Created: 11/12/2015

Notes: Conduct a steam trap survey to identify and replace failed traps passing live steam into the condensate piping system and to ensure proper function of the vacuum condensate return system.

System: D3040 - Distribution Systems

Location: Basement mechanical room

Distress: Damaged

Category: 3 - Operations / Maint.

Priority: 1 - Response Time (< 2 yr)

Correction: Replace duplex vacuum and condensate receiver

Qty: 1.00

Unit of Measure: Ea.

Estimate: $135,756.55

Assessor Name: System

Date Created: 11/11/2015

Notes: Replace the existing vacuum condensate receiver tank in the basement mechanical room, which is damaged from rust and does not function properly.

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

System: B3010120 - Single Ply Membrane

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete deck topping including remove and replace waterproofing membrane - add for epoxy coating if required by inserting the SF in the estimate

Qty: 8,100.00

Unit of Measure: S.F.

Estimate: $530,176.54

Assessor Name: System

Date Created: 01/09/2016

Notes: Replace topping on outdoor gym floor, install new waterproofing membrane

System: C3020413 - Vinyl Flooring

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 1,900.00

Unit of Measure: S.F.

Estimate: $22,833.31

Assessor Name: System

Date Created: 01/09/2016

Notes: Replace damaged VCT

System: D2030 - Sanitary Waste

Location: Basement mechanical room

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Replace sanitary sewage ejector pit and pumps. (48" dia.)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $30,685.95

Assessor Name: System

Date Created: 11/11/2015

Notes: Replace existing sewage ejector pump system and piping in the basement as it is beyond its service life and was not functional during the site visit.

System: D5010 - Electrical Service/Distribution

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and Replace Panelboard - 400 amp

Qty: 1.00

Unit of Measure: Ea.

Estimate: $494,110.52

Assessor Name: System

Date Created: 01/07/2016

Notes: Install new 120V panel-boards throughout the building for lighting, and receptacles loads.

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

System: B1020 - Roof Construction

Location: Exterior

Distress: Maintenance Required

Category: 3 - Operations / Maint.

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

Correction: Rehabilitate chain link fabric roof structure - paint the frame and replace the chain link - insert the SF of roof area in the qty.

Qty: 8,100.00

Unit of Measure: S.F.

Estimate: $280,370.01

Assessor Name: System

Date Created: 01/08/2016

Notes: Refurbish wire mesh structure enclosing outdoor gym on 4th floor; clean and paint framing, install new wire mesh

System: C1020 - Interior Doors

Location: Interior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Replace door knobs with compliant lever type

Qty: 182.00

Unit of Measure: Ea.

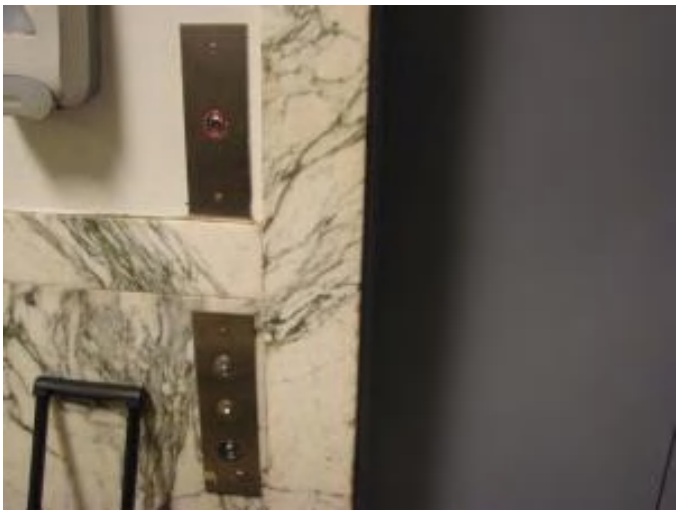
Estimate: $101,295.64

Assessor Name: System

Date Created: 01/09/2016

Notes: Provide ADA compliant hardware on interior doors

System: D1010 - Elevators and Lifts



Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Elevator - 4 to 6 stop electric traction - add to the estimate for the number of stops over 4

Qty: 2.00

Unit of Measure: Ea.

Estimate: $757,643.62

Assessor Name: System

Date Created: 01/09/2016

Notes: Refurbish elevator cabins and provide new controls (2 elevators)

System: D2010 - Plumbing Fixtures

Location: Corridors

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 3 - Response Time (3-4 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: 11/11/2015

Notes: Replace six (6) wall hung drinking fountains and integral refrigerated coolers in the corridors. These units are well beyond their service life and are NOT accessible type.

System: D2020 - Domestic Water Distribution

Location: Basement mechanical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace instantaneous water heater

Qty: 3.00

Unit of Measure: Ea.

Estimate: $73,420.64

Assessor Name: System

Date Created: 11/11/2015

Notes: Replace existing three (3) Paloma gas fired instant hot water heaters which are approaching the end of their service lives with new gas fired hot water heaters.

System: D2030 - Sanitary Waste

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Inspect sanitary waste piping and replace damaged sections. (+100KSF)

Qty: 105,000.00

Unit of Measure: S.F.

Estimate: $445,893.78

Assessor Name: System

Date Created: 11/11/2015

Notes: Hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D2040 - Rain Water Drainage

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Inspect internal rain water drainage piping and replace pipe - based on SF of multi-story building - insert SF of building

Qty: 105,000.00

Unit of Measure: S.F.

Estimate: $465,615.16

Assessor Name: System

Date Created: 11/11/2015

Notes: Hire a qualified contractor to perform a detailed examination of the rain water drainage piping using visual inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D3040 - Distribution Systems

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Perform testing to identify and replace damaged steam and condensate piping.

Qty: 105,000.00

Unit of Measure: S.F.

Estimate: $993,339.12

Assessor Name: System

Date Created: 11/11/2015

Notes: Hire a qualified contractor to examine the steam piping, in service for nearly 80 years, and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures.

System: D3040 - Distribution Systems

Location: Penthouse

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace utility set exhaust fan (5 HP)

Qty: 4.00

Unit of Measure: Ea.

Estimate: $157,697.79

Assessor Name: System

Date Created: 11/11/2015

Notes: Replace four (4) exhaust fans, in use beyond their service life, in the penthouses on the 5th floor with new fans.

System: D5020 - Lighting and Branch Wiring

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Wiring Devices (SF) - surface mounted conduit and boxes

Qty: 0.00

Unit of Measure: S.F.

Estimate: $764,530.20

Assessor Name: System

Date Created: 01/07/2016

Notes: Install new receptacles in all classrooms and other areas (minimum two receptacles on each wall).

System: D5020 - Lighting and Branch Wiring

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace Lighting Fixtures (SF)

Qty: 0.00

Unit of Measure: S.F.

Estimate: $479,452.23

Assessor Name: System

Date Created: 01/07/2016

Notes: Install new a lighting system for most of building, except the Gym, the library, the auditorium and other updated areas (50%).
Effective SF = 50% x 10500 SF = 52,500 SF

System: D5030 - Communications and Security

Location: throughout the building

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

Estimate: $514,936.17

Assessor Name: System

Date Created: 01/07/2016

Notes: Install a new automated FA System

System: D5090 - Other Electrical Systems

Location: throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add Emergency/Exit Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $207,838.74

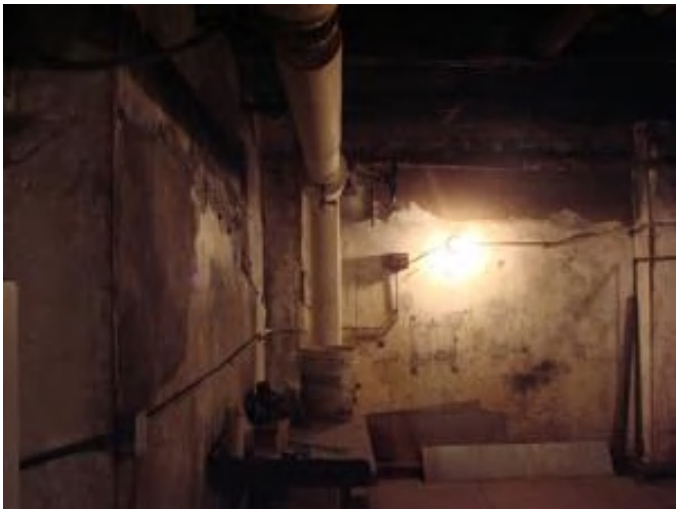
Assessor Name: System

Date Created: 01/07/2016

Notes: Install new emergency exit signs emergency lights.

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

System: C3010230 - Paint & Covering



Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 189,000.00

Unit of Measure: S.F.

Estimate: $1,280,262.75

Assessor Name: System

Date Created: 01/09/2016

Notes: Repair (15%) and repaint all walls

System: C3020413 - Vinyl Flooring

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 2,200.00

Unit of Measure: S.F.

Estimate: $33,366.67

Assessor Name: System

Date Created: 01/09/2016

Notes: Replace all VAT tile in office spaces

System: C3030 - Ceiling Finishes

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Repair and resurface plaster ceilings - 2 coats plaster

Qty: 67,200.00

Unit of Measure: S.F.

Estimate: $398,891.02

Assessor Name: System

Date Created: 01/09/2016

Notes: Repair (10%) and repaint all ceilings

System: C3030 - Ceiling Finishes

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace ceiling tiles only in suspended ceiling - pick the proper material

Qty: 4,900.00

Unit of Measure: S.F.

Estimate: $62,095.03

Assessor Name: System

Date Created: 01/09/2016

Notes: Replace acoustic tile in cafeteria and kitchen

System: D2020 - Domestic Water Distribution

This deficiency has no image.

Location: Throughout building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace domestic water piping (75 KSF)
Qty: 105,000.00
Unit of Measure: S.F.
Estimate: $532,072.78
Assessor Name: System
Date Created: 11/11/2015

Notes: Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for an unknown amount of time, and replace any damaged piping.

System: D5010 - Electrical Service/Distribution

Location: electrical room
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Replace Service Transformer, Add Switchboard
Qty: 0.00
Unit of Measure: Ea.
Estimate: $582,323.77
Assessor Name: System
Date Created: 01/07/2016

Notes: Install new Site electrical service 1500KVA, 480V, 3 Phase to feed the HVAC Loads (480V), as well as, the lighting and receptacle loads (120V).
Install a new 480V, 3 phase switchgear.
Install a new 120V/208V, 3 phase switchgear.

System: D5030 - Communications and Security

Location: Throughout the building
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Clock System or Components
Qty: 0.00
Unit of Measure: Ea.
Estimate: $225,120.45
Assessor Name: System
Date Created: 01/07/2016

Notes: Install a new Clock System

System: D5030 - Communications and Security

Location: B214001;Masterman
Distress: Inadequate
Category: 4 - Capital Improvement
Priority: 4 - Response Time (4-5 yrs)
Correction: Add/Replace Video Surveillance System
Qty: 1.00
Unit of Measure: Ea.
Estimate: $51,361.21
Assessor Name: System
Date Created: 01/07/2016

Notes: Install a new security system with cameras and monitor (CCTV).

Priority 5 - Response Time (> 5 yrs):

System: C3020414 - Wood Flooring

Location: Interior

Distress: Maintenance Required

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Refinish wood floors

Qty: 16,000.00

Unit of Measure: S.F.

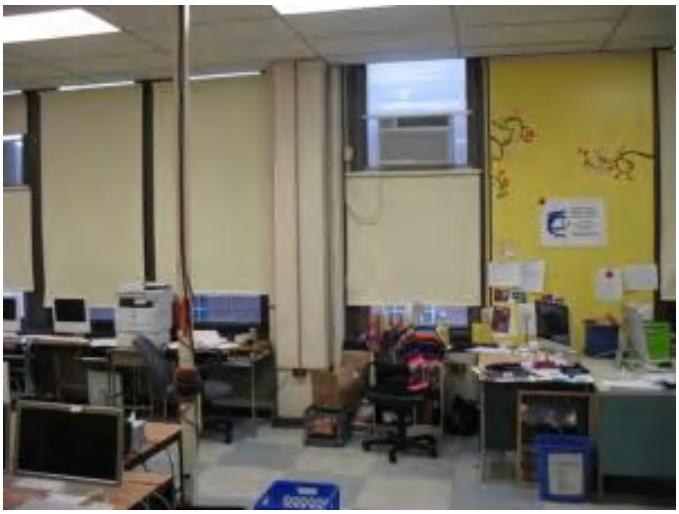
Estimate: $172,271.04

Assessor Name: System

Date Created: 01/09/2016

Notes: Repair (10%) refinish hardwood flooring (50%)

System: D3030 - Cooling Generating Systems



Location: Throughout building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 105,000.00

Unit of Measure: S.F.

Estimate: $1,570,741.74

Assessor Name: System

Date Created: 11/11/2015

Notes: Remove the window air conditioning units and install a 275 ton air-cooled chiller with chilled water distribution piping and pumps located in a mechanical room to supply more reliable air conditioning for the building with a much longer service life.

System: D3040 - Distribution Systems

Location: Classrooms

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

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

Qty: 41.00

Unit of Measure: C

Estimate: $3,405,500.59

Assessor Name: System

Date Created: 11/11/2015

Notes: Remove the existing fin tube steam radiators and install units with hot and chilled water coils and integral heat exchangers to introduce outdoor air to the building.

System: D3040 - Distribution Systems

Location: Auditorium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Auditorium (200 seat).

Qty: 500.00

Unit of Measure: Seat

Estimate: $712,713.57

Assessor Name: System

Date Created: 11/11/2015

Notes: Provide ventilation for the Auditorium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D3040 - Distribution Systems

Location: Cafeteria

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Cafeteria (850 students).

Qty: 806.00

Unit of Measure: Pr.

Estimate: $376,835.12

Assessor Name: System

Date Created: 11/11/2015

Notes: Provide ventilation for the Cafeteria by installing a constant volume air handling unit with distribution ductwork and registers.

System: D3040 - Distribution Systems

This deficiency has no image.

Location: Administration

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Administration (2000 students).

Qty: 806.00

Unit of Measure: Pr.

Estimate: $348,855.83

Assessor Name: System

Date Created: 11/11/2015

Notes: Provide ventilation for the Administration offices by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D3040 - Distribution Systems

Location: Kitchen

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install GF makeup air unit for kitchen exhaust hood (single 10 ft hood).

Qty: 1.00

Unit of Measure: Ea.

Estimate: $309,401.34

Assessor Name: System

Date Created: 11/11/2015

Notes: Install a gas fired make-up air unit in the Kitchen to allow conditioned fresh air makeup for when the kitchen hood is in use.

System: D3040 - Distribution Systems

Location: Gymnasium

Distress: Building / MEP Codes

Category: 2 - Code Compliance

Priority: 5 - Response Time (> 5 yrs)

Correction: Install HVAC unit for Gymnasium (single station).

Qty: 6,000.00

Unit of Measure: Ea.

Estimate: $308,301.04

Assessor Name: System

Date Created: 11/11/2015

Notes: Provide ventilation for the Gymnasium by installing a fan coil air handling unit hung from the structure with outdoor air ducted to the unit from louvers in window openings.

System: D3060 - Controls & Instrumentation

Location: Throughout building

Distress: Inadequate

Category: 4 - Capital Improvement

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace pneumatic controls with DDC (75KSF)

Qty: 105,000.00

Unit of Measure: S.F.

Estimate: $2,252,469.58

Assessor Name: System

Date Created: 11/11/2015

Notes: Replace the pneumatic controls for the HVAC systems with modern DDC modules, valves and actuators to improve reliability and energy efficiency. Provide a new building automation system (BAS) with communication interface to the preferred system in use throughout the District.

System: D4010 - Sprinklers

Location: Throughout building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 5 - Response Time (> 5 yrs)

Correction: Install a fire protection sprinkler system

Qty: 105,000.00

Unit of Measure: S.F.

Estimate: $1,502,071.88

Assessor Name: System

Date Created: 11/11/2015

Notes: Install a fire protection sprinkler system with quick response type heads to reduce insurance costs by providing protection for the property. A fire pump may be required depending on the available city water pressure.

Equipment Inventory

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

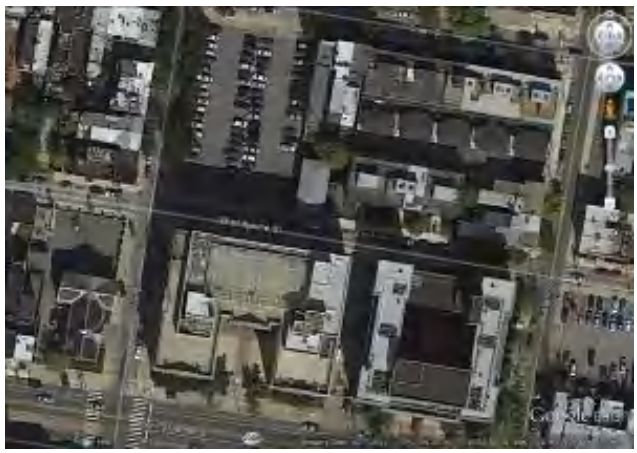
Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Traction geared elevators, passenger, 3500 lb, 5 floors, 200 FPM	2.00	Ea.	Building Interior					30	1933	2047	$181,650.00	$399,630.00
D2020 Domestic Water Distribution	Pump, pressure booster system, 7-1/2 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Basement Mechanical Room	Armstrong				25	2000	2025	$12,198.00	$26,835.60
D5010 Electrical Service/Distribution	Switchboards, distribution section, aluminum bus bars, 4 W, 120/208 or 277/480 V, 1200 amp, excl breakers	1.00	Ea.	electrical room					30	1933	2047	$6,551.55	$7,206.71
D5090 Other Electrical Systems	Generator set, diesel, 3 phase 4 wire, 277/480 V, 125 kW, incl battery, charger, muffler, & day tank, excl conduit, wiring, & concrete	1.00	Ea.	electrical room					30	2010	2040	$50,797.80	$55,877.58
												Total:	**$489,549.89**

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):	13,800
Year Built:	1933
Last Renovation:	
Replacement Value:	$706,828
Repair Cost:	$885,843.17
Total FCI:	125.33 %
Total RSLI:	106.32 %



Description:

Attributes:

General Attributes:

Bldg ID:	S214001	Site ID:	S214001

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	106.19 %	130.66 %	$674,373.69
G40 - Site Electrical Utilities	106.67 %	110.88 %	$211,469.48
Totals:	**106.32 %**	**125.33 %**	**$885,843.17**

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 $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$9.47	S.F.	23,750	30	1990	2020	2047	106.67 %	228.34 %	32		$513,558.57	$224,913
G2030	Pedestrian Paving	$16.19	S.F.	13,300	40	1933	1973	2057	105.00 %	40.88 %	42		$88,023.05	$215,327
G2040	Site Development	$5.34	S.F.	13,800	25	1990	2015	2042	108.00 %	98.78 %	27		$72,792.07	$73,692
G2050	Landscaping & Irrigation	$4.36	S.F.	500	15	1933	1948	2032	113.33 %	0.00 %	17			$2,180
G4020	Site Lighting	$8.75	S.F.	13,800	30	1933	1963	2047	106.67 %	117.33 %	32		$141,679.76	$120,750
G4030	Site Communications & Security	$5.07	S.F.	13,800	30	1933	1963	2047	106.67 %	99.75 %	32		$69,789.72	$69,966
								Total	**106.32 %**	**125.33 %**			**$885,843.17**	**$706,828**

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.

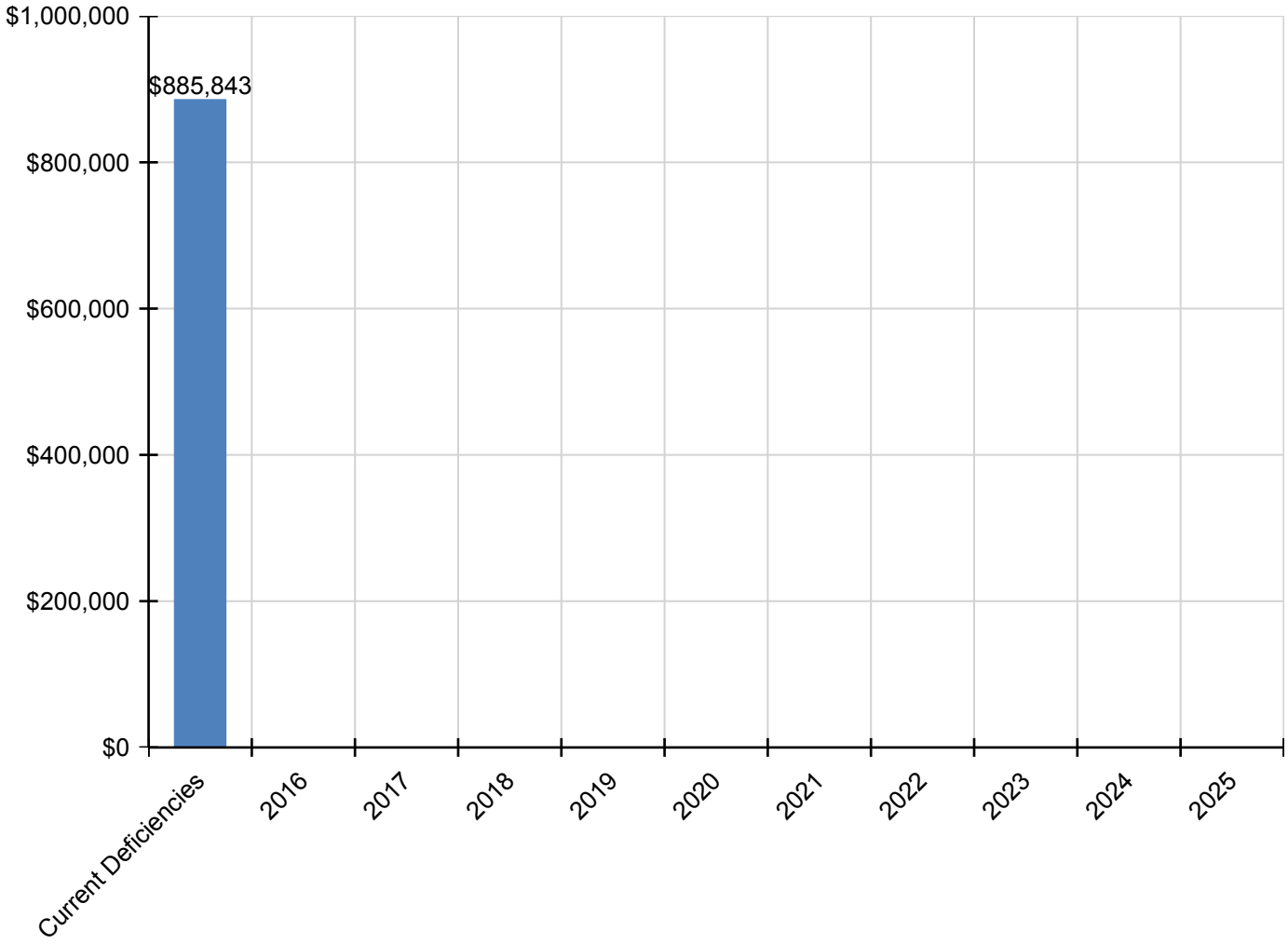
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$885,843**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$885,843**
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**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$513,559	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$513,559**
G2030 - Pedestrian Paving	$88,023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$88,023**
G2040 - Site Development	$72,792	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$72,792**
G2050 - Landscaping & Irrigation	$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	$141,680	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$141,680**
G4030 - Site Communications & Security	$69,790	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$69,790**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

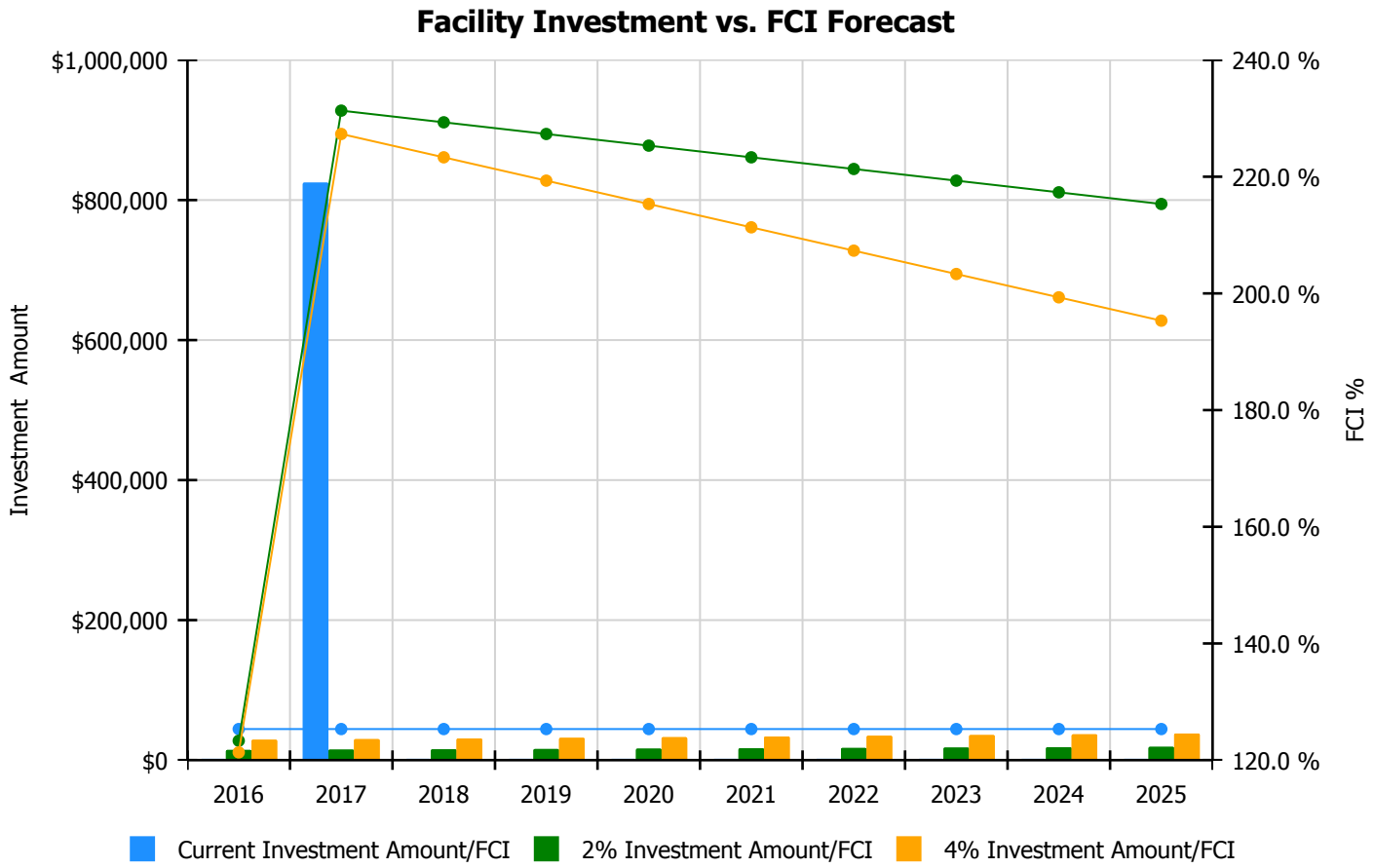
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

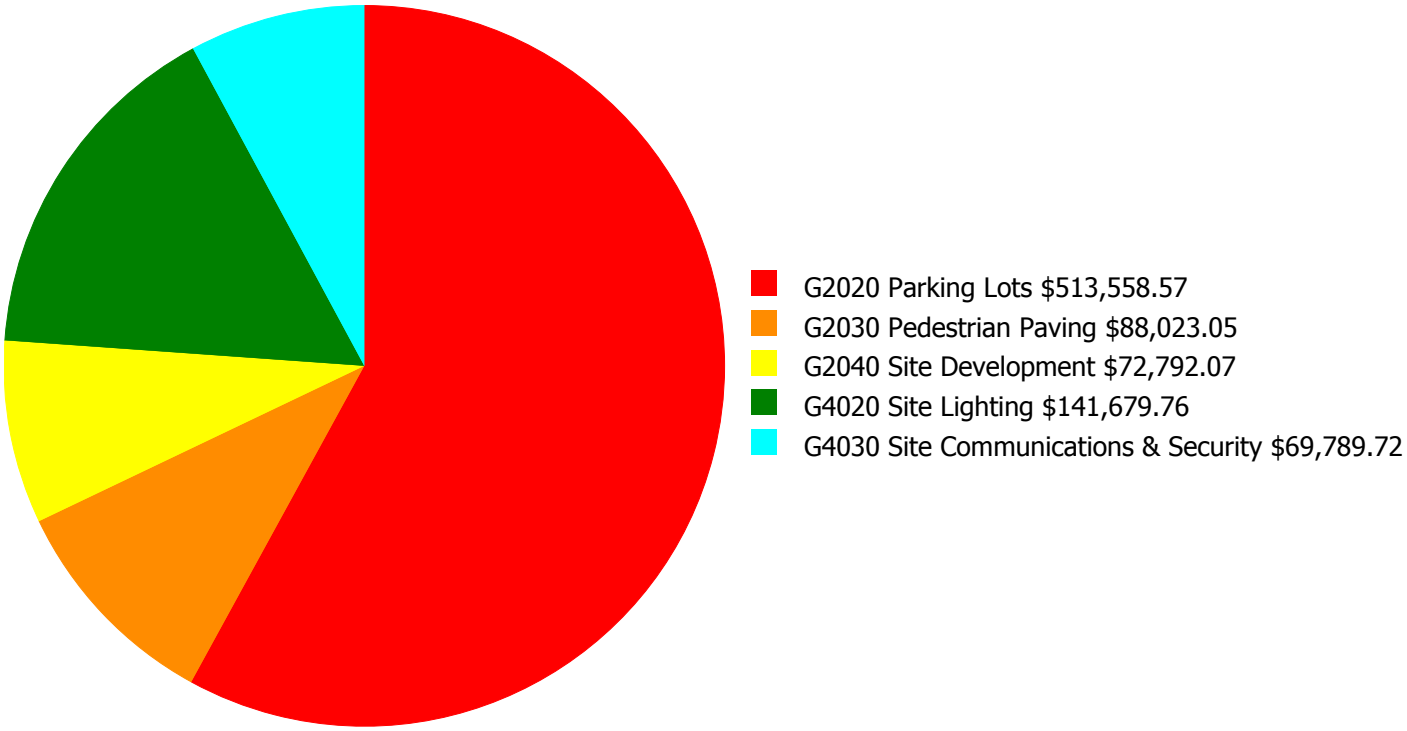
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 125.33%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$14,561.00	123.33 %	$29,121.00	121.33 %
2017	$824,861	$14,997.00	231.33 %	$29,995.00	227.33 %
2018	$0	$15,447.00	229.33 %	$30,895.00	223.33 %
2019	$0	$15,911.00	227.33 %	$31,822.00	219.33 %
2020	$0	$16,388.00	225.33 %	$32,776.00	215.33 %
2021	$0	$16,880.00	223.33 %	$33,760.00	211.33 %
2022	$0	$17,386.00	221.33 %	$34,772.00	207.33 %
2023	$0	$17,908.00	219.33 %	$35,816.00	203.33 %
2024	$0	$18,445.00	217.33 %	$36,890.00	199.33 %
2025	$0	$18,998.00	215.33 %	$37,997.00	195.33 %
Total:	**$824,861**	**$166,921.00**		**$333,844.00**	

Deficiency Summary by System

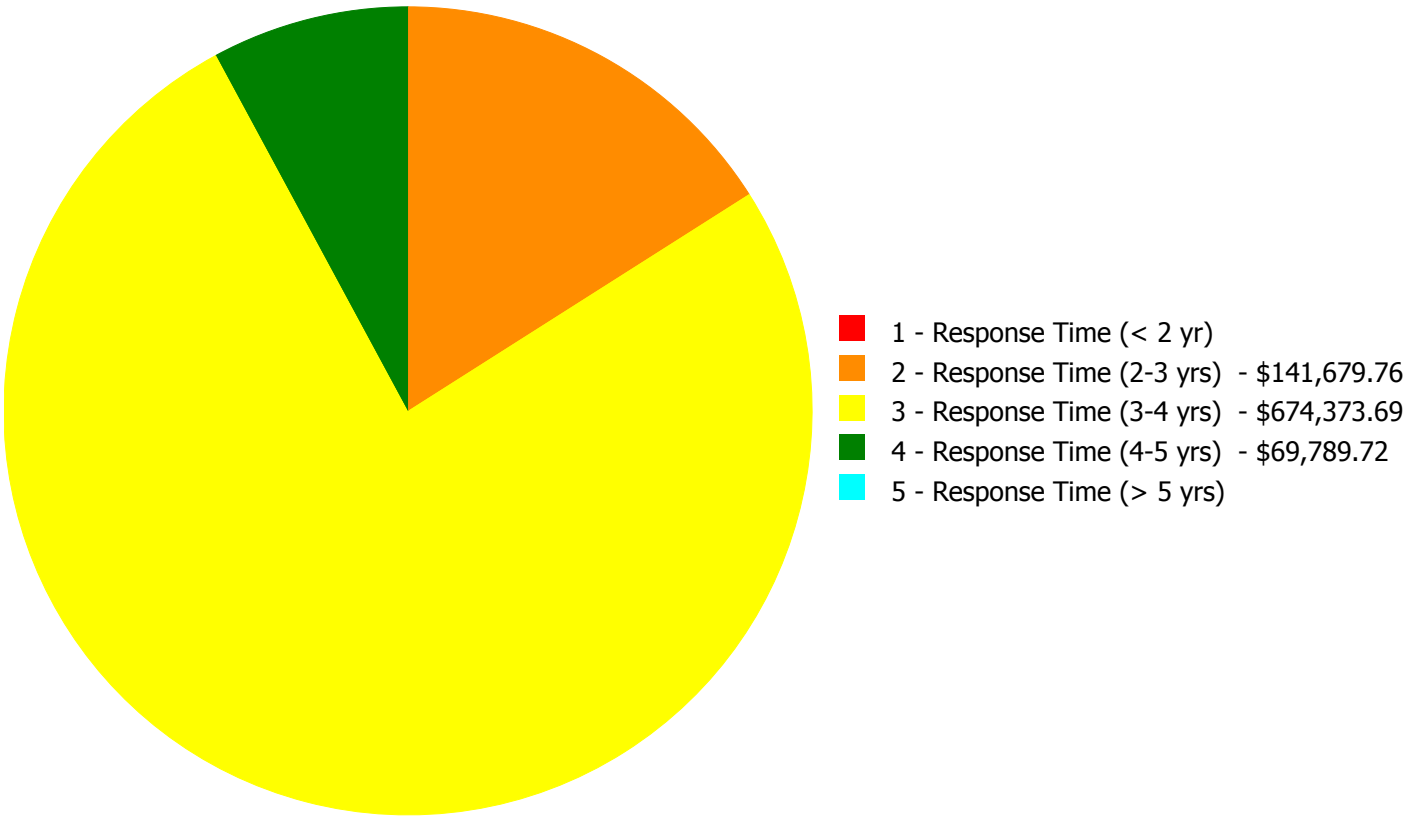
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $885,843.17

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: $885,843.17

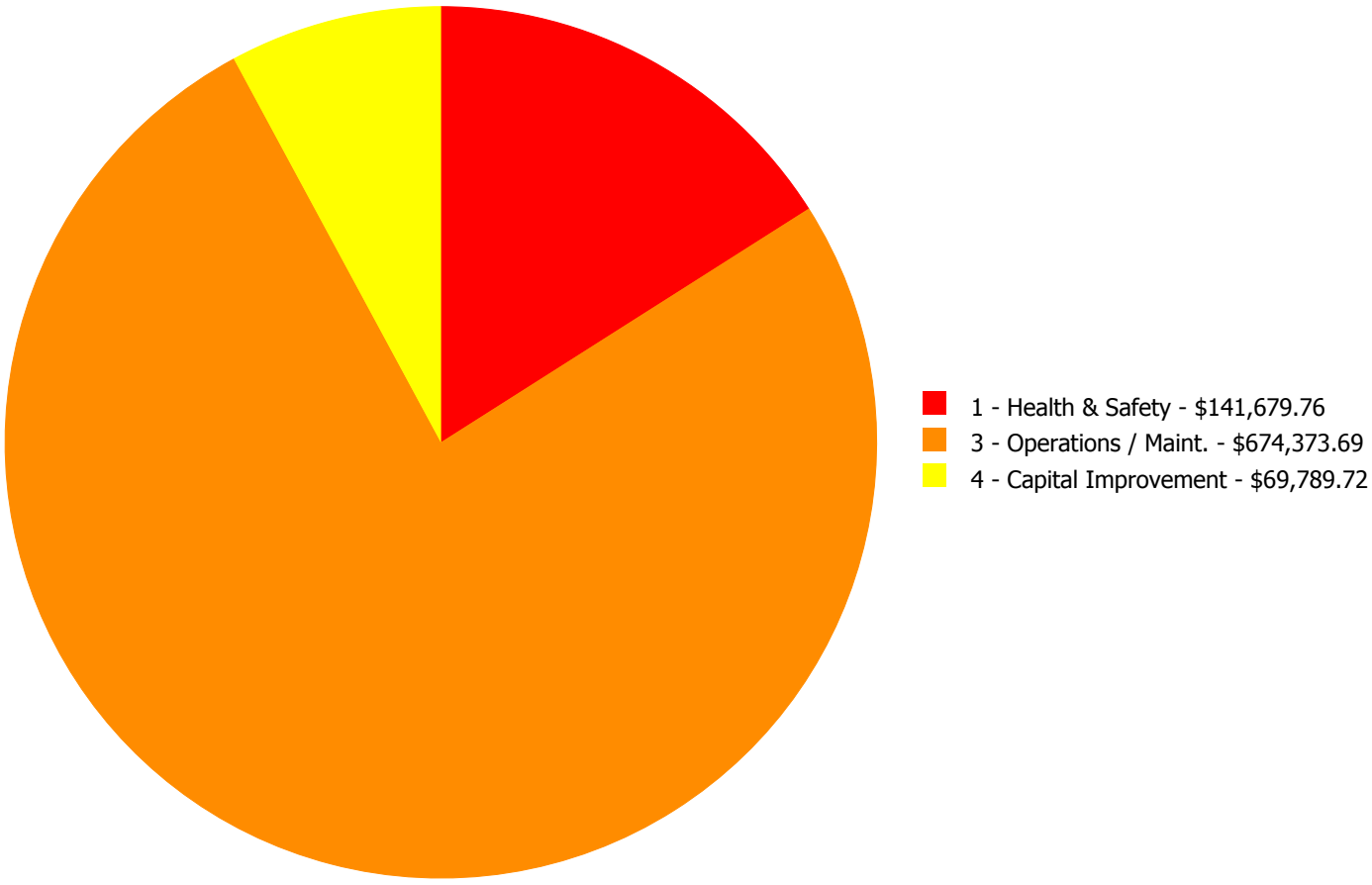
Deficiency By Priority Investment Table

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
G2020	Parking Lots	$0.00	$0.00	$513,558.57	$0.00	$0.00	$513,558.57
G2030	Pedestrian Paving	$0.00	$0.00	$88,023.05	$0.00	$0.00	$88,023.05
G2040	Site Development	$0.00	$0.00	$72,792.07	$0.00	$0.00	$72,792.07
G4020	Site Lighting	$0.00	$141,679.76	$0.00	$0.00	$0.00	$141,679.76
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$69,789.72	$0.00	$69,789.72
	Total:	$0.00	$141,679.76	$674,373.69	$69,789.72	$0.00	$885,843.17

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: $885,843.17

Deficiency Details by Priority

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

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

System: G4020 - Site Lighting

Location: Grounds

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Add Site Lighting - pole mounted - select the proper light and pole

Qty: 1.00

Unit of Measure: Ea.

Estimate: $141,679.76

Assessor Name: Craig Anding

Date Created: 01/07/2016

Notes: Install new site lighting for safety of the people and security of property.

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

System: G2020 - Parking Lots

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete paving

Qty: 23,750.00

Unit of Measure: S.F.

Estimate: $499,849.83

Assessor Name: Craig Anding

Date Created: 01/09/2016

Notes: Resurface and restripe parking, replace wheel stops

System: G2020 - Parking Lots

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Stripe parking stalls, install parking bumpers, provide handicap symbol and handicap post mounted sign - insert proper quantities in estimate

Qty: 69.00

Unit of Measure: Ea.

Estimate: $13,708.74

Assessor Name: Craig Anding

Date Created: 01/09/2016

Notes: Restripe parking

System: G2030 - Pedestrian Paving

Location: Grounds/ courtyard

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete sidewalk or concrete paving - 4" concrete thickness

Qty: 6,120.00

Unit of Measure: S.F.

Estimate: $88,023.05

Assessor Name: Craig Anding

Date Created: 01/09/2016

Notes: Replace courtyard paving, re-set stone steps

System: G2040 - Site Development

Location: Grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace chain link fence - 8' high

Qty: 650.00

Unit of Measure: L.F.

Estimate: $72,792.07

Assessor Name: Craig Anding

Date Created: 01/09/2016

Notes: Replace chain link fence

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

System: G4030 - Site Communications & Security

Location: Grounds

Distress: Inadequate

Category: 4 - Capital Improvement

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

Correction: Add Site Paging System

Qty: 0.00

Unit of Measure: Ea.

Estimate: $69,789.72

Assessor Name: Craig Anding

Date Created: 01/07/2016

Notes: Install new site paging on building exterior walls.

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