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.

Hartranft School

Governance	DISTRICT	Report Type	Elementarymiddle
Address	720 W. Cumberland St.	Enrollment	526
	Philadelphia, Pa 19133	Grade Range	'00-08'
Phone/Fax	215-684-5088 / 215-765-6515	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Hartranft	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	**46.67%**	**$20,343,292**	**$43,589,222**
Building	44.51 %	$18,869,645	$42,392,474
Grounds	123.14 %	$1,473,647	$1,196,748

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	89.46 %	$1,534,855	$1,715,628
Exterior Walls (Shows condition of the structural condition of the exterior facade)	23.19 %	$727,421	$3,137,350
Windows (Shows functionality of exterior windows)	93.05 %	$1,424,514	$1,530,850
Exterior Doors (Shows condition of exterior doors)	221.68 %	$273,220	$123,250
Interior Doors (Classroom doors)	191.88 %	$572,470	$298,350
Interior Walls (Paint and Finishes)	80.17 %	$900,240	$1,122,850
Plumbing Fixtures	18.49 %	$212,460	$1,149,200
Boilers	00.00 %	$0	$1,586,950
Chillers/Cooling Towers	00.00 %	$0	$2,080,800
Radiators/Unit Ventilators/HVAC	87.10 %	$3,182,753	$3,654,150
Heating/Cooling Controls	158.90 %	$1,823,425	$1,147,500
Electrical Service and Distribution	110.31 %	$909,465	$824,500
Lighting	36.58 %	$1,078,193	$2,947,800
Communications and Security (Cameras, Pa System and Fire Alarm)	44.72 %	$493,781	$1,104,150

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

S532001;Hartranft

Final

Site Assessment Report

January 31, 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):	85,000
Year Built:	1969
Last Renovation:	
Replacement Value:	$43,589,222
Repair Cost:	$20,343,292.46
Total FCI:	46.67 %
Total RSLI:	80.31 %

Description:

Facility Assessment, August 2015

School District of Philadelphia

Hartranft Elementary School

720 W. Cumberland Street

Philadelphia, PA 19133

85,000 SF / 676 Students / LN 05

The Hartranft Elementary school building is located at 720 W. Cumberland Street in Philadelphia, PA. The 2 level, approximately 85,000 square foot building was originally constructed in 1968. First level floor is partially below grade.

Mr. Scott Ovington, Facility Area Coordinator provided input to the Parsons assessment team on current problems and planned renovation projects. Ms. Tracy Sowell, building engineer, accompanied us on our tour of the school and provided limited information on the building systems

and recent maintenance history.

STRUCTURAL/ EXTERIOR CLOSURE:

The building typically rests on concrete foundations and concrete bearing walls that are not showing signs of settlement. There are no signs of moisture penetration through first level walls.

The main structure consists typically of cast-in-place concrete columns, beams and 1 and 2-way ribbed concrete slabs. The roof structure over the main building is similar to floor construction. The roof structure in Gymnasium and Cafeteria/ Auditorium consists of concrete columns, framing and bar joists supporting precast concrete roof panels and is raised above main roof level. The superstructure is generally in good condition.

The building envelope is typically face brick masonry with CMU backup. In general, masonry is in fair to good condition; however, masonry at window sills in classroom pods is severely cracked and buckling. The second level floor and roof slab edges are exposed at building perimeter. Water penetration through walls has not been reported.

The building windows are extruded aluminum double hung windows single acrylic glazed with integral security screens, installed in late 1990's. Some windows in raised sections (above main roof) of the second level are fixed, extruded aluminum, single, acrylic glazed. All windows are generally in very poor condition, most are damaged. The leaks around the windows perimeters have not been reported; however, the perimeter sealant is severely cracked.

The exterior doors are typically hollow metal doors and frames, painted. The doors are generally in poor condition with damaged or missing hardware; bullet holes in several doors have been observed.

Roofing system is a built-up system over 25 years old and in poor condition. There is evidence of water ponding and large soft spot areas; leaks have been reported.

INTERIORS:

The building partition wall types include painted CMU and hollow metal, glazed, borrowed light partitions. Some classrooms have inoperable folding partitions. Partitions are generally in good condition.

Interior doors are generally solid core wood doors, some glazed, in hollow metal frames. Some doors have glazed, hollow metal framed side lights. Substantial numbers of doors are damaged and missing hardware. The doors leading to exit stairways and along egress routes are hollow metal doors and frames in good condition.

Fittings include toilet accessories and toilet partitions, generally in fair to poor condition, installed approximately in late 1990's; no accessible compartments; chalkboards are in poor condition. Handrails and ornamental metals are generally in good condition. Built-in cabinets are steel in good condition. Interior identifying signage is typically directly painted on wall or door surfaces generally in poor condition or missing.

The interior wall finishes in the building are typically painted CMU. Generally, paint is in good condition throughout the building.

Most ceilings in the building are exposed, painted with some 2x2 suspended acoustical panels in office areas. The suspension system and tile are in fair too poor condition.

Flooring in classrooms and auditorium/ cafeteria and gymnasium is VCT (approximately 80% of floor area); and ceramic tile in toilets and kitchen. Flooring in the kitchen is quarry tile in good condition. Most VCT flooring is in poor condition; tiles are old and separated from the substrate in some areas. About 70% of VCT is beyond their service life.

Stair construction is cast-in-place concrete with cast iron non-slip nosing in good condition.

Institutional and Commercial equipment includes: stage equipment, generally in good condition; A/V equipment in very good condition; gym equipment – basketball backstops, scoreboards, etc.; generally in good condition. Other equipment includes kitchen equipment, generally in good condition.

Furnishings include fixed casework in classrooms, corridors and library, generally in fair to good condition; window shades/blinds, generally in good condition; fixed seating in auditorium/cafeteria is in good condition.

CONVEYING SYSTEMS:

The building has a 1,200 lb traction elevator serving 2 floors; generally in poor condition and not conforming to ADA requirements.

PLUMBING:

Plumbing Fixtures - Many of the original plumbing fixtures remain in service. Fixtures in the restrooms on each floor consist of wall mounted flush valve water closets, wall hung urinals and lavatories with wheel handle faucets. Many of the units appear to be in poor condition and should be replaced.

Drinking fountains consist of wall hung fixtures with integral refrigerated coolers and porcelain fixtures. They are beyond their service life, several are damaged, and should be replaced; most are NOT accessible type.

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

The Kitchen has two sinks; one three compartment stainless steel sink with lever operated faucets and a grease trap and one two compartment stainless steel sink with lever operated faucets. There is no grease trap on the two compartment sink, as it is not a full service kitchen. Chemicals are injected manually into the sanitizing basins.

Domestic Water Distribution - A 5” city water service enters the mechanical room from the north side of the building. The 3” meter and valves are located in the mechanical room and a reduced pressure backflow preventer is installed. Duplex 10HP SyncroFlo domestic pressure booster pumps and storage tank are mounted on a SyncroFlo skid. This ensures adequate pressure throughout the system on the domestic water line. The piping in the mechanical and boiler room was replaced in 2010 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 in the building is over 45 years old and should be inspected and replaced by a qualified contractor.

Two PVI Turbopower gas fired, 400 gallon, vertical hot water heaters with circulating pumps supply hot water for domestic use. The units are located in the boiler room on the first floor level. The hot water heaters are equipped with T&P relief valves and expansion tanks. The domestic hot water heater is within its service life and should provide reliable service for the next 5-7 years.

Sanitary Waste - The original sanitary sewer piping is galvanized with threaded fittings. Much of it was not visible during the site visit; it is located under the slab or within chases. The maintenance staff reported mostly minor problems with the sanitary waste piping systems. However, the sewer piping has been in service over 45 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.

This school does not have a sewage ejector or sump pump.

Rain Water Drainage - The rain water drains from the roof are routed through mechanical chases in the building and appear to be original. The drain piping should be inspected by a qualified contractor and repaired as necessary.

MECHANICAL:

Energy Supply - A high pressure 2” city gas service enters the building in the mechanical room. Two gas meters are installed; a 3” and a 2” meter located in the mechanical room downstream of two pressure reducing valves.

The reserve oil supply is stored in a 10,000 gallon underground storage tank (UST). Duplex pumps located in the mechanical room circulate oil through the system. Oil is used as a backup fuel and the District receives credit from the gas utility as an interruptible service. The current supply has been in storage for some time and should be tested for quality on a regular schedule. USTs have an anticipated service life of 20 years. The actual condition of the fuel side is unknown.

Heat Generating Systems - Building heating hot water is generated by three (3) cast iron sectional Buderus Logano GE615 boilers with net IBR rating of 2,958 MBH and installed in 2010. Two boilers can handle the load in normal winter weather conditions; three units are required to bring the building up to temperature on very cold days. Each boiler is equipped with a Webster burner designed to operate on natural gas or fuel oil. Burner oil pumps are loose and not driven by the fan motor. The gas train serving the boilers does have code required venting of the regulators and dual solenoid valves with venting of the chamber between. Combustion air makeup is supplied by an inline fan installed in the boiler room and equipped with a motorized damper. No major issues with the boilers were reported by the Building Engineer. Cast iron sectional boilers have an anticipated service life of 35 years or more; these units have been in service approximately 5 years. The boilers appear to have been maintained well. The District should provide reliable service for the next 25 to 30 years.

Cooling Generating Systems - Chilled water is generated by one 156 nominal ton Carrier 30HX water-cooled twin screw chiller located in the first floor boiler room. Heat from the chillers is rejected by one roof mounted 250 nominal ton Evapco model USS induced draft, counterflow cooling tower. The single chiller is sufficient to hold the building on hot summer days. Screw chillers have an anticipated service life of 20 years; this unit has been in service 5 years. The District should provide reliable service to the chiller for the next 12-15 years. Galvanized metal cooling towers have an anticipated service life of 18 years; this unit has been in service approximately 10 years. Rust stains are forming on the structural support of the cooling tower and the condenser water piping. The District should have an expert monitor the condition of the cooling tower. The District should budget for replacing the cooling tower over the next 6-8 years. The Building Engineer reported no issues with either the chillers or cooling towers.

Distribution Systems - Building water distribution piping is black steel with threaded fittings and black steel with flanged fittings in the boiler room. The piping in the boiler room was replaced in 2005, but the original piping remains in the rest of the building. Most of the piping is covered with insulation. The distribution piping in several rooms has been damaged by condensation and has significant rust damage. The piping has been in use 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 distribution 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 5 years.

A two pipe distribution system supplies building heating or cooling water to the unit ventilators, fin tube radiators, air handling units, and heating and ventilation units (hot water only). Two 25HP Bell & Gossett end suction dual temperature water pumps, P-3 and P-4, serve either the hot water or chilled water service depending on valve configuration. Two 7.5HP Bell & Gossett end suction water pumps, P-1 and P-2, serve the building hot water distribution network for the heating and ventilation units. Two 30HP Bell & Gossett end suction pumps, P-5 and P-6, serve the condenser water loop for the cooling tower and chiller. A chemical treatment system for the condenser water system is located in the mechanical room. All pumps were installed in 2010 and are within the anticipated service life of 25 years.

Unit ventilators and fin tube radiators provide heating and cooling for the majority of classrooms, offices, and indirectly to the hallways. The unit ventilators and radiators are original to the building and beyond their service life. The existing unit ventilators and radiators should be removed and new two pipe units that have integral heat exchangers should be installed to introduce outdoor air to the building.

Conditioned air is provided to several spaces in the building by air handling units located in a penthouse mechanical room. Air handling unit (AHU) AHU-2 serves the Main Office and Engineer's Office. Air handling unit AHU-3 serves the Comm. Area. AHU-4 serves the Cafetorium. Heating and ventilation unit (HV) HV-5 serves the Gymnasium and provides heating only. Heating and ventilation unit (HV) HV-6 serves the Kitchen and provides heating only. Each air handling unit has a chilled water and hot water connection. The heating and ventilation units have only hot water connections. These units are estimated to have been installed in 2005 and are within their service life. The District should provide reliable service to the units for the next 10-15 years.

The AHU and HV units in the penthouse mechanical room are served by pumps located in that space. Pump P-7 is a 2HP inline pump and serves dual temperature water to AHU-2. Pump P-8 is a 1-½HP inline pump and serves dual temperature water to AHU-3. Pump P-9 is a 5HP end suction pump and serves dual temperature water to AHU-4. Pump P-10 is 2HP end suction pump and serves hot water to HV-5. Pump P-12 is 1HP end suction pump and serves hot water to HV-6. All pumps appear to have been installed in 2005, are in good condition, and are within their service life.

An exhaust fan on the upper roof serves the kitchen hood. Three (3) large and four (4) small power ventilators are also installed on the upper roof. The main roof has one exhaust fan and ten (10) power ventilators installed. The lower roof has three (3) power ventilators installed. It could not be determined which specific spaces each ventilator served during the site visit. The Building Engineer reports that some of the exhaust fans and power ventilators are operational, but many are not. The fans and ventilators are beyond their service life and should be replaced.

Terminal & Package Units - One kitchen hood is installed above the gas fired cooking equipment. A fire suppression system is not installed on the hood as the kitchen serves only precooked meals. An automatic gas shut-off system is not installed. The equipment looks to be within its service life.

A Mitsubishi split system air conditioning system provides cooling to the LAN room located on the second floor. 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 no longer provide control functions. Pneumatic room thermostats are intended to control the dual temperature unit ventilator control valve and heating coil. In reality the thermostats are not functional and many ventilator control valves are wide open and heating and cooling control are achieved via manual control of the boiler or chiller. Pneumatic control air is no longer supplied; the air compressor has been removed. The pneumatic systems are beyond their service life and require too much attention from the maintenance staff. 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 majority of the school building is NOT covered by an automatic sprinkler system. Only the Library is covered by a wet pipe sprinkler system. A 4" sprinkler line enters the first floor education storage room from Seventh Street. 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.

ELECTRICAL:

Site electrical service - An underground medium voltage (13.2 KV) cable drop from the utility power poles along Cumberland Street feeds an old utility company Dry-type transformer (500 KVA, 13.2KV – 120V/208V, 3-Phase). The PECO metering is located inside the electrical room. The school's main service switchgear is located in the main electrical room. The main service is 1600 Amp at 120 V, three phase. The main 120 V switchgear consists of 1600A (Frame size) adjustable main Breaker, and several 600 A frame 120V feeder circuit breakers. There is no emergency generator on campus for emergency loads. Service entrance and the main building electrical distribution systems are very old and in poor condition (built in 1967), beyond their useful life, and do not have any capacity for future growth.

Distribution system - The electrical distribution is accomplished with 120V distribution switchboards. Switchboards feed the 120V panels two in each floor. These panels are in poor condition and need replacements.

Receptacles - There is insufficient number of receptacles in classrooms, computer rooms, libraries, 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 kitchen. Surface or pendant mounted industrial fluorescent are used in mechanical and electrical. The majority of interior lighting fixtures is in a poor condition and has reached the end of their useful life.

Fire alarm - The present fire alarm system is not automatic/addressable, and is not in compliance with safety code. There are manual pull stations throughout the building. There is insufficient number of horn/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 servicing the communication system of the building. School also equipped with Wi-Fi system.

Public Address - Separate PA system does not exist. School uses the telephone system for public announcement. This system is working correctly. Each classroom is provided with intercom telephone service which is working correctly. The system permits paging and intercom 2-way communication between main office and classrooms, and between classrooms.

Clock and Program system- Clock and program system are not working adequately. Classrooms are provided with 12 inches, wall mounted, round clock, however, the clocks are not controlled properly by central master control panel.

Television System- Television system is not provided in the school. Most classes are provided with smart board having ability of connection to computer and internet.

Security Systems-access control, video surveillance- The school is not provided with adequate video surveillance system. Sufficient numbers of cameras are not installed at exit doors, corridors, exterior, and other critical areas. These cameras should be controlled by a Closed Circuit Television system (CCTV).

Emergency Power System - School is not provided with adequate emergency generator to feed elevators, emergency lighting and other emergency loads via a transfer switch.

Emergency lighting system, including exit lighting- there is insufficient emergency lighting fixtures in corridors, library and other exit ways. Exit signs and emergency fixtures are old and beyond useful life.

Lightning Protection System- There is adequate lightning protection system installed in the school.

Grounding- The present grounding system is adequate.

Site Lighting - Campus and parking area 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 speakers located on building exterior walls.

GROUNDS (SITE):

The parking lot at the site is unused due to severely deteriorated pavement, and enclosed with chain link fence in very poor condition. Playground pavement adjacent to the building is in poor condition, paving is cracked and deteriorated; there is no playground equipment. Playground is separated from the street with a granite berm which starts showing signs of deterioration. Picket fence separating the playground and kindergarten playground is generally in good condition. There is minimal landscaping at the site consisting of several trees, generally in fair condition.

ACCESSIBILITY:

Generally, the building has an accessible route per ADA requirements to first floor only. Toilets are not equipped with accessible fixtures, and accessories, such as grab bars, and accessible partitions. None of the doors in the building have ADA required door handles. Elevator cabin is not wheel chair accessible.

RECOMMENDATIONS:

- Rebuild cracked and buckling exterior masonry below windows in classroom pods.
- Replace lintels over vent louvers (below windows)
- Install all new roofing system including insulation within next 3 to 4 years; tear-down existing roofing; install flashing, and counter flashing
- Replace exterior doors
- Replace all windows
- Replace damaged interior doors
- Replace interior doors hardware for ADA accessibility
- Replace non-ADA compliant toilet partitions; reconfigure remaining toilet partitions
- Replace signage throughout the building
- Repaint all walls
- Replace carpet in library
- Replace VCT/VAT tile throughout the building
- Repair and refinish hardwood flooring in gym
- Replace all suspended acoustical ceiling in the building
- Repair and repaint drywall/plaster ceilings
- Replace built-in cabinets in classrooms
- Replace existing 1200# traction elevator with new 2500# elevator
- Replace pavement in the parking lot, stripe stalls including accessible spaces and aisles
- Resurface playground paving
- Replace ten (10) urinals, in use beyond their service life, with new low flow fixtures.
- Replace fifteen (15) water closets, in use beyond their service life, with new code compliant fixtures.
- Replace four (4) lavatories, in use beyond their service life, with new code compliant fixtures.
- Replace six (6) wall hung drinking fountains and integral refrigerated coolers in the corridors. These units are well beyond their service life and most are NOT accessible type.
- Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for over 45 years, and replace any damaged piping.
- 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.
- Hire a qualified contractor to examine the distribution piping, in service for over 45 years and damaged, and replace any damaged piping and to further quantify the extent of potential failures.
- Replace the existing unit ventilators with two pipe units that have integral heat exchangers to introduce outdoor air to the building.
- Replace the two (2) existing roof mounted exhaust fans that are no longer operational and utilize the existing ductwork.
- Replace the twenty (20) existing roof mounted power ventilators, many of which are damaged, and utilize the existing ductwork.
- 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.

- Provide new Site electrical service 2000KVA, 480V, 3 Phase to feed the existing loads plus new additional loads for new HVAC System. New

main 480 switchgear for the new HVAC loads plus an MCC. Also, a new 120V/208V, 3 phase switchboard to replace existing.

- Provide new 120V distribution system (panelboards) throughout the building for lighting, receptacles.
- Provide new receptacles in all classrooms and other areas
- Provide new lighting system in the entire building
- Provide new automated FA system
- Provide new clock system
- Provide new 100 KW emergency generator
- Provide new emergency exit signs & emergency lights
- Install new site lighting
- Install new site paging on building exterior walls

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 2 / Tm 4
Status:	Accepted by SDP	Team:	Tm 4
Site ID:	S532001		

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	53.00 %	0.00 %	$0.00
A20 - Basement Construction	53.00 %	0.00 %	$0.00
B10 - Superstructure	53.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	71.03 %	50.61 %	$2,425,154.51
B30 - Roofing	110.00 %	89.46 %	$1,534,855.11
C10 - Interior Construction	60.69 %	32.90 %	$686,177.88
C20 - Stairs	53.00 %	0.00 %	$0.00
C30 - Interior Finishes	112.10 %	80.20 %	$2,846,869.02
D10 - Conveying	105.71 %	221.52 %	$670,322.07
D20 - Plumbing	74.18 %	81.60 %	$1,416,279.11
D30 - HVAC	93.80 %	52.95 %	$5,006,178.46
D40 - Fire Protection	92.47 %	177.49 %	$1,215,964.37
D50 - Electrical	110.11 %	57.18 %	$2,857,083.27
E10 - Equipment	21.21 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	116.41 %	$210,761.69
G20 - Site Improvements	105.48 %	150.34 %	$1,233,990.49
G40 - Site Electrical Utilities	106.67 %	63.74 %	$239,656.48
Totals:	**80.31 %**	**46.67 %**	**$20,343,292.46**

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)
B532001;Hartranft	85,000	44.51	$2,826,993.99	$4,383,155.06	$5,626,785.11	$3,975,023.74	$2,057,687.59
G532001;Grounds	48,800	123.14	$0.00	$0.00	$1,184,681.04	$288,965.93	$0.00
Total:		**46.67**	**$2,826,993.99**	**$4,383,155.06**	**$6,811,466.15**	**$4,263,989.67**	**$2,057,687.59**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $2,826,993.99
- 2 - Response Time (2-3 yrs) - $4,383,155.06
- 3 - Response Time (3-4 yrs) - $6,811,466.15
- 4 - Response Time (4-5 yrs) - $4,263,989.67
- 5 - Response Time (> 5 yrs) - $2,057,687.59

Budget Estimate Total: $20,343,292.46

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):	85,000
Year Built:	1968
Last Renovation:	
Replacement Value:	$42,392,474
Repair Cost:	$18,869,645.49
Total FCI:	44.51 %
Total RSLI:	79.59 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B532001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S532001		

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	53.00 %	0.00 %	$0.00
A20 - Basement Construction	53.00 %	0.00 %	$0.00
B10 - Superstructure	53.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	71.03 %	50.61 %	$2,425,154.51
B30 - Roofing	110.00 %	89.46 %	$1,534,855.11
C10 - Interior Construction	60.69 %	32.90 %	$686,177.88
C20 - Stairs	53.00 %	0.00 %	$0.00
C30 - Interior Finishes	112.10 %	80.20 %	$2,846,869.02
D10 - Conveying	105.71 %	221.52 %	$670,322.07
D20 - Plumbing	74.18 %	81.60 %	$1,416,279.11
D30 - HVAC	93.80 %	52.95 %	$5,006,178.46
D40 - Fire Protection	92.47 %	177.49 %	$1,215,964.37
D50 - Electrical	110.11 %	57.18 %	$2,857,083.27
E10 - Equipment	21.21 %	0.00 %	$0.00
E20 - Furnishings	105.00 %	116.41 %	$210,761.69
Totals:	**79.59 %**	**44.51 %**	**$18,869,645.49**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$18.40	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$1,564,000
A1030	Slab on Grade	$7.73	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$657,050
A2010	Basement Excavation	$6.55	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$556,750
A2020	Basement Walls	$12.70	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$1,079,500
B1010	Floor Construction	$75.10	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$6,383,500
B1020	Roof Construction	$13.88	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$1,179,800
B2010	Exterior Walls	$36.91	S.F.	85,000	100	1968	2068		53.00 %	23.19 %	53		$727,421.15	$3,137,350
B2020	Exterior Windows	$18.01	S.F.	85,000	40	1968	2008	2057	105.00 %	93.05 %	42		$1,424,513.74	$1,530,850
B2030	Exterior Doors	$1.45	S.F.	85,000	25	1968	1993	2042	108.00 %	221.68 %	27		$273,219.62	$123,250
B3010105	Built-Up	$37.76	S.F.	45,300	20	1968	1988	2037	110.00 %	89.73 %	22		$1,534,855.11	$1,710,528
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		25				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	85,000	20	1968	1988	2037	110.00 %	0.00 %	22			$5,100
C1010	Partitions	$17.91	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$1,522,350
C1020	Interior Doors	$3.51	S.F.	85,000	40	1968	2008	2057	105.00 %	191.88 %	42		$572,470.45	$298,350
C1030	Fittings	$3.12	S.F.	85,000	40	1968	2008	2037	55.00 %	42.88 %	22		$113,707.43	$265,200
C2010	Stair Construction	$1.41	S.F.	85,000	100	1968	2068		53.00 %	0.00 %	53			$119,850

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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.	85,000	10	2005	2015	2027	120.00 %	80.17 %	12		$900,240.12	$1,122,850
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.		30				0.00 %	0.00 %				$0
C3020411	Carpet	$7.30	S.F.	2,100	10	2005	2015	2027	120.00 %	153.30 %	12		$23,500.61	$15,330
C3020412	Terrazzo & Tile	$75.52	S.F.		50				0.00 %	0.00 %				$0
C3020413	Vinyl Flooring	$9.68	S.F.	49,200	20	1968	1988	2037	110.00 %	156.68 %	22		$746,200.07	$476,256
C3020414	Wood Flooring	$22.27	S.F.	6,400	25	1968	1993	2042	108.00 %	130.90 %	27		$186,573.25	$142,528
C3020415	Concrete Floor Finishes	$0.97	S.F.	10,600	50	1968	2018	2067	104.00 %	0.00 %	52			$10,282
C3030	Ceiling Finishes	$20.97	S.F.	85,000	25	1968	1993	2042	108.00 %	55.56 %	27		$990,354.97	$1,782,450
D1010	Elevators and Lifts	$3.56	S.F.	85,000	35	1968	2003	2052	105.71 %	221.52 %	37		$670,322.07	$302,600
D2010	Plumbing Fixtures	$13.52	S.F.	85,000	35	1968	2003	2035	57.14 %	18.49 %	20		$212,459.81	$1,149,200
D2020	Domestic Water Distribution	$1.68	S.F.	85,000	25	1968	1993	2042	108.00 %	301.63 %	27		$430,725.20	$142,800
D2030	Sanitary Waste	$2.90	S.F.	85,000	25	1968	1993	2042	108.00 %	169.16 %	27		$416,988.77	$246,500
D2040	Rain Water Drainage	$2.32	S.F.	85,000	30	1968	1998	2047	106.67 %	180.58 %	32		$356,105.33	$197,200
D3020	Heat Generating Systems	$18.67	S.F.	85,000	35	2010	2045		85.71 %	0.00 %	30			$1,586,950
D3030	Cooling Generating Systems	$24.48	S.F.	85,000	20	2010	2030		75.00 %	0.00 %	15			$2,080,800
D3040	Distribution Systems	$42.99	S.F.	85,000	25	1968	1993	2042	108.00 %	87.10 %	27		$3,182,753.17	$3,654,150
D3050	Terminal & Package Units	$11.60	S.F.	85,000	20	2010	2030		75.00 %	0.00 %	15			$986,000
D3060	Controls & Instrumentation	$13.50	S.F.	85,000	20	1968	1988	2037	110.00 %	158.90 %	22		$1,823,425.29	$1,147,500
D4010	Sprinklers	$7.05	S.F.	85,000	35	1968	2003	2052	105.71 %	202.91 %	37		$1,215,964.37	$599,250
D4020	Standpipes	$1.01	S.F.	85,000	35				0.00 %	0.00 %				$85,850
D5010	Electrical Service/Distribution	$9.70	S.F.	85,000	30	1968	1998	2047	106.67 %	110.31 %	32		$909,464.97	$824,500
D5020	Lighting and Branch Wiring	$34.68	S.F.	85,000	20	1968	1988	2037	110.00 %	36.58 %	22		$1,078,192.85	$2,947,800
D5030	Communications and Security	$12.99	S.F.	85,000	15	1968	1983	2032	113.33 %	44.72 %	17		$493,781.16	$1,104,150
D5090	Other Electrical Systems	$1.41	S.F.	85,000	30	1968	1998	2047	106.67 %	313.43 %	32		$375,644.29	$119,850
E1020	Institutional Equipment	$4.82	S.F.	85,000	35	1968	2003	2028	37.14 %	0.00 %	13			$409,700
E1090	Other Equipment	$11.10	S.F.	85,000	35	1968	2003	2020	14.29 %	0.00 %	5			$943,500
E2010	Fixed Furnishings	$2.13	S.F.	85,000	40	1968	2008	2057	105.00 %	116.41 %	42		$210,761.69	$181,050
								Total	**79.59 %**	**44.51 %**			**$18,869,645.49**	**$42,392,474**

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:	**$18,869,645**	**$0**	**$0**	**$0**	**$0**	**$1,203,153**	**$0**	**$0**	**$0**	**$0**	**$0**	**$20,072,798**
*** A - Substructure**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A10 - Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1010 - Standard Foundations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A1030 - Slab on Grade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A20 - Basement Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$727,421	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$727,421**
B2020 - Exterior Windows	$1,424,514	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,424,514**
B2030 - Exterior Doors	$273,220	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$273,220**
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	$1,534,855	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,534,855**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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**

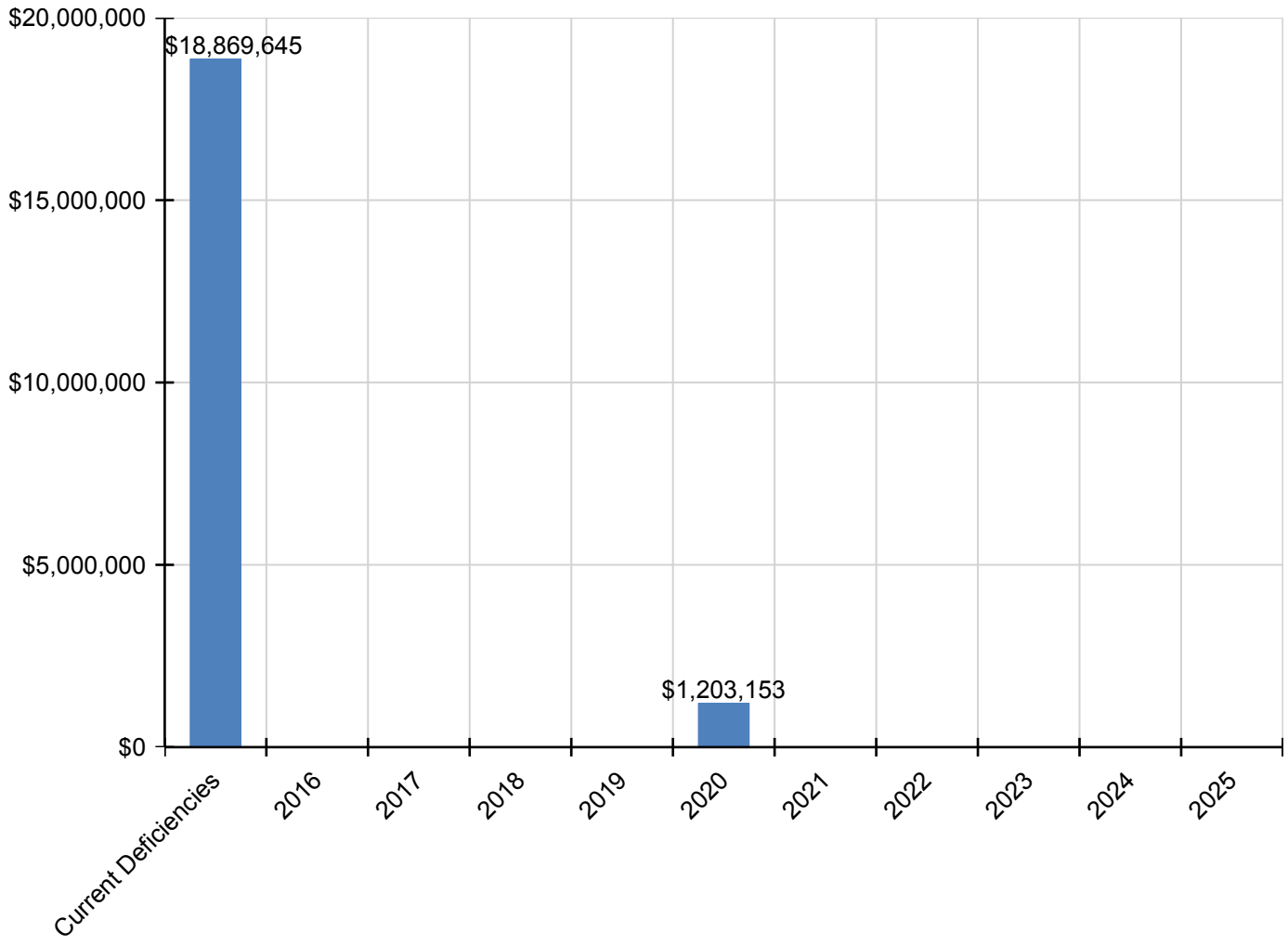
C1020 - Interior Doors	$572,470	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$572,470**
C1030 - Fittings	$113,707	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$113,707**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$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	$900,240	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$900,240**
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	$23,501	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$23,501**
C3020412 - Terrazzo & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020413 - Vinyl Flooring	$746,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$746,200**
C3020414 - Wood Flooring	$186,573	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$186,573**
C3020415 - Concrete Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3030 - Ceiling Finishes	$990,355	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$990,355**
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	$670,322	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$670,322**
D20 - Plumbing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2010 - Plumbing Fixtures	$212,460	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$212,460**
D2020 - Domestic Water Distribution	$430,725	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$430,725**
D2030 - Sanitary Waste	$416,989	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$416,989**
D2040 - Rain Water Drainage	$356,105	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$356,105**
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	$0	**$0**
D3030 - Cooling Generating Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3040 - Distribution Systems	$3,182,753	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,182,753**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D3060 - Controls & Instrumentation	$1,823,425	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,823,425**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$1,215,964	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,215,964**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$909,465	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$909,465**
D5020 - Lighting and Branch Wiring	$1,078,193	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,078,193**
D5030 - Communications and Security	$493,781	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$493,781**
D5090 - Other Electrical Systems	$375,644	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$375,644**
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	$1,203,153	$0	$0	$0	$0	$0	**$1,203,153**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$210,762	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$210,762**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

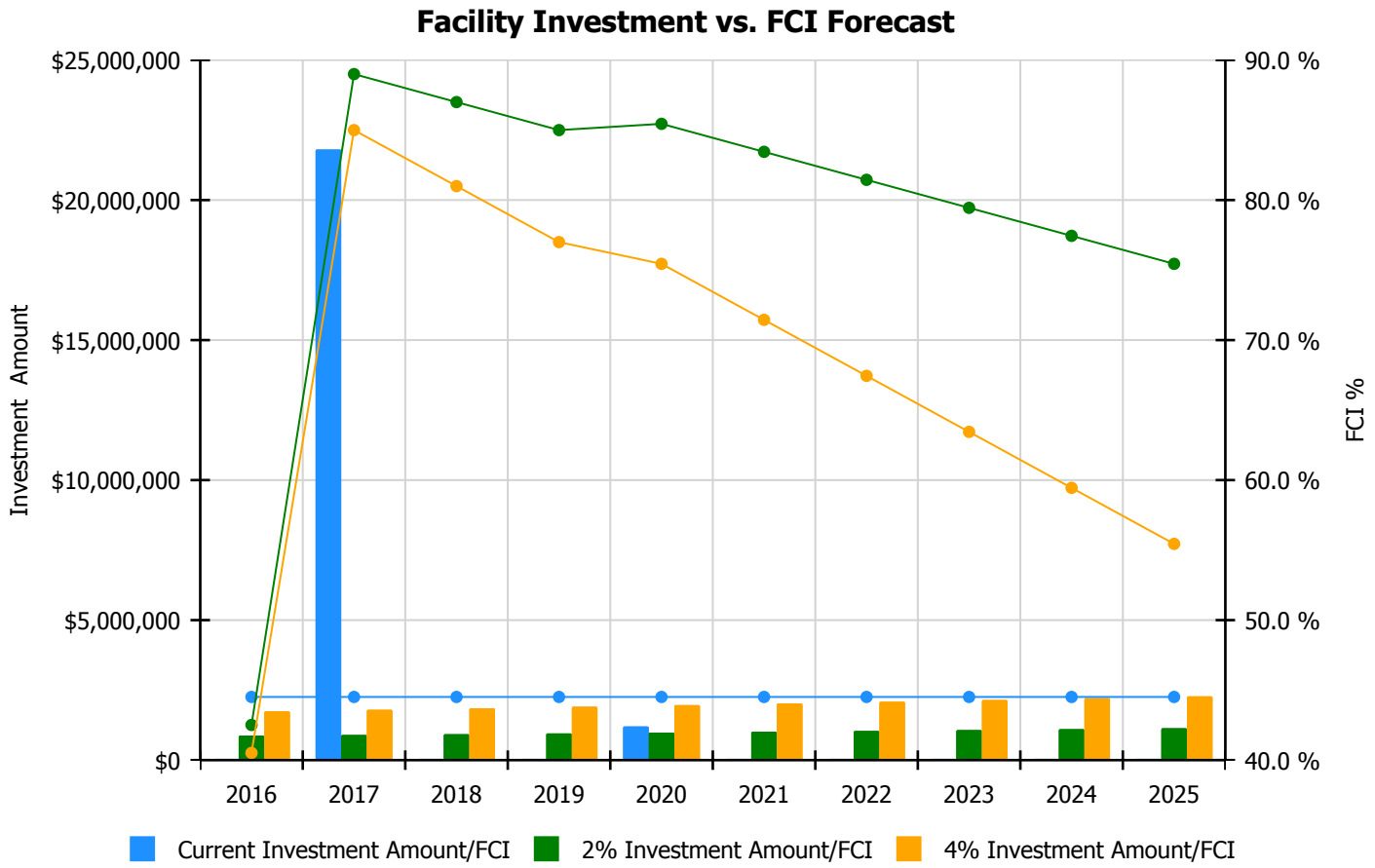
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



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:

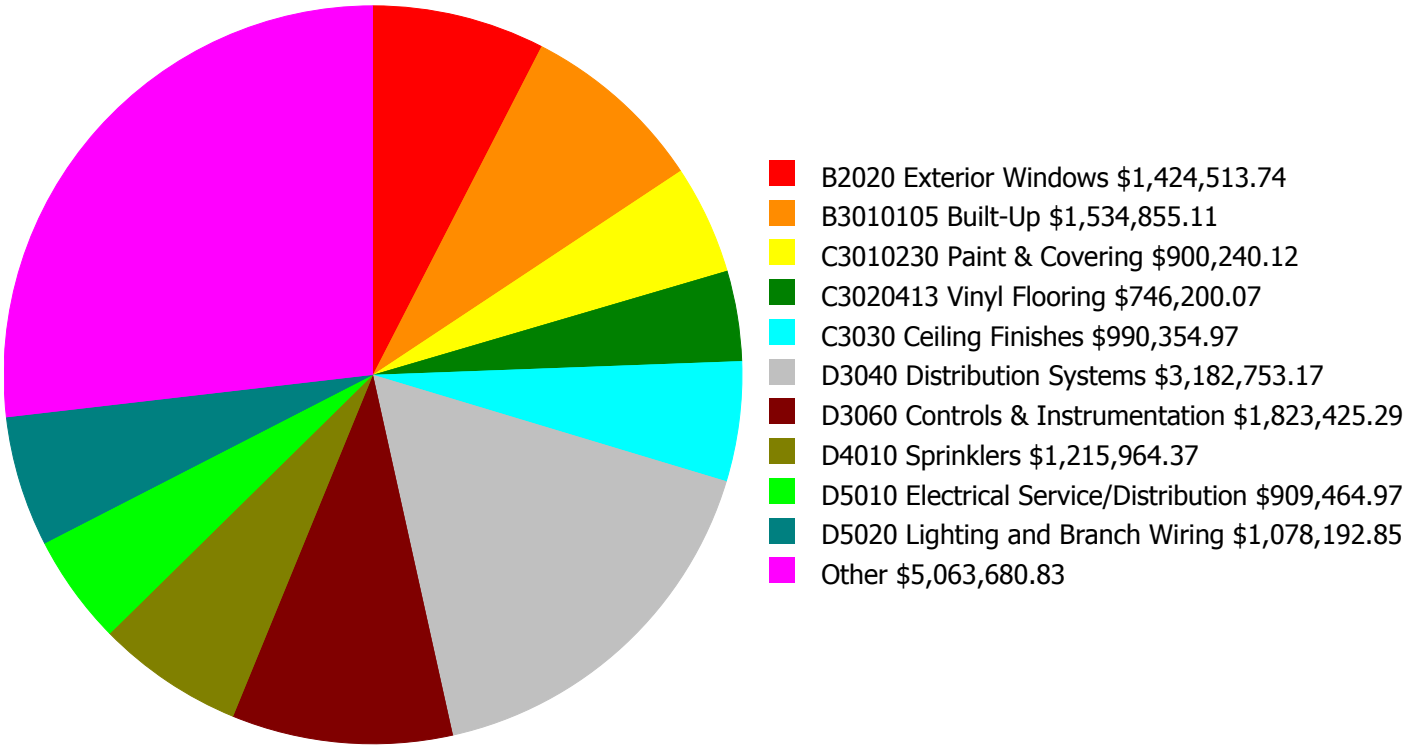
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 44.51%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$873,285.00	42.51 %	$1,746,570.00	40.51 %
2017	$21,805,353	$899,484.00	89.00 %	$1,798,967.00	85.00 %
2018	$0	$926,468.00	87.00 %	$1,852,936.00	81.00 %
2019	$0	$954,262.00	85.00 %	$1,908,524.00	77.00 %
2020	$1,203,153	$982,890.00	85.44 %	$1,965,780.00	75.44 %
2021	$0	$1,012,377.00	83.44 %	$2,024,753.00	71.44 %
2022	$0	$1,042,748.00	81.44 %	$2,085,496.00	67.44 %
2023	$0	$1,074,030.00	79.44 %	$2,148,061.00	63.44 %
2024	$0	$1,106,251.00	77.44 %	$2,212,503.00	59.44 %
2025	$0	$1,139,439.00	75.44 %	$2,278,878.00	55.44 %
Total:	**$23,008,506**	**$10,011,234.00**		**$20,022,468.00**	

Deficiency Summary by System

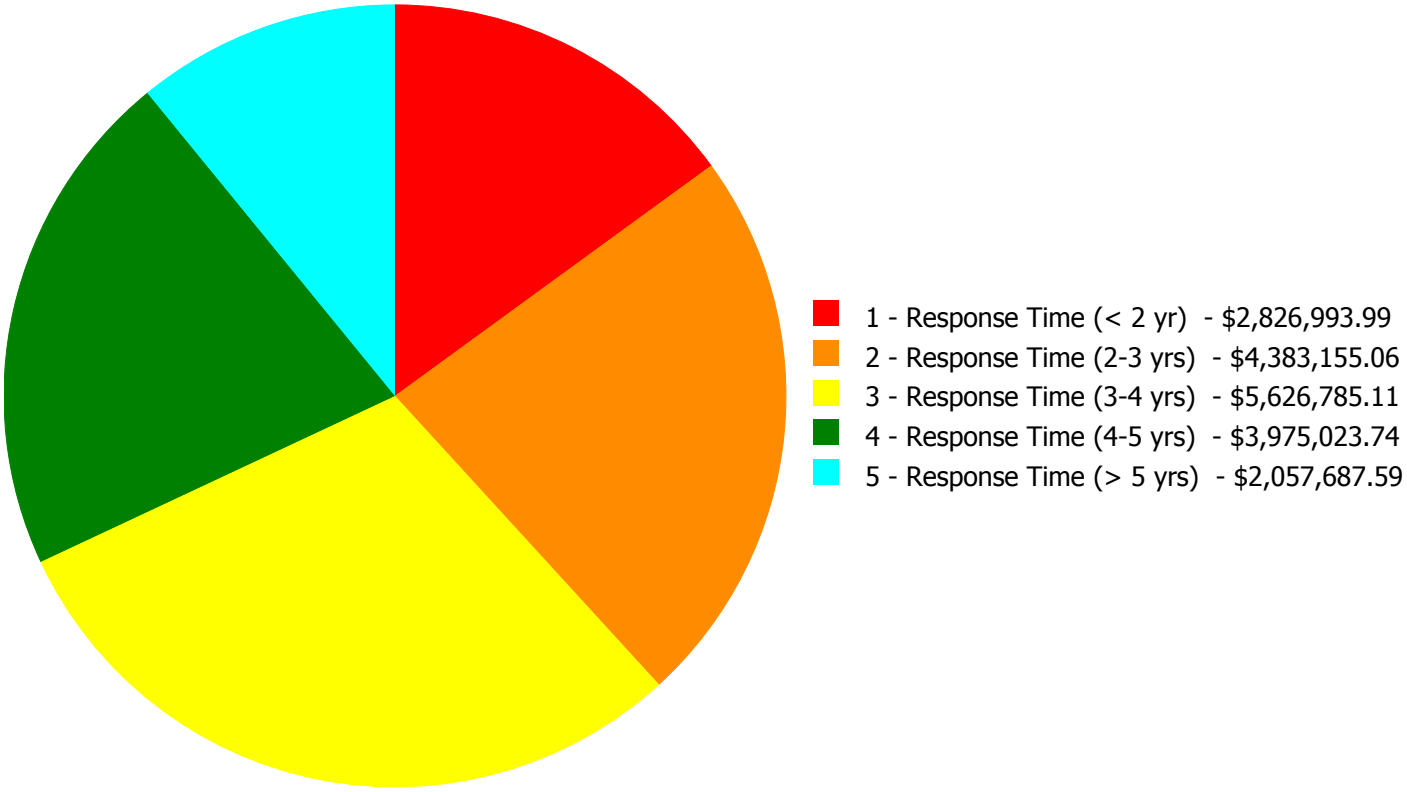
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $18,869,645.49

Deficiency Summary by Priority

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



Budget Estimate Total: $18,869,645.49

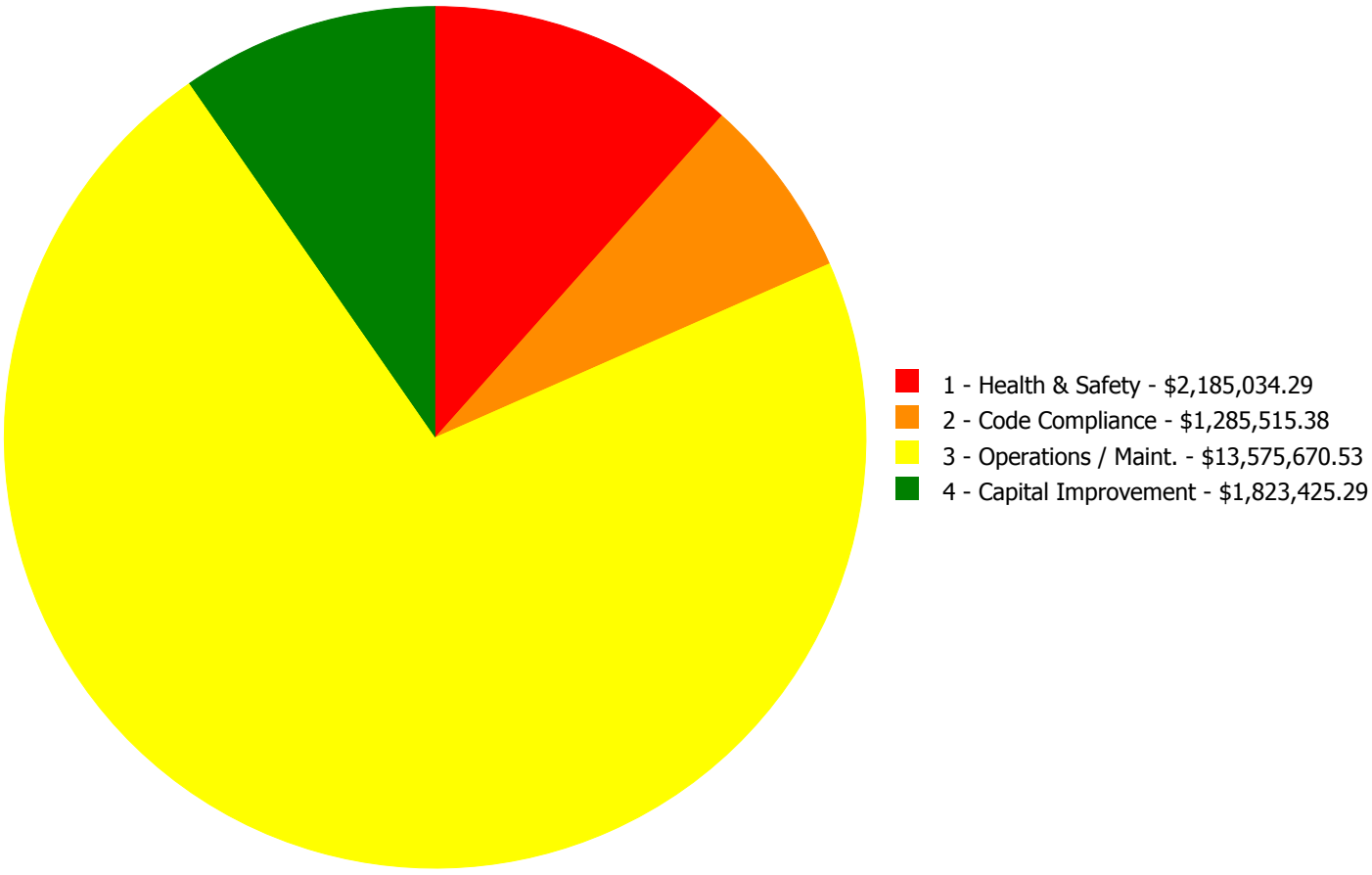
Deficiency By Priority Investment Table

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
B2010	Exterior Walls	$0.00	$727,421.15	$0.00	$0.00	$0.00	$727,421.15
B2020	Exterior Windows	$0.00	$0.00	$1,424,513.74	$0.00	$0.00	$1,424,513.74
B2030	Exterior Doors	$0.00	$0.00	$273,219.62	$0.00	$0.00	$273,219.62
B3010105	Built-Up	$1,534,855.11	$0.00	$0.00	$0.00	$0.00	$1,534,855.11
C1020	Interior Doors	$0.00	$0.00	$0.00	$572,470.45	$0.00	$572,470.45
C1030	Fittings	$0.00	$0.00	$81,197.93	$32,509.50	$0.00	$113,707.43
C3010230	Paint & Covering	$0.00	$0.00	$0.00	$900,240.12	$0.00	$900,240.12
C3020411	Carpet	$0.00	$0.00	$0.00	$0.00	$23,500.61	$23,500.61
C3020413	Vinyl Flooring	$0.00	$0.00	$746,200.07	$0.00	$0.00	$746,200.07
C3020414	Wood Flooring	$0.00	$186,573.25	$0.00	$0.00	$0.00	$186,573.25
C3030	Ceiling Finishes	$0.00	$0.00	$0.00	$990,354.97	$0.00	$990,354.97
D1010	Elevators and Lifts	$0.00	$670,322.07	$0.00	$0.00	$0.00	$670,322.07
D2010	Plumbing Fixtures	$0.00	$166,984.67	$45,475.14	$0.00	$0.00	$212,459.81
D2020	Domestic Water Distribution	$0.00	$0.00	$0.00	$430,725.20	$0.00	$430,725.20
D2030	Sanitary Waste	$0.00	$0.00	$416,988.77	$0.00	$0.00	$416,988.77
D2040	Rain Water Drainage	$0.00	$0.00	$0.00	$356,105.33	$0.00	$356,105.33
D3040	Distribution Systems	$76,174.51	$2,302,446.90	$804,131.76	$0.00	$0.00	$3,182,753.17
D3060	Controls & Instrumentation	$0.00	$0.00	$0.00	$0.00	$1,823,425.29	$1,823,425.29
D4010	Sprinklers	$1,215,964.37	$0.00	$0.00	$0.00	$0.00	$1,215,964.37
D5010	Electrical Service/Distribution	$0.00	$329,407.02	$0.00	$580,057.95	$0.00	$909,464.97
D5020	Lighting and Branch Wiring	$0.00	$0.00	$1,078,192.85	$0.00	$0.00	$1,078,192.85
D5030	Communications and Security	$0.00	$0.00	$381,220.94	$112,560.22	$0.00	$493,781.16
D5090	Other Electrical Systems	$0.00	$0.00	$375,644.29	$0.00	$0.00	$375,644.29
E2010	Fixed Furnishings	$0.00	$0.00	$0.00	$0.00	$210,761.69	$210,761.69
	Total:	$2,826,993.99	$4,383,155.06	$5,626,785.11	$3,975,023.74	$2,057,687.59	$18,869,645.49

Deficiency Summary by Category

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



Budget Estimate Total: $18,869,645.49

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: 45,300.00
Unit of Measure: S.F.
Estimate: $1,534,855.11
Assessor Name: Craig Anding
Date Created: 12/17/2015

Notes: Install all new roofing system including insulation within next 3 to 4 years; tear-down existing roofing; install flashing, and counter flashing

System: D3040 - Distribution Systems

Location: Roof
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace utility set exhaust fan (5 HP)
Qty: 2.00
Unit of Measure: Ea.
Estimate: $76,174.51
Assessor Name: Craig Anding
Date Created: 09/29/2015

Notes: Replace the two (2) existing roof mounted exhaust fans that are no longer operational and utilize the existing ductwork.

System: D4010 - Sprinklers

Location: Throughout building

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Install a fire protection sprinkler system

Qty: 85,000.00

Unit of Measure: S.F.

Estimate: $1,215,964.37

Assessor Name: Craig Anding

Date Created: 09/29/2015

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.

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

System: B2010 - Exterior Walls

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Rebuild brick parapets at original building roof perimeter; re-set stone coping - change qty. for LF of coping if necessary

Qty: 2,500.00

Unit of Measure: S.F.

Estimate: $550,037.75

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Rebuild cracked and buckling exterior masonry below windows in classroom pods

System: B2010 - Exterior Walls

Location: Exterior

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replacing failing steel lintels in brick wall construction

Qty: 320.00

Unit of Measure: L.F.

Estimate: $177,383.40

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace lintels over vent louvers (below windows)

System: C3020414 - Wood Flooring

Location: Interior

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace wood flooring

Qty: 6,400.00

Unit of Measure: S.F.

Estimate: $186,573.25

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Repair and refinish hardwood flooring in gym

System: D1010 - Elevators and Lifts

Location: Interior

Distress: Accessibility

Category: 2 - Code Compliance

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

Correction: Add interior elevator - 4 floors - adjust the electrical run lengths to hook up the elevator

Qty: 1.00

Unit of Measure: Ea.

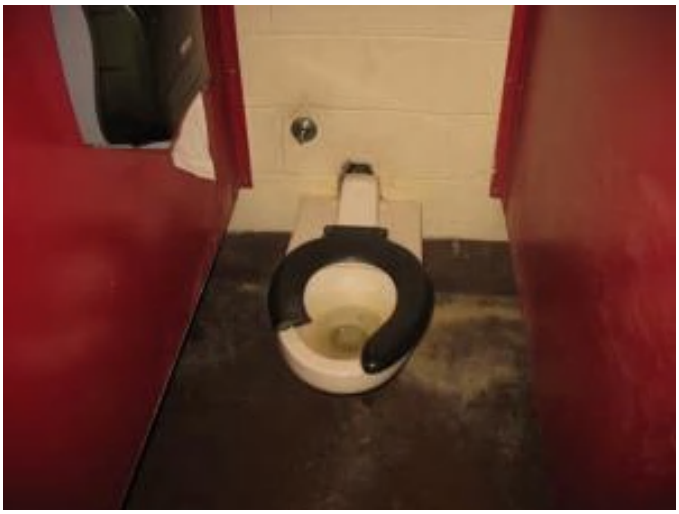
Estimate: $670,322.07

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace existing 1200# traction elevator with new 2500# elevator

System: D2010 - Plumbing Fixtures



Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace water closet - quantify additional units

Qty: 15.00

Unit of Measure: Ea.

Estimate: $111,932.22

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Replace fifteen (15) water closets, in use beyond their service life, with new code compliant fixtures.

System: D2010 - Plumbing Fixtures

Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace wall hung urinals

Qty: 10.00

Unit of Measure: Ea.

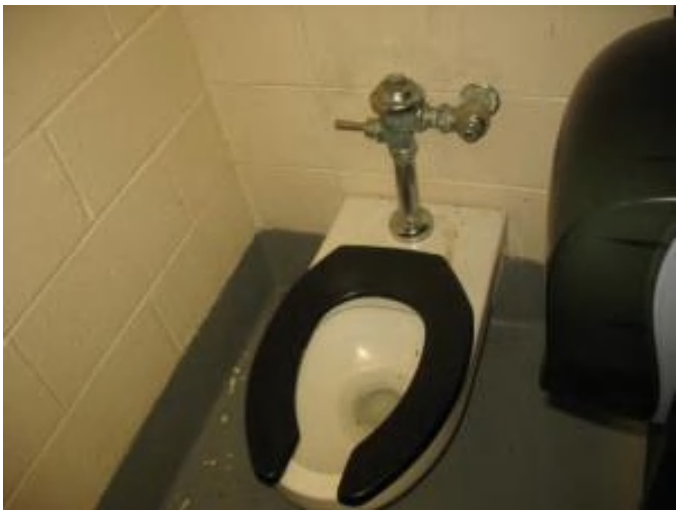
Estimate: $33,424.38

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Replace ten (10) urinals, in use beyond their service life, with new low flow fixtures.

System: D2010 - Plumbing Fixtures



Location: Restrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace or replace lavatory - quantify accessible if required

Qty: 4.00

Unit of Measure: Ea.

Estimate: $21,628.07

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Replace four (4) lavatories, in use beyond their service life, with new code compliant fixtures.

System: D3040 - Distribution Systems

Location: Classrooms

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace classroom unit ventilator (htg/clg coils, 5 tons, 2,000 CFM)

Qty: 34.00

Unit of Measure: Ea.

Estimate: $1,695,874.87

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Replace the existing unit ventilators with two pipe units that have integral heat exchangers to introduce outdoor air to the building.

System: D3040 - Distribution Systems

Location: Roof

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Replace power roof ventilator (24" dia.)

Qty: 20.00

Unit of Measure: Ea.

Estimate: $606,572.03

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Replace the twenty (20) existing roof mounted power ventilators, many of which are damaged, and utilize the existing ductwork.

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: $329,407.02

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Replace existing old 120V panel-boards

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

System: B2020 - Exterior Windows

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 200.00

Unit of Measure: Ea.

Estimate: $1,424,513.74

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace all windows

System: B2030 - Exterior Doors

Location: Exterior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 30.00

Unit of Measure: Ea.

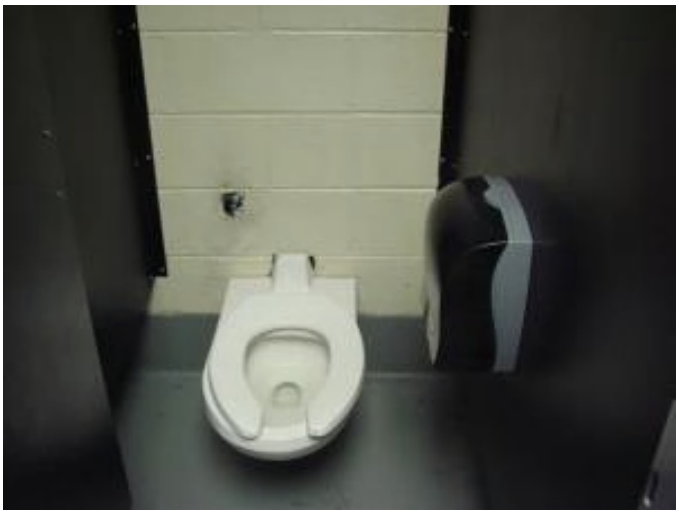
Estimate: $273,219.62

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace exterior doors

System: C1030 - Fittings



Location: Interior

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Remove and replace damaged toilet paritions - handicap units

Qty: 25.00

Unit of Measure: Ea.

Estimate: $81,197.93

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace non-ADA compliant toilet partitions; reconfigure remaining toilet partitions

System: C3020413 - Vinyl Flooring

Location: Interior

Distress: Health Hazard / Risk

Category: 1 - Health & Safety

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

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

Qty: 49,200.00

Unit of Measure: S.F.

Estimate: $746,200.07

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace VCT/VAT tile throughout the building

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: Craig Anding

Date Created: 09/29/2015

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

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. (+50KSF)

Qty: 85,000.00

Unit of Measure: S.F.

Estimate: $416,988.77

Assessor Name: Craig Anding

Date Created: 09/29/2015

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: 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: 85,000.00

Unit of Measure: S.F.

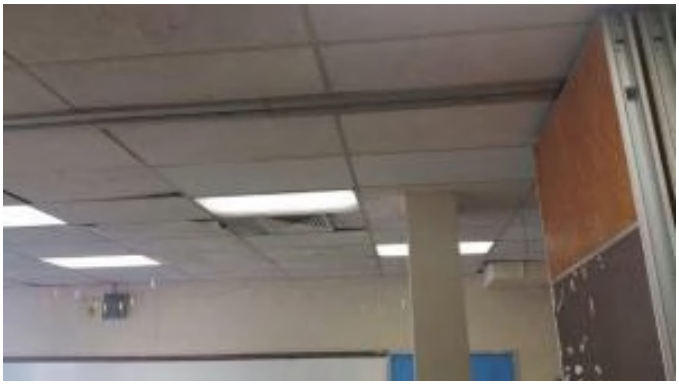
Estimate: $804,131.76

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Hire a qualified contractor to examine the distribution piping, in service for over 45 years and damaged, and replace any damaged piping and to further quantify the extent of potential failures.

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: $568,118.75

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: New lighting system in the entire building

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: $510,074.10

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Install new Receptacles throughout the building

System: D5030 - Communications and Security

Location: throughout the building

Distress: Building / MEP Codes

Category: 2 - Code Compliance

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

Correction: Replace fire alarm system

Qty: 1.00

Unit of Measure: S.F.

Estimate: $381,220.94

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: New automated FA system

System: D5090 - Other Electrical Systems

Location: throughout the building
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 3 - Response Time (3-4 yrs)
Correction: Add Emergency/Exit Lighting
Qty: 1.00
Unit of Measure: Ea.
Estimate: $222,869.85
Assessor Name: Craig Anding
Date Created: 09/29/2015

Notes: New emergency exit signs emergency lights

System: D5090 - Other Electrical Systems

Location: electrical room
Distress: Building / MEP Codes
Category: 2 - Code Compliance
Priority: 3 - Response Time (3-4 yrs)
Correction: Replace standby generator system
Qty: 1.00
Unit of Measure: Ea.
Estimate: $152,774.44
Assessor Name: Craig Anding
Date Created: 09/29/2015

Notes: New 100 KW emergency generator. Notes: a). used 1.2 instead of 1.0 to cover the installation cost for other things. b). since there is no existing generator, I used the picture of the location it can be installed.

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

System: C1020 - Interior Doors

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 120.00

Unit of Measure: Ea.

Estimate: $572,470.45

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace damaged interior doors

System: C1030 - Fittings

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 120.00

Unit of Measure: Ea.

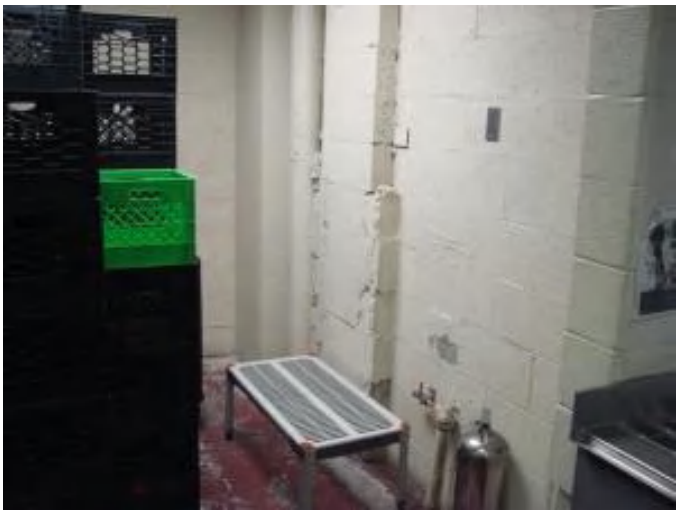
Estimate: $32,509.50

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace signage throughout the building

System: C3010230 - Paint & Covering



Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Repair substrate and repaint interior concrete or CMU walls - SF of wall surface

Qty: 120,000.00

Unit of Measure: S.F.

Estimate: $900,240.12

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Repaint all walls

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 suspended acoustic ceilings - lighting not included

Qty: 50,000.00

Unit of Measure: S.F.

Estimate: $754,121.51

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace all suspended acoustical ceiling in the building

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: 18,000.00

Unit of Measure: S.F.

Estimate: $236,233.46

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Repair and repaint drywall/plaster ceilings

System: D2020 - Domestic Water Distribution

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: 85,000.00

Unit of Measure: S.F.

Estimate: $430,725.20

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Hire a qualified contractor to perform a detailed inspection of the domestic water piping, in use for over 45 years, and replace any damaged piping.

System: D2040 - Rain Water Drainage

Location: Throughout building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace rain water drainage piping - based on +- 30 KSF roof area on 3-4 story building - insert the SF of roof area to be drained

Qty: 35,000.00

Unit of Measure: S.F.

Estimate: $356,105.33

Assessor Name: Craig Anding

Date Created: 09/29/2015

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: D5010 - Electrical Service/Distribution

Location: electrical room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add Electrical Switchgear and Distribution System

Qty: 0.00

Unit of Measure: Ea.

Estimate: $580,057.95

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: New 480 V, 3 phase, 1500 KVA electrical service, with 2000 A 480 V switchgear, plus a 1600 A 120V 3 phase switchboard and a new 800 A MCC.

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: $112,560.22

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: New Clock System

Priority 5 - Response Time (> 5 yrs):

System: C3020411 - Carpet

Location: Interior
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 5 - Response Time (> 5 yrs)
Correction: Remove and replace carpet
Qty: 2,100.00
Unit of Measure: S.F.
Estimate: $23,500.61
Assessor Name: Craig Anding
Date Created: 12/17/2015

Notes: Replace carpet in library

System: D3060 - Controls & Instrumentation

Location: Throughout building
Distress: Energy Efficiency
Category: 4 - Capital Improvement
Priority: 5 - Response Time (> 5 yrs)
Correction: Replace pneumatic controls with DDC (75KSF)
Qty: 85,000.00
Unit of Measure: S.F.
Estimate: $1,823,425.29
Assessor Name: Craig Anding
Date Created: 09/29/2015

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: E2010 - Fixed Furnishings

Location: Interior

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Remove and replace lab base cabinets and countertops - see E1020 for correction

Qty: 120.00

Unit of Measure: L.F.

Estimate: $210,761.69

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Replace built-in cabinets in classrooms

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	Electric traction residential elevators, cab type, 2 floor, 3 stop, custom model, max	1.00	Ea.						35			$63,562.00	$69,918.20
D2020 Domestic Water Distribution	Pump, pressure booster system, 10 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Boiler Room	SyncroFlo	55G10	291819-2		25	2010	2035	$12,768.00	$28,089.60
D2020 Domestic Water Distribution	Pump, pressure booster system, 10 HP pump, includes diaphragm tank, control and pressure switch	2.00	Ea.	Boiler Room	SyncroFlo	55G10	291819-1		25	2010	2035	$12,768.00	$28,089.60
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 3210 MBH, includes burners, controls and insulated jacket, packaged	3.00	Ea.	Boiler Room	Buderus Logano	GE615/14	63130080-00-8175-0080		35	2010	2045	$75,956.00	$250,654.80
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 3210 MBH, includes burners, controls and insulated jacket, packaged	3.00	Ea.	Boiler Room	Buderus Logano	GE615/14	63130080-00-8287-0085		35	2010	2045	$75,956.00	$250,654.80
D3020 Heat Generating Systems	Boiler, gas/oil combination, cast iron, hot water, gross output, 3210 MBH, includes burners, controls and insulated jacket, packaged	3.00	Ea.	Boiler Room	Buderus Logano	GE615/14	63130080-00-8175-0081		35	2010	2045	$75,956.00	$250,654.80
D3030 Cooling Generating Systems	Cooling tower, packaged unit, galvanized steel, blow through, centrifugal type, 250 ton, includes standard controls, excludes pumps and piping	1.00	Ea.	Roof	Evapco	USS 10-511	5-122085		18	2005	2023	$41,840.70	$46,024.77
D3030 Cooling Generating Systems	Water chiller, screw liquid chiller, packaged unit, water cooled, 250 ton, includes standard controls, excludes water tower	1.00	Ea.	Mechanical Room	Carrier	30HXC161RZ-561BA	0710Q18159		20	2010	2030	$136,570.50	$150,227.55
D3040 Distribution Systems	Pump, general utility, centrifugal, end suction, horizontal base mounted, horizontal split case, rated @ 100' head, single stage, 750 GPM, 25 H.P., 5" discharge, includes drip proof motor	2.00	Ea.	Boiler Room	Bell & Gossett	1510	C092701-02H90		25	2010	2035	$14,136.00	$31,099.20
D3040 Distribution Systems	Pump, general utility, centrifugal, end suction, horizontal base mounted, horizontal split case, rated @ 100' head, single stage, 750 GPM, 25 H.P., 5" discharge, includes drip proof motor	2.00	Ea.	Boiler Room	Bell & Gossett	1510	C092701-01H90		25	2010	2035	$14,136.00	$31,099.20
D3040 Distribution Systems	Pump, general utility, centrifugal, end suction, horizontal base mounted, vertical split case, rated @ 100' head, single stage, 750 GPM, 30 H.P., 4" discharge, includes drip proof motor	2.00	Ea.	Mechanical Room	Bell & Gossett	1510	C092702-02H90		25	2010	2035	$9,832.50	$21,631.50
D3040 Distribution Systems	Pump, general utility, centrifugal, end suction, horizontal base mounted, vertical split case, rated @ 100' head, single stage, 750 GPM, 30 H.P., 4" discharge, includes drip proof motor	2.00	Ea.	Mechanical Room	Bell & Gossett	1510	C092702-01H90		25	2010	2035	$9,832.50	$21,631.50
												Total:	**$1,179,775.52**

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):	48,800
Year Built:	1968
Last Renovation:	
Replacement Value:	$1,196,748
Repair Cost:	$1,473,646.97
Total FCI:	123.14 %
Total RSLI:	105.85 %

Description:

Attributes:

General Attributes:

Bldg ID:	S532001	Site ID:	S532001

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	105.48 %	150.34 %	$1,233,990.49
G40 - Site Electrical Utilities	106.67 %	63.74 %	$239,656.48
Totals:	**105.85 %**	**123.14 %**	**$1,473,646.97**

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 $
G2010	Roadways	$11.52	S.F.		30				0.00 %	0.00 %				$0
G2020	Parking Lots	$9.47	S.F.	10,000	30	1969	1999	2047	106.67 %	229.36 %	32		$217,204.00	$94,700
G2030	Pedestrian Paving	$16.19	S.F.	40,000	40	1969	2009	2057	105.00 %	157.01 %	42		$1,016,786.49	$647,600
G2040	Site Development	$4.36	S.F.	18,000	25	1969	1994	2042	108.00 %	0.00 %	27			$78,480
G2050	Landscaping & Irrigation	$4.36	S.F.		15				0.00 %	0.00 %				$0
G4020	Site Lighting	$4.84	S.F.	48,800	30	1969	1999	2047	106.67 %	71.08 %	32		$167,894.55	$236,192
G4030	Site Communications & Security	$3.12	S.F.	44,800	30	1969	1999	2047	106.67 %	51.34 %	32		$71,761.93	$139,776
								Total	**105.85 %**	**123.14 %**			**$1,473,646.97**	**$1,196,748**

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.

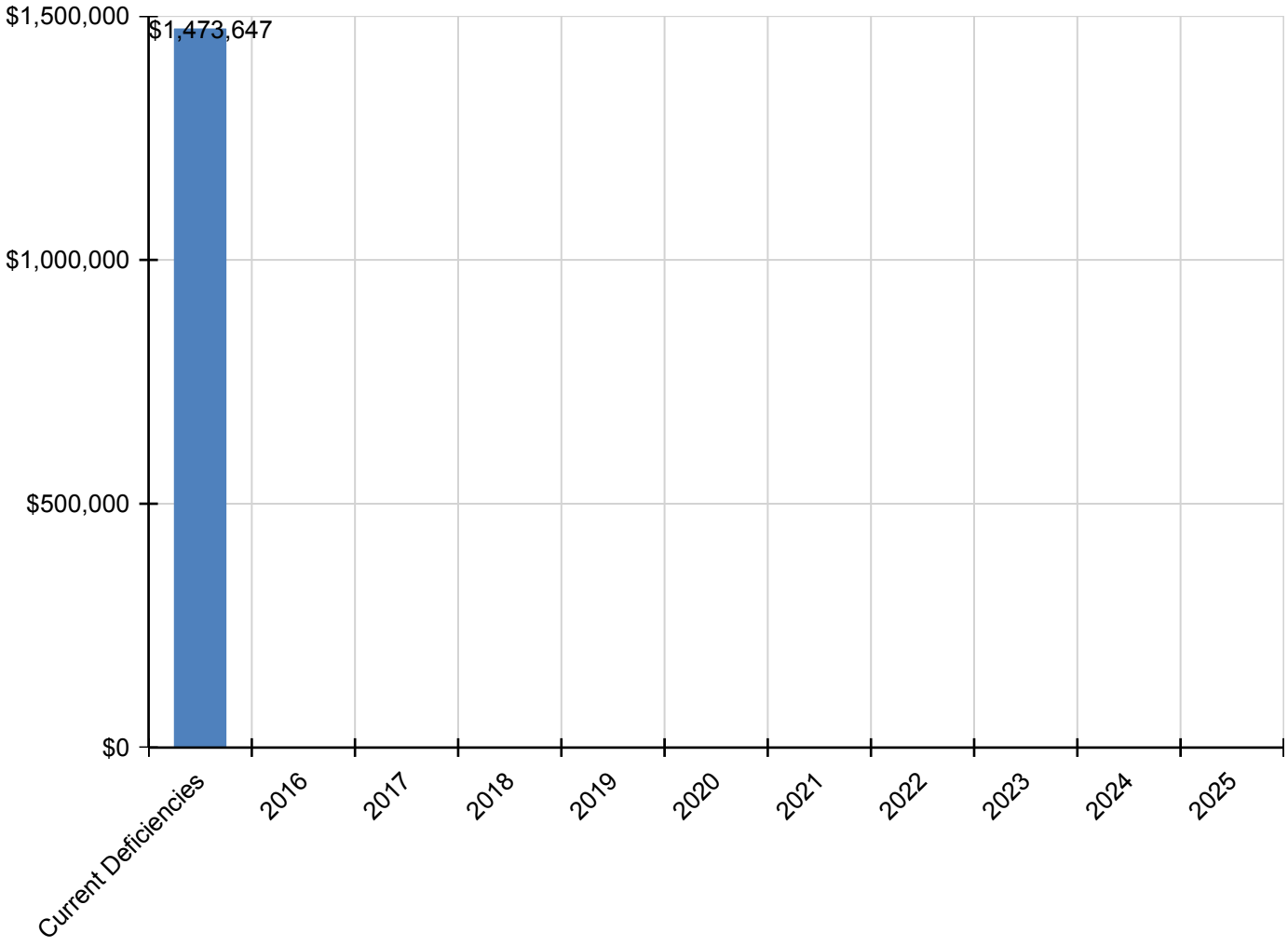
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$1,473,647**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,473,647**
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	$217,204	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$217,204**
G2030 - Pedestrian Paving	$1,016,786	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,016,786**
G2040 - Site Development	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
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	$167,895	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$167,895**
G4030 - Site Communications & Security	$71,762	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$71,762**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

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

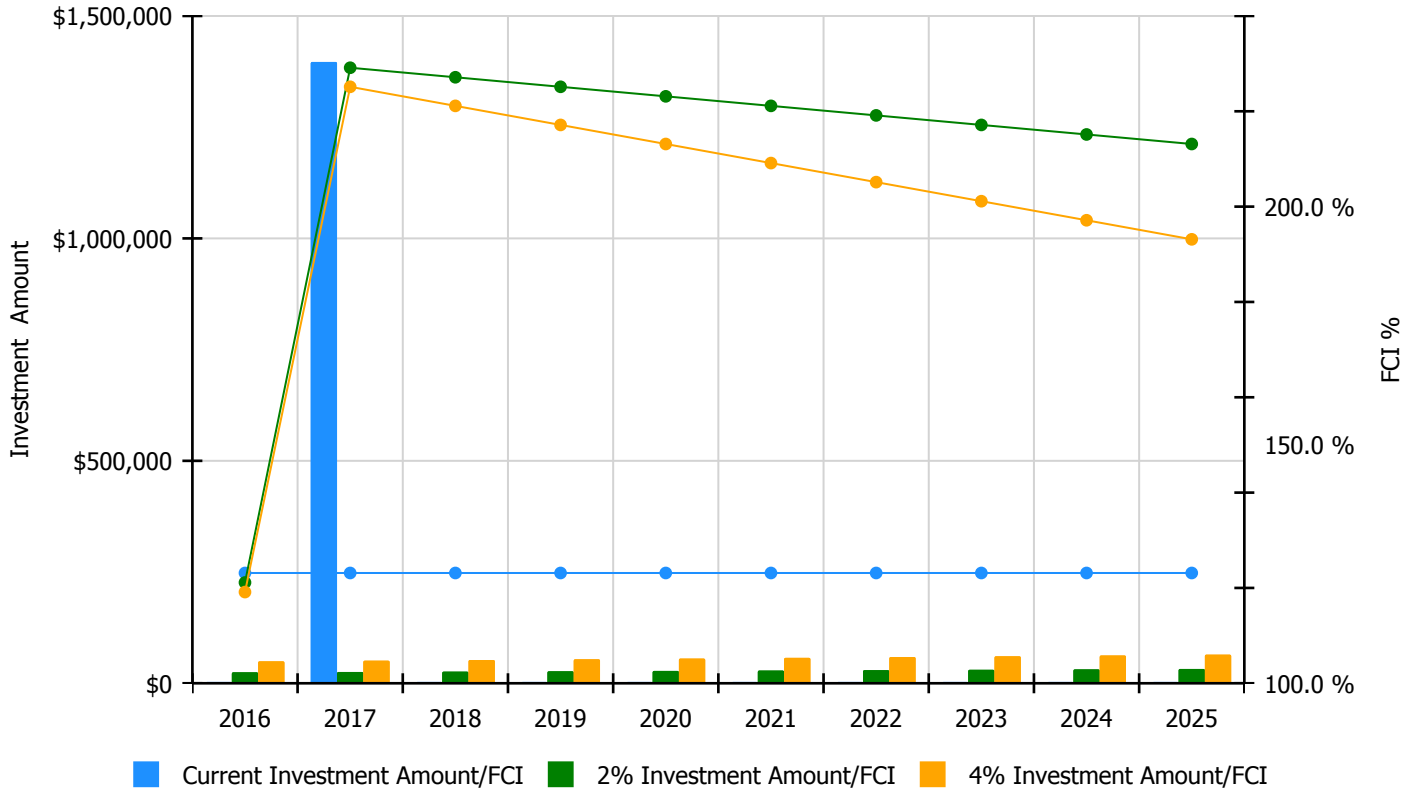


10 Year FCI Forecast by Investment Scenario

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

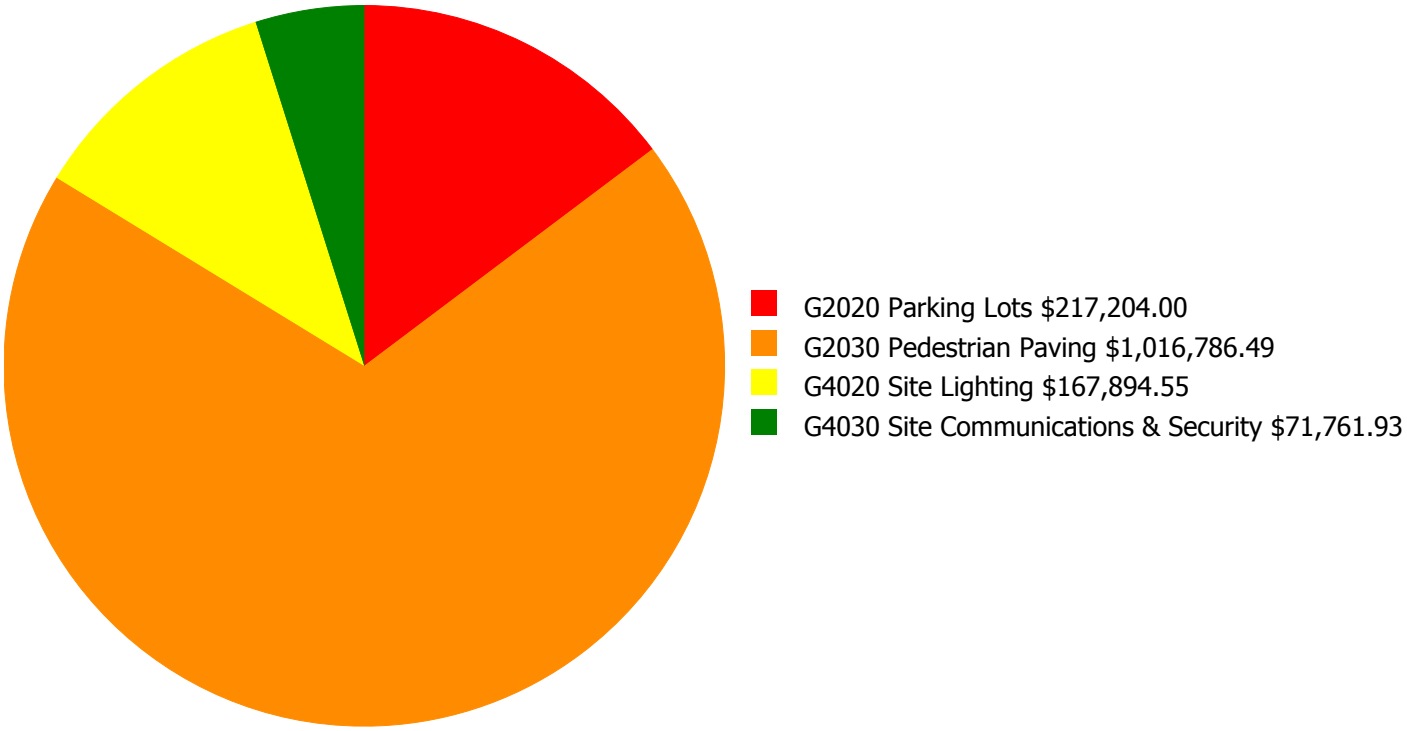
Facility Investment vs. FCI Forecast



Year	Investment Amount Current FCI - 123.14%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$24,653.00	121.14 %	$49,306.00	119.14 %
2017	$1,396,593	$25,393.00	229.14 %	$50,785.00	225.14 %
2018	$0	$26,154.00	227.14 %	$52,309.00	221.14 %
2019	$0	$26,939.00	225.14 %	$53,878.00	217.14 %
2020	$0	$27,747.00	223.14 %	$55,494.00	213.14 %
2021	$0	$28,580.00	221.14 %	$57,159.00	209.14 %
2022	$0	$29,437.00	219.14 %	$58,874.00	205.14 %
2023	$0	$30,320.00	217.14 %	$60,640.00	201.14 %
2024	$0	$31,230.00	215.14 %	$62,459.00	197.14 %
2025	$0	$32,167.00	213.14 %	$64,333.00	193.14 %
Total:	**$1,396,593**	**$282,620.00**		**$565,237.00**	

Deficiency Summary by System

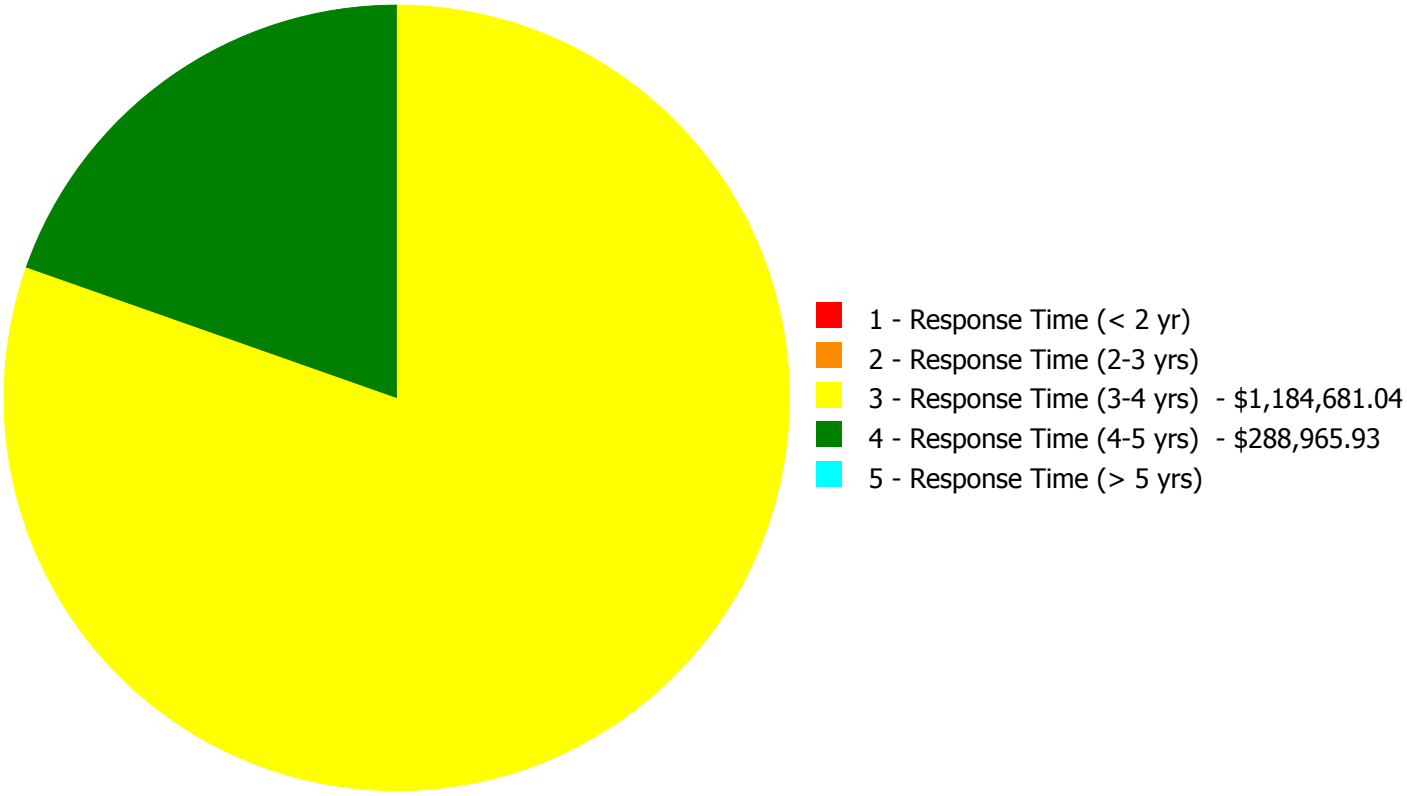
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $1,473,646.97

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: $1,473,646.97

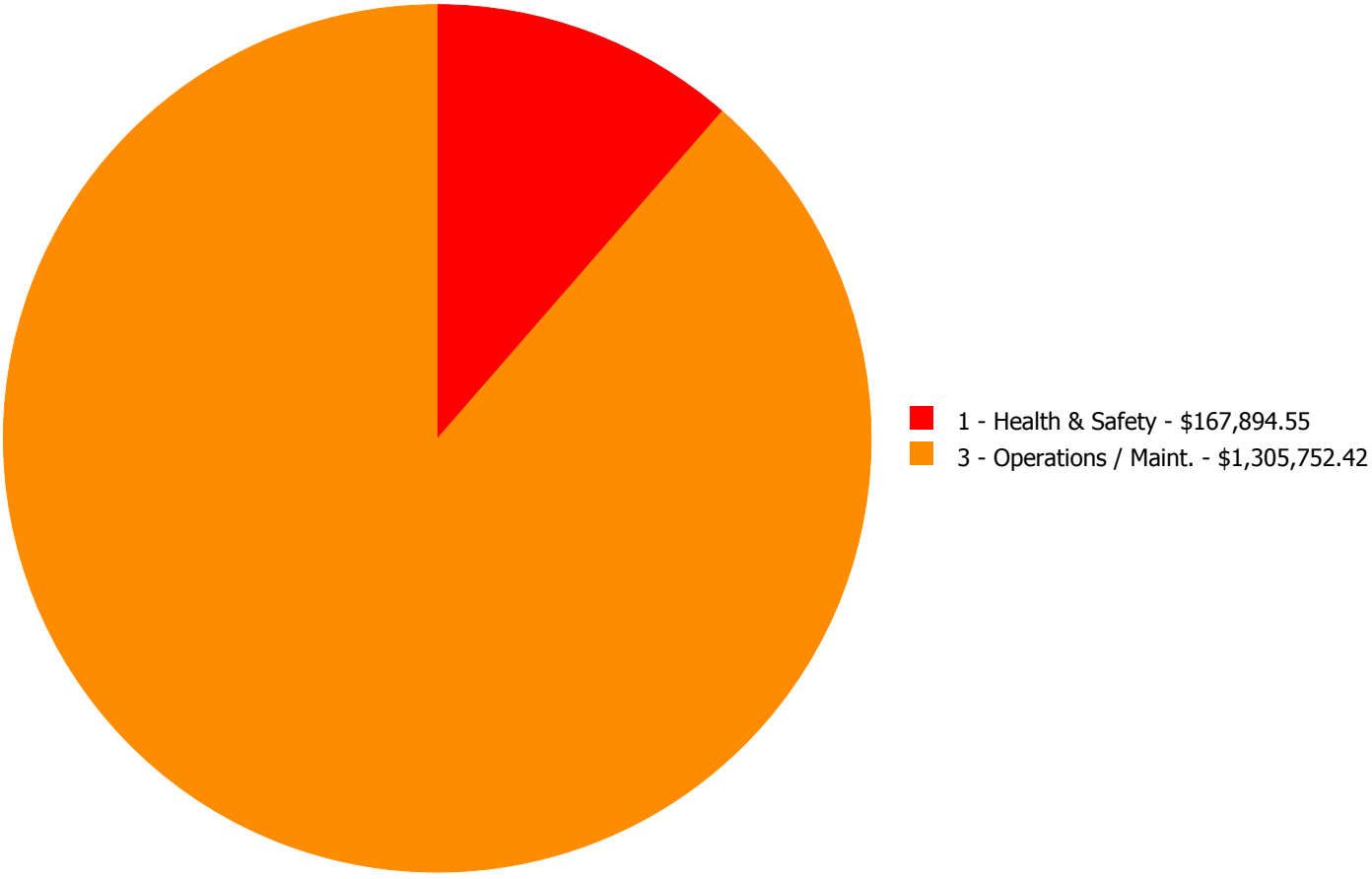
Deficiency By Priority Investment Table

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
G2020	Parking Lots	$0.00	$0.00	$0.00	$217,204.00	$0.00	$217,204.00
G2030	Pedestrian Paving	$0.00	$0.00	$1,016,786.49	$0.00	$0.00	$1,016,786.49
G4020	Site Lighting	$0.00	$0.00	$167,894.55	$0.00	$0.00	$167,894.55
G4030	Site Communications & Security	$0.00	$0.00	$0.00	$71,761.93	$0.00	$71,761.93
	Total:	$0.00	$0.00	$1,184,681.04	$288,965.93	$0.00	$1,473,646.97

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: $1,473,646.97

Deficiency Details by Priority

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

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

System: G2030 - Pedestrian Paving

Location: Grounds/ site

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace concrete paving - pedestrian or parking - 8" concrete thickness

Qty: 38,700.00

Unit of Measure: S.F.

Estimate: $1,016,786.49

Assessor Name: Craig Anding

Date Created: 12/17/2015

Notes: Resurface playground paving

System: G4020 - Site Lighting

Location: grounds

Distress: Security Issue

Category: 1 - Health & Safety

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

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

Qty: 1.00

Unit of Measure: Ea.

Estimate: $167,894.55

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Site Lighting - Campus and parking area and building Perimeters are not adequately lighted for safety of the people and security of property.

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

System: G2020 - Parking Lots

Location: G532001;Grounds
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Remove and replace concrete paving
Qty: 10,000.00
Unit of Measure: S.F.
Estimate: $210,463.08
Assessor Name: Craig Anding
Date Created: 12/17/2015

Notes: Replace pavement in the parking lot, stripe stalls including accessible spaces and aisles

System: G2020 - Parking Lots

Location: Grounds/ site
Distress: Beyond Service Life
Category: 3 - Operations / Maint.
Priority: 4 - Response Time (4-5 yrs)
Correction: Stripe parking stalls, install parking bumpers, provide handicap symbol and handicap post mounted sign - insert proper quantities in estimate
Qty: 32.00
Unit of Measure: Ea.
Estimate: $6,740.92
Assessor Name: Craig Anding
Date Created: 12/17/2015

Notes: Stripe parking stalls including 2 accessible spaces and aisles; provide accessible signage

System: G4030 - Site Communications & Security

Location: grounds

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Add Site Paging System

Qty: 0.00

Unit of Measure: Ea.

Estimate: $71,761.93

Assessor Name: Craig Anding

Date Created: 09/29/2015

Notes: Site Paging– The present Site paging System is not adequate. There are insufficient number of speaker are located 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