## 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.*

## Childs (Barratt) School

| | | | |
|---|---|---|---|
| Governance | DISTRICT | Report Type | Elementarymiddle |
| Address | 1599 Wharton St. | Enrollment | 559 |
| | Philadelphia, Pa 19146 | Grade Range | '00-08' |
| Phone/Fax | 215-952-6213 / 215-952-6443 | Admissions Category | Neighborhood |
| Website | Www.Philasd.Org/Schools/Childs | 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** | **23.31%** | **$18,626,228** | **$79,890,392** |
| Building | 22.98 % | $18,204,240 | $79,230,602 |
| Grounds | 63.96 % | $421,988 | $659,790 |

## Major Building Systems

| Building System | System FCI | Repair Costs | Replacement Cost |
|---|---|---|---|
| **Roof** (Shows physical condition of roof) | 16.70 % | $321,599 | $1,926,270 |
| **Exterior Walls** (Shows condition of the structural condition of the exterior facade) | 00.00 % | $0 | $6,728,140 |
| **Windows** (Shows functionality of exterior windows) | 53.75 % | $1,766,150 | $3,285,680 |
| **Exterior Doors** (Shows condition of exterior doors) | 00.00 % | $0 | $223,780 |
| **Interior Doors** (Classroom doors) | 00.00 % | $0 | $550,740 |
| **Interior Walls** (Paint and Finishes) | 06.90 % | $171,342 | $2,483,020 |
| **Plumbing Fixtures** | 04.22 % | $86,336 | $2,044,840 |
| **Boilers** | 00.00 % | $0 | $2,823,380 |
| **Chillers/Cooling Towers** | 60.19 % | $2,228,631 | $3,702,420 |
| **Radiators/Unit Ventilators/HVAC** | 94.87 % | $6,169,698 | $6,503,020 |
| **Heating/Cooling Controls** | 117.53 % | $2,400,128 | $2,042,160 |
| **Electrical Service and Distribution** | 33.72 % | $544,465 | $1,614,700 |
| **Lighting** | 01.19 % | $68,630 | $5,771,380 |
| **Communications and Security** (Cameras, Pa System and Fire Alarm) | 06.49 % | $140,280 | $2,161,420 |

*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

# S211001;Barratt

Final

## Site Assessment Report

January 30, 2017

PARSONS

# Table of Contents

## Site Executive Summary

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

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

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

| | |
|---|---|
| Gross Area (SF): | 134,000 |
| Year Built: | 1908 |
| Last Renovation: | 1926 |
| Replacement Value: | $79,890,392 |
| Repair Cost: | $18,626,227.61 |
| Total FCI: | 23.31 % |
| Total RSLI: | 49.49 % |

**Description:**

Facility Assessment
July 20th, 2015

School District of Philadelphia
Barratt Middle School
1599 Wharton Street
Philadelphia, PA 19146

134,000 SF / 1,176 Students / LN 01

GENERAL

Mr. Dave Loftus, Facility Area Coordinator, provided input to the Parsons Assessment Team on planned renovation/addition projects. Mr. Russel Amodei, Building Engineer accompanied us on our tour of the school and provided us with detailed information on the building systems and maintenance history.

The 5 story, 134,000 square foot building was originally constructed in 1908 with a large addition built in 1926. The

building has a multi-level basement and sub-basement.

STRUCTURAL / EXTERIOR CLOSURE

The main building rests on concrete foundations and bearing walls that are showing slight signs of settlement damage with cracked concrete and exposed steel reinforcement. The main structure consists typically of cast-in-place concrete columns, beams and concrete, and one way ribbed slab in basement. The main roof structure consists of concrete one-way slab supported by main structural frame. Main roofing is built up application in fair condition with lightweight concrete on rooftop play yard area. Roofing on gyms are metal roofing on steel truss in fair condition and in need of repair or replacement. The building envelope is masonry with face brick. Elevations are enhanced minimally with stonework around entrances. In general, masonry is in good condition. All elevations are face brick. The original windows were replaced in early 1990s with extruded aluminum, double hung windows, Lexan Plexiglas with insect/security screens. All windows are generally in poor condition with heavy hazing. Exterior doors are hollow metal in good condition. Public access doors and service doors have concrete stoops and stairs. The building is accessible per ADA requirements.

Main building partition wall types include plastered ceramic hollow blocks. Interior doors are generally hollow metal frames with solid core wood doors with lites in good condition with lever type handles. Doors leading to exit stairways are hollow metal doors and frames in good condition. Fittings include: toilet accessories in good condition; composite plastic toilet partitions, in good condition and meeting ADA requirements; fixed metal wall lockers in corridors in good condition; and handrails and ornamental metals, in fair condition. Interior identifying signage is typically directly painted on wall or door surfaces in good condition. Main stair construction is concrete in good condition with tile risers on front entryway stairs. Utility stairs are metal in good condition. Stair railings are wall mounted metal railing in good condition.

Interior wall finishes include: painted plaster or brick with marble wainscot in stairways, corridors, and toilets and glazed brick tile wainscot in cafeteria, kitchen, gyms and basement classrooms; and wood panel wainscot in auditorium and balcony. Generally, paint is in good condition with some plaster deterioration in north side classrooms in need of repair. Marble, glazed brick, and wood panel wainscot is all in good condition. Flooring includes: patterned and bare concrete in corridors, stairways, toilets, and basement service areas in good condition with a few hollow and damaged areas; hardwood in most classrooms, auditorium, stage, and balcony in good condition; vinyl tile in some classrooms, cafeteria and office areas in good condition; tile in front entryway, main office hallway, and kitchen in very good condition; and rubber protection coated concrete in both gyms in good condition. Wood base in classrooms are typically in fair condition. Ceilings are suspended acoustic tile in classrooms, corridors, cafeteria, and offices in good condition with some damaged tiles; painted plaster and structural concrete in toilets, stairways, kitchen, auditorium and entryway generally in good condition with some repairs needed; and painted steel structure in gyms in fair condition with attached acoustic panels that are beyond service life.

The building has one elevator serving 4 stories and is ADA compliant.

Commercial and institutional equipment includes: stage equipment, generally in fair condition. Other equipment includes unused food preparation equipment and food service equipment (heat and serve only) in good condition.

Fixed furnishings include: fixed casework in classrooms, corridors and library, generally in fair to good condition; window shades/blinds, generally in fair condition; fixed cafeteria seating and tables in good condition; and fixed auditorium seating is original, generally in fair condition with some damaged and missing seats.

MECHANICAL SYSTEMS

Building plumbing fixtures are a mixture of original and replacement. Restroom fixtures on each floor consist of wall hung water closets, urinals and lavatories. A few fixtures are out of order and need repair along with the third floor boy’s toilet room. The fixtures should provide reliable service for the next 5-10 years.

Life skills classroom has stainless steel, single basin, rim mounted kitchen sinks with single lever control, mixing faucets. This room also has new washing machine hot and cold supply lines and drain connections, but there is no washing machine. The school cafeteria kitchen has a stainless steel, three basin, commercial, dish washing sink with chemical sanitization system, and also a lavatory. Kitchen sinks are in good condition and should be serviceable for 10-15 years.

Fourth floor science room has a laboratory sink in fair condition with new supply piping and faucets. It is within its service life and will not need replacement before 10 years.

A service sink is available in the corridor on each floor for use by the janitorial staff. These are enamel on cast iron, floor standing, single basin sinks typical of 1920s construction. They have replacement faucets without vacuum breakers. They all appear is good condition with no signs of leakage and should last another 5-10 years without replacement.

Drinking fountains in the corridors are mostly wall hung, accessible, with integral refrigerated coolers. They are within their service life and will remain serviceable for 5-10 years. There still remain non-accessible fountains on the ground floor that should be replaced due to age.

A 3" city water service enters the building on the sub-basement level near the boiler room. The water meter and bypass line need double backflow prevention valves. There is a duplex booster pump with expansion tank. The domestic hot and cold water distribution piping is copper piping and soldered connections. The maintenance staff reports no significant problems with domestic piping and the supply is adequate to the fixtures. However, most domestic water piping is well beyond its service life and should be replaced to eliminate joints made with lead solder.

A 75 gallon vertical tank type, gas-fired water heater installed in 2012 supplies hot water for domestic use. The water heater is within its service life and should provide reliable service for the next 15-20 years. There is a circulation pump which was running at the time of inspection. The constant draft damper on the heater exhaust ducting has rusted through and fallen off. It should be replaced.

The sanitary sewer piping is threaded galvanized steel pipe. There is no sewage ejector. The housekeeping staff report problems with the sanitary waste piping systems backing up into lower level sinks during heavy rains.

Rain water drain pipes are threaded galvanized steel. These pipes are likely original to the building and apparently connect to the sanitary waste piping at some point based on statements from housekeeping workers. The combined system is likely running slowly due to chronic rust and debris clogging the inside of the piping. The district should hire a qualified contractor to examine the rain water discharge piping using video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures. The roof does not have overflow drains.

The building is heated by a combination of steam radiators throughout the building and forced air heat to class rooms, gyms, auditorium, etc.

Steam is supplied by 3 Smith, model 4500A-22, cast iron, 5,994 MBH capacity boilers fired by Power Flame burners on gas or fuel oil. They were installed in 2001, are all operational, and will not need replacement for 20 years. Combustion air makeup is supplied by louvers equipped with automatic control. Condensate collects in a sump and pumps transfer it to the feed water storage tank with one feed water pump for each boiler and a fourth spare pump. The building engineer stated these were rebuilt within the past 12 months. There is a chemical treatment system for makeup water. The oil supply is stored in a 5,000 gallon storage tank installed in 2005. Two pumps located in the boiler room circulate oil through the system and were running at the time of inspection. The gas service enters the building in the boiler room and includes a booster. No problems were reported with steam traps.

The building does not have any central cooling systems. A 335 ton total capacity cooling system should be installed to provide cooling to the entire building and replace approximately 30 aged, inefficient window unit air conditioners.

Steam and condensate piping is steel with welded and threaded fittings. Steam mains from the basement level run up through the building to the terminal units and air handlers on all floors. They appear to be original to the building. The steam and condensate piping should be replaced due to age and visible rust.

Forced air is supplied to multiple parts of the building from 5 air handlers in the basement and sub-basement. These are original to the building. They included primary and secondary steam heat sections with air washers in between. Steam coils and fans are functional, but none of the air washers are operable. The engineer stated the steam coils work well and started one fan during the inspection. The fan started quickly and easily and it ran smoothly and quietly. Outside air intake and attic plenum return air are controlled independently by adjustable dampers at air handler inlets. Heated air is delivered through un-insulated sheet metal ducts to built-in structural clay tile ducts and various plenums and then to

class rooms and other large spaces. Room discharge air is conducted through similar ducts and plenums to the attic where it either returns to the air handlers or is discharged through multiple gravity vent hoods on the roof. These air handlers are obsolete, existing steam coils and fans are inefficient, they lack cooling and humidity control, and they should be replaced with new equipment. Un-insulated metal duct with manual controls should be replaced with insulated ducts and automatic digital controls.

Cast iron radiators supply heat for the entire building. They are original to the building and have pneumatic controlled steam valves. The radiators are well beyond their service life and should be replaced with finned tube unit heaters with electronic controls.

The kitchen has a gas burning stove with exhaust hood and fire extinguishing system. This system appears functional and will not need replacement within 10 years.

The original pneumatic systems have mostly failed according to the building engineer. Pneumatic room thermostats control steam flow valves on the radiators. Central duct dampers are manually adjustable only. The pneumatic systems are beyond their service life. These controls should be converted to DDC and automatically controllable dampers installed when metal ducts are replaced. 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.

The school building has stand pipes but it is not covered by an automatic sprinkler system. The stand pipes are of unknown age, but appear to be in good condition and should be inspected annually. A sprinkler system should be installed to improve life safety. An outdoor, engine driven, packaged fire pump should be installed if required based on the available city water.

ELECTRICAL SYSTEMS

An underground lateral service from an overhead line on Latona Street to an indoor unit substation serves this building. The unit substation is composed of Penn Panel, 15KV, 600A Medium Voltage load interrupter switch, Olsun, dry type 750/1000KVA, 13.2KV- 120/208V step down transformer and General Electric 3000A, 120/208V distribution section. The unit substation is located in the basement electrical room. The unit substation was installed around 2001 and is expected to provide 26 more years of useful life. Since the HVAC electrical load will exceed the capacity of the existing electrical service. Provide a 1000KVA, 13.2KV- 480/277, indoor unit substation

The electrical distribution is obtained using 120/208V panel-boards located at each floor. Panel-boards are manufactured by Penn Panel and were installed in 2001 and are expected to provide 26 more years of useful life. Raceways are concealed in ceiling or wall spaces. There is a 150KVA phase converter to serve the three elevators.

Approximate 80% of the classrooms are provided with adequate quantity of receptacles. Provide approximate 12 classrooms with the teacher’s whiteboard wall and the opposite of it with double compartment surface raceways, the other two walls with minimum two duplex outlets each, when feasible.

Most of the classrooms, offices are illuminated with surface mounted fluorescent fixtures, the corridors are illuminated with recessed mounted fluorescent fixtures. Fluorescent fixtures are provided with T-8 lamps. Fixtures are part of the 2001 project.

The fire alarm system is part of the 2001 project. The fire alarm control panel is manufactured by Simplex. The fire alarm system is composed of pull station at exit doors, and audio/visual devices at corridors, gymnasium and auditorium. Provide fire alarm audio/visual devices in each classroom

The present telephone system is adequate.

An independent and separate PA system does not exist. School uses the telephone systems for public announcement. This system is working adequately for most part.

The school is provided with battery operated, wireless, central clock system. The present bell system is working.

There is not television system.

The security system consists of motion detectors at the first floor and principal's office. CCTV cameras are located at each corridor entrance.

The emergency power system consists of natural gas generator, manufactured by Onan rated 42KW 120/208V. The present emergency power system serves the corridor, exit signs, elevator cab lights, stair ways, fire tower, boiler and fire alarm panel and generator battery charger. Natural gas generator is part of the 2001 project and it is expected to provide 6 more years of useful service life. Generator does not have capacity to carry the elevator motors. Provide an outdoor diesel powered 150KW generator.

There is adequate UPS in the IT room.

The emergency lighting is obtained with dedicated fixtures connected to the emergency generator. Exit signs are located at each exit door and corridors and are connected to the school emergency system.

Lightning Protection System is accomplished with air terminals mounted on the chimney.

At the roof level repair/splice down conductor to maintain the electrical/mechanical continuity of the down conductor. A study should be conducted to determine if the air terminals provide the proper coverage.

The school has a three traction power elevators rated 25HP at 240V. Elevator controller and elevator motors are approximately 10 years old. They are expected to provide 10 more years of useful service life.

The school theatrical lighting and dimming control system is old and obsolete. Provide theatrical lighting and dimming control system.

The auditorium sound system is obtained with portable equipment. Provide a permanent sound system.

GROUNDS SYSTEMS

The site surrounds the building on all four sides which is set back from the street. Yard area on west side is asphalt paving in good condition with some cracks and indications of a storm water drainage problem on the east edge. Parking for staff vehicles is on south side and accessible from Wharton St. Chain link fence surrounding and separating yard and parking area is in good condition. Landscaping covers about 5% of the site and is new and in good condition.

Accessibility: the building does have an accessible entrance, and accessible routes. Some toilets are equipped with accessible fixtures, partitions and accessories, such as grab bars and accessible partitions. Most doors in the building have ADA required door handles.

The school perimeter and parking lot is illuminated via wall mounted lighting fixtures. However there is not enough lighting. Provide 12 pole mounted lighting fixtures for security.

There are not CCTV cameras around the building perimeter. Provide a site video surveillance system.

Site Paging-There are wall mounted loud speaker facing the parking lot/playground area

RECOMMENDATIONS

- Repair damaged structural columns and foundation walls in basement
- Repair or replace metal roofing on gym areas – damaged and leaking
- Replace Plexiglas windows – hazed
- Repair and repaint interior plaster walls on north side – water damaged
- Replace acoustic ceiling tiles – discolored/damaged/missing (5% of suspended ceiling area)
- Replace acoustic panels in gyms – beyond service life
- Replace auditorium seats – beyond service life and failing
- Address storm water drainage issue on east side of play yard

- Repair out of service toilet room on 3rd floor and other inoperative plumbing fixtures throughout the building.
- Replace the aged drinking fountains in the basement with accessible models.
- Install backflow prevention valves on water meter and bypass lines.
- Repair constant draft damper on water heater exhaust duct.
- Replace the original copper domestic water piping to eliminate joints made with lead solder.
- Hire a qualified contractor to perform a detailed examination of the sanitary waste and rain water drainage piping using visual inspection and video cameras to determine cause of back-ups during heavy rains and replace any damaged or failing piping.
- Replace steam and condensate piping due to age and rust.
- Install 335 ton total capacity cooling system to replace aged and inefficient window unit air conditioners.
- Replace 5 existing obsolete air handlers including heating, cooling, humidification, and dehumidification.
- Replace the existing radiators with finned coil units.
- 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 packaged, outdoor, engine driven fire pump may be required depending on the available city water pressure.
- Provide 1000KVA 13.2KV-480/277V, indoor unit substation
- Provide (2) 25FT of surface raceways with receptacles at 24” on center and two-duplex wall mount receptacles. Approximate 12 classrooms
- Provide fire alarm audio/visual devices in each classroom. Approximate 60
- Generator does not have capacity to carry the elevator motors. Provide an outdoor diesel powered 150KW generator.
- Prepare a study to determine if the air terminals provide the proper coverage.
- Provide a state of the art theatrical lighting and dimming control system.
- Provide a permanent, state of the art auditorium sound system.
- Provide 12 pole-mounted lighting fixtures for security.
- Provide a site video surveillance system. Approximate 8 cameras

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg Lot Tm: | Lot 1 / Tm 3 |
| Status: | Accepted by SDP | Team: | Tm 3 |
| Site ID: | S211001 | | |

## 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.

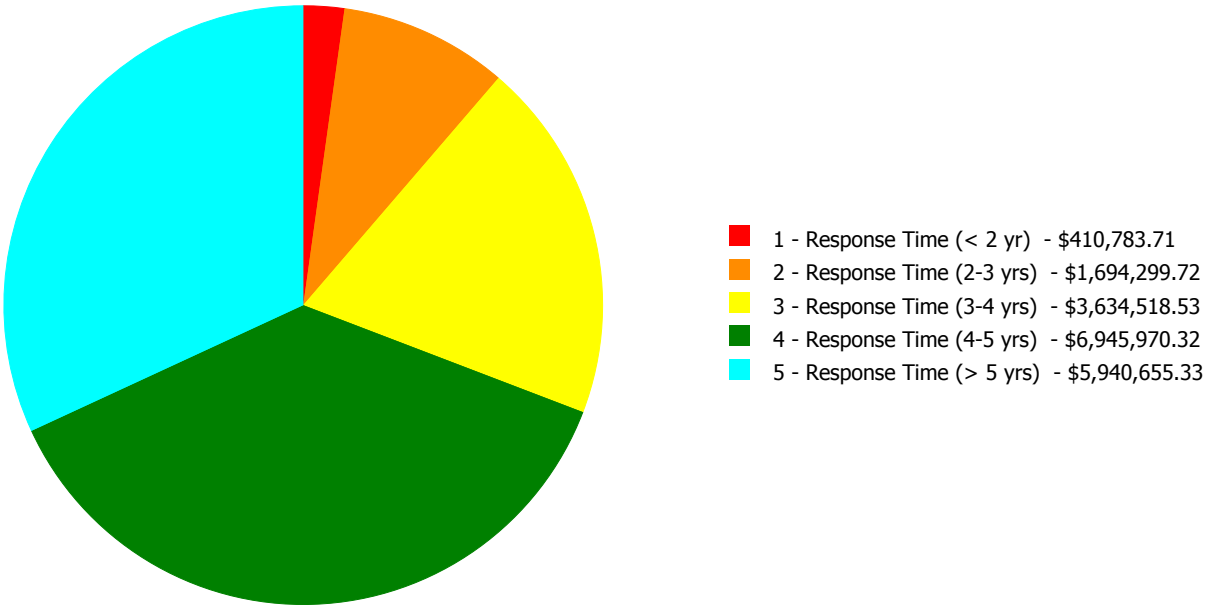
### Current Investment Requirement and Condition by Uniformat Classification

| UNIFORMAT Classification | RSLI% | FCI % | Current Repair |
|---|---|---|---|
| A10 - Foundations | 21.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 21.00 % | 0.30 % | $6,831.97 |
| B10 - Superstructure | 21.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 27.51 % | 17.25 % | $1,766,150.43 |
| B30 - Roofing | 41.55 % | 16.70 % | $321,598.95 |
| C10 - Interior Construction | 32.21 % | 0.00 % | $0.00 |
| C20 - Stairs | 21.00 % | 0.00 % | $0.00 |
| C30 - Interior Finishes | 44.70 % | 2.34 % | $192,172.06 |
| D10 - Conveying | 31.43 % | 0.00 % | $0.00 |
| D20 - Plumbing | 48.31 % | 40.28 % | $1,220,811.51 |
| D30 - HVAC | 100.10 % | 64.18 % | $10,798,456.50 |
| D40 - Fire Protection | 96.03 % | 157.55 % | $1,916,928.39 |
| D50 - Electrical | 54.11 % | 9.88 % | $966,170.63 |
| E10 - Equipment | 49.37 % | 13.47 % | $293,594.70 |
| E20 - Furnishings | 40.00 % | 248.13 % | $721,524.41 |
| G20 - Site Improvements | 58.19 % | 0.00 % | $0.00 |
| G40 - Site Electrical Utilities | 106.67 % | 222.80 % | $421,988.06 |
| **Totals:** | **49.49 %** | **23.31 %** | **$18,626,227.61** |

### 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) |
|---|---|---|---|---|---|---|---|
| B211001;Barratt | 134,000 | 22.98 | $80,900.55 | $1,602,194.82 | $3,634,518.53 | $6,945,970.32 | $5,940,655.33 |
| G211001;Grounds | 32,600 | 63.96 | $329,883.16 | $92,104.90 | $0.00 | $0.00 | $0.00 |
| **Total:** | | **23.31** | **$410,783.71** | **$1,694,299.72** | **$3,634,518.53** | **$6,945,970.32** | **$5,940,655.33** |

### Deficiencies By Priority




**Budget Estimate Total: $18,626,227.61**

## Executive Summary

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

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

| | |
|---|---|
| Function: | Middle School |
| Gross Area (SF): | 134,000 |
| Year Built: | 1908 |
| Last Renovation: | 1926 |
| Replacement Value: | $79,230,602 |
| Repair Cost: | $18,204,239.55 |
| Total FCI: | 22.98 % |
| Total RSLI: | 49.31 % |

**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Active: | Open | Bldg ID: | B211001 |
| Sewage Ejector: | No | Status: | Accepted by SDP |
| Site ID: | S211001 | | |

## 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 | 21.00 % | 0.00 % | $0.00 |
| A20 - Basement Construction | 21.00 % | 0.30 % | $6,831.97 |
| B10 - Superstructure | 21.00 % | 0.00 % | $0.00 |
| B20 - Exterior Enclosure | 27.51 % | 17.25 % | $1,766,150.43 |
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| C10 - Interior Construction | 32.21 % | 0.00 % | $0.00 |
| C20 - Stairs | 21.00 % | 0.00 % | $0.00 |
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| D30 - HVAC | 100.10 % | 64.18 % | $10,798,456.50 |
| D40 - Fire Protection | 96.03 % | 157.55 % | $1,916,928.39 |
| D50 - Electrical | 54.11 % | 9.88 % | $966,170.63 |
| E10 - Equipment | 49.37 % | 13.47 % | $293,594.70 |
| E20 - Furnishings | 40.00 % | 248.13 % | $721,524.41 |
| **Totals:** | **49.31 %** | **22.98 %** | **$18,204,239.55** |

## 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 | $27.05 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $3,624,700 |
| A1030 | Slab on Grade | $6.04 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $809,360 |
| A2010 | Basement Excavation | $5.09 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $682,060 |
| A2020 | Basement Walls | $11.74 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.43 % | 21 | | $6,831.97 | $1,573,160 |
| B1010 | Floor Construction | $98.06 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $13,140,040 |
| B1020 | Roof Construction | $10.55 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $1,413,700 |
| B2010 | Exterior Walls | $50.21 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $6,728,140 |
| B2020 | Exterior Windows | $24.52 | S.F. | 134,000 | 40 | 1991 | 2031 | | 40.00 % | 53.75 % | 16 | | $1,766,150.43 | $3,285,680 |
| B2030 | Exterior Doors | $1.67 | S.F. | 134,000 | 25 | 2000 | 2025 | | 40.00 % | 0.00 % | 10 | | | $223,780 |
| B3010105 | Built-Up | $43.61 | S.F. | 35,092 | 20 | 2000 | 2020 | | 25.00 % | 0.00 % | 5 | | | $1,530,362 |
| B3010130 | Preformed Metal Roofing | $62.63 | S.F. | 6,193 | 30 | 1980 | 2010 | 2047 | 106.67 % | 82.91 % | 32 | | $321,598.95 | $387,868 |
| B3020 | Roof Openings | $0.06 | S.F. | 134,000 | 30 | 2000 | 2030 | | 50.00 % | 0.00 % | 15 | | | $8,040 |
| C1010 | Partitions | $20.95 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $2,807,300 |
| C1020 | Interior Doors | $4.11 | S.F. | 134,000 | 40 | 2000 | 2040 | | 62.50 % | 0.00 % | 25 | | | $550,740 |
| C1030 | Fittings | $3.64 | S.F. | 134,000 | 40 | 2000 | 2040 | | 62.50 % | 0.00 % | 25 | | | $487,760 |
| C2010 | Stair Construction | $1.63 | S.F. | 134,000 | 100 | 1926 | 2026 | 2036 | 21.00 % | 0.00 % | 21 | | | $218,420 |
| C3010230 | Paint & Covering | $16.67 | S.F. | 134,000 | 10 | 2010 | 2020 | | 50.00 % | 7.67 % | 5 | | $171,341.52 | $2,233,780 |
| C3010232 | Wall Tile | $1.86 | S.F. | 134,000 | 30 | 2000 | 2030 | | 50.00 % | 0.00 % | 15 | | | $249,240 |

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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 $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C3020412 | Terrazzo & Tile | $88.36 | S.F. | 6,700 | 50 | 2000 | 2050 | | 70.00 % | 0.00 % | 35 | | | $592,012 |
| C3020413 | Vinyl Flooring | $11.33 | S.F. | 20,100 | 20 | 2000 | 2020 | | 25.00 % | 0.00 % | 5 | | | $227,733 |
| C3020414 | Wood Flooring | $26.07 | S.F. | 60,300 | 25 | 2000 | 2025 | | 40.00 % | 0.00 % | 10 | | | $1,572,021 |
| C3020415 | Concrete Floor Finishes | $1.14 | S.F. | 46,900 | 50 | 1980 | 2030 | | 30.00 % | 0.00 % | 15 | | | $53,466 |
| C3030 | Ceiling Finishes | $24.54 | S.F. | 134,000 | 25 | 2000 | 2025 | | 40.00 % | 0.63 % | 10 | | $20,830.54 | $3,288,360 |
| D1010 | Elevators and Lifts | $1.61 | S.F. | 134,000 | 35 | 1991 | 2026 | | 31.43 % | 0.00 % | 11 | | | $215,740 |
| D2010 | Plumbing Fixtures | $15.26 | S.F. | 134,000 | 35 | 1927 | 1962 | 2022 | 20.00 % | 4.22 % | 7 | | $86,336.34 | $2,044,840 |
| D2020 | Domestic Water Distribution | $1.90 | S.F. | 134,000 | 25 | 1927 | 1952 | 2042 | 108.00 % | 222.09 % | 27 | | $565,429.71 | $254,600 |
| D2030 | Sanitary Waste | $2.85 | S.F. | 134,000 | 30 | 1927 | 1957 | 2047 | 106.67 % | 149.00 % | 32 | | $569,045.46 | $381,900 |
| D2040 | Rain Water Drainage | $2.61 | S.F. | 134,000 | 30 | 1927 | 1957 | 2047 | 106.67 % | 0.00 % | 32 | | | $349,740 |
| D3020 | Heat Generating Systems | $21.07 | S.F. | 134,000 | 35 | 2001 | 2036 | | 60.00 % | 0.00 % | 21 | | | $2,823,380 |
| D3030 | Cooling Generating Systems | $27.63 | S.F. | 134,000 | 30 | | | 2047 | 106.67 % | 60.19 % | 32 | | $2,228,630.61 | $3,702,420 |
| D3040 | Distribution Systems | $48.53 | S.F. | 134,000 | 25 | 1927 | 1952 | 2042 | 108.00 % | 94.87 % | 27 | | $6,169,698.30 | $6,503,020 |
| D3050 | Terminal & Package Units | $13.09 | S.F. | 134,000 | 20 | 1927 | 1947 | 2037 | 110.00 % | 0.00 % | 22 | | | $1,754,060 |
| D3060 | Controls & Instrumentation | $15.24 | S.F. | 134,000 | 20 | 1960 | 1980 | 2037 | 110.00 % | 117.53 % | 22 | | $2,400,127.59 | $2,042,160 |
| D4010 | Sprinklers | $7.94 | S.F. | 134,000 | 35 | | | 2052 | 105.71 % | 180.17 % | 37 | | $1,916,928.39 | $1,063,960 |
| D4020 | Standpipes | $1.14 | S.F. | 134,000 | 35 | 1927 | 1962 | 2025 | 28.57 % | 0.00 % | 10 | | | $152,760 |
| D5010 | Electrical Service/Distribution | $12.05 | S.F. | 134,000 | 30 | 2001 | 2031 | | 53.33 % | 33.72 % | 16 | | $544,464.69 | $1,614,700 |
| D5020 | Lighting and Branch Wiring | $43.07 | S.F. | 134,000 | 20 | 2001 | 2021 | | 30.00 % | 1.19 % | 6 | | $68,630.18 | $5,771,380 |
| D5030 | Communications and Security | $16.13 | S.F. | 134,000 | 15 | 1927 | 1942 | 2032 | 113.33 % | 6.49 % | 17 | | $140,279.57 | $2,161,420 |
| D5090 | Other Electrical Systems | $1.76 | S.F. | 134,000 | 30 | 1927 | 1957 | 2047 | 106.67 % | 90.23 % | 32 | | $212,796.19 | $235,840 |
| E1020 | Institutional Equipment | $4.92 | S.F. | 134,000 | 35 | 1991 | 2026 | | 31.43 % | 44.53 % | 11 | | $293,594.70 | $659,280 |
| E1090 | Other Equipment | $11.35 | S.F. | 134,000 | 35 | 2000 | 2035 | | 57.14 % | 0.00 % | 20 | | | $1,520,900 |
| E2010 | Fixed Furnishings | $2.17 | S.F. | 134,000 | 40 | 1991 | 2031 | | 40.00 % | 248.13 % | 16 | | $721,524.41 | $290,780 |
| | | | | | | | | **Total** | **49.31 %** | **22.98 %** | | | **$18,204,239.55** | **$79,230,602** |

## System Notes

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

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

**Note:** 90% Paint & Cover
10% Wall Tile (glazed block)

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

**Note:** 5% - Terrazzo & Tile
15% - Vinyl Flooring
45% - Wood Flooring
35% - Concrete Floor Cover

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

**Note:** 1-150KVA 208V to 240V phase converter to feed the existing elevator motors.

## 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:** | **$18,204,240** | **$0** | **$0** | **$0** | **$0** | **$5,090,444** | **$7,580,462** | **$2,766,385** | **$0** | **$0** | **$7,741,782** | **$41,383,313** |
| *** 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** | $6,832 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$6,832** |
| **B - Shell** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B10 - Superstructure** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B1010 - Floor Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B1020 - Roof Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B20 - Exterior Enclosure** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B2010 - Exterior Walls** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **B2020 - Exterior Windows** | $1,766,150 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,766,150** |
| **B2030 - Exterior Doors** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $330,816 | **$330,816** |
| **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** | $0 | $0 | $0 | $0 | $0 | $1,951,520 | $0 | $0 | $0 | $0 | $0 | **$1,951,520** |
| **B3010130 - Preformed Metal Roofing** | $321,599 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$321,599** |
| **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** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C1030 - Fittings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |

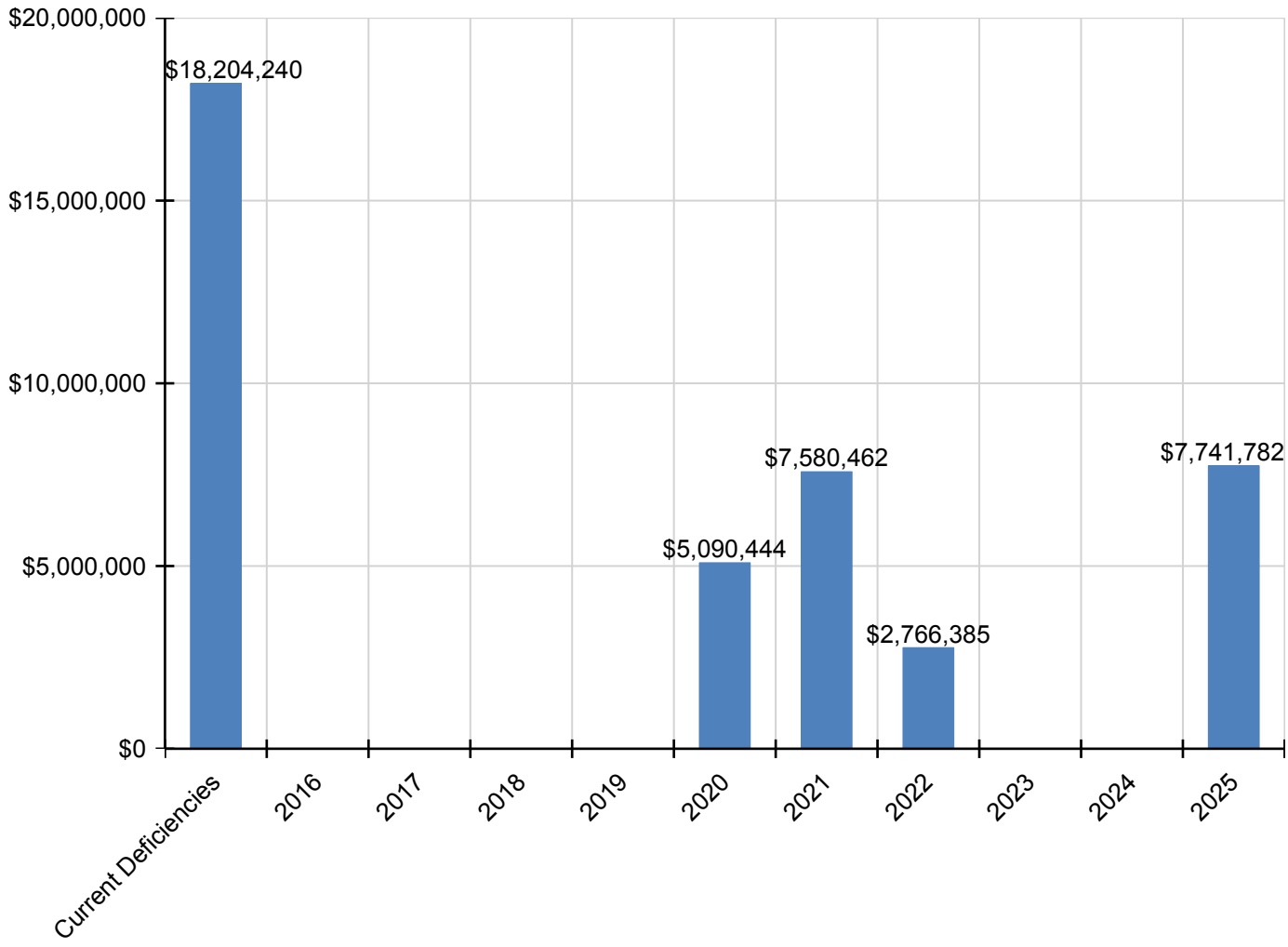
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **C20 - Stairs** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C2010 - Stair Construction** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C30 - Interior Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3010 - Wall Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3010230 - Paint & Covering** | $171,342 | $0 | $0 | $0 | $0 | $2,848,520 | $0 | $0 | $0 | $0 | $0 | **$3,019,861** |
| **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** |
| **C3020412 - Terrazzo & Tile** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3020413 - Vinyl Flooring** | $0 | $0 | $0 | $0 | $0 | $290,405 | $0 | $0 | $0 | $0 | $0 | **$290,405** |
| **C3020414 - Wood Flooring** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $2,323,931 | **$2,323,931** |
| **C3020415 - Concrete Floor Finishes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **C3030 - Ceiling Finishes** | $20,831 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4,861,209 | **$4,882,039** |
| **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** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D20 - Plumbing** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D2010 - Plumbing Fixtures** | $86,336 | $0 | $0 | $0 | $0 | $0 | $0 | $2,766,385 | $0 | $0 | $0 | **$2,852,721** |
| **D2020 - Domestic Water Distribution** | $565,430 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$565,430** |
| **D2030 - Sanitary Waste** | $569,045 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$569,045** |
| **D2040 - Rain Water Drainage** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **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** | $2,228,631 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$2,228,631** |
| **D3040 - Distribution Systems** | $6,169,698 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$6,169,698** |
| **D3050 - Terminal & Package Units** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D3060 - Controls & Instrumentation** | $2,400,128 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$2,400,128** |
| **D40 - Fire Protection** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D4010 - Sprinklers** | $1,916,928 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$1,916,928** |
| **D4020 - Standpipes** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $225,826 | **$225,826** |
| **D50 - Electrical** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **D5010 - Electrical Service/Distribution** | $544,465 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$544,465** |
| **D5020 - Lighting and Branch Wiring** | $68,630 | $0 | $0 | $0 | $0 | $0 | $7,580,462 | $0 | $0 | $0 | $0 | **$7,649,093** |
| **D5030 - Communications and Security** | $140,280 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$140,280** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **D5090 - Other Electrical Systems** | $212,796 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$212,796** |
| **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** | $293,595 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$293,595** |
| **E1090 - Other Equipment** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E20 - Furnishings** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **E2010 - Fixed Furnishings** | $721,524 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$721,524** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

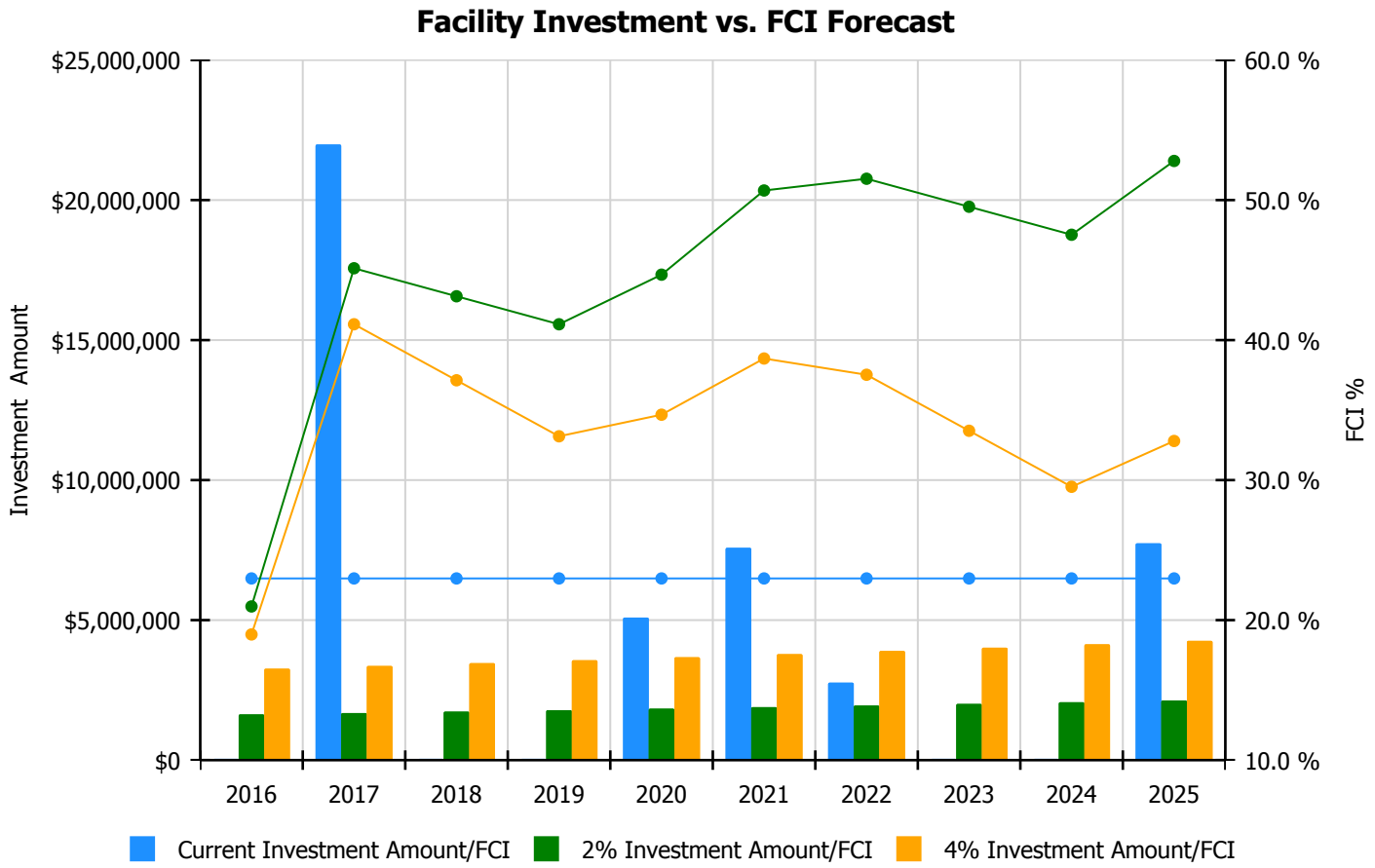
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 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:

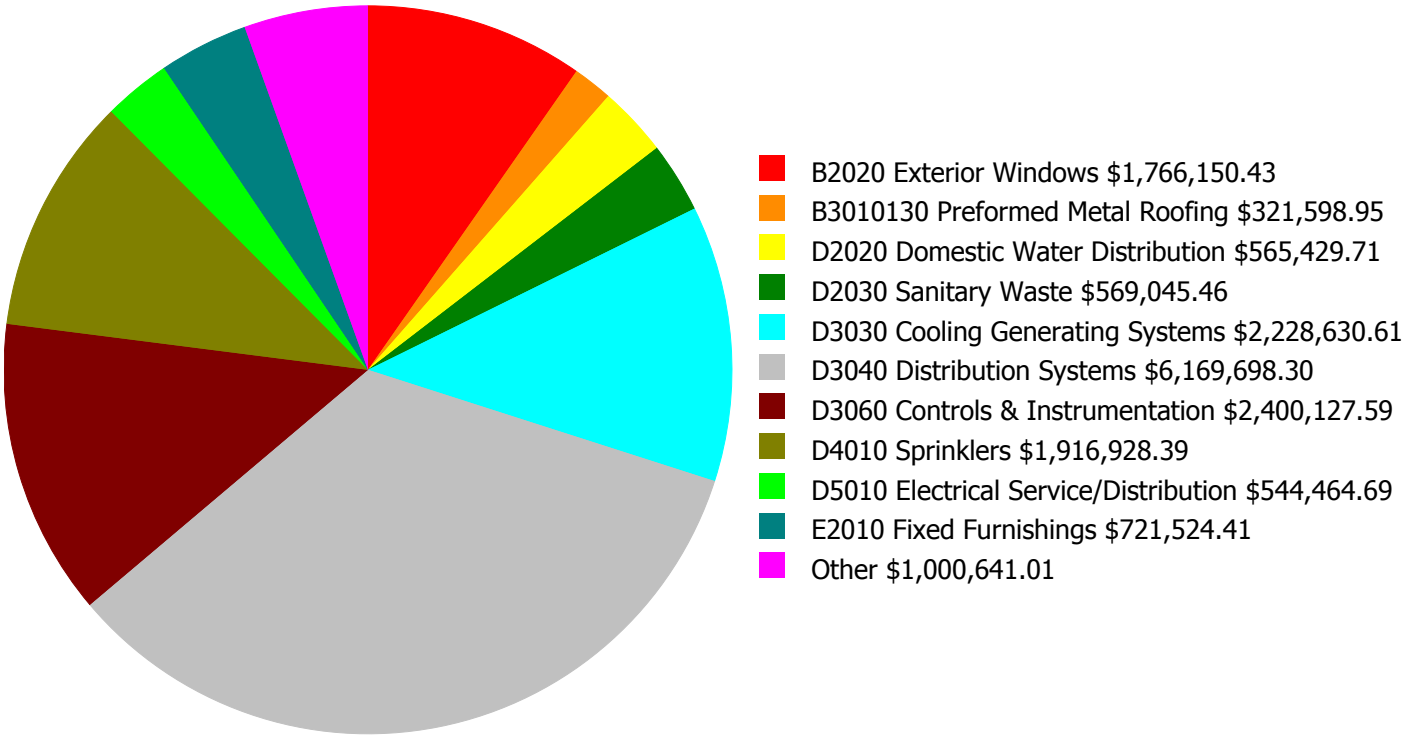
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 22.98% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $1,632,150.00 | 20.98 % | $3,264,301.00 | 18.98 % |
| 2017 | $21,982,576 | $1,681,115.00 | 45.13 % | $3,362,230.00 | 41.13 % |
| 2018 | $0 | $1,731,548.00 | 43.13 % | $3,463,097.00 | 37.13 % |
| 2019 | $0 | $1,783,495.00 | 41.13 % | $3,566,990.00 | 33.13 % |
| 2020 | $5,090,444 | $1,837,000.00 | 44.67 % | $3,673,999.00 | 34.67 % |
| 2021 | $7,580,462 | $1,892,110.00 | 50.68 % | $3,784,219.00 | 38.68 % |
| 2022 | $2,766,385 | $1,948,873.00 | 51.52 % | $3,897,746.00 | 37.52 % |
| 2023 | $0 | $2,007,339.00 | 49.52 % | $4,014,678.00 | 33.52 % |
| 2024 | $0 | $2,067,559.00 | 47.52 % | $4,135,119.00 | 29.52 % |
| 2025 | $7,741,782 | $2,129,586.00 | 52.79 % | $4,259,172.00 | 32.79 % |
| **Total:** | **$45,161,650** | **$18,710,775.00** | | **$37,421,551.00** | |

## Deficiency Summary by System

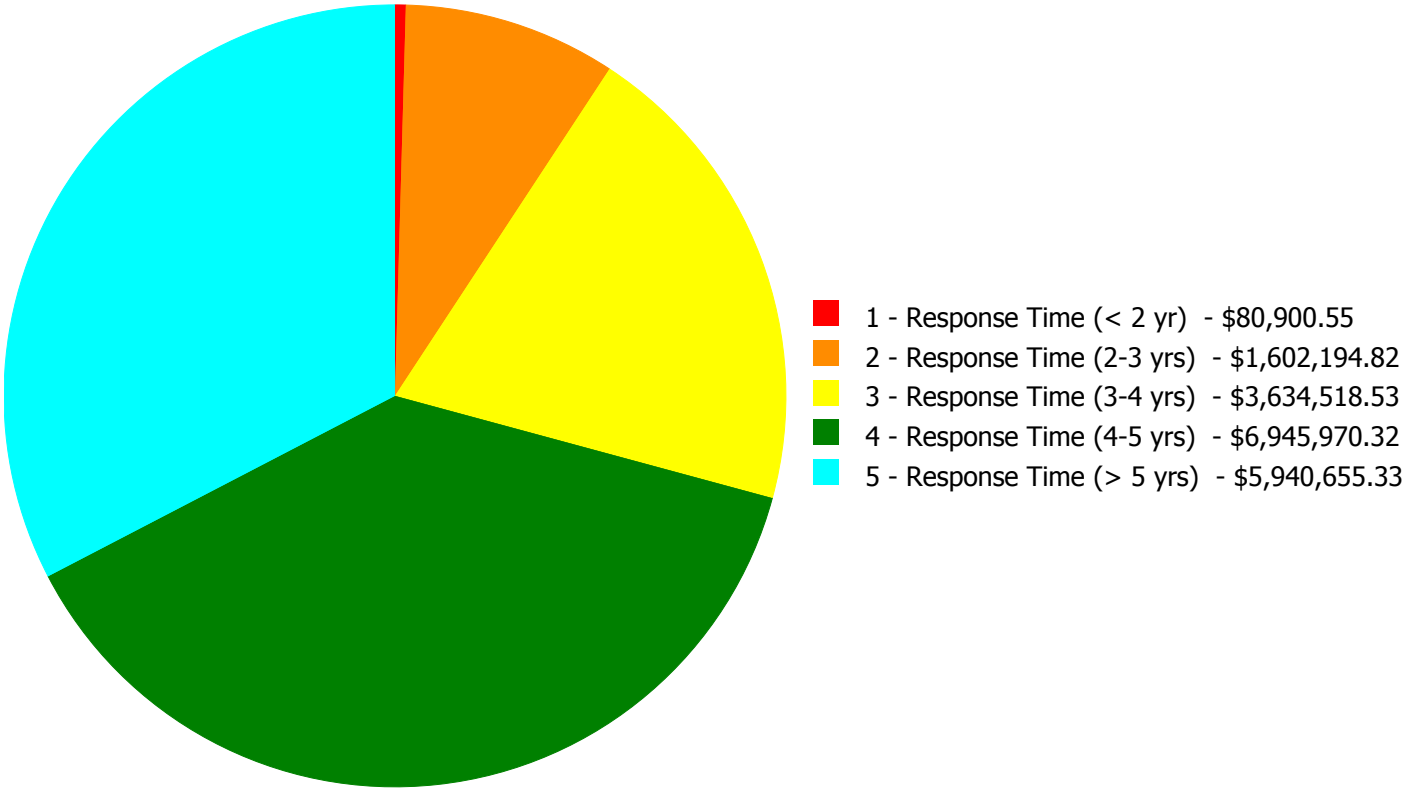
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $18,204,239.55**

## 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: $18,204,239.55**

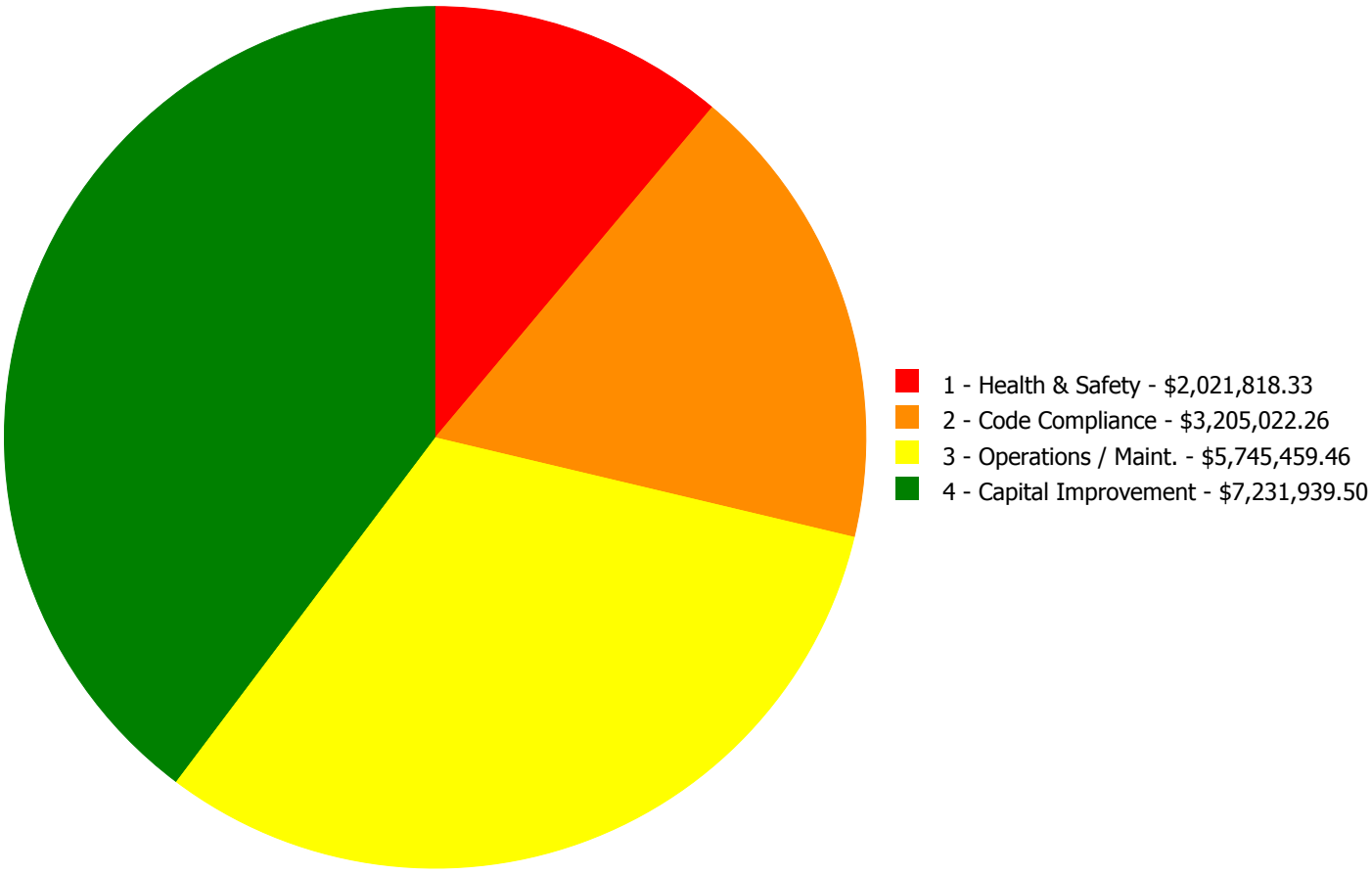
## Deficiency By Priority Investment Table

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 |
|---|---|---|---|---|---|---|---|
| A2020 | Basement Walls | $0.00 | $0.00 | $6,831.97 | $0.00 | $0.00 | $6,831.97 |
| B2020 | Exterior Windows | $0.00 | $0.00 | $0.00 | $1,766,150.43 | $0.00 | $1,766,150.43 |
| B3010130 | Preformed Metal Roofing | $0.00 | $321,598.95 | $0.00 | $0.00 | $0.00 | $321,598.95 |
| C3010230 | Paint & Covering | $0.00 | $0.00 | $171,341.52 | $0.00 | $0.00 | $171,341.52 |
| C3030 | Ceiling Finishes | $0.00 | $20,830.54 | $0.00 | $0.00 | $0.00 | $20,830.54 |
| D2010 | Plumbing Fixtures | $71,177.96 | $0.00 | $15,158.38 | $0.00 | $0.00 | $86,336.34 |
| D2020 | Domestic Water Distribution | $9,722.59 | $0.00 | $0.00 | $0.00 | $555,707.12 | $565,429.71 |
| D2030 | Sanitary Waste | $0.00 | $0.00 | $569,045.46 | $0.00 | $0.00 | $569,045.46 |
| D3030 | Cooling Generating Systems | $0.00 | $0.00 | $0.00 | $0.00 | $2,228,630.61 | $2,228,630.61 |
| D3040 | Distribution Systems | $0.00 | $0.00 | $2,872,141.20 | $141,239.50 | $3,156,317.60 | $6,169,698.30 |
| D3060 | Controls & Instrumentation | $0.00 | $0.00 | $0.00 | $2,400,127.59 | $0.00 | $2,400,127.59 |
| D4010 | Sprinklers | $0.00 | $0.00 | $0.00 | $1,916,928.39 | $0.00 | $1,916,928.39 |
| D5010 | Electrical Service/Distribution | $0.00 | $544,464.69 | $0.00 | $0.00 | $0.00 | $544,464.69 |
| D5020 | Lighting and Branch Wiring | $0.00 | $68,630.18 | $0.00 | $0.00 | $0.00 | $68,630.18 |
| D5030 | Communications and Security | $0.00 | $140,279.57 | $0.00 | $0.00 | $0.00 | $140,279.57 |
| D5090 | Other Electrical Systems | $0.00 | $212,796.19 | $0.00 | $0.00 | $0.00 | $212,796.19 |
| E1020 | Institutional Equipment | $0.00 | $293,594.70 | $0.00 | $0.00 | $0.00 | $293,594.70 |
| E2010 | Fixed Furnishings | $0.00 | $0.00 | $0.00 | $721,524.41 | $0.00 | $721,524.41 |
| | **Total:** | $80,900.55 | $1,602,194.82 | $3,634,518.53 | $6,945,970.32 | $5,940,655.33 | $18,204,239.55 |

## 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: $18,204,239.55**

## 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: D2010 - Plumbing Fixtures**


**Location:** Toilet rooms

**Distress:** Failing

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

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

**Qty:** 10.00

**Unit of Measure:** Ea.

**Estimate:** $71,177.96

**Assessor Name:** System

**Date Created:** 08/12/2015

**Notes:** Repair out of service toilet room on 3th floor and other inoperative plumbing fixtures throughout the building.

**System: D2020 - Domestic Water Distribution**

This deficiency has no image.

**Location:** Sub-basement

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Replace valves

**Qty:** 2.00

**Unit of Measure:** Ea.

**Estimate:** $9,296.46

**Assessor Name:** System

**Date Created:** 08/12/2015

**Notes:** Install double back flow preventers on water meter and bypass lines.

**System: D2020 - Domestic Water Distribution**

**Location:** Boiler room

**Distress:** Damaged

**Category:** 3 - Operations / Maint.

**Priority:** 1 - Response Time (< 2 yr)

**Correction:** Repair water heater (enter estimate)

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $426.13

**Assessor Name:** System

**Date Created:** 08/12/2015

**Notes:** Repair constant draft damper on water heater exhaust duct.

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

**System: B3010130 - Preformed Metal Roofing**

**Location:** Gym roof

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

**Correction:** Remove and replace preformed metal roofing

**Qty:** 6,200.00

**Unit of Measure:** S.F.

**Estimate:** $321,598.95

**Assessor Name:** System

**Date Created:** 08/31/2015

**Notes:** Repair or replace metal roofing on gym areas – damaged and leaking

**System: C3030 - Ceiling Finishes**

**Location:** Ceiling

**Distress:** Damaged

**Category:** 3 - Operations / Maint.

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

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

**Qty:** 2,700.00

**Unit of Measure:** S.F.

**Estimate:** $20,830.54

**Assessor Name:** System

**Date Created:** 08/31/2015

**Notes:** Replace acoustic ceiling tiles – discolored/damaged/missing (5% of suspended ceiling area)

**System: D5010 - Electrical Service/Distribution**

**Location:** Basement- electrical room

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Add Electrical Switchgear and Distribution System

**Qty:** 1.00

**Unit of Measure:** Ea.

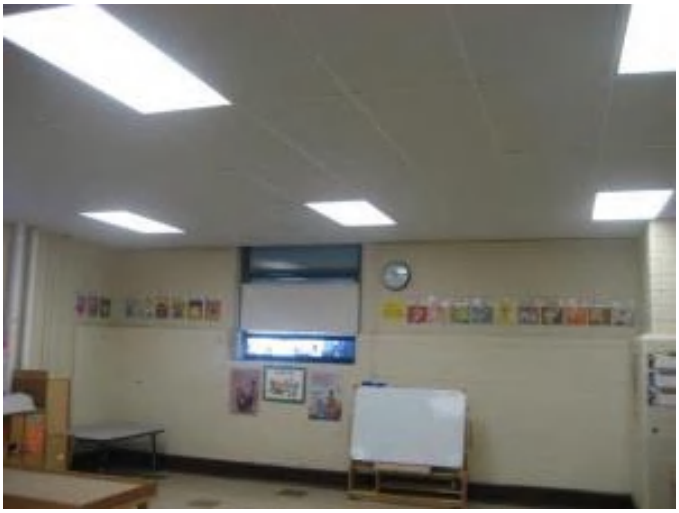
**Estimate:** $544,464.69

**Assessor Name:** System

**Date Created:** 09/08/2015

**Notes:** Provide 1000KVA 13.2KV-480/277V, indoor unit substation

**System: D5020 - Lighting and Branch Wiring**



**Location:** Classrooms

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Add wiring device

**Qty:** 12.00

**Unit of Measure:** Ea.

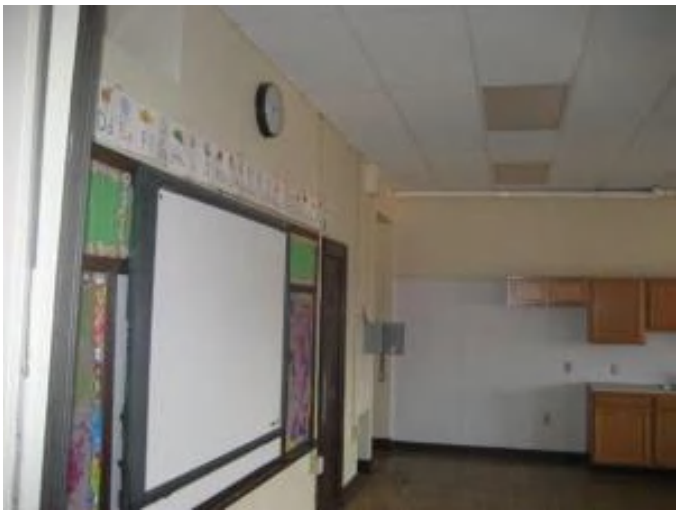
**Estimate:** $68,630.18

**Assessor Name:** System

**Date Created:** 08/07/2015

**Notes:** Provide (2)25FT of surface raceways with 24” receptacles on center and two-duplex wall mount receptacles. Approximate 12 classrooms

**System: D5030 - Communications and Security**



**Location:** Entire Building
**Distress:** Life Safety / NFPA / PFD
**Category:** 1 - Health & Safety
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Add fire alarm device
**Qty:** 60.00
**Unit of Measure:** Ea.
**Estimate:** $104,889.94
**Assessor Name:** System
**Date Created:** 08/07/2015

**Notes:** Provide fire alarm audio/visual devices in each classroom. Approximate 60

**System: D5030 - Communications and Security**

**Location:** Auditorium
**Distress:** Inadequate
**Category:** 4 - Capital Improvement
**Priority:** 2 - Response Time (2-3 yrs)
**Correction:** Add/Replace Sound System
**Qty:** 1.00
**Unit of Measure:** LS
**Estimate:** $35,389.63
**Assessor Name:** System
**Date Created:** 08/07/2015

**Notes:** Provide a permanent, state of the art auditorium sound system.

**System: D5090 - Other Electrical Systems**

**Location:** Outdoor

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

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

**Correction:** Replace standby generator system

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $188,546.37

**Assessor Name:** System

**Date Created:** 08/07/2015

**Notes:** Generator does not have capacity to carry the elevator motors. Provide an outdoor diesel powered 150KW generator.

**System: D5090 - Other Electrical Systems**

**Location:** Roof

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

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

**Correction:** Repair Lightning Protection System

**Qty:** 1.00

**Unit of Measure:** Job

**Estimate:** $24,249.82

**Assessor Name:** System

**Date Created:** 08/07/2015

**Notes:** Prepare a study to determine if the air terminals provide the proper coverage

**System: E1020 - Institutional Equipment**

**Location:** Auditorium

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

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

**Correction:** Add/Replace Stage Theatrical Lighting System

**Qty:** 1.00

**Unit of Measure:** Ea.

**Estimate:** $293,594.70

**Assessor Name:** System

**Date Created:** 08/07/2015

**Notes:** Provide a state of the art theatrical lighting and dimming control system

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

**System: A2020 - Basement Walls**

**Location:** Basement

**Distress:** Damaged

**Category:** 3 - Operations / Maint.

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

**Correction:** Repair spalled concrete - pick the appropriate repair and insert the SF of wall area

**Qty:** 50.00

**Unit of Measure:** S.F.

**Estimate:** $6,831.97

**Assessor Name:** System

**Date Created:** 08/31/2015

**Notes:** Repair damaged structural columns and foundation walls in basement

**System: C3010230 - Paint & Covering**

**Location:** North side classrooms

**Distress:** Damaged

**Category:** 3 - Operations / Maint.

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

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

**Qty:** 20,000.00

**Unit of Measure:** S.F.

**Estimate:** $171,341.52

**Assessor Name:** System

**Date Created:** 08/31/2015

**Notes:** Repair and repaint interior plaster walls on north side – water damaged

**System: D2010 - Plumbing Fixtures**

**Location:** Basement

**Distress:** Accessibility

**Category:** 2 - Code Compliance

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

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

**Qty:** 2.00

**Unit of Measure:** Ea.

**Estimate:** $15,158.38

**Assessor Name:** System

**Date Created:** 08/12/2015

**Notes:** Replace the aged drinking fountains in the basement with accessible models.

**System: D2030 - Sanitary Waste**

**Location:** Entire building.

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

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

**Qty:** 134,000.00

**Unit of Measure:** S.F.

**Estimate:** $569,045.46

**Assessor Name:** System

**Date Created:** 08/12/2015

**Notes:** Hire a qualified contractor to perform a detailed examination of the sanitary waste and rain water drainage piping using visual inspection and video cameras to determine cause of back-ups during heavy rains and replace any damaged or failing piping.

**System: D3040 - Distribution Systems**

**Location:** Fan rooms

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

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

**Correction:** Install / replace HVAC unit for Auditorium (800 seat).

**Qty:** 800.00

**Unit of Measure:** Seat

**Estimate:** $1,604,451.39

**Assessor Name:** System

**Date Created:** 01/21/2016

**Notes:** Replace the HVAC system serving the auditorium.

**System: D3040 - Distribution Systems**

**Location:** Entire 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:** 134,000.00

**Unit of Measure:** S.F.

**Estimate:** $1,267,689.81

**Assessor Name:** System

**Date Created:** 08/13/2015

**Notes:** Replace steam and condensate piping due to age and rust.

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

**System: B2020 - Exterior Windows**

**Location:** Gym

**Distress:** Energy Efficiency

**Category:** 4 - Capital Improvement

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

**Correction:** Remove and replace double slider windows

**Qty:** 350.00

**Unit of Measure:** Ea.

**Estimate:** $1,766,150.43

**Assessor Name:** System

**Date Created:** 08/31/2015

**Notes:** Replace Plexiglas windows – hazed

**System: D3040 - Distribution Systems**

**Location:** Entire building

**Distress:** Failing

**Category:** 3 - Operations / Maint.

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

**Correction:** Replace finned tube radiation terminals (per 100 LF)

**Qty:** 350.00

**Unit of Measure:** L.F.

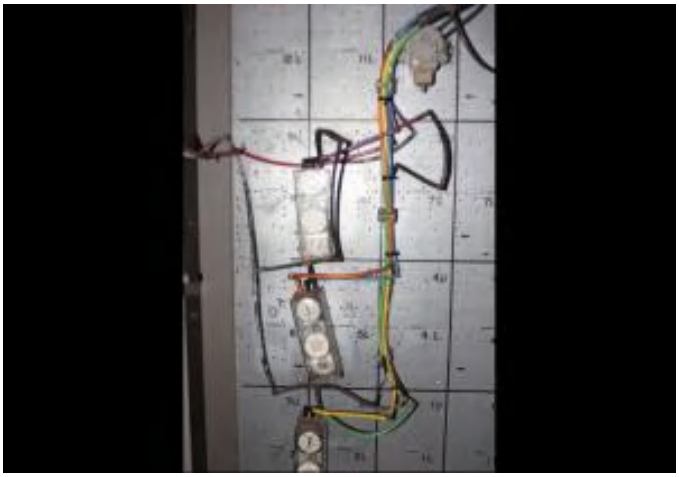
**Estimate:** $141,239.50

**Assessor Name:** System

**Date Created:** 08/13/2015

**Notes:** Replace the existing radiators with finned coil units.

**System: D3060 - Controls & Instrumentation**



**Location:** Entire building

**Distress:** Energy Efficiency

**Category:** 4 - Capital Improvement

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

**Correction:** Replace pneumatic controls with DDC (150KSF)

**Qty:** 134,000.00

**Unit of Measure:** S.F.

**Estimate:** $2,400,127.59

**Assessor Name:** System

**Date Created:** 08/13/2015

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

---

**System: D4010 - Sprinklers**

This deficiency has no image.

**Location:** Entire building

**Distress:** Life Safety / NFPA / PFD

**Category:** 1 - Health & Safety

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

**Correction:** Install a fire protection sprinkler system

**Qty:** 134,000.00

**Unit of Measure:** S.F.

**Estimate:** $1,916,928.39

**Assessor Name:** System

**Date Created:** 08/13/2015

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

---

**System: E2010 - Fixed Furnishings**

**Location:** Auditorium

**Distress:** Damaged

**Category:** 3 - Operations / Maint.

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

**Correction:** Replace auditorium seating - add tablet arms if required. Veneer seating is an option.

**Qty:** 800.00

**Unit of Measure:** Ea.

**Estimate:** $721,524.41

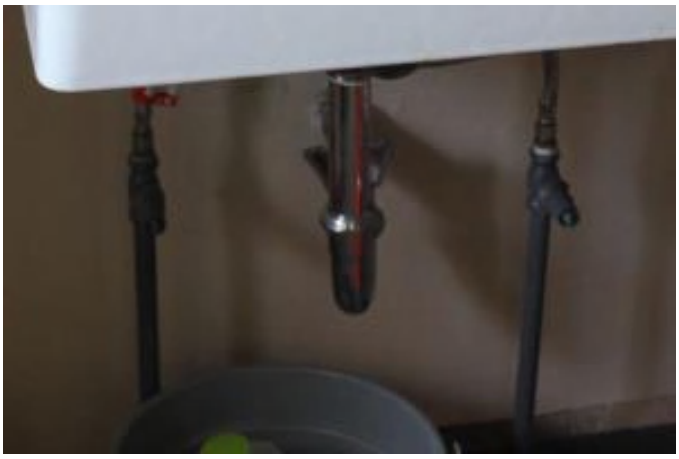
**Assessor Name:** System

**Date Created:** 08/31/2015

**Notes:** Replace auditorium seats – beyond service life and failing

## Priority 5 - Response Time (> 5 yrs):

**System: D2020 - Domestic Water Distribution**



**Location:** Entire building

**Distress:** Beyond Service Life

**Category:** 3 - Operations / Maint.

**Priority:** 5 - Response Time (> 5 yrs)

**Correction:** Replace domestic water piping (150 KSF)

**Qty:** 134,000.00

**Unit of Measure:** S.F.

**Estimate:** $555,707.12

**Assessor Name:** System

**Date Created:** 08/12/2015

**Notes:** Replace the original copper domestic water piping to eliminate joints made with lead solder.

**System: D3030 - Cooling Generating Systems**

**Location:** Entire building.

**Distress:** Inadequate

**Category:** 4 - Capital Improvement

**Priority:** 5 - Response Time (> 5 yrs)

**Correction:** Install chilled water system with distribution piping and pumps. (+150KSF)

**Qty:** 134,000.00

**Unit of Measure:** S.F.

**Estimate:** $2,228,630.61

**Assessor Name:** System

**Date Created:** 08/13/2015

**Notes:** Install 335 ton total capacity cooling system to replace aged and inefficient window unit air conditioners.

**System: D3040 - Distribution Systems**

**Location:** classrooms

**Distress:** Building / MEP Codes

**Category:** 2 - Code Compliance

**Priority:** 5 - Response Time (> 5 yrs)

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

**Qty:** 38.00

**Unit of Measure:** Room

**Estimate:** $3,156,317.60

**Assessor Name:** System

**Date Created:** 08/13/2015

**Notes:** Replace the original HVAC system serving the classrooms with new fan coil units and dedicated OA systems.

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D2020 Domestic Water Distribution | Pump, pressure booster system, variable speed, base, controls, starter, duplex, 100' head, 400 GPM, 7-1/2 H.P., 4" discharge | 1.00 | Ea. | Sub-basement | | | | | 25 | 2012 | 2037 | $51,870.00 | $57,057.00 |
| D3020 Heat Generating Systems | Boiler, gas/oil combination, cast iron, steam, gross output, 6100 MBH, includes burners, controls and insulated jacket, packaged | 3.00 | Ea. | Boiler room | | | | | 35 | 2001 | 2036 | $140,742.00 | $464,448.60 |
| D3040 Distribution Systems | AHU, field fabricated, built up, cool/heat coils, filters, constant volume, 40,000 CFM | 5.00 | Ea. | Basement mechanical rooms | | | | | 25 | 1927 | 2042 | $151,511.80 | $833,314.90 |
| D5010 Electrical Service/Distribution | Load interrupter switch, 2 position, 300 kVA & below, 13.8 kV, 600 amp w/CLF fuses, NEMA 1 | 1.00 | Ea. | electrical room | Penn Panel | PPB-3 | 010143 | | 30 | 2001 | 2031 | $42,600.60 | $46,860.66 |
| D5010 Electrical Service/Distribution | Switchboards, no main disconnect, 4 wire, 120/208 V, 3000 amp, incl CT compartment, excl CT's or PT's | 1.00 | Ea. | basement electrical room | General Electric | Switchboard | 6950246D03 | | 30 | 2001 | 2031 | $12,792.60 | $14,071.86 |
| D5010 Electrical Service/Distribution | Switchgear installation, incl switchboard, panels & circuit breaker, 120/208 V, 800 A | 1.00 | Ea. | basement electrical room | General Electric | Spectra Series | 178PP63692 | | 20 | 2001 | 2021 | $21,766.05 | $23,942.66 |
| D5010 Electrical Service/Distribution | Transformer, liquid-filled, 5 kV or 15 kV primary, 277/480 V secondary, 3 phase, 1000 kVA, pad mounted | 1.00 | Ea. | basement eletrical room | Olsun Electris corporation | dry type transformer class AA | 31450-CR 111169 | | 30 | 2001 | 2031 | $50,425.20 | $55,467.72 |
| | | | | | | | | | | | | **Total:** | **$1,495,163.40** |

## 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): | 32,600 |
| Year Built: | 1926 |
| Last Renovation: | |
| Replacement Value: | $659,790 |
| Repair Cost: | $421,988.06 |
| Total FCI: | 63.96 % |
| Total RSLI: | 72.10 % |


**Description:**

**Attributes:**

**General Attributes:**

| | | | |
|---|---|---|---|
| Bldg ID: | S211001 | Site ID: | S211001 |

## 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 | 58.19 % | 0.00 % | $0.00 |
| G40 - Site Electrical Utilities | 106.67 % | 222.80 % | $421,988.06 |
| **Totals:** | **72.10 %** | **63.96 %** | **$421,988.06** |

## 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 $ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| G2020 | Parking Lots | $8.50 | S.F. | 11,200 | 30 | 2000 | 2030 | | 50.00 % | 0.00 % | 15 | | | $95,200 |
| G2030 | Pedestrian Paving | $12.30 | S.F. | 17,600 | 40 | 2000 | 2040 | | 62.50 % | 0.00 % | 25 | | | $216,480 |
| G2040 | Site Development | $4.36 | S.F. | 32,600 | 25 | 2005 | 2030 | | 60.00 % | 0.00 % | 15 | | | $142,136 |
| G2050 | Landscaping & Irrigation | $4.36 | S.F. | 3,800 | 15 | 2005 | 2020 | | 33.33 % | 0.00 % | 5 | | | $16,568 |
| G4020 | Site Lighting | $4.84 | S.F. | 32,600 | 30 | | | 2047 | 106.67 % | 209.07 % | 32 | | $329,883.16 | $157,784 |
| G4030 | Site Communications & Security | $0.97 | S.F. | 32,600 | 30 | | | 2047 | 106.67 % | 291.27 % | 32 | | $92,104.90 | $31,622 |
| | | | | | | | | **Total** | **72.10 %** | **63.96 %** | | | **$421,988.06** | **$659,790** |

## 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.

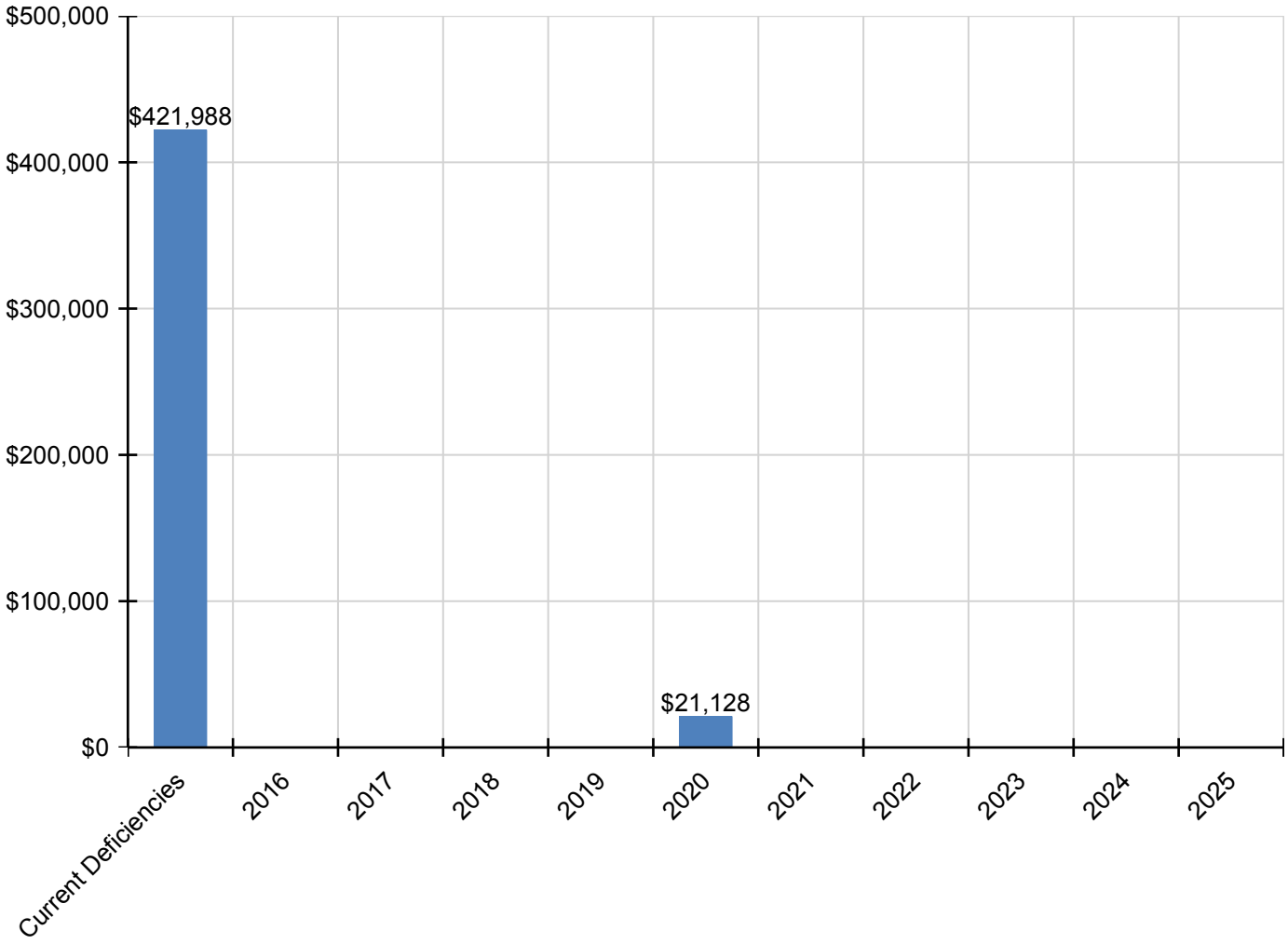
*Inflation Rate: 3%*

| System | Current Deficiencies | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total:** | **$421,988** | **$0** | **$0** | **$0** | **$0** | **$21,128** | **$0** | **$0** | **$0** | **$0** | **$0** | **$443,116** |
| **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** |
| **G2020 - Parking Lots** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2030 - Pedestrian Paving** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2040 - Site Development** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G2050 - Landscaping & Irrigation** | $0 | $0 | $0 | $0 | $0 | $21,128 | $0 | $0 | $0 | $0 | $0 | **$21,128** |
| **G40 - Site Electrical Utilities** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$0** |
| **G4020 - Site Lighting** | $329,883 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$329,883** |
| **G4030 - Site Communications & Security** | $92,105 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | **$92,105** |

** Indicates non-renewable system*

## Forecasted Sustainment Requirement

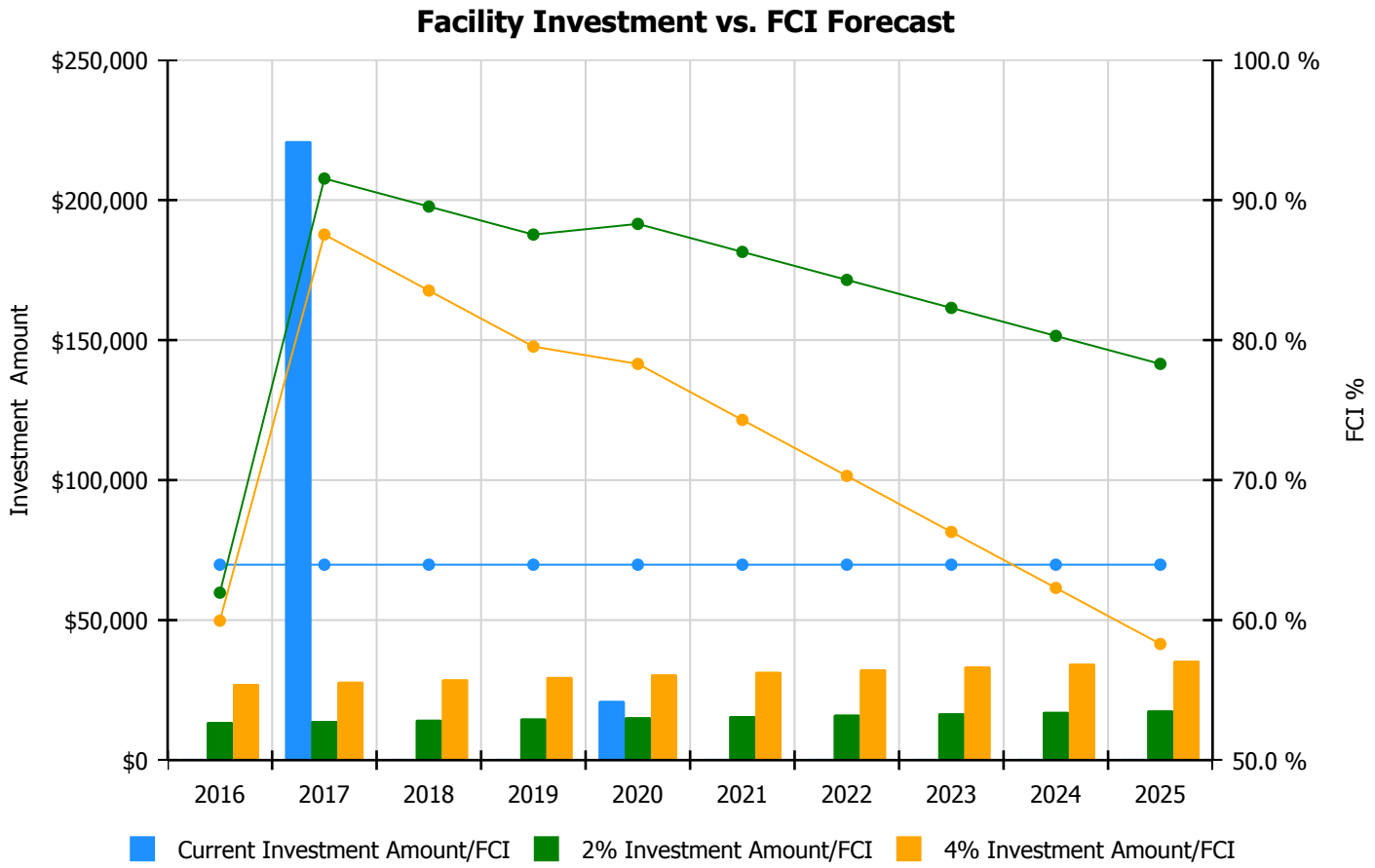
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



## 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:

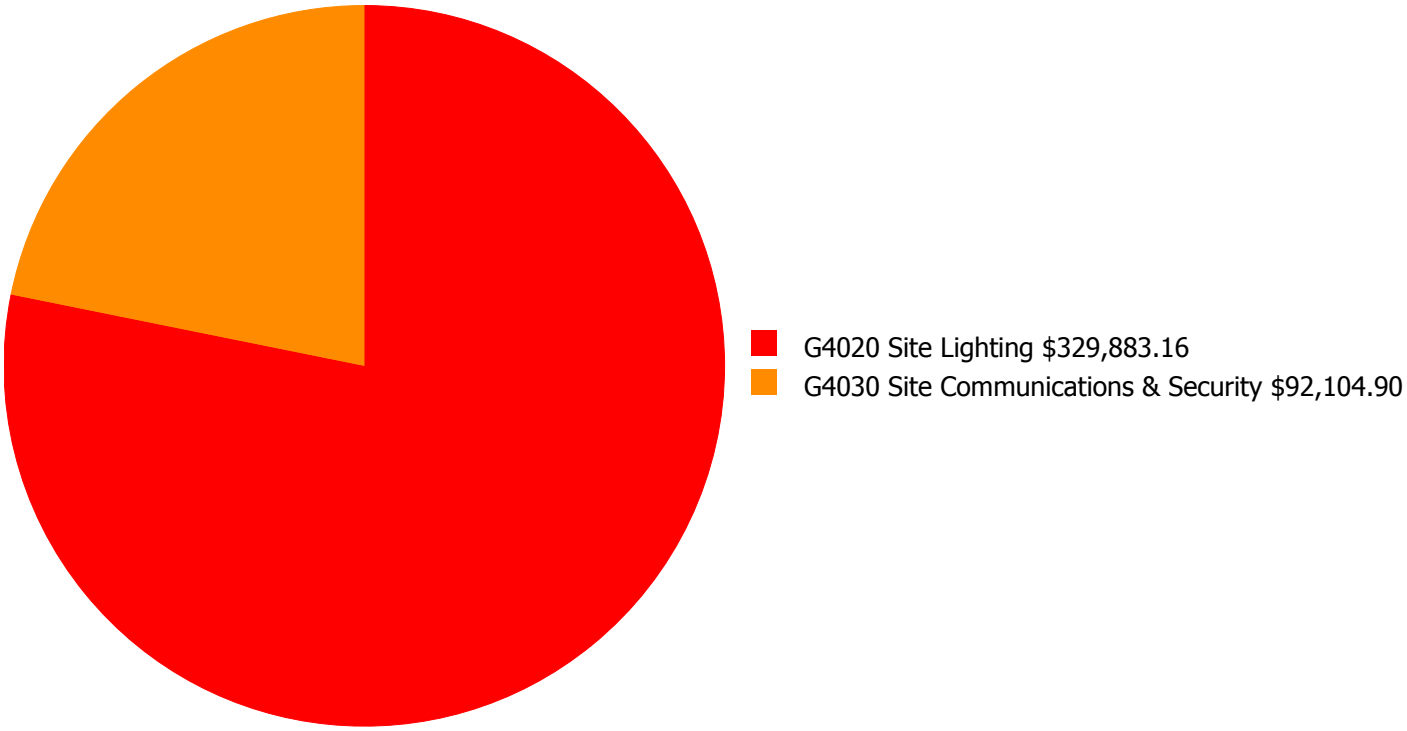
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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




| Year | Investment Amount Current FCI - 63.96% | 2% Investment | | 4% Investment | |
|---|---|---|---|---|---|
| | | Amount | FCI | Amount | FCI |
| 2016 | $0 | $13,592.00 | 61.96 % | $27,183.00 | 59.96 % |
| 2017 | $221,034 | $13,999.00 | 91.54 % | $27,999.00 | 87.54 % |
| 2018 | $0 | $14,419.00 | 89.54 % | $28,839.00 | 83.54 % |
| 2019 | $0 | $14,852.00 | 87.54 % | $29,704.00 | 79.54 % |
| 2020 | $21,128 | $15,298.00 | 88.30 % | $30,595.00 | 78.30 % |
| 2021 | $0 | $15,756.00 | 86.30 % | $31,513.00 | 74.30 % |
| 2022 | $0 | $16,229.00 | 84.30 % | $32,458.00 | 70.30 % |
| 2023 | $0 | $16,716.00 | 82.30 % | $33,432.00 | 66.30 % |
| 2024 | $0 | $17,218.00 | 80.30 % | $34,435.00 | 62.30 % |
| 2025 | $0 | $17,734.00 | 78.30 % | $35,468.00 | 58.30 % |
| **Total:** | **$242,162** | **$155,813.00** | | **$311,626.00** | |

## Deficiency Summary by System

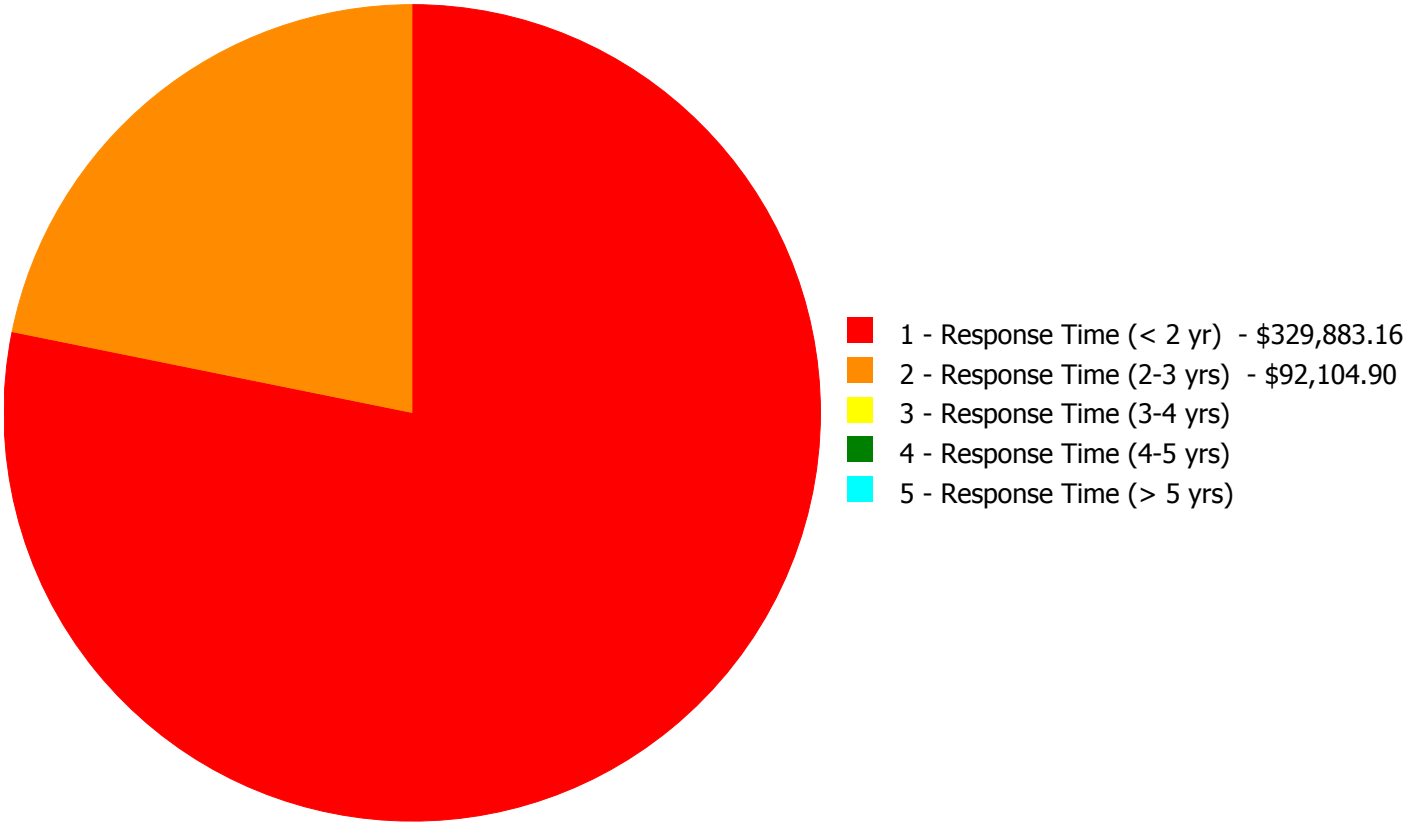
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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




**Budget Estimate Total: $421,988.06**

## 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: $421,988.06**

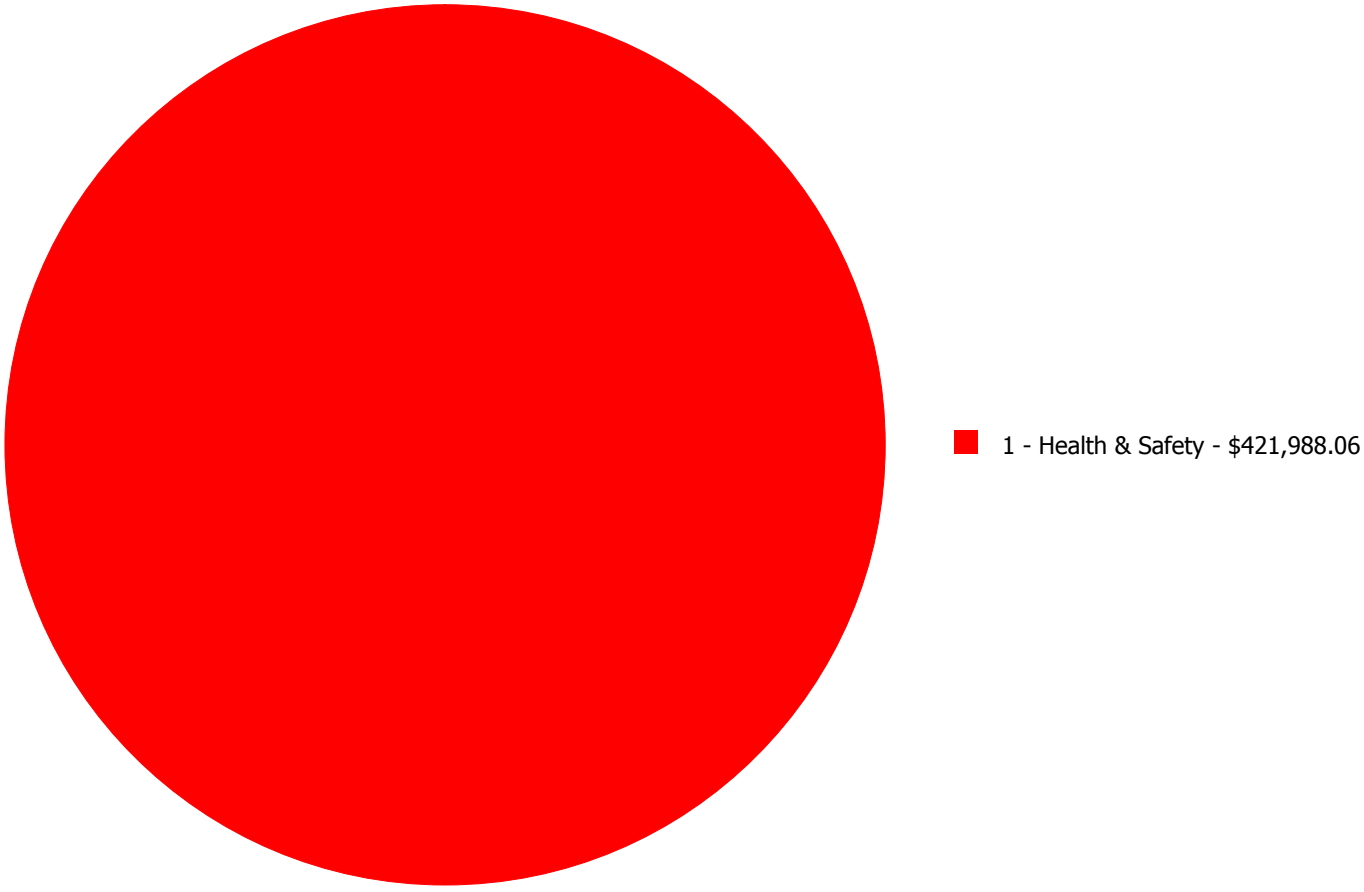
## Deficiency By Priority Investment Table

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 |
|---|---|---|---|---|---|---|---|
| G4020 | Site Lighting | $329,883.16 | $0.00 | $0.00 | $0.00 | $0.00 | $329,883.16 |
| G4030 | Site Communications & Security | $0.00 | $92,104.90 | $0.00 | $0.00 | $0.00 | $92,104.90 |
| | **Total:** | $329,883.16 | $92,104.90 | $0.00 | $0.00 | $0.00 | $421,988.06 |

## 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: $421,988.06**

## 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: G4020 - Site Lighting**

**Location:** Grounds

**Distress:** Security Issue

**Category:** 1 - Health & Safety

**Priority:** 1 - Response Time (< 2 yr)

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

**Qty:** 12.00

**Unit of Measure:** Ea.

**Estimate:** $329,883.16

**Assessor Name:** Craig Anding

**Date Created:** 08/07/2015

**Notes:** Provide 12 pole mounted lighting fixtures for security.

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

**System: G4030 - Site Communications & Security**

**Location:** Bkuilding Exterior

**Distress:** Security Issue

**Category:** 1 - Health & Safety

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

**Correction:** Add Video Surveillance System

**Qty:** 8.00

**Unit of Measure:** Ea.

**Estimate:** $92,104.90

**Assessor Name:** Craig Anding

**Date Created:** 08/07/2015

**Notes:** Provide a site video surveillance system. Approximate 8 cameras

## 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 |