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.

Feltonville Arts and Sciences School

Governance	DISTRICT	Report Type	Middle
Address	210 E. Courtland St. Philadelphia, Pa 19120	Enrollment Grade Range	553 '06-08'
Phone/Fax	215-456-5603 / 215-456-5614	Admissions Category	Neighborhood
Website	Www.Philasd.Org/Schools/Feltonville-Arts-And-Sciences	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	**11.93%**	**$7,034,818**	**$58,959,199**
Building	12.04 %	$7,001,887	$58,173,287
Grounds	04.19 %	$32,931	$785,912

Major Building Systems

Building System	System FCI	Repair Costs	Replacement Cost
Roof (Shows physical condition of roof)	90.86 %	$1,341,501	$1,476,384
Exterior Walls (Shows condition of the structural condition of the exterior facade)	00.38 %	$19,111	$4,964,258
Windows (Shows functionality of exterior windows)	38.20 %	$927,028	$2,426,567
Exterior Doors (Shows condition of exterior doors)	25.43 %	$41,805	$164,417
Interior Doors (Classroom doors)	02.31 %	$9,177	$398,002
Interior Walls (Paint and Finishes)	00.48 %	$8,567	$1,796,113
Plumbing Fixtures	01.33 %	$20,448	$1,533,046
Boilers	09.40 %	$199,003	$2,117,010
Chillers/Cooling Towers	24.06 %	$667,839	$2,775,812
Radiators/Unit Ventilators/HVAC	44.81 %	$2,184,195	$4,874,679
Heating/Cooling Controls	00.00 %	$0	$1,530,779
Electrical Service and Distribution	00.00 %	$0	$1,099,893
Lighting	00.11 %	$4,419	$3,932,400
Communications and Security (Cameras, Pa System and Fire Alarm)	46.94 %	$691,414	$1,472,949

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

S750001;Feltonville Arts

Final

Site Assessment Report

January 31, 2017

PARSONS

Table of Contents

Site Executive Summary

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

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

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

Gross Area (SF):	113,391
Year Built:	1960
Last Renovation:	2005
Replacement Value:	$58,959,199
Repair Cost:	$7,034,817.78
Total FCI:	11.93 %
Total RSLI:	70.87 %

Description:

Facility Assessment
November 2015

School District of Philadelphia
Feltonville Arts Middle School
210 East Courtland Street
Philadelphia, PA 19120

113,391sf / 519 students / LN 07

Feltonville Arts Middle School is located at 210 East Courtland Street. The main entrance faces East Courtland Street. The original school building, a 2 story brick building with a full basement, was constructed around 1960. Other buildings were added in the following years then demolished in 1999. In 2005, a new three story building was added to the existing building, more than doubling the size of the school, creating a new main entrance and a small, secure, semi-enclosed, concrete courtyard/playground. The total size of the facility is now 113,391sf, "Doc" Burrage, the Assistant Building Engineer accompanied the team during the building inspection.

At the time of the site visitation, the inspection team met with Principal John Piniat, who expressed the following concerns. Since the addition was completed 10 years ago, there have been roof leaks into the school office damaging ceiling tiles, lighting, and furniture. Heating and air-conditioning is not well controlled in the building. Windows in the original building are old and leak. The clock system does not work. There are no outside speakers. Security cameras are provided on the first floor but additional security cameras are needed on upper floors. The faculty parking lot is too small to accommodate the entire staff, requiring them to park in the neighborhood.

ARCHITECTURAL/STRUCTURAL SYSTEMS

Foundations in the original building and the addition appear to be constructed of poured concrete and concrete block. Joints are in good condition with no major settlement cracks observed. Paint on the basement walls and ceilings, is in fair condition with some damages and dirt especially in the old building area. Footings were not seen and their construction type or condition could not be ascertained.

Floor slabs in the boiler room in the original building basement and the new addition are constructed of concrete which is in good condition with some areas of minor dirt. Upper floor slabs in the old building and new addition are concrete on either steel beams with metal deck (new addition) or concrete beams (possibly for the old building). There was no observed cracking and spalling of the concrete slabs in upper floor areas of either building. However, the intersection of the old building and the addition is the one location of problems in the first floor slab. The terrazzo on the new first floor slab is delaminating around the base of the old stairway wall due to the floor slab is heaving (moving). Cracks are also forming on the walls in this area. The floor finish and slab in the area around the old stair needs to be removed to determine the reason for this settlement or heaving.

Roof construction over the old building is a flat deck thought to be reinforced concrete beams and deck. Internal roof drains with crickets between drains are used to drain the roof. There are a couple overflow scuppers in the low parapet. Roof construction over the new addition main roof is a flat deck probably consists of a metal deck supported by structural steel beams and columns. Through the wall scuppers and vertical leaders and internal roof drains are used to remove water from the main addition roofs. Roof construction over the gymnasium (part of the new addition) is curved steel trusses with a metal deck and metal roof; horizontal gutters and vertical leaders are used to drain the curved gymnasium roof. All flat roof decks are slightly sloped with minimum overall slope. There are multiple roof access points as there are many levels and sections to the old and new roofs. The addition has an outside mechanical equipment roof area adjacent to the south gymnasium wall, in which cooling towers are located. Access to the addition's elevator machine hoist room and other fans and rooftop equipment is also from the roof of the addition, near the gymnasium. The main roof of the old building has an air handler and some fans; the lower roof over the old building music room has an air handler and some fans.

Exterior walls on the new addition are constructed of brick, flat metal panels, and corrugated metal panels. Two shades of tan colored brick gives the flat masonry wall an appearance of depth and different accent colors; the buff brick matches the brick on the front of the old building. Silver corrugated metal panels are used on the gym exteriors and other wall locations for accent. Blue flat panels are used to accentuate the upper two floor rear corner of the building. Masonry is generally in good condition with minor mildew or dirtiness observed in on the rear walls under the blue metal panel overhang and some other isolated areas of the addition walls. The old building is constructed of buff brick on the front and sides and red brick on the sides and rear. EIFS (Exterior insulation and finish system, also known as "Dryvit") is used on the east wall of the one-story section of the existing building that houses the Music Studio and part of the west wall; the other two exterior walls of this wing have supergraphic paintings. Many joints in many areas of the old building brickwork are spalling and losing grout, in need of repointing. Some areas have already been repointed as evident from the lighter grout and brick color; these appear to be holding well; the additional failing areas need to be repointed. All old brickwork needs to be powerwashed.

Exterior windows in the old building were not replaced when the new addition was constructed. They are made of clear anodized aluminum frames with operable single hung units and single thickness clear plexiglass vision panel glazing. These windows are in poor condition with oxidized frames and severely scratched single-pane plexiglass vision panels. Operable units are difficult to operate up and down, due to broken internal counterbalance weights. Single pane plexiglass units do not meet today's energy code requirements and are large sources of heat loss; they should be replaced. First floor and basement windows in the old building facing the street have external galvanized steel security screens. Steel lintels over these windows are in good condition, but these lintels as well as all other lintels in the old building need to be cleaned and repainted. Windows in the new addition windows are more modern double glazed glass windows in clear anodized aluminum frames. Classroom windows have operable "hopper" windows that can be opened to allow for natural ventilation when appropriate. First floor windows facing pedestrian and vehicular areas have heavy duty external steel bug-security screens for protection of glazing. Windows facing the courtyard and the main entrance have no screens but are probably safety glass (tempered or laminated) to prevent damage from impact; safety glazing is a code requirement where glazing is near pedestrian traffic or doors. All addition windows appear to be in good condition.

Exterior doors providing emergency exit from stairways (with and without narrow vision panels are flush, painted hollow metal doors with painted steel frames. Steel doors in the old building are rusted damaged and need to be replaced. Steel doors in the new addition need to be repainted. Main entry doors and those providing access to the courtyard are clear anodized aluminum frame units with clear safety glass; they appear to be in good condition with properly operating hardware. There is a ramp up to the door into the Music Studio in the old building, but the door hardware is not ADA compliant and needs to be updated. The aluminum and glass doors at the main entrance to the building, both sets of aluminum and glass doors leading into the courtyard, and the set of glass doors leading from the outside play area into the cafeteria are flush with grade and appear to have mostly ADA compliant hardware; entry opening force was not tested and electric assist is not provided. Also, accessible route signage is not provided at any entrance.

Roof coverings on all roofs consist of light gray ceramic granule impregnated, fully adhered rolled asphalt sheet systems. Brick wall structures and mechanical equipment are flashed with similar granule impregnated asphaltic membranes with counterflashing overlapping top edges. The roof membranes on both roofs are showing signs of aging in different ways. The old building roof membrane has maintained most of its granules, but is cracking along most edges and has many lumpy and soft areas. Dried, cracked asphalt can be seen along membrane joints. Although the main section of the membrane seems to be intact (soft areas notwithstanding), flashing joints along the low parapets have been repaired and metal counterflashing needs to be re-sealed. The low roof over the office area has no granules and was painted silver; paint is wearing and looks aged and ready to fail. The membrane around the old building elevator also has no granules and was holding water, which is always a bad sign; this area looks as if it has been repaired a number of times. The addition flat roof membrane has already lost most of its granular surface. They are collecting near scuppers and roof drains and washing away. Exposing the asphalt to the sun will cause accelerated wear and failure. The masonry flashing and counterflashing on the low area of the addition roof over the entrance appears bent and losing integrity with the brick. Aluminum coping on all walls appear to be in good condition. The most notorious leak, however is the one over the main office above the visitor sign-in counter and work area. Leaks have been reported since the building opened and despite all efforts repairs have not been successful. This leak occurs in a difficult area, located where the new low roof over the entrance area meets the wall of the old building. The connection of the roof to the building is an expansion joint material; two feet above this joint is a band of windows on the existing wall and two new walls also terminating on this roof. Finally, the low roof deck has inadequate slope which would allow water, snow, and ice to accumulate near walls. All in all, this roof has walls on three sides with different materials terminating on the roof. From the looks of the connections from above, it appears that the wrong types of expansion joint or incorrectly or inadequately installed expansion joints have been used. There is a similar roof leak at the intersection of a new brick wall to a new low roof over the corner of the Drama Room, causing water damage around the window and wall under the roof. These low roof areas need to be disassembled and rebuilt with enough slope and correctly selected and installed expansion joints to permit quick water drainage. Even though all other flat roofs are not past their normal service life of 20 years, they are in need of maintenance to allow them to reach their expected lifespan. In light of the leaks reported in old and new roofs and the worn condition of the membrane of the new roof, full replacement should be considered within the next 5 years.

Partitions in classrooms, offices corridors and stairways in the old building are constructed of painted concrete block or gypsum board with PVC sheet finish applied for wall protection; PVC is in good condition, but has an institutional appearance. Painted block and gypsum board partitions in the old building are in need of repainting. Toilet rooms are constructed of block; renovated toilet rooms have ceramic tile wainscots on walls. Corridors, classrooms, cafeteria, and offices in the new addition are constructed of concrete block. The gymnasium in the new addition has sound attenuating block partitions, which do an excellent job of absorbing sound in a space that has highly reflective surfaces. Corridors and lobbies in the new addition utilize different colors of glazed and painted block to help provide direction and location within the building. The cafeteria, multipurpose room, toilet rooms, classrooms, and offices in the new addition have block partitions. All partitions in the new addition are generally in good condition.

Interior doors in the entire school are solid core wood with oak veneer. Most classroom and stairway doors have narrow vertical vision panels. Mechanical room doors and one set of old building stairway doors are hollow metal doors. Doors in the back end of the kitchen are FRP which are highly durable and cleanable. All doors are set into hollow metal frames. Doors are generally in good condition throughout the building. The new addition doors all have ADA compliant lever lock or latchsets, and are not fire rated since the entire building is equipped with an automatic fire sprinkler system. Doors in the old building and some doors in the new addition do not have security locks, which allow for locking from inside the room; these are required to meet new school security guidelines. Doors are generally in good condition with a few needing refinishing.

Interior fittings/hardware include white boards and smart boards in every classroom. Toilet room partitions are painted metal; some have been repainted, but all appear to be in good condition with all the necessary accessories such as toilet paper dispensers, soap, paper towel or dryers, and grab bars for accessibility in selected toilet rooms. Windows in the new addition have Mecho roller shades, which are perforated shades that limit direct sunlight but do not completely block it allowing diffuse light to pass into spaces.

Stair construction consists of steel pan and riser stair systems with concrete-filled treads. With the exception of one stairway in the old building, stairways all have 36” high handrails and 42” high guards at platforms and open sides of stairways, and steel vertical balusters with 4” maximum spacing or steel mesh balustrades which also comply with the 4” maximum spacing. All stair railings are painted steel in worn condition, requiring a new coat of paint through the building. The original stairway in the old building with

railing systems that do not comply with today's codes needs to be upgraded.

Wall finishes in the old building are painted block or PVC in corridors, in good condition. Classrooms and offices in the old building are either painted block or painted gypsum board in need of repainting. Toilet rooms were recently renovated to be ADA compliant and have painted block above ceramic tile wainscots. Wall finishes in the new addition are nearly all painted block. At some classroom doorways and selected corridor walls, different colored glazed block is used as an accent. Blue columns at front and courtyard building entrances are rusting and need repainting.

Floor finishes in corridors, classrooms, offices, and stairway landings the old building consist of 12"x12" vinyl composition tiles (VCT). This material is not brand new but has been adequately maintained and cleaned. Renovated toilet rooms in the old building have ceramic mosaic tile or quarry tile finishes. In the new addition, terrazzo is used in the entrance lobby area and part of the first floor corridor. Other corridor floors, classrooms, offices, multipurpose room, cafeteria, and stairway landings / platforms are VCT. The gymnasium has a seamless vinyl floor system, in good condition. The Library has carpet tiles. Toilet rooms in the new addition have ceramic tile floors. The kitchen and supporting spaces are finished with quarry tiles.

Ceiling finishes in the new addition are mostly 2'x4' suspended acoustical tile ceilings with recessed or pendant mounted fluorescent lighting fixtures, all in good condition. Toilet rooms in the new addition have gypsum board ceilings with recesses fluorescent lighting. Toilet rooms in the old building have 2'x4' or gypsum board ceilings. The ceiling of the gymnasium is open with exposed painted bar joists and suspended industrial-type HID lighting. Ceilings in the old building are 2'x4' suspended acoustical ceiling systems with recessed fluorescent lighting. These ceilings are worn, discolored, water stained, and need to be replaced.

A four-stop, 2500lb capacity, two-sided door, hydraulic elevator is provided in the old building; it has been upgraded to provide audible, visual, and tactile notifications as required by ADA. A new four stop hydraulic elevator is installed in the new addition, complete with all the latest ADA required features. Both units seem to be operating without issue. A single chair wheelchair lift is provided at the first floor entrance to the Music Room in the old building, providing accessibility, as the Music room is 8 risers down from the main floor.

Fixed furnishings consist of steel lockers and plastic laminate cabinets and shelves built into niches in the walls inside classrooms. The IMC (library) has built in wood bookcases along perimeter walls. Kitchen/cafeteria service equipment is stainless steel. Loose plastic laminate and metal storage casework and storage cabinets are utilized throughout the building. The MultiPurpose Room has a portable stage and loose, stackable chairs. The cafeteria has foldable table/chair units.

MECHANICAL SYSTEMS

Plumbing Fixtures – The New Addition is equipped with wall hung urinals (flush valve type), wall hung water closets (flush valve type), and wall hung lavatories with wheel handle faucets. The fixtures were installed in 2005 when the addition was constructed and do not need to be replaced at this time as they are relatively new. The bathrooms are also equipped with floor drains. The Original Wing is equipped with wall hung urinals (flush valve type), floor mount water closets (flush valve type), and wall hung lavatories with short lever handle faucets. These fixtures appear to have been replaced and do not appear to be the original fixtures. The bathrooms are also equipped with floor drains.

In the Building Addition electric water coolers are located in the corridors and at the restrooms. Drinking fountains are typically located at the bathroom groups. Most of the fixtures appear to be the original installed equipment. In the Original Wing there are wall hung electric water coolers (EWC) in the corridor located at the restroom locations. These fixtures do not appear to be the original fixtures and appear to have be replaced within the last ten years.

In the Building Addition, floor set service/mop sinks original and available throughout the building for use by the janitorial staff. Service sinks are located in the vicinity of the bathroom groups and drinking fountains. The sinks were installed in 2005 as part of the new construction and do not need to be replaced at this time. The Cafeteria's food prep/kitchen is equipped with one, triple compartment stainless steel sink with wheel handle operated faucets and its sanitary connection is served by a below floor grease trap. The kitchen is also equipped with a hand sink. The triple compartment wash sink (with lever handles) and hand sink (with lever handles) and double compartment sink with an indirect connection to a floor sink show signs of normal usage. The grease interceptor is accessible for maintenance. Chemicals are injected manually into the sanitizing basin. In the Original Wing floor set service/mop sinks are available throughout the building for use by the janitorial staff. Service sinks are located in the vicinity of the bathroom groups. These fixtures were installed in 1965 and have surpassed their service life and should be replaced.

Domestic Water Distribution – For the New Addition it appears that the 6" domestic water service piping is mostly soldered copper. Water service enters the building in the basement, with2, 6" double check backflow preventer (RPZA – reduced pressure zone assembly), however, a 4" water meter on the main line upon entering the building. The water meter appears to be new. The piping is

copper with soldered joints. The distribution piping was installed in 2005 and does not need to be inspected or replaced at this time based on the expected service life. The system is equipped with a domestic booster system with a storage tank and duplex pump assembly by Alyan Pump, 550 gpm, 80 feet head. The Original Wing water supply was not field verified.

The New Addition domestic water system is produced by two natural gas fired instantaneous Paloma water heaters, model PH24-M-DN and are located in the main boiler mechanical equipment room. The heater is rated for a maximum gas input of 178,000 bthu, minimum 37,000 btuh. The hot water system is equipped with a recirculation pump which circulates water into an existing original domestic hot water storage tank. Each water heater has an expansion tank installed. One heater serves the kitchen while the other serves the restrooms. The water heaters appear to be in satisfactory condition and should not need to be replaced for five years as they were installed in 2005 as part of the construction of the addition. The Original Wing domestic hot water is provided by one, Bradford White, natural gas fired vertical, 40 gallon, tank type heater, model MI403516FBN, 40,000 btuh input and was installed in 2007. The water heater should be replace in the next 5 -7 years. The system is equipped with an expansion tank, a circulating pump and P/T relief.

Sanitary Waste - The New Addition is cast iron, no hub piping and leaves the building by a duplex sewage ejection system. The sanitary piping system is within its service life and should not need inspection at this time. The sanitary waste piping system in the Original Wing is extra heavy cast iron with lead and oakum seals and appears to be the original piping installed in the building. It is therefore recommended to inspect this piping and repair or replace sections as needed. The sanitary system leaves the building by gravity.

Rain Water Drainage - The New Addition storm drainage consists of gutters and downspouts, roof drains and scuppers. The rain water drains from the roof of the Original Building are routed through mechanical chases in the building and connect to the underground site drainage system. There are no overflow scuppers for the Original Building. There is also a duplex sump pump in the main boiler mechanical equipment room for collection of any foundation drainage.

Energy Supply – For the New Addition duplex fuel oil supply pumps are available, the underground fuel oil storage is between an 8,000- 12,000 gallons tank is located the rear of the building's southeast corner. The system is equipped with a leak detection level monitoring system manufactured by Pneumercator. The system was in alarm at the time of our survey. . The natural gas main is welded, black steel piping while the branches are threaded, black steel. For the Original Wing the 8" gas service enters the main boiler mechanical equipment room and serves a 4 " service to the Original Wing and an 8 in service to the New Addition. Each branch is equipped with a booster system, the latter is located in the New Addition main mechanical boiler equipment room.. In addition in the Original Wing, the backup fuel supply for the boilers consist of two, 250 gallon, number 2 fuel oil storage tanks which are located in the main boiler mechanical equipment room. No tank monitoring gauges were noted.

Heat Generating Systems – In the New Addition, heating water is generated by two HB Smith 3,015 MBH, cast iron, sectional boilers, model 4500A-S/W-11 with dual fuel burners. Both boilers are equipped with Power Flame dual fuel burners, natural gas and number 2 fuel oil, model LNIC3-GO-25B, low NOX. The boilers were installed in 2005 as part of the building addition project. Both boilers have approximately 25 years of service life remaining. The draft system consist of an induced Auburn fan for each flue. There were combustion air dampers and louvers which would serve the boiler room to provide combustion air for the boiler operation. Burner oil pumps are driven by independent motors. The oil supply to the burner is equipped with dual solenoid valves and strainer/disposable media filter. The heating water pumping system is comprised of two constant volume base mounted end suction pumps manufactured by Armstrong serving as duty and stand by arrangement with 777 gpm, 42 feet head, 15 HP, 1800 rpm for the pump characteristics. The Original Wing heating system consists of two Weil McLain, cast iron, sectional natural gas fired water boilers, IBR 1419 MBH, model 788 series 88 with dual fuel burners. Both boilers are equipped with Gordon Piatt dual fuel burners, natural gas and number 2 fuel oil, model WR8.3-GO-15. The boilers and burners appear to be approximately 20 – 25 years old and have 10 years of service life based on this. The boiler mechanical equipment room appears to have transfer air available to meet the combustion air requirements. There are three, end suction base mounted, centrifugal, constant volume heating water pumps for the hot water system. The pumps are manufactured by Alyan, model number was illegible, 150 gpm, 55 feet head. All pumps are nearing the end of their service life and should be replaced within the next five years. The heating water is treated with 30 propylene glycol.

Cooling Generating Systems - In the New Addition is served by two, Carrier 30XAB2026J-OGJ73, with screw compressors and R134a refrigerant, located on the roof. The primary pumping loop consists of two Bell & Gossett, base mounted, end suction pumps, model 1510, 455 gpm, 80 feet head, 1800 rpm which serve the plate to plate heat exchanger. The chilled water system secondary loop is treated with ethyl glycol. The secondary loop pumps are Bell & Gossett, constant volume, base mounted vertical split case, model VSC, 960 gpm, 50 feet head. The Original Building is provided cooling with an air cooled chiller (model and manufacturer could not be determined due to over growth of vegetation near the unit). The chilled water pumps serving the chiller were two, Alyan constant volume pumps, 225 gpm, 50 feet head. The chiller tonnage more than likely is about 100 tons. The chiller and chilled water pumps appear to be roughly 20 years old and should be replaced within 5 years.

Distribution Systems – For the New Addition the heating and chilled water distribution piping is black steel with welded fittings. The

piping was installed in 2005 and has the majority of its service life remaining. The Original Wing chilled water and heating water supply and return piping consists of black steel with welded fittings. The piping system is at the end of its service life and the District should hire a qualified contractor to examine the distribution piping and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 5 years.

For the New Addition, fresh air is admitted into the building through the unit ventilators (manufactured by Carrier) and outside air intakes to air handling equipment. Ventilation air for the unit ventilators is induced into the spaces through the outside air intake grilles located in the building exterior wall which are ducted to the unit ventilators. Ventilation is also provided through the air handling unit systems serving the cafeteria, gymnasium and auditorium.

The New Addition uses unit ventilators with heating water and chilled water coils in the classrooms and hot water console fan coils, sloped top hot water convectors or hot water baseboard in the hallways, at stairwell entrances to the outdoors. Currently these units are the sole source of heat for these areas. The gymnasium in the New Addition is served by a modular, Series 39 rooftop unit with heating and ventilating unit with a steam heating coil. The RTU was installed as part of the New Addition and does not need to be replaced for 15 years. The RTU supplies air to the space through an overhead ducted supply and return system with supply registers and return air registers The RTU was installed as part of the New Addition and should not need to be replaced for 15 years.

The cafeteria in the New Addition is served by a rooftop unit with heating water and chilled water coils. The RTU is part of the New Addition construction, and should not need to be replaced for 15 years. Air is distributed into the cafeteria through louvered face 2x2 supply diffusers and is returned to the unit through return grilles located in the ceiling. The kitchen is provided with one exhaust hood. There is a make up air unit to serve the hood exhaust fans, consisting of a Sterling unit, model E1K-PV15C6C01L61L1AB3A5E3G3K2K5L1, 150,000 btuh input, 120,000 btuh output, date of manufacture 2005 The area which this unit serves could not be determined. There is an additional Sterling unit as well, model E1K-PV5OA6CO1M611R1AB3A5EG3K2K5L1, 500,000 btuh input, 400,000 btuh output, date of manufacture 2005. Proper air flow pressurization and balancing should be performed for the seating area with respect to the kitchen to maintain the kitchen under negative pressurization.

The multipurpose room/auditorium in the New Addition is served by a RTU with a heating water and chilled water coils. The RTU is part of the New Addition construction, and should not need to be replaced for 15 years. Air is distributed into the cafeteria through louvered face 2x2 supply diffusers and is returned to the unit through return grilles located in the ceiling. The Original Wing is served by three rooftop units. One unit has no nameplate data available while the other two units are Trane, model FCRA24500A6KA001Y and FCRA20000A6HA001Y. The units are equipped with heating water and chilled water coils. All three units are within 10 feet of the roof edge so guardrail protection is required.

Terminal & Package Units – In the New Addition, the kitchen hood exhaust fan is located on the roof. In the New Addition the restrooms are served by roof mounted exhaust fans. A split system serves the LAN room and the remotely located roof condenser is manufactured by EMI, model MC4D2220AAA0006, R22 refrigerant. This unit should be replaced with a lower GWP refrigerant unit. In the New Addition, slope top convection heaters serve the hallways, console convectors serve the stairwells and heating fan coil units are located at the entryways. In the Original Wing, there are roof mounted exhaust fans which serve the restrooms. The fans should be replaced. Horizontal electric unit heaters serve the stairwells in the Original Wing.

Controls & Instrumentation – In the New Addition controls are DDC. In the Original Wing, no controls were visible, so they are to be assumed to be DDC as well since an air compressor was not located in the areas that we accessed.

Sprinklers - The school building is covered by an automatic sprinkler system, both the New Addition and the Original Wing.In the New Addition, the building is served from the main which enters the Original Wing. The New Addition is equipped with a diesel 750 gpm fire pump, manufactured by Aurora, supplied by number 2 fuel oil stored in a 600 gallon tank residing in the fire pump room with the pump and controller. In the drop ceiling areas concealed drop down sprinkler heads are utilized. Upright sprinkler heads are used in open ceiling areas. The two kitchen hoods in the cafeteria in the New Addition are equipped with an Ansul fire suppression system. In the Original Wing, the 6” fire service enters through the main boiler mechanical equipment room. The incoming service piping is galvanized, black steel piping with mechanical joints. In the drop ceiling areas concealed drop down sprinkler heads are utilized.

ELECTRICAL SYSTEMS

Site Electrical Service of new wing of the building is from medium voltage overhead lines on wooden poles along Court Land St. One Pad mounted utility transformer with medium voltage primary (Voltage level unknown at this time) and 480/277VAC secondary and at an estimated available power of 300 KVA is installed outside the building for supplying power this building. The utility meter is located adjacent to the utility transformer. Main switchboard is rated at 2000A and located in the Electrical Room in the basement. There are two step down transformers (one at 225KVA, 480V to 208/120V and the other at 112.5KVA, 480V to 208/120V) have been provided for feeding the receptacle, and other 208 volts loads.

Electrical service and power distribution system of the original building is by 800A, 208/120V, 3PH, 4wire, distribution panel located in Custodial Office in the basement of the building. This distribution panel, which feeds all of the loads of this building is fed from a pad mounted utility transformer with medium voltage primary (Voltage level unknown at this time) and 208/120VAC secondary and at an available power of 300 KVA.

In general the service entrance and distribution system of both buildings are in a good condition thus no need for any upgrading or replacement.

There is sufficient number of receptacles installed in classrooms, officer, corridors and etc in both buildings. No major deficiencies observed.

Interior building is illuminated by various types of lighting fixtures. Corridors and Kitchen are illuminated by 2x4 lay in grid fluorescent lighting fixtures with T8 lamps. Boiler Room, electrical and fuel rooms by 1x4 surface/pendent mounted industrial fluorescent. Classrooms, auditorium, and cafeteria are provided with decorative uplight/downlight linear fluorescent. In general all existing lighting fixtures are in a good condition and building illumination is sufficient. Chiller area is not provided with lighting fixtures require by international mechanical cod.

The Fire Alarm system is addressable, and in compliance with minimum requirement of today's safety codes. The Smoke detection system consists of area and smoke detectors are provided in the school. Manual pull stations for fire notification are also provided in the corridors and at exit doors. Horn/strobes are installed in the library, corridors and offices as an alarm-initiating device and notification.

The telephone/LAN equipment/devices are provided in an IT room in the school school. The room was locked and inaccessible at the time of the field investigation. Computer room and some classrooms and offices are provided with telephone and data outlets. In general the school telephone and Local Area Network (LAN) system is functioning adequately. School also equipped with wifi system.

Separate PA system does not exist for public announcement. School uses the telephone systems for this purpose and working adequately. Separate sound system is provided in dining area and gymnasium and they are still in service.

Each classroom is provided by intercom telephone service. The system is permit paging and intercom communication between main office phone to classroom phones, and classroom to main office, classroom to classroom, and to office. Outside line access from a classroom phone through the PBX is blocked. The system is interfaces with master clock system for class change signaling utilizing paging speakers. The system also equipped with a tone generator and input from program/clock controller.

The present master clock system is not functioning. School is provided with time system controller consisting of a combination of clock and speaker installed on the wall in each classrooms and a master time programmer. The clocks are mostly damaged and not controlled properly by the central master controller. System is old and has exceeded its useful service life thus requiring replacement. The present bell system is working adequately.

Television System is not provided in the school.

The present security and video surveillance system is not adequate. School is provided with a few security cameras and monitoring small portion of the building. Corridors, kitchen, dining area, library, building entrances and exterior building are not fully protected. Some exterior cameras are damaged and might not be in service. The school desires a new complete video surveillance system with enough cameras for monitoring all the areas considered as a critical area such the ones mentioned above. The cameras should be controlled by a new Closed Circuit Television (CCTV) system and monitors from three different locations such as school security office, building engineer office and main office.

Emergency Power System is provided in the new wing of the school. A 100KW, 480/277V, 3PH, 4W diesel generator manufactured by "Detroit diesel" is installed in the boiler room for feeding the elevator, emergency lighting, exit signs and other critical emergency loads located in new wing of the building. The generator is new and in very good condition.

The source of power for servers in the building has not been verified for main IT room. Door was locked and inaccessible at the time of the field investigation. However it is assumed that servers in this building are to be supported by UPS and this assumption is based on similar installation.

Emergency lighting and exit lighting, is provided in corridors, library, auditorium, and exit ways and fed by the emergency backup generator in new wing of the building. Battery pack emergency lights are used in old wing of the building. In general exit signs are equipped with batteries and are in acceptable condition.

Lightning protection system is present in the school and is in compliance with NFPA 780 ((standard for the installation of lightning protection system).

Two hydraulic type elevator, are in operation at the school (one 30 horsepower rated in old wing of the building and one 25 horsepower rated in new wing of the building). The elevators appear to be working properly.

Stage lighting is provided with front lighting, upstage lighting, high-side lighting and backlighting. Stage lighting is controlling by dimmer bank during performances.

A sound system is provided in school auditorium and working properly.

Campus areas, parking areas, and building perimeters have lighting that is adequate for personnel safety and security of property.

Site Paging System is not provided in the school. Announcement cannot be heard in exterior building.

GROUNDS SYSTEMS

Paving and parking is asphalt and is very limited on this site. A small faculty parking lot to the west of the old building does not have the capacity to provide enough parking spaces for all faculty; it has some cracking and requires filling and sealing. Handicap parking spaces are located in this parking lot, but accessible route signage is needed to direct people to the main entrance. On the east side of the addition, there is a driveway that leads to an asphalt loading dock area. A retaining wall with a chain link fence forms the south side of this area. There is some settlement along the retaining wall in two locations (along the mechanical parking area and along the play area). Cracking along the section of wall in the mechanical parking area needs to be repaired. Along the concrete walkway that runs along the building, there is approximately 1" of settlement evident along the building.

The entire area within the space created by the old building and the new addition is paved in concrete and serves as a playground for the children. Exits from the main lobby, cafeteria, music studio and building corridors are provided. Fencing closes of the space creating a secure area for the children to congregate.

Steel chain link fencing surrounds the sides and rear of the site and is generally in good condition.

RECOMMENDATIONS

- Strip, clean and reseal concrete floors in old building mechanical rooms and stairways and new addition mechanical room. (7200sf)
- Repair concrete slab underneath cracking and delaminating terrazzo at old building stairway, then repair terrazzo – in area where new addition meets old building (200sf)
- Repair cracks in interior block walls in area where new addition meets old building (200sf)
- Repoint red brick on old building (200sf)
- Powerwash buff brick on old building and SE section under blue overhang on new building (2500sf)
- Replace all exterior windows in old building with insulated single hung units (114)3.5x6 and (44) 3.5x2
- Repaint all lintels over old windows in old building (550 ft)
- Replace exterior hollow metal doors on old building (4 3x7)
- Repaint exterior hollow metal doors and frames on new addition (9 3x7)
- Replace all roofing (38,919sf)
- Remove and reinstall all masonry to roof expansion joints where old building meets new building and along low roof intersection to masonry along E. Courtland Street on new addition (200 ft)
- Provide security hardware for classrooms and offices, locking from inside classroom; replace all in old building, replace some in new addition (40)
- Replace ceilings with water damage from leaks in new addition; replace old 2x4 ceilings in old building (18,400sf)
- Repair walls damaged by water leaks; repaint walls in old building (1000sf)
- Replace VCT in old building (16,000sf)
- Remove and replace stairway handrails and guards with code compliant systems in old building stairway 3 stories = 150ft
- Repaint 3 steel columns supporting exterior overhangs at entrance, courtyard and mech area (200sf)

MECHANICAL

- In the Original Wing replace service sinks (janitor sinks) in the building.
- In the Original Wing hire a qualified contractor to perform a detailed examination of the sanitary waste piping using visual

inspection and video cameras to locate and replace any damaged piping and to further quantify the extent of potential failures.
- In the New Addition add automatic sanitizing chemicals to the stainless steel sink in the cafeteria.
- In the Annex hire a qualified contractor to examine the heating and chilled water piping in service for 18 years and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.
- In the Original Wing replace chiller.
- In the Original Wing replace the chilled water pumps.
- In the Original Wing replace the heating water pumps.
- In the Original Wing replace exhaust fans.

ELECTRICAL

- Provide speaker on exterior wall and connect them to school paging system. Estimated 4 speakers
- Provide exterior lighting fixtures in chiller area. Estimated 2 LED lighting fixtures.
- Replace existing master clock system with a new wireless clock system.
- Replace existing video surveillance system with an adequate video surveillance system including camera and Closed Circuit Television (CCTV) system. Cameras should install in the corridors, school entrance doors and on the walls around the building in order to make fully protection to the school.

GROUNDS

- Crackfill and seal cracked section of faculty parking area (200lf; 11,000sf)
- Repair sunken asphalt area along retaining wall in mechanical a1rea and play area (200sf)
- Repair sunken concrete slabs outside mechanical room and in play area (300 sf)
- Repair cracked retaining wall (50sf)

Attributes:

General Attributes:

Active:	Open	Bldg Lot Tm:	Lot 4 / Tm 2
Status:	Accepted by SDP	Team:	Tm 2
Site ID:	S750001		

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	90.00 %	0.05 %	$1,607.30
A20 - Basement Construction	90.00 %	0.00 %	$0.00
B10 - Superstructure	90.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	84.53 %	13.08 %	$987,944.03
B30 - Roofing	50.08 %	90.86 %	$1,341,500.55
C10 - Interior Construction	85.95 %	0.33 %	$9,177.46
C20 - Stairs	90.00 %	1.46 %	$2,335.42
C30 - Interior Finishes	45.91 %	8.67 %	$509,356.17
D10 - Conveying	71.43 %	0.00 %	$0.00
D20 - Plumbing	69.32 %	17.74 %	$403,096.77
D30 - HVAC	61.13 %	24.19 %	$3,051,036.33
D40 - Fire Protection	71.43 %	0.00 %	$0.00
D50 - Electrical	49.47 %	10.44 %	$695,833.16
E10 - Equipment	71.43 %	0.00 %	$0.00
E20 - Furnishings	75.00 %	0.00 %	$0.00
G20 - Site Improvements	65.82 %	5.59 %	$32,930.59
G40 - Site Electrical Utilities	66.67 %	0.00 %	$0.00
Totals:	**70.87 %**	**11.93 %**	**$7,034,817.78**

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)
B750001;Feltonville Arts	113,391	12.04	$2,016,822.54	$1,551,379.83	$1,286,658.99	$330,559.95	$1,816,465.87
G750001;Grounds	45,200	4.19	$0.00	$32,216.68	$713.91	$0.00	$0.00
Total:		**11.93**	**$2,016,822.54**	**$1,583,596.51**	**$1,287,372.90**	**$330,559.95**	**$1,816,465.87**

Deficiencies By Priority

- 1 - Response Time (< 2 yr) - $2,016,822.54
- 2 - Response Time (2-3 yrs) - $1,583,596.51
- 3 - Response Time (3-4 yrs) - $1,287,372.90
- 4 - Response Time (4-5 yrs) - $330,559.95
- 5 - Response Time (> 5 yrs) - $1,816,465.87

Budget Estimate Total: $7,034,817.78

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):	113,391
Year Built:	1960
Last Renovation:	2005
Replacement Value:	$58,173,287
Repair Cost:	$7,001,887.18
Total FCI:	12.04 %
Total RSLI:	70.93 %

Description:

Attributes:

General Attributes:

Active:	Open	Bldg ID:	B750001
Sewage Ejector:	No	Status:	Accepted by SDP
Site ID:	S750001		

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	90.00 %	0.05 %	$1,607.30
A20 - Basement Construction	90.00 %	0.00 %	$0.00
B10 - Superstructure	90.00 %	0.00 %	$0.00
B20 - Exterior Enclosure	84.53 %	13.08 %	$987,944.03
B30 - Roofing	50.08 %	90.86 %	$1,341,500.55
C10 - Interior Construction	85.95 %	0.33 %	$9,177.46
C20 - Stairs	90.00 %	1.46 %	$2,335.42
C30 - Interior Finishes	45.91 %	8.67 %	$509,356.17
D10 - Conveying	71.43 %	0.00 %	$0.00
D20 - Plumbing	69.32 %	17.74 %	$403,096.77
D30 - HVAC	61.13 %	24.19 %	$3,051,036.33
D40 - Fire Protection	71.43 %	0.00 %	$0.00
D50 - Electrical	49.47 %	10.44 %	$695,833.16
E10 - Equipment	71.43 %	0.00 %	$0.00
E20 - Furnishings	75.00 %	0.00 %	$0.00
Totals:	**70.93 %**	**12.04 %**	**$7,001,887.18**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
A1010	Standard Foundations	$23.16	S.F.	113,391	100	2005	2105		90.00 %	0.00 %	90			$2,626,136
A1030	Slab on Grade	$5.17	S.F.	113,391	100	2005	2105		90.00 %	0.27 %	90		$1,607.30	$586,231
A2010	Basement Excavation	$4.36	S.F.	113,391	100	2005	2105		90.00 %	0.00 %	90			$494,385
A2020	Basement Walls	$10.05	S.F.	113,391	100	2005	2105		90.00 %	0.00 %	90			$1,139,580
B1010	Floor Construction	$85.94	S.F.	113,391	100	2005	2105		90.00 %	0.00 %	90			$9,744,823
B1020	Roof Construction	$9.26	S.F.	113,391	100	2005	2105		90.00 %	0.00 %	90			$1,050,001
B2010	Exterior Walls	$43.78	S.F.	113,391	100	2005	2105		90.00 %	0.38 %	90		$19,110.99	$4,964,258
B2020	Exterior Windows	$21.40	S.F.	113,391	40	2005	2045		75.00 %	38.20 %	30		$927,028.46	$2,426,567
B2030	Exterior Doors	$1.45	S.F.	113,391	25	2005	2030		60.00 %	25.43 %	15		$41,804.58	$164,417
B3010105	Built-Up	$37.76	S.F.	38,919	20	2005	2025		50.00 %	91.28 %	10		$1,341,500.55	$1,469,581
B3010120	Single Ply Membrane	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3010130	Preformed Metal Roofing	$54.22	S.F.		30				0.00 %	0.00 %				$0
B3010140	Shingle & Tile	$38.73	S.F.		20				0.00 %	0.00 %				$0
B3020	Roof Openings	$0.06	S.F.	113,391	30	2005	2035		66.67 %	0.00 %	20			$6,803
C1010	Partitions	$17.91	S.F.	113,391	100	2005	2105		90.00 %	0.00 %	90			$2,030,833
C1020	Interior Doors	$3.51	S.F.	113,391	40	2005	2045		75.00 %	2.31 %	30		$9,177.46	$398,002
C1030	Fittings	$3.12	S.F.	113,391	40	2005	2045		75.00 %	0.00 %	30			$353,780
C2010	Stair Construction	$1.41	S.F.	113,391	100	2005	2105		90.00 %	1.46 %	90		$2,335.42	$159,881

Site Assessment Report - B750001;Feltonville Arts

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
C3010230	Paint & Covering	$13.21	S.F.	113,391	10	2005	2015		0.00 %	0.57 %	0		$8,567.08	$1,497,895
C3010231	Vinyl Wall Covering	$0.97	S.F.		15				0.00 %	0.00 %				$0
C3010232	Wall Tile	$2.63	S.F.	113,391	30	2005	2035		66.67 %	0.00 %	20			$298,218
C3020411	Carpet	$7.30	S.F.	3,200	10	2005	2015		0.00 %	0.00 %	0			$23,360
C3020412	Terrazzo & Tile	$75.52	S.F.	10,200	50	2005	2055		80.00 %	0.43 %	40		$3,311.22	$770,304
C3020413	Vinyl Flooring	$9.68	S.F.	92,791	20	2005	2025		50.00 %	21.41 %	10		$192,280.51	$898,217
C3020414	Wood Flooring	$22.27	S.F.		25				0.00 %	0.00 %				$0
C3020415	Concrete Floor Finishes	$0.97	S.F.	7,200	50	2005	2055		80.00 %	396.34 %	40		$27,680.64	$6,984
C3030	Ceiling Finishes	$20.97	S.F.	113,391	25	2005	2030		60.00 %	11.67 %	15		$277,516.72	$2,377,809
D1010	Elevators and Lifts	$1.53	S.F.	113,391	35	2005	2040		71.43 %	0.00 %	25			$173,488
D2010	Plumbing Fixtures	$13.52	S.F.	113,391	35	2005	2040		71.43 %	1.33 %	25		$20,448.28	$1,533,046
D2020	Domestic Water Distribution	$1.68	S.F.	113,391	25	2005	2030		60.00 %	0.00 %	15			$190,497
D2030	Sanitary Waste	$2.52	S.F.	113,391	30	2005	2035		66.67 %	133.91 %	20		$382,648.49	$285,745
D2040	Rain Water Drainage	$2.32	S.F.	113,391	30	2005	2035		66.67 %	0.00 %	20			$263,067
D3020	Heat Generating Systems	$18.67	S.F.	113,391	35	2005	2040		71.43 %	9.40 %	25		$199,002.85	$2,117,010
D3030	Cooling Generating Systems	$24.48	S.F.	113,391	30	2005	2035		66.67 %	24.06 %	20		$667,838.88	$2,775,812
D3040	Distribution Systems	$42.99	S.F.	113,391	25	2005	2030		60.00 %	44.81 %	15		$2,184,194.60	$4,874,679
D3050	Terminal & Package Units	$11.60	S.F.	113,391	20	2005	2025		50.00 %	0.00 %	10			$1,315,336
D3060	Controls & Instrumentation	$13.50	S.F.	113,391	20	2005	2025		50.00 %	0.00 %	10			$1,530,779
D4010	Sprinklers	$7.05	S.F.	113,391	35	2005	2040		71.43 %	0.00 %	25			$799,407
D4020	Standpipes	$1.01	S.F.	113,391	35	2005	2040		71.43 %	0.00 %	25			$114,525
D5010	Electrical Service/Distribution	$9.70	S.F.	113,391	30	2005	2035	2035	66.67 %	0.00 %	20			$1,099,893
D5020	Lighting and Branch Wiring	$34.68	S.F.	113,391	20	2005	2025	2025	50.00 %	0.11 %	10		$4,419.29	$3,932,400
D5030	Communications and Security	$12.99	S.F.	113,391	15	2005	2020	2020	33.33 %	46.94 %	5		$691,413.87	$1,472,949
D5090	Other Electrical Systems	$1.41	S.F.	113,391	30	2005	2035	2035	66.67 %	0.00 %	20			$159,881
E1020	Institutional Equipment	$4.82	S.F.	113,391	35	2005	2040		71.43 %	0.00 %	25			$546,545
E1090	Other Equipment	$11.10	S.F.	113,391	35	2005	2040		71.43 %	0.00 %	25			$1,258,640
E2010	Fixed Furnishings	$2.13	S.F.	113,391	40	2005	2045		75.00 %	0.00 %	30			$241,523
								Total	**70.93 %**	**12.04 %**			**$7,001,887.18**	**$58,173,287**

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:
Painted walls 99%
Glazed block 1%

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

Note:
Concrete 7,200 6%
VCT - 92,791 82%
QT - 10,300 9%
Carpet - 3,200 3%

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

Note:
painted concrete, painted metal deck, painted gyp. = 10,800 10%
(assume all concrete floor spaces have no ceilings; includes old bldg. stairs)
acoustical tile = 102,591 90%

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:	**$7,001,887**	**$0**	**$0**	**$0**	**$0**	**$1,878,307**	**$0**	**$0**	**$0**	**$0**	**$15,769,952**	**$24,650,146**
*** 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	$1,607	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$1,607**
*** A20 - Basement Construction**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2010 - Basement Excavation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
A2020 - Basement Walls	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B - Shell	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B10 - Superstructure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1010 - Floor Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B1020 - Roof Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B20 - Exterior Enclosure	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B2010 - Exterior Walls	$19,111	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$19,111**
B2020 - Exterior Windows	$927,028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$927,028**
B2030 - Exterior Doors	$41,805	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$41,805**
B30 - Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010 - Roof Coverings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010105 - Built-Up	$1,341,501	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,172,495	**$3,513,995**
B3010120 - Single Ply Membrane	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010130 - Preformed Metal Roofing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3010140 - Shingle & Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
B3020 - Roof Openings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C - Interiors	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C10 - Interior Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C1010 - Partitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

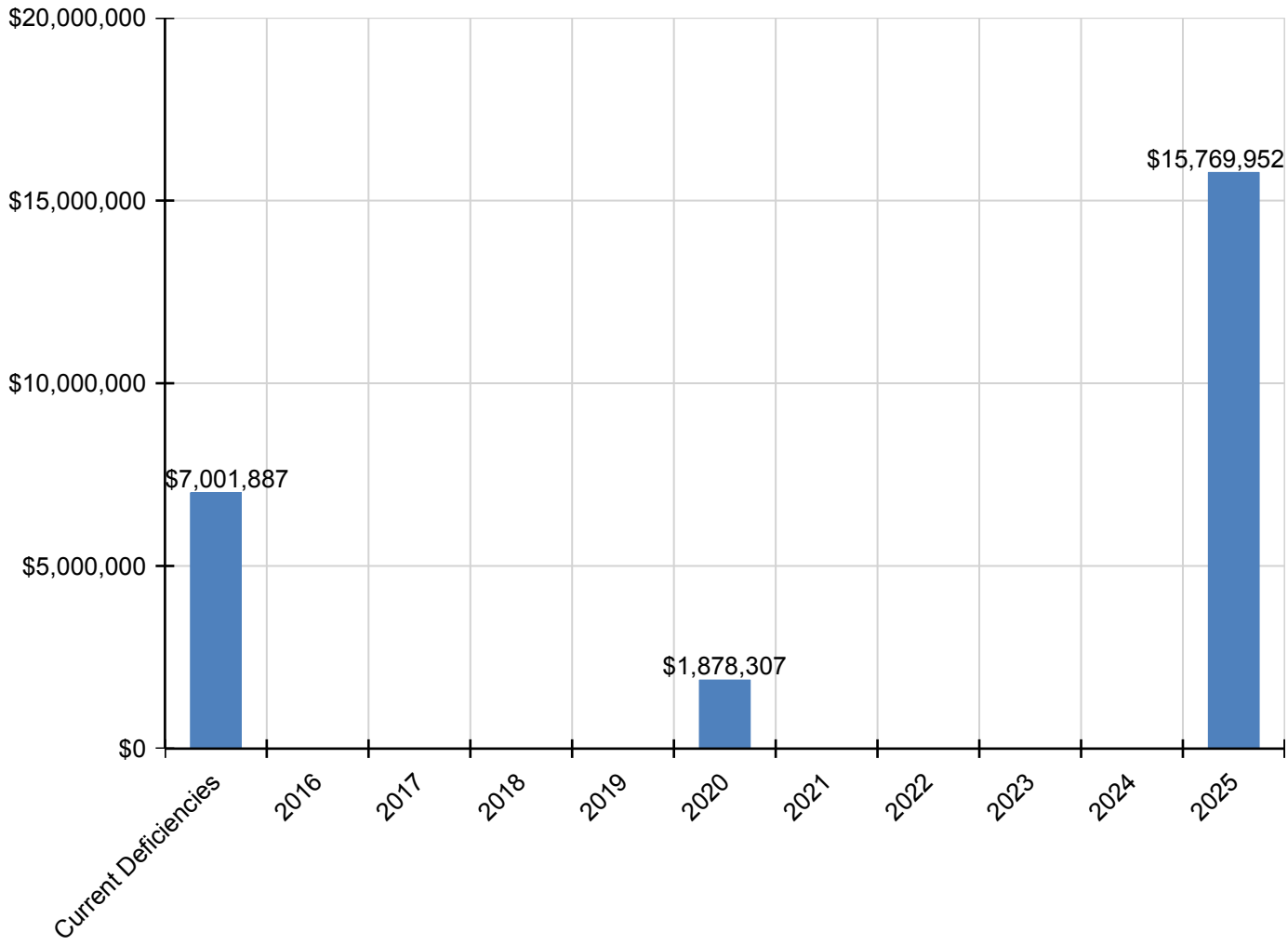
C1020 - Interior Doors	$9,177	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$9,177**
C1030 - Fittings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C20 - Stairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C2010 - Stair Construction	$2,335	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,335**
C30 - Interior Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010 - Wall Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010230 - Paint & Covering	$8,567	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,214,351	**$2,222,918**
C3010231 - Vinyl Wall Covering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3010232 - Wall Tile	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020 - Floor Finishes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020411 - Carpet	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$34,533	**$34,533**
C3020412 - Terrazzo & Tile	$3,311	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$3,311**
C3020413 - Vinyl Flooring	$192,281	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,327,842	**$1,520,122**
C3020414 - Wood Flooring	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
C3020415 - Concrete Floor Finishes	$27,681	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$27,681**
C3030 - Ceiling Finishes	$277,517	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$277,517**
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	$20,448	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$20,448**
D2020 - Domestic Water Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D2030 - Sanitary Waste	$382,648	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$382,648**
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	$199,003	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$199,003**
D3030 - Cooling Generating Systems	$667,839	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$667,839**
D3040 - Distribution Systems	$2,184,195	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$2,184,195**
D3050 - Terminal & Package Units	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,944,471	**$1,944,471**
D3060 - Controls & Instrumentation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,262,962	**$2,262,962**
D40 - Fire Protection	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4010 - Sprinklers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D4020 - Standpipes	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

D50 - Electrical	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5010 - Electrical Service/Distribution	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
D5020 - Lighting and Branch Wiring	$4,419	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,813,298	**$5,817,718**
D5030 - Communications and Security	$691,414	$0	$0	$0	$0	$1,878,307	$0	$0	$0	$0	$0	**$2,569,721**
D5090 - Other Electrical Systems	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E - Equipment & Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E10 - Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1020 - Institutional Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E1090 - Other Equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E20 - Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
E2010 - Fixed Furnishings	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

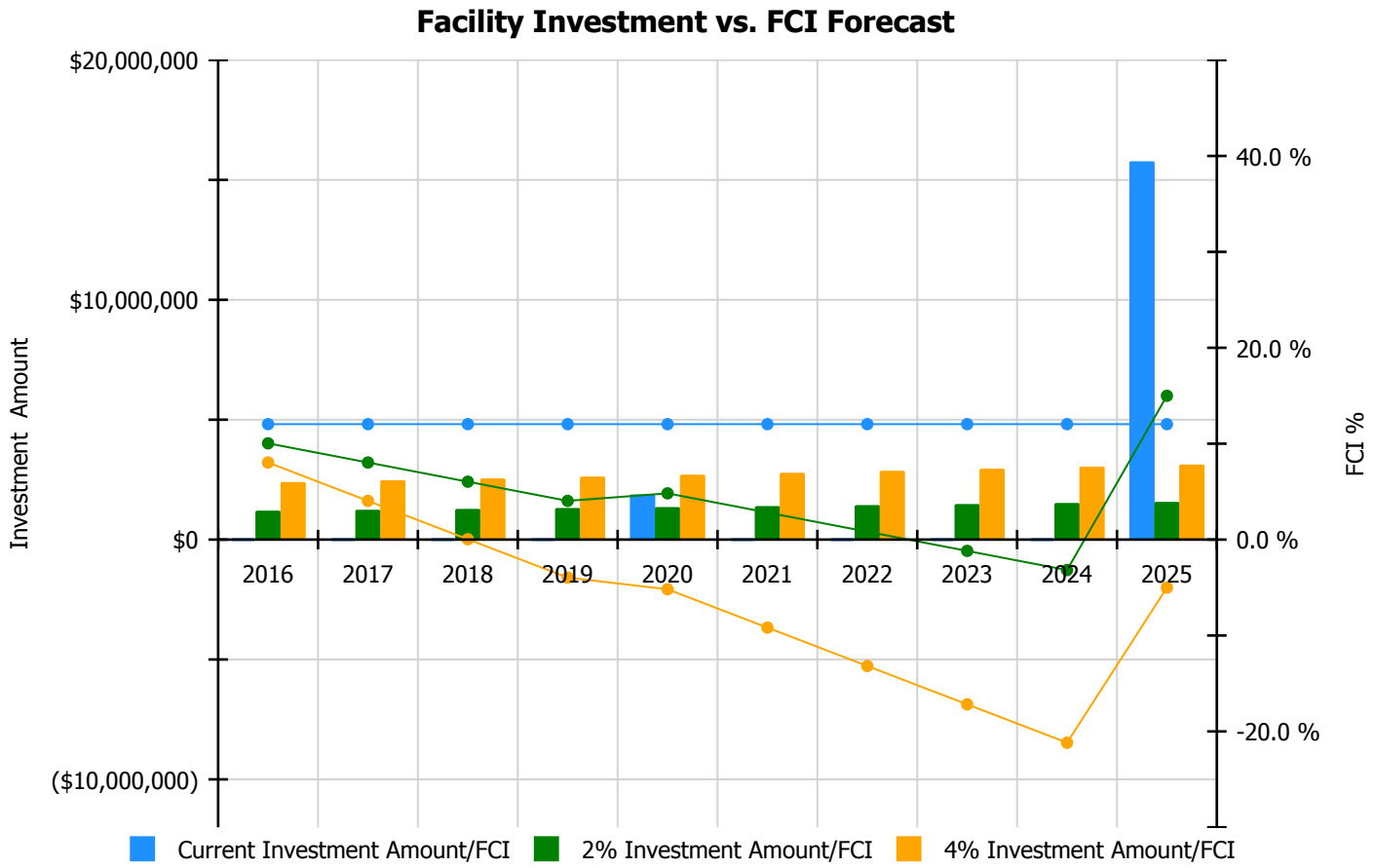
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

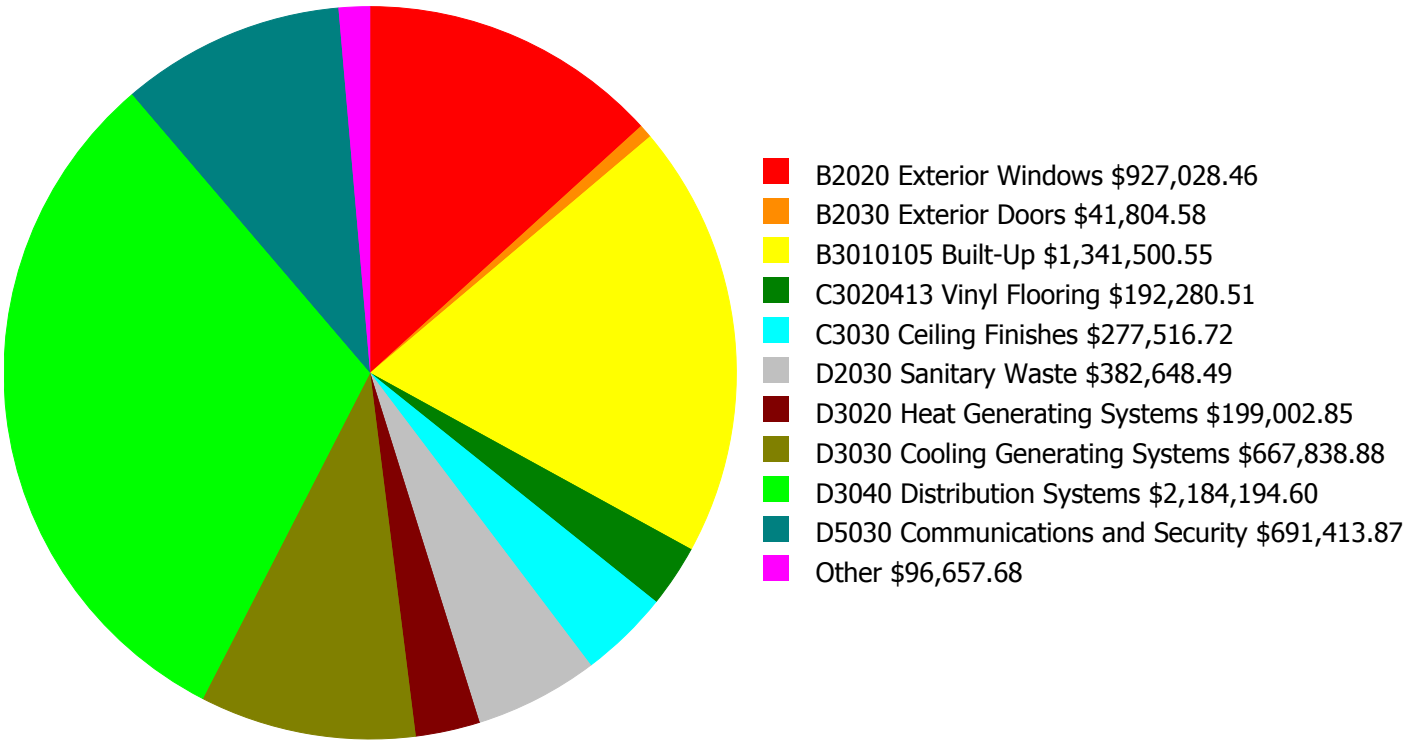
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 12.04%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$1,198,370.00	10.04 %	$2,396,739.00	8.04 %
2017	$0	$1,234,321.00	8.04 %	$2,468,642.00	4.04 %
2018	$0	$1,271,350.00	6.04 %	$2,542,701.00	0.04 %
2019	$0	$1,309,491.00	4.04 %	$2,618,982.00	-3.96 %
2020	$1,878,307	$1,348,776.00	4.82 %	$2,697,551.00	-5.18 %
2021	$0	$1,389,239.00	2.82 %	$2,778,478.00	-9.18 %
2022	$0	$1,430,916.00	0.82 %	$2,861,832.00	-13.18 %
2023	$0	$1,473,844.00	-1.18 %	$2,947,687.00	-17.18 %
2024	$0	$1,518,059.00	-3.18 %	$3,036,118.00	-21.18 %
2025	$15,769,952	$1,563,601.00	14.99 %	$3,127,201.00	-5.01 %
Total:	**$17,648,258**	**$13,737,967.00**		**$27,475,931.00**	

Deficiency Summary by System

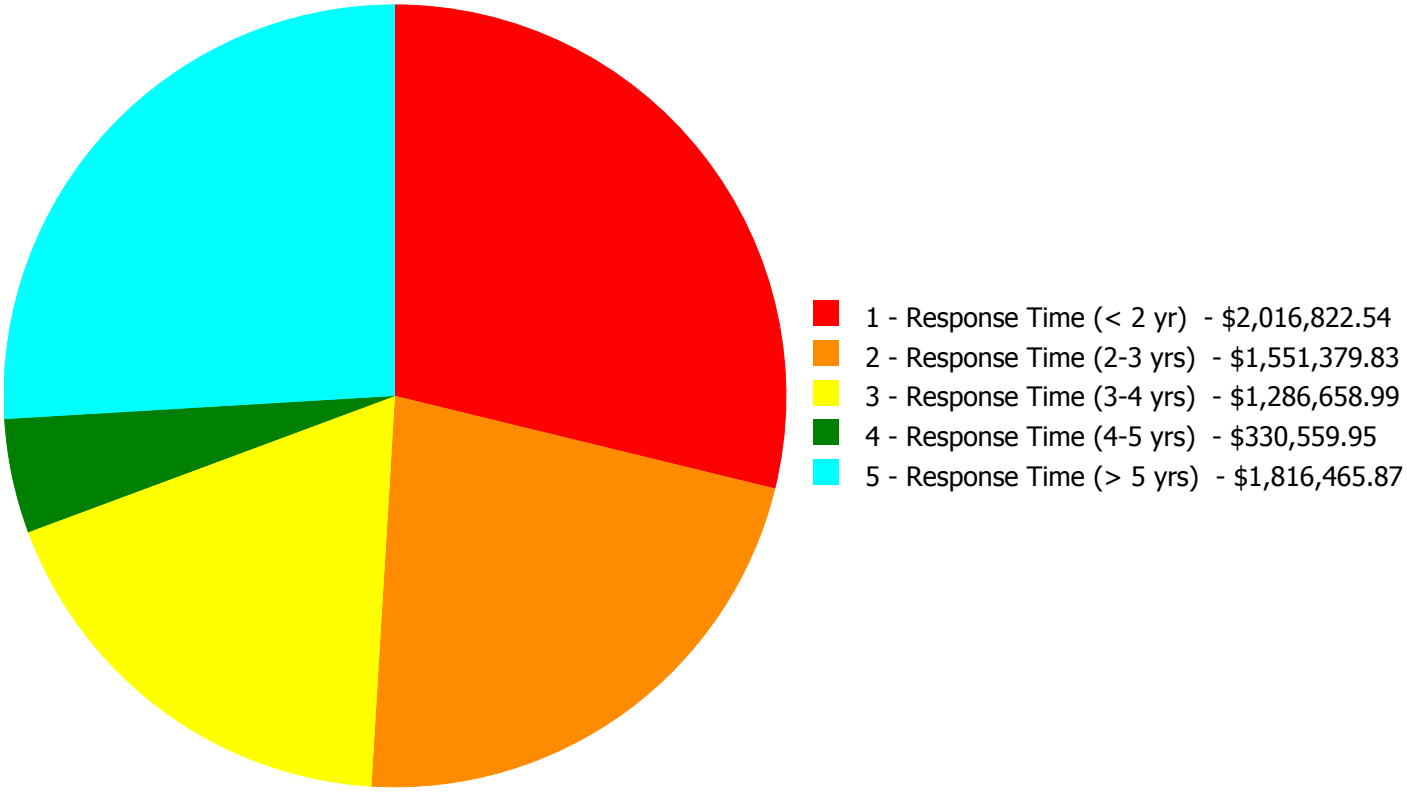
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $7,001,887.18

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: $7,001,887.18

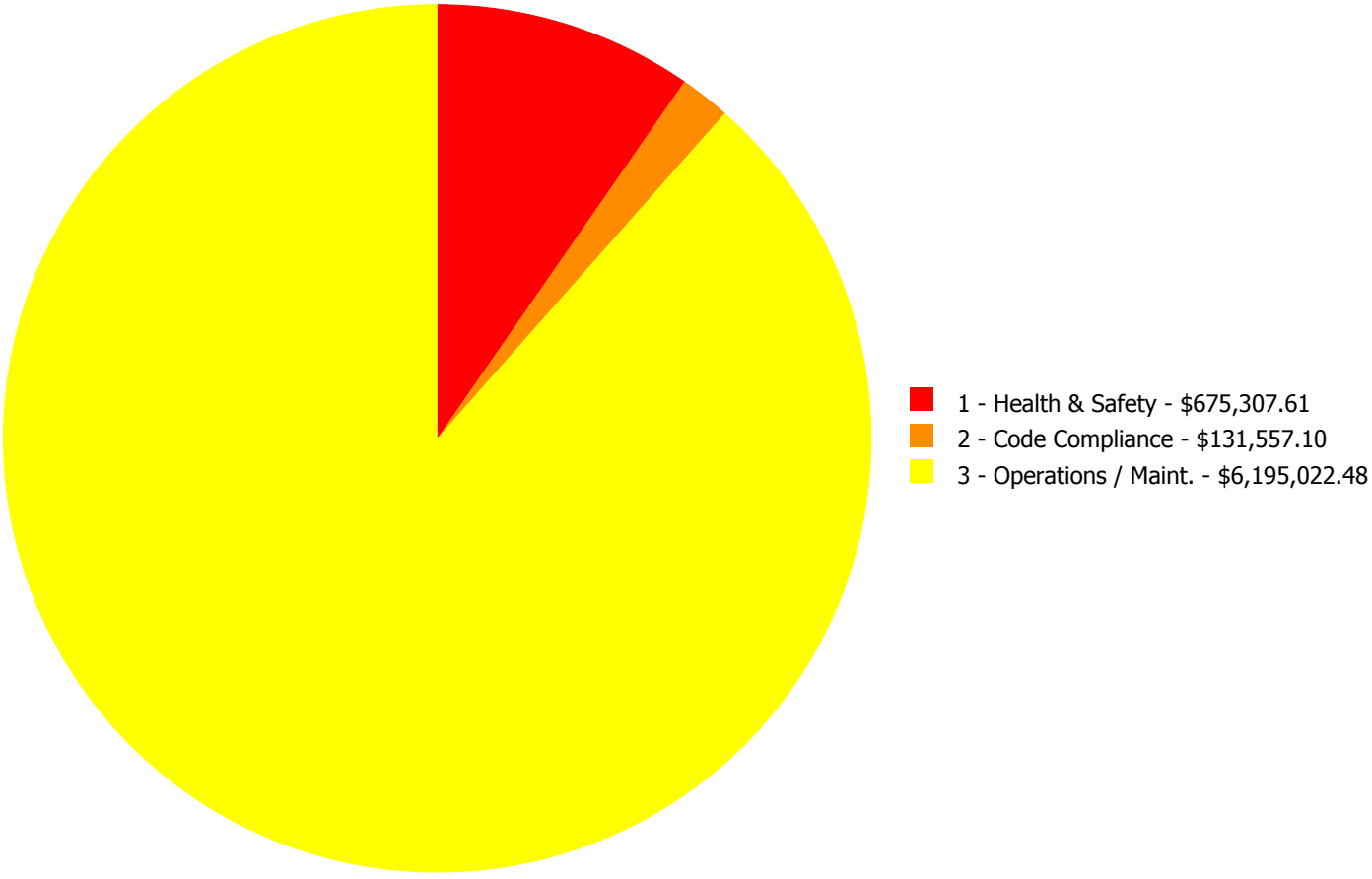
Deficiency By Priority Investment Table

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
A1030	Slab on Grade	$0.00	$1,607.30	$0.00	$0.00	$0.00	$1,607.30
B2010	Exterior Walls	$0.00	$19,110.99	$0.00	$0.00	$0.00	$19,110.99
B2020	Exterior Windows	$0.00	$927,028.46	$0.00	$0.00	$0.00	$927,028.46
B2030	Exterior Doors	$0.00	$41,804.58	$0.00	$0.00	$0.00	$41,804.58
B3010105	Built-Up	$1,318,653.96	$22,846.59	$0.00	$0.00	$0.00	$1,341,500.55
C1020	Interior Doors	$0.00	$9,177.46	$0.00	$0.00	$0.00	$9,177.46
C2010	Stair Construction	$2,335.42	$0.00	$0.00	$0.00	$0.00	$2,335.42
C3010230	Paint & Covering	$0.00	$8,567.08	$0.00	$0.00	$0.00	$8,567.08
C3020412	Terrazzo & Tile	$0.00	$3,311.22	$0.00	$0.00	$0.00	$3,311.22
C3020413	Vinyl Flooring	$0.00	$192,280.51	$0.00	$0.00	$0.00	$192,280.51
C3020415	Concrete Floor Finishes	$0.00	$27,680.64	$0.00	$0.00	$0.00	$27,680.64
C3030	Ceiling Finishes	$0.00	$277,516.72	$0.00	$0.00	$0.00	$277,516.72
D2010	Plumbing Fixtures	$0.00	$20,448.28	$0.00	$0.00	$0.00	$20,448.28
D2030	Sanitary Waste	$0.00	$0.00	$382,648.49	$0.00	$0.00	$382,648.49
D3020	Heat Generating Systems	$0.00	$0.00	$0.00	$199,002.85	$0.00	$199,002.85
D3030	Cooling Generating Systems	$0.00	$0.00	$536,281.78	$131,557.10	$0.00	$667,838.88
D3040	Distribution Systems	$0.00	$0.00	$367,728.72	$0.00	$1,816,465.87	$2,184,194.60
D5020	Lighting and Branch Wiring	$4,419.29	$0.00	$0.00	$0.00	$0.00	$4,419.29
D5030	Communications and Security	$691,413.87	$0.00	$0.00	$0.00	$0.00	$691,413.87
	Total:	$2,016,822.54	$1,551,379.83	$1,286,658.99	$330,559.95	$1,816,465.87	$7,001,887.18

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: $7,001,887.18

Deficiency Details by Priority

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

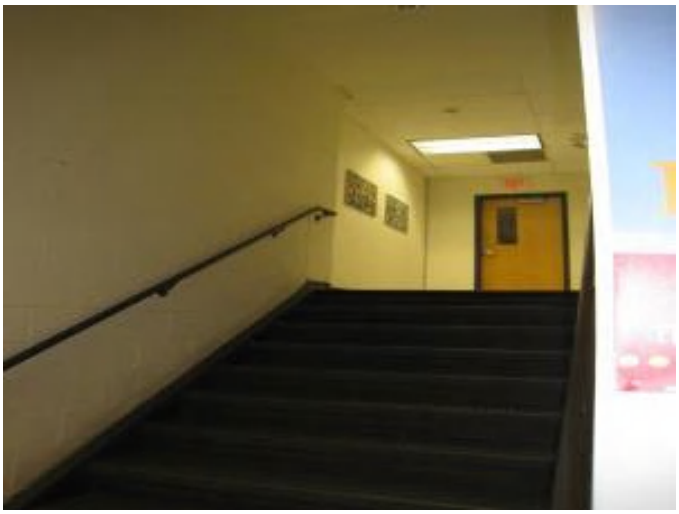
Priority 1 - Response Time (< 2 yr):

System: B3010105 - Built-Up

Location: roofs - all
Distress: Failing
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Remove and Replace Built Up Roof
Qty: 38,919.00
Unit of Measure: S.F.
Estimate: $1,318,653.96
Assessor Name: Steven Litman
Date Created: 01/15/2016

Notes: Replace all roofing (38,919sf)

System: C2010 - Stair Construction



Location: old building stairway
Distress: Building / MEP Codes
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Replace inadequate or install proper stair railing - select appropriate material
Qty: 150.00
Unit of Measure: L.F.
Estimate: $2,335.42
Assessor Name: Steven Litman
Date Created: 01/15/2016

Notes: Remove and replace stairway handrails and guards with code compliant systems in old building stairway 3 stories = 150ft

System: D5020 - Lighting and Branch Wiring

Location: Chiller Area

Distress: Life Safety / NFPA / PFD

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Add Exterior Lighting

Qty: 1.00

Unit of Measure: Ea.

Estimate: $4,419.29

Assessor Name: Steven Litman

Date Created: 12/28/2015

Notes: Provide exterior lighting fixtures in chiller area. Estimated 2 LED lighting fixtures.

System: D5030 - Communications and Security

Location: Entire Building

Distress: Security Issue

Category: 1 - Health & Safety

Priority: 1 - Response Time (< 2 yr)

Correction: Add/Replace Video Surveillance System

Qty: 1.00

Unit of Measure: Ea.

Estimate: $631,280.12

Assessor Name: Steven Litman

Date Created: 01/25/2016

Notes: Replace existing video surveillance system with an adequate video surveillance system including camera and Closed Circuit Television (CCTV) system. Cameras should install in the corridors, school entrance doors and on the walls around the building in order to make fully protection to the school.

System: D5030 - Communications and Security

Location: B750001;Feltonville Arts
Distress: Life Safety / NFPA / PFD
Category: 1 - Health & Safety
Priority: 1 - Response Time (< 2 yr)
Correction: Add/Replace Sound System
Qty: 1.00
Unit of Measure: LS
Estimate: $30,430.74
Assessor Name: Steven Litman
Date Created: 11/24/2015

Notes: Provide speaker on exterior wall and connect them to school paging system. Estimated 4 speakers

System: D5030 - Communications and Security

Location: Entire Building
Distress: Damaged
Category: 3 - Operations / Maint.
Priority: 1 - Response Time (< 2 yr)
Correction: Add/Replace Clock System or Components
Qty: 1.00
Unit of Measure: Ea.
Estimate: $29,703.01
Assessor Name: Steven Litman
Date Created: 12/28/2015

Notes: Replace existing master clock system with a new wireless clock system.

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

System: A1030 - Slab on Grade

Location: lobby

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair cracks in slab on grade floor - based on SF of floor and LF of crack repair - insert proper quantities in the estimate

Qty: 200.00

Unit of Measure: S.F.

Estimate: $1,607.30

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repair concrete slab underneath cracking and delaminating terrazzo at old building stairway, then repair terrazzo – in area where new addition meets old building (200sf)

System: B2010 - Exterior Walls

Location: old building, south wall, one story sectioin

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair cracks in masonry - replace missing mortar and repoint - SF of wall area

Qty: 200.00

Unit of Measure: S.F.

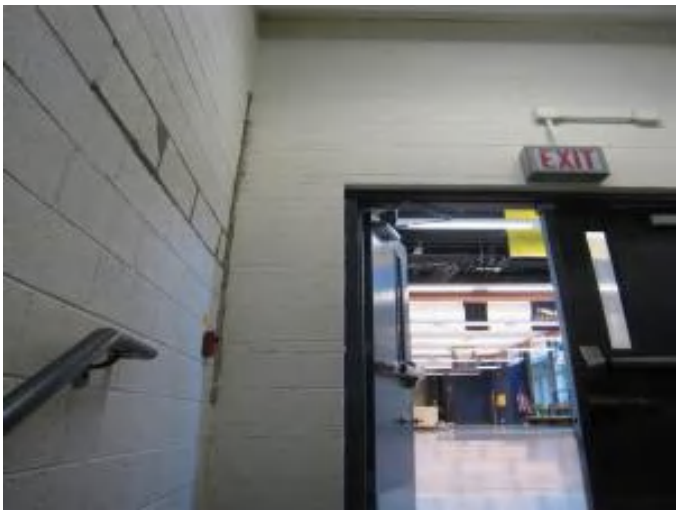
Estimate: $6,457.90

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repoint red brick on old building (200sf)

System: B2010 - Exterior Walls



Location: old-new bldg intersection

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Repair cracks in masonry - replace missing mortar and repoint - SF of wall area

Qty: 200.00

Unit of Measure: S.F.

Estimate: $4,225.44

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repair cracks in interior block walls in area where new addition meets old building (200sf)

System: B2010 - Exterior Walls

Location: old building, lintels

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Prepare and paint exterior steel beams or steel surfaces

Qty: 550.00

Unit of Measure: S.F.

Estimate: $4,175.09

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repaint all lintels over old windows in old building (550 ft)

System: B2010 - Exterior Walls

Location: old building, street facade

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Sooty and dirty walls - powerwash

Qty: 2,500.00

Unit of Measure: S.F.

Estimate: $2,734.34

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Powerwash buff brick on old building and SE section under blue overhang on new building (2500sf)

System: B2010 - Exterior Walls

Location: steel columns at entrance, courtyard, and mech area

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Prepare and paint exterior steel beams or steel surfaces

Qty: 200.00

Unit of Measure: S.F.

Estimate: $1,518.22

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repaint 5 steel columns supporting exterior overhangs at entrance, courtyard, mech area (200sf)

System: B2020 - Exterior Windows

Location: old building, exterior windows

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 158.00

Unit of Measure: Ea.

Estimate: $927,028.46

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Replace all exterior windows in old building with insulated single hung units (114)3.5x6 and (44) 3.5x2

System: B2030 - Exterior Doors

Location: old building exterior doors

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace exterior doors - per leaf

Qty: 4.00

Unit of Measure: Ea.

Estimate: $36,429.28

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Replace exterior hollow metal doors on old building (4 3x7)

System: B2030 - Exterior Doors

Location: new addition, exterior metal doors

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Refinish and repaint exterior doors - per leaf

Qty: 9.00

Unit of Measure: Ea.

Estimate: $5,375.30

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repaint exterior hollow metal doors and frames on new addition (9 3x7)

System: B3010105 - Built-Up

Location: roof / masonry wall intersection

Distress: Building Envelope Integrity

Category: 3 - Operations / Maint.

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

Correction: Remove and replace roof level bellows (expansion joints)

Qty: 200.00

Unit of Measure: L.F.

Estimate: $22,846.59

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Remove and reinstall all masonry to roof expansion joints where old building meets new building and along low roof intersection to masonry along E. Courtland Street on new addition (200 ft)

System: C1020 - Interior Doors

Location: classroom and office doors on corridor

Distress: Security Issue

Category: 1 - Health & Safety

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

Correction: Provide security hardware for classroom and office doors

Qty: 40.00

Unit of Measure: Ea.

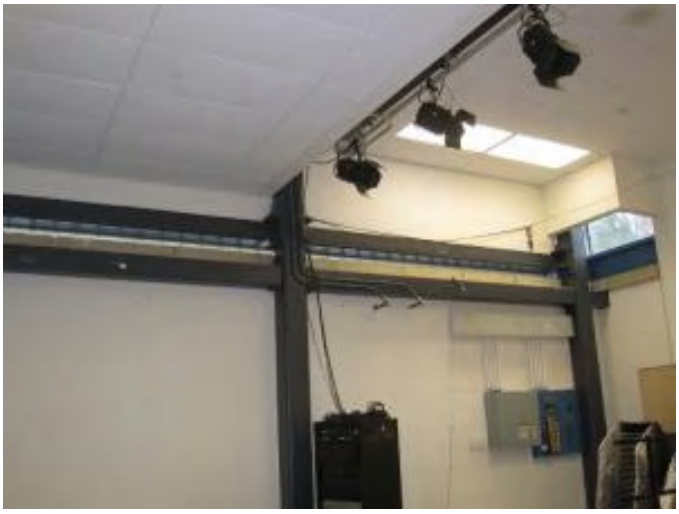
Estimate: $9,177.46

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Provide security hardware for classrooms and offices, locking from inside classroom; replace all in old building, replace some in new addition (40)

System: C3010230 - Paint & Covering



Location: water damaged walls

Distress: Damaged

Category: 3 - Operations / Maint.

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

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

Qty: 1,000.00

Unit of Measure: S.F.

Estimate: $8,567.08

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repair walls damaged by water leaks; repaint walls in old building (1000sf)

System: C3020412 - Terrazzo & Tile

Location: lobby

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Remove and replace terazzo or tile flooring - pick the appropriate material

Qty: 200.00

Unit of Measure: S.F.

Estimate: $3,311.22

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repair concrete slab underneath cracking and delaminating terrazzo at old building stairway, then repair terrazzo – in area where new addition meets old building (200sf)

System: C3020413 - Vinyl Flooring

Location: old building floor

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Remove and replace VCT

Qty: 16,000.00

Unit of Measure: S.F.

Estimate: $192,280.51

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Replace VCT in old building (16,000sf)

System: C3020415 - Concrete Floor Finishes

Location: old building basement and stairs

Distress: Appearance

Category: 3 - Operations / Maint.

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

Correction: Clean and reseal concrete floors

Qty: 7,200.00

Unit of Measure: S.F.

Estimate: $27,680.64

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Strip, clean and reseal concrete floors in old building mechanical rooms and stairways and new addition mechanical room. (7200sf)

System: C3030 - Ceiling Finishes

Location: ceilings

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 18,400.00

Unit of Measure: S.F.

Estimate: $277,516.72

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Replace ceilings with water damage from leaks in new addition; replace old 2x4 ceilings in old building (18,400sf)

System: D2010 - Plumbing Fixtures

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Remove and replace floor janitor or mop sink - insert the quantity

Qty: 3.00

Unit of Measure: Ea.

Estimate: $20,448.28

Assessor Name: Carlton Ross

Date Created: 02/08/2016

Notes: In the Original Wing replace service sinks (janitor sinks) in the building.

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

System: D2030 - Sanitary Waste

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

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

Qty: 78,000.00

Unit of Measure: S.F.

Estimate: $382,648.49

Assessor Name: Carlton Ross

Date Created: 02/08/2016

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

System: D3030 - Cooling Generating Systems

This deficiency has no image.

Location: Adjacent to building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace chiller, air-cooled (130 tons)

Qty: 1.00

Unit of Measure: Ea.

Estimate: $536,281.78

Assessor Name: Carlton Ross

Date Created: 02/08/2016

Notes: In the Original Wing replace chiller.

System: D3040 - Distribution Systems

Location: Roof

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace power roof ventilator (36" dia.)

Qty: 4.00

Unit of Measure: Ea.

Estimate: $367,728.72

Assessor Name: Carlton Ross

Date Created: 02/08/2016

Notes: In the Original Wing replace exhaust fans.

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

System: D3020 - Heat Generating Systems

Location: Main boiler mechanical equipment room

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

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

Correction: Replace pump, base-mounted, end suction HHW (3" size, 5 HP, to 225 GPM)

Qty: 3.00

Unit of Measure: Ea.

Estimate: $199,002.85

Assessor Name: Carlton Ross

Date Created: 02/08/2016

Notes: In the Original Wing replace the heating water pumps

System: D3030 - Cooling Generating Systems

Location: Main boiler mechanical room

Distress: Beyond Service Life

Category: 2 - Code Compliance

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

Correction: Replace base mounted, end suction CHW pump (3" size, 5 HP, to 225 GPM)

Qty: 2.00

Unit of Measure: Ea.

Estimate: $131,557.10

Assessor Name: Carlton Ross

Date Created: 02/08/2016

Notes: In the Original Wing replace the chilled water pumps.

Priority 5 - Response Time (> 5 yrs):

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace chilled water distribution piping (75KSF)

Qty: 78,000.00

Unit of Measure: S.F.

Estimate: $1,048,601.68

Assessor Name: Carlton Ross

Date Created: 02/08/2016

Notes: In the Original Building hire a qualified contractor to examine the chilled water piping in service for 25 years and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

System: D3040 - Distribution Systems

Location: Throughout the building

Distress: Beyond Service Life

Category: 3 - Operations / Maint.

Priority: 5 - Response Time (> 5 yrs)

Correction: Replace hydronic heating piping (75KSF)

Qty: 78,000.00

Unit of Measure: S.F.

Estimate: $767,864.19

Assessor Name: Carlton Ross

Date Created: 02/08/2016

Notes: In the Original Building hire a qualified contractor to examine the heating water piping in service for 25 years and perform additional testing to locate and replace any damaged piping and to further quantify the extent of potential failures. The District should budget for replacing this piping over the next 10 years.

Equipment Inventory

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

Subsystem	Inventory	Qty	UoM	Location	Manufacturer	Model Number	Serial Number	Barcode	Life	Install Date	Next Renewal	Raw Cost	Inventory Cost
D1010 Elevators and Lifts	Hydraulic, passenger elevator, 1500 lb, 2 floors, 100 FPM	1.00	Ea.	Old Building					30	2005	2035	$68,985.00	$75,883.50
D1010 Elevators and Lifts	Hydraulic, passenger elevator, 3000 lb, 2 floors, 100 FPM	1.00	Ea.	New Building					30	2005	2035	$73,815.00	$81,196.50
D5010 Electrical Service/Distribution	Switchboards, pressure switch, 4 wire, with ground fault, 277/480 V, 2000 amp, incl CT compartment, excl CT's or PT's	1.00	Ea.	Electrical Room					30	2005	2035	$38,005.20	$41,805.72
D5010 Electrical Service/Distribution	Switchboards, pressure switch, bolted, 3 pole, 4 wire, 120/208 or 120/240 V, 800 amp	1.00	Ea.	Custodial Office					30	2005	2035	$12,544.20	$13,798.62
												Total:	**$212,684.34**

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):	45,200
Year Built:	2005
Last Renovation:	
Replacement Value:	$785,912
Repair Cost:	$32,930.59
Total FCI:	4.19 %
Total RSLI:	66.03 %

Description:

Attributes:

General Attributes:

Bldg ID:	S750001	Site ID:	S750001

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	65.82 %	5.59 %	$32,930.59
G40 - Site Electrical Utilities	66.67 %	0.00 %	$0.00
Totals:	**66.03 %**	**4.19 %**	**$32,930.59**

Condition Detail

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

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

System Listing

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

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

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

System Code	System Description	Unit Price $	UoM	Qty	Life	Year Installed	Calc Next Renewal Year	Next Renewal Year	RSLI%	FCI%	RSL	eCR	Deficiency $	Replacement Value $
G2010	Roadways	$11.52	S.F.		30	2005	2035		66.67 %	0.00 %	20			$0
G2020	Parking Lots	$7.65	S.F.	10,800	30	2005	2035		66.67 %	16.69 %	20		$13,785.54	$82,620
G2030	Pedestrian Paving	$11.52	S.F.	23,200	40	2005	2045		75.00 %	1.61 %	30		$4,314.85	$267,264
G2040	Site Development	$4.36	S.F.	45,200	25	2005	2030		60.00 %	7.53 %	15		$14,830.20	$197,072
G2050	Landscaping & Irrigation	$3.78	S.F.	11,200	15	2005	2020		33.33 %	0.00 %	5			$42,336
G4020	Site Lighting	$3.58	S.F.	45,200	30	2005	2035		66.67 %	0.00 %	20			$161,816
G4030	Site Communications & Security	$0.77	S.F.	45,200	30	2005	2035		66.67 %	0.00 %	20			$34,804
								Total	**66.03 %**	**4.19 %**			**$32,930.59**	**$785,912**

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.

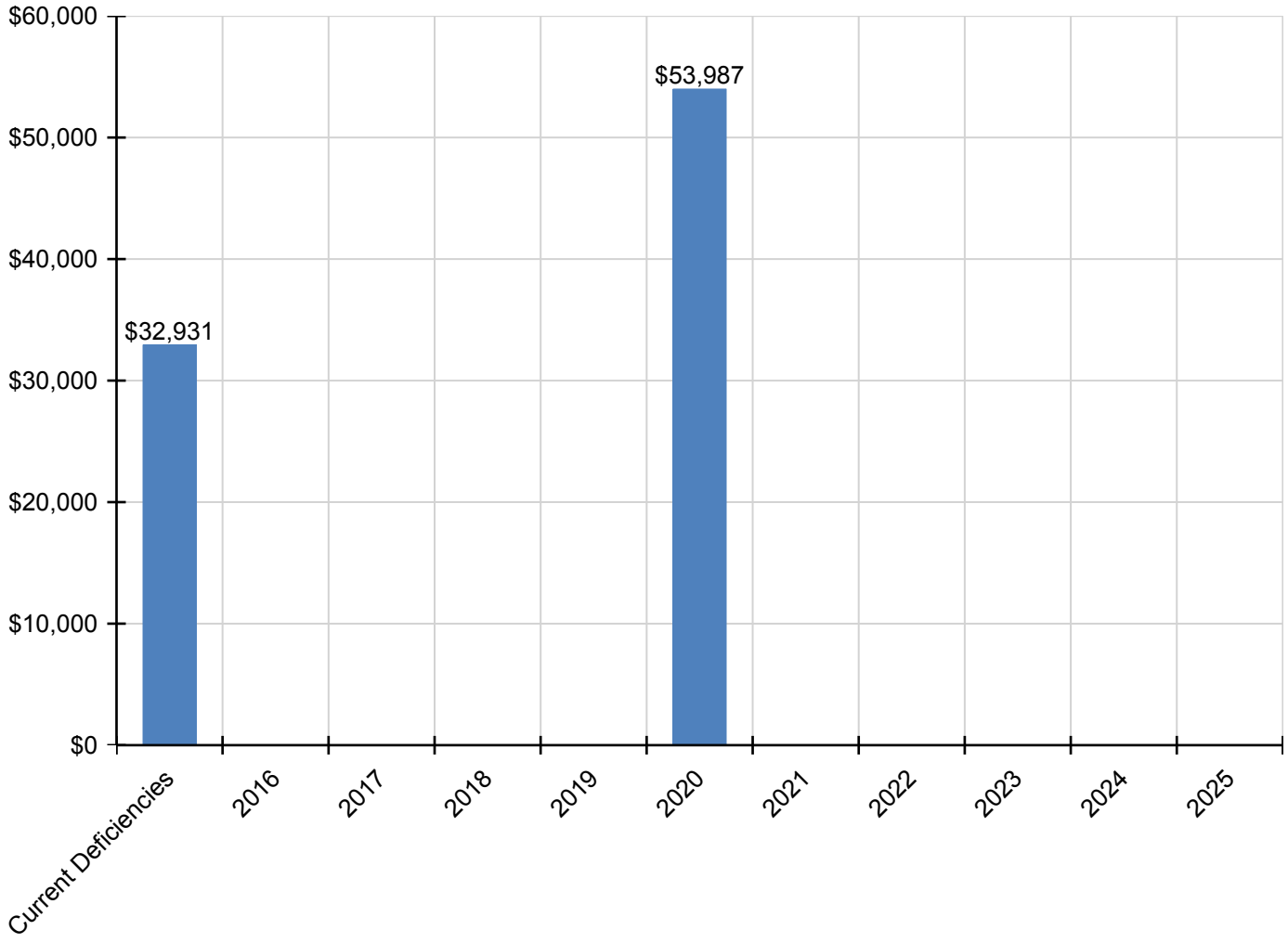
Inflation Rate: 3%

System	Current Deficiencies	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total:	**$32,931**	**$0**	**$0**	**$0**	**$0**	**$53,987**	**$0**	**$0**	**$0**	**$0**	**$0**	**$86,918**
G - Building Sitework	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G20 - Site Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2010 - Roadways	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G2020 - Parking Lots	$13,786	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$13,786**
G2030 - Pedestrian Paving	$4,315	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$4,315**
G2040 - Site Development	$14,830	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$14,830**
G2050 - Landscaping & Irrigation	$0	$0	$0	$0	$0	$53,987	$0	$0	$0	$0	$0	**$53,987**
G40 - Site Electrical Utilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4020 - Site Lighting	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**
G4030 - Site Communications & Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	**$0**

** Indicates non-renewable system*

Forecasted Sustainment Requirement

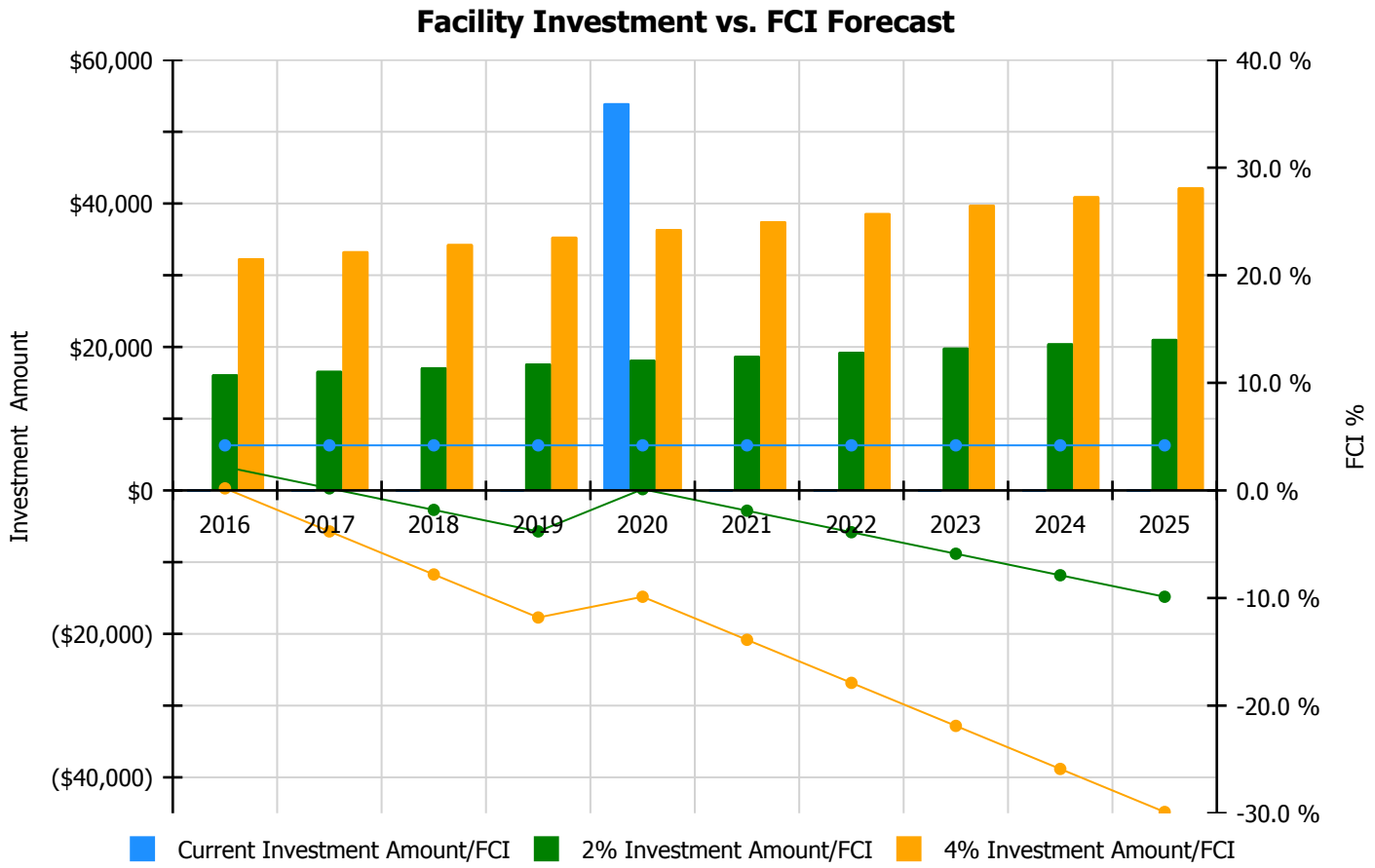
The following chart shows the current building deficiencies and forecasting sustainment requirements over the next ten years.



10 Year FCI Forecast by Investment Scenario

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

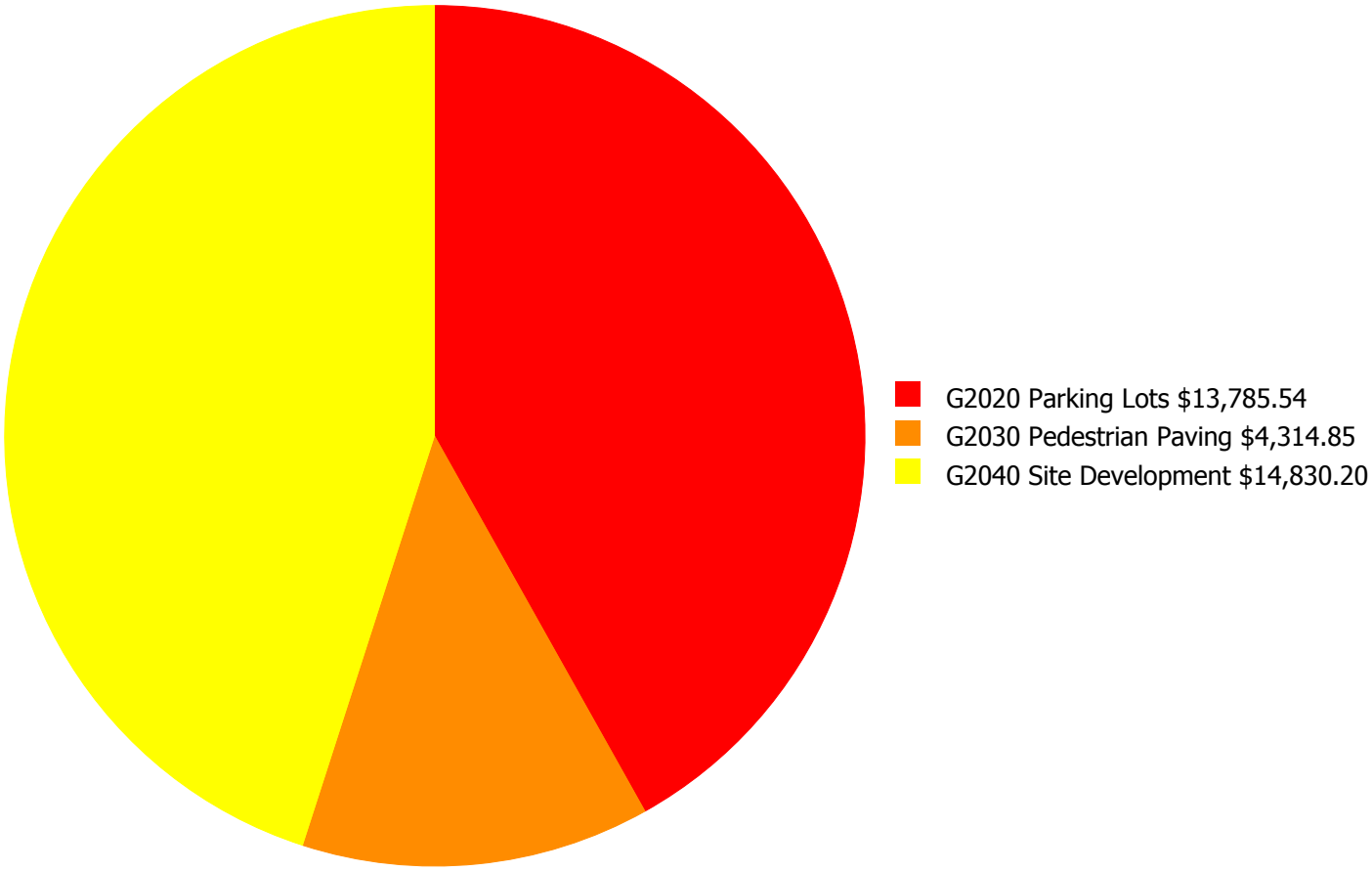
- Current FCI: a variable investment amount based on renewing expired systems to maintain the current FCI for the building
- 2% Investment: an annual investment of 2% of the replacement value of the building, escalated for inflation
- 4% Investment: an annual investment of 4% of the replacement value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



Year	Investment Amount Current FCI - 4.19%	2% Investment		4% Investment	
		Amount	FCI	Amount	FCI
2016	$0	$16,190.00	2.19 %	$32,380.00	0.19 %
2017	$0	$16,675.00	0.19 %	$33,351.00	-3.81 %
2018	$0	$17,176.00	-1.81 %	$34,351.00	-7.81 %
2019	$0	$17,691.00	-3.81 %	$35,382.00	-11.81 %
2020	$53,987	$18,222.00	0.12 %	$36,443.00	-9.88 %
2021	$0	$18,768.00	-1.88 %	$37,537.00	-13.88 %
2022	$0	$19,331.00	-3.88 %	$38,663.00	-17.88 %
2023	$0	$19,911.00	-5.88 %	$39,823.00	-21.88 %
2024	$0	$20,509.00	-7.88 %	$41,017.00	-25.88 %
2025	$0	$21,124.00	-9.88 %	$42,248.00	-29.88 %
Total:	**$53,987**	**$185,597.00**		**$371,195.00**	

Deficiency Summary by System

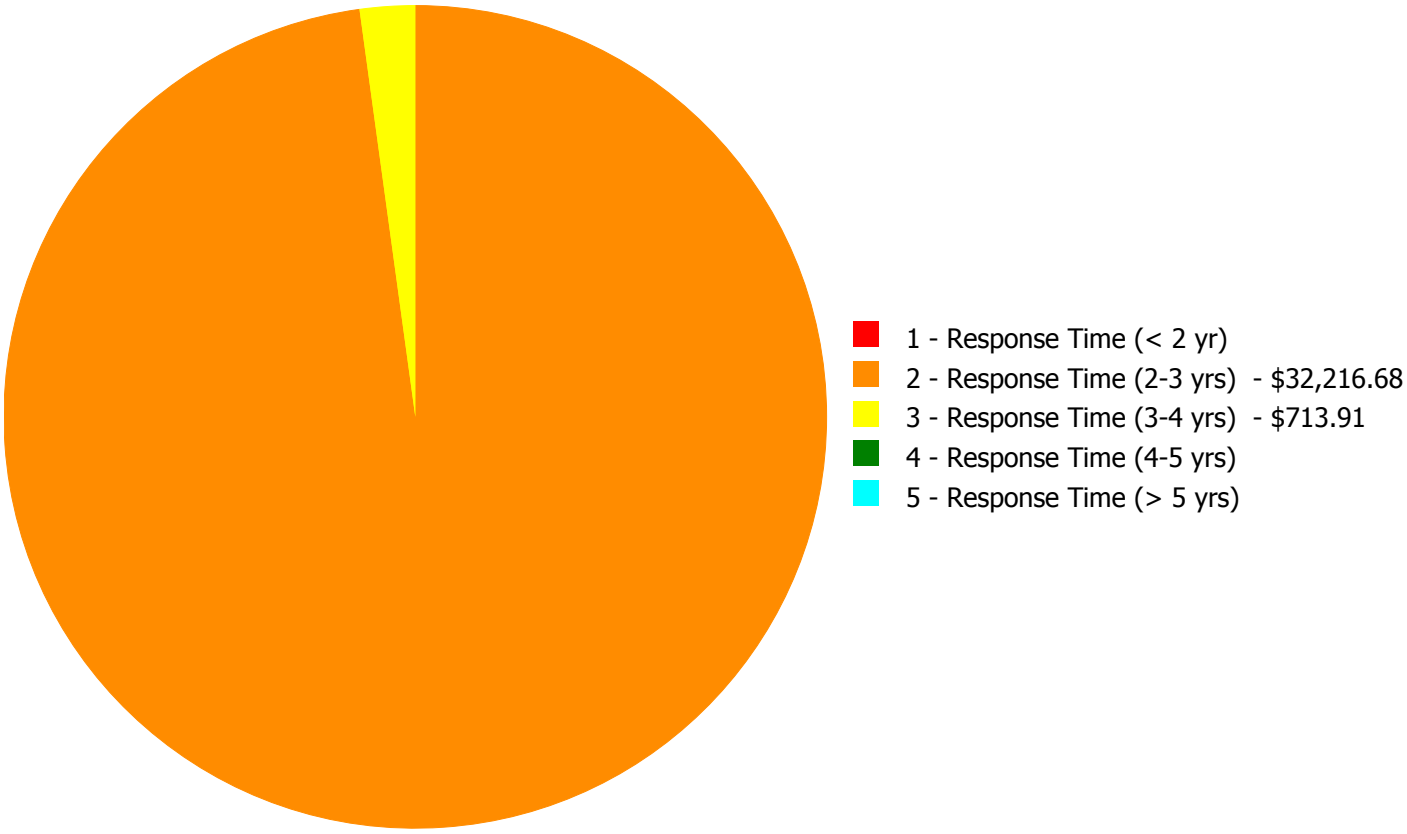
Current deficiencies included assemblies that have reached or exceeded their design life or components of the assemblies that are in need of repair. Assemblies that have reached their design life are identified as current deficiencies and assigned the distress 'Beyond Useful Life'. The following chart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



Budget Estimate Total: $32,930.59

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: $32,930.59

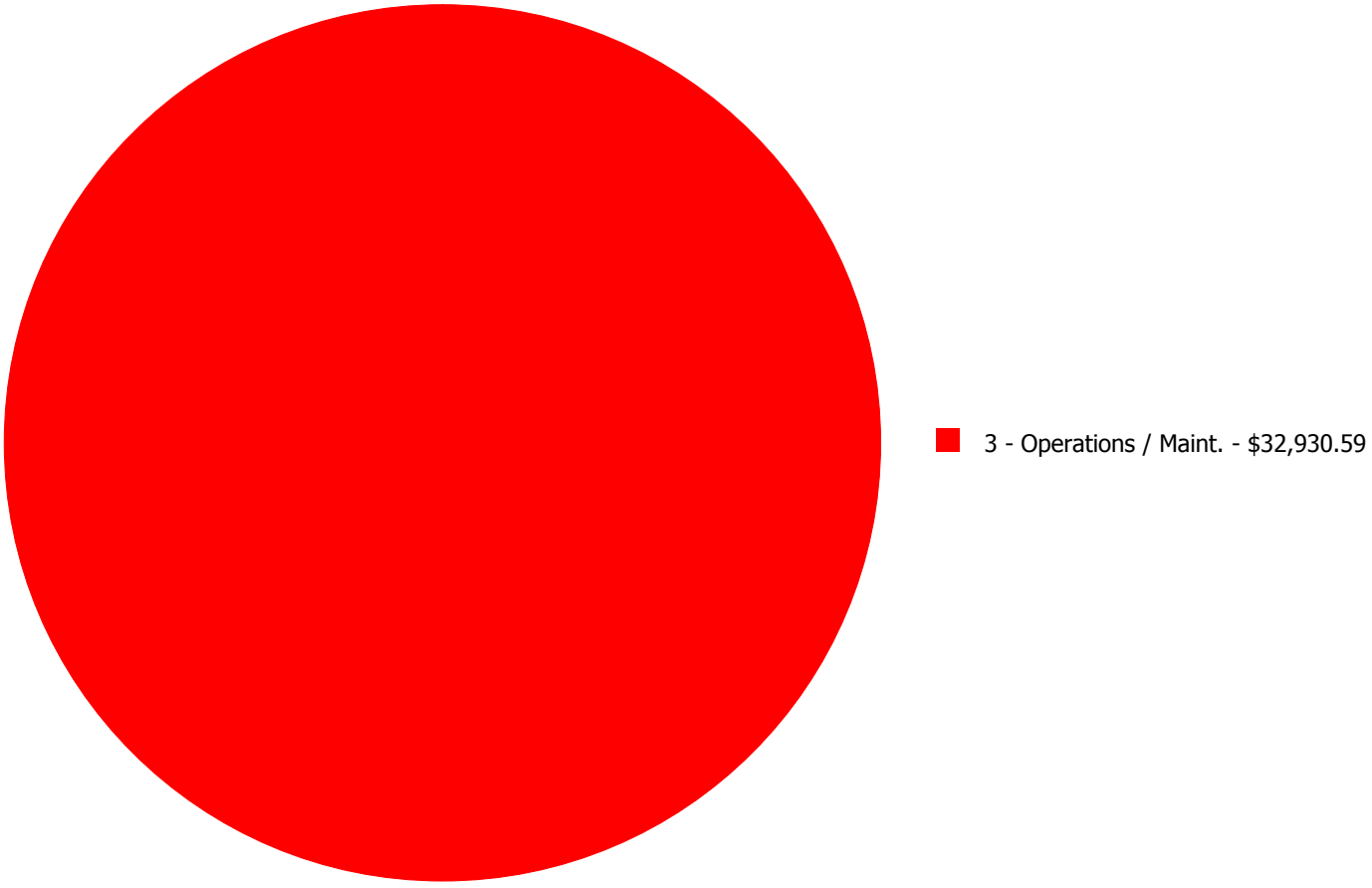
Deficiency By Priority Investment Table

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

System Code	System Description	1 - Response Time (< 2 yr)	2 - Response Time (2-3 yrs)	3 - Response Time (3-4 yrs)	4 - Response Time (4-5 yrs)	5 - Response Time (> 5 yrs)	Total
G2020	Parking Lots	$0.00	$13,071.63	$713.91	$0.00	$0.00	$13,785.54
G2030	Pedestrian Paving	$0.00	$4,314.85	$0.00	$0.00	$0.00	$4,314.85
G2040	Site Development	$0.00	$14,830.20	$0.00	$0.00	$0.00	$14,830.20
	Total:	$0.00	$32,216.68	$713.91	$0.00	$0.00	$32,930.59

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: $32,930.59

Deficiency Details by Priority

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

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

System: G2020 - Parking Lots

Location: faculty parking lot

Distress: Damaged

Category: 3 - Operations / Maint.

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

Correction: Fill pavement cracks and reseal parking lot - including striping - change the LF of crack repair if it is severe

Qty: 1.00

Unit of Measure: S.F.

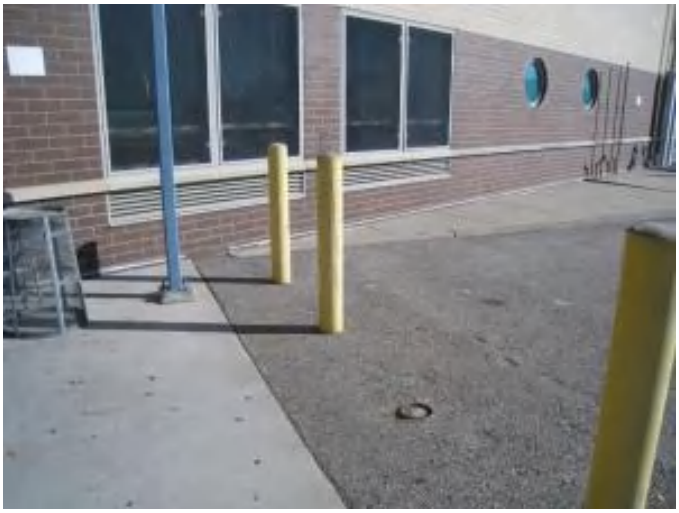
Estimate: $13,071.63

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Crackfill and seal cracked section of faculty parking area (200lf; 11,000sf)

System: G2030 - Pedestrian Paving



Location: mechanical area and play areas

Distress: Failing

Category: 3 - Operations / Maint.

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

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

Qty: 300.00

Unit of Measure: S.F.

Estimate: $4,314.85

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repair sunken concrete slabs outside mechanical room and in play area and cracked concrete slabs in playground area (300 sf)

System: G2040 - Site Development

Location: mechanical area - retaining wall

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Repair concrete retaining wall in poor condition including rebar doweling - insert the SF of wall area

Qty: 50.00

Unit of Measure: S.F.

Estimate: $14,830.20

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repair cracked retaining wall (50sf)

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

System: G2020 - Parking Lots

Location: mechanical area and play area

Distress: Failing

Category: 3 - Operations / Maint.

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

Correction: Resurface parking lot - grind and resurface including striping

Qty: 200.00

Unit of Measure: S.F.

Estimate: $713.91

Assessor Name: Steven Litman

Date Created: 01/15/2016

Notes: Repair sunken asphalt area along retaining wall in mechanical area and play area (40' x 5')

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