EAST CAROLINA UNIVERSITY

Facility Condition Assessment

Joyner East
Asset 001A

Inspected January 12, 2023

ISES CORPORATION

TABLE OF CONTENTS

FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

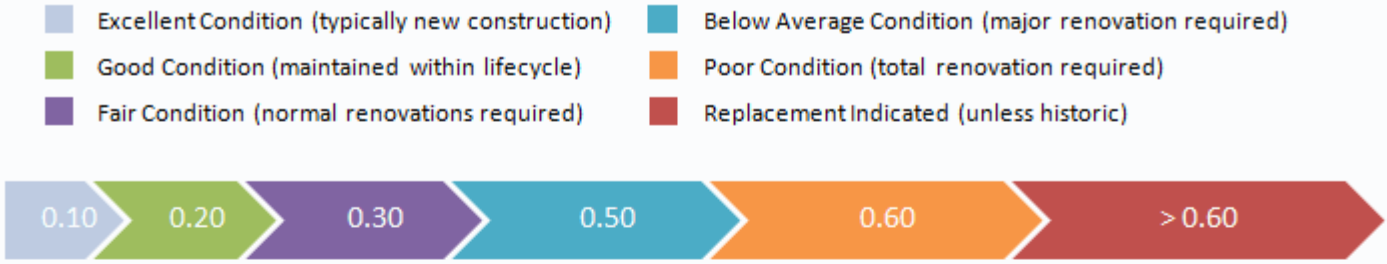
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

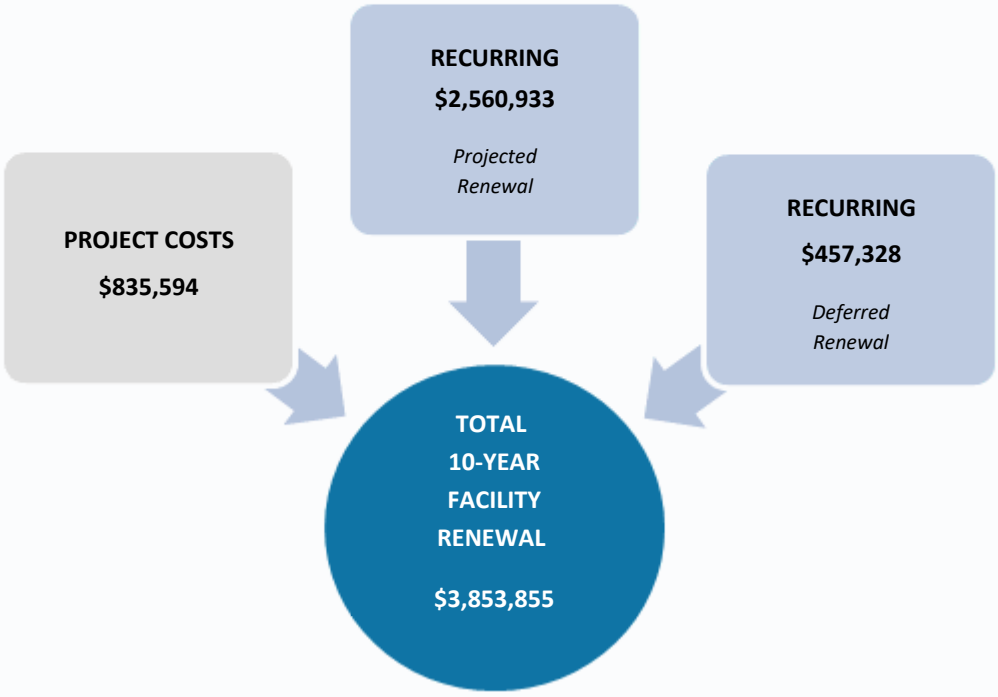
ASSET CODE	001A	**CURRENT REPLACEMENT VALUE**	$17,463,000
ASSET NAME	JOYNER EAST	**FACILITY CONDITION NEEDS INDEX**	0.22
ASSET USE	Library	**FACILITY CONDITION INDEX**	0.03
YEAR BUILT	1975	**10-YEAR $/SF**	127.96
GSF	30,118		
INSPECTION DATE	01/12/2023		

FCNI Scale

The FCNI for this asset is **0.22**



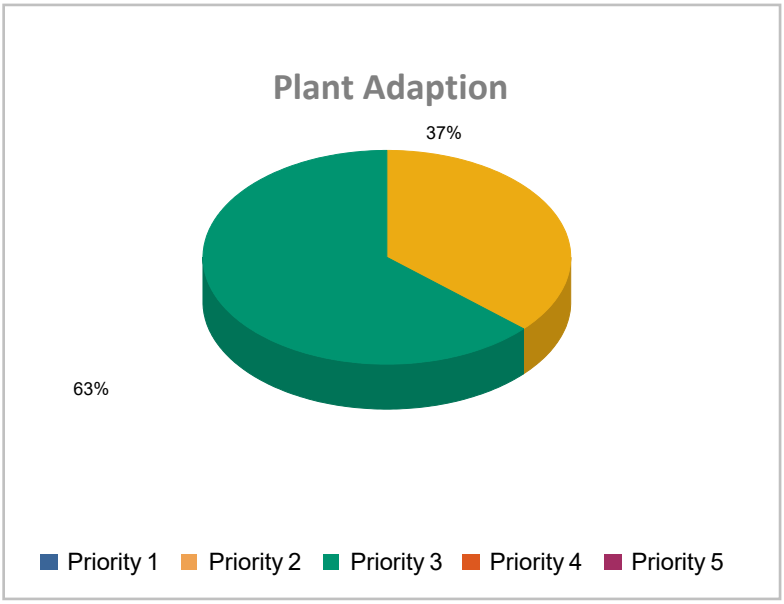
Total Facility Renewal Costs



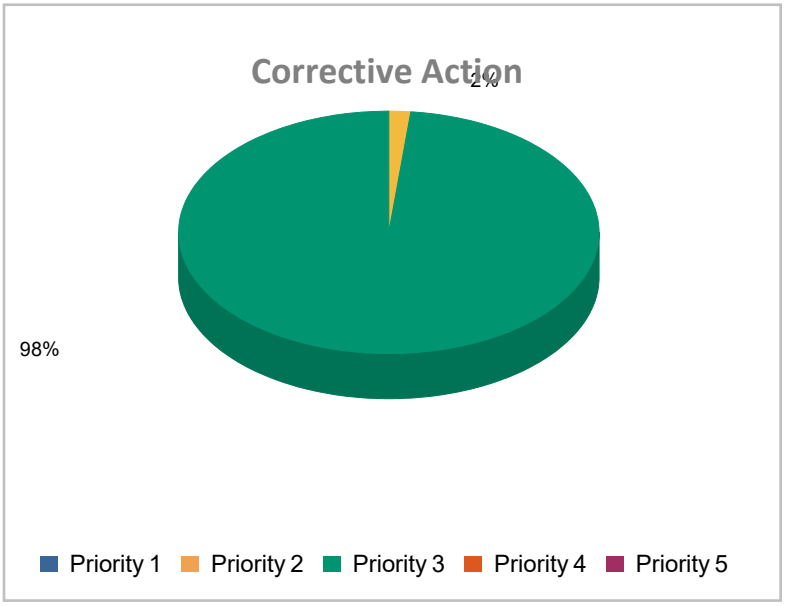
Project Costs

Project Cost by Priority

PLANT ADAPTION	
Priority 1	**$0**
Priority 2	**$270,311**
Priority 3	**$464,683**
Priority 4	**$0**
Priority 5	**$0**

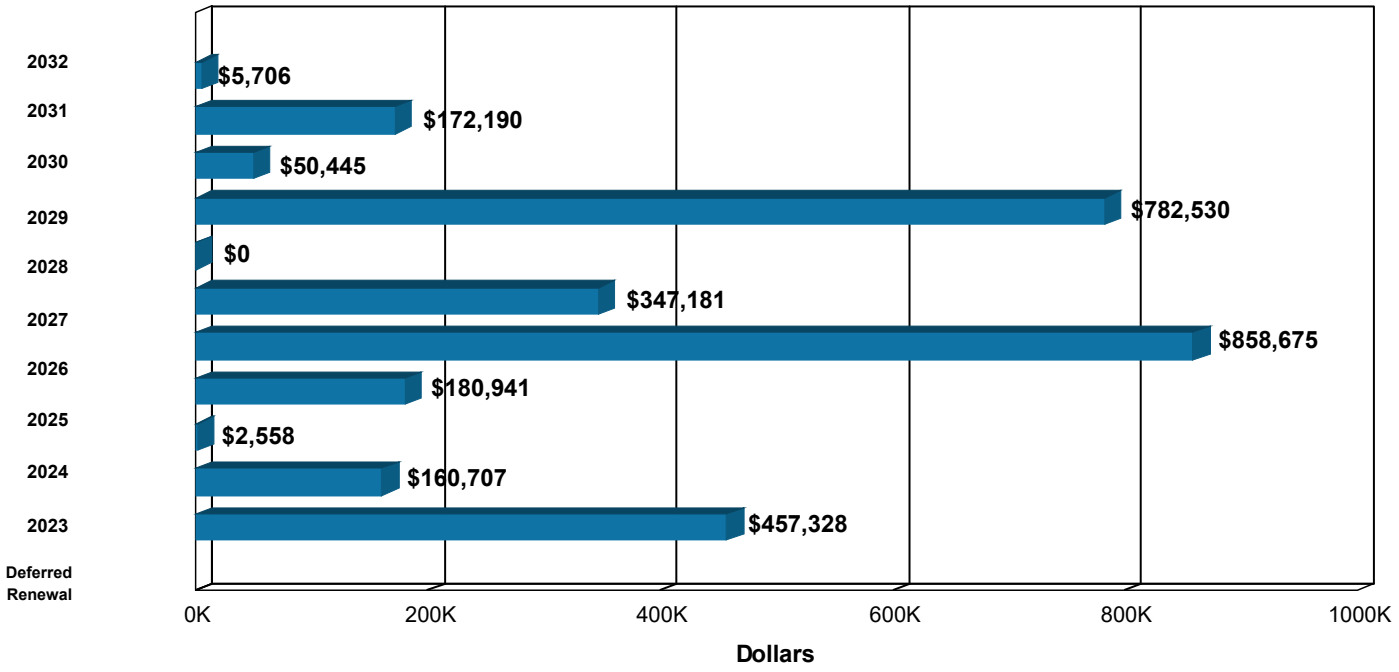


CORRECTIVE ACTION	
Priority 1	**$0**
Priority 2	**$1,635**
Priority 3	**$98,966**
Priority 4	**$0**
Priority 5	**$0**

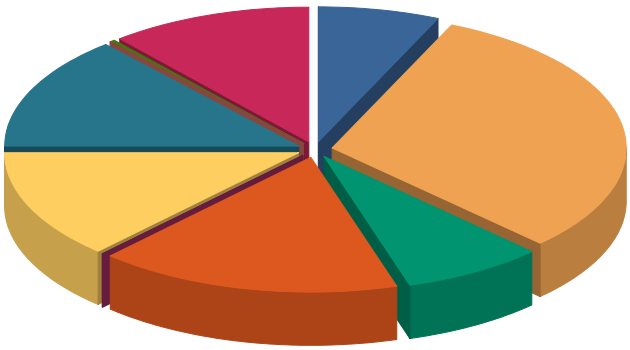


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$257,435	7%
Electrical	$1,187,214	31%
Exterior	$300,672	8%
Fire/Life Safety	$639,934	17%
Health	$482	0%
HVAC	$508,820	13%
Interiors	$517,432	13%
Plumbing	$2,158	0%
Site	$11,944	0.3%
Vert. Trans.	$427,763	11%
Security	$11,944	0.0%
TOTAL	**$3,853,855**	

ASSET SUMMARY

Constructed in phases from the 1950s through the 1990s, Joyner East is a two-story classroom structure with a small basement housing the campus telecommunication space. Nominally listed as being "built" in 1975, this steel and concrete-framed building is on the east side of the Sonic Plaza pedestrian walkway near the middle of the northern portion of the East Carolina University campus. It has a listed area of 30,118 gross square feet.

The information for this report was gathered during an inspection conducted on January 12, 2023.

Site

The minimal landscaping on this relatively small, slightly sloping site consists of some turf, a few shrubs, specimen trees, and foundation planting all in overall good condition. The concrete loading area will require joint maintenance within ten years. The asphalt service road adjacent to the loading area will also require seal coating and restriping within ten years. The brick pavers are recently installed and should not require maintenance within ten years.

Exterior Structure

The original east wing of the Joyner Library was an L-shaped structure, apparently constructed in the mid-1950s. Some of the northern portion of this wing was razed during a multi-phase construction project in the mid to late-1990s, creating a pedestrian walkway between what became the east facade of the remaining library building and the west facade of a now freestanding classroom structure. The northern half of this new classroom building then had a concrete frame, while the southern half retained its original steel structure. This building has a brick veneer that also incorporates a motion-activated waterwall fountain art panel at the south end of the west facade. This stone-veneered wall is actually just a screen wall that hides the south facade loading dock area and extends from the southwest corner of this building to the north corner of the square glockenspiel clock tower 60 feet to the south. Except for the glass and aluminum entry doors, the few other exterior doors are painted metal.

A portion of the brick joints show signs of wear and are recommended for near-term repointing with the remainder of the building being due for repointing within ten years. The white metal siding on the interior overlook walls of the basement roof will be due for joint restoration within ten years. Both the brick and metal siding have visible deposits. The brick will require a light chemical treatment and power washing to remove efflorescence and the siding will require power washing to remove grime.

Both the glass and aluminum and hollow-metal doors are in good condition with no recommendations at this time. However, the overhead coiling door at the loading dock will require maintenance for the pads within ten years. The stationary storefront windows and curtainwall are all in good condition, as are the muntin style windows overlooking the basement roof.

The modified bitumen roofing and gutter system is showing signs of deterioration and should be replaced within the ten-year scope of this report. Replace this roof with a similar application. The roof hatch will also require replacement within ten years.

Interior Finishes/Systems

The interior of the entry floor has an F-shaped double-loaded central corridor. There is an L-shaped double-loaded central corridor on the upper floor, with classrooms and offices on both sides. Most of the walls are painted, with some ceramic tile in the restrooms. Ceilings in most spaces are lay-in, acoustical tile, with some painted ceilings. Some of the offices and the auditorium are carpeted, but most spaces have vinyl tile flooring. The newer ACT should outlast the scope of this report. However, the older ACT will need to be replaced within ten years. Painted ceilings will outlast the scope of this report.

Walls will need to be repainted within ten years. The four-inch ceramic tile walls in the restrooms will also need to be replaced in ten years. The wood veneer walls on the first floor and acoustic walls in the second-floor classrooms will outlast the ten-year scope. There are acoustic wall tiles that are suspected to contain asbestos. Abatement prior to replacement is addressed in the Health section. The carpet and restroom floor tile will be due for replacement within the next ten years.

A portion of the interior doors appear to be original and should be replaced with newer doors with appropriate fire ratings. The auditorium seating is in overall good condition, with a majority of older seats and a row of newer seats added in back. The casework is old and should be replaced. Also, the marble partitions are outdated and should be replaced with high density polymer partitions that match the existing polymer partitions.

Accessibility

There is handicapped accessibility into and through this building. The northwest entrance has a wheelchair ramp and inside the building there are wheelchair accessible restrooms, lever door hardware on most doors, ADA signage throughout much of the building, and an ADA-compliant elevator. However, several upgrades are recommended to enhance building accessibility.

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). The end geometry of the handrails at the middle exit stair and the south exit stair do not comply with this legislation, and the south stair lacks wall handrails. Additionally, the tread finish on the interior stairs is old and no longer provides a proper gripping surface. A new tread finish should be applied to the stairs to prevent slipping and limit liability.

ADA legislation requires that door hardware be designed for operation by those with little or no ability to grasp objects with their hands. Although most of the doors in this building have lever hardware, it is recommended that lever handle door hardware be installed on all remaining doors that still have knob hardware.

The auditorium does not have indication of assisted listening. It is recommended that an infrared system be installed to provide listening assistance to occupants. The seating also lacks sufficient ADA spaces and the installation of an additional ADA seating is recommended.

The two drinking fountains on the upper floor are mounted at two different heights and one of these is not wheelchair accessible. Also, the first floor drinking fountain has a single-level configuration, which is not wheelchair accessible. The installation of a dual level refrigerated drinking fountain is recommended to replace the current fountains.

Two of the restrooms do not have proper ADA stalls. Construction of two unisex single user restrooms is recommended to retain current fixture count and provide accessible fixtures. The remaining restrooms should be reconfigured to include properly dimensioned ADA stalls and upgraded with power door operators to improve accessibility for the occupants.

The elevator car lacks a hands-free emergency telephone. Installation of a hands free telephone is recommended to provide compliant access to emergency services.

Health

The attached acoustic wall panels in room 205B are suspected to contain asbestos. Testing of the wall panels and necessary abatement is recommended prior to replacement of these finishes.

Fire/Life Safety

Code requires that there be a guardrail where there is a change in floor level in excess of 36 inches, and that these guardrails be a minimum of 42 inches high. The guardrails must also prevent the passage of a specific diameter sphere. The painted metal guardrails at the south exit stairs are too low and lack sufficient infill, and the northwest corner fire escape has an open side that has a handrail but lacks a guardrail. A painted metal rail should be added above and parallel to the existing south stair guardrails and the northwest corner fire escape handrails. The application of a galvanized, expanded metal grillage to the existing guardrails at the south exit stair is the most cost-effective method of complying with the sphere test. The treads on both stairs are insufficient and should also be upgraded.

The roof hatch does not have adequate fall protection on one side. It is recommended that fall protection be installed to improve worker safety and limit liability. The roof also does not have sufficient parapet walls to prevent falls. The installation of roof davits for worker tie offs is recommended to improve worker safety and limit liability.

This facility is protected by a central fire alarm system that includes a main fire alarm control panel and an additional subordinate panel. The devices that serve the fire alarm systems include manual pull stations, audible/visible devices, and smoke detectors. The main, addressable fire alarm control panel (FACP) is in room B01 and was installed in 1997. The subordinate panel, in room B01A, was installed in 2020 and provides for the main server/telecom room. The majority of the devices date to 1997 while

some systematic renewal of select notifiers and smoke detectors occurred in 2020. While the system is serviceable, the main FACP and 1997 vintage devices are recommended for renewal due to age.

The majority of the facility is not protected by any form of automatic fire suppression. Manual, dry chemical fire extinguishers are available and it is recommended that an automatic fire suppression system be retrofitted. To reduce overall liability and potential for loss, install an automatic fire sprinkler system in unprotected areas throughout the facility. The main server/telecom room has an HFC-227ea suppression system that was installed in 2015 and is in good condition. There are no renewal recommendations.

HVAC

This facility is on the campus steam loop. Hot water is generated via a steam-to-water heat exchangers (HEX), and hot water (HW) is circulated as the heating medium. Chilled water for facility cooling is provided by chillers Joyner Library (001).

The incoming steam for the heating water system is delivered to a pressure reducing valve with associated safety relief valve in mechanical rooms B01. This equipment is operating beyond its reliable service life and is recommended for renewal. The heating water HEX was installed in 1997 and is in proper working condition with no recommendations.

A base-mounted electric heating water pump (P-17) was observed in room B01 along with a chilled water pump (P-18). Both pumps are currently serviceable, but the heating water pump is operating beyond its reliable service life and should be considered for renewal.

Equipment that supports the HVAC system includes a duplex condensate return unit, an expansion tank, and an air separator for the heating water system. The air separator was updated in 2017 but the expansion tank and condensate return unit have reached the end of their statistical service life and should be considered for renewal.

The facility is served by a 1996/1997 vintage forced-air HVAC system with multizone air handling units that have hot water heating coils and chilled water-cooling coils. The ventilation system delivers 100 percent outside air to specific interior spaces. The air distribution network furnishes constant volume air to the occupied spaces. The eight air handlers observed are operating beyond their statistical life and should be considered for renewal.

Supplemental HVAC for the Studio areas is provided by a split system that utilizes DX cooling and heat and is controlled with electronic thermostats. The 15-ton air-cooled condenser and associated air handler will reach the end of their service life near the end of this ten-year planning period. Renewal is recommended. Additionally, the main server room is equipped with five split system computer room air conditioning units with interior units and exterior air-cooled condensers. These CRAC units are in good condition with no recommendations.

The HVAC distribution system includes metal duct work and insulated steel piping systems. No major deficiencies were observed and there are no recommendations for the distribution system.

The controls for the entire HVAC system are a hybrid design that utilizes mostly direct digital control manufactured and designed by Trane as well as some limited pneumatic actuation. A comprehensive effort has been made to update the central and local control panel system and software. Additionally, more modern Belimo electronic damper and valve actuation was observed throughout the HVAC system. This update to the control system has greatly improved the efficiency of the HVAC system but reinvestment should be anticipated due to technological obsolescence within the next ten years. The reciprocating air compressor and associated refrigerated air dryer in room B01 are in good condition with no recommendations.

Additional components that serve the central HVAC systems include a hydronic unit heater that is currently serviceable but requires renewal in the next ten years due to age.

This facility is equipped with a centrifugal rooftop fan and a through wall fan serving mechanical room B01. Both fans are currently serviceable, but the mechanical room fan is operating beyond its reliable service life and should be considered for renewal.

Electrical

Primary electrical service and any central emergency power is provided from equipment in Joyner Library (001). Approximately half of the facility is furnished with electrical distribution equipment (branch wiring, outlets, switches) that dates to the mid-1970s and the remainder of the building is equipped with circa 1996/1997 equipment. Some minimal renewal to this system was performed in 2019 for some circuits in the main server room. These circuits are equipped with distribution panelboards and dry-type transformers of varying vintage and capacity. It should be anticipated that the distribution system equipment and panelboards that date to the 1970s will require major reinvestment due to age. The majority of the dry-type transformers and distribution panelboards will reach the end of their reliable service life within the purview of this report assessment and should also be considered for renewal.

A motor control center identified as MCC-2 was observed in room B01. This two-section controller is rated for 600 amps and was installed in 1997. This MCC will reach the end of its reliable service life in the next five years and is recommended for renewal.

Most of the mechanical equipment, such as pumps, air handlers, fans, etc., are served by variable frequency drives (VFDs). Ten various sized and age VFDs were observed to be in service at the time of inspection. These drives will reach the end of their reliable service life in ten years primarily due to technological obsolescence and should be considered for renewal.

Interior lighting includes a combination of recessed, pendant, and surface mount fixtures. Most of the lighting system was subject to an energy retrofit which included the installation of more modern, energy-efficient LED lamp packs. Occupancy sensors were observed in some select spaces but some less efficient fluorescent lighting with T12 lamps was also observed in mechanical and storage spaces. The interior lighting is currently serviceable, but the majority will require renewal within the next ten years due to age.

The exterior is illuminated by recessed, wall, and pole-mounted light fixtures. LED and HID lamps were observed. The lighting is currently serviceable but will require renewal in the next ten years due to age and condition.

Plumbing

Potable water is distributed via an insulated, copper piping network. Sanitary waste and stormwater piping is cast-iron construction. No leaks or damage were observed and there are no recommendations.

The pump, backflow preventer, and expansion tank for the exterior, decorative water wall are in room B01 and were installed in 2020. The equipment is in good condition with no recommendations.

The fixtures consist of tankless water closets, wall-hung urinals, and wall-hung lavatories in the restrooms and a wall-hung utility sink in the custodial closet 108. Due to its age, the utility sink should be replaced. The water closets and urinals are all newer and will not require replacement within the scope of this report.

Vertical Transportation

This facility is provided vertical transportation by a hydraulic elevator system that was installed in 1997. The elevator system is currently serviceable, but the hydraulic machine is operating beyond its statistical service life. The machine and passenger car are recommended for modernization.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors examined the accessible equipment and various building components to determine what repairs or modifications may be necessary to restore the systems and asset to an acceptable condition, or to a level defined by the Client. The estimated costs represent correction of existing deficiencies and anticipated lifecycle failures within a ten-year period. These recommendations are to bring the facility to modern standards without any anticipation of change to facility space layout or function. The total costs include variable project delivery costs as determined by the Owner. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, security, furniture, window treatment, space change, program issues, relocation, swing space, contingency, or costs that could not be identified or determined from the visual inspection and available building information.

INSPECTION TEAM DATA

Report Development

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Date of Inspection

January 12, 2023

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Rob Camperlino	Facility Assessor	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Noah Porter	Project Architect	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Griffin L. Avin, CEFP	Director of Facilities Services, Health Sciences Campus Chief Sustainability Officer

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Nonrecurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and nonrecurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Renewable Component Inventory, which is explained in detail below. Nonrecurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these nonrecurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and nonrecurring renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the university a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Nonrecurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Greenville using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Also included in the renewal costs are the construction markup (general contractor profit and overhead, construction management, permitting, accounting, site security, insurance, bonds, sales tax, institutional fees, site utilities, refuse fees, and insurance) and professional fees (architect or engineer design fees and in-house design costs).

GLOBAL MARKUP	%
Local Labor Index	71.3
Local Materials Index	100.7
Construction Markup	20.0
Professional Fees	16.0

Recurring Costs

Renewable Component Inventory and Cost Projections

The Renewable Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major systems and components within a facility. Each indicated component has the following associated information:

CATEGORY	DESCRIPTION
Component Code	A four-digit code assigned by AMS to the component
Component Description	Description of the individual component
Identifier	Identifying information can be entered as necessary.
Customer ID	Customer-provided equipment ID number
Location	The location of each component can be entered if applicable.
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Complexity Factor	Adjusts the component replacement costs when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	The unit cost multiplied by quantity, in today's dollars (note that this is a one-time renewal/replacement cost)
Install Date	This is the year that the component was or is estimated to have been installed. When this data is not available, the default is the year the asset was constructed.
Useful Life	Average life expectancy of the component
Useful Life Adjustment	An optional adjustment that lengthens or reduces the first lifecycle of the component
Replacement Year	Expresses when the next replacement should occur and is the sum of the install date, useful life, and any useful life adjustment

The component listing forms the basis of the Recurring Costs by Year report, which provides a year-by-year list of projected recurring renewal costs (in future year dollars) over the next ten years. Each individual component is assigned a replacement year based on lifecycles. For items already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Renewable Component Inventory, that are past due for completion and have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral could impair the proper functioning of the facility. Deferred Renewal upgrades should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Projected Renewal
  Recurring renewal efforts, generated by the Renewable Component Inventory, that will be due within the scope of the assessment. These are regular or normal facility maintenance, repair, or renovation efforts that should be planned in the near future.

Nonrecurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, nonrecurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Renewable Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant Adaption
  Nonrecurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changing teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Nonrecurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each nonrecurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Priority 1 – High

  Items in this category include:

  a. correcting a cited safety hazard
  b. stopping accelerated deterioration
  c. returning a facility to normal operation

- Priority 2 – Medium

  Items in this category include:

  a. repairs to prevent further deterioration
  b. improvements to facility approach/entry and access to goods and services (DOJ ADA title III, priorities 1 and 2)
  c. correction of potential safety hazards

- Priority 3 – Low

  Items in this category include:

  a. improving access to restrooms and other amenities (DOJ ADA title III, priorities 3 and 4)

  b. bringing a facility into compliance with current building codes as grandfather clauses expire

  c. increasing usability following an occupancy or use change

  d. actions that are recommended but not required by code

Project Subclass

Subclass ratings are assigned to accessibility upgrade activities based on the four Department of Justice priority rankings recommended by the Title III regulations for planning readily achievable barrier removal projects. These ratings are:

- DOJ1 Accessible approach and entrance
- DOJ2 Access to goods and services
- DOJ3 Access to restrooms
- DOJ4 Any other necessary measures

Category Codes

CATEGORY CODE*	SYSTEM DESCRIPTION
AC1A – AC4B	ACCESSIBILITY
EL1A – EL8A	ELECTRICAL
ES1A – ES6E	EXTERIOR STRUCTURE
FS1A – FS6A	FIRE/LIFE SAFETY
HE1A – HE7A	HEALTH
HV1A – HV8B	HVAC
IS1A – IS6D	INTERIOR FINISHES/SYSTEMS
PL1A – PL5A	PLUMBING
SI1A – SI4A	SITE
VT1A – VT7A	VERTICAL TRANSPORTATION

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example			
Priority Class	**Category Code**	**Project Number**	**Priority Sequence**
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Drawings

Floor plans for this facility are provided as a reference.

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

Sustainability/Energy Analysis

Energy/resource conservation measures (ECMs) are recommendations that will reduce resource consumption or the rate of growth in consumption. Examples include improving the efficiency of an HVAC system (e.g., digital motor speed controls, exhaust energy recovery, retrocommissioning) or directly reducing the consumption of a resource (e.g., low flow plumbing fixtures, high-efficiency lighting, or structural insulation improvement). Where significant conservation opportunities are evident for this facility, ECMs are identified and tabulated in Section 7 as a basis for further viability investigation.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

RENEWAL NEEDS MATRIX

All dollars shown as Present Value

CATEGORY	NONRECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Noncritical	Deferred Renewal	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	TOTAL
ACCESSIBILITY	0	234,414	23,022	0	0	0	0	0	0	0	0	0	0	0	$257,435
EXTERIOR	0	0	98,966	117,318	0	2,558	0	0	76,123	0	0	0	0	5,706	$300,672
INTERIOR	0	0	0	331,879	0	0	0	0	13,364	0	0	0	172,190	0	$517,432
PLUMBING	0	0	0	2,158	0	0	0	0	0	0	0	0	0	0	$2,158
HVAC	0	0	0	0	60,400	0	0	2,466	17,905	0	383,553	44,495	0	0	$508,820
FIRE/LIFE SAFETY	0	37,532	441,179	0	0	0	161,223	0	0	0	0	0	0	0	$639,934
ELECTRICAL	0	0	0	0	100,307	0	19,718	428,447	239,788	0	393,005	5,950	0	0	$1,187,214
SITE	0	0	0	5,972	0	0	0	0	0	0	5,972	0	0	0	$11,944
VERT. TRANS.	0	0	0	0	0	0	0	427,763	0	0	0	0	0	0	$427,763
HEALTH/EQUIP.	0	0	482	0	0	0	0	0	0	0	0	0	0	0	$482
SUBTOTAL	$0	$271,945	$563,649	$457,328	$160,707	$2,558	$180,941	$858,675	$347,181	$0	$782,530	$50,445	$172,190	$5,706	$3,853,855
TOTAL NONRECURRING PROJECT NEEDS			$835,594	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,018,260	

CURRENT REPLACEMENT VALUE	$17,463,000
FACILITY CONDITION NEEDS INDEX	0.22
FACILITY CONDITION INDEX	0.03

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
30,118	$3,853,855	$127.96

RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NONRECURRING PROJECT COSTS	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$257,435	$0	$257,435
EXTERIOR	$98,966	$201,706	$300,672
INTERIOR	$0	$517,432	$517,432
PLUMBING	$0	$2,158	$2,158
HVAC	$0	$508,820	$508,820
FIRE/LIFE SAFETY	$478,711	$161,223	$639,934
ELECTRICAL	$0	$1,187,214	$1,187,214
SITE	$0	$11,944	$11,944
VERT. TRANS	$0	$427,763	$427,763
HEALTH	$482	$0	$482
TOTALS	**$835,594**	**$3,018,260**	**$3,853,855**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
001A	RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH	MOD BIT	10126	ROOF	B3010	Deferred Renewal	115,375
001A	RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			ROOF	B3010	Deferred Renewal	1,943
001A	IW14	TOILET PARTITION WITH ACCESSORIES	MARBLE		108A, 108B, 206A, 206B	C1010	Deferred Renewal	31,357
001A	IW15	URINAL PARTITION WITH ACCESSORIES	MARBLE		108A, 206A	C1010	Deferred Renewal	1,755
001A	DR01	DOOR AND FRAME, INTERIOR, NON-RATED	RESTROOM PUSH PULL DOORS		109A, 109B, 108A, 108B, 206A, 206B	C1020	Deferred Renewal	15,635
001A	DR01	DOOR AND FRAME, INTERIOR, NON-RATED	NON CORRIDOR KNOB DOORS		205D, 201B, 215B, 219, 119, 118, 102	C1020	Deferred Renewal	65,147
001A	DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	AUDITORIUM DOORS		201	C1020	Deferred Renewal	9,002
001A	DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CORRIDOR SEPARATION DRS		1ST FLOOR CORRIDOR	C1020	Deferred Renewal	9,002
001A	DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	OLD CORRIDOR KNOB		BOTH CORRIDORS	C1020	Deferred Renewal	99,017
001A	CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	SOLID SURF, WOOD		204	C1030	Deferred Renewal	12,984
001A	IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	RESTROOM 4 INCH TILE		109A, 109B, 108, 108A, 108B, 206A, 206B	C3010	Deferred Renewal	54,976
001A	IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION	PERFORATED ACM TILE		205B	C3010	Deferred Renewal	3,847
001A	IF08	FLOORING - TILE, CERAMIC / STONE / QUARRY ECONOMY	1X TILE		109A, 109B, 108, 108A, 108B, 206A, 206B	C3020	Deferred Renewal	29,159

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
001A	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	JANITOR SINK		108	D2010	Deferred Renewal	2,158
001A	SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE	MECHANICAL COURTYARD		SOUTH ELEVATION	G2010	Deferred Renewal	984
001A	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SERVICE ROAD		WEST ELEVATION	G2020	Deferred Renewal	3,141
001A	SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	SIDEWALK		NORTH, EAST, WEST ELEVS	G2030	Deferred Renewal	1,848
001A	HU53	UNIT HEATER, STEAM/HYDRONIC STD (TO 250 MBH)	CABINET HEATER		STAIR 1222	D3020	2023	1,346
001A	TK33	EXPANSION TANK, DIAPHRAGM (250-550 GAL)	HHW EXP TANK		B01	D3030	2023	15,709
001A	HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV		B01	D3040	2023	5,376
001A	PH01	PUMP - ELECTRIC (<=10 HP)	P-18 CHW PUMP		B01	D3040	2023	15,013
001A	RV01	SAFETY RELIEF VALVE	SAFETY RELIEF VALVE		B01	D3040	2023	22,955
001A	MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-2		B01	D5010	2023	92,732
001A	TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	DTB5A		B01	D5010	2023	7,075
001A	LE08	LIGHTING - EXTERIOR, WALL LANTERN or FLOOD (INC, CFL, LED)	SURFACE, TWIN, FLOOD		EXTERIOR	D5020	2023	500
001A	DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	COILING DOOR		MECHANICAL COURTYARD	B2030	2024	2,558
001A	FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	FACP		B01	D4030	2025	18,227
001A	FA02	FIRE ALARM SYSTEM - DEVICES	DETECTORS, NOTIFIERS, PULL STATIONS		BUILDING WIDE	D4030	2025	142,996

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
001A	TX28	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (112.5-150 KVA)	STUDIO TRANSFORMER		EXTERIOR	D5010	2025	19,718
001A	VT03	ELEVATOR MODERNIZATION - HYDRAULIC	ELEV 4	10140	99	D1010	2026	363,640
001A	VT04	ELEVATOR CAB RENOVATION - PASSENGER	ELEV 4	10140	ELEVATOR	D1010	2026	64,123
001A	FN27	FAN - PROPELLER WITH LOUVER, 1/4" SP (1-1.5 HP)	THROUGH WALL FAN		B01	D3040	2026	2,466
001A	SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	120/208 & 277/480 VOLTS		BUILDING WIDE	D5010	2026	389,011
001A	SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	PANEL A		104	D5010	2026	39,436
001A	EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	WHITE METAL PANEL SIDING		ROOF BELOW	B2010	2027	76,123
001A	IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	OLD 2X4 ACT		215	C3030	2027	13,364
001A	PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	DUPLEX CRU		B01	D3040	2027	17,905
001A	SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANEL LPB5		B01	D5010	2027	56,085
001A	SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANEL HPB5		B01	D5010	2027	56,085
001A	SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	LP25B		203	D5010	2027	56,085
001A	TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	TRANSFORMER DTEB5B		B01	D5010	2027	7,075
001A	TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	JOYE-TRA-001, DTB5C	10147	B01	D5010	2027	7,075
001A	TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	JOYE-TRA-004, DTEB5A	10148	B01	D5010	2027	10,613

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
001A	TX26	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (50-75 KVA)	SIEMENS		B01A	D5010	2027	9,755
001A	TX30	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (225-300 KVA)	JOYE-TRA-003, DTB5B	10146	B01	D5010	2027	26,960
001A	LE03	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)	RECESSED, OVERHANG		EXTERIOR	D5020	2027	4,799
001A	LE04	LIGHTING - EXTERIOR, STANCHION LUMINAIRE, 12-FOOT	POLE MOUNTED		EXTERIOR	D5020	2027	5,254
001A	AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-14		B01	D3040	2029	29,647
001A	AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-13		B01	D3040	2029	29,647
001A	AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-20		203	D3040	2029	29,647
001A	AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-18		203	D3040	2029	29,647
001A	AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-19		203B	D3040	2029	29,647
001A	AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU-17		297	D3040	2029	53,468
001A	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-16		B01	D3040	2029	67,216
001A	AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-15		98	D3040	2029	67,216
001A	BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	PANELS AND SOFTWARE		BUILDING WIDE	D3060	2029	31,410
001A	BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	MAJOR INSTRMNTTN		BUILDING WIDE	D3060	2029	16,010
001A	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-14 VSD		B01	D5010	2029	2,530
001A	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-13 VSD		B01	D5010	2029	2,530

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE	COMP CODE	COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
001A	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-20 VSD		203	D5010	2029	2,530
001A	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-18 VSD		203	D5010	2029	2,530
001A	VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-19 VSD	10134	203B	D5010	2029	2,530
001A	VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	P-17 VSD		B01	D5010	2029	3,824
001A	VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-17 VSD	10135	297	D5010	2029	3,824
001A	VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-16 VSD		B01	D5010	2029	5,736
001A	VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-15 VSD		98	D5010	2029	5,736
001A	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	P-18 VSD		B01	D5010	2029	4,783
001A	LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	RECESSED, SURFACE, PEN. RETROFIT LED		BUILDING WIDE	D5020	2029	356,453
001A	SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE	MECHANICAL COURTYARD		SOUTH ELEVATION	G2010	2029	984
001A	SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SERVICE ROAD		WEST ELEVATION	G2020	2029	3,141
001A	SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	SIDEWALK		NORTH, EAST, WEST ELEVS	G2030	2029	1,848
001A	HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	STUDIO CONDENSER		EXTERIOR	D3030	2030	20,359
001A	AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	STUDIO AHU		104	D3040	2030	24,136
001A	LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	SURFACE LED		EXTERIOR	D5020	2030	5,950
001A	IW01	WALL FINISH - PAINT, STANDARD	STD WALL PAINT		MOST AREAS	C3010	2031	75,194

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
001A	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	LOOM		211, 205C, 204, 101, 105G, MOST OFFICES	C3020	2031	96,996
001A	RR29	ROOF HATCH - ACCESS	MODULAR ALUM	10126	ROOF	B3020	2032	5,706
							TOTAL	**$3,018,260**

FACILITIES RENEWAL PLAN

NONRECURRING PROJECT COSTS

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
001AAC01	UPGRADE ELEVATOR WITH TWO-WAY COMMUNICATION UNIT	C1010	2	Plant Adaption	3,367
001AAC03	AUDITORIUM ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	8,602
001AAC04	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	45,714
001AAC05	RESTROOM ACCESSIBILITY UPGRADES	D2010	2	Plant Adaption	84,394
001AAC06	UNISEX RESTROOM INSTALLATION	D2010	2	Plant Adaption	47,970
001AAC07	INTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	44,367
001AFS01	ADD ROPE DAVITS TO SUPPORT WORKER FALL PROTECTION	B3010	2	Plant Adaption	9,378
001AFS03	ROOF HATCH FALL PROTECTION	B3010	2	Corrective Action	1,635
001AFS04	EXTERIOR STAIR UPGRADES	C2020	2	Plant Adaption	26,519
001AAC02	UPGRADE DRINKING FOUNTAINS	C1010	3	Plant Adaption	23,022
001AES01	EXTERIOR MASONRY WALL RENEWAL	B2010	3	Corrective Action	91,714
001AES02	EXTERIOR WALL FINISH RENEWAL	B2010	3	Corrective Action	7,252
001AFS02	FIRE SPRINKLER SYSTEM INSTALLATION	D4010	3	Plant Adaption	441,179
001AHE01	ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS	F2020	3	Plant Adaption	482
				TOTAL	**$835,594**

FACILITY CONDITION ASSESSMENT

SECTION 3

NONRECURRING PROJECT DETAILS

All costs shown as Present Value

EXTERIOR STAIR UPGRADES

Project Number:	001AFS04	**Category Code:** FS5E	
Priority Sequence:	1		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	EGRESS PATH
Date Basis:	1/12/2023	**Element:**	STAIRS AND RAILING

Code Application:		Subclass/Savings:	Project Location:
IBC	1011, 1014	Not Applicable	Floor-wide: Floor(s)
ADAAG	505		

Description

Code requires that there be a guardrail where there is a change in floor level in excess of 36 inches, and that these guardrails be a minimum of 42 inches high. The guardrails must also prevent the passage of a specific diameter sphere. The painted metal guardrails at the south exit stairs are too low and lack sufficient infill, and the northwest corner fire escape has an open side that has a handrail but lacks a guardrail. A painted metal rail should be added above and parallel to the existing south stair guardrails and the northwest corner fire escape handrails. The application of a galvanized, expanded metal grillage to the existing guardrails at the south exit stair is the most cost-effective method of complying with the sphere test. The treads on both stairs are insufficient and should also be upgraded.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	2	$859	$1,717	$781	$1,561	$3,279
Switchback handrail/guardrail system per floor	FLR	2	$1,945	$3,891	$1,249	$2,498	$6,389
Railing system up to 42 inches high with pickets at 4 1/2 inches on center.	LF	34	$53.60	$1,822	$44.79	$1,523	$3,345
Infill risers with metal	FLR	2	$3,084	$6,169	$965	$1,931	$8,099
Base Material/Labor Costs				**$13,599**		**$7,513**	
Indexed Material/Labor Costs				**$13,694**		**$5,357**	**$19,051**
Construction Mark Up at 20.0%							**$3,810**
Original Construction Cost							**$22,861**
Date of Original Estimate: 1/12/2023						**Inflation**	**$0**
Current Year Construction Cost							**$22,861**
Professional Fees at 16.0%							**$3,658**
TOTAL PROJECT COST							**$26,519**

All costs shown as Present Value

ADD ROPE DAVITS TO SUPPORT WORKER FALL PROTECTION

Project Number:	001AFS01	**Category Code:** FS6A	
Priority Sequence:	2		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	2/23/2023	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1926.500	Not Applicable	Floor-wide: Floor(s) R

Description

Fall protection is required for roofing installations to protect the welfare of workers on roofing systems located over six feet above grade. The installation of hard looped tie-off points is recommended at intervals throughout the roof to support workers associated lifelines and harness personal protective equipment.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Allocation to install metal rope davits to support PPE equipment on roof	EA	8	$391	$3,131	$628	$5,026	$8,158
			Base Material/Labor Costs	**$3,131**		**$5,026**	
			Indexed Material/Labor Costs	**$3,153**		**$3,584**	**$6,737**
						Construction Mark Up at 20.0%	**$1,347**
						Original Construction Cost	**$8,084**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
						Current Year Construction Cost	**$8,084**
						Professional Fees at 16.0%	**$1,293**
						TOTAL PROJECT COST	**$9,378**

All costs shown as Present Value

ROOF HATCH FALL PROTECTION

Project Number:	001AFS03	**Category Code:** FS6A	
Priority Sequence:	3		
Priority Class:	Medium	**System:**	FIRE/LIFE SAFETY
Project Class:	Corrective Action	**Component:**	GENERAL
Date Basis:	2/23/2023	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
OSHA	29 CFR 1910.21(A)(4)	Not Applicable	Item Only: Floor(s) R
OSHA	29 CFR 1910.23(E)(8)		

Description

The roof hatch is missing fall protection on one side. It is recommended that fall protection be added to improve worker safety.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Metal pipe guardrail, average	LF	10	$98.97	$990	$24.93	$249	$1,239
Base Material/Labor Costs				**$990**		**$249**	
Indexed Material/Labor Costs				**$997**		**$178**	**$1,174**
Construction Mark Up at 20.0%							**$235**
Original Construction Cost							**$1,409**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
Current Year Construction Cost							**$1,409**
Professional Fees at 16.0%							**$225**
TOTAL PROJECT COST							**$1,635**

All costs shown as Present Value

UPGRADE ELEVATOR WITH TWO-WAY COMMUNICATION UNIT

Project Number:	001AAC01	**Category Code:** AC3A	
Priority Sequence:	4		
Priority Class:	Medium	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	2/23/2023	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	407	DOJ2 - Access to Goods & Services	Floor-wide: Floor(s) 1

Description

Accessibility legislation requires that goods, and services offered in buildings be generally accessible to all persons. The elevator is only partially compliant with current ADA legislation. It is recommended that an ADA-compliant, hands-free phone be installed in order meet the current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant hands-free elevator emergency telephone	EA	1	$1,580	$1,580	$1,161	$1,161	$2,741
			Base Material/Labor Costs	**$1,580**		**$1,161**	
			Indexed Material/Labor Costs	**$1,591**		**$828**	**$2,419**
						Construction Mark Up at 20.0%	**$484**
						Original Construction Cost	**$2,902**
Date of Original Estimate:	2/23/2023					**Inflation**	**$0**
						Current Year Construction Cost	**$2,902**
						Professional Fees at 16.0%	**$464**
						TOTAL PROJECT COST	**$3,367**

All costs shown as Present Value

RESTROOM ACCESSIBILITY UPGRADES

Project Number:	001AAC05	**Category Code:** AC3E	
Priority Sequence:	5		
Priority Class:	Medium	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	2/23/2023	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309, 604, 605, 606, 607, 608	DOJ3 - Restrooms	Room Only: Floor(s) 1,2

Description

All of the restrooms have improperly dimensioned accessible stalls. It is recommended that these stalls be reconfigured with the correct dimensions. Also, the restroom doors could pose an accessibility barrier to occupants. Installation of power door operators is recommended to improve the accessibility of the restrooms.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Door operator, signage, and controls	EA	6	$6,021	$36,129	$2,083	$12,496	$48,625
High density polymer toilet partition modification	EA	4	$2,647	$10,587	$1,639	$6,557	$17,145
			Base Material/Labor Costs	**$46,716**		**$19,053**	
			Indexed Material/Labor Costs	**$47,043**		**$13,585**	**$60,628**
					Construction Mark Up at 20.0%		**$12,126**
					Original Construction Cost		**$72,753**
Date of Original Estimate: 2/23/2023					**Inflation**		**$0**
					Current Year Construction Cost		**$72,753**
					Professional Fees at 16.0%		**$11,641**
					TOTAL PROJECT COST		**$84,394**

All costs shown as Present Value

UNISEX RESTROOM INSTALLATION

Project Number:	001AAC06	**Category Code:** AC3E	
Priority Sequence:	6		
Priority Class:	Medium	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	2/23/2023	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	604, 605, 606	DOJ3 - Restrooms	Room Only: Floor(s) 1

Description

The two east first floor restrooms do not have properly dimensioned stalls. In order to retain fixture count, it is recommended that these restrooms be converted into unisex restrooms.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of an accessible unisex restroom including toilet, lavatory, piping, and rough-in (60 square feet in area)	EA	2	$8,598	$17,196	$12,023	$24,047	$41,242
Base Material/Labor Costs				**$17,196**		**$24,047**	
Indexed Material/Labor Costs				**$17,316**		**$17,145**	**$34,461**
Construction Mark Up at 20.0%							**$6,892**
Original Construction Cost							**$41,353**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
Current Year Construction Cost							**$41,353**
Professional Fees at 16.0%							**$6,617**
TOTAL PROJECT COST							**$47,970**

All costs shown as Present Value

AUDITORIUM ACCESSIBILITY UPGRADES

Project Number:	001AAC03	**Category Code:** AC4A	
Priority Sequence:	7		
Priority Class:	Medium	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	2/23/2023	**Element:**	FUNCTIONAL SPACE MOD.

Code Application:		Subclass/Savings:	Project Location:
ADAAG	219.3, 706.1, 806	DOJ2 - Access to Goods & Services	Undefined: Floor(s) 1

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. The auditorium has multiple barriers to accessibility. There are not enough table seating spaces designated for wheelchair use. It is recommended that one other seat be modified to accommodate persons in a wheelchair. Also, install transmitter and headphone receiver sets to accommodate those individuals that require audible assistance.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Table and seating modifications	LOT	1	$1,451	$1,451	$910	$910	$2,362
Infrared transmitter and headphone receiver sets	SYS	1	$2,493	$2,493	$2,186	$2,186	$4,679
Base Material/Labor Costs				**$3,945**		**$3,096**	
Indexed Material/Labor Costs				**$3,972**		**$2,207**	**$6,180**
Construction Mark Up at 20.0%							**$1,236**
Original Construction Cost							**$7,416**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
Current Year Construction Cost							**$7,416**
Professional Fees at 16.0%							**$1,186**
TOTAL PROJECT COST							**$8,602**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	001AAC04
Priority Sequence:	8
Priority Class:	Medium
Project Class:	Plant Adaption
Date Basis:	2/23/2023

Category Code: AC3C

System:	ACCESSIBILITY
Component:	INTERIOR PATH OF TRAVEL
Element:	DOORS AND HARDWARE

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4	DOJ2 - Access to Goods & Services	Floor-wide: Floor(s) 1,2

Description

The knob actuated door hardware is a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle door hardware be installed on all doors that still have knobs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Lever actuated door hardware	EA	51	$498	$25,406	$200	$10,178	$35,584
Base Material/Labor Costs				**$25,406**		**$10,178**	
Indexed Material/Labor Costs				**$25,584**		**$7,257**	**$32,841**
Construction Mark Up at 20.0%							**$6,568**
Original Construction Cost							**$39,409**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
Current Year Construction Cost							**$39,409**
Professional Fees at 16.0%							**$6,305**
TOTAL PROJECT COST							**$45,714**

All costs shown as Present Value

INTERIOR STAIR UPGRADES

Project Number:	001AAC07	**Category Code:** AC3B	
Priority Sequence:	9		
Priority Class:	Medium	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	2/23/2023	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	DOJ2 - Access to Goods & Services	Floor-wide: Floor(s) 1,2
ADAAG	505		

Description

Accessibility legislation requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a four-inch diameter sphere (six inches in the triangle formed by the lower rail and tread/riser angle). The finishes on the stairs have deteriorated or are otherwise unsafe. Stairs are also required to have a nonslip tread surface. It is recommended that compliant handrails and guardrails be installed along with a nonslip tread finish.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	4	$939	$3,757	$854	$3,415	$7,172
Switchback handrail/guardrail system per floor	FLR	4	$2,128	$8,511	$1,366	$5,464	$13,975
Stair tread and landing finish upgrades per floor	FLR	4	$2,377	$9,508	$1,267	$5,068	$14,576
			Base Material/Labor Costs	**$21,776**		**$13,948**	
			Indexed Material/Labor Costs	**$21,928**		**$9,945**	**$31,873**
					Construction Mark Up at 20.0%		**$6,375**
					Original Construction Cost		**$38,247**
Date of Original Estimate:	2/23/2023				**Inflation**		**$0**
					Current Year Construction Cost		**$38,247**
					Professional Fees at 16.0%		**$6,120**
					TOTAL PROJECT COST		**$44,367**

All costs shown as Present Value

FIRE SPRINKLER SYSTEM INSTALLATION

Project Number:	001AFS02	**Category Code:** FS3A	
Priority Sequence:	10		
Priority Class:	Low	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	SUPPRESSION
Date Basis:	3/7/2023	**Element:**	SPRINKLERS

Code Application:		Subclass/Savings:	Project Location:
NFPA	1, 13, 13R, 101	Not Applicable	Floor-wide: Floor(s) 1,2,G

Description

As a part of future renovation efforts, it is recommended that this facility be fully protected by an automatic, wet-pipe sprinkler system.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install a wet-pipe sprinkler system, including valves, piping, sprinkler heads, piping supports, etc.	SF	30,118	$5.60	$168,661	$6.85	$206,308	$374,969
Base Material/Labor Costs				**$168,661**		**$206,308**	
Indexed Material/Labor Costs				**$169,841**		**$147,098**	**$316,939**
Construction Mark Up at 20.0%							**$63,388**
Original Construction Cost							**$380,327**
Date of Original Estimate: 3/7/2023						**Inflation**	**$0**
Current Year Construction Cost							**$380,327**
Professional Fees at 16.0%							**$60,852**
TOTAL PROJECT COST							**$441,179**

All costs shown as Present Value

ASBESTOS ABATEMENT - INTERIOR FINISH SYSTEMS

Project Number:	001AHE01	**Category Code:** HE6F	
Priority Sequence:	11		
Priority Class:	Low	**System:**	HEALTH
Project Class:	Plant Adaption	**Component:**	HAZARDOUS MATERIAL
Date Basis:	2/23/2023	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
EPA	40 CFR 61.M, 763	Not Applicable	Area Wide: Floor(s) 2
OSHA	29 CFR 1910.1001, 1926.1101		

Description

Asbestos-containing materials (ACMs) are suspected to exist in room 205B. Prior to replacing these systems, the ACMs should be properly investigated and abated. This project provides a budget for the abatement of ACMs prior to the renewal of the affected finishes.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Typical asbestos abatement of attached wall finishes	SF	290	$0.11	$32	$1.52	$441	$473
			Base Material/Labor Costs	**$32**		**$441**	
			Indexed Material/Labor Costs	**$32**		**$314**	**$346**
						Construction Mark Up at 20.0%	**$69**
						Original Construction Cost	**$416**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
						Current Year Construction Cost	**$416**
						Professional Fees at 16.0%	**$67**
						TOTAL PROJECT COST	**$482**

All costs shown as Present Value

UPGRADE DRINKING FOUNTAINS

Project Number:	001AAC02	**Category Code:** AC3F	
Priority Sequence:	12		
Priority Class:	Low	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	2/23/2023	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	DOJ4 - Other	Floor-wide: Floor(s) 2

Description

Current legislation requires that building amenities be generally accessible to all persons. The configuration of the corridor drinking fountains is a barrier to accessibility. The single-level refrigerated drinking fountains should be replaced with dual-level unit.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual-level drinking fountain	EA	2	$1,995	$3,989	$613	$1,226	$5,215
Alcove construction for drinking fountain	EA	2	$1,438	$2,876	$6,137	$12,274	$15,150
			Base Material/Labor Costs	**$6,865**		**$13,500**	
			Indexed Material/Labor Costs	**$6,913**		**$9,626**	**$16,539**
					Construction Mark Up at 20.0%		**$3,308**
					Original Construction Cost		**$19,846**
Date of Original Estimate: 2/23/2023					**Inflation**		**$0**
					Current Year Construction Cost		**$19,846**
					Professional Fees at 16.0%		**$3,175**
					TOTAL PROJECT COST		**$23,022**

All costs shown as Present Value

EXTERIOR MASONRY WALL RENEWAL

Project Number:	001AES01	**Category Code:** ES2B	
Priority Sequence:	13		
Priority Class:	Low	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	2/23/2023	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

A portion of the south brick wall has damaged joints. It is recommended that this section undergo repointing soon to restore the appearance and integrity of the brick. Additionally, the remainder of the building should be repointed within the next ten years.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Restore exterior masonry wall to include cleaning and approximately two percent pointing	SF	23,700	$0.41	$9,717	$3.32	$78,684	$88,401
			Base Material/Labor Costs	**$9,717**		**$78,684**	
			Indexed Material/Labor Costs	**$9,785**		**$56,102**	**$65,887**
					Construction Mark Up at 20.0%		**$13,177**
					Original Construction Cost		**$79,064**
Date of Original Estimate: 2/23/2023					**Inflation**		**$0**
					Current Year Construction Cost		**$79,064**
					Professional Fees at 16.0%		**$12,650**
					TOTAL PROJECT COST		**$91,714**

All costs shown as Present Value

EXTERIOR WALL FINISH RENEWAL

Project Number:	001AES02	**Category Code:** ES2B	
Priority Sequence:	14		
Priority Class:	Low	**System:**	EXTERIOR
Project Class:	Corrective Action	**Component:**	COLUMNS/BEAMS/WALLS
Date Basis:	2/23/2023	**Element:**	FINISH

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

The white metal siding on the interior overlook walls of the basement roof has visible grime deposits. The exterior brick also has efflorescent deposits on some areas. It is recommended that the walls be treated with a light chemical and power washed to restore their appearance.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
General exterior wall surface clean and pressure wash with light chemical	SF	2,930	$0.30	$879	$2.07	$6,065	$6,944
Base Material/Labor Costs				**$879**		**$6,065**	
Indexed Material/Labor Costs				**$885**		**$4,324**	**$5,210**
Construction Mark Up at 20.0%							**$1,042**
Original Construction Cost							**$6,251**
Date of Original Estimate: 2/23/2023						**Inflation**	**$0**
Current Year Construction Cost							**$6,251**
Professional Fees at 16.0%							**$1,000**
TOTAL PROJECT COST							**$7,252**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	WHITE METAL PANEL SIDING		ROOF BELOW	2,930	SF	1.12	$76,123	2002	25		2027
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD			ROOF BELOW	400	SF	1.12	$82,554	2019	40		2059
WN02	GLASS, WINDOW, ALUMINUM OR WOOD, CUSTOM	STATIONARY STOREFRONT		NORTH, WEST ELEVS	2,390	SF	1.12	$678,332	2019	40		2059
WN04	GLASS, CURTAIN WALL, PREMIUM			CLOCK TOWER	1,200	SF	1.12	$621,277	2019	60		2079
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	HM PANIC		SOUTH ELEVATION	3	LEAF	1.00	$7,335	2019	40	7	2066
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	HM LEVER		B032, 900	3	LEAF	1.00	$7,335	1997	40	7	2044
DR12	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	WEST ENTRY		1114	1	LEAF	1.00	$4,514	2019	25		2044
DR12	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	EAST ENTRY		1222	1	LEAF	1.00	$4,514	2019	25		2044
DR12	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	WEST ENTRY 2ND FLOOR		2097	1	LEAF	1.00	$4,514	2019	25		2044
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	COILING DOOR		MECHANICAL COURTYARD	80	SF	1.00	$9,452	2009	30		2039
DR28	DOOR OPERATOR, POWER-ASSIST	WEST ENTRY	10154	1114	1	EA	1.00	$10,508	2019	20		2039
DR28	DOOR OPERATOR, POWER-ASSIST	WEST VESTIBULE	10153	1114	1	EA	1.00	$10,508	2019	20		2039
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	COILING DOOR		MECHANICAL COURTYARD	1	EA	1.00	$2,558	2009	15		2024
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH	MOD BIT	10126	ROOF	17,372	SF	1.09	$115,375	2002	20		DR
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			ROOF	95	LF	1.00	$1,943	2002	20		DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
RR29	ROOF HATCH - ACCESS	MODULAR ALUM	10126	ROOF	1	EA	1.00	$5,706	2002	30		2032
IW14	TOILET PARTITION WITH ACCESSORIES	MARBLE		108A, 108B, 206A, 206B	10	SYS	1.00	$31,357	1975	20	27	DR
IW14	TOILET PARTITION WITH ACCESSORIES	PLASTIC		109A, 109B	3	SYS	1.00	$9,407	2019	20		2039
IW15	URINAL PARTITION WITH ACCESSORIES	MARBLE		108A, 206A	3	EA	1.00	$1,755	1975	20	27	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	NON CORRIDOR KNOB DOORS		205D, 201B, 215B, 219, 119, 118, 102	25	LEAF	1.00	$65,147	1975	40	7	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	RESTROOM PUSH PULL DOORS		109A, 109B, 108A, 108B, 206A, 206B	6	LEAF	1.00	$15,635	1975	40	7	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	WEST VESTIBULE		1114	1	LEAF	1.00	$2,606	2019	40		2059
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	WEST VESTIBULE 2ND FLOOR		2097	1	LEAF	1.00	$2,606	2019	40		2059
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	OLD CORRIDOR KNOB		BOTH CORRIDORS	22	LEAF	1.00	$99,017	1975	40	7	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	AUDITORIUM DOORS		201	2	LEAF	1.00	$9,002	1975	40	7	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CORRIDOR SEPARATION DRS		1ST FLOOR CORRIDOR	2	LEAF	1.00	$9,002	1975	40	7	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	NEW CORRIDOR LEVER		BOTH CORRIDORS	52	LEAF	1.00	$234,040	2019	40		2059
DR24	DOOR LOCK, COMMERCIAL-GRADE	RESTROOM PUSH PULL DOORS		109A, 109B, 108A, 108B, 206A, 206B	6	EA	1.00	$5,379	1997	20	27	2044
DR24	DOOR LOCK, COMMERCIAL-GRADE	NEW CORRIDOR LEVER		BOTH CORRIDORS	52	EA	1.00	$46,614	2019	20		2039

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
DR24	DOOR LOCK, COMMERCIAL-GRADE	HM LEVER		B032, 900	3	EA	1.00	$2,689	2019	20	27	2066
DR26	DOOR PANIC HARDWARE	HM PANIC		SOUTH ELEVATION	3	EA	1.00	$4,400	2019	20	27	2066
DR26	DOOR PANIC HARDWARE	WEST ENTRY		1114	1	EA	1.00	$1,467	2019	20		2039
DR26	DOOR PANIC HARDWARE	EAST ENTRY		1222	1	EA	1.00	$1,467	2019	20		2039
DR26	DOOR PANIC HARDWARE	WEST ENTRY 2ND FLOOR		2097	1	EA	1.00	$1,467	2019	20		2039
DR26	DOOR PANIC HARDWARE	AUDITORIUM DOORS		201	2	EA	1.00	$2,933	1997	20	27	2044
DR26	DOOR PANIC HARDWARE	CORRIDOR SEPARATION DOORS		1ST FLOOR CORRIDOR	2	EA	1.00	$2,933	1997	20	27	2044
DR26	DOOR PANIC HARDWARE	WEST VESTIBULE		1114	1	EA	1.00	$1,467	2019	20		2039
DR26	DOOR PANIC HARDWARE	WEST VESTIBULE 2ND FLOOR		2097	1	EA	1.00	$1,467	2019	20		2039
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	SOLID SURF, WOOD		204	20	LF	1.00	$12,984	1997	20	5	DR
IW01	WALL FINISH - PAINT, STANDARD	STD WALL PAINT		MOST AREAS	27,910	SF	1.00	$75,194	2019	12		2031
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	RESTROOM 4 INCH TILE		109A, 109B, 108, 108A, 108B, 206A, 206B	1,190	SF	1.00	$54,976	1975	30	17	DR
IW08	WALL FINISH - WOOD PANEL, STANDARD	VENEER PANEL		FIRST FLOOR CORRIDOR	1,190	SF	1.00	$26,360	1997	40	7	2044

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
IW09	WALL FINISH - WALL COVERING, ROLL	ACOUSTIC FABRIC STUDIO WALL		105H	590	SF	1.00	$3,700	2019	20		2039
IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION	PERFORATED ACM TILE		205B	290	SF	1.00	$3,847	1975	20	17	DR
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	LOOM		211, 205C, 204, 101, 105G, MOST OFFICES	6,580	SF	1.00	$96,996	2019	12		2031
IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD	12X12		201, 219, 214, 215, MOST CORRIDORS	20,890	SF	1.00	$161,166	2019	20		2039
IF08	FLOORING - TILE, CERAMIC / STONE / QUARRY ECONOMY	1X TILE		109A, 109B, 108, 108A, 108B, 206A, 206B	1,140	SF	1.00	$29,159	1997	20	5	DR
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	NEW 2X4 ACT		MOST AREAS EXCEPT RESTROOMS	26,370	SF	1.00	$320,362	2019	30		2049
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	OLD 2X4 ACT		215	1,100	SF	1.00	$13,364	1997	30		2027
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD	STD PAINT		108A, 108B, 206A, 206B, STAIR TOWER	860	SF	1.00	$2,317	2019	24		2043
VT03	ELEVATOR MODERNIZATION - HYDRAULIC	ELEV 4	10140	99	1	EA	1.00	$363,640	1997	25	4	2026
VT04	ELEVATOR CAB RENOVATION - PASSENGER	ELEV 4	10140	ELEVATOR	1	EA	1.00	$64,123	1997	12	17	2026
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	PORCELAIN LEVER		109A, 109B, 108A, 108B, 206A, 206B	13	EA	1.00	$20,818	2019	35		2054
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	JANITOR SINK		108	1	EA	1.00	$2,158	1975	35		DR

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FX10	PLUMBING FIXTURE - URINAL	PORCELAIN		109A, 108, 108A, 206A	5	EA	1.00	$12,748	2019	35	12	2066
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	PORCELAIN TANKLESS		109A, 109B, 108A, 108B, 206A, 206B	13	EA	1.00	$30,494	2019	35		2054
BF01	BACKFLOW PREVENTER (<=1 INCH)	WATER WALL BF, 3/4 INCH		B01	1	EA	1.00	$1,263	2020	10	5	2035
PS02	SUPPLY PIPING SYSTEM - CLASSROOM	COPPER		BUILDING WIDE	30,118	SF	1.00	$352,514	1997	35	5	2037
PD02	DRAIN PIPING SYSTEM - CLASSROOM	CAST IRON		BUILDING WIDE	30,118	SF	1.00	$532,417	1997	40		2037
HU53	UNIT HEATER, STEAM/HYDRONIC STD (TO 250 MBH)	CABINET HEATER		STAIR 1222	1	EA	1.00	$1,346	1976	35	12	2023
TK02	EXPANSION TANK (0-20 GAL)	WATER WALL TANK	S#3GVT604682	B01	20	GAL	1.00	$5,895	2015	25		2040
TK05	EXPANSION TANK (61-100 GAL)	HHW AIR SEPARATOR		B01	80	GAL	1.00	$15,696	2017	25		2042
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CRU-3, VERIZON		EXTERIOR	5	TON	1.00	$12,909	2016	23		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CRU-2, VERIZON		EXTERIOR	5	TON	1.00	$12,909	2016	23		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CRU-4, VERIZON		EXTERIOR	5	TON	1.00	$12,909	2016	23		2039
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	CRU-1, CROWN CASTLE		EXTERIOR	5	TON	1.00	$12,909	2017	23		2040
HU01	CONDENSER - REFRIGERANT, AIR-COOLED (<=10 TON)	AC-5, LIEBERT PDX		EXTERIOR	5	TON	1.00	$12,909	2017	23		2040
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	STUDIO CONDENSER		EXTERIOR	15	TON	1.00	$20,359	2007	23		2030
TK33	EXPANSION TANK, DIAPHRAGM (250-550 GAL)	HHW EXP TANK		B01	200	GAL	1.00	$15,709	1998	25		2023

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	STUDIO AHU		104	2	HP	1.00	$24,136	2005	25		2030
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-14		B01	3	HP	1.00	$29,647	1997	25	7	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-13		B01	3	HP	1.00	$29,647	1997	25	7	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-20		203	3	HP	1.00	$29,647	1997	25	7	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-18		203	3	HP	1.00	$29,647	1997	25	7	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-19		203B	3	HP	1.00	$29,647	1997	25	7	2029
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU-17		297	5	HP	1.00	$53,468	1997	25	7	2029
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-16		B01	7.50	HP	1.00	$67,216	1997	25	7	2029
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-15		98	7.50	HP	1.00	$67,216	1997	25	7	2029
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EXHAUST FAN		LOWER ROOF	1	EA	1.00	$7,711	2018	20		2038
FN27	FAN - PROPELLER WITH LOUVER, 1/4" SP (1-1.5 HP)	THROUGH WALL FAN		B01	1	HP	1.00	$2,466	1997	20	9	2026
HV02	HVAC DISTRIBUTION NETWORKS - CLASSROOM	DUCT AND PIPING		BUILDING WIDE	30,118	SF	1.00	$1,164,082	1997	40		2037
HX02	HEAT EXCHANGER - SHELL & TUBE WATER TO WATER (85-255 GPM)	HEAT EXCHANGER		B01	120	GPM	1.00	$32,271	1997	35	1	2033
HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV		B01	1	EA	1.00	$5,376	1997	20	6	2023
PH01	PUMP - ELECTRIC (<=10 HP)	P-17 HHW PUMP	22384	B01	5	HP	1.00	$9,903	2015	25		2040

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
PH01	PUMP - ELECTRIC (<=10 HP)	P-18 CHW PUMP		B01	7.58	HP	1.00	$15,013	1997	25	1	2023
PH01	PUMP - ELECTRIC (<=10 HP)	WATER WALL PUMP		B01	3	HP	1.00	$5,942	2020	25		2045
PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	DUPLEX CRU		B01	2	HP	1.00	$17,905	2003	20	4	2027
RV01	SAFETY RELIEF VALVE	SAFETY RELIEF VALVE		B01	1	EA	1.00	$22,955	1997	25	1	2023
AH36	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (3-10 TON)	CRU-3, VERIZON		B01A	5	TON	1.00	$66,869	2016	15	2	2033
AH36	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (3-10 TON)	CRU-4, VERIZON		B01A	5	TON	1.00	$66,869	2016	15	2	2033
AH36	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (3-10 TON)	AC-5, LIEBERT PDX		B01A	5	TON	1.00	$66,869	2017	15	1	2033
AH36	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (3-10 TON)	CRU-1, CROWN CASTLE		B01A	5	TON	1.00	$66,869	2017	15	1	2033
AH36	COMPUTER ROOM AC UNIT - REFRIGERANT, EXCL. HEAT REJECTION (3-10 TON)	CRU-2, VERIZON		B01A	5	TON	1.00	$66,869	2016	15	2	2033
AC01	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	SPEEDAIRE COMPRESSOR		B01	1	HP	1.00	$2,160	2014	20		2034
AD01	AIR DRYER - REFRIGERATED - 0-10 CFM	HANKISON AIR DRYER		B01	1	EA	1.00	$1,961	2020	15		2035
BA02	HVAC CONTROLS - TERMINAL ASSEMBLIES - CLASSROOM	TERMINAL ASSEMBLIES		BUILDING WIDE	30,118	SF	1.00	$112,255	2017	20		2037
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	PANELS AND SOFTWARE		BUILDING WIDE	30,118	SF	1.00	$31,410	2017	10	2	2029
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	MAJOR INSTRMNTTN		BUILDING WIDE	30,118	SF	1.00	$16,010	2017	10	2	2029
FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	FACP		B01	1	EA	0.40	$18,227	1997	15	13	2025

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	SERVER RM FACP		B01A	1	EA	0.25	$11,392	2020	15		2035
FA02	FIRE ALARM SYSTEM - DEVICES	DETECTORS, NOTIFIERS, PULL STATIONS		BUILDING WIDE	29,118	SF	1.00	$142,996	1997	18	10	2025
FA02	FIRE ALARM SYSTEM - DEVICES	DETECTORS, NOTIFIERS, PULL STATIONS		B01A	1,000	SF	1.00	$4,911	2020	18		2038
FS02	FM200 OR INERGEN FIRE SUPPRESSION	B01A		B01A	18,000	CF	1.00	$131,822	2015	25		2040
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-2		B01	1	EA	1.00	$92,732	1997	25	1	2023
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	120/208 & 277/480 VOLTS		BUILDING WIDE	14,118	SF	1.04	$389,011	1976	40	10	2026
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	120/208 & 277/480 VOLTS		BUILDING WIDE	15,000	SF	1.00	$397,417	1997	40		2037
SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	120/208 & 277/480 VOLTS		B01A	1,000	SF	1.18	$31,263	2019	40		2059
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	PANEL A		104	400	AMP	1.00	$39,436	1994	20	12	2026
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	LP25B		203	600	AMP	1.00	$56,085	1997	20	10	2027
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANEL LPB5		B01	600	AMP	1.00	$56,085	1997	20	10	2027
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANEL HPB5		B01	600	AMP	1.00	$56,085	1997	20	10	2027
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	JOYE-TRA-001, DTB5C	10147	B01	30	KVA	1.00	$7,075	1997	30		2027
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	TRANSFORMER DTEB5B		B01	30	KVA	1.00	$7,075	1997	30		2027

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	JOYE-TRA-004, DTEB5A	10148	B01	45	KVA	1.00	$10,613	1997	30		2027
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	DTB5A		B01	30	KVA	1.00	$7,075	1990	30	3	2023
TX26	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (50-75 KVA)	SIEMENS		B01A	50	KVA	1.00	$9,755	1997	30		2027
TX28	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (112.5-150 KVA)	STUDIO TRANSFORMER		EXTERIOR	112.50	KVA	1.00	$19,718	1998	30	-3	2025
TX29	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (150-225 KVA)	XFMR TDAS2		B01	150	KVA	1.00	$20,140	2018	30		2048
TX29	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (150-225 KVA)	TRANS TDAS1		B01	150	KVA	1.00	$20,140	2021	30		2051
TX30	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (225-300 KVA)	JOYE-TRA-003, DTB5B	10146	B01	225	KVA	1.00	$26,960	1997	30		2027
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-20 VSD		203	3	HP	1.00	$2,530	2017	12		2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-18 VSD		203	3	HP	1.00	$2,530	2017	12		2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-19 VSD	10134	203B	3	HP	1.00	$2,530	2017	12		2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-14 VSD		B01	3	HP	1.00	$2,530	2017	12		2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-13 VSD		B01	3	HP	1.00	$2,530	2017	12		2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-16 VSD		B01	7.50	HP	1.00	$5,736	2017	12		2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	P-17 VSD		B01	5	HP	1.00	$3,824	2017	12		2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-17 VSD	10135	297	5	HP	1.00	$3,824	2017	12		2029

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-15 VSD		98	7.50	HP	1.00	$5,736	2017	12		2029
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	P-18 VSD		B01	7.50	HP	1.00	$4,783	2017	12		2029
LE03	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)	RECESSED, OVERHANG		EXTERIOR	17	EA	1.00	$4,799	2007	15	5	2027
LE04	LIGHTING - EXTERIOR, STANCHION LUMINAIRE, 12-FOOT	POLE MOUNTED		EXTERIOR	2	EA	1.00	$5,254	1997	15	15	2027
LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	SURFACE LED		EXTERIOR	5	EA	1.00	$5,950	2015	15		2030
LE08	LIGHTING - EXTERIOR, WALL LANTERN or FLOOD (INC, CFL, LED)	SURFACE, TWIN, FLOOD		EXTERIOR	1	EA	1.00	$500	1997	15	11	2023
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	RECESSED, SURFACE, PEN. RETROFIT LED		BUILDING WIDE	30,118	SF	0.97	$356,453	1997	20	12	2029
SF02	SEATING, FIXED, FOLDING, PREMIUM	OLD PREM SEATS		201	76	EA	1.00	$77,244	1997	60		2057
SF02	SEATING, FIXED, FOLDING, PREMIUM	NEW PREM SEATS		201	30	EA	1.00	$30,491	2019	60		2079
SF02	SEATING, FIXED, FOLDING, PREMIUM	GREEN PREM SEATS		201	10	EA	1.00	$10,164	2019	60		2079
SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE	MECHANICAL COURTYARD		SOUTH ELEVATION	143	LF	1.00	$984	1975	7	40	DR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SERVICE ROAD		WEST ELEVATION	722	SY	1.00	$3,141	1975	7	40	DR
SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	SIDEWALK		NORTH, EAST, WEST ELEVS	309	LF	1.00	$1,848	1975	7	40	DR
SI03	BRICK PAVERS	RED BRICK		EAST ELEVATION	6,321	SF	1.00	$160,343	2019	25		2044

RENEWABLE COMPONENT INVENTORY

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	QTY	UNITS	CPLX FACTR	TOTAL COST	INSTL DATE	USEFUL LIFE	USEFUL LIFE ADJ	REPL YEAR
							Grand Total:	$8,890,325				

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
RR20	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED			ROOF	B3010	95	LF	$1,943	DR
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH	MOD BIT	10126	ROOF	B3010	17,372	SF	$115,375	DR
IW15	URINAL PARTITION WITH ACCESSORIES	MARBLE		108A, 206A	C1010	3	EA	$1,755	DR
IW14	TOILET PARTITION WITH ACCESSORIES	MARBLE		108A, 108B, 206A, 206B	C1010	10	SYS	$31,357	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	NON CORRIDOR KNOB DOORS		205D, 201B, 215B, 219, 119, 118, 102	C1020	25	LEAF	$65,147	DR
DR01	DOOR AND FRAME, INTERIOR, NON-RATED	RESTROOM PUSH PULL DOORS		109A, 109B, 108A, 108B, 206A, 206B	C1020	6	LEAF	$15,635	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	OLD CORRIDOR KNOB		BOTH CORRIDORS	C1020	22	LEAF	$99,017	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	AUDITORIUM DOORS		201	C1020	2	LEAF	$9,002	DR
DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	CORRIDOR SEPARATION DRS		1ST FLOOR CORRIDOR	C1020	2	LEAF	$9,002	DR
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	SOLID SURF, WOOD		204	C1030	20	LF	$12,984	DR
IW03	WALL FINISH - TILE, CERAMIC / STONE, STANDARD	RESTROOM 4 INCH TILE		109A, 109B, 108, 108A, 108B, 206A, 206B	C3010	1,190	SF	$54,976	DR

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

IW12	WALL FINISH - PANEL, MEDICAL / LABORATORY APPLICATION	PERFORATED ACM TILE		205B	C3010	290	SF	$3,847	DR
IF08	FLOORING - TILE, CERAMIC / STONE / QUARRY ECONOMY	1X TILE		109A, 109B, 108, 108A, 108B, 206A, 206B	C3020	1,140	SF	$29,159	DR
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	JANITOR SINK		108	D2010	1	EA	$2,158	DR
SI07	CONCRETE VEHICULAR PAVING - JOINT MAINTENANCE	MECHANICAL COURTYARD		SOUTH ELEVATION	G2010	143	LF	$984	DR
SI06	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE	SERVICE ROAD		WEST ELEVATION	G2020	722	SY	$3,141	DR
SI01	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	SIDEWALK		NORTH, EAST, WEST ELEVS	G2030	309	LF	$1,848	DR
					TOTAL DEFERRED RENEWAL COST			**$457,328**	

2023									
COMP CODE	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**CUSTOMER ID**	**LOCATION**	**UNI-FORMAT**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
HU53	UNIT HEATER, STEAM/HYDRONIC STD (TO 250 MBH)	CABINET HEATER		STAIR 1222	D3020	1	EA	$1,346	2023
TK33	EXPANSION TANK, DIAPHRAGM (250-550 GAL)	HHW EXP TANK		B01	D3030	200	GAL	$15,709	2023

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

PH01	PUMP - ELECTRIC (<=10 HP)	P-18 CHW PUMP		B01	D3040	7.58	HP	$15,013	2023
HX09	PRESSURE REDUCING VALVE, STEAM SYSTEM (2")	PRV		B01	D3040	1	EA	$5,376	2023
RV01	SAFETY RELIEF VALVE	SAFETY RELIEF VALVE		B01	D3040	1	EA	$22,955	2023
MC02	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (400-600A) W/STARTERS	MCC-2		B01	D5010	1	EA	$92,732	2023
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	DTB5A		B01	D5010	30	KVA	$7,075	2023
LE08	LIGHTING - EXTERIOR, WALL LANTERN or FLOOD (INC, CFL, LED)	SURFACE, TWIN, FLOOD		EXTERIOR	D5020	1	EA	$500	2023
						2023 PROJECTED COMPONENT REPLACEMENT COST		**$160,707**	

2024

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	COILING DOOR		MECHANICAL COURTYARD	B2030	1	EA	$2,635	2024
						2024 PROJECTED COMPONENT REPLACEMENT COST		**$2,635**	

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2025									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	FACP		B01	D4030	1	EA	$19,337	2025
FA02	FIRE ALARM SYSTEM - DEVICES	DETECTORS, NOTIFIERS, PULL STATIONS		BUILDING WIDE	D4030	29,118	SF	$151,704	2025
TX28	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (112.5-150 KVA)	STUDIO TRANSFORMER		EXTERIOR	D5010	112.50	KVA	$20,919	2025
					2025 PROJECTED COMPONENT REPLACEMENT COST			$191,960	

2026									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
VT03	ELEVATOR MODERNIZATION - HYDRAULIC	ELEV 4	10140	99	D1010	1	EA	$397,359	2026
VT04	ELEVATOR CAB RENOVATION - PASSENGER	ELEV 4	10140	ELEVATOR	D1010	1	EA	$70,069	2026
FN27	FAN - PROPELLER WITH LOUVER, 1/4" SP (1-1.5 HP)	THROUGH WALL FAN		B01	D3040	1	HP	$2,695	2026
SG01	MAIN SWITCHBOARD W/BREAKERS (<400 AMP)	PANEL A		104	D5010	400	AMP	$43,092	2026

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

SE02	ELECTRICAL DISTRIBUTION NETWORK - CLASSROOM	120/208 & 277/480 VOLTS		BUILDING WIDE	D5010	14,118	SF	$425,083	2026
					2026 PROJECTED COMPONENT REPLACEMENT COST			**$938,298**	

2027									
COMP CODE	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**CUSTOMER ID**	**LOCATION**	**UNI-FORMAT**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
EW12	WALL, EXTERIOR, PANEL JOINT RESTORATION	WHITE METAL PANEL SIDING		ROOF BELOW	B2010	2,930	SF	$85,678	2027
IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	OLD 2X4 ACT		215	C3030	1,100	SF	$15,041	2027
PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	DUPLEX CRU		B01	D3040	2	HP	$20,153	2027
TX26	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (50-75 KVA)	SIEMENS		B01A	D5010	50	KVA	$10,980	2027
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	LP25B		203	D5010	600	AMP	$63,124	2027
TX30	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (225-300 KVA)	JOYE-TRA-003, DTB5B	10146	B01	D5010	225	KVA	$30,344	2027
SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANEL LPB5		B01	D5010	600	AMP	$63,124	2027
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	TRANSFORMER DTEB5B		B01	D5010	30	KVA	$7,963	2027

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

SG02	MAIN SWITCHBOARD W/BREAKERS (400-600 AMP)	PANEL HPB5		B01	D5010	600	AMP	$63,124	2027
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	JOYE-TRA-001, DTB5C	10147	B01	D5010	30	KVA	$7,963	2027
TX25	TRANSFORMER - DRY-TYPE, 3PH, 480V SECONDARY (30-50 KVA)	JOYE-TRA-004, DTEB5A	10148	B01	D5010	45	KVA	$11,945	2027
LE03	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)	RECESSED, OVERHANG		EXTERIOR	D5020	17	EA	$5,401	2027
LE04	LIGHTING - EXTERIOR, STANCHION LUMINAIRE, 12-FOOT	POLE MOUNTED		EXTERIOR	D5020	2	EA	$5,914	2027
					2027 PROJECTED COMPONENT REPLACEMENT COST			**$390,755**	

No Projected Component Replacement Cost for Asset No. 001A for 2028

2029									
COMP CODE	**COMPONENT DESCRIPTION**	**IDENTIFIER**	**CUSTOMER ID**	**LOCATION**	**UNI-FORMAT**	**QTY**	**UNITS**	**REPLACEMENT COST**	**YEAR**
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-15		98	D3040	7.50	HP	$80,259	2029

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-14		B01	D3040	3	HP	$35,400	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-13		B01	D3040	3	HP	$35,400	2029
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-16		B01	D3040	7.50	HP	$80,259	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-20		203	D3040	3	HP	$35,400	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-18		203	D3040	3	HP	$35,400	2029
AH04	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-19		203B	D3040	3	HP	$35,400	2029
AH05	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU-17		297	D3040	5	HP	$63,844	2029
BA25	HVAC CONTROLS - FIELD PANELS/OPS SOFTWARE - CLASSROOM	PANELS AND SOFTWARE		BUILDING WIDE	D3060	30,118	SF	$37,505	2029
BA48	HVAC CONTROLS - MAJOR INSTRUMENTATION - CLASSROOM	MAJOR INSTRMNTTN		BUILDING WIDE	D3060	30,118	SF	$19,117	2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-15 VSD		98	D5010	7.50	HP	$6,849	2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-20 VSD		203	D5010	3	HP	$3,021	2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-18 VSD		203	D5010	3	HP	$3,021	2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-17 VSD	10135	297	D5010	5	HP	$4,566	2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-19 VSD	10134	203B	D5010	3	HP	$3,021	2029
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-14 VSD		B01	D5010	3	HP	$3,021	2029

RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	AHU-13 VSD		B01	D5010	3	HP	$3,021	2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-16 VSD		B01	D5010	7.50	HP	$6,849	2029
VF02	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	P-17 VSD		B01	D5010	5	HP	$4,566	2029
VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	P-18 VSD		B01	D5010	7.50	HP	$5,712	2029
LI02	LIGHTING SYSTEM, INTERIOR - CLASSROOM	RECESSED, SURFACE, PEN. RETROFIT LED		BUILDING WIDE	D5020	30,118	SF	$425,623	2029
						2029 PROJECTED COMPONENT REPLACEMENT COST		**$927,251**	

2030

COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
HU02	CONDENSER - REFRIGERANT, AIR-COOLED (10-35 TON)	STUDIO CONDENSER		EXTERIOR	D3030	15	TON	$25,039	2030
AH03	AIR HANDLING UNIT - INDOOR (1.75-2.75 HP)	STUDIO AHU		104	D3040	2	HP	$29,684	2030
LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)	SURFACE LED		EXTERIOR	D5020	5	EA	$7,317	2030
						2030 PROJECTED COMPONENT REPLACEMENT COST		**$62,041**	

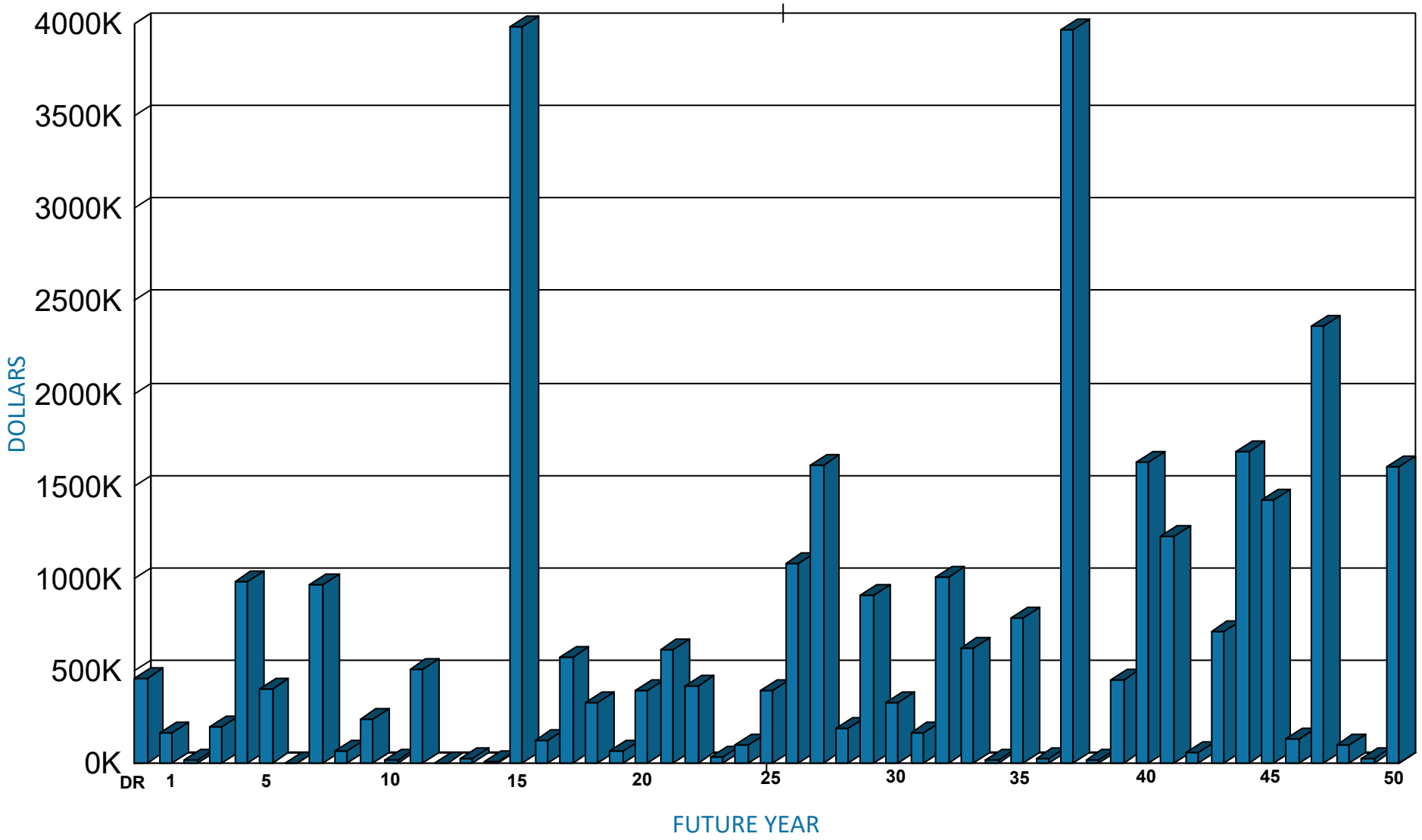
RECURRING NEEDS BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2031									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
IW01	WALL FINISH - PAINT, STANDARD	STD WALL PAINT		MOST AREAS	C3010	27,910	SF	$95,253	2031
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD	LOOM		211, 205C, 204, 101, 105G, MOST OFFICES	C3020	6,580	SF	$122,871	2031
					2031 PROJECTED COMPONENT REPLACEMENT COST			$218,125	

2032									
COMP CODE	COMPONENT DESCRIPTION	IDENTIFIER	CUSTOMER ID	LOCATION	UNI-FORMAT	QTY	UNITS	REPLACEMENT COST	YEAR
RR29	ROOF HATCH - ACCESS	MODULAR ALUM	10126	ROOF	B3020	1	EA	$7,445	2032
					2032 PROJECTED COMPONENT REPLACEMENT COST			$7,445	

RECURRING COMPONENT EXPENDITURE PROJECTIONS



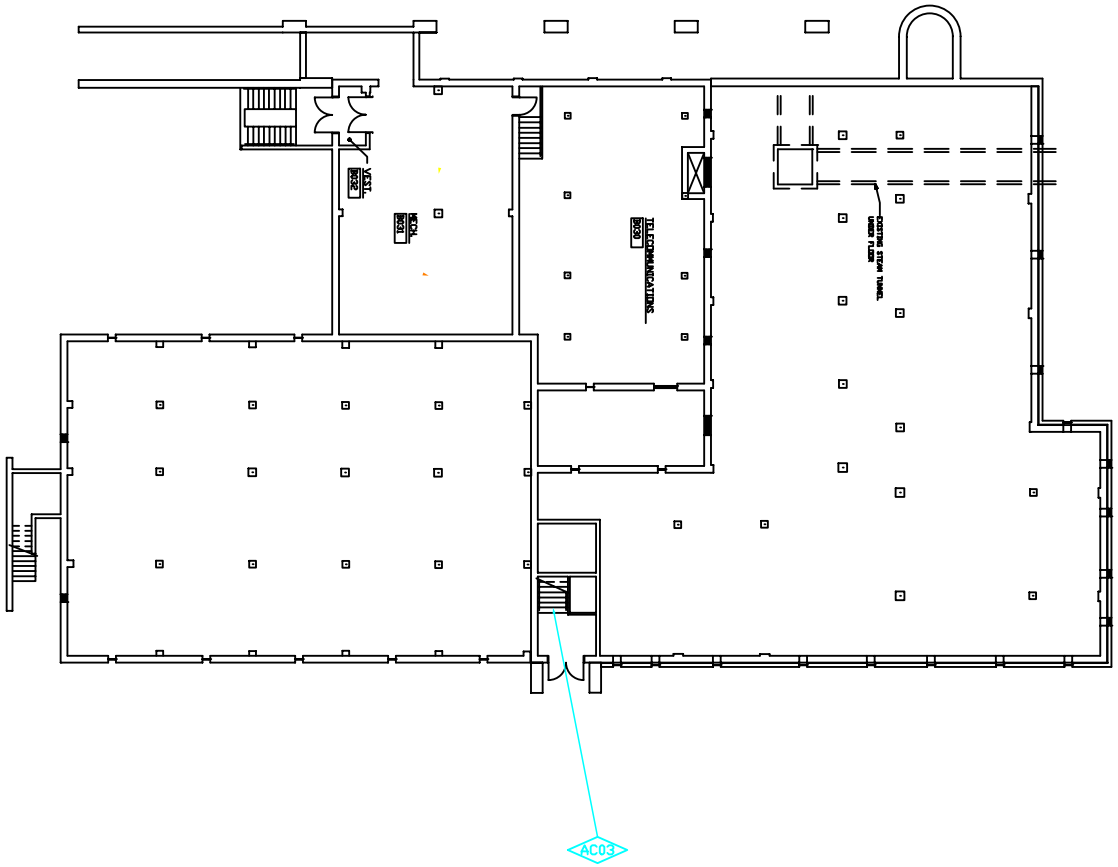
Average Annual Renewal Cost per SF $9.70

FACILITY CONDITION ASSESSMENT

SECTION 5

DRAWINGS

EAST CAROLINA UNIVERSITY



JOYNER
EAST

ISES
CORPORATION

FACILITY
CONDITION
ANALYSIS

2165 West Park Court
Suite N
Stone Mountain GA 30087
770.879.7376

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

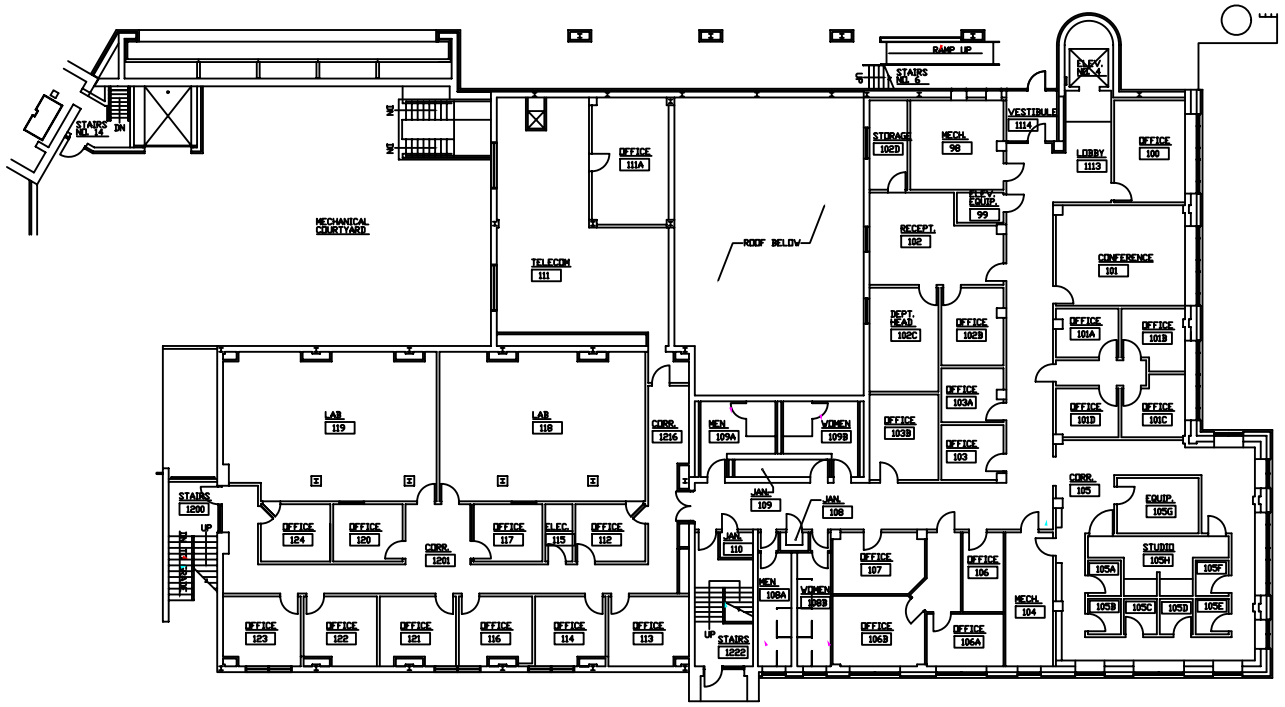
PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/04/09
Drawn by: J.T.V.
Project No. 09-041

GROUND FLOOR PLAN

Sheet No.
1 of 3

EAST CAROLINA UNIVERSITY



JOYNER
EAST

ISES CORPORATION

FACILITY
CONDITION
ANALYSIS

2165 West Park Court
Suite N
Stone Mountain GA 30087
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PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

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PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

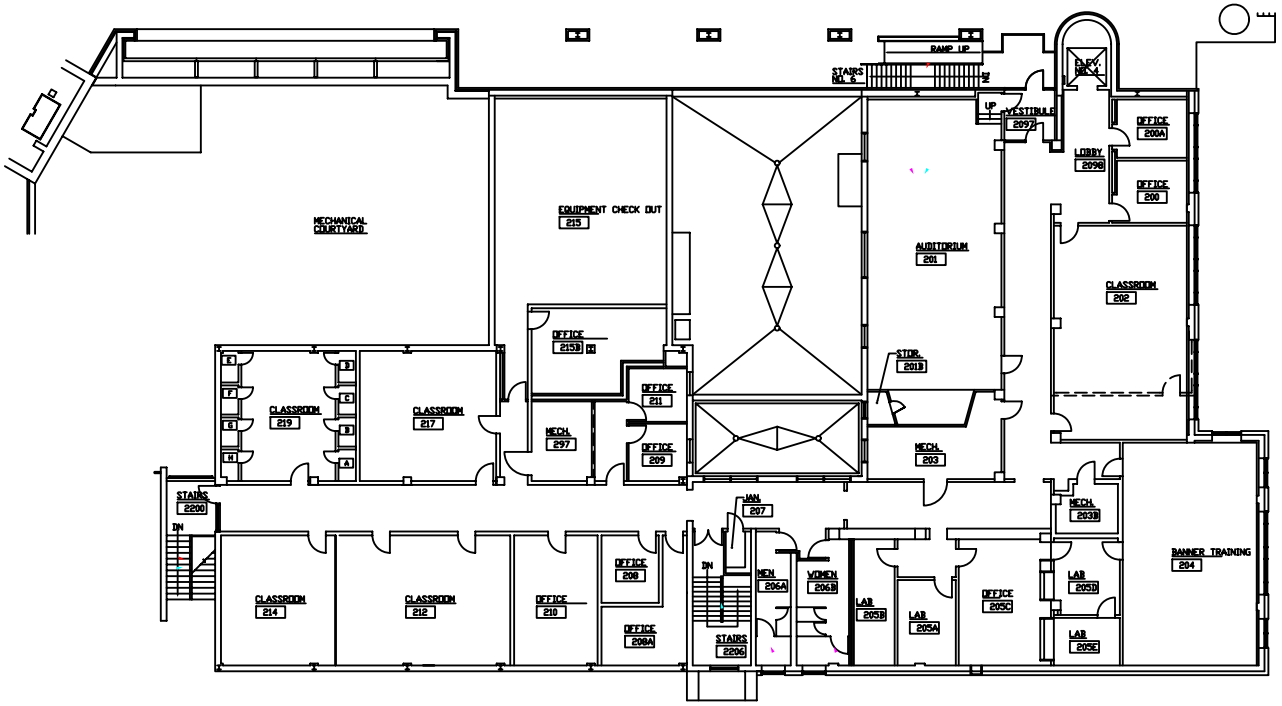
PROJECT NUMBER APPLIES TO AREA AS NOTED

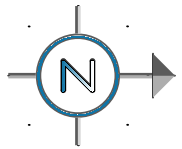
Date: 11/04/09
Drawn by: J.T.V.
Project No. 09-041

FIRST FLOOR PLAN

Sheet No.
2 of 3

EAST CAROLINA UNIVERSITY





JOYNER EAST

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2165 West Park Court
Suite N
Stone Mountain GA 30087
770.879.7376

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 11/04/09
Drawn by: J.T.V.
Project No. 09-041

SECOND FLOOR PLAN

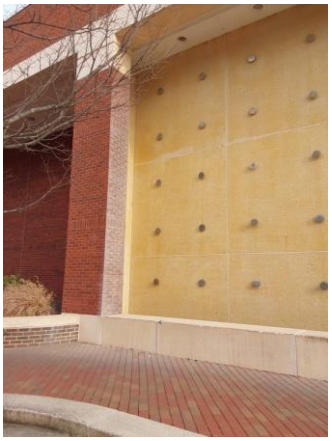
Sheet No.
3 of 3

SECTION 6

PHOTOGRAPHS

001A001a 1/12/2023
Water wall and brick pavers
West elevation

001A001e 1/12/2023
150-kVA dry-type transformer TDAS1
Room B01



001A002a 1/12/2023
Water stains on wall
West elevation

001A002e 1/12/2023
Circa 1990 dry-type transformer
Room B01

001A003a 1/12/2023
Exterior door power operator
West elevation

001A003e 1/12/2023
Water wall feature pump skid
Room B01

001A004a 1/12/2023
Brick efflorescence
North elevation

001A004e 1/12/2023
Refrigerated air dryer
Room B01

001A005a 1/12/2023
Custom glazing
North elevation

001A005e 1/12/2023
Air compressor
Room B01

001A006a 1/12/2023
Glazing and drive
East elevation

001A006e 1/12/2023
Motor control center MCC-2
Room B01

001A007a 1/12/2023
Exterior powder-coated aluminum door
East elevation

001A007e 1/12/2023
600-amp panelboard LPB5
Room B01

001A008a 1/12/2023
Exterior chain link fence
East elevation

001A008e 1/12/2023
Fire alarm control panel
Room B01

001A009a 1/12/2023
Exterior fire stair without handrail
South elevation

001A009e 1/12/2023
Air handler AHU-14
Room B01

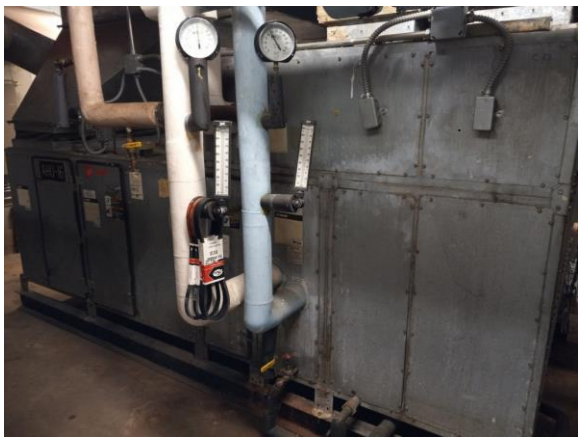
001A010a 1/12/2023
Brick deterioration on south facing wall
South elevation

001A010e 1/12/2023
Air handler AHU-13
Room B01

001A011a 1/12/2023
Overhead coiling door
South elevation

001A011e 1/12/2023
Variable speed drives for AHU-13 and AHU-14
Room B01

001A012a 1/12/2023
Exterior tunnel door
South elevation



001A012e 1/12/2023
Air handler AHU-14
Room B01

001A013a 1/12/2023

Exterior gates and stair

South elevation

001A013e 1/12/2023

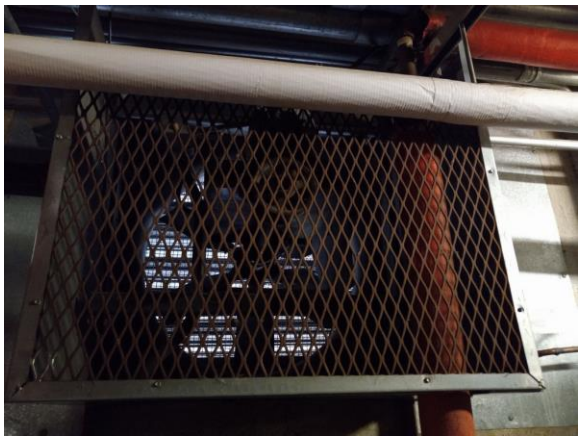
Modernized controls

Room B01

001A014a 1/12/2023

Clock tower with glazing and brick

Southeast elevation



001A014e 1/12/2023

Through wall exhaust fan

Room B01

001A015a 1/12/2023

Clock tower glazing and brick

Southwest elevation

001A015e 1/12/2023

Duplex condensate return unit

Room B01

001A016a 1/12/2023
Clock tower glazing and brick
Northwest elevation

001A016e 1/12/2023
Shell and tube heat exchanger
Room B01

001A017a 1/12/2023
Replace water wall doors
West wall

001A017e 1/12/2023
Heating water pump
Room B01

001A018a 1/12/2023
Back of water wall
West wall

001A018e 1/12/2023
Updated controls on air handler AHU-16
Room B01

001A019a 1/12/2023
Back of south mechanical wall
South wall

001A019e 1/12/2023
Chilled water pump P-18
Room B01

001A020a 1/12/2023
Roof hatch
Roof

001A020e 1/12/2023
Pressure reducing valve
Room B01

001A021a 1/12/2023
Roof hatch nameplate
Roof

001A021e 1/12/2023
Steam safety relief valve
Room B01

001A022a 1/12/2023

Basement roof

Roof

001A022e 1/12/2023

Computer room AC unit 5

Room B01A

001A023a 1/12/2023

Roof blister

Roof

001A023e 1/12/2023

Computer room AC unit CRU-1

Room B01A

001A024a 1/12/2023

North roof with parapets

Roof

001A024e 1/12/2023

HFC 227 fire suppression system controller

Room B01A

001A025a 1/12/2023

Gutter with downspout

Roof

001A025e 1/12/2023

HFC 227 fire suppression system chemical storage tank

Room B01A

001A026a 1/12/2023

Roof blister

Roof

001A026e 1/12/2023

Network emergency power battery bank

Room B01A

001A027a 1/12/2023

Fall protection needed over water wall

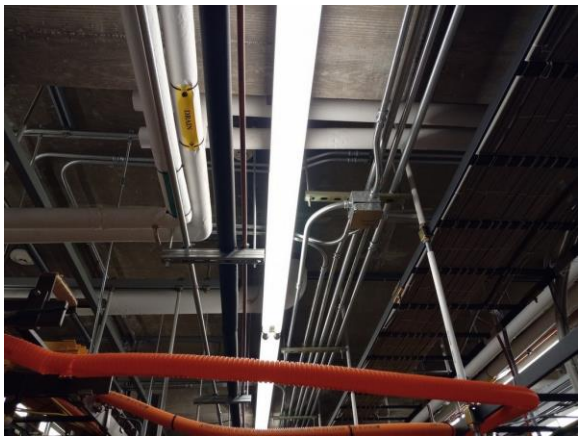
Roof

001A027e 1/12/2023

Various piping systems

Room B01A

001A028a 1/12/2023
Gutter with downspouts
Roof



001A028e 1/12/2023
Aged interior lighting
Room B01A

001A029a 1/12/2023
Southeast roof with parapet wall
Roof

001A029e 1/12/2023
Rooftop exhaust fan
Lower roof

001A030a 1/12/2023
Roof with downspouts
Roof

001A030e 1/12/2023
Overview of waste pipe and potable water pipe
Crawlspace

001A031a 1/12/2023

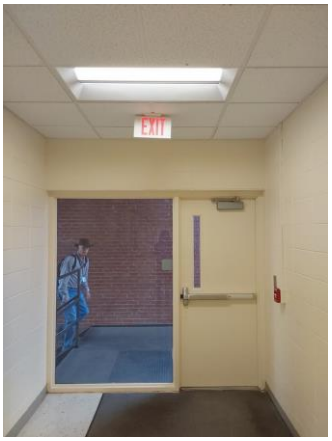
Grime on metal siding

Roof

001A031e 1/12/2023

Network emergency power battery inverter

Room B01A



001A032a 1/12/2023

South corridor entrance

Stair 2200

001A032e 1/12/2023

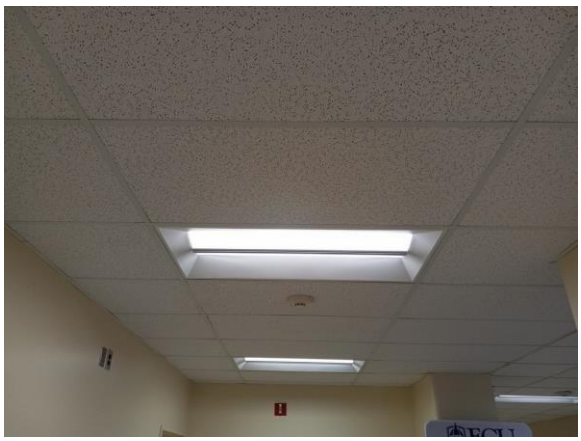
Elevator lighting

Elevator

001A033a 1/12/2023

Music room with knob hardware

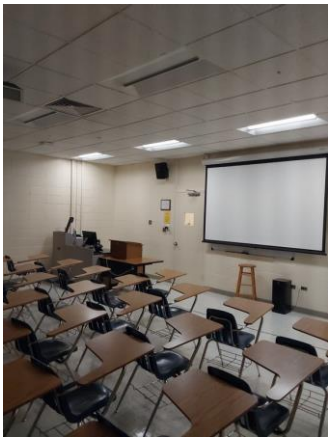
Room 219



001A033e 1/12/2023

2x4 recessed lighting with LED retrofit

Second floor corridor

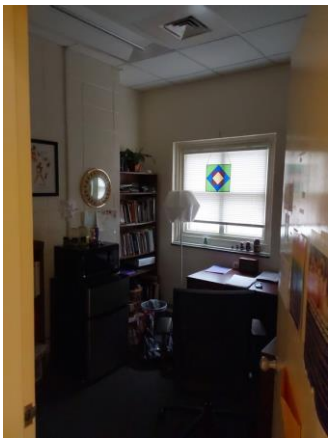


001A034a 1/12/2023
Typical classroom finishes
Room 214

001A034e 1/12/2023
Fire alarm system detector
Second floor corridor

001A035a 1/12/2023
Multimedia newsroom with finishes shown
Room 215

001A035e 1/12/2023
Fire alarm system notifier
Second floor corridor



001A036a 1/12/2023
Typical second floor office with finishes shown
Room 211

001A036e 1/12/2023
Aged secondary electric system panelboard
Second floor corridor

001A037a 1/12/2023

Knob hardware

Second floor south corridor

001A037e 1/12/2023

Circa 1997 air handler AHU-20

Mechanical 203

001A038a 1/12/2023

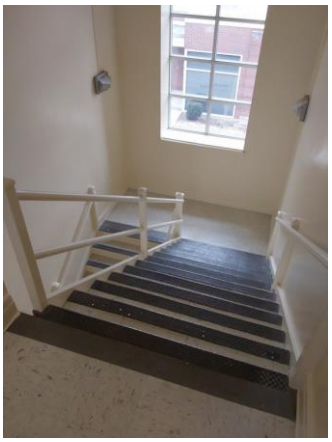
Stair tower doors

Second floor south corridor

001A038e 1/12/2023

Lighting showing retrofit kit

Mechanical 203



001A039a 1/12/2023

East stairs with noncompliant handrail

Room 2206

001A039e 1/12/2023

Circa 1997 air handler AHU-19

Mechanical 203B

001A040a 1/12/2023
Wall-hung lavatories and partitions
Room 206A

001A040e 1/12/2023
Zoned, metal HVAC ductwork
Mechanical 203B

001A041a 1/12/2023
Ceramic wall and floor tile, painted upper wall, and wall-hung lavatories
Room 206B

001A041e 1/12/2023
Fire alarm system pull station
Second floor corridor

001A042a 1/12/2023
Gray marble partitions
Room 206B

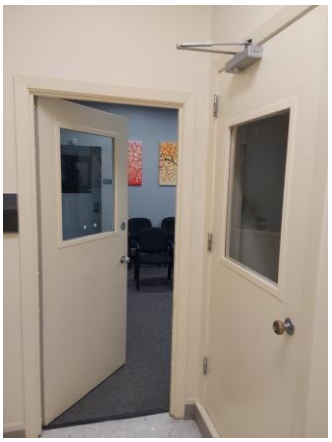
001A042e 1/12/2023
Modernized electronic actuators
Mechanical 297

001A043a 1/12/2023
Wall with possible asbestos
Room 205B

001A043e 1/12/2023
Chilled and heating water distribution pipe
Mechanical 297

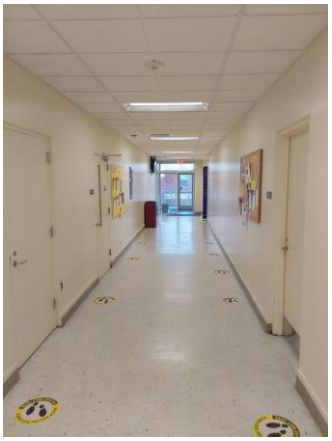
001A044a 1/12/2023
Step up threshold
Room 205B

001A044e 1/12/2023
Updated Trane sensor and temperature controller
Room 201



001A045a 1/12/2023
Doors with knob hardware and vision glass
Room 205C

001A045e 1/12/2023
Variable air volume terminal assembly
Mechanical 098



001A046a 1/12/2023

Corridor finishes

Second floor west corridor

001A046e 1/12/2023

Hydraulic elevator machine

Elevator 099

001A047a 1/12/2023

Two single height water fountains

Second floor west corridor

001A047e 1/12/2023

Elevator controls

Elevator 099

001A048a 1/12/2023

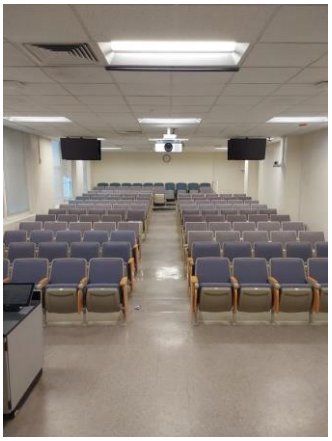
Wood casework

Room 204

001A048e 1/12/2023

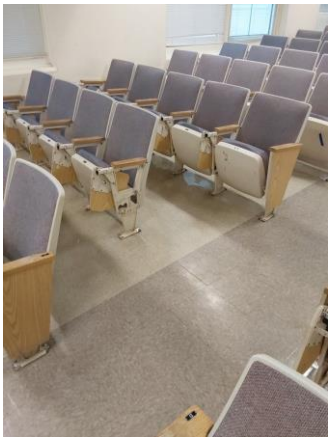
Circa 2004 air handler for Studio

Mechanical 104



001A049a 1/12/2023
Assembly area with fixed seating
Room 201

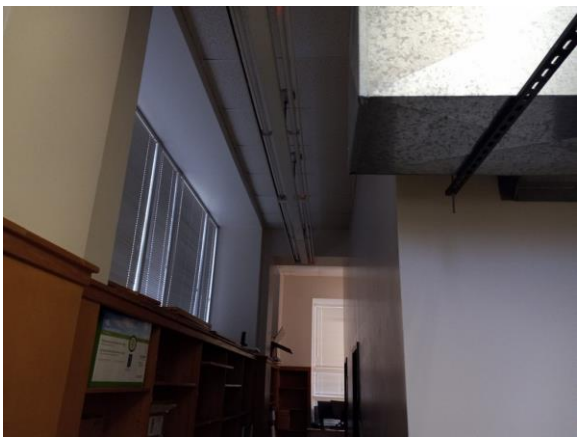
001A049e 1/12/2023
Electric duct heater
Mechanical 104



001A050a 1/12/2023
Possible ADA wheelchair location
Room 201

001A050e 1/12/2023
Circa 1994 electrical panelboard
Mechanical 104

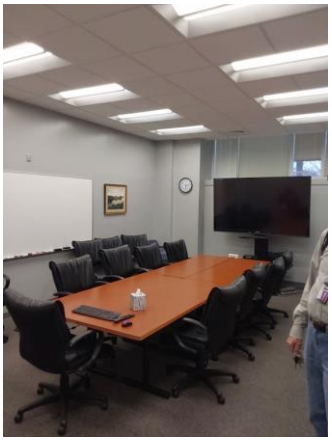
001A051a 1/12/2023
West second floor entrance
Room 2097



001A051e 1/12/2023
Aged lighting with T12 lamps
Room 105

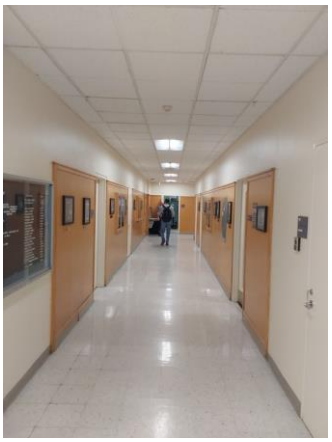
001A052a 1/12/2023
Elevator control panel
Elevator 4

001A052e 1/12/2023
Pendant style interior lighting
Room 118



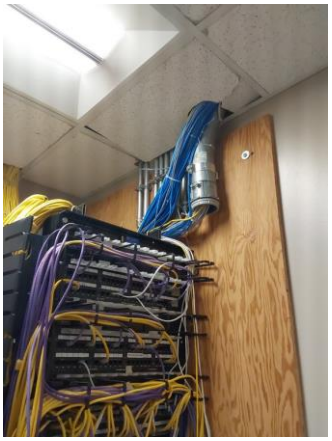
001A053a 1/12/2023
Conference room with finishes shown
Room 101

001A053e 1/12/2023
Aged flood light
Exterior



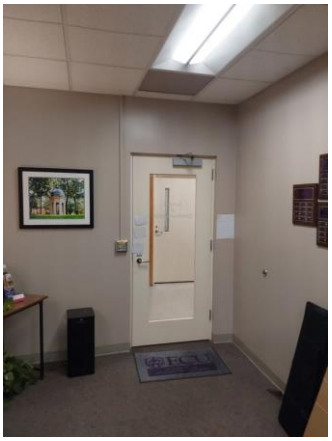
001A054a 1/12/2023
Corridor finishes
First floor west corridor

001A054e 1/12/2023
Computer room air cooled condensers
Exterior



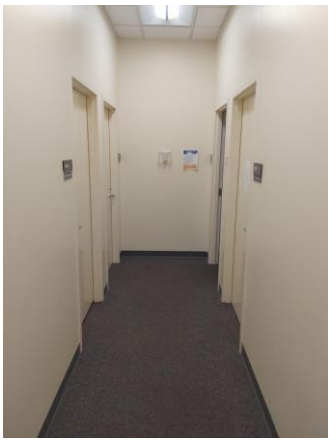
001A055a 1/12/2023
Missing fire blocking in conduit
Room 102D

001A055e 1/12/2023
Computer room air-cooled condensers
Site



001A056a 1/12/2023
Office suite glass door
Room 102

001A056e 1/12/2023
15 ton air cooled condenser
Site



001A057a 1/12/2023
Office finishes
Room 101A-D

001A057e 1/12/2023
Overview of piping systems
Crawlspace

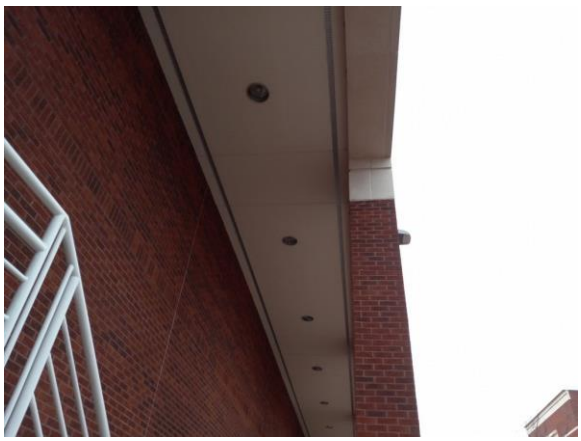
001A058a 1/12/2023
Typical sound booth with acoustic wall finish
Room 105H

001A058e 1/12/2023
Pole-mounted light fixture
Site

001A059a 1/12/2023
Typical sound booth
Room 105G

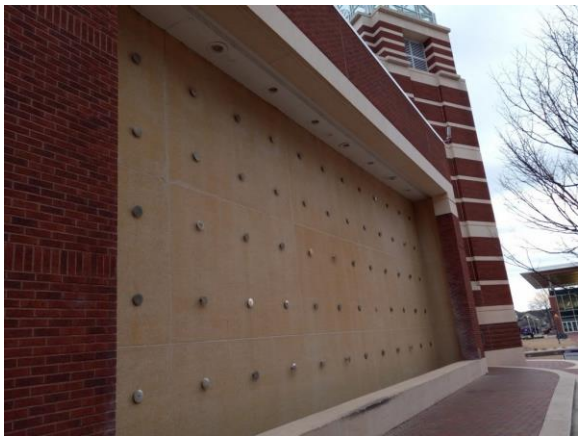
001A059e 1/12/2023
Surface mounted light fixture with LED lamps
Exterior

001A060a 1/12/2023
Single height water fountain
South corridor



001A060e 1/12/2023
Recessed light fixture
Exterior

001A061a 1/12/2023
Urinal, toilet partition and ceramic wall and floor finishes
Room 109a

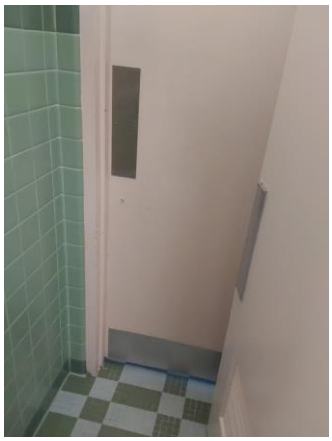


001A061e 1/12/2023
Water wall feature
Exterior

001A062a 1/12/2023
Ceramic floor and wall tile, painted upper wall, and wall-hung lavatories
Room 109a

001A063a 1/12/2023
Typical water closet with grab bars
Room 109a

001A064a 1/12/2023
Mop sink
Room 110



001A065a 1/12/2023
Men's restroom double doors too close
Room 108a

001A066a 1/12/2023
Urinals, partitions, and ceramic wall and floor finishes
Room 108a

001A067a 1/12/2023
Side mounted water closets
Room 108a

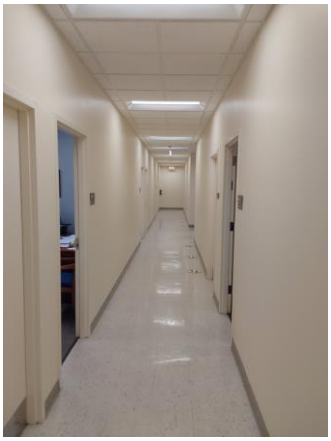
001A068a 1/12/2023
Wall-hung lavatories and ceramic floor and wall finishes
Room 108a

001A069a 1/12/2023
Toilet partitions and pink ceramic finishes
Room 108B

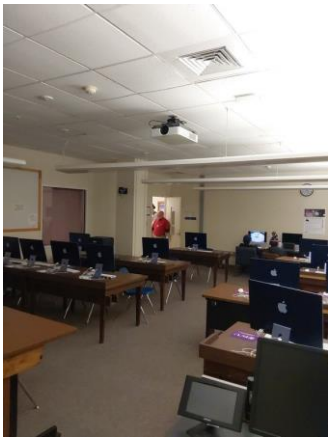
001A070a 1/12/2023
Wall-hung lavatories
Room 108B

001A071a 1/12/2023
Plastic partitions
Room 109B

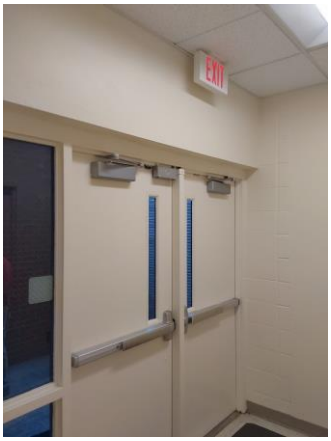
001A072a 1/12/2023
Wall-hung lavatories
Room 109B



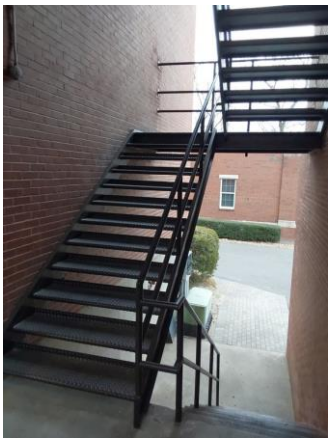
001A073a 1/12/2023
Lever hardware
First floor south corridor



001A074a 1/12/2023
Computer lab finishes
Room 118



001A075a 1/12/2023
South exit doors with panic hardware
South corridor



001A076a 1/12/2023
Open risers
South elevation

001A077a 1/12/2023
Exterior egress stair
West elevation

FACILITY CONDITION ASSESSMENT

SECTION 7

PRELIMINARY ENERGY ASSESSMENT

INTRODUCTION

A Preliminary Energy Assessment (PEA) was conducted to identify energy conservation opportunities. The PEA is intended to be a preliminary energy screening only. The goal is to identify potential energy savings opportunities in a building. It is not equivalent to an American Society of Heating, Refrigeration, or Air Conditioning Engineers (ASHRAE) Level 1, 2, or 3 audit. The PEA has two sections: 1) Benchmarking Data and 2) Energy Conservation Opportunities. Basic building information is provided in **Table 1**.

TABLE 1. BUILDING INFORMATION	
Client	East Carolina University
Asset Number	001A
Asset Name	Joyner East
Year Built or Last Energy Renovation	1997

BENCHMARKING DATA

The purpose of benchmarking building performance is to determine how well a building performs in comparison to other similar buildings. For this analysis, buildings were assessed based on their primary use (e.g., education, food sales, food service, etc.) and year constructed. Two metrics -- energy use intensity and energy end use -- are presented for the building manager to use to assess how efficiently the building performs compared to similar buildings.

Metric #1: Energy Use Intensity (EUI)

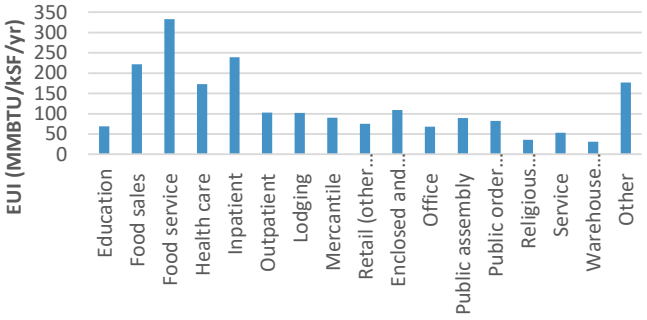
EUI is a measure of energy consumption per square foot of building space per year. The units of measurement are million British thermal units per thousand square foot per year (MMBTU/kSF/yr). The US-DOE EUI can be compared to the actual EUI of the client building to determine how efficient the building is compared to other similar buildings. A building manager can calculate EUI by summing total energy consumption per year (in MMBTU/yr) and dividing it by the building area (in kSF). Benchmarking data from the U.S. Energy Information Administration (EIA) Commercial Building Energy Consumption Survey (CBECS) database was used for this analysis.

Basic information about the building use and the time of the most recent major HVAC or lighting upgrade is provided in **Table 2**. That information is used to determine the Benchmark EUI. The building manager can calculate the Building EUI and compare it to the Benchmark EUI to determine how building efficiency compares to similar buildings (see **Table 3**). In addition, **Figure 1** shows the EUIs of various building types for further comparison.

TABLE 2. BUILDING DETAILS	
FCA Building Type	Classroom
Energy Information Administration Equivalent Building Type	Education
Range of Years Constructed/Last Major Energy Renovation	1990 to present
Benchmark EUI (MMBTU/kSF/yr) =	**69**
Building EUI to be Calculated by Client (MMBTU/kSF/yr) =	

TABLE 3. EUI COMPARISON	
Very Energy Efficient (consumes more than 30% less energy)	EUI < 48.3
Energy Efficient (consumes 10% to 30% less energy)	48.3 <= EUI <= 62.1
Similar (consumes within 10% less or 10% more energy)	62.1 < EUI < 75.9
Energy Inefficient (consumes 10% to 30% more energy)	75.9 <= EUI <= 89.7
Very Energy Inefficient (consumes more than 30% more energy)	EUI > 89.7

Figure 1. EUIs for Buildings Constructed/Renovated 1990 to present

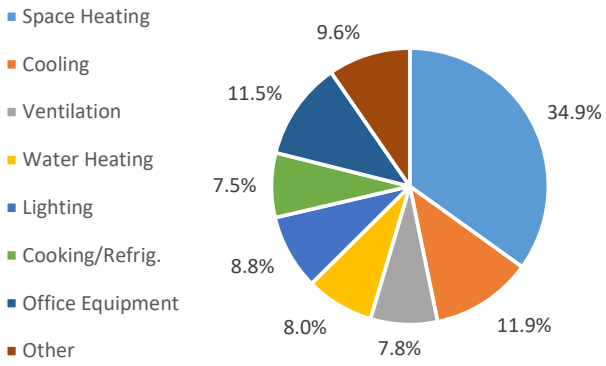


Metric #2: Energy End Use

Energy end use data characterizes how energy is used by profiling energy consumption into end use categories such as space heating, cooling, ventilation, lighting, etc. When energy end use data is presented in a pie chart, high energy-consuming activities are readily identified. A building manager can determine the energy end use profile for a building by analyzing trend data from a Building Automation System and/or Energy Management Control System.

TABLE 4. ENERGY END USE PROFILE: CLASSROOM	
Space Heating	34.9%
Cooling	11.9%
Ventilation	7.8%
Water Heating	8.0%
Lighting	8.8%
Cooking/Refrig.	7.5%
Office Equipment	11.5%
Other	9.6%
Total	100.0%

Figure 2. Energy End Use Profile: Classroom



References:
1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. "Technologies and Products by Category." Efficient Technologies and Products for Federal Facilities. DOE. http://energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities. Accessed: June 2016.

2. U.S. Energy Information Administration [EIA]. "2012 CBECS Survey Data." Commercial Building Energy Consumption Survey. EIA. http://www.eia.gov/consumption/commercial/data/2012/index.cfm?view=consumption#c1-c12, Accessed: June 2016.

ENERGY CONSERVATION OPPORTUNITIES

This section presents energy conservation measures (ECMs) recommended for further investigation. Recommended ECMs are categorized into one or more cost categories to indicate an approximate level of resources required to implement the ECM. These cost categories are:

Operation and Maintenance Measures (O&M): O&M actions usually (a) can be completed by in-house maintenance personnel and (b) result in an immediate return on investment.

Low-Cost/No-Cost Measures (LC/NC): LC/NC measures typically (a) can be done by in-house personnel, (b) require little to no investment cost, and (c) result in significant energy savings. In other words, LC/NC measures typically have a quick payback period (less than one year).

Capital Improvement Measures (CAP): CAP measures are major capital investments that usually require significant time (i.e., approximately six months to three years) for planning, design, and implementation. Oftentimes, a request for proposal, design/bid/build (D/B/B), and/or design/build (D/B) package is required. The return on investment for CAP projects ranges significantly, varying from a payback period from one to twenty plus years.

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
Lighting - Interior	INSTALL EFFICIENT LIGHTING FIXTURES. While incandescent lamp fixtures have a low initial cost, the lamps are energy inefficient and have a short useful life. Consider CFL and LED lighting instead. HID lamps are necessary in some applications; however, alternatives such as high bay, T5 lighting fixtures or LED fixtures should be considered as an alternate. T12 lamps are an outdated lighting technology that should be replaced with newer technologies such as T8, T5, or LED lamp fixtures.	N/A, Varies
Lighting - Interior, Controls	INSTALL LIGHTING CONTROLS. Oftentimes, lighting fixtures on switches do not get turned off when a space is unoccupied. Occupancy sensors, photocell sensors, and lighting control systems can help reduce lighting energy consumption. For example, consider installing occupancy sensors in offices, common areas, and other areas that have variable occupancy. In areas where there is natural lighting, consider using photocell sensors to dim or shut off fixtures that aren't needed. Alternatively, install a comprehensive light control system that uses time clock schedules, occupancy sensors, photocell sensors, etc., to monitor and control lighting throughout an entire building.	N/A, Varies
Lighting - Exterior	INSTALL EFFICIENT LIGHTING FIXTURES. While incandescent lamp fixtures have a low initial cost, the lamps are energy inefficient and have a short useful life. Consider CFL and LED lighting instead. HID lamps are necessary in some applications; however, alternatives such as high intensity T5 or LED fixtures should be considered. T12 lamps are an outdated lighting technology that should be replaced with newer technologies such as high intensity fluorescent or LED lamp fixtures.	N/A, Varies
Lighting - Exterior, Controls	INSTALL LIGHTING CONTROLS. Consider using photocell sensors or timeclocks to shut off building/parking lot fixtures during daylight hours.	N/A, Varies
HVAC - Air Dist. Network Insulation	INSULATE DUCTWORK. Insulating HVAC ductwork reduces heat loss and decreases energy consumption.	CAP

ECM CATEGORY	ECM RECOMMENDED FOR FURTHER CONSIDERATION	COST CATEGORY
HVAC - Air Dist. Network, VAV	INSTALL VARIABLE AIR VOLUME (VAV) SYSTEM. In constant air volume (CAV) systems, more energy is required to heat, cool, and distribute air than in VAV systems. Consider a VAV system to reduce energy consumption, mainly fan energy consumption.	CAP
Electrical - Motor Efficiency	UPGRADE TO PREMIUM EFFICIENCY MOTORS. Premium efficiency motors operate more efficiently than standard or high efficiency motors and so reduce energy consumption and operating costs. A return on investment is usually realized within a few years.	O&M; LC/NC; CAP