

**EAST CAROLINA UNIVERSITY**

Facility Condition Assessment

Warren Life Sciences Building

Asset LIFE

Inspected March 16, 2015





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# FACILITY CONDITION ASSESSMENT

## SECTION 1

### ASSET OVERVIEW



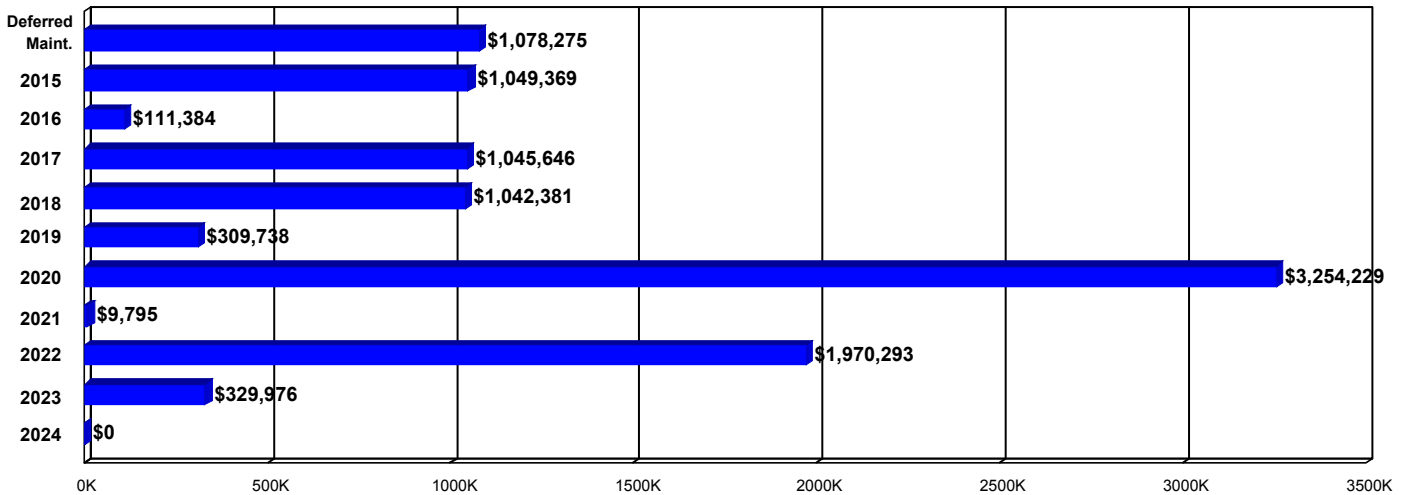
### EXECUTIVE SUMMARY - WARREN LIFE SCIENCES BUILDING

**Building Code:** LIFE  
**Building Name:** WARREN LIFE SCIENCES BUILDING  
**Year Built:** 1980  
**Building Use:** Laboratory  
**Square Feet:** 75,482

**Non-Recurring Project Costs by Priority**  
**Immediate:** \$0  
**Critical:** \$268,372  
**Non-Critical:** \$1,177,557

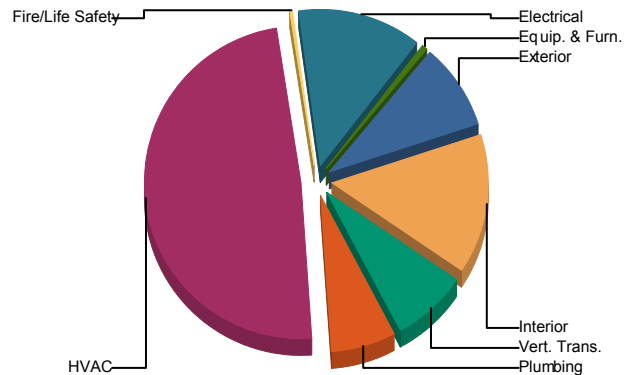
**Current Replacement Value:** \$39,035,000      **Total Non-Recurring Project Costs:** \$1,445,929

**Recurring Component Replacement Cost By Year**



**Recurring Facilities Renewal Cost By System**

Exterior	\$911,317
Interior	\$1,464,665
Plumbing	\$688,429
HVAC	\$4,958,140
Fire/Life Safety	\$18,050
Electrical	\$1,290,655
Site	\$0
Conveying	\$801,767
Equipment	\$68,063
<b>Total</b>	<b>\$10,201,085</b>



**Non-Recurring Project Cost** \$1,445,929  
**Deferred Maintenance Cost** \$1,078,275  
**Projected Facility Renewal Cost** \$9,122,810  
**Total 10-Year Facility Cost** \$11,647,014

FCNI	FCI	10-Yr \$/SqFt
0.30	0.028	\$154.30





## ASSET SUMMARY

The Warren Life Sciences Building, located near the North Campus Loop of East Carolina State University, is connected to the Vidant Medical Center and Brody School of Medicine. This two-story, 75,482 square foot medical support lab and research facility was constructed in 1980 and contains a mixture of medical exam rooms, medical offices, research labs, and administrative support space. An addition was completed in 1997. Some of the first floor lab area was reportedly renovated in 2013, and there have been other isolated upgrades throughout this building.

Information for this report was gathered during a site visit conducted on March 16, 2015.

### Site

The sidewalk system consists of a covered walkway to the hospital and a small section leading from the parking lot to the entrance. Most of the sidewalk is the standard design, but the entrance facing the parking area has a custom design sidewalk. In both areas, the sidewalks are in good condition and expected to have a lifecycle that extends beyond the purview of this report. The parking area appears to have been resurfaced within the past ten years and is in good condition. No upgrade is recommended.

### Exterior Structure

The brick and CMU finishes are in average to good condition. Some isolated sections of masonry may need to be repointed within the next ten years, but no major upgrade is anticipated. There is an EIFS finish along the walkway and near the general parking area. This finish is in good condition but is at the end of its useful life and should be upgraded. The multi-level EPDM main roof was reportedly installed in 2014 and should outlast this report scope. The secondary modified bitumen roof was installed in 2003 and is recommended for replacement within the next ten years. No upgrade of the metal roofing on the rooftop mechanical space and the covered walkway is recommended. The original, double-pane, aluminum frame windows are generally in fair condition, but several are leaking. Window replacement is recommended. The newer windows are in very good condition and should outlast the scope of this report. Also, no upgrade of the glass block windows should be necessary within the next ten years. Exterior doors include both metal and storefront systems. Most of the doors appear to be original and are nearing the end of their expected lifecycle. Replacement is recommended.

### Interior Finishes/Systems

The second floor labs are in very good condition and require no upgrades at this time. However, the first floor labs near the abandoned radiation research facility have original wood lab casework and damaged doors, flooring, and ceilings. These areas are recommended for upgrade.

The finishes in the office areas range from poor to good condition. The abandoned offices have carpet, painted walls, and acoustical tile ceilings. These finishes are beyond their expected lifecycle and should be upgraded. The newer finishes on the second floor and in active first floor labs are in good condition. The painted walls, 12x12 floor tile, and acoustical tile ceilings in these areas are expected to have a normal lifecycle that extends beyond the scope of this report. Restrooms have ceramic tile floor and wall finishes, and the lobby has a ceramic tile floor. No upgrade of these finishes is recommended.

The interior doors in the newer section of the building are in very good condition, with no upgrade recommended. The older interior doors in and near the Bio Lab are in poor condition. These should be upgraded to match the newer door installations.

## Accessibility

There is some wheelchair accessibility in this building. The elevators provide ADA compliant access to both floors, but the hand-free phone is located behind a door. It is recommended that this door be removed. Also, the restrooms have been upgraded for ADA compliance, but access to the second floor restrooms near the labs is limited by the original airlock door systems. To improve handicap access, the installation of powered door operators is recommended.

The second floor staff kitchen break room lacks under-counter wheelchair access but does have adequate side wheelchair approach. The cabinetry will likely require replacement within the next ten years. The replacement system should comply with ADA requirements.

The single level configuration of the drinking fountains is a barrier to accessibility. They should be replaced with dual level units. The construction of alcoves will likely be necessary.

Most of the doors have lever hardware and ADA compliant signage. However, the abandoned labs and accompanying offices have knob hardware. This older section also lacks upgraded ADA signage. It is recommended that lever handle hardware be installed on all doors that still have knobs and that ADA compliant room and directional signage be installed. The signage should meet specific size, graphical, Braille, height, and location requirements.

Some handicap upgrades have been made in labs, such as lab 248, which has push button access, a lowered eyewash station, and open areas for wheelchair access. The radiation labs on the first floor are abandoned and the casework original. Any future upgrades to these labs should include provisions for ADA compliance.

Current 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. Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, some handrails are deficient relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades. Low headroom clearance issues were also noted, such as under the lobby stairs. A permanent barrier should be installed to protect those who are visually impaired.

## Health

Four walk-in cold rooms serve the research labs. These are located in rooms 028B, 154, 156 and 187. The cold room in 028B is 1980 vintage and overdue for replacement. The other three are 1997 vintage. Their enclosures will outlast the scope of this report. Their refrigeration systems, however, have a shorter expected service life and are due for replacement.

## Fire/Life Safety

This facility is protected by a modern point addressable central fire alarm system with a recently installed Simplex 4100ES control panel in room 107. The devices that serve this system include manual pull stations, audible/visible devices, and smoke detectors. The system is in very good condition. With proper maintenance, it should outlast the scope of this report.

The 1997 addition is protected by an automatic, comprehensive, wet-pipe sprinkler system. In the original section, fire suppression is provided by fire extinguishers. The extension of the wet-pipe sprinkler system is recommended to reduce overall liability and risk of loss. This effort should include piping, valves, sprinkler heads, and piping supports. Install flow switches and sensors to interface with the fire alarm system.

The exit signs are connected to the emergency power network. Emergency lighting is available through standard interior light fixtures that are connected to the emergency power network. The exit signs in the 1997 addition are LED illuminated and appear to be in good condition, but are approaching the end of their expected service life. The exit signs in the original section are already outdated and should be replaced as soon as possible.

Additionally, large classrooms, such as room 202, should have an exit sign above the doorway, and the exit signs in the loading dock area and in the corridor outside of room 025 are non-illuminating. The installation of additional exit signs is recommended in these areas.

## HVAC

The facility is connected to the campus steam loop via two sets of pressure reducing valves (PRV). Steam is used for heating and humidification in the four main air handling units (AHU) in the 1997 addition (AHU-001, -002, -003, -004). Two shell-and-tube heat exchangers use the steam to produce heating hot water. The hot water is circulated to the reheat coils, unit heaters, and radiators by several heating hot water pumps. Three electric and one pneumatic condensate receivers capture the steam condensate and complete the campus steam loop. The heat exchanger in room 041 (HEX-001) is at the end of its expected service life, while the heat exchanger in room 260 (HEX-002) should outlast the scope of this report. The PRVs, pumps, and condensate receivers that were added during the 1997 addition will reach the end of their expected service life during the next ten years. The 1980 vintage PRVs are beyond their expected service life. Their poor condition warrants replacement soon.

Chilled water is supplied by the campus chilled water loop and circulated by two chilled water pumps (40 hp each). Chilled water is used for cooling in all of the air handlers. The two pumps are 1997 vintage and should be scheduled for replacement within the next ten years.

The air handlers provide conditioned air. The 1997 addition has four main air handling units that are equipped with low pressure steam heating coils, chilled water coils, steam humidification system, heat recovery section, and supply fans. The humidification systems are currently out of order and need to be replaced. AHU-003 and -004 are also equipped with return fans. AHU-005 and AHU-006 are smaller units with heating hot water and chilled water coils that serve the bridge connecting this building to the adjacent building.

On the roof of the 1997 addition are seven exhaust air units (EAU) that are providing ventilation from the animal labs (fume hoods), and are equipped with heat recovery coils to extract the heat from the air before venting to the atmosphere. Two of these units (EAU-02A and -02B) were upgraded in 2012 to meet all the newest requirements for research for the CDC and NIH. The new EAUs will certainly outlast the scope of this report. The 1997 vintage AHUs and EAUs will reach the end of their expected service life within the next ten years and should be replaced.

Note that when the remaining five EAUs are replaced, to meet modern requirements for CDC and NIH research, many upgrades will be required. A project has been included for these upgrades, including larger motors to get the exhaust to vent high enough away from the building. Larger motors, in turn, will require larger conduit and electrical panels. Modern HEPA filters are also included.

Additional ventilation is provided to interior spaces by centrifugal roof exhausters and other exhaust fans that are mainly 1997 vintage. These fans are in fair to good condition and should be scheduled for replacement due to normal lifecycle depletion.

The original section of the building has one air handler (AHU-002-OLS) with heating hot water and chilled water coils, as well as three ASA supply fans and three AEX exhaust fans for animal labs. This 1980 vintage equipment is already beyond its expected service life and overdue for replacement.

The HVAC controls in the original building are outdated pneumatic and beyond their expected service life. Replacement is recommended. The 1997 section has a combination of pneumatics and Metasys DDC manufactured by Johnson Controls. Both the 1997 controls and the air compressors for the controls should be replaced due to expected lifecycle depletion.

Variable frequency drives (VFD) provide efficient control of the larger air handler supply fans, exhaust fans, and the chilled water pumps. The VFDs are various ages. Those installed around 2007 should be scheduled for replacement in the next ten years due to normal lifecycle depletion.

The HVAC distribution network in the 1997 section of the building is in good condition and will last well beyond the next ten years. In the original section of the building, the distribution network is approaching the end of its expected service life. Rather than replacing individual components, a complete redesign and replacement of the HVAC system is recommended. Demolish and dispose of existing equipment. Install a new modern HVAC system with variable air volume (VAV) and constant volume air distribution as needed. This includes new air handlers, ductwork, terminal units, exhaust

fans, pumps, piping, and electrical connections. Incorporate variable frequency drives (VFDs) into the new HVAC design as applicable. Replace the pneumatic control system with current DDC technology.

Note that the mechanical rooms for the old section of the building (room 041 and the penthouse on the roof) are not large enough to house modern HVAC equipment. Therefore, expansion of the rooftop penthouse is recommended.

Two fume hoods (room 007) are beyond their expected service life. The other fume hoods have only a few years of expected service life remaining. Costs can be reduced if the hoods replacement is coordinated with the proposed redesign of the HVAC system in the old section of the building and the exhaust fan upgrade.

A clean steam generator is located in room 260. This unit (CSG-1) is currently out of service. Replacement is recommended.

## Electrical

The 7,200 volt power enters the oil-filled transformer on the north exterior of the building. The 1,500 kVA transformer reduces the power to 480/277 volts and feeds the power into the 1,600 amp General Electric switchboard. The transformer and switchboard are both 1997 vintage. The transformer has a longer expected service life and should outlast the scope of this report. The switchboard, located in room 155, should be scheduled for replacement due to normal lifecycle depletion. A second 1,500 kVA transformer is also located on the north exterior. This brand new transformer is used to power a temporary chiller for emergency backup to this facility.

The electrical distribution network is a dual voltage configuration. 277/480 volt power is distributed to secondary panels and branch transformers in both the original and the 1997 sections of the building. The lighting and major mechanical systems are supported by the 277/480 volt circuit. The distribution network in the original section should be scheduled for replacement during the next ten years as it approaches the end of its expected service life. The electrical network in the 1997 section of the building should outlast the scope of this report.

The interior spaces are illuminated by 2x4 fluorescent fixtures, recessed 4-pin CFL fixtures, and a few incandescent fixtures (in old mechanical areas). The interior lighting in the 1980 vintage areas is in fair to poor condition and overdue for replacement. The lighting in the 1997 sections is in good condition but should still be scheduled for replacement. Specify energy-efficient fixtures, and install occupancy sensors where possible. Note that as the interior lighting system is replaced, the installation of new wiring/conduit will be needed to meet modern codes (i.e. communication cabling is not in code compliant conduit).

The exterior areas adjacent to the building are illuminated by HID light fixtures that are either recessed or mounted to the building. These appear to be 1997 vintage and should be scheduled for replacement soon. Additionally, exterior lighting was lacking at doorways on the roof of the facility. The installation of additional lighting is recommended. Place the new exterior lights on photocell activation.

Emergency power is provided by the 500 kW Caterpillar diesel generator located on the north exterior. The automatic transfer switch is located in room 155. These appear to be in good condition but should be scheduled for replacement in the next ten years based upon normal lifecycle depletion.

## Plumbing

Potable water is distributed via a copper piping network. There are backflow preventers (BFP) on the domestic water main, fire suppression main, and other systems that should be protected. Due to their normally short expected service life, these units should be scheduled for replacement soon. Sanitary waste and stormwater piping is cast-iron, no-hub. The supply and drain piping networks appear to be in good to fair condition. The piping in the original section of the building should be scheduled for replacement as it approaches the end of its expected service life. The piping in the 1997 addition will likely provide reliable service throughout the scope of this analysis.

The plumbing fixtures in the old section of the building are outdated and should be replaced. Install new fixtures with automatic, hands-free faucets and flush valves. The 1997 vintage fixtures are in good condition and should provide reliable service beyond the next ten years.

The two Flo-Rite instantaneous domestic water heaters in room 260 are brand new and use low pressure steam to generate hot water. No upgrade is warranted. The sump pump in room 155 appears to be 1997 vintage and, therefore, will need replacement in the coming years as it reaches the end of its expected service life.

The labs are served by vacuum, compressed air, and medical gases. The vacuum and compressed air systems are located in room 155. Medical gas control panels are visible in the corridors outside the labs. The compressed air system was recently replaced. The vacuum system and gas control panels are older and should be scheduled for replacement.

Two domestic water booster systems are located in room 155. One is the original system (1997 vintage) and is now only used as a backup. There is no need to replace this backup system. The new system was installed in 2012 and should outlast the scope of this report.

## Vertical Transportation

This facility is served by three Dover, hydraulic passenger elevators with a capacity of 5,000 pounds each and 60 hp hydraulic pumps. Two elevators are located on the north end and one on the south end. All stop at both floors. They are 1997 vintage, and the interior cabs will need renovation soon. The mechanical components should be scheduled for modernization toward the end of the next ten years.

Note: The renewal needs outlined in this report were identified from the visual inspection and staff interviews. Our professional architectural and engineering inspectors thoroughly 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

ISES Corporation  
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### Project Manager

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### Date of Inspection

March 16, 2015

### Inspection Team Personnel

NAME	POSITION	SPECIALTY
Hayden Collins	Facility Analyst	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Richard Franck	Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

### Client Contact

NAME	POSITION
Griffin L. Avin	Director of Facilities Services, Health Sciences Campus



## DEFINITIONS

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

### Overview

#### Recurring and Non-Recurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and non-recurring. 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 Lifecycle Component Inventory, which is explained in detail below. Non-recurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, non-recurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these non-recurring 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 non-recurring facilities 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.

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

#### Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Maintenance facilities renewal costs to the current replacement value.

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

## 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. Typical general contractor fees (which could include profit, overhead, bonds, and insurance) and professional fees (architect or engineer design fees and in-house design costs) are also included in the project costs.

GLOBAL MARKUP	%
Local Labor Index	51.3
Local Materials Index	100.7
General Contractor Markup	20.0
Professional Fees	16.0

## Recurring Costs

### Asset Component Inventory and Cost Projections

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

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilize to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Recurring Component Renewal Schedule, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Maintenance.

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 Maintenance**  
Recurring repairs, generated by the Lifecycle Component Inventory, that are past due for completion but have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral of such renewal could impair the proper functioning of the facility. Costs estimated for Deferred Maintenance projects should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.
- **Recurring Component Replacement**  
Recurring renewal efforts, generated by the Lifecycle Component Inventory, that will be due within the scope of the assessment. These projects represent regular or normal facility maintenance, repair, or renovation that should be planned in the near future.

## Non-Recurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, non-recurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Lifecycle 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/Program Adaption**  
Non-recurring 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 changed teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).
- **Corrective Action**  
Non-recurring 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 non-recurring 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 – Immediate**  
Projects in this category require immediate action to:
  - a. correct a cited safety hazard
  - b. stop accelerated deterioration
  - c. and/or return a facility to normal operation

- **Priority 2 – Critical**

Projects in this category include actions that must be addressed in the short-term:

- a. repairs to prevent further deterioration
- b. improvements to facilities associated with critical accessibility needs
- c. potential safety hazards

- **Priority 3 – Non-Critical**

Projects in this category include:

- a. improvements to facilities associated with non-critical accessibility needs
- b. actions to bring a facility into compliance with current building codes as grandfather clauses expire
- c. actions to improve the usability of a facility following an occupancy or use change

## 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
SS1A – SS7A	SECURITY SYSTEMS
VT1A – VT7A	VERTICAL TRANSPORTATION

<i>Example:</i> Category Code = EL5A	
<b>EL</b>	System Description
<b>5</b>	Component Description
<b>A</b>	Element Description

\*Refer to the Category Code Report starting on page 1.5.1.

## 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

### Project Subclass Type

- **Energy Conservation**  
Projects with energy conservation opportunities, based on simple payback analysis.

### Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

### Photographs

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

<i>Example:</i> Photo Number: 0001006e	
<b>0001</b>	Asset Number
<b>006</b>	Photo Sequence
<b>e</b>	Engineering Photo

## CATEGORY CODE REPORT

### ACCESSIBILITY

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
AC1A	Site	Stair and Railings	Includes exterior stairs and railings which are not part of the building entrance points.
AC1B	Site	Ramps and Walks	Includes sidewalks, grade change ramps (except for a building entrance), curb ramps, etc.
AC1C	Site	Parking	Designated parking spaces, including striping, signage, access aisles and ramps, etc.
AC1D	Site	Tactile Warnings	Raised tactile warnings located at traffic crossing and elevation changes.
AC2A	Building Entry	General	Covers all aspects of entry into the building itself, including ramps, lifts, doors and hardware, power operators, etc.
AC3A	Interior Path of Travel	Lifts/Ramps/Elevators	Interior lifts, ramps and elevators designed to accommodate level changes inside a building. Includes both installation and retrofitting.
AC3B	Interior Path of Travel	Stairs and Railings	Upgrades to interior stairs and handrails for accessibility reasons.
AC3C	Interior Path of Travel	Doors and Hardware	Accessibility upgrades to the interior doors including widening, replacing hardware power, assisted operators, etc.
AC3D	Interior Path of Travel	Signage	Interior building signage upgrades for compliance with THE ADA.
AC3E	Interior Path of Travel	Restrooms/Bathrooms	Modifications to and installation of accessible public restrooms and bathrooms. Bathrooms that are an integral part of residential suites are catalogued under HC4A.
AC3F	Interior Path of Travel	Drinking Fountains	Upgrading/replacing drinking fountains for reasons of accessibility.
AC3G	Interior Path of Travel	Phones	Replacement/modification of public access telephones.
AC4A	General	Functional Space Modifications	This category covers all necessary interior modifications necessary to make the services and functions of a building accessible. It includes installation of assistive listening systems, modification of living quarters, modifications to laboratory workstations, etc. Bathrooms that are integral to efficiency suites are catalogued here.
AC4B	General	Other	All accessibility issues not catalogued elsewhere.

### ELECTRICAL

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
EL1A	Incoming Service	Transformer	Main building service transformer.
EL1B	Incoming Service	Disconnects	Main building disconnect and switchgear.
EL1C	Incoming Service	Feeders	Incoming service feeders. Complete incoming service upgrades, including transformers, feeders, and main distribution panels are catalogued here.
EL1D	Incoming Service	Metering	Installation of meters to record consumption and/or demand.
EL2A	Main Distribution Panels	Condition Upgrade	Main distribution upgrade due to deficiencies in condition.
EL2B	Main Distribution Panels	Capacity Upgrade	Main distribution upgrades due to inadequate capacity.
EL3A	Secondary Distribution	Step-Down Transformers	Secondary distribution step-down and isolation transformers.
EL3B	Secondary Distribution	Distribution Network	Includes conduit, conductors, sub-distribution panels, switches, outlets, etc. Complete interior rewiring of a facility is catalogued here.

EL3C	Secondary Distribution	Motor Controllers	Mechanical equipment motor starters and control centers.
EL4A	Devices and Fixtures	Exterior Lighting	Exterior building lighting fixtures, including supply conductors and conduit.
EL4B	Devices and Fixtures	Interior Lighting	Interior lighting fixtures (also system wide emergency lighting), including supply conductors and conduits.
EL4C	Devices and Fixtures	Lighting Controllers	Motion sensors, photocell controllers, lighting contactors, etc.
EL4D	Devices and Fixtures	GFCI Protection	Ground fault protection, including GFCI receptacles and breakers.
EL4E	Devices and Fixtures	Lightning Protection	Lightning arrestation systems including air terminals and grounding conductors.
EL5A	Emergency Power System	Generation/ Distribution	Includes generators, central battery banks, transfer switches, emergency power grid, etc.
EL6A	Systems	UPS/DC Power Supply	Uninterruptible power supply systems and DC motor-generator sets and distribution systems.
EL7A	Infrastructure	Above Ground Transmission	Includes poles, towers, conductors, insulators, fuses, disconnects, etc.
EL7B	Infrastructure	Underground Transmission	Includes direct buried feeders, ductbanks, conduit, manholes, feeders, switches, disconnects, etc.
EL7C	Infrastructure	Substations	Includes incoming feeders, breakers, buses, switchgear, meters, CTs, PTs, battery systems, capacitor banks, and all associated auxiliary equipment.
EL7D	Infrastructure	Distribution Switchgear	Stand-alone sectionalizing switches, distribution switchboards, etc.
EL7F	Infrastructure	Area and Street Lighting	Area and street lighting systems, including stanchions, fixtures, feeders, etc.
EL8A	General	Other	Electrical system components not catalogued elsewhere.

## EXTERIOR STRUCTURE

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
ES1A	Foundation/ Footing	Structure	Structural foundation improvements involving structural work on foundation wall/footing, piers, caissons, and piles, including crack repairs, shoring, and pointing
ES1B	Foundation/ Footing	Dampproofing/ Dewatering	Foundation/footing waterproofing work, including, damp-proofing, dewatering, insulation, etc.
ES2A	Columns/Beams/ Walls	Structure	Structural work to primary load-bearing structural components aside from floors, including columns, beams, bearing walls, lintels, arches, etc.
ES2B	Columns/Beams/ Walls	Finish	Work involving restoration of the appearance and weatherproof integrity of exterior wall/structural envelope components, including masonry/pointing, expansion joints, efflorescence and stain removal, grouting, surfacing, chimney repairs, etc.
ES3A	Floor	Structure	Work concerning the structural integrity of the load supporting floors, both exposed and unexposed, including deformation, delamination, spalling, shoring, crack repair, etc.
ES4A	Roof	Repair	Work on waterproof horizontal finish (roof) involving repair and/or limited replacement (<40% total), including membrane patching, flashing repair, coping caulk/resetting, PPT wall parging/coating, walkpad installation, skylight and roof hatch R&R, etc.
ES4B	Roof	Replacement	Work involving total refurbishment of roofing system, including related component rehab.
ES5A	Fenestrations	Doors	Work on exterior exit/access door, including storefronts, airlocks, air curtains, vinyl slat doors, all power/manual operating hardware (except handicapped), etc.
ES5B	Fenestrations	Windows	Work on exterior fenestration closure and related components, including glass/metal/wood curtain walls, fixed or operable window sashes, glazing, frames, sills, casings, stools, seats, coatings, treatments, screens, storm windows, etc.



ES6A	General	Attached Structure	Work on attached exterior structure components not normally considered in above categories, including porches, stoops, decks, monumental entrance stairs, cupolas, tower, etc.
ES6B	General	Areaways	Work on attached grade level or below structural features, including subterranean lightwells, areaways, basement access stairs, etc.
ES6C	General	Trim	Work on ornamental exterior (generally non-structural) elements, including beltlines, quoins, porticos, soffits, cornices, moldings, trim, etc.
ES6D	General	Superstructure	Finish and structural work on non-standard structures with exposed load-bearing elements, such as stadiums, bag houses, bleachers, freestanding towers, etc.
ES6E	General	Other	Any exterior work not specifically categorized elsewhere, including finish and structural work on freestanding boiler stacks.

FIRE/LIFE SAFETY			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
FS1A	Lighting	Egress Lighting/Exit Signage	R&R work on exit signage and packaged AC/DC emergency lighting.
FS2A	Detection/Alarm	General	Repair or replacement of fire alarm/detection system/components, including alarms, pull boxes, smoke/heat detectors, annunciator panels, central fire control stations, remote dialers, fire station communications, etc.
FS3A	Suppression	Sprinklers	Repair or installation of water sprinkler type automatic fire suppressions, including wet-pipe and dry-pipe systems, heads, piping, deflectors, valves, monitors, associated fire pump, etc.
FS3B	Suppression	Standpipe/Hose	Repair or installation of standpipe system or components, including hardware, hoses, cabinets, nozzles, necessary fire pumping system, etc.
FS3C	Suppression	Extinguishers	Repairs or upgrades to F.E. cabinets/wall fastenings and handheld extinguisher testing/replacement.
FS3D	Suppression	Other	Other fire suppression items not specifically categorized elsewhere, including fire blankets, carbon dioxide automatic systems, Halon systems, dry chemical systems, etc.
FS4A	Hazardous Materials	Storage Environment	Installation or repair of special storage environment for the safe holding of flammable or otherwise dangerous materials/supplies, including vented flammables storage cabinets, holding pens/rooms, cages, fire safe chemical storage rooms, etc.
FS4B	Hazardous Materials	User Safety	Improvements, repairs, installation, or testing of user safety equipment, including emergency eyewashes, safety showers, emergency panic/shut-down system, etc.
FS5A	Egress Path	Designation	Installation, relocation or repair of posted diagrammatic emergency evacuation routes.
FS5B	Egress Path	Distance/Geometry	Work involving remediation of egress routing problems, including elimination of dead end corridors, excessive egress distance modifications, and egress routing inadequacies.
FS5C	Egress Path	Separation Rating	Restoration of required fire protective barriers, including wall rating compromises, fire-rated construction, structural fire proofing, wind/safety glazing, transom retrofitting, etc.
FS5D	Egress Path	Obstruction	Clearance of items restricting the required egress routes.
FS5E	Egress Path	Stairs Railing	Retrofit of stair/landing configurations/structure, railing heights/geometries, etc.
FS5F	Egress Path	Fire Doors/Hardware	Installation/replacement/repair of fire doors and hardware, including labeled fire doors, fire shutters, closers, magnetic holders, panic hardware, etc.
FS5G	Egress Path	Finish/Furniture Ratings	Remediation of improper fire/smoke ratings of finishes and furniture along egress routes.
FS6A	General	Other	Life/fire safety items not specifically categorized elsewhere.

HEALTH			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
HE1A	Environmental Control	Equipment and Enclosures	Temperature control chambers (both hot and cold) for non-food storage. Includes both chamber and all associated mechanical equipment.
HE1B	Environmental Control	Other	General environmental control problems not catalogued elsewhere.
HE2A	Pest Control	General	Includes all measures necessary to control and destroy insects, rodents, and other pests.
HE3A	Refuse	General	Issues related to the collection, handling, and disposal of refuse.
HE4A	Sanitation Equipment	Laboratory and Process	Includes autoclaves, cage washers, steam cleaners, etc.
HE5A	Food Service	Kitchen Equipment	Includes ranges, grilles, cookers, sculleries, etc.
HE5B	Food Service	Cold Storage	Includes the cold storage room and all associated refrigeration equipment.
HE6A	Hazardous Material	Structural Asbestos	Testing, abatement, and disposal of structural and building finish materials containing asbestos.
HE6B	Hazardous Material	Mechanical Asbestos	Testing, abatement, and disposal of mechanical insulation materials containing asbestos.
HE6C	Hazardous Material	PCBs	Includes testing, demolition, disposal, and cleanup of PCB contaminated substances.
HE6D	Hazardous Material	Fuel Storage	Includes monitoring, removal, and replacement of above and below ground fuel storage and distribution systems. Also includes testing and disposal of contaminated soils.
HE6E	Hazardous Material	Lead Paint	Testing, removal, and disposal of lead-based paint systems.
HE6F	Hazardous Material	Other	Handling, storage, and disposal of other hazardous materials.
HE7A	General	Other	Health related issues not catalogued elsewhere.

HVAC			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
HV1A	Heating	Boilers/Stacks/Controls	Boilers for heating purposes, including their related stacks, flues, and controls.
HV1B	Heating	Radiators/Convectors	Including cast-iron radiators, fin tube radiators, baseboard radiators, etc.
HV1C	Heating	Furnace	Furnaces and their related controls, flues, etc.
HV1D	Heating	Fuel Supply/Storage	Storage and/or distribution of fuel for heating purposes, including tanks and piping networks and related leak detection/monitoring.
HV2A	Cooling	Chillers/Controls	Chiller units for production of chilled water for cooling purposes, related controls (not including mods for CFC compliance).
HV2B	Cooling	Heat Rejection	Repair/replacement of cooling towers, dry coolers, air-cooling, and heat rejection. Includes connection of once-through system to cooling tower.
HV3A	Heating/Cooling	System Retrofit/Replace	Replacement or major retrofit of HVAC systems.
HV3B	Heating/Cooling	Water Treatment	Treatment of hot water, chilled water, steam, condenser water, etc.
HV3C	Heating/Cooling	Package/Self-Contained Units	Repair/replacement of self-contained/package type units, including stand-up units, rooftop units, window units, etc; both air conditioners and heat pumps.
HV3D	Heating/Cooling	Conventional Split Systems	Repair, installation, or replacement of conventional split systems, both air conditioners and heat pumps, including independent component replacements of compressors and condensers.

HV4A	Air Moving/ Ventilation	Air Handlers/ Fan Units	Includes air handlers and coils, fan coil units, unit ventilators, filtration upgrades, etc., not including package/self-contained units, split systems, or other specifically categorized systems.
HV4B	Air Moving/ Ventilation	Exhaust Fans	Exhaust fan systems, including fans, range and fume hoods, controls, and related ductwork.
HV4C	Air Moving/ Ventilation	Other Fans	Supply, return, or any other fans not incorporated into a component categorized elsewhere.
HV4D	Air Moving/ Ventilation	Air Distribution Network	Repair, replacement, or cleaning of air distribution network, including ductwork, terminal reheat/cool, VAV units, induction units, power induction units, insulation, dampers, linkages, etc.
HV5A	Steam/Hydronic Distribution	Piping Network	Repair/replacement of piping networks for heating and cooling systems, including pipe, fittings, insulation, related components, etc.
HV5B	Steam/Hydronic Distribution	Pumps	Repair or replacement of pumps used in heating and cooling systems, related control components, etc.
HV5C	Steam/Hydronic Distribution	Heat Exchangers	Including shell-and-tube heat exchangers and plate heat exchangers for heating and cooling.
HV6A	Controls	Complete System Upgrade	Replacement of HVAC control systems.
HV6B	Controls	Modifications/ Repairs	Repair or modification of HVAC control system.
HV6C	Controls	Air Compressors/ Dryers	Repair or modification of control air compressors and dryers.
HV7A	Infrastructure	Steam/Hot Water Generation	Generation of central steam and/or hot water, including boilers and related components.
HV7B	Infrastructure	Steam/Hot Water Distribution	Distribution system for central hot water and/or steam.
HV7C	Infrastructure	Chilled Water Generation	Generation of central chilled water, including chillers and related components.
HV7D	Infrastructure	Chilled Water Distribution	Distribution system for central chilled water.
HV7E	Infrastructure	Tunnels/ Manholes/ Trenches	Repairs, installation, or replacement of utility system access chambers.
HV7F	Infrastructure	Other	HVAC infrastructure issues not specifically categorized elsewhere.
HV8A	General	CFC Compliance	Chiller conversions/replacements for CFC regulatory compliance, monitoring, etc.
HV8B	General	Other	HVAC issues not catalogued elsewhere.

## INTERIOR FINISHES/SYSTEMS

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
IS1A	Floor	Finishes-Dry	R&R of carpet, hardwood strip flooring, concrete coating, vinyl linoleum and tile, marble, terrazzo, rubber flooring, and underlayment in predominantly dry areas ("dry" includes non-commercial kitchens)
IS1B	Floor	Finishes-Wet	Flooring finish/underlayment work in predominantly "wet" areas, including work with linoleum, rubber, terrazzo, concrete coating, quarry tile, ceramic tile, epoxy aggregate, etc.
IS2A	Partitions	Structure	Structural work on full height permanent interior partitions, including wood/metal stud and drywall systems, CMU systems, structural brick, tile, glass block, etc.
IS2B	Partitions	Finishes	Work on full height permanent interior partitions, including R&R, to gypsum board, plaster, lath, wood paneling, acoustical panels, wall coverings, column coverings, tile, paint, etc.
IS3A	Ceilings	Repair	Repair of interior ceilings (<40% of total), including tiles, gypsum board, plaster, paint, etc.
IS3B	Ceilings	Replacement	Major refurbishments (>40% of total) to interior ceiling systems, including grid system replacements, structural framing, new suspended systems, paint, plastering, etc.

IS4A	Doors	General	Any work on interior non-fire-rated doors, roll-up counter doors, mechanical/plumbing access doors, and all door hardware (except for reasons of access improvement).
IS5A	Stairs	Finish	Any finish restorative work to stair tower walking surfaces, including replacement of rubber treads, safety grips, nosings, etc. (except as required to accommodate disabled persons).
IS6A	General	Molding	R&R to interior trim/molding systems, including rubber/vinyl/wood base, crown/chair/ornamental moldings, cased openings, etc.
IS6B	General	Cabinetry	R&R work to interior casework systems, including cabinets, countertops, wardrobes, lockers, mail boxes, built-in bookcases, lab/work benches, reagent shelving, etc. (except as required for access by the disabled).
IS6C	General	Screening	Work on temporary or partial height partitioning systems, including toilet partitions, urinal/vanity screens, etc.
IS6D	General	Other	Any work on interior elements not logically or specifically categorized elsewhere, including light coves, phone booths, interior lightwells, etc.

PLUMBING			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
PL1A	Domestic Water	Piping Network	Repair or replacement of domestic water supply piping network, insulation, hangers, etc.
PL1B	Domestic Water	Pumps	Domestic water booster pumps, circulating pumps, related controls, etc.
PL1C	Domestic Water	Storage/ Treatment	Equipment or vessels for storage or treatment of domestic water.
PL1D	Domestic Water	Metering	Installation, repair, or replacement of water meters.
PL1E	Domestic Water	Heating	Domestic water heaters, including gas, oil, and electric water heaters, shell-and-tube heat exchangers, tank type, and instantaneous.
PL1F	Domestic Water	Cooling	Central systems for cooling and distributing drinking water.
PL1G	Domestic Water	Fixtures	Plumbing fixtures, including sinks, drinking fountains, water closets, urinals, etc.
PL1H	Domestic Water	Conservation	Alternations made to the water distribution system to conserve water.
PL1I	Domestic Water	Backflow Protection	Backflow protection devices, including backflow preventers, vacuum breakers, etc.
PL2A	Wastewater	Piping Network	Repair or replacement of building wastewater piping network.
PL2B	Wastewater	Pumps	Pump systems used to lift wastewater, including sewage ejectors and other sump systems.
PL3A	Special Systems	Process Gas/Fluids	Generation and/or distribution of process steam, compressed air, natural and LP gas, process water, vacuum, etc.
PL4A	Infrastructure	Potable Water Storage/ Treatment	Storage and treatment of potable water for distribution.
PL4B	Infrastructure	Industrial Water Distribution/ Treatment	Storage and treatment of industrial water for distribution.
PL4C	Infrastructure	Sanitary Water Collection	Sanitary water collection systems and sanitary sewer systems, including combined systems.
PL4D	Infrastructure	Stormwater Collection	Stormwater collection systems and storm sewer systems; storm water only.
PL4E	Infrastructure	Potable Water Distribution	Potable water distribution network.
PL4F	Infrastructure	Wastewater Treatment	Wastewater treatment plants, associated equipment, etc.
PL5A	General	Other	Plumbing issues not categorized elsewhere.

SITE			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
SI1A	Access	Pedestrian	Paved pedestrian surfaces, including walks, site stairs, step ramps, paths, pedestrian signage, sidewalk bridges/canopies, pedestrian plaza/mall areas, etc.
SI1B	Access	Vehicular	Paved vehicular surfaces, including roads, paths, curbs, guards, bollards, bridges, skyways, joints, shoulder work, culverts, ditches, vehicular signage, etc.
SI2A	Landscape	Grade/Flora	Landscape related work, including new grass/turf refurbishment, grade improvements, catch basins, swales, berms, pruning, new ornamental flora, etc.
SI3A	Hardscape	Structure	Permanent hard site features, predominantly ornamental, including terraces, fences, statues, freestanding signage, fountains, benches, etc.
SI4A	General	Other	Other site work not specifically categorized elsewhere.

SECURITY SYSTEMS			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
SS1A	Lighting	Exterior	Fixtures, stanchions, foliage interference, cleanliness, locations, etc.
SS2A	Site	Fencing	Perimeter campus fencing, individual building fencing, includes both pedestrian and vehicular control fences.
SS2B	Site	General	Hidden areas due to foliage, fencing, parking, walls, etc.
SS3A	Communications	Emergency Phones	Access, locations, visibility, function, reliability, etc.
SS4A	Access Control	Doors	Access, locks, keys, two-way speakers, reliability, redundancy, etc.
SS4B	Access Control	Windows	Locks, screens, access, reliability, etc.
SS4C	Access Control	Systems	Card key, proximity devices, data control, data use, reliability, system design, etc.
SS5A	Monitoring	Systems	Cameras, audio communication, monitoring stations, locations, system design, etc.
SS6A	Circulation	Pedestrian	On campus as well as to and from off-campus housing and class locations, etc.
SS6B	Circulation	Vehicular	Guard gates, access, systems, data control and use, identification, etc.
SS7A	General	Other	General information/projects pertaining to security issues.

VERTICAL TRANSPORTATION			
CODE	Component Description	Element Description	DEFINITION
VT1A	Machine Room	General	Machine, worm gear, thrust bearing, brake, motors, sheaves, generator, controller, selector, governor, pump(s), valves, oil, access, lighting, ventilation, and floor.
VT2A	Car	General	Position indicator, lighting, floor, gate-doors, operation devices, safeties, safety shoe, light ray/detection, emergency light, fire fighter service, car top, door operator, stop switch, car frame, car guides, sheaves, phone, and ventilation.
VT3A	Hoistway	General	Enclosure, fascia, interlock, doors, hangers, closers, sheaves, rails, hoistway switches, ropes, traveling cables, selector tape, weights, and compensation.
VT4A	Hall Fixtures	General	Operating panel, position indicator, hall buttons, lobby panel, hall lanterns, fire fighter service, audible signals, and card/key access.
VT5A	Pit	General	Buffer(s), guards, sheaves, hydro packing, floor, lighting, and safety controls.
VT6A	Operating Conditions	General	Door open time, door close time, door thrust, acceleration, deceleration, leveling, dwell time, speed, OFR time, and nudging.
VT7A	General	Other	General information/projects relating to vertical transportation system components.



FACILITY CONDITION ASSESSMENT

**SECTION 2**

COST SUMMARIES  
AND TOTALS





**Detailed Facility Cost Summary**  
**Facilities Renewal Budget Pro-Forma**  
**LIFE : WARREN LIFE SCIENCES BUILDING**

	Non-Recurring Project Costs			Recurring Component Replacement Cost											Total
	Immediate	Critical	Non-Critical	Deferred Maint.	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Accessibility	0	13,579	22,519	0	0	0	0	0	0	0	0	0	0	0	\$36,099
Exterior	0	0	0	0	0	111,384	0	49,163	0	469,258	0	0	281,512	0	\$911,317
Interior	0	0	0	226,856	0	0	39,450	2,423	299,861	837,816	9,795	0	48,464	0	\$1,464,665
Plumbing	0	0	0	0	268,735	0	166,409	0	0	253,285	0	0	0	0	\$688,429
HVAC	0	130,867	1,000,144	712,021	583,323	0	235,055	990,795	0	1,380,500	0	1,056,446	0	0	\$6,089,152
Fire/Life Safety	0	2,448	153,447	2,579	0	0	15,471	0	0	0	0	0	0	0	\$173,944
Electrical	0	121,478	1,446	136,819	14,047	0	589,260	0	9,877	313,371	0	227,281	0	0	\$1,413,578
Site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0
Conveying	0	0	0	0	115,201	0	0	0	0	0	0	686,566	0	0	\$801,767
Equipment	0	0	0	0	68,063	0	0	0	0	0	0	0	0	0	\$68,063
	0	268,372	1,177,557	1,078,275	1,049,369	111,384	1,045,646	1,042,381	309,738	3,254,229	9,795	1,970,293	329,976	0	\$11,647,014

<b>Non-Recurring Project Cost</b>	<b>\$1,445,929</b>
<b>Recurring Component Replacement Cost</b>	<b>\$10,201,085</b>
<b>Total 10-Year Facility Cost</b>	<b>\$11,647,014</b>

<b>CRV</b>	<b>\$39,035,000</b>
<b>FCNI</b>	<b>0.30</b>
<b>FCI</b>	<b>0.03</b>

<b>Building SqFt.</b>	<b>75,482</b>
<b>10-Yr \$ / SqFt</b>	<b>\$154.30</b>

All costs shown as Present Value

**Detailed Facility Cost Summary  
 Facilities Renewal Needs by System  
 LIFE : WARREN LIFE SCIENCES BUILDING**

	<b>Non-Recurring Project Costs</b>	<b>Recurring Component Replacement Cost</b>	<b>Total 10-Yr. Facility Renewal Costs</b>
<b>Accessibility</b>	\$36,099	\$0	<b>\$36,099</b>
<b>Exterior</b>	\$0	\$911,317	<b>\$911,317</b>
<b>Interior</b>	\$0	\$1,464,665	<b>\$1,464,665</b>
<b>Plumbing</b>	\$0	\$688,429	<b>\$688,429</b>
<b>HVAC</b>	\$1,131,012	\$4,958,140	<b>\$6,089,152</b>
<b>Fire/Life Safety</b>	\$155,895	\$18,050	<b>\$173,944</b>
<b>Electrical</b>	\$122,924	\$1,290,655	<b>\$1,413,578</b>
<b>Site</b>	\$0	\$0	<b>\$0</b>
<b>Conveying</b>	\$0	\$801,767	<b>\$801,767</b>
<b>Equipment/Other</b>	\$0	\$68,063	<b>\$68,063</b>
	<b>\$1,445,929</b>	<b>\$10,201,085</b>	<b>\$11,647,014</b>

**Detailed Facility Cost Summary  
Facilities Renewal Plan  
LIFE : WARREN LIFE SCIENCES BUILDING**

**Non-Recurring Project Costs**

Project Number	Title	Unifomat	Priority Class	Project Classification	Project Cost (Present Val.)
LIFEAC03	RESTROOM DOOR ACCESSIBILITY UPGRADES	D2010	Critical	Plant Adaption	13,579
LIFEHV02	EXPAND MECHANICAL PENTHOUSE	D3040	Critical	Plant Adaption	130,867
LIFEEL01	ELECTRICAL CONDUIT/WIRING UPGRADE	D5010	Critical	Plant Adaption	121,478
LIFEFS02	INSTALL ADDITIONAL EXIT SIGNS	D5090	Critical	Plant Adaption	2,448
LIFEEL02	ADD EXTERIOR LIGHTING	D5020	Non-Critical	Plant Adaption	1,446
LIFEFS01	FIRE SPRINKLER SYSTEM EXTENSION	D4010	Non-Critical	Plant Adaption	153,447
LIFEAC04	STAIR SAFETY UPGRADES	C2020	Non-Critical	Plant Adaption	2,635
LIFEHV01	UPGRADE EXHAUST AIR UNITS	D3040	Non-Critical	Plant Adaption	1,000,144
LIFEAC01	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	Non-Critical	Plant Adaption	13,174
LIFEAC02	INTERIOR DOOR HARDWARE ACCESSIBILITY UPGRADES	C1010	Non-Critical	Plant Adaption	6,710
					<b>1,445,929</b>

**Recurring Component Replacement Cost**

Component	Unifomat	Repl. Year	Repl. Cost (Present Val.)
IF03 FLOORING - VINYL COMPOSITION TILE, STANDARD	OLD LAB, COMMON C3020	Deferred Maint.	\$79,692
IC01 CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	OLD LAB, COMMON C3030	Deferred Maint.	\$147,164
AH01 AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-ASA-02 D3040	Deferred Maint.	\$7,467
AH04 AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-AEX-08 D3040	Deferred Maint.	\$20,892
AH04 AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-AEX-09 D3040	Deferred Maint.	\$20,892
AH04 AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-ASA-03 D3040	Deferred Maint.	\$20,892
AH05 AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU-002-OLS D3040	Deferred Maint.	\$37,933
AH08 AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-AEX-07 D3040	Deferred Maint.	\$88,397
AH08 AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-ASA-01 D3040	Deferred Maint.	\$88,397
AH45 HUMIDIFIER, STEAM INJECTION	HUM-1 D3040	Deferred Maint.	\$32,614
AH45 HUMIDIFIER, STEAM INJECTION	HUM-2 D3040	Deferred Maint.	\$32,614
AH45 HUMIDIFIER, STEAM INJECTION	HUM-3 D3040	Deferred Maint.	\$65,228
AH45 HUMIDIFIER, STEAM INJECTION	HUM-4 D3040	Deferred Maint.	\$65,228

**Detailed Facility Cost Summary  
Facilities Renewal Plan  
LIFE : WARREN LIFE SCIENCES BUILDING**

FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	OLD SECTION ROO	D3040	Deferred Maint.	\$9,907
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-011	D3040	Deferred Maint.	\$2,302
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-013	D3040	Deferred Maint.	\$921
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ROOM 041A	D3040	Deferred Maint.	\$2,302
HD01	HOOD, FUME	1980	D3040	Deferred Maint.	\$19,031
HX02	HEAT EXCHANGER - SHELL & TUBE WATER TO WATER (85-255 GPM)	CSG-1	D3040	Deferred Maint.	\$22,938
HX12	PRESSURE REDUCING VALVE, STEAM SYSTEM (4")	PRS-001 (RM 041)	D3040	Deferred Maint.	\$8,324
AC01	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	ROOM 041	D3060	Deferred Maint.	\$5,886
BA09	HVAC CONTROLS SYSTEM - LABORATORY, WET	1980	D3060	Deferred Maint.	\$159,861
EL02	EXIT SIGN - WITH BATTERY BACK-UP	1980	D4030	Deferred Maint.	\$2,579
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1980	D5020	Deferred Maint.	\$136,819
VT04	ELEVATOR CAB RENOVATION - PASSENGER	1	D1010	2015	\$38,400
VT04	ELEVATOR CAB RENOVATION - PASSENGER	2	D1010	2015	\$38,400
VT04	ELEVATOR CAB RENOVATION - PASSENGER	3	D1010	2015	\$38,400
FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	1980	D2010	2015	\$4,314
FX04	PLUMBING FIXTURE - SINK, KITCHEN	1980	D2010	2015	\$3,561
FX05	PLUMBING FIXTURE - SINK, LABORATORY-USE	1980	D2010	2015	\$20,380
FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	1980	D2010	2015	\$10,282
FX08	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	1980	D2010	2015	\$5,595
FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	1980	D2010	2015	\$6,424
FX16	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH	1980	D2010	2015	\$13,394
BF01	BACKFLOW PREVENTER (<=1 INCH)	BFP-002	D2020	2015	\$887
BF01	BACKFLOW PREVENTER (<=1 INCH)	BFP-005	D2020	2015	\$887
BF01	BACKFLOW PREVENTER (<=1 INCH)	BFP-006	D2020	2015	\$887
BF01	BACKFLOW PREVENTER (<=1 INCH)	BFP-007	D2020	2015	\$887
BF01	BACKFLOW PREVENTER (<=1 INCH)	BFP-008	D2020	2015	\$887
BF04	BACKFLOW PREVENTER (3-4 INCHES)	BFP-003	D2020	2015	\$7,407
BF04	BACKFLOW PREVENTER (3-4 INCHES)	BFP-004	D2020	2015	\$7,407
BF06	BACKFLOW PREVENTER (6-8 INCHES)	BFP-001	D2020	2015	\$18,752
PS09	SUPPLY PIPING SYSTEM - LABORATORY, WET	1980	D2020	2015	\$166,787
HX05	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (>85 GPM)	HEX-001	D3040	2015	\$17,426
BA09	HVAC CONTROLS SYSTEM - LABORATORY, WET	1997	D3060	2015	\$565,897
LE03	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)		D5020	2015	\$4,908

**Detailed Facility Cost Summary  
Facilities Renewal Plan  
LIFE : WARREN LIFE SCIENCES BUILDING**

LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)		D5020	2015	\$9,139
CR01	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	ROOM 028B	E1020	2015	\$26,413
CR02	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	ROOM 028B	E1020	2015	\$7,917
CR03	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 154	E1020	2015	\$11,244
CR03	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 156	E1020	2015	\$11,244
CR03	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 187	E1020	2015	\$11,244
EW11	WALL, EXTERIOR, EIFS	ROOF LEVEL	B2010	2016	\$111,384
IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD		C3020	2017	\$39,450
PP01	DOMESTIC WATER BOOSTER SYSTEM	RM 155 (BACKUP)	D2020	2017	\$107,067
PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SMP-050	D2030	2017	\$539
PG07	VACUUM PUMP - OIL RING SEAL (5-10 HP), WITH TRAP	PMP-009	D2090	2017	\$48,572
PG14	MEDICAL GAS CONTROL PANEL		D2090	2017	\$10,232
FN01	FAN - AXIAL, RETURN, 1.5" SP (<=3 HP) 9,200 CFM	RAF-002 (RM 255)	D3040	2017	\$9,203
FN03	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	RAF-001 (RM 260)	D3040	2017	\$13,647
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EAF-002	D3040	2017	\$4,954
FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EAF-003	D3040	2017	\$4,954
FN21	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EAF-008	D3040	2017	\$1,200
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-001	D3040	2017	\$2,302
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-002	D3040	2017	\$2,302
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-003	D3040	2017	\$2,302
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-004	D3040	2017	\$2,302
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-004	D3040	2017	\$1,611
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-006 (RM 155)	D3040	2017	\$2,302
FN26	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-007	D3040	2017	\$2,302
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EAF-005	D3040	2017	\$4,668
FN32	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EAF-010	D3040	2017	\$4,668
HD01	HOOD, FUME	1997	D3040	2017	\$53,286
HX12	PRESSURE REDUCING VALVE, STEAM SYSTEM (4")	PRS-002 (RM 155)	D3040	2017	\$8,324
PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CR-1 ROOM 155	D3040	2017	\$12,623
PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CR-3 ROOM 255	D3040	2017	\$12,623
PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	TR-2 ROOM 155	D3040	2017	\$25,246
AC02	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (6-10 TOTAL HP)	ROOM 260	D3060	2017	\$16,794

**Detailed Facility Cost Summary  
Facilities Renewal Plan  
LIFE : WARREN LIFE SCIENCES BUILDING**

AC03	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (>10 TOTAL HP)	ROOM 155	D3060	2017	\$47,445
EL02	EXIT SIGN - WITH BATTERY BACK-UP	1997	D4030	2017	\$15,471
SG05	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	480V	D5010	2017	\$104,928
LI09	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1997	D5020	2017	\$484,332
DR19	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	LOADING DOCK	B2030	2018	\$49,163
DR24	DOOR LOCK, COMMERCIAL-GRADE	LOADING DOCK	C1020	2018	\$2,423
HV09	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	1980	D3040	2018	\$990,795
IW01	WALL FINISH - PAINT, STANDARD		C3010	2019	\$287,843
IC04	CEILING FINISH - PAINTED OR STAINED, STANDARD		C3030	2019	\$12,018
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-011	D5010	2019	\$2,794
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-013	D5010	2019	\$559
VF01	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-014	D5010	2019	\$1,676
VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	VSD-012	D5010	2019	\$4,848
WN01	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD		B2010	2020	\$424,709
DR08	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	LOADING DOCK	B2030	2020	\$6,723
DR12	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	MAIN ENTRANCE	B2030	2020	\$30,779
DR30	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	LOADING DOCK	B2030	2020	\$7,047
DR01	DOOR AND FRAME, INTERIOR, NON-RATED		C1020	2020	\$52,414
DR24	DOOR LOCK, COMMERCIAL-GRADE		C1020	2020	\$19,386
CW04	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP	ABANDONED	C1030	2020	\$729,734
IF15	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		C3020	2020	\$36,282
PD09	DRAIN PIPING SYSTEM - LABORATORY, WET	1980	D2030	2020	\$253,285
AH17	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	AHU-EAU-04	D3040	2020	\$86,816
AH19	AIR HANDLING UNIT - OUTDOOR PACKAGE (8-12 HP)	AHU-EAU-03	D3040	2020	\$155,264
AH19	AIR HANDLING UNIT - OUTDOOR PACKAGE (8-12 HP)	AHU-EAU-06	D3040	2020	\$155,264
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-01	D3040	2020	\$561,803
AH21	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-05	D3040	2020	\$421,353
SE09	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	1980	D5010	2020	\$313,371
DR24	DOOR LOCK, COMMERCIAL-GRADE	MECHANICAL	C1020	2021	\$1,212
CW01	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	BREAK ROOM	C1030	2021	\$8,584
VT03	ELEVATOR MODERNIZATION - HYDRAULIC	1	D1010	2022	\$228,855
VT03	ELEVATOR MODERNIZATION - HYDRAULIC	2	D1010	2022	\$228,855
VT03	ELEVATOR MODERNIZATION - HYDRAULIC	3	D1010	2022	\$228,855

**Detailed Facility Cost Summary  
Facilities Renewal Plan  
LIFE : WARREN LIFE SCIENCES BUILDING**

AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-005	D3040	2022	\$50,878
AH06	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-006	D3040	2022	\$50,878
AH10	AIR HANDLING UNIT - INDOOR (23-27 HP)	AHU-002	D3040	2022	\$122,335
AH12	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU-003	D3040	2022	\$193,707
AH13	AIR HANDLING UNIT - INDOOR (45-63 HP)	AHU-001	D3040	2022	\$240,186
AH14	AIR HANDLING UNIT - INDOOR (63-88 HP)	AHU-004	D3040	2022	\$286,032
PH01	PUMP - ELECTRIC (<=10 HP)	PMP-003	D3040	2022	\$2,641
PH01	PUMP - ELECTRIC (<=10 HP)	PMP-004	D3040	2022	\$2,641
PH01	PUMP - ELECTRIC (<=10 HP)	PMP-006	D3040	2022	\$6,603
PH01	PUMP - ELECTRIC (<=10 HP)	PMP-007	D3040	2022	\$10,565
PH01	PUMP - ELECTRIC (<=10 HP)	PMP-008	D3040	2022	\$10,565
PH04	PUMP - ELECTRIC (20 - 25 HP)	PMP-005	D3040	2022	\$17,089
PH06	PUMP - ELECTRIC (30 - 40 HP)	PMP-001	D3040	2022	\$31,162
PH06	PUMP - ELECTRIC (30 - 40 HP)	PMP-002	D3040	2022	\$31,162
GN04	GENERATOR - DIESEL (200-500 KW)	EMG-002	D5090	2022	\$207,707
GN16	SWITCH - AUTO TRANSFER, 480 V (>400 AMP)	TSW-ATS1	D5090	2022	\$19,574
DR28	DOOR OPERATOR, POWER-ASSIST	SOME LABS	B2030	2023	\$214,589
RR07	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH		B3010	2023	\$66,924
DR24	DOOR LOCK, COMMERCIAL-GRADE		C1020	2023	\$48,464
					<b>\$10,201,085</b>

**All costs shown as Present Value**

**Detailed Project Summary**  
**Facility Condition Assessment**  
**Project Classification**  
 LIFE : WARREN LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Seq	Project Classification	Pri Cls	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
FS1A	LIFEFS02	1	Plant Adaption	2	INSTALL ADDITIONAL EXIT SIGNS	2,110	338	0	2,448
AC3E	LIFEAC03	2	Plant Adaption	2	RESTROOM DOOR ACCESSIBILITY UPGRADES	11,706	1,873	0	13,579
HV3A	LIFEHV02	3	Plant Adaption	2	EXPAND MECHANICAL PENTHOUSE	112,817	18,051	0	130,867
EL3B	LIFEEL01	4	Plant Adaption	2	ELECTRICAL CONDUIT/WIRING UPGRADE	104,722	16,756	0	121,478
FS3A	LIFEFS01	5	Plant Adaption	3	FIRE SPRINKLER SYSTEM EXTENSION	132,282	21,165	0	153,447
AC3F	LIFEAC01	6	Plant Adaption	3	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	11,357	1,817	0	13,174
AC3C	LIFEAC02	7	Plant Adaption	3	INTERIOR DOOR HARDWARE ACCESSIBILITY UPGRADES	5,785	926	0	6,710
AC2A	LIFEAC04	8	Plant Adaption	3	STAIR SAFETY UPGRADES	2,271	363	0	2,635
HV4B	LIFEHV01	9	Plant Adaption	3	UPGRADE EXHAUST AIR UNITS	862,193	137,951	0	1,000,144
EL4A	LIFEEL02	10	Plant Adaption	3	ADD EXTERIOR LIGHTING	1,246	199	0	1,446
<b>Totals for Plant Adaption</b>						<b>1,246,490</b>	<b>199,438</b>	<b>0</b>	<b>1,445,929</b>
<b>Grand Total:</b>						<b>1,246,490</b>	<b>199,438</b>	<b>0</b>	<b>1,445,929</b>



Detailed Project Summary  
 Facility Condition Assessment  
 Category/System Code Update Report  
 LIFE : WARREN LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fees	Actual Cost to Date	Remaining Cost
AC3E	LIFEAC03	2	2	RESTROOM DOOR ACCESSIBILITY UPGRADES	11,706	1,873	0	13,579
AC3F	LIFEAC01	3	6	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	11,357	1,817	0	13,174
AC3C	LIFEAC02	3	7	INTERIOR DOOR HARDWARE ACCESSIBILITY UPGRADES	5,785	926	0	6,710
AC2A	LIFEAC04	3	8	STAIR SAFETY UPGRADES	2,271	363	0	2,635
<b>Totals for System Code: ACCESSIBILITY</b>					<b>31,120</b>	<b>4,979</b>	<b>0</b>	<b>36,099</b>
EL3B	LIFEEL01	2	4	ELECTRICAL CONDUIT/WIRING UPGRADE	104,722	16,756	0	121,478
EL4A	LIFEEL02	3	10	ADD EXTERIOR LIGHTING	1,246	199	0	1,446
<b>Totals for System Code: ELECTRICAL</b>					<b>105,969</b>	<b>16,955</b>	<b>0</b>	<b>122,924</b>
FS1A	LIFEFS02	2	1	INSTALL ADDITIONAL EXIT SIGNS	2,110	338	0	2,448
FS3A	LIFEFS01	3	5	FIRE SPRINKLER SYSTEM EXTENSION	132,282	21,165	0	153,447
<b>Totals for System Code: FIRE/LIFE SAFETY</b>					<b>134,392</b>	<b>21,503</b>	<b>0</b>	<b>155,895</b>
HV3A	LIFEHV02	2	3	EXPAND MECHANICAL PENTHOUSE	112,817	18,051	0	130,867
HV4B	LIFEHV01	3	9	UPGRADE EXHAUST AIR UNITS	862,193	137,951	0	1,000,144
<b>Totals for System Code: HVAC</b>					<b>975,010</b>	<b>156,002</b>	<b>0</b>	<b>1,131,012</b>
<b>Grand Total:</b>					<b>1,246,490</b>	<b>199,438</b>	<b>0</b>	<b>1,445,929</b>



FACILITY CONDITION ASSESSMENT

**SECTION 3**

PROJECT DETAILS

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEFS02	<b>Title:</b>	INSTALL ADDITIONAL EXIT SIGNS
<b>Priority Sequence:</b>	1		
<b>Priority Class:</b>	2		
<b>Category Code:</b>	FS1A	<b>System:</b>	FIRE/LIFE SAFETY
		<b>Component:</b>	LIGHTING
		<b>Element:</b>	EGRESS LTG./EXIT SIGNAGE
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	NFPA	101-47	
	IBC	1011	
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Floor-wide: Floor(s) 1,2		

**Project Description**

The egress path is not clearly designated by illuminated exit signs in all required areas. It is recommended that new LED exit signs be installed in room 202, the loading dock area, and the corridor outside of room 025.

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEF02

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Installation of new battery pack LED exit signs, including all connections	EA	5	\$277	\$1,385	\$142	\$708	\$2,093
<b>Project Totals:</b>				<b>\$1,385</b>		<b>\$708</b>	<b>\$2,093</b>

<b>Material/Labor Cost</b>		<b>\$2,093</b>
<b>Material Index</b>		<b>100.70</b>
<b>Labor Index</b>		<b>51.30</b>
<b>Material/Labor Indexed Cost</b>		<b>\$1,758</b>
<b>General Contractor Mark Up at 20.0%</b>	+	<b>\$352</b>
<b>Inflation</b>	+	<b>\$0</b>
<b>Construction Cost</b>		<b>\$2,110</b>
<b>Professional Fees at 16.0%</b>	+	<b>\$338</b>
<b>Total Project Cost</b>		<b>\$2,448</b>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEAC03	<b>Title:</b>	RESTROOM DOOR ACCESSIBILITY UPGRADES
<b>Priority Sequence:</b>	2		
<b>Priority Class:</b>	2		
<b>Category Code:</b>	AC3E	<b>System:</b>	ACCESSIBILITY
		<b>Component:</b>	INTERIOR PATH OF TRAVEL
		<b>Element:</b>	RESTROOMS/BATHROOMS
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	ADAAG	309	
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Room Only: Floor(s) 2		

**Project Description**

The restrooms have been upgraded for ADA compliance, but access to the second floor restrooms near the labs is limited by the original airlock door systems. To improve handicap access, the installation of powered door operators is recommended.

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEAC03

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Door operator, signage, and controls	EA	2	\$4,118	\$8,236	\$1,424	\$2,849	\$11,085
<b>Project Totals:</b>				<b>\$8,236</b>		<b>\$2,849</b>	<b>\$11,085</b>

<b>Material/Labor Cost</b>		\$11,085
<b>Material Index</b>		100.70
<b>Labor Index</b>		51.30
<b>Material/Labor Indexed Cost</b>		<u>\$9,755</u>
<b>General Contractor Mark Up at 20.0%</b>	+	\$1,951
<b>Inflation</b>	+	<u>\$0</u>
<b>Construction Cost</b>		<u>\$11,706</u>
<b>Professional Fees at 16.0%</b>	+	<u>\$1,873</u>
<b>Total Project Cost</b>		<u><u>\$13,579</u></u>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEHV02	<b>Title:</b>	EXPAND MECHANICAL PENTHOUSE
<b>Priority Sequence:</b>	3		
<b>Priority Class:</b>	2		
<b>Category Code:</b>	HV3A	<b>System:</b>	HVAC
		<b>Component:</b>	HEATING/COOLING
		<b>Element:</b>	SYSTEM RETROFIT/REPLACE
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	Not Applicable		
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Floor-wide: Floor(s) R		

**Project Description**

The mechanical rooms for the old section of the building (room 041 and the penthouse on the roof) are not large enough to house modern HVAC equipment. Upgrades to the HVAC system require the expansion of the penthouse on the roof.



**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEHV02

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Expansion of mechanical penthouse, including roof reinforcement, support structure, roof and siding, floor, electrical connections, fire alarm extension	SF	2,000	\$38.30	\$76,600	\$16.45	\$32,900	\$109,500
<b>Project Totals:</b>				<b>\$76,600</b>		<b>\$32,900</b>	<b>\$109,500</b>

<b>Material/Labor Cost</b>		\$109,500
<b>Material Index</b>		100.70
<b>Labor Index</b>		51.30
<b>Material/Labor Indexed Cost</b>		<u>\$94,014</u>
<b>General Contractor Mark Up at 20.0%</b>	+	\$18,803
<b>Inflation</b>	+	<u>\$0</u>
<b>Construction Cost</b>		<u>\$112,817</u>
<b>Professional Fees at 16.0%</b>	+	<u>\$18,051</u>
<b>Total Project Cost</b>		<u><u>\$130,867</u></u>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEEL01	<b>Title:</b>	ELECTRICAL CONDUIT/WIRING UPGRADE
<b>Priority Sequence:</b>	4		
<b>Priority Class:</b>	2		
<b>Category Code:</b>	EL3B	<b>System:</b>	ELECTRICAL
		<b>Component:</b>	SECONDARY DISTRIBUTION
		<b>Element:</b>	DISTRIBUTION NETWORK
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	Not Applicable		
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Floor-wide: Floor(s) 1,2		

**Project Description**

As the lighting system is replaced in this facility, installation of new wiring/conduit will be needed to meet modern codes (i.e. communication cabling is not in code compliant conduit).

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEEL01

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Additional wiring costs during installation of new interior lighting	SF	75,482	\$0.98	\$73,972	\$0.33	\$24,909	\$98,881
<b>Project Totals:</b>				<b>\$73,972</b>		<b>\$24,909</b>	<b>\$98,881</b>

<b>Material/Labor Cost</b>		\$98,881
<b>Material Index</b>		100.70
<b>Labor Index</b>		51.30
<b>Material/Labor Indexed Cost</b>		<u>\$87,269</u>
<b>General Contractor Mark Up at 20.0%</b>	+	\$17,454
<b>Inflation</b>	+	<u>\$0</u>
<b>Construction Cost</b>		<u>\$104,722</u>
<b>Professional Fees at 16.0%</b>	+	<u>\$16,756</u>
<b>Total Project Cost</b>		<u><u>\$121,478</u></u>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEFS01	<b>Title:</b>	FIRE SPRINKLER SYSTEM EXTENSION
<b>Priority Sequence:</b>	5		
<b>Priority Class:</b>	3		
<b>Category Code:</b>	FS3A	<b>System:</b>	FIRE/LIFE SAFETY
		<b>Component:</b>	SUPPRESSION
		<b>Element:</b>	SPRINKLERS
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	NFPA	1, 13, 13R, 101	
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Floor-wide: Floor(s) 1		

**Project Description**

As part of future renovation efforts, it is recommended that an automatic, wet-pipe sprinkler system be installed to fully protect this facility.

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEF01

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Install a wet-pipe sprinkler system, including valves, piping, sprinkler heads, piping supports, etc.	SF	15,096	\$4.47	\$67,479	\$5.46	\$82,424	\$149,903
<b>Project Totals:</b>				<b>\$67,479</b>		<b>\$82,424</b>	<b>\$149,903</b>

<b>Material/Labor Cost</b>		\$149,903
<b>Material Index</b>		100.70
<b>Labor Index</b>		51.30
<b>Material/Labor Indexed Cost</b>		<u>\$110,235</u>
<b>General Contractor Mark Up at 20.0%</b>	+	\$22,047
<b>Inflation</b>	+	<u>\$0</u>
<b>Construction Cost</b>		<u>\$132,282</u>
<b>Professional Fees at 16.0%</b>	+	<u>\$21,165</u>
<b>Total Project Cost</b>		<u><u>\$153,447</u></u>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEAC01	<b>Title:</b>	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES
<b>Priority Sequence:</b>	6		
<b>Priority Class:</b>	3		
<b>Category Code:</b>	AC3F	<b>System:</b>	ACCESSIBILITY
		<b>Component:</b>	INTERIOR PATH OF TRAVEL
		<b>Element:</b>	DRINKING FOUNTAINS
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	ADAAG	211, 602	
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Undefined: Floor(s) 1,2		

**Project Description**

The single level configuration of the drinking fountains is a barrier to accessibility. They should be replaced with dual level units. The construction of alcoves will likely be necessary.

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEAC01

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Dual level drinking fountain	EA	2	\$1,364	\$2,728	\$419	\$839	\$3,567
Alcove construction for drinking fountain	EA	2	\$983	\$1,967	\$4,197	\$8,395	\$10,361
<b>Project Totals:</b>				<b>\$4,695</b>		<b>\$9,233</b>	<b>\$13,928</b>

<b>Material/Labor Cost</b>		<b>\$13,928</b>
<b>Material Index</b>		100.70
<b>Labor Index</b>		51.30
<b>Material/Labor Indexed Cost</b>		<u>\$9,464</u>
<b>General Contractor Mark Up at 20.0%</b>	+	\$1,893
<b>Inflation</b>	+	<u>\$0</u>
<b>Construction Cost</b>		<u>\$11,357</u>
<b>Professional Fees at 16.0%</b>	+	<u>\$1,817</u>
<b>Total Project Cost</b>		<u><u>\$13,174</u></u>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEAC02	<b>Title:</b>	INTERIOR DOOR HARDWARE ACCESSIBILITY UPGRADES
<b>Priority Sequence:</b>	7		
<b>Priority Class:</b>	3		
<b>Category Code:</b>	AC3C	<b>System:</b>	ACCESSIBILITY
		<b>Component:</b>	INTERIOR PATH OF TRAVEL
		<b>Element:</b>	DOORS AND HARDWARE
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	ADAAG	309.4, 703.1	
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Area Wide: Floor(s) 1		

**Project Description**

Most of the doors have lever hardware and ADA compliant signage. However, the abandoned labs and accompanying offices have knob hardware. This older section also lacks upgraded ADA signage. It is recommended that lever handle hardware be installed on all doors that still have knobs and that ADA compliant room and directional signage be installed. The signage should meet specific size, graphical, Braille, height, and location requirements.



**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEAC02

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
ADA compliant signage	EA	10	\$59.56	\$596	\$17.52	\$175	\$771
Lever actuated door hardware	EA	10	\$341	\$3,407	\$136	\$1,365	\$4,772
<b>Project Totals:</b>				<b>\$4,003</b>		<b>\$1,540</b>	<b>\$5,543</b>

<b>Material/Labor Cost</b>		<b>\$5,543</b>
<b>Material Index</b>		<b>100.70</b>
<b>Labor Index</b>		<b>51.30</b>
<b>Material/Labor Indexed Cost</b>		<b>\$4,821</b>
<b>General Contractor Mark Up at 20.0%</b>	+	<b>\$964</b>
<b>Inflation</b>	+	<b>\$0</b>
<b>Construction Cost</b>		<b>\$5,785</b>
<b>Professional Fees at 16.0%</b>	+	<b>\$926</b>
<b>Total Project Cost</b>		<b>\$6,710</b>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEAC04	<b>Title:</b>	STAIR SAFETY UPGRADES
<b>Priority Sequence:</b>	8		
<b>Priority Class:</b>	3		
<b>Category Code:</b>	AC2A	<b>System:</b>	ACCESSIBILITY
		<b>Component:</b>	BUILDING ENTRY
		<b>Element:</b>	GENERAL
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	IBC	1003.3	
	ADAAG	505	
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Floor-wide: Floor(s) 1,2		

**Project Description**

Current 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. Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, some handrails are deficient relative to current standards. Future renovation efforts should include comprehensive stair railing upgrades.

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEAC04

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Wall-mounted handrail system per floor	FLR	2	\$642	\$1,285	\$584	\$1,168	\$2,453
<b>Project Totals:</b>				<b>\$1,285</b>		<b>\$1,168</b>	<b>\$2,453</b>

<b>Material/Labor Cost</b>		<b>\$2,453</b>
<b>Material Index</b>		<b>100.70</b>
<b>Labor Index</b>		<b>51.30</b>
<b>Material/Labor Indexed Cost</b>		<b>\$1,893</b>
<b>General Contractor Mark Up at 20.0%</b>	+	<b>\$379</b>
<b>Inflation</b>	+	<b>\$0</b>
<b>Construction Cost</b>		<b>\$2,271</b>
<b>Professional Fees at 16.0%</b>	+	<b>\$363</b>
<b>Total Project Cost</b>		<b>\$2,635</b>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEHV01	<b>Title:</b>	UPGRADE EXHAUST AIR UNITS
<b>Priority Sequence:</b>	9		
<b>Priority Class:</b>	3		
<b>Category Code:</b>	HV4B	<b>System:</b>	HVAC
		<b>Component:</b>	AIR MOVING/VENTILATION
		<b>Element:</b>	EXHAUST FANS
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	Not Applicable		
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Floor-wide: Floor(s) R		

**Project Description**

To meet modern requirements for CDC and NIH research, replacement of the EAUs on the roof will require many upgrades. This includes larger motors to vent the exhaust the required distance above the building. Larger motors, in turn, will require larger conduit and electrical panels. Modern HEPA filters are also included.

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEHV01

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
Cost difference for installing a larger exhaust fan motor, including rewiring, larger circuit breaker and panels	EA	5	\$45,000	\$225,000	\$1,800	\$9,000	\$234,000
Installation of HEPA filtration system	EA	5	\$95,000	\$475,000	\$3,500	\$17,500	\$492,500
<b>Project Totals:</b>				<b>\$700,000</b>		<b>\$26,500</b>	<b>\$726,500</b>

<b>Material/Labor Cost</b>		\$726,500
<b>Material Index</b>		100.70
<b>Labor Index</b>		51.30
<b>Material/Labor Indexed Cost</b>		<u>\$718,495</u>
<b>General Contractor Mark Up at 20.0%</b>	+	\$143,699
<b>Inflation</b>	+	<u>\$0</u>
<b>Construction Cost</b>		<u>\$862,193</u>
<b>Professional Fees at 16.0%</b>	+	<u>\$137,951</u>
<b>Total Project Cost</b>		<u><u>\$1,000,144</u></u>

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Description**

<b>Project Number:</b>	LIFEEL02	<b>Title:</b>	ADD EXTERIOR LIGHTING
<b>Priority Sequence:</b>	10		
<b>Priority Class:</b>	3		
<b>Category Code:</b>	EL4A	<b>System:</b>	ELECTRICAL
		<b>Component:</b>	DEVICES AND FIXTURES
		<b>Element:</b>	EXTERIOR LIGHTING
<b>Building Code:</b>	LIFE		
<b>Building Name:</b>	WARREN LIFE SCIENCES BUILDING		
<b>Subclass/Savings:</b>	Not Applicable		
<b>Code Application:</b>	Not Applicable		
<b>Project Class:</b>	Plant Adaption		
<b>Project Date:</b>	03/16/2015		
<b>Project Location:</b>	Building-wide: Floor(s) 1,2,R		

**Project Description**

It is recommended that additional exterior lighting be installed in order to illuminate the areas surrounding this facility. During the inspection, a deficiency in quantity of light fixtures was observed. Install new exterior lighting systems in order to ensure a safe environment for building users during dark hours of the day. Place all new exterior lighting systems on photocell activation.

**Specific Project Details**  
**Facility Condition Assessment**  
**Section Three**

**Project Cost**

Project Number: LIFEEL02

**Task Cost Estimate**

<b>Task Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Material Unit Cost</b>	<b>Total Material Cost</b>	<b>Labor Unit Cost</b>	<b>Total Labor Cost</b>	<b>Total Cost</b>
HID wall-mount fixture	EA	2	\$349	\$699	\$326	\$653	\$1,352
<b>Project Totals:</b>				<b>\$699</b>		<b>\$653</b>	<b>\$1,352</b>

<b>Material/Labor Cost</b>		<b>\$1,352</b>
<b>Material Index</b>		100.70
<b>Labor Index</b>		51.30
<b>Material/Labor Indexed Cost</b>		<u>\$1,039</u>
<b>General Contractor Mark Up at 20.0%</b>	+	\$208
<b>Inflation</b>	+	<u>\$0</u>
<b>Construction Cost</b>		<u>\$1,246</u>
<b>Professional Fees at 16.0%</b>	+	<u>\$199</u>
<b>Total Project Cost</b>		<u><u><b>\$1,446</b></u></u>





FACILITY CONDITION ASSESSMENT

**SECTION 4**

LIFECYCLE COMPONENT  
INVENTORY



**Asset Component Inventory**

**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
B2010	WALL, EXTERIOR, MASONRY POINTING	STANDARD BRICK	6,620	SF	\$5.02	1.12	\$37,208	1980	30	20
B2010	WALL, EXTERIOR, MASONRY POINTING	CMU BLOCK	6,620	SF	\$5.02	1.12	\$37,208	2001	30	
B2010	WALL, EXTERIOR, EIFS	ROOF LEVEL	5,290	SF	\$18.80	1.12	\$111,384	1980	20	16
B2010	WALL, EXTERIOR, TILE OR GLASS BLOCK CLEAN, GROUT, AND REPAIR		380	SF	\$1.91	1.12	\$812	1980	15	30
B2010	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD		3,150	SF	\$120.38	1.12	\$424,709	1980	40	
B2010	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD		3,150	SF	\$120.38	1.12	\$424,709	2001	40	
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	LOADING DOCK	4	LEAF	\$1,680.78		\$6,723	1980	40	
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	MECHANICAL	2	LEAF	\$1,680.78		\$3,362	2001	40	
B2030	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	MAIN ENTRANCE	2	LEAF	\$3,077.90	5.00	\$30,779	1980	25	15
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	LOADING DOCK	640	SF	\$76.82		\$49,163	1980	30	8
B2030	DOOR OPERATOR, POWER-ASSIST	SOME LABS	30	EA	\$7,152.95		\$214,589	2003	20	
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	LOADING DOCK	4	EA	\$1,761.75		\$7,047	1980	15	25
B3010	ROOF - 1-PLY, ADHERED (EPDM, PIB, CSPE, PVC)		18,900	SF	\$5.27		\$99,619	2014	20	
B3010	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH		18,900	SF	\$3.54		\$66,924	2003	20	
B3010	ROOF GUTTER AND LEADER - ALUMINUM OR GALVANIZED, COATED	ADDITION ROOF	790	LF	\$12.66		\$10,003	1997	20	10
C1020	DOOR AND FRAME, INTERIOR, NON-RATED		30	LEAF	\$1,747.12		\$52,414	1980	40	
C1020	DOOR AND FRAME, INTERIOR, FIRE-RATED		80	LEAF	\$3,109.63		\$248,771	2003	40	
C1020	DOOR LOCK, COMMERCIAL-GRADE		32	EA	\$605.80		\$19,386	1980	20	20
C1020	DOOR LOCK, COMMERCIAL-GRADE	LOADING DOCK	4	EA	\$605.80		\$2,423	1980	20	18
C1020	DOOR LOCK, COMMERCIAL-GRADE	MECHANICAL	2	EA	\$605.80		\$1,212	2001	20	
C1020	DOOR LOCK, COMMERCIAL-GRADE		80	EA	\$605.80		\$48,464	2003	20	
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	BREAK ROOM	20	LF	\$429.18		\$8,584	2001	20	
C1030	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP		22,760	SF	\$120.30	0.60	\$1,642,804	2001	40	

**Asset Component Inventory**

**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
C1030	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP	ABANDONED	10,110	SF	\$120.30	0.60	\$729,734	1980	40	
C1030	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP	SPECIAL RECEIVING	2,530	SF	\$120.30	0.60	\$182,614	2001	40	
C3010	WALL FINISH - PAINT, STANDARD		192,080	SF	\$1.50		\$287,843	2001	12	6
C3010	WALL FINISH - TILE, CERAMIC / STONE, STANDARD		2,500	SF	\$30.18		\$75,457	1980	30	20
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		3,850	SF	\$10.25		\$39,450	1980	12	25
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		5,770	SF	\$10.25		\$59,124	2010	12	5
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	OLD LAB, COMMON AREA	16,040	SF	\$4.97		\$79,692	1980	20	14
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		6,420	SF	\$4.97		\$31,897	2001	20	9
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		9,620	SF	\$4.97		\$47,795	2010	20	
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY STANDARD	LOBBY	2,000	SF	\$23.97		\$47,942	2003	30	
C3020	FLOORING - TILE, CERAMIC / STONE / QUARRY PREMIUM	LOBBY	6,420	SF	\$51.40		\$329,972	1980	40	10
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		16,040	SF	\$2.26		\$36,282	1980	10	30
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	OLD LAB, COMMON AREA	19,250	SF	\$7.64		\$147,164	1980	30	4
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD		28,870	SF	\$7.64		\$220,708	2001	30	
C3030	CEILING FINISH - PAINTED OR STAINED, STANDARD		8,020	SF	\$1.50		\$12,018	1980	24	15
C3030	CEILING FINISH - PAINTED OR STAINED, STANDARD		8,020	SF	\$1.50		\$12,018	2001	24	5
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	1	1	EA	\$228,855.19		\$228,855	1997	25	
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	2	1	EA	\$228,855.19		\$228,855	1997	25	
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	3	1	EA	\$228,855.19		\$228,855	1997	25	
D1010	ELEVATOR CAB RENOVATION - PASSENGER	1	1	EA	\$38,400.32		\$38,400	1997	12	6
D1010	ELEVATOR CAB RENOVATION - PASSENGER	2	1	EA	\$38,400.32		\$38,400	1997	12	6
D1010	ELEVATOR CAB RENOVATION - PASSENGER	3	1	EA	\$38,400.32		\$38,400	1997	12	6

**Asset Component Inventory**

**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
D2010	PLUMBING FIXTURE - LAVATORY, COUNTER	1997	20	EA	\$1,062.96		\$21,259	1997	35	
D2010	PLUMBING FIXTURE - LAVATORY, WALL HUNG	1980	4	EA	\$1,078.41		\$4,314	1980	35	
D2010	PLUMBING FIXTURE - LAVATORY, WALL HUNG	1997	8	EA	\$1,078.41		\$8,627	1997	35	
D2010	PLUMBING FIXTURE - SINK, KITCHEN	1980	2	EA	\$1,780.26		\$3,561	1980	35	
D2010	PLUMBING FIXTURE - SINK, KITCHEN	1997	2	EA	\$1,780.26		\$3,561	1997	35	
D2010	PLUMBING FIXTURE - SINK, LABORATORY-USE	1980	8	EA	\$2,547.52		\$20,380	1980	35	
D2010	PLUMBING FIXTURE - SINK, LABORATORY-USE	1997	49	EA	\$2,547.52		\$124,829	1997	35	
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	1980	7	EA	\$1,468.86		\$10,282	1980	35	
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	1997	14	EA	\$1,468.86		\$20,564	1997	35	
D2010	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	1980	4	EA	\$1,398.79		\$5,595	1980	35	
D2010	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	1997	6	EA	\$1,398.79		\$8,393	1997	35	
D2010	PLUMBING FIXTURE - URINAL	1997	8	EA	\$1,722.47		\$13,780	1997	35	
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	1980	4	EA	\$1,606.00		\$6,424	1980	35	
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	1997	19	EA	\$1,606.00		\$30,514	1997	35	
D2010	PLUMBING FIXTURE - EMERGENCY SHOWER	1997	1	EA	\$1,163.47		\$1,163	1997	35	
D2010	PLUMBING FIXTURE - EMERGENCY EYEWASH	1997	42	EA	\$3,918.51		\$164,578	1997	35	
D2010	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH	1980	2	EA	\$6,696.75		\$13,394	1980	35	
D2010	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH	1997	10	EA	\$6,696.75		\$66,968	1997	35	
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-002	1	EA	\$886.71		\$887	1997	10	8
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-005	1	EA	\$886.71		\$887	1997	10	8
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-006	1	EA	\$886.71		\$887	1997	10	8
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-007	1	EA	\$886.71		\$887	1997	10	8
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-008	1	EA	\$886.71		\$887	1997	10	8
D2020	BACKFLOW PREVENTER (3-4 INCHES)	BFP-003	1	EA	\$7,406.90		\$7,407	1997	10	8
D2020	BACKFLOW PREVENTER (3-4 INCHES)	BFP-004	1	EA	\$7,406.90		\$7,407	1997	10	8

**Asset Component Inventory**  
**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
D2020	BACKFLOW PREVENTER (6-8 INCHES)	BFP-001	1	EA	\$18,752.10		\$18,752	1997	10	8
D2020	DOMESTIC WATER BOOSTER SYSTEM	RM 155 (BACKUP)	10	HP	\$10,706.68		\$107,067	1997	20	
D2020	DOMESTIC WATER BOOSTER SYSTEM	ROOM 155	23	HP	\$10,706.68		\$246,254	2012	20	
D2020	SUPPLY PIPING SYSTEM - LABORATORY, WET	1980	15,096	SF	\$9.78	1.13	\$166,787	1980	35	
D2020	SUPPLY PIPING SYSTEM - LABORATORY, WET	1997	60,386	SF	\$9.78		\$590,415	1997	35	
D2020	WATER HEATER - SHELL & TUBE (45-93 GPM)	DWH - FLO-RITE	48	GPM	\$1,005.48		\$48,263	2014	30	
D2020	WATER HEATER - SHELL & TUBE (45-93 GPM)	DWH - FLO-RITE	48	GPM	\$1,005.48		\$48,263	2014	30	
D2030	DRAIN PIPING SYSTEM - LABORATORY, WET	1980	15,096	SF	\$14.85	1.13	\$253,285	1980	40	
D2030	DRAIN PIPING SYSTEM - LABORATORY, WET	1997	60,386	SF	\$14.85		\$896,613	1997	40	
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	SMP-050	1	EA	\$538.86		\$539	1997	20	
D2090	AIR COMPRESSOR - MEDICAL/LABORATORY PCKG (=10 HP), WITH DRYER	AIR-006	10	HP	\$1,950.76		\$19,508	2014	20	
D2090	VACUUM PUMP - OIL RING SEAL (5-10 HP), WITH TRAP	PMP-009	8	HP	\$6,071.47		\$48,572	1997	20	
D2090	MEDICAL GAS CONTROL PANEL		10	EA	\$1,023.17		\$10,232	1997	20	
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-ASA-02	1	HP	\$7,466.65		\$7,467	1980	25	9
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-AEX-08	3	HP	\$6,963.84		\$20,892	1980	25	9
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-AEX-09	3	HP	\$6,963.84		\$20,892	1980	25	9
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-ASA-03	3	HP	\$6,963.84		\$20,892	1980	25	9
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU-002-OLS	5	HP	\$7,586.51		\$37,933	1980	25	9
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-005	8	HP	\$6,359.80		\$50,878	1997	25	
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-006	8	HP	\$6,359.80		\$50,878	1997	25	
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-AEX-07	15	HP	\$5,893.14		\$88,397	1980	25	9
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-ASA-01	15	HP	\$5,893.14		\$88,397	1980	25	9
D3040	AIR HANDLING UNIT - INDOOR (23-27 HP)	AHU-002	25	HP	\$4,893.38		\$122,335	1997	25	

**Asset Component Inventory**

**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
D3040	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU-003	40	HP	\$4,842.68		\$193,707	1997	25	
D3040	AIR HANDLING UNIT - INDOOR (45-63 HP)	AHU-001	60	HP	\$4,003.10		\$240,186	1997	25	
D3040	AIR HANDLING UNIT - INDOOR (63-88 HP)	AHU-004	80	HP	\$3,575.40		\$286,032	1997	25	
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	AHU-EAU-04	5	HP	\$17,363.11		\$86,816	1997	23	
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (8-12 HP)	AHU-EAU-03	10	HP	\$15,526.41		\$155,264	1997	23	
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (8-12 HP)	AHU-EAU-06	10	HP	\$15,526.41		\$155,264	1997	23	
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-01	40	HP	\$14,045.08		\$561,803	1997	23	
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-02A	30	HP	\$14,045.08		\$421,353	2012	23	
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-02B	30	HP	\$14,045.08		\$421,353	2012	23	
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-05	30	HP	\$14,045.08		\$421,353	1997	23	
D3040	HUMIDIFIER, STEAM INJECTION	HUM-3	1	EA	\$10,871.26	6.00	\$65,228	1997	20	-3
D3040	HUMIDIFIER, STEAM INJECTION	HUM-4	1	EA	\$10,871.26	6.00	\$65,228	1997	20	-3
D3040	HUMIDIFIER, STEAM INJECTION	HUM-1	1	EA	\$10,871.26	3.00	\$32,614	1997	20	-3
D3040	HUMIDIFIER, STEAM INJECTION	HUM-2	1	EA	\$10,871.26	3.00	\$32,614	1997	20	-3
D3040	FAN - AXIAL, RETURN, 1.5" SP (<=3 HP) 9,200 CFM	RAF-002 (RM 255)	3	HP	\$3,067.80		\$9,203	1997	20	
D3040	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	RAF-001 (RM 260)	8	HP	\$1,705.91		\$13,647	1997	20	
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (10"-18" DIAMETER)	EAF-001	1	EA	\$2,875.03		\$2,875	2009	20	
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EAF-002	1	EA	\$4,953.73		\$4,954	1997	20	
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EAF-003	1	EA	\$4,953.73		\$4,954	1997	20	
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	OLD SECTION ROOF	2	EA	\$4,953.73		\$9,907	1980	20	14
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EAF-008	1	HP	\$1,199.86		\$1,200	1997	20	
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-001	1	HP	\$2,301.60		\$2,302	1997	20	
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-002	1	HP	\$2,301.60		\$2,302	1997	20	

**Asset Component Inventory**

**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-003	1	HP	\$2,301.60		\$2,302	1997	20	
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-004	1	HP	\$2,301.60		\$2,302	1997	20	
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-004	1	HP	\$2,301.60	0.70	\$1,611	1997	20	
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-006 (RM 155)	1	HP	\$2,301.60		\$2,302	1997	20	
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-007	1	HP	\$2,301.60		\$2,302	1997	20	
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-011	1	HP	\$2,301.60		\$2,302	1980	20	14
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-013	1	HP	\$2,301.60	0.40	\$921	1980	20	14
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ROOM 041A	1	HP	\$2,301.60		\$2,302	1980	20	14
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EAF-005	1	HP	\$4,668.18		\$4,668	1997	20	
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EAF-010	1	HP	\$4,668.18		\$4,668	1997	20	
D3040	HOOD, FUME	1997	28	LF	\$1,903.09		\$53,286	1997	20	
D3040	HOOD, FUME	1980	10	LF	\$1,903.09		\$19,031	1980	20	14
D3040	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	1980	15,096	SF	\$58.08	1.13	\$990,795	1980	40	-2
D3040	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	1997	60,386	SF	\$58.08		\$3,507,355	1997	40	
D3040	HEAT EXCHANGER - SHELL & TUBE WATER TO WATER (85-255 GPM)	CSG-1	120	GPM	\$191.15		\$22,938	1997	35	-18
D3040	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (>85 GPM)	HEX-001	140	GPM	\$124.47		\$17,426	1980	35	
D3040	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (>85 GPM)	HEX-002	140	GPM	\$124.47		\$17,426	1997	35	
D3040	PRESSURE REDUCING VALVE, STEAM SYSTEM (4")	PRS-001 (RM 041)	1	EA	\$8,323.56		\$8,324	1980	20	14
D3040	PRESSURE REDUCING VALVE, STEAM SYSTEM (4")	PRS-002 (RM 155)	1	EA	\$8,323.56		\$8,324	1997	20	
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-003	2	HP	\$1,320.68		\$2,641	1997	25	
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-004	2	HP	\$1,320.68		\$2,641	1997	25	
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-006	5	HP	\$1,320.68		\$6,603	1997	25	
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-007	8	HP	\$1,320.68		\$10,565	1997	25	
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-008	8	HP	\$1,320.68		\$10,565	1997	25	
D3040	PUMP - ELECTRIC (20 - 25 HP)	PMP-005	25	HP	\$683.57		\$17,089	1997	25	
D3040	PUMP - ELECTRIC (30 - 40 HP)	PMP-001	40	HP	\$779.04		\$31,162	1997	25	



**Asset Component Inventory**  
**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
D3040	PUMP - ELECTRIC (30 - 40 HP)	PMP-002	40	HP	\$779.04		\$31,162	1997	25	
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CR-3 ROOM 255	2	HP	\$6,311.39		\$12,623	1997	20	
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CR-1 ROOM 155	2	HP	\$6,311.39		\$12,623	1997	20	
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	TR-2 ROOM 155	4	HP	\$6,311.39		\$25,246	1997	20	
D3040	CONDENSATE RECEIVER, PNEUMATIC (<=30 GPM)	ROOM 041	5	GPM	\$1,669.37		\$8,347	2014	20	
D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	ROOM 041	4	HP	\$1,471.48		\$5,886	1980	20	14
D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (6-10 TOTAL HP)	ROOM 260	10	HP	\$1,679.38		\$16,794	1997	20	
D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (>10 TOTAL HP)	ROOM 155	30	HP	\$1,581.49		\$47,445	1997	20	
D3060	HVAC CONTROLS SYSTEM - LABORATORY, WET	1980	15,096	SF	\$9.37	1.13	\$159,861	1980	18	16
D3060	HVAC CONTROLS SYSTEM - LABORATORY, WET	1997	60,386	SF	\$9.37		\$565,897	1997	18	
D4010	FIRE SPRINKLER SYSTEM	1997	60,386	SF	\$9.47		\$571,889	1997	80	
D4030	EXIT SIGN - WITH BATTERY BACK-UP	1980	5	EA	\$515.70		\$2,579	1980	20	14
D4030	EXIT SIGN - WITH BATTERY BACK-UP	1997	30	EA	\$515.70		\$15,471	1997	20	
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	4100ES, RM 107	1	EA	\$29,281.79		\$29,282	2014	15	
D4030	FIRE ALARM SYSTEM - DEVICES		75,482	SF	\$3.21	0.98	\$237,672	2014	18	
D5010	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	1980	15,096	SF	\$18.37	1.13	\$313,371	1980	40	
D5010	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	1997	60,386	SF	\$18.37		\$1,109,314	1997	40	
D5010	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	480V	1,600	AMP	\$65.58		\$104,928	1997	20	
D5010	TRANSFORMER - OIL-FILLED, 3PH, 5-15KV PRIMARY (1000-1500 KVA)	NORMAL	1,500	KVA	\$79.98		\$119,976	1997	40	
D5010	TRANSFORMER - OIL-FILLED, 3PH, 5-15KV PRIMARY (1000-1500 KVA)	TEMP CHILLER	1,500	KVA	\$79.98		\$119,976	2015	40	
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-011	5	HP	\$558.77		\$2,794	2007	12	
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-013	1	HP	\$558.77		\$559	2007	12	
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-014	3	HP	\$558.77		\$1,676	2007	12	
D5010	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	VSD-010	8	HP	\$504.99		\$4,040	2014	12	
D5010	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	VSD-015	8	HP	\$504.99		\$4,040	2014	12	

**Asset Component Inventory**  
**LIFE : WARREN LIFE SCIENCES BUILDING**

Uni-format	Component Description	Identifier	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp	Lf Adj
D5010	VARIABLE FREQUENCY DRIVE (5-7.5 HP)	AHU-6 TUNNEL	8	HP	\$504.99		\$4,040	2014	12	
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	VSD-012	15	HP	\$323.17		\$4,848	2007	12	
D5010	VARIABLE FREQUENCY DRIVE (20-25 HP)	VSD-009	25	HP	\$278.72		\$6,968	2009	16	
D5010	VARIABLE FREQUENCY DRIVE (25-30 HP)	VSD-001	30	HP	\$267.61		\$8,028	2012	16	
D5010	VARIABLE FREQUENCY DRIVE (25-30 HP)	VSD-002	30	HP	\$267.61		\$8,028	2012	16	
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	VSD-003	40	HP	\$227.21		\$9,088	2014	16	
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	VSD-004	40	HP	\$227.21		\$9,088	2014	16	
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	VSD-005	40	HP	\$227.21		\$9,088	2009	16	
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	VSD-006	40	HP	\$227.21		\$9,088	2009	16	
D5010	VARIABLE FREQUENCY DRIVE (30-40 HP)	VSD-007	40	HP	\$227.21		\$9,088	2009	16	
D5010	VARIABLE FREQUENCY DRIVE (50-75 HP)	VSD-008	60	HP	\$192.54		\$11,552	2009	16	
D5020	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)		27	EA	\$181.79		\$4,908	1997	15	3
D5020	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)		12	EA	\$761.55		\$9,139	1997	15	3
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1980	15,096	SF	\$8.02	1.13	\$136,819	1980	20	14
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1997	60,386	SF	\$8.02		\$484,332	1997	20	
D5090	GENERATOR - DIESEL (200-500 KW)	EMG-002	500	KW	\$415.41		\$207,707	1997	25	
D5090	SWITCH - AUTO TRANSFER, 480 V (>400 AMP)	TSW-ATS1	800	AMP	\$24.47		\$19,574	1997	25	
E1020	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	ROOM 154	150	SF	\$279.80	1.18	\$49,525	1997	35	
E1020	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	ROOM 156	150	SF	\$279.80	1.18	\$49,525	1997	35	
E1020	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	ROOM 028B	80	SF	\$279.80	1.18	\$26,413	1980	35	
E1020	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	ROOM 187	225	SF	\$279.80	1.18	\$74,287	1997	35	
E1020	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	ROOM 028B	1	EA	\$7,916.69		\$7,917	1980	10	25

**Asset Component Inventory**

**LIFE : WARREN LIFE SCIENCES BUILDING**

<b>Uni-format</b>	<b>Component Description</b>	<b>Identifier</b>	<b>Qty</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Cmplx Adj</b>	<b>Total Cost</b>	<b>Install Date</b>	<b>Life Exp</b>	<b>Lf Adj</b>
E1020	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 154	1	EA	\$11,244.31		\$11,244	1997	10	8
E1020	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 156	1	EA	\$11,244.31		\$11,244	1997	10	8
E1020	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 187	1	EA	\$11,244.31		\$11,244	1997	10	8
G2020	ASPHALT VEHICULAR PAVING - SEALCOAT AND STRIPE		340	SY	\$2.76		\$939	2000	7	19
G2030	CONCRETE PEDESTRIAN PAVING - JOINT MAINTENANCE	SIDEWALK	340	LF	\$3.63		\$1,235	2000	7	19
							<b>\$22,861,123</b>			

# Recurring Component Renewal Schedule

## LIFE : WARREN LIFE SCIENCES BUILDING

Uniformat Code	Component Description		Qty	Units	DM Replacement Cost	Year
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD	OLD LAB, COMMON AREA	16,040	SF	\$79,692	DM
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD	OLD LAB, COMMON AREA	19,250	SF	\$147,164	DM
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)	AHU-ASA-02	1	HP	\$7,467	DM
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-AEX-08	3	HP	\$20,892	DM
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-AEX-09	3	HP	\$20,892	DM
D3040	AIR HANDLING UNIT - INDOOR (2.75-3.25 HP)	AHU-ASA-03	3	HP	\$20,892	DM
D3040	AIR HANDLING UNIT - INDOOR (3.25-6 HP)	AHU-002-OLS	5	HP	\$37,933	DM
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-AEX-07	15	HP	\$88,397	DM
D3040	AIR HANDLING UNIT - INDOOR (12-17 HP)	AHU-ASA-01	15	HP	\$88,397	DM
D3040	HUMIDIFIER, STEAM INJECTION	HUM-3	1	EA	\$65,228	DM
D3040	HUMIDIFIER, STEAM INJECTION	HUM-4	1	EA	\$65,228	DM
D3040	HUMIDIFIER, STEAM INJECTION	HUM-1	1	EA	\$32,614	DM
D3040	HUMIDIFIER, STEAM INJECTION	HUM-2	1	EA	\$32,614	DM
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	OLD SECTION ROOF	2	EA	\$9,907	DM
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-011	1	HP	\$2,302	DM
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-013	1	HP	\$921	DM
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ROOM 041A	1	HP	\$2,302	DM
D3040	HOOD, FUME	1980	10	LF	\$19,031	DM
D3040	HEAT EXCHANGER - SHELL & TUBE WATER TO WATER (85-255 GPM)	CSG-1	120	GPM	\$22,938	DM
D3040	PRESSURE REDUCING VALVE, STEAM SYSTEM (4")	PRS-001 (RM 041)	1	EA	\$8,324	DM
D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	ROOM 041	4	HP	\$5,886	DM

## Recurring Component Renewal Schedule

D3060	HVAC CONTROLS SYSTEM - LABORATORY, WET	1980	15,096	SF	\$159,861	DM
D4030	EXIT SIGN - WITH BATTERY BACK-UP	1980	5	EA	\$2,579	DM
D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1980	15,096	SF	\$136,819	DM

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**Deferred Maintenance Cost for Asset No. LIFE                      \$1,078,275**

Uniformat Code	Component Description		Qty	Units	2015 Replacement Cost	Year
D2010	PLUMBING FIXTURE - LAVATORY, WALL HUNG	1980	4	EA	\$4,314	2015
D2010	PLUMBING FIXTURE - SINK, KITCHEN	1980	2	EA	\$3,561	2015
D2010	PLUMBING FIXTURE - SINK, LABORATORY-USE	1980	8	EA	\$20,380	2015
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	1980	7	EA	\$10,282	2015
D2010	PLUMBING FIXTURE - SHOWER VALVE AND HEAD	1980	4	EA	\$5,595	2015
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	1980	4	EA	\$6,424	2015
D2010	PLUMBING FIXTURE - EMERGENCY COMBINATION SHOWER/EYEWASH	1980	2	EA	\$13,394	2015
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-002	1	EA	\$887	2015
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-005	1	EA	\$887	2015
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-006	1	EA	\$887	2015
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-007	1	EA	\$887	2015
D2020	BACKFLOW PREVENTER (<=1 INCH)	BFP-008	1	EA	\$887	2015
D2020	BACKFLOW PREVENTER (3-4 INCHES)	BFP-003	1	EA	\$7,407	2015
D2020	BACKFLOW PREVENTER (3-4 INCHES)	BFP-004	1	EA	\$7,407	2015
D2020	BACKFLOW PREVENTER (6-8 INCHES)	BFP-001	1	EA	\$18,752	2015
D2020	SUPPLY PIPING SYSTEM - LABORATORY, WET	1980	15,096	SF	\$166,787	2015
D3040	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (>85 GPM)	HEX-001	140	GPM	\$17,426	2015

## Recurring Component Renewal Schedule

D3060	HVAC CONTROLS SYSTEM - LABORATORY, WET	1997	60,386	SF	\$565,897	2015
E1020	WALK-IN REFRIGERATOR OR FREEZER STRUCTURE	ROOM 028B	80	SF	\$26,413	2015
E1020	REFRIGERATION SYSTEM - WALK-IN, 2 EVAP FANS, 6700 BTUH, CONDENSER	ROOM 028B	1	EA	\$7,917	2015
E1020	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 154	1	EA	\$11,244	2015
E1020	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 156	1	EA	\$11,244	2015
E1020	REFRIGERATION SYSTEM - WALK-IN, 3 EVAP FANS, 10000 BTUH, CONDENSER	ROOM 187	1	EA	\$11,244	2015
D5020	LIGHTING - EXTERIOR, RECESSED (INC, CFL, LED)		27	EA	\$4,908	2015
D5020	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)		12	EA	\$9,139	2015
D1010	ELEVATOR CAB RENOVATION - PASSENGER	1	1	EA	\$38,400	2015
D1010	ELEVATOR CAB RENOVATION - PASSENGER	2	1	EA	\$38,400	2015
D1010	ELEVATOR CAB RENOVATION - PASSENGER	3	1	EA	\$38,400	2015

**Projected Component Replacement Cost for Asset No. LIFE for 2015**

**\$1,049,369**

Uniformat Code	Component Description	Qty	Units	2016 Replacement Cost	Year	
B2010	WALL, EXTERIOR, EIFS		ROOF LEVEL	5,290 SF	\$114,725	2016

**Projected Component Replacement Cost for Asset No. LIFE for 2016**

**\$114,725**

Uniformat Code	Component Description	Qty	Units	2017 Replacement Cost	Year	
D2020	DOMESTIC WATER BOOSTER SYSTEM		RM 155 (BACKUP)	10 HP	\$113,587	2017
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)		SMP-050	1 EA	\$572	2017
D2090	VACUUM PUMP - OIL RING SEAL (5-10 HP), WITH TRAP		PMP-009	8 HP	\$51,530	2017
D2090	MEDICAL GAS CONTROL PANEL			10 EA	\$10,855	2017

## Recurring Component Renewal Schedule

D3040	FAN - AXIAL, RETURN, 1.5" SP (<=3 HP) 9,200 CFM	RAF-002 (RM 255)	3	HP	\$9,764	2017
D3040	FAN - AXIAL, RETURN, 1.5" SP (5-7.5 HP) 16,500 CFM	RAF-001 (RM 260)	8	HP	\$14,478	2017
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EAF-002	1	EA	\$5,255	2017
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	EAF-003	1	EA	\$5,255	2017
D3040	FAN - INLINE CENTRIFUGAL AIRFOIL, SUPPLY, 2.5" SP (<=30 HP)	EAF-008	1	HP	\$1,273	2017
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-001	1	HP	\$2,442	2017
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-002	1	HP	\$2,442	2017
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-003	1	HP	\$2,442	2017
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	ADC-004	1	HP	\$2,442	2017
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-004	1	HP	\$1,709	2017
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-006 (RM 155)	1	HP	\$2,442	2017
D3040	FAN - PROPELLER WITH LOUVER, 1/4" SP (.5-1 HP)	EAF-007	1	HP	\$2,442	2017
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EAF-005	1	HP	\$4,952	2017
D3040	FAN - UTILITY SET, 1/4" SP (.4-1.25 HP)	EAF-010	1	HP	\$4,952	2017
D3040	HOOD, FUME	1997	28	LF	\$56,532	2017
D3040	PRESSURE REDUCING VALVE, STEAM SYSTEM (4")	PRS-002 (RM 155)	1	EA	\$8,830	2017
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CR-3 ROOM 255	2	HP	\$13,392	2017
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	CR-1 ROOM 155	2	HP	\$13,392	2017
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	TR-2 ROOM 155	4	HP	\$26,783	2017
D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (6-10 TOTAL HP)	ROOM 260	10	HP	\$17,816	2017
D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (>10 TOTAL HP)	ROOM 155	30	HP	\$50,334	2017
D5010	MAIN SWITCHBOARD W/BREAKERS (1200-1600 AMP)	480V	1,600	AMP	\$111,318	2017

## Recurring Component Renewal Schedule

D5020	LIGHTING SYSTEM, INTERIOR - LABORATORY, WET	1997	60,386	SF	\$513,828	2017
D4030	EXIT SIGN - WITH BATTERY BACK-UP	1997	30	EA	\$16,413	2017
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		3,850	SF	\$41,853	2017

**Projected Component Replacement Cost for Asset No. LIFE for 2017** **\$1,109,325**

Uniformat Code	Component Description		Qty	Units	2018 Replacement Cost	Year
D3040	HVAC DISTRIBUTION NETWORKS - LABORATORY, WET	1980	15,096	SF	\$1,082,668	2018
B2030	DOOR, EXTERIOR, OVERHEAD ROLLING METAL, LOCK	LOADING DOCK	640	SF	\$53,722	2018
C1020	DOOR LOCK, COMMERCIAL-GRADE	LOADING DOCK	4	EA	\$2,648	2018

**Projected Component Replacement Cost for Asset No. LIFE for 2018** **\$1,139,038**

Uniformat Code	Component Description		Qty	Units	2019 Replacement Cost	Year
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-011	5	HP	\$3,145	2019
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-013	1	HP	\$629	2019
D5010	VARIABLE FREQUENCY DRIVE (<=5 HP)	VSD-014	3	HP	\$1,887	2019
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	VSD-012	15	HP	\$5,456	2019
C3030	CEILING FINISH - PAINTED OR STAINED, STANDARD		8,020	SF	\$13,527	2019
C3010	WALL FINISH - PAINT, STANDARD		192,080	SF	\$323,969	2019

**Projected Component Replacement Cost for Asset No. LIFE for 2019** **\$348,612**

Uniformat Code	Component Description		Qty	Units	2020 Replacement Cost	Year
D2030	DRAIN PIPING SYSTEM - LABORATORY, WET	1980	15,096	SF	\$293,626	2020
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (1.5-5 HP)	AHU-EAU-04	5	HP	\$100,643	2020
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (8-12 HP)	AHU-EAU-03	10	HP	\$179,994	2020



## Recurring Component Renewal Schedule

D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (8-12 HP)	AHU-EAU-06	10	HP	\$179,994	2020
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-01	40	HP	\$651,284	2020
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (>17 HP)	AHU-EAU-05	30	HP	\$488,463	2020
D5010	ELECTRICAL DISTRIBUTION NETWORK - LABORATORY, WET	1980	15,096	SF	\$363,283	2020
C1030	CASEWORK - LABORATORY, INCLUDES REAGENT SHELF AND TOP	ABANDONED	10,110	SF	\$845,962	2020
C1020	DOOR AND FRAME, INTERIOR, NON-RATED		30	LEAF	\$60,762	2020
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL	LOADING DOCK	4	LEAF	\$7,794	2020
B2030	DOOR AND STOREFRONT, EXTERIOR, SWINGING, ALUMINUM AND GLASS	MAIN ENTRANCE	2	LEAF	\$35,681	2020
C1020	DOOR LOCK, COMMERCIAL-GRADE		32	EA	\$22,473	2020
B2030	DOOR OPERATOR, OVERHEAD DOOR, COMMERCIAL, PADS	LOADING DOCK	4	EA	\$8,169	2020
C3020	FLOORING - FLUID APPLIED, PAINT OR CLEAR SEAL		16,040	SF	\$42,061	2020
B2010	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD		3,150	SF	\$492,354	2020

**Projected Component Replacement Cost for Asset No. LIFE for 2020**

**\$3,772,543**

Uniformat Code	Component Description		Qty	Units	2021 Replacement Cost	Year
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD	BREAK ROOM	20	LF	\$10,249	2021
C1020	DOOR LOCK, COMMERCIAL-GRADE	MECHANICAL	2	EA	\$1,447	2021

**Projected Component Replacement Cost for Asset No. LIFE for 2021**

**\$11,696**

Uniformat Code	Component Description		Qty	Units	2022 Replacement Cost	Year
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-005	8	HP	\$62,574	2022
D3040	AIR HANDLING UNIT - INDOOR (6-9 HP)	AHU-006	8	HP	\$62,574	2022
D3040	AIR HANDLING UNIT - INDOOR (23-27 HP)	AHU-002	25	HP	\$150,456	2022

## Recurring Component Renewal Schedule

D3040	AIR HANDLING UNIT - INDOOR (35-45 HP)	AHU-003	40	HP	\$238,235	2022
D3040	AIR HANDLING UNIT - INDOOR (45-63 HP)	AHU-001	60	HP	\$295,399	2022
D3040	AIR HANDLING UNIT - INDOOR (63-88 HP)	AHU-004	80	HP	\$351,783	2022
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-003	2	HP	\$3,249	2022
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-004	2	HP	\$3,249	2022
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-006	5	HP	\$8,121	2022
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-007	8	HP	\$12,994	2022
D3040	PUMP - ELECTRIC (<=10 HP)	PMP-008	8	HP	\$12,994	2022
D3040	PUMP - ELECTRIC (20 - 25 HP)	PMP-005	25	HP	\$21,018	2022
D3040	PUMP - ELECTRIC (30 - 40 HP)	PMP-001	40	HP	\$38,325	2022
D3040	PUMP - ELECTRIC (30 - 40 HP)	PMP-002	40	HP	\$38,325	2022
D5090	GENERATOR - DIESEL (200-500 KW)	EMG-002	500	KW	\$255,453	2022
D5090	SWITCH - AUTO TRANSFER, 480 V (>400 AMP)	TSW-ATS1	800	AMP	\$24,074	2022
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	1	1	EA	\$281,463	2022
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	2	1	EA	\$281,463	2022
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	3	1	EA	\$281,463	2022

**Projected Component Replacement Cost for Asset No. LIFE for 2022                    \$2,423,212**

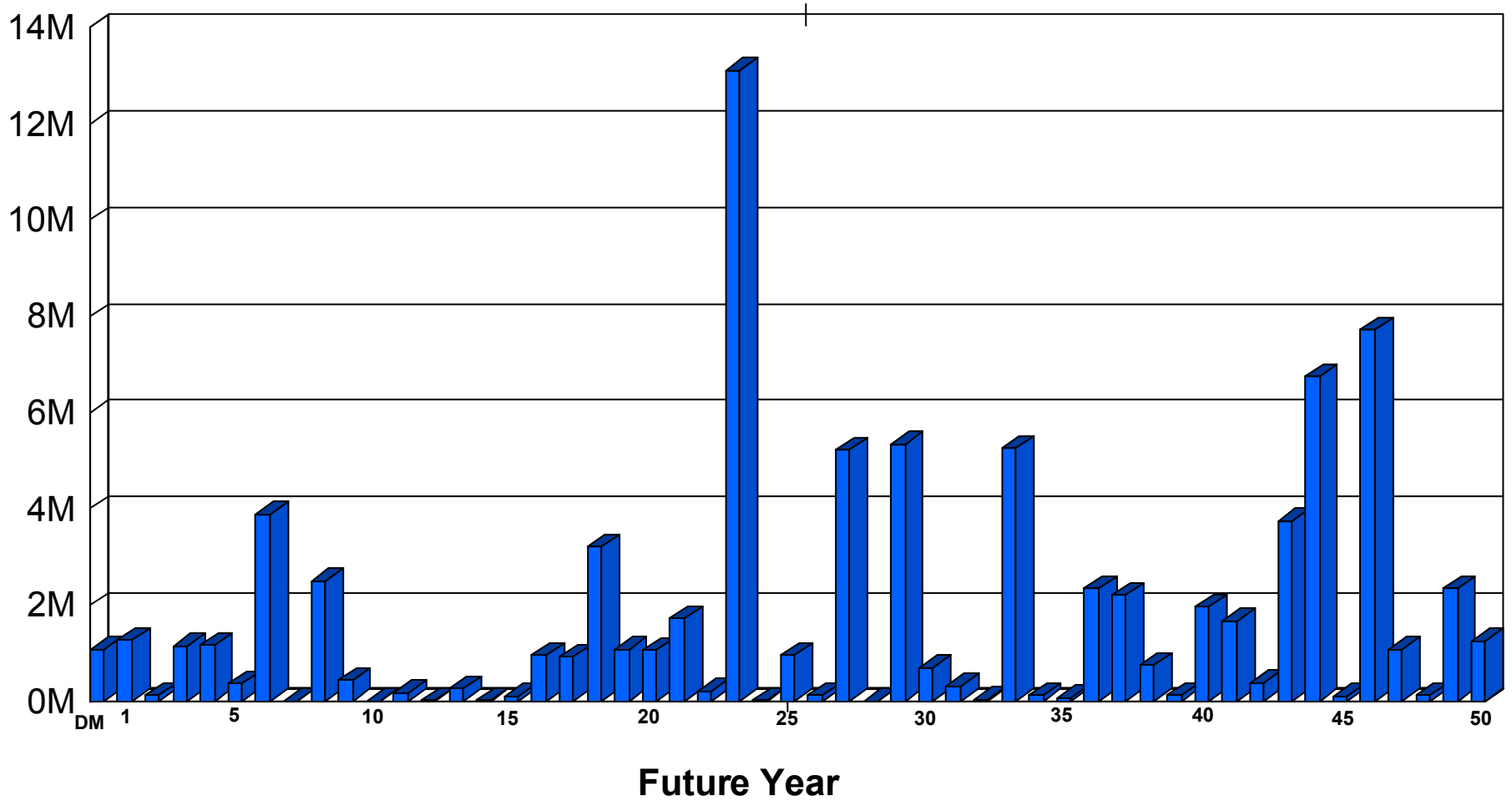
Uniformat Code	Component Description		Qty	Units	2023 Replacement Cost	Year
B2030	DOOR OPERATOR, POWER-ASSIST	SOME LABS	30	EA	\$271,834	2023
C1020	DOOR LOCK, COMMERCIAL-GRADE		80	EA	\$61,393	2023
B3010	ROOF - BITUMINOUS, 2-PLY, APPLIED MODIFIED BITUMEN, TORCH		18,900	SF	\$84,777	2023

**Projected Component Replacement Cost for Asset No. LIFE for 2023                    \$418,004**

***No Projected Component Replacement Cost for Asset No. LIFE for 2024***

# Recurring Component Expenditure Projections

LIFE : WARREN LIFE SCIENCES BUILDING



Average Annual Renewal Cost per SqFt \$10.17



FACILITY CONDITION ASSESSMENT

**SECTION 5**

DRAWINGS/  
PROJECT LOCATIONS





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

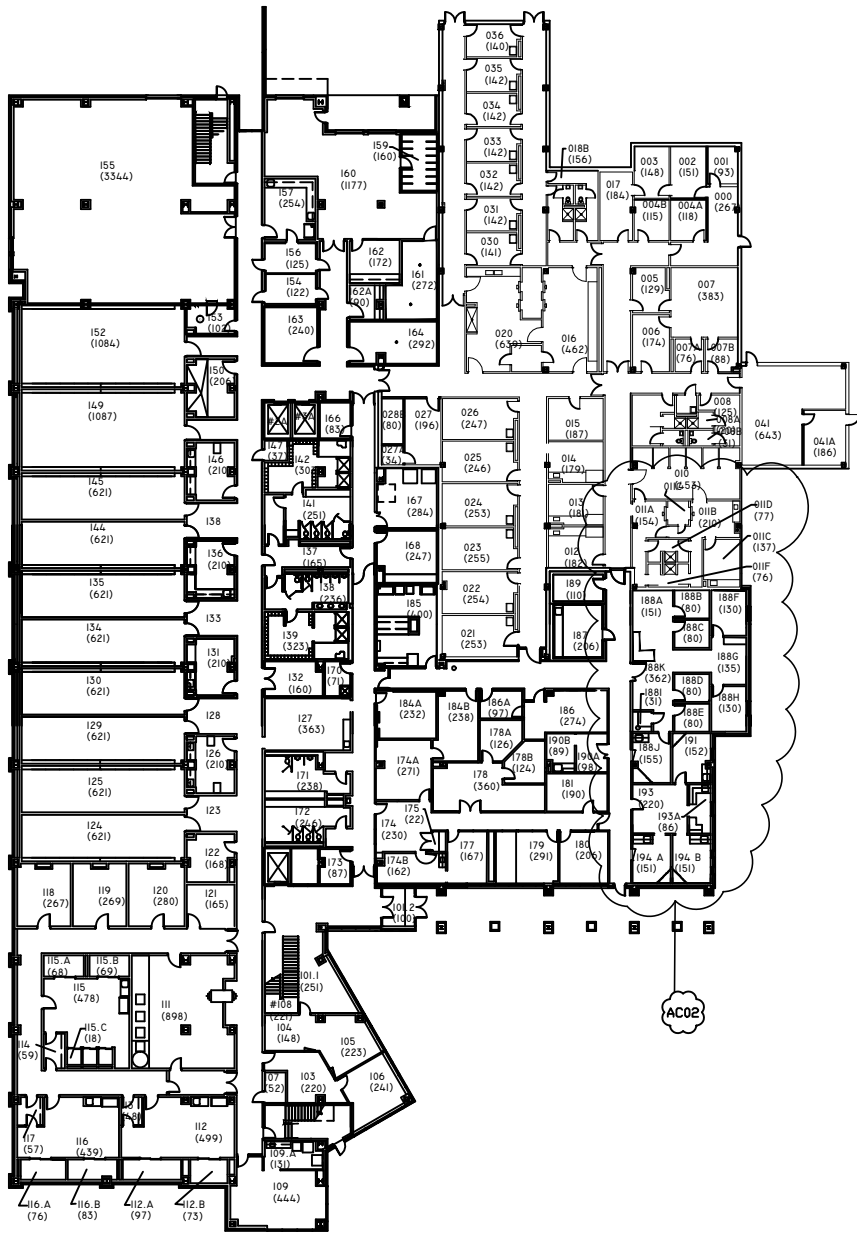
PROJECT NUMBER  
APPLIES TO A SITUATION  
OF UNDEFINED EXTENTS

PROJECT NUMBER  
APPLIES TO AREA  
AS NOTED

Date: 05/28/2015

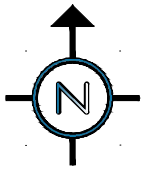
Drawn by: T.C.

Project No. 15-008



AC01 EL02

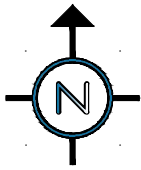
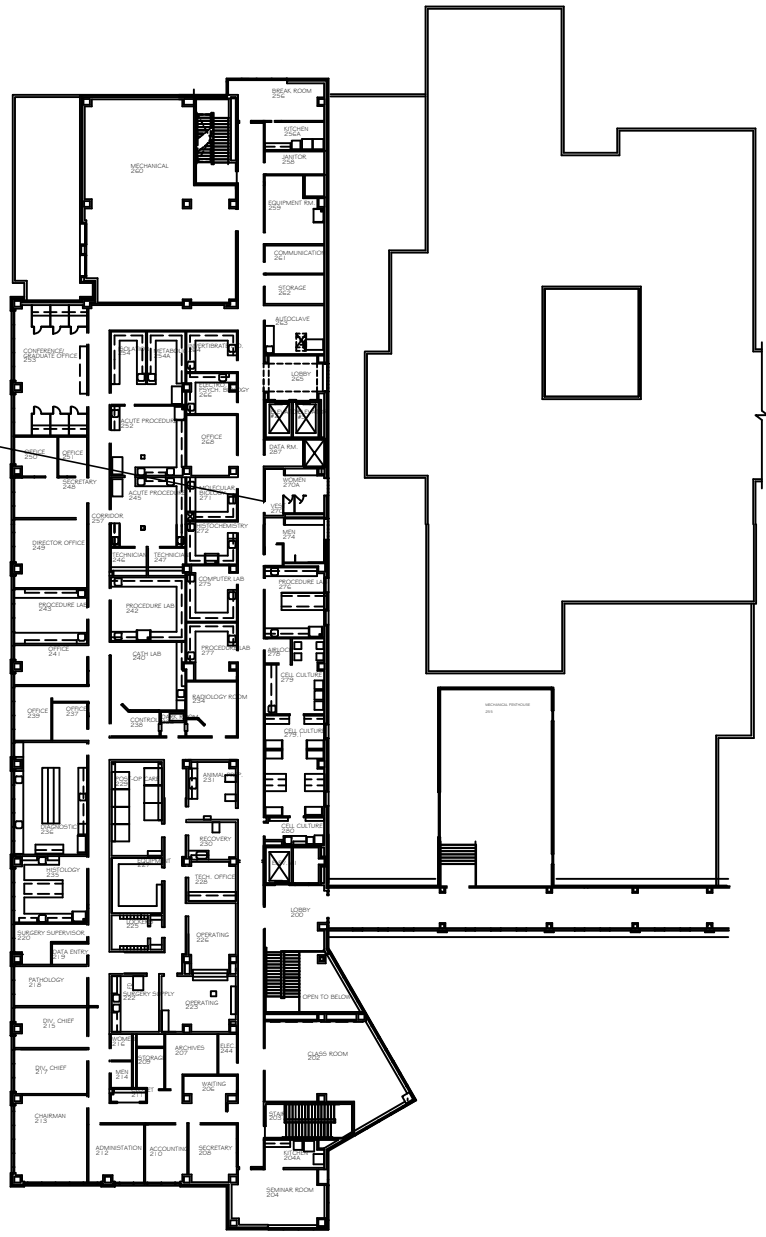
AC04 EL01 FS01 FS02



ROOF



AC04



LIFE SCIENCES BUILDING

BLDG NO. LIFE



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: 05/28/2015  
Drawn by: T.C.  
Project No. 15-008

SECOND FLOOR PLAN



# FACILITY CONDITION ASSESSMENT

## **SECTION 6**

### PHOTOGRAPHS



Photo Log - Facility Condition Assessment  
LIFE : WARREN LIFE SCIENCES BUILDING

Photo ID No.	Description	Location	Date
LIFE001a	Void	Void	03/16/2015
LIFE001e	Centrifugal rooftop exhaust fan	Roof	03/16/2015
LIFE002a	Built-up roof	Roof	03/16/2015
LIFE002e	Stroboic exhaust air unit (AHU-EAU-02A)	Roof	03/16/2015
LIFE003a	CMU wall	Roof	03/16/2015
LIFE003e	Old exhaust air unit (AHU-EAU-06)	Roof	03/16/2015
LIFE004a	Painted CMU	Roof	03/16/2015
LIFE004e	T8 fluoresent light fixture in stairwell	Stairwell	03/16/2015
LIFE005a	Roof drain	Roof	03/16/2015
LIFE005e	15 hp animal exhaust fan (AEF-007)	Penthouse	03/16/2015
LIFE006a	CMU wall	Roof	03/16/2015
LIFE006e	Square D motor starters and electrical controls	Penthouse	03/16/2015
LIFE007a	Roof access door	Roof	03/16/2015
LIFE007e	3 hp animal exhaust fan (AEF-008)	Penthouse	03/16/2015
LIFE008a	Painted CMU finish	Roof mechanical area	03/16/2015
LIFE008e	Incandescent light fixture	Penthouse	03/16/2015
LIFE009a	Minor water damage on painted interior wall	Roof hatch interior wall	03/16/2015
LIFE009e	Modern audible/visible fire device	Penthouse	03/16/2015
LIFE010a	Interior handrail	Roof access stairs	03/16/2015
LIFE010e	Non-functioning humidification section of AHU-003	Room 255	03/16/2015
LIFE011a	EPDM roof	Roof	03/16/2015
LIFE011e	Chilled water piping for AHU-003	Room 255	03/16/2015
LIFE012a	Built-up roof	Roof	03/16/2015
LIFE012e	Combination of pneumatics and Metasys DDC made by Johnson Controls	Room 255	03/16/2015
LIFE013a	Metal exterior finish	Roof mechanical room	03/16/2015
LIFE013e	Low pressure steam (yellow) for heating and heat recovery piping (green) for AHU-003	Room 255	03/16/2015
LIFE014a	Tree growth over roof	Roof	03/16/2015
LIFE014e	Condensate receiver	Room 255	03/16/2015
LIFE015a	General landscaping	Site	03/16/2015
LIFE015e	Return fan (RAF-002)	Room 255	03/16/2015
LIFE016a	CMU wall and windows	Roof	03/16/2015

Photo Log - Facility Condition Assessment  
LIFE : WARREN LIFE SCIENCES BUILDING

Photo ID No.	Description	Location	Date
LIFE016e	AHU-005	Room 255	03/16/2015
LIFE017a	Asphalt parking	Dedicated parking lot	03/16/2015
LIFE017e	Recessed CFL light fixture in south elevator lobby	Lobby 200	03/16/2015
LIFE018a	Damaged asphalt parking	Dedicated parking lot	03/16/2015
LIFE018e	Medical gas valves	Second floor corridor	03/16/2015
LIFE019a	Concrete sidewalk	Site	03/16/2015
LIFE019e	Laboratory sink and emergency eyewash	Room 277	03/16/2015
LIFE020a	Dual roof drain	Roof	03/16/2015
LIFE020e	Fume hood	Room 272	03/16/2015
LIFE021a	Glass block exterior window	Roof	03/16/2015
LIFE021e	Lavatories	Men's restroom 274	03/16/2015
LIFE022a	Fixed, double-pane, aluminum frame window	Roof	03/16/2015
LIFE022e	Urinal	Men's restroom 274	03/16/2015
LIFE023a	Exposed metal ceiling finish with insulated walls	Roof mechanical room	03/16/2015
LIFE023e	Water closet	Men's restroom 274	03/16/2015
LIFE024a	EIFS exterior wall	Roof	03/16/2015
LIFE024e	AHU-004	Room 260	03/16/2015
LIFE025a	EIFS exterior wall	Roof	03/16/2015
LIFE025e	25 hp heat recovery pump	Room 260	03/16/2015
LIFE026a	Sink and cabinetry	Break room	03/16/2015
LIFE026e	Flo-Rite domestic water heater	Room 260	03/16/2015
LIFE027a	Painted wall	Break room	03/16/2015
LIFE027e	Out-of-service clean steam generator	Room 260	03/16/2015
LIFE028a	Acoustical tile ceiling	Break room	03/16/2015
LIFE028e	Shell-and-tube heat exchanger for heating hot water	Room 260	03/16/2015
LIFE029a	Vinyl tile floor	Break room	03/16/2015
LIFE029e	Exit sign	Second floor corridor	03/16/2015
LIFE030a	Fixed, double-pane, aluminum frame window	Break room	03/16/2015
LIFE030e	Fluorescent lighting in corridor	Second floor corridor	03/16/2015
LIFE031a	Interior door with lever hardware	Break room	03/16/2015
LIFE031e	Surgical scrub sink	Room 225	03/16/2015
LIFE032a	Vinyl floor tile	Corridor near break room	03/16/2015

Photo Log - Facility Condition Assessment  
LIFE : WARREN LIFE SCIENCES BUILDING

Photo ID No.	Description	Location	Date
LIFE032e	Large classroom that should have exit sign	Room 202	03/16/2015
LIFE033a	Acoustical tile ceiling	Corridor near break room	03/16/2015
LIFE033e	Simplex 4100 ES fire alarm control panel	Room 107	03/16/2015
LIFE034a	ADA signage	Room 252	03/16/2015
LIFE034e	Wash-down area in animal lab	Room 149	03/16/2015
LIFE035a	Lab cabinetry	Room 252	03/16/2015
LIFE035e	EMSECO vacuum air system	Room 155	03/16/2015
LIFE036a	Interior door with lever hardware	Room 252	03/16/2015
LIFE036e	Powerex lab compressed air system	Room 155	03/16/2015
LIFE037a	Lab cabinetry	Room 252	03/16/2015
LIFE037e	Steam pressure reducing valves	Room 155	03/16/2015
LIFE038a	Assisted door	Room 252	03/16/2015
LIFE038e	A pair of 40 hp chilled water pumps	Room 155	03/16/2015
LIFE039a	Eyewash station	Room 252	03/16/2015
LIFE039e	Domestic water booster system	Room 155	03/16/2015
LIFE040a	ADA signage	Room 248	03/16/2015
LIFE040e	1,00 amp General Electric switchboard (480 V)	Room 155	03/16/2015
LIFE041a	Damaged carpet	Room 248	03/16/2015
LIFE041e	GE safety switch (left) and Caterpillar automatic transfer switch (right)	Room 155	03/16/2015
LIFE042a	Exterior fixed window	Room 248	03/16/2015
LIFE042e	Non-illuminating exit sign	Loading dock area	03/16/2015
LIFE043a	Acoustical tile ceiling	Room 248	03/16/2015
LIFE043e	Air curtain	Loading dock area	03/16/2015
LIFE044a	Exterior fixed window	Room 248	03/16/2015
LIFE044e	Recessed exterior light fixture	Loading dock area	03/16/2015
LIFE045a	Single level drinking fountain	Corridor near room 248	03/16/2015
LIFE045e	Recessed fluorescent light fixture in older section of building	First floor corridor	03/16/2015
LIFE046a	Restroom lavatory and countertop	Men's restroom	03/16/2015
LIFE046e	Older lab sink with emergency eyewash	Room 027	03/16/2015
LIFE047a	Water closet with ADA grab bar	Men's restroom	03/16/2015
LIFE047e	Older exit sign	Northeast entrance	03/16/2015
LIFE048a	Dual level urinal	Men's restroom	03/16/2015

Photo Log - Facility Condition Assessment  
LIFE : WARREN LIFE SCIENCES BUILDING

Photo ID No.	Description	Location	Date
LIFE048e	Older fume hood	Room 007	03/16/2015
LIFE049a	ADA signage	Men's restroom	03/16/2015
LIFE049e	Original pneumatic HVAC controls	Room 041	03/16/2015
LIFE050a	Double door system	Second floor, near break room	03/16/2015
LIFE050e	Original air handler (AHU-002-OLS)	Room 041	03/16/2015
LIFE051a	ADA signage	DCM office	03/16/2015
LIFE051e	Original hot water unit heater showing corrosion	Room 041	03/16/2015
LIFE052a	Carpeting	DCM office suite	03/16/2015
LIFE052e	Air handling unit AHU-ASA-01	Room 041	03/16/2015
LIFE053a	Acoustical tile ceiling	DCM office suite	03/16/2015
LIFE053e	Group of four variable frequency drives	Room 041	03/16/2015
LIFE054a	Interior door with lever hardware	DCM office suite	03/16/2015
LIFE054e	Pair of 2 hp heating hot water pumps	Room 041	03/16/2015
LIFE055a	Interior door with ADA signage	Locker room	03/16/2015
LIFE055e	New pneumatic condensate receiver	Room 041	03/16/2015
LIFE056a	Painted CMU wall finish	Lab suite	03/16/2015
LIFE056e	Original steam pressure reducing valves	Room 041	03/16/2015
LIFE057a	Single level drinking fountain	DCM office suite	03/16/2015
LIFE057e	Combination safety shower and eyewash	First floor corridor	03/16/2015
LIFE058a	Exterior fixed window	Training room	03/16/2015
LIFE058e	60 hp hydraulic pump for Dover elevator	Room 173	03/16/2015
LIFE059a	Damaged wood finish	Training room	03/16/2015
LIFE059e	Wall-mounted exterior light fixture	North exterior	03/16/2015
LIFE060a	Stair lacking wall handrail	Second floor, stair 2	03/16/2015
LIFE060e	New transformer for power to temporary chiller	North exterior	03/16/2015
LIFE061a	Ceramic tile floor	First floor lobby	03/16/2015
LIFE061e	500 kW Caterpillar generator	North exterior	03/16/2015
LIFE062a	Low headroom clearance under stair	First floor lobby	03/16/2015
LIFE063a	Concrete floor and painted CMU walls	First floor	03/16/2015
LIFE064a	Concrete floor and painted CMU walls	First floor, lab suite	03/16/2015
LIFE065a	Directional signage	First floor, Comparative Medicine	03/16/2015
LIFE066a	Sealed concrete floor	First floor, control lab	03/16/2015
LIFE067a	Painted ceiling	First floor, control lab	03/16/2015

Photo Log - Facility Condition Assessment  
LIFE : WARREN LIFE SCIENCES BUILDING

Photo ID No.	Description	Location	Date
LIFE068a	Cab finish	Elevator	03/16/2015
LIFE069a	Hands-free call station behind door	Elevator	03/16/2015
LIFE070a	ADA signage	Room 159 tank farm	03/16/2015
LIFE071a	Storage area for nitrogen	Room 159 tank farm	03/16/2015
LIFE072a	Stainless steel counter and storage area	Animal receiving room 162	03/16/2015
LIFE073a	Painted ceiling finish	Animal receiving room 162	03/16/2015
LIFE074a	Rated door system	First floor corridor	03/16/2015
LIFE075a	Exterior storefront with glass door	Exterior elevation	03/16/2015
LIFE076a	Knob actuated door hardware	First floor, abandoned office suite	03/16/2015
LIFE077a	Painted CMU wall	First floor, abandoned office suite	03/16/2015
LIFE078a	Original lab cabinetry and countertop	First floor, abandoned lab	03/16/2015
LIFE079a	Vinyl floor tile	First floor, abandoned lab	03/16/2015
LIFE080a	Isolation booth with painted walls	First floor, abandoned lab	03/16/2015
LIFE081a	Lab floor	First floor, abandoned lab	03/16/2015
LIFE082a	Painted ceiling	First floor, abandoned lab	03/16/2015
LIFE083a	Blocked door	First floor, abandoned lab	03/16/2015
LIFE084a	ADA signage	Isolation lab 10	03/16/2015
LIFE085a	Lab service door	Biohazard lab	03/16/2015
LIFE086a	ADA signage	Room 187	03/16/2015
LIFE087a	Painted walls, vinyl floor, and acoustical tile ceiling	First floor, office/lab suite	03/16/2015
LIFE088a	Missing handrail	Loading dock	03/16/2015
LIFE089a	Landscaping and exterior pad-mounted equipment	North elevation	03/16/2015
LIFE090a	Concrete drive and loading dock	North elevation	03/16/2015
LIFE091a	Exterior roof access ladder	North elevation	03/16/2015
LIFE092a	Exterior brick finish	North elevation	03/16/2015
LIFE093a	Exterior brick finish	West elevation	03/16/2015
LIFE094a	Fixed, double-pane, aluminum frame window	West elevation	03/16/2015
LIFE095a	Fixed, double-pane, aluminum frame windows	West elevation	03/16/2015
LIFE096a	Brick finish and fixed, double-pane, aluminum frame windows	West elevation	03/16/2015
LIFE097a	Gutter system	Southwest elevation	03/16/2015
LIFE098a	Exterior signage	East elevation	03/16/2015
LIFE099a	Exterior EIFS and brick finish	East elevation	03/16/2015

Photo Log - Facility Condition Assessment  
LIFE : WARREN LIFE SCIENCES BUILDING

Photo ID No.	Description	Location	Date
LIFE100a	Exterior EIFS and brick finish	East elevation	03/16/2015
LIFE101a	Secondary entrance	Southeast elevation	03/16/2015
LIFE102a	Exterior finishes	West elevation	03/16/2015



Facility Condition Assessment - Photographs



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Facility Condition Assessment - Photographs



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Facility Condition Assessment - Photographs



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Facility Condition Assessment - Photographs



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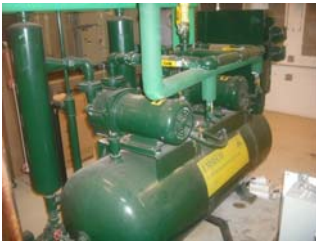
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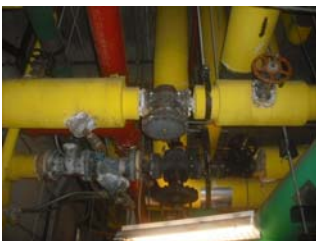
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Facility Condition Assessment - Photographs



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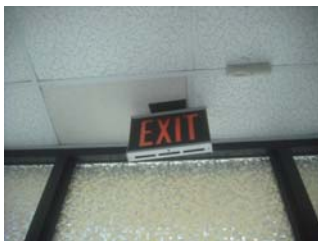
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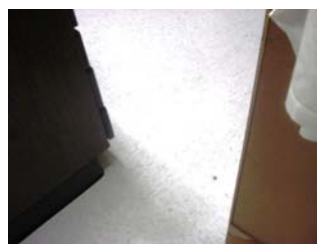
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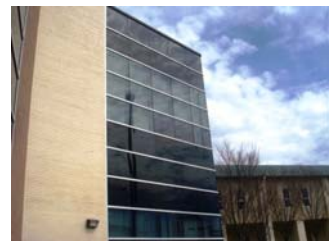
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Facility Condition Assessment - Photographs



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