EAST CAROLINA UNIVERSITY

LIFE SCIENCES BUILDING

ASSET CODE: LIFE

FACILITY CONDITION ANALYSIS

DECEMBER 8, 2009

ISES CORPORATION

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FACILITY CONDITION ANALYSIS

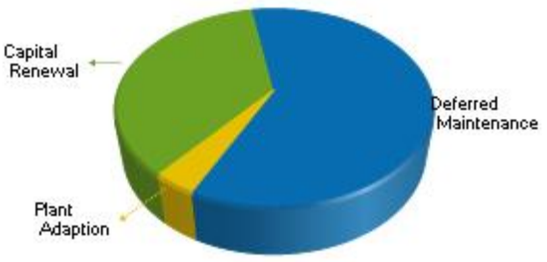
SECTION 1

GENERAL ASSET INFORMATION

EXECUTIVE SUMMARY - LIFE SCIENCES BUILDING

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

PROJECT COSTS BY CLASSIFICATION

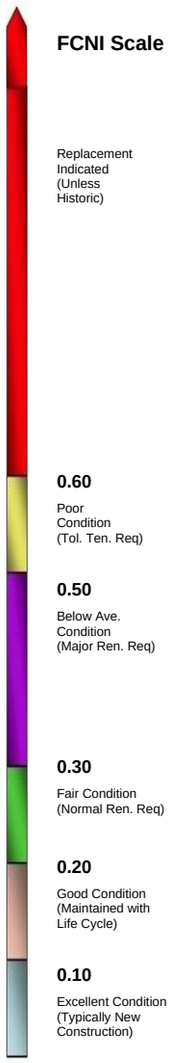


Project Costs by Priority

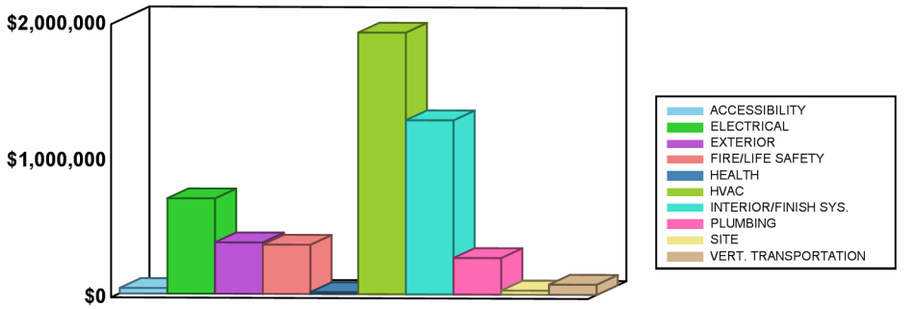
Priority 1:	$7,486
Priority 2:	$141,753
Priority 3:	$4,557,480
Priority 4:	$346,751
Total Project Costs:	**$5,053,471**

Facility Replacement Cost: **$30,872,000**

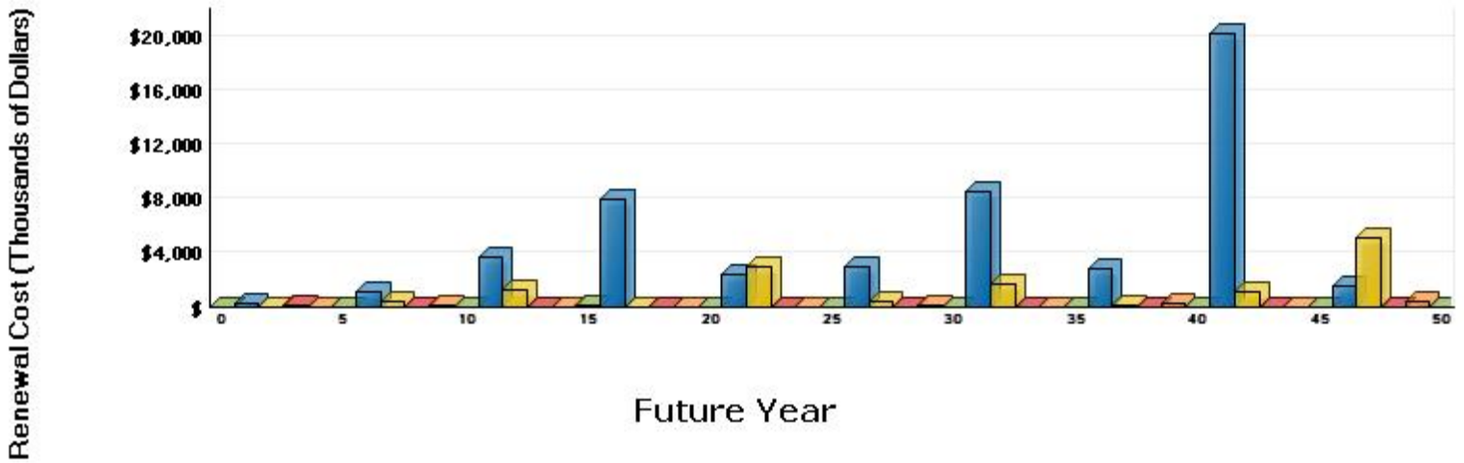
Facility Condition Needs Index (FCNI): **0.16**
(Project Costs / Replacement Cost)



PROJECT COSTS BY SYSTEM CODE



LIFE CYCLE MODEL EXPENDITURE PROJECTIONS



Average Annual Renewal Cost Per SqFt $7.45

B. ASSET SUMMARY

Built in 1980, the Life Sciences Building is a two-story medical research laboratory. In 1999, an addition was added to the west facade, creating a second floor and expanding the first floor. The building has a precast concrete structure and cast-in place floors on a poured foundation. The exterior finishes consist of brick facades and single-ply and built-up roof systems. The second floor has research labs, and the first floor houses animal research areas and administrative offices. The Life Sciences Building totals 75,482 square feet and is located at the Health Science Campus of East Carolina University in Greenville, North Carolina.

The information in this report was gathered during a site visit that concluded on September 1, 2009.

SITE

There is limited landscaping around this facility. The landscaping that does exist consists of grassy lawns, shrubs, and a few ornamental trees. Landscaping appears to be well-maintained and should not require an upgrade in the next ten years.

Pedestrian paving systems are in overall poor condition and represent a liability to the owner. New systems, including excavation, grading, base compaction, and paving, are recommended. Vehicular paving systems are in fair condition and will need moderate upgrades.

EXTERIOR STRUCTURE

Brick veneer is the primary exterior finish. While the brick is fundamentally sound, exposure to the elements has caused some deterioration of the mortar joints and expansion joints. Cleaning, surface preparation, selective repairs, and applied finish or penetrating sealant upgrades are recommended to restore the aesthetics and integrity of the building envelope.

Exterior doors are metal-framed glass units at primary entrances and painted metal at secondary entrances. There are several roll-up doors at the loading dock. It is recommended that aged and inefficient primary entrance doors be replaced. The replacement units should maintain the architectural design aspects of this facility and should be modern, energy-efficient applications. Exterior windows are dual-pane units in metal frames and appear to be 1980 and 1999 vintage. They are in good condition and should outlast the ten-year scope of this report.

The upper roof area and portions of the lower roof are built-up systems that should be replaced. The existing stress conditions around the seams and at the perimeter flashing will lead to failure if left unattended. Replace the stressed roof and flashing with a similar application.

Part of the older lower roof section has a single-ply membrane roof, which is not expected to outlast the scope of this analysis. Future budget modeling should include a provision for the replacement of all failing roofing systems. Replace this roof with a similar application.

INTERIOR FINISHES / SYSTEMS

Interior floor finishes consist of vinyl tile, sheet vinyl, carpet, and epoxy flooring. Walls are painted plaster or concrete. Ceiling finishes are lay-in, acoustical tile or painted plaster. The interior finish applications vary in age and condition from area to area. Floor, wall, and ceiling finish upgrades should be considered as part of any future cosmetic improvements or major comprehensive renovation efforts.

While the casework in the newer section of the building is good condition, the laboratory casework in the older section is in overall poor condition. Install new casework as part of a comprehensive laboratory renovation effort.

ACCESSIBILITY

Access to the building is provided by several at-grade entrances. Once inside, three passenger elevators provide access to the various levels. Most amenities and features of the building are handicapped accessible. Restrooms, door hardware, signage, and stair design are compliant with modern requirements. However, the configurations of the break room kitchenettes and drinking fountains are barriers to accessibility. The installation of wheelchair accessible kitchenette cabinetry is recommended where applicable, along with dual level, refrigerated drinking fountains.

HEALTH

There were no reports or evidence of any asbestos-containing material or lead based paint. Environmental coolers were observed on the first floor, labeled as rooms 187 and 0288. These walk-in cold boxes support research functions in the laboratory areas. The mechanical components of these systems have been in service beyond their expected life cycles and should be replaced within the purview of this analysis.

FIRE / LIFE SAFETY

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed with little regard for fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

Fire / life safety protection is provided by an addressable fire alarm system assessed to have been installed with the 1999 addition. This system is equipped with combination audible annunciators and xenon strobes, smoke detectors, and fire pulls. It is anticipated that the fire alarm system will reach the end of its useful service life within the next five years, so a complete system upgrade is recommended.

The 1980 portion of the building is not protected by an automatic fire suppression system. However, manual chemical fire extinguishers are available for immediate access. The new addition is protected by a comprehensive, automatic, wet-pipe fire suppression system with fusible link-type sprinkler heads. The statistical life cycle for a sprinkler head is approximately twenty years. During this time, scale can

accumulate inside the head and cause it to malfunction when needed. It is recommended that the aging sprinkler heads be replaced to ensure that proper protection is available. Additionally, the installation of a comprehensive fire suppression system in the unprotected areas of the facility is recommended.

Emergency exits are indicated by original LED exit signs connected to the emergency generator power network. The exit signs are at the end of their useful service life, and renewal is recommended within the next five years. Replace the existing exit signs with modern, efficient LED units, and install additional units to comply with current NFPA life safety codes. The path of egress is illuminated by select interior light fixtures connected to the generator power. Because of the daytime inspection, the emergency egress illumination level was not easily identified. It is assumed that there is sufficient emergency egress lighting, since no deficiencies were reported.

HVAC

The primary heating medium is steam supplied from the central plant. The low pressure steam is reduced to heating hot water via a hot water heat exchanger located in mechanical room 260. Outdated base-mounted hot water pumps circulate the heating hot water to the hot water reheat boxes for the various variable and constant volume air handlers. Steam condensate is returned to the central plant by an aging condensate return unit. Clean steam for the animal research area is produced by a late 1990s vintage steam boiler observed in mechanical room 260. This boiler was reported to operate twice a year and is in good condition.

Chilled water is the primary cooling media and is also supplied from the central plant. It is circulated by two base-mounted, 40 horsepower chilled water pumps equipped with variable frequency drives. The late 1990s heating and cooling equipment should remain serviceable for the scope of this assessment.

Air distribution throughout the structure is provided by 1990 vintage variable air volume air handling units AHU-2, 3, 4, and 5. The air handler supply and return fans are equipped with ABB variable frequency drives. The original portion of the building is served by an outdated air handling unit labeled AHU-1 and three supply fans AS-1, 2, and 3. The original air handler and supply fans are located in mechanical room 041. Building exhaust is provided by multiple centrifugal and utility exhaust fans of various ages and conditions. Building automation is provided by an outdated hybrid pneumatic Johnson Control system. The air distribution equipment installed in 1999 is in good condition and should provide reliable service for the purview of this assessment. However, the original 1980s equipment is at the end of its useful service life, and renewal is recommended within the next five years.

Approximately fifteen fume hoods serve the research labs. The fume hoods and their associated mechanical exhaust fans have been in service beyond their intended life cycles. It is recommended that they be replaced within the scope of this analysis.

ELECTRICAL

High voltage from the utility company is reduced to 277/480 volt, three-phase building service via a liquid service entrance transformer, located at the northwest corner of the building. The related 1,600 amp, General Electric switchboard is located in mechanical room 155. It is in good condition and, with regular scheduled preventive maintenance, should remain serviceable for the scope of this assessment.

The electrical distribution network in this facility is also in good operating condition. However, it is recommended that minor deficiencies in the electrical distribution network be rectified. Such remedies include, but are not limited to, installing additional circuits, replacing worn switches and receptacles, replacing circuit breakers, and updating panel directories.

The lighting configuration consists of lay-in / surface-mounted, T8 and T12 fluorescent fixtures. Based on life cycle depletion, the replacement of all interior fixtures is recommended. Select lamps with the same color temperature and rendering index for lighting uniformity. Install occupancy sensors in select areas for additional energy conservation.

Exterior areas adjacent to the building are illuminated by building-mounted HID fixtures that are currently in good condition. However, their replacement should be scheduled within the outlook of this report due to predictable wear. Install new energy-efficient fixtures, and place them on photocell activation.

PLUMBING

Potable water is supplied through a copper piping network. Sanitary and stormwater is conveyed by cast-iron, no-hub piping with copper run-outs. The drain piping network is adequate and does not currently require any projects. However, the original 1980s supply piping network will require replacement within the scope of this analysis. The plumbing fixtures are in good condition, and no upgrade is required.

Domestic water is heated by a large storage tank type steam to hot water heat exchanger. With age, heat exchanger efficiency is reduced by internal tube scaling. Internal wear will eventually lead to failure, allowing contaminates to enter the water system. Replacement of the domestic hot water heat exchanger is recommended within the next five years.

Central compressed air and vacuum systems support building program processes. These systems are presently providing dependable service. However, it should be expected that they will require replacement within the scope of this report.

VERTICAL TRANSPORTATION

The University commissioned an outside contractor to perform an elevator condition study in 2009. The capital project recommendations from this study have been included as projects in the ISES database.

Note: The deficiencies outlined in this report were noted from a visual inspection. ISES engineers and architects developed projects with related costs that are needed over the next ten-year period to bring the facility to “like-new” condition. The costs developed do not represent the cost of a complete facility renovation. Soft costs not represented in this report include telecommunications, 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. However, existing fixed building components and systems were thoroughly inspected. The developed costs represent correcting existing deficiencies and anticipated life cycle failures (within a ten-year period) to bring the facility to modern standards without any anticipation of change to facility space layout or function. Please refer to Section Three of this report for recommended Specific Project Details.

C. INSPECTION TEAM DATA

DATE OF INSPECTION: September 1, 2009

INSPECTION TEAM PERSONNEL:

NAME	POSITION	SPECIALTY
Thomas Ferguson, AIA, LEED® AP	Project Architect	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health
Rob Gasaway, Q.E.I.	Facility Analyst	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health
John Holder, Q.E.I.	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Imelda Jordan	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
James Lewis	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Carl Mason, PE, BSCP	Project Engineer	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health
Paul Southwell	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Norm Teahan, RA, AIA, NCARB	Project Architect	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health

FACILITY CONTACTS:

NAME	POSITION
William Bagwell	Associate Vice Chancellor, Campus Operations

REPORT DEVELOPMENT:

Report Development by:
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Suite N
Stone Mountain, GA 30087

Contact:
Kyle Thompson, Project Manager
770-879-7376

D. FACILITY CONDITION ANALYSIS - DEFINITIONS

The following information is a clarification of Asset Report Sections using example definitions.

1. REPORT DESCRIPTION

Section 1: Asset Executive Summary, Asset Summary, and General Report Information

Section 2: Detailed Project Summaries and Totals

A. Detailed Project Totals – Matrix with FCNI Data and Associated Charts
B. Detailed Projects by Priority Class / Priority Sequence
C. Detailed Projects by Cost within range [$0 - < $100,000]
D. Detailed Projects by Cost within range [≥ $100,000 - < $500,000]
E. Detailed Projects by Cost within range [≥ $500,000]
F. Detailed Projects by Project Classification
G. Detailed Projects by Project Rating Type - Energy Conservation
H. Detailed Projects by Category / System Code

FCNI = Facility Condition Needs Index, Total Cost vs. Replacement Cost. The FCNI provides a life cycle cost comparison. Facility replacement cost is based on replacement with current construction standards for 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.

$$FCNI = \frac{\text{Deferred Maintenance / Modernization + Capital Renewal + Plant Adaption}}{\text{Plant / Facility Replacement Cost}}$$

Section 3: Specific Project Details Illustrating Description / Cost

Section 4: Drawings with Iconography

The drawings for this facility are marked with ICONS (see legend), denoting the specific location(s) for each project. Within each ICON is the last four characters of the respective project number (e.g., 0001IS01 is marked on plan by IS01). There is one set of drawings marked with ICONS representing all priority classes (1, 2, 3, and 4).

Section 5: Life Cycle Model Summary and Projections

Section 6: Photographic Log

2. PROJECT CLASSIFICATION

A. Plant / Program Adaption: Expenditures 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).

B. Deferred Maintenance: Refers to expenditures for repairs which were not accomplished as a part of normal maintenance or capital repair which have accumulated to the point that facility deterioration is evident and 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 affect the needed repairs. Deferred maintenance projects represent catch up expenses.

C. Capital Renewal: A subset of regular or normal facility maintenance which refers to major repairs or the replacement / rebuilding of major facility components (e.g., roof replacement at the end of its normal useful life is capital repair; roof replacement several years after its normal useful life is deferred maintenance).

3. PROJECT SUBCLASS TYPE

A. Energy Conservation: Projects with energy conservation opportunities, based on simple payback analysis.

4. PRIORITY SEQUENCE BY PRIORITY CLASS (Shown in Sections 2 and 3)

All projects are assigned both a Priority Sequence number and Priority Class number for categorizing and sorting projects based on criticality and recommended execution order.

Example:

PRIORITY CLASS 1

CODE	PROJECT NO.	PRIORITY SEQUENCE
HV2C	0001HV04	01
PL1D	0001PL02	02

PRIORITY CLASS 2

CODE	PROJECT NO.	PRIORITY SEQUENCE
IS1E	0001IS06	03
EL4C	0001EL03	04

5. PRIORITY CLASS (Shown in Sections 2 and 3)

PRIORITY 1 - Currently Critical (Immediate)

Projects in this category require immediate action to:
a. return a facility to normal operation
b. stop accelerated deterioration
c. correct a cited safety hazard

PRIORITY 2 - Potentially Critical (Year One)

Projects in this category, if not corrected expeditiously, will become critical within a year. Situations in this category include:
a. intermittent interruptions
b. rapid deterioration
c. potential safety hazards

PRIORITY 3 - Necessary - Not Yet Critical (Years Two to Five)

Projects in this category include conditions requiring appropriate attention to preclude predictable deterioration or potential downtime and the associated damage or higher costs if deferred further.

PRIORITY 4 - Recommended (Years Six to Ten)

Projects in this category include items that represent a sensible improvement to existing conditions. These items are not required for the most basic function of a facility; however, Priority 4 projects will either improve overall usability and / or reduce long-term maintenance.

6. COST SUMMARIES AND TOTALS

The cost summaries and totals are illustrated by Detailed Projects sorted in multiple formats (shown in Sections 2 and 3).

City Index material / labor cost factors: (shown in Sections 2 and 3)

Cost factors are based on the Greenville City Index and are adjusted for material and labor cost factors (2009). Refer to the project related labor report found later in this section.

Global Markup Percentages		R.S. MEANS
Local Labor Index:	51.3 %	of National Average
Local Materials Index:	100.7 %	of National average
General Contractor Markup:	20.0 %	Contractor profit & overhead, bonds & insurance
Professional Fees:	16.0 %	Arch. / Eng. Firm design fees and in-house design cost

7. PROJECT NUMBER (Shown in Sections 2 and 3)

Example:

Project Number = 0001-EL-04 (unique for each independent project)

0001	-	Building Identification Number
EL	-	System Code, EL represents Electrical
04	-	Sequential Assignment Project Number by Category / System

8. PHOTO NUMBER (Shown in Section 6)

A code shown on the Photographic Log identifies the building number, photo sequence, and architect, engineer, or vertical transportation.

Example: 0001006e

Building Number	Photo Sequence	Arch / Eng / VT
0001	006	e

9. LIFE CYCLE COST MODEL DESCRIPTION AND DEFINITIONS (Shown in Section 5)

Included in this report is a Life Cycle Cost Model. This model consists of two elements, one is the component listing (starting on page 5.1.1) and the other is the Life Cycle Cost Projections Graph (page 5.2.1). The component list is a summary of all major systems and components within the facility. Each indicated component has the following associated information:

Uniformat Code	This is the standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Qty	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)
Total Cost	Unit cost multiplied by Quantity, also in today's dollars. Note that this is a one time renewal / replacement cost
Install Date	Year that the component was installed. Where this data is not available, it defaults to the year the asset was constructed
Life Exp	Average life expectancy for each individual component

The component listing forms the basis for the Life Cycle Cost Projections Graph shown on page 5.2.1. This graph represents a projection over a fifty-year period (starting from the date the report is run) of expected component renewals based on each individual item's renewal cost and life span. Some components might require renewal several times within the fifty-year model, while others might not occur at all. Each individual component is assigned a renewal year based on life cycles, and the costs for each item are inflated forward to the appropriate year. The vertical bars shown on the graph represent the accumulated (and inflated) total costs for each individual year. At the bottom of the graph, the average annual cost per gross square foot ($/GSF) is shown for the facility. In this calculation, all costs are not inflated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

10. CATEGORY CODE (Shown in Sections 2 and 3)

Refer to the following Category Code Report.

Example: Category Code = EL5A

EL = System Description
5 = Component Description
A = Element Description

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

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
SYSTEM DESCRIPTION: ACCESSIBILITY			
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 ADA.
AC3E	INTERIOR PATH OF TRAVEL	RESTROOMS/ BATHROOMS	Modifications to and installation of accessible public restrooms and bathrooms. Bathrooms, which 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, which are integral to efficiency suites, are catalogued here.
AC4B	GENERAL	OTHER	All accessibility issues not catalogued elsewhere.
SYSTEM DESCRIPTION: ELECTRICAL			
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 stepdown 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.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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.
SYSTEM DESCRIPTION: EXTERIOR			
ES1A	FOUNDATION/FOOTING	STRUCTURE	Structural foundation improvements involving structural work on foundation wall/footing, piers, caissons, piles including crack repairs, shoring & 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 & 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 & 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 light wells, 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.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
ES6E	GENERAL	OTHER	Any exterior work not specifically categorized elsewhere including finish and structural work on freestanding boiler stacks.
SYSTEM DESCRIPTION: FIRE / LIFE SAFETY			
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 sprinklers type automatic fire suppressions including wet pipe & 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.
SYSTEM DESCRIPTION: HEALTH			
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.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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.
SYSTEM DESCRIPTION: HVAC			
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 & 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	Replacement of HVAC control systems.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
		UPGRADE	
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, 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.
SYSTEM DESCRIPTION: INTERIOR FINISHES / SYSTEMS			
IS1A	FLOOR	FINISHES-DRY	R & R of carpet, hardwood strip flooring, concrete coating, vinyl linoleum & tile, marble, terrazzo, rubber flooring, 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 & 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 light wells, etc.
SYSTEM DESCRIPTION: PLUMBING			

CATEGORY CODE REPORT			
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, sanitary sewer systems; including combined systems.
PL4D	INFRASTRUCTURE	STORM WATER COLLECTION	Storm water collection systems, 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.
SYSTEM DESCRIPTION: SITE			
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.
SYSTEM DESCRIPTION: SECURITY SYSTEMS			
SS1A	LIGHTING	EXTERIOR	Fixtures, stanchions, foliage interference, cleanliness, locations, etc.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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.
SYSTEM DESCRIPTION: VERTICAL TRANSPORTATION			
VT1A	MACHINE ROOM	GENERAL	Machine, worm gear, thrust bearing, brake, motors, sheaves, generator, controller, selector, governor, pump(s), valves, oil, access, lighting, ventilation, 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, ventilation.
VT3A	HOISTWAY	GENERAL	Enclosure, fascia, interlock, doors, hangers, closers, sheaves, rails, hoistway switches, ropes, traveling cables, selector tape, weights, compensation.
VT4A	HALL FIXTURES	GENERAL	Operating panel, position indicator, hall buttons, lobby panel, hall lanterns, fire fighter service, audible signals, card/key access.
VT5A	PIT	GENERAL	Buffer(s), guards, sheaves, hydro packing, floor, lighting, safety controls.
VT6A	OPERATING CONDITIONS	GENERAL	Door open time, door close time, door thrust, acceleration, deceleration, leveling, dwell time, speed, OFR time, nudging.
VT7A	GENERAL	OTHER	General information/projects relating to vertical transportation system components.

FACILITY CONDITION ANALYSIS

SECTION 2

DETAILED PROJECT SUMMARIES AND TOTALS

Detailed Project Totals

Facility Condition Analysis

System Code by Priority Class

LIFE : LIFE SCIENCES BUILDING

System Code	System Description	Priority Classes 1	2	3	4	Subtotal
AC	ACCESSIBILITY	0	0	0	40,068	40,068
EL	ELECTRICAL	0	0	687,522	10,572	698,094
ES	EXTERIOR	0	0	331,205	45,443	376,648
FS	FIRE/LIFE SAFETY	7,486	141,753	211,480	0	360,719
HE	HEALTH	0	0	12,934	0	12,934
HV	HVAC	0	0	1,915,995	0	1,915,995
IS	INTERIOR/FINISH SYS.	0	0	1,275,545	0	1,275,545
PL	PLUMBING	0	0	17,445	250,669	268,113
SI	SITE	0	0	30,356	0	30,356
VT	VERT. TRANSPORTATION	0	0	75,000	0	75,000
	TOTALS	7,486	141,753	4,557,480	346,751	5,053,471

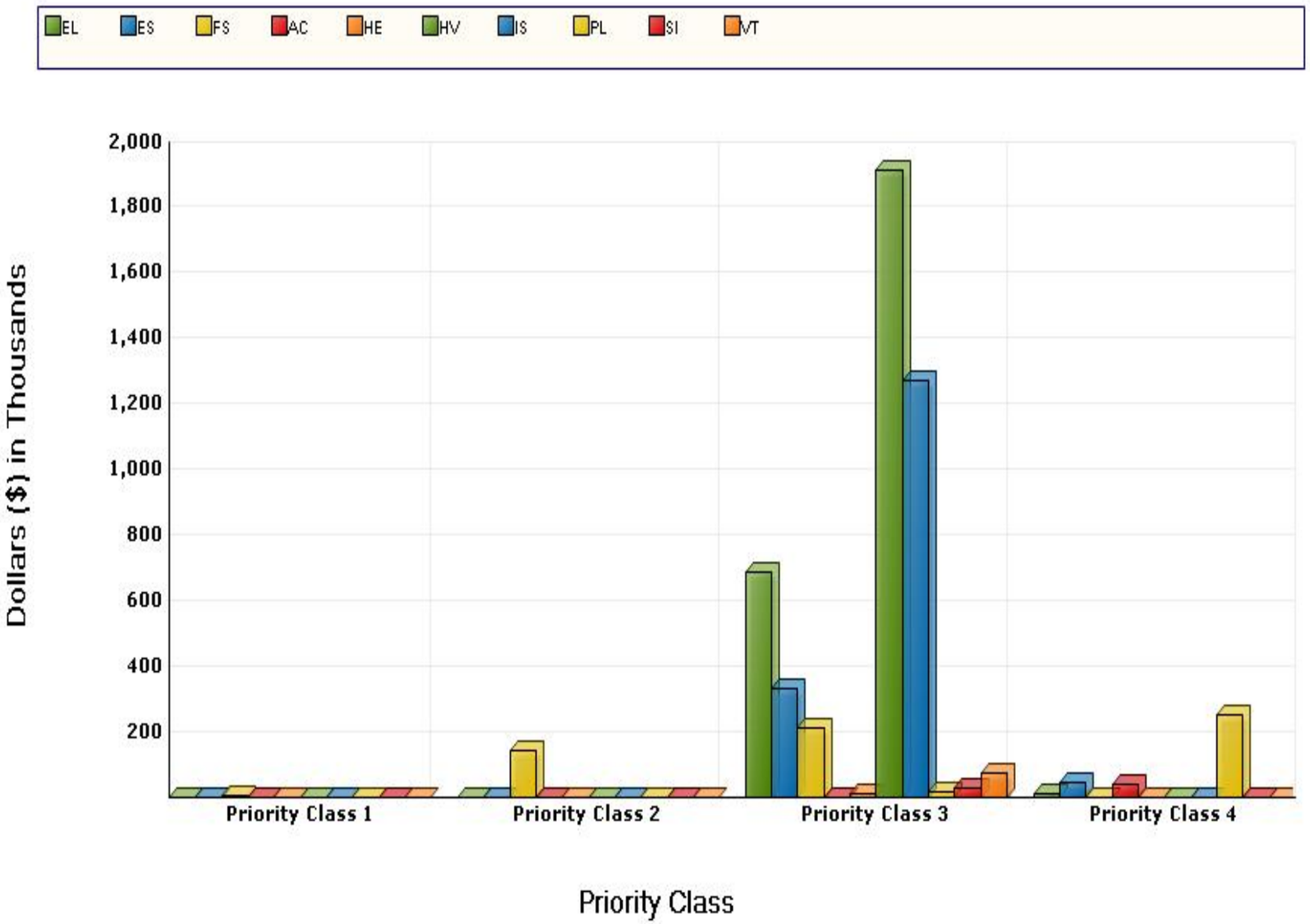
Facility Replacement Cost	$30,872,000
Facility Condition Needs Index	0.16

Gross Square Feet	75,482	**Total Cost Per Square Foot**	$66.95

FACILITY CONDITION ANALYSIS

System Code by Priority Class

LIFE : LIFE SCIENCES BUILDING



Detailed Project Totals
Facility Condition Analysis
System Code by Project Class
LIFE : LIFE SCIENCES BUILDING

System Code	System Description	Project Classes: Captial Renewal	Deferred Maintenance	Plant Adaption	Subtotal
AC	ACCESSIBILITY	0	0	40,068	40,068
EL	ELECTRICAL	10,572	687,522	0	698,094
ES	EXTERIOR	82,133	294,515	0	376,648
FS	FIRE/LIFE SAFETY	202,450	9,030	149,239	360,719
HE	HEALTH	12,934	0	0	12,934
HV	HVAC	0	1,915,995	0	1,915,995
IS	INTERIOR/FINISH SYS.	1,275,545	0	0	1,275,545
PL	PLUMBING	250,669	17,445	0	268,113
SI	SITE	0	30,356	0	30,356
VT	VERT. TRANSPORTATION	0	75,000	0	75,000
	TOTALS	1,834,302	3,029,862	189,307	5,053,471

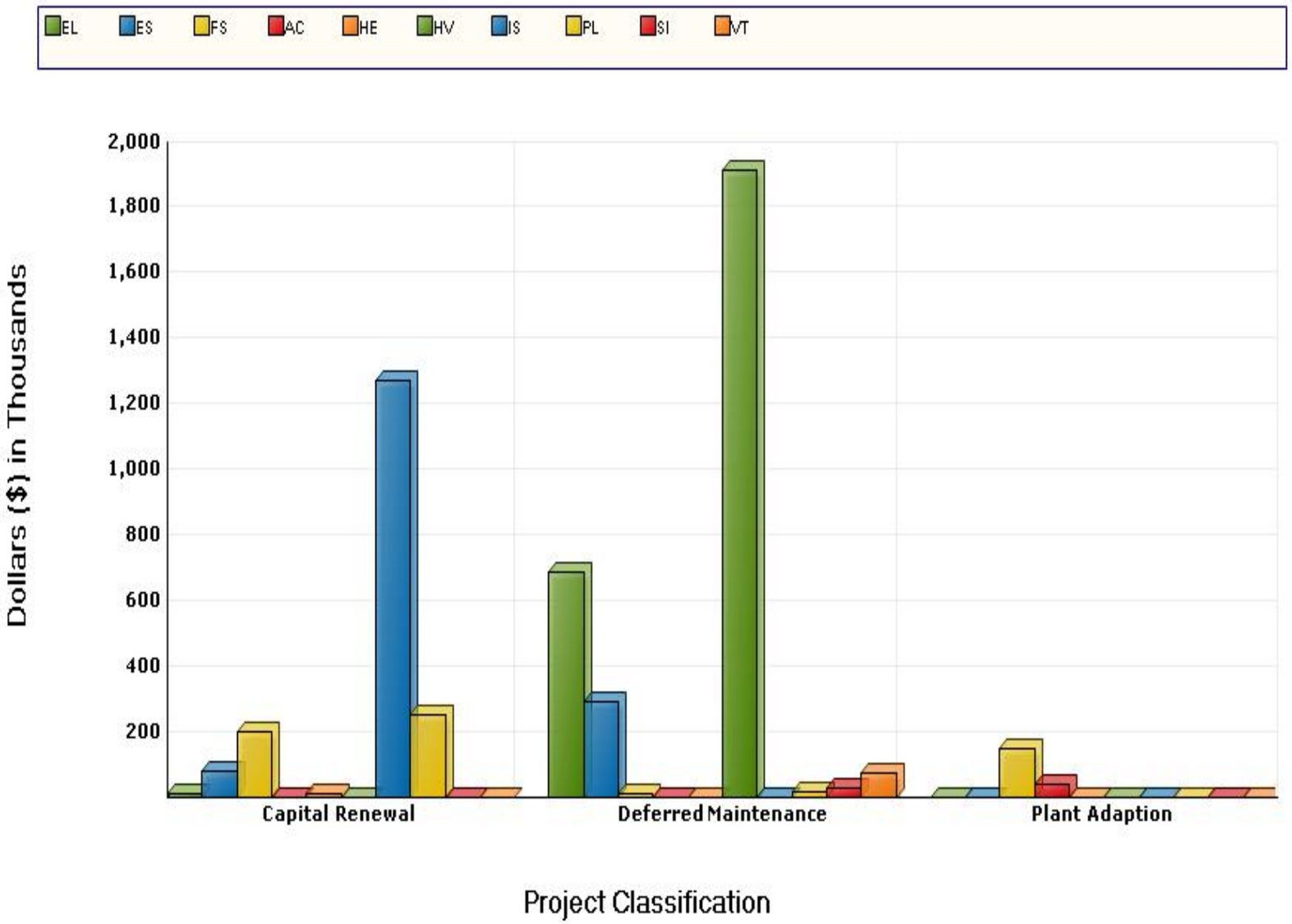
Facility Replacement Cost	$30,872,000
Facility Condition Needs Index	0.16

Gross Square Feet	75,482	**Total Cost Per Square Foot**	$66.95

FACILITY CONDITION ANALYSIS

System Code by Project Class

LIFE : LIFE SCIENCES BUILDING



Detailed Project Summary
Facility Condition Analysis
Project Class by Priority Class
LIFE : LIFE SCIENCES BUILDING

	Priority Classes				
Project Class	**1**	**2**	**3**	**4**	**Subtotal**
Capital Renewal	0	0	1,527,618	306,683	1,834,302
Deferred Maintenance	0	0	3,029,862	0	3,029,862
Plant Adaption	7,486	141,753	0	40,068	189,307
TOTALS	7,486	141,753	4,557,480	346,751	5,053,471

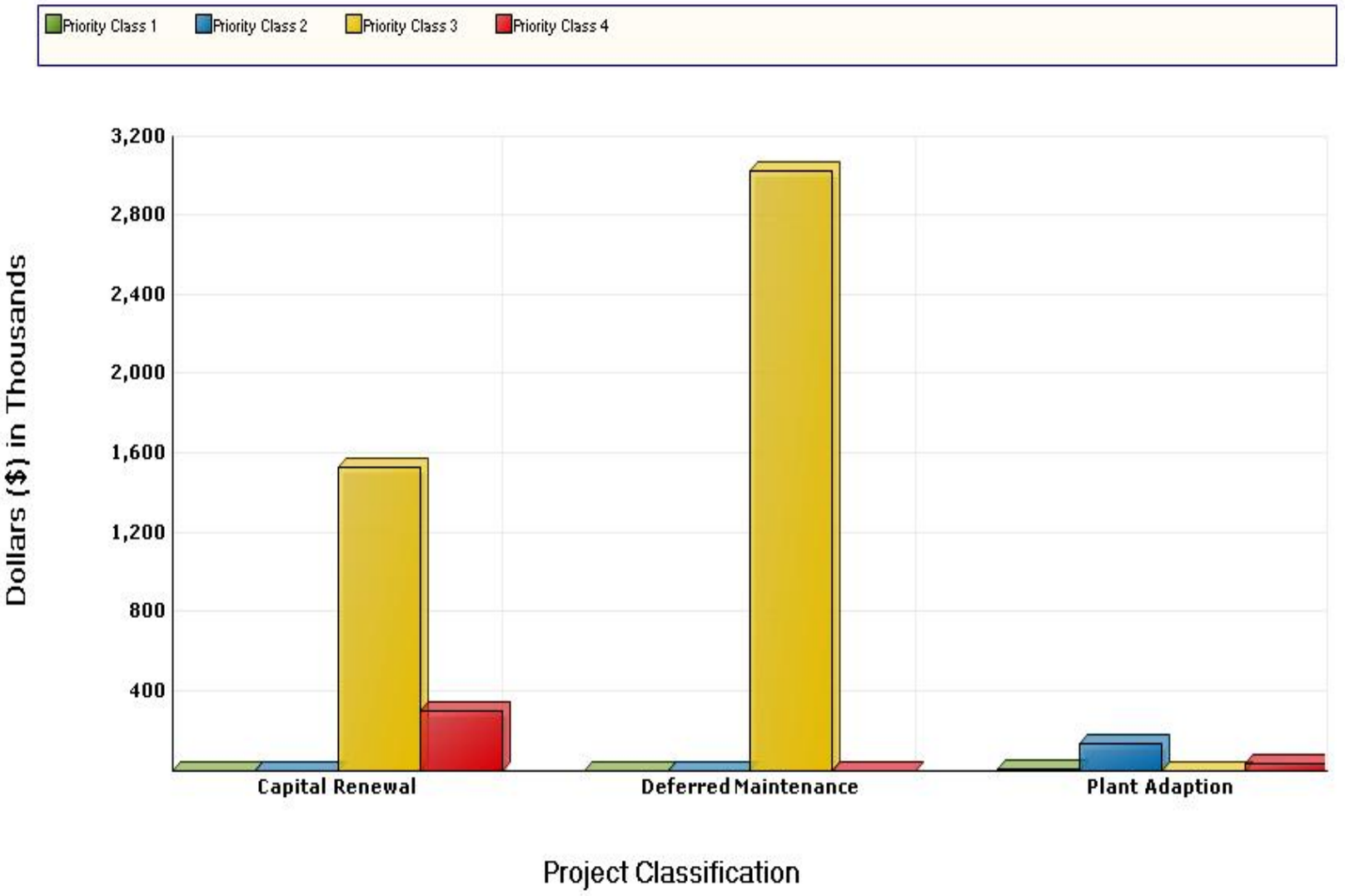
Facility Replacement Cost	$30,872,000
Facility Condition Needs Index	0.16

Gross Square Feet	75,482	**Total Cost Per Square Foot**	$66.95

FACILITY CONDITION ANALYSIS

Project Class by Priority Class

LIFE : LIFE SCIENCES BUILDING



Detailed Project Summary

Facility Condition Analysis

Priority Class - Priority Sequence

LIFE : LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
FS5C	LIFEFS01	1	1	ELIMINATE FIRE RATING COMPROMISES	6,454	1,033	7,486
				Totals for Priority Class 1	**6,454**	**1,033**	**7,486**
FS3A	LIFEFS03	2	2	FIRE SPRINKLER SYSTEM EXTENSION	122,201	19,552	141,753
				Totals for Priority Class 2	**122,201**	**19,552**	**141,753**
FS1A	LIFEFS04	3	3	REPLACE EXIT SIGNS	7,785	1,246	9,030
FS2A	LIFEFS02	3	4	FIRE ALARM SYSTEM REPLACEMENT	174,526	27,924	202,450
HE1A	LIFEHE01	3	5	LAB COLD BOX REFRIGERATION SYSTEM REPLACEMENT	11,150	1,784	12,934
ES4B	LIFEES03	3	6	BUILT-UP ROOF REPLACEMENT	232,167	37,147	269,314
ES5A	LIFEES02	3	7	EXTERIOR DOOR REPLACEMENT	21,725	3,476	25,201
ES2B	LIFEES01	3	8	RESTORE BRICK VENEER	31,630	5,061	36,690
HV3A	LIFEHV01	3	9	HVAC SYSTEM REPLACEMENT	1,107,149	177,144	1,284,293
HV4B	LIFEHV02	3	10	FUME HOOD REPLACEMENT	544,570	87,131	631,701
EL3B	LIFEEL02	3	11	ELECTRICAL SYSTEM REPAIRS	173,786	27,806	201,591
EL4B	LIFEEL01	3	12	INTERIOR LIGHTING UPGRADE	418,906	67,025	485,931
IS1A	LIFEIS01	3	13	REFINISH FLOORING	399,382	63,901	463,283
IS2B	LIFEIS02	3	14	REFINISH WALLS	135,237	21,638	156,874
IS3B	LIFEIS03	3	15	REFINISH CEILINGS	258,362	41,338	299,700
IS6B	LIFEIS04	3	16	LABORATORY CASEWORK UPGRADES	306,627	49,060	355,687
PL1E	LIFEPL01	3	17	DOMESTIC HOT WATER HEAT EXCHANGER REPLACEMENT	15,039	2,406	17,445
SI4A	LIFESI01	3	18	SITE PAVING UPGRADES	26,169	4,187	30,356
VT7A	LIFEVT01	3	19	UPGRADE ELEVATOR NO. 1	75,000	0	75,000
				Totals for Priority Class 3	**3,939,207**	**618,273**	**4,557,480**
AC4A	LIFEAC01	4	20	INTERIOR AMENITY ACCESSIBILITY UPGRADES	34,541	5,527	40,068
ES4B	LIFEES04	4	21	MEMBRANE ROOF REPLACEMENT	39,175	6,268	45,443
EL4A	LIFEEL03	4	22	EXTERIOR LIGHTING REPLACEMENT	9,114	1,458	10,572
PL1A	LIFEPL02	4	23	WATER SUPPLY PIPING REPLACEMENT	115,505	18,481	133,985
PL3A	LIFEPL03	4	24	REPLACE PROCESS AIR EQUIPMENT	100,589	16,094	116,683
				Totals for Priority Class 4	**298,923**	**47,828**	**346,751**
				Grand Total:	**4,366,785**	**686,686**	**5,053,471**

Detailed Project Summary

Facility Condition Analysis

Project Cost Range

LIFE : LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
FS5C	LIFEFS01	1	1	ELIMINATE FIRE RATING COMPROMISES	6,454	1,033	7,486
				Totals for Priority Class 1	**6,454**	**1,033**	**7,486**
ES2B	LIFEES01	3	8	RESTORE BRICK VENEER	31,630	5,061	36,690
ES5A	LIFEES02	3	7	EXTERIOR DOOR REPLACEMENT	21,725	3,476	25,201
SI4A	LIFESI01	3	18	SITE PAVING UPGRADES	26,169	4,187	30,356
VT7A	LIFEVT01	3	19	UPGRADE ELEVATOR NO. 1	75,000	0	75,000
FS1A	LIFEFS04	3	3	REPLACE EXIT SIGNS	7,785	1,246	9,030
HE1A	LIFEHE01	3	5	LAB COLD BOX REFRIGERATION SYSTEM REPLACEMENT	11,150	1,784	12,934
PL1E	LIFEPL01	3	17	DOMESTIC HOT WATER HEAT EXCHANGER REPLACEMENT	15,039	2,406	17,445
				Totals for Priority Class 3	**188,496**	**18,159**	**206,655**
AC4A	LIFEAC01	4	20	INTERIOR AMENITY ACCESSIBILITY UPGRADES	34,541	5,527	40,068
ES4B	LIFEES04	4	21	MEMBRANE ROOF REPLACEMENT	39,175	6,268	45,443
EL4A	LIFEEL03	4	22	EXTERIOR LIGHTING REPLACEMENT	9,114	1,458	10,572
				Totals for Priority Class 4	**82,830**	**13,253**	**96,082**
				Grand Totals for Projects < 100,000	**277,779**	**32,445**	**310,224**

Detailed Project Summary

Facility Condition Analysis

Project Cost Range

LIFE : LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
FS3A	LIFEFS03	2	2	FIRE SPRINKLER SYSTEM EXTENSION	122,201	19,552	141,753
				Totals for Priority Class 2	**122,201**	**19,552**	**141,753**
ES4B	LIFEES03	3	6	BUILT-UP ROOF REPLACEMENT	232,167	37,147	269,314
IS1A	LIFEIS01	3	13	REFINISH FLOORING	399,382	63,901	463,283
IS2B	LIFEIS02	3	14	REFINISH WALLS	135,237	21,638	156,874
IS3B	LIFEIS03	3	15	REFINISH CEILINGS	258,362	41,338	299,700
IS6B	LIFEIS04	3	16	LABORATORY CASEWORK UPGRADES	306,627	49,060	355,687
FS2A	LIFEFS02	3	4	FIRE ALARM SYSTEM REPLACEMENT	174,526	27,924	202,450
EL4B	LIFEEL01	3	12	INTERIOR LIGHTING UPGRADE	418,906	67,025	485,931
EL3B	LIFEEL02	3	11	ELECTRICAL SYSTEM REPAIRS	173,786	27,806	201,591
				Totals for Priority Class 3	**2,098,992**	**335,839**	**2,434,830**
PL1A	LIFEPL02	4	23	WATER SUPPLY PIPING REPLACEMENT	115,505	18,481	133,985
PL3A	LIFEPL03	4	24	REPLACE PROCESS AIR EQUIPMENT	100,589	16,094	116,683
				Totals for Priority Class 4	**216,094**	**34,575**	**250,669**
				Grand Totals for Projects >= 100,000 and < 500,000	**2,437,286**	**389,966**	**2,827,252**

Detailed Project Summary

Facility Condition Analysis

Project Cost Range

LIFE : LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
HV3A	LIFEHV01	3	9	HVAC SYSTEM REPLACEMENT	1,107,149	177,144	1,284,293
HV4B	LIFEHV02	3	10	FUME HOOD REPLACEMENT	544,570	87,131	631,701
				Totals for Priority Class 3	**1,651,719**	**264,275**	**1,915,995**
				Grand Totals for Projects >= 500,000	**1,651,719**	**264,275**	**1,915,995**
				Grand Totals For All Projects:	**4,366,785**	**686,686**	**5,053,471**

Detailed Project Summary

Facility Condition Analysis

Project Classification

LIFE : LIFE SCIENCES BUILDING

Cat Code	Project Number	Pri. Seq.	Project Classification	Pri. Cls	Project Title	Total Cost
FS2A	LIFEFS02	4	Capital Renewal	3	FIRE ALARM SYSTEM REPLACEMENT	202,450
HE1A	LIFEHE01	5	Capital Renewal	3	LAB COLD BOX REFRIGERATION SYSTEM REPLACEMENT	12,934
ES2B	LIFEES01	8	Capital Renewal	3	RESTORE BRICK VENEER	36,690
IS1A	LIFEIS01	13	Capital Renewal	3	REFINISH FLOORING	463,283
IS2B	LIFEIS02	14	Capital Renewal	3	REFINISH WALLS	156,874
IS3B	LIFEIS03	15	Capital Renewal	3	REFINISH CEILINGS	299,700
IS6B	LIFEIS04	16	Capital Renewal	3	LABORATORY CASEWORK UPGRADES	355,687
ES4B	LIFEES04	21	Capital Renewal	4	MEMBRANE ROOF REPLACEMENT	45,443
EL4A	LIFEEL03	22	Capital Renewal	4	EXTERIOR LIGHTING REPLACEMENT	10,572
PL1A	LIFEPL02	23	Capital Renewal	4	WATER SUPPLY PIPING REPLACEMENT	133,985
PL3A	LIFEPL03	24	Capital Renewal	4	REPLACE PROCESS AIR EQUIPMENT	116,683
					Totals for Capital Renewal	**1,834,302**
FS1A	LIFEFS04	3	Deferred Maintenance	3	REPLACE EXIT SIGNS	9,030
ES4B	LIFEES03	6	Deferred Maintenance	3	BUILT-UP ROOF REPLACEMENT	269,314
ES5A	LIFEES02	7	Deferred Maintenance	3	EXTERIOR DOOR REPLACEMENT	25,201
HV3A	LIFEHV01	9	Deferred Maintenance	3	HVAC SYSTEM REPLACEMENT	1,284,293
HV4B	LIFEHV02	10	Deferred Maintenance	3	FUME HOOD REPLACEMENT	631,701
EL3B	LIFEEL02	11	Deferred Maintenance	3	ELECTRICAL SYSTEM REPAIRS	201,591
EL4B	LIFEEL01	12	Deferred Maintenance	3	INTERIOR LIGHTING UPGRADE	485,931
PL1E	LIFEPL01	17	Deferred Maintenance	3	DOMESTIC HOT WATER HEAT EXCHANGER REPLACEMENT	17,445
SI4A	LIFESI01	18	Deferred Maintenance	3	SITE PAVING UPGRADES	30,356
VT7A	LIFEVT01	19	Deferred Maintenance	3	UPGRADE ELEVATOR NO. 1	75,000
					Totals for Deferred Maintenance	**3,029,862**
FS5C	LIFEFS01	1	Plant Adaption	1	ELIMINATE FIRE RATING COMPROMISES	7,486
FS3A	LIFEFS03	2	Plant Adaption	2	FIRE SPRINKLER SYSTEM EXTENSION	141,753
AC4A	LIFEAC01	20	Plant Adaption	4	INTERIOR AMENITY ACCESSIBILITY UPGRADES	40,068
					Totals for Plant Adaption	**189,307**
					Grand Total:	**5,053,471**

Detailed Project Summary

Facility Condition Analysis

Energy Conservation

LIFE : LIFE SCIENCES BUILDING

Cat Code	Project Number	Pri Cls	Pri Seq	Project Title	Total Cost	Annual Savings	Simple Payback
FS1A	LIFEFS04	3	3	REPLACE EXIT SIGNS	9,030	20	451.52
ES4B	LIFEES03	3	6	BUILT-UP ROOF REPLACEMENT	269,314	3,400	79.21
HV3A	LIFEHV01	3	9	HVAC SYSTEM REPLACEMENT	1,284,293	10,910	117.72
EL4B	LIFEEL01	3	12	INTERIOR LIGHTING UPGRADE	485,931	23,100	21.04
				Totals for Priority Class 3	**2,048,569**	**37,430**	**54.73**
ES4B	LIFEES04	4	21	MEMBRANE ROOF REPLACEMENT	45,443	600	75.74
EL4A	LIFEEL03	4	22	EXTERIOR LIGHTING REPLACEMENT	10,572	980	10.79
				Totals for Priority Class 4	**56,015**	**1,580**	**35.45**
				Grand Total:	**2,104,583**	**39,010**	**53.95**

Detailed Project Summary

Facility Condition Analysis

Category/System Code

LIFE : LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
AC4A	LIFEAC01	4	20	INTERIOR AMENITY ACCESSIBILITY UPGRADES	34,541	5,527	40,068
				Totals for System Code: ACCESSIBILITY	**34,541**	**5,527**	**40,068**
EL3B	LIFEEL02	3	11	ELECTRICAL SYSTEM REPAIRS	173,786	27,806	201,591
EL4B	LIFEEL01	3	12	INTERIOR LIGHTING UPGRADE	418,906	67,025	485,931
EL4A	LIFEEL03	4	22	EXTERIOR LIGHTING REPLACEMENT	9,114	1,458	10,572
				Totals for System Code: ELECTRICAL	**601,805**	**96,289**	**698,094**
ES4B	LIFEES03	3	6	BUILT-UP ROOF REPLACEMENT	232,167	37,147	269,314
ES5A	LIFEES02	3	7	EXTERIOR DOOR REPLACEMENT	21,725	3,476	25,201
ES2B	LIFEES01	3	8	RESTORE BRICK VENEER	31,630	5,061	36,690
ES4B	LIFEES04	4	21	MEMBRANE ROOF REPLACEMENT	39,175	6,268	45,443
				Totals for System Code: EXTERIOR	**324,696**	**51,951**	**376,648**
FS5C	LIFEFS01	1	1	ELIMINATE FIRE RATING COMPROMISES	6,454	1,033	7,486
FS3A	LIFEFS03	2	2	FIRE SPRINKLER SYSTEM EXTENSION	122,201	19,552	141,753
FS1A	LIFEFS04	3	3	REPLACE EXIT SIGNS	7,785	1,246	9,030
FS2A	LIFEFS02	3	4	FIRE ALARM SYSTEM REPLACEMENT	174,526	27,924	202,450
				Totals for System Code: FIRE/LIFE SAFETY	**310,965**	**49,754**	**360,719**
HE1A	LIFEHE01	3	5	LAB COLD BOX REFRIGERATION SYSTEM REPLACEMENT	11,150	1,784	12,934
				Totals for System Code: HEALTH	**11,150**	**1,784**	**12,934**
HV3A	LIFEHV01	3	9	HVAC SYSTEM REPLACEMENT	1,107,149	177,144	1,284,293
HV4B	LIFEHV02	3	10	FUME HOOD REPLACEMENT	544,570	87,131	631,701
				Totals for System Code: HVAC	**1,651,719**	**264,275**	**1,915,995**
IS1A	LIFEIS01	3	13	REFINISH FLOORING	399,382	63,901	463,283
IS2B	LIFEIS02	3	14	REFINISH WALLS	135,237	21,638	156,874
IS3B	LIFEIS03	3	15	REFINISH CEILINGS	258,362	41,338	299,700
IS6B	LIFEIS04	3	16	LABORATORY CASEWORK UPGRADES	306,627	49,060	355,687
				Totals for System Code: INTERIOR/FINISH SYS.	**1,099,608**	**175,937**	**1,275,545**
PL1E	LIFEPL01	3	17	DOMESTIC HOT WATER HEAT EXCHANGER REPLACEMENT	15,039	2,406	17,445
PL1A	LIFEPL02	4	23	WATER SUPPLY PIPING REPLACEMENT	115,505	18,481	133,985
PL3A	LIFEPL03	4	24	REPLACE PROCESS AIR EQUIPMENT	100,589	16,094	116,683
				Totals for System Code: PLUMBING	**231,132**	**36,981**	**268,113**
SI4A	LIFESI01	3	18	SITE PAVING UPGRADES	26,169	4,187	30,356

Detailed Project Summary

Facility Condition Analysis

Category/System Code

LIFE : LIFE SCIENCES BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
				Totals for System Code: SITE	**26,169**	**4,187**	**30,356**
VT7A	LIFEVT01	3	19	UPGRADE ELEVATOR NO. 1	75,000	0	75,000
				Totals for System Code: VERT. TRANSPORTATION	**75,000**		**75,000**
				Grand Total:	**4,366,785**	**686,686**	**5,053,471**

FACILITY CONDITION ANALYSIS

SECTION 3

SPECIFIC PROJECT DETAILS ILLUSTRATING DESCRIPTION / COST

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEFS01	**Title:**	ELIMINATE FIRE RATING COMPROMISES
Priority Sequence:	1		
Priority Class:	1		
Category Code:	FS5C	**System:**	FIRE/LIFE SAFETY
		Component:	EGRESS PATH
		Element:	SEPARATION RATING
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	IBC 711.3		
Project Class:	Plant Adaption		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1, 2		

Project Description

Structural fire separations are not maintained according to code requirements for new construction in select areas of this facility. Primarily, data cabling has been routed with little regard for fire-rated separations. Intumescent passive firestopping and some minor structural separation repairs should be accomplished promptly.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEFS01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Minor passive firestopping efforts	SF	75,480	$0.03	$2,264	$0.08	$6,038	$8,303
Project Totals:				**$2,264**		**$6,038**	**$8,303**

Material/Labor Cost		$8,303
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$5,378
General Contractor Mark Up at 20.0%	+	$1,076
Construction Cost		$6,454
Professional Fees at 16.0%	+	$1,033
Total Project Cost		**$7,486**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEFS03	**Title:**	FIRE SPRINKLER SYSTEM EXTENSION
Priority Sequence:	2		
Priority Class:	2		
Category Code:	FS3A	**System:**	FIRE/LIFE SAFETY
		Component:	SUPPRESSION
		Element:	SPRINKLERS
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		

Code Application: NFPA 1, 13, 13R, 101

Project Class:	Plant Adaption
Project Date:	10/20/2009
Project Location:	Floor-wide: Floor(s) 1, 2

Project Description

Install an automatic fire sprinkler system in unprotected areas throughout the facility. This includes piping, valves, sprinkler heads, and piping supports. Install flow switches and sensors to interface with the fire alarm system. Additionally, replace the sprinkler heads on the existing system.

Project Cost

Project Number: LIFEFS03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install a wet-pipe sprinkler system, including valves, piping, sprinkler heads, piping supports, etc.	SF	17,090	$3.08	$52,637	$3.77	$64,429	$117,067
Fire sprinkler head replacement	SF	58,392	$0.09	$5,255	$0.35	$20,437	$25,692
Project Totals:				**$57,892**		**$84,867**	**$142,759**

Material/Labor Cost		$142,759
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$101,834
General Contractor Mark Up at 20.0%	+	$20,367
Construction Cost		$122,201
Professional Fees at 16.0%	+	$19,552
Total Project Cost		**$141,753**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEFS04	**Title:**	REPLACE EXIT SIGNS
Priority Sequence:	3		
Priority Class:	3		
Category Code:	FS1A	**System:**	FIRE/LIFE SAFETY
		Component:	LIGHTING
		Element:	EGRESS LTG./EXIT SIGNAGE

Building Code:	LIFE	
Building Name:	LIFE SCIENCES BUILDING	
Subclass/Savings:	Energy Conservation	$20

Code Application:	NFPA	101-47
	IBC	1011

Project Class:	Deferred Maintenance
Project Date:	10/20/2009
Project Location:	Floor-wide: Floor(s) 1, 2

Project Description

Replace the existing exit signs with modern, efficient LED units, and install additional units to comply with current NFPA life safety codes. The new units should be connected to the emergency power network. LED type exit signs are recommended, because they are energy efficient and require minimal maintenance.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEFS04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replacement of existing exit signs with LED units	EA	54	$76.00	$4,104	$85.00	$4,590	$8,694
Project Totals:				**$4,104**		**$4,590**	**$8,694**

Material/Labor Cost		$8,694
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$6,487
General Contractor Mark Up at 20.0%	+	$1,297
Construction Cost		$7,785
Professional Fees at 16.0%	+	$1,246
Total Project Cost		**$9,030**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEFS02	**Title:**	FIRE ALARM SYSTEM REPLACEMENT
Priority Sequence:	4		
Priority Class:	3		
Category Code:	FS2A	**System:**	FIRE/LIFE SAFETY
		Component:	DETECTION ALARM
		Element:	GENERAL
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		

Code Application:	ADAAG	702.1
	NFPA	1, 101

Project Class:	Capital Renewal
Project Date:	10/20/2009
Project Location:	Floor-wide: Floor(s) 1, 2

Project Description

Upgrade the existing fire alarm system with a modern application. Specify a point addressable supervised main fire alarm panel with an annunciator. This work includes pull stations, audible and visible alarms, smoke and heat detectors, and a wiring network. Install all devices in accordance with current NFPA and ADA requirements. The system should be monitored to report activation or trouble to an applicable receiving station.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEFS02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Fire alarm control panel(s), annunciator, smoke and heat detectors, manual pull stations, audible and visual alarms, wiring, raceways, cut and patching materials	SF	75,482	$1.46	$110,204	$0.89	$67,179	$177,383
Project Totals:				**$110,204**		**$67,179**	**$177,383**

Material/Labor Cost		$177,383
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$145,438
General Contractor Mark Up at 20.0%	+	$29,088
Construction Cost		$174,526
Professional Fees at 16.0%	+	$27,924
Total Project Cost		**$202,450**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEHE01	**Title:**	LAB COLD BOX REFRIGERATION SYSTEM REPLACEMENT
Priority Sequence:	5		
Priority Class:	3		
Category Code:	HE1A	**System:**	HEALTH
		Component:	ENVIRONMENTAL CONTROL
		Element:	EQUIPMENT AND ENCLOSURES
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ASHRAE 15-2004		
Project Class:	Capital Renewal		
Project Date:	10/20/2009		
Project Location:	Room Only: Floor(s) 1		

Project Description

Replacement of the laboratory cold box refrigeration systems is recommended. Install new non-CFC/HCFC refrigerant based systems of the latest energy-efficient design.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEHE01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Refrigeration system, including compressor, evaporator unit, controls, refrigerant, and demolition of existing equipment	SYS	2	$3,350	$6,700	$2,480	$4,960	$11,660
Project Totals:				**$6,700**		**$4,960**	**$11,660**

Material/Labor Cost		$11,660
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$9,291
General Contractor Mark Up at 20.0%	+	$1,858
Construction Cost		$11,150
Professional Fees at 16.0%	+	$1,784
Total Project Cost		**$12,934**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEES03	**Title:**	BUILT-UP ROOF REPLACEMENT
Priority Sequence:	6		
Priority Class:	3		
Category Code:	ES4B	**System:**	EXTERIOR
		Component:	ROOF
		Element:	REPLACEMENT
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Energy Conservation $3,400		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) R		

Project Description

The upper roof area and portions of the lower roof are built-up systems that should be replaced. The existing stress conditions around the seams and at the perimeter flashing will lead to failure if left unattended. Replace the stressed roof and flashing with a similar application.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEES03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Built-up roof	SF	39,340	$3.06	$120,380	$3.58	$140,837	$261,218
Project Totals:				**$120,380**		**$140,837**	**$261,218**

Material/Labor Cost		$261,218
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$193,473
General Contractor Mark Up at 20.0%	+	$38,695
Construction Cost		$232,167
Professional Fees at 16.0%	+	$37,147
Total Project Cost		**$269,314**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEES02	**Title:**	EXTERIOR DOOR REPLACEMENT
Priority Sequence:	7		
Priority Class:	3		
Category Code:	ES5A	**System:**	EXTERIOR
		Component:	FENESTRATIONS
		Element:	DOORS
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/5/2009		
Project Location:	Building-wide: Floor(s) 1		

Project Description

Exterior doors are metal-framed glass units at primary entrances and painted metal at secondary entrances. There are several roll-up doors at the loading dock. It is recommended that aged and inefficient primary entrance doors be replaced. The replacement units should maintain the architectural design aspects of this facility and should be modern, energy-efficient applications.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEES02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
High traffic door system	LEAF	6	$1,978	$11,868	$1,999	$11,994	$23,862
Project Totals:				**$11,868**		**$11,994**	**$23,862**

Material/Labor Cost		$23,862
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$18,104
General Contractor Mark Up at 20.0%	+	$3,621
Construction Cost		$21,725
Professional Fees at 16.0%	+	$3,476
Total Project Cost		**$25,201**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEES01	**Title:**	RESTORE BRICK VENEER
Priority Sequence:	8		
Priority Class:	3		
Category Code:	ES2B	**System:**	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	FINISH
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Building-wide: Floor(s) 1		

Project Description

Brick veneer is the primary exterior finish. While the brick is fundamentally sound, exposure to the elements has caused some deterioration of the mortar joints and expansion joints. Cleaning, surface preparation, selective repairs, and applied finish or penetrating sealant upgrades are recommended to restore the aesthetics and integrity of the building envelope.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEES01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Cleaning and surface preparation	SF	19,260	$0.11	$2,119	$0.22	$4,237	$6,356
Selective mortar and / or sealant repairs (assumes 10 linear feet for every 100 square feet of envelope)	LF	1,926	$2.45	$4,719	$4.99	$9,611	$14,329
Applied finish or sealant	SF	19,260	$0.22	$4,237	$0.82	$15,793	$20,030
Project Totals:				**$11,075**		**$29,641**	**$40,716**

Material/Labor Cost		$40,716
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$26,358
General Contractor Mark Up at 20.0%	+	$5,272
Construction Cost		$31,630
Professional Fees at 16.0%	+	$5,061
Total Project Cost		**$36,690**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEHV01	**Title:**	HVAC SYSTEM REPLACEMENT
Priority Sequence:	9		
Priority Class:	3		
Category Code:	HV3A	**System:**	HVAC
		Component:	HEATING/COOLING
		Element:	SYSTEM RETROFIT/REPLACE
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Energy Conservation $10,910		
Code Application:	ASHRAE 62-2004		
Project Class:	Deferred Maintenance		
Project Date:	10/20/2009		
Project Location:	Floor-wide: Floor(s) 1, 2, R		

Project Description

Redesign and replacement of the 1980s vintage HVAC system is recommended. Demolish and dispose of existing equipment. Install a new modern HVAC system with variable air volume and constant volume air distribution as needed. This includes new air handlers, exhaust fans, ductwork, terminal units, heat exchangers, pumps, piping, controls, and related electrical components. Specify direct digital controls for the new equipment. Incorporate variable frequency drives into the new HVAC design as applicable.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEHV01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Air handlers, exhaust fans, ductwork, VAVs, VFDs, DDCs, heat exchangers, pumps, piping, electrical connections, and demolition of existing equipment	SF	17,090	$33.04	$564,654	$40.38	$690,094	$1,254,748
Project Totals:				**$564,654**		**$690,094**	**$1,254,748**

Material/Labor Cost		$1,254,748
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$922,625
General Contractor Mark Up at 20.0%	+	$184,525
Construction Cost		$1,107,149
Professional Fees at 16.0%	+	$177,144
Total Project Cost		**$1,284,293**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEHV02	**Title:**	FUME HOOD REPLACEMENT
Priority Sequence:	10		
Priority Class:	3		
Category Code:	HV4B	**System:**	HVAC
		Component:	AIR MOVING/VENTILATION
		Element:	EXHAUST FANS
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ASHRAE 62-2004, 110-1995		
Project Class:	Deferred Maintenance		
Project Date:	10/20/2009		
Project Location:	Floor-wide: Floor(s) 1, 2, R		

Project Description

Replacement of the aging fume hoods is recommended. Demolish the necessary fume hoods and their related mechanical systems. Install new modern fume hood systems including hoods, fans, ductwork, piping, and electrical connections. Provide modern direct digital controls that interface with the HVAC system.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEHV02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Fume hood replacement, including mechanical systems, controls, demolition, and disposal fees	SYS	15	$24,990	$374,850	$9,920	$148,800	$523,650
Project Totals:				**$374,850**		**$148,800**	**$523,650**

Material/Labor Cost		$523,650
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$453,808
General Contractor Mark Up at 20.0%	+	$90,762
Construction Cost		$544,570
Professional Fees at 16.0%	+	$87,131
Total Project Cost		**$631,701**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEEL02	**Title:**	ELECTRICAL SYSTEM REPAIRS
Priority Sequence:	11		
Priority Class:	3		
Category Code:	EL3B	**System:**	ELECTRICAL
		Component:	SECONDARY DISTRIBUTION
		Element:	DISTRIBUTION NETWORK
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		

Code Application: NEC Articles 100, 210, 410

Project Class: Deferred Maintenance

Project Date: 10/20/2009

Project Location: Floor-wide: Floor(s) 1, 2

Project Description

Aging devices, including wall switches and receptacles, are potential shock and fire hazards. Replace all worn or damaged switches, receptacles, and cover plates. Install GFCI receptacles where required by code. Test power panels for proper operation, replacing faulty breakers as needed. Update power panel directories for circuit identification.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEEL02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Switches, receptacles, cover plates, breakers, miscellaneous materials	SF	75,482	$1.08	$81,521	$1.62	$122,281	$203,801
Project Totals:				**$81,521**		**$122,281**	**$203,801**

Material/Labor Cost		$203,801
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$144,821
General Contractor Mark Up at 20.0%	+	$28,964
Construction Cost		$173,786
Professional Fees at 16.0%	+	$27,806
Total Project Cost		**$201,591**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEEL01	**Title:**	INTERIOR LIGHTING UPGRADE
Priority Sequence:	12		
Priority Class:	3		
Category Code:	EL4B	**System:**	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	INTERIOR LIGHTING
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Energy Conservation $23,100		
Code Application:	NEC Articles 210, 410		
Project Class:	Deferred Maintenance		
Project Date:	10/20/2009		
Project Location:	Floor-wide: Floor(s) 1, 2		

Project Description

An interior lighting upgrade is recommended. Replace existing aged and / or inefficient light fixtures with modern fixtures of the latest energy-efficient design. Select lamps with the same color temperature and rendering index for lighting uniformity. Install occupancy sensors in select areas for additional energy conservation.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEEL01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
High efficiency fluorescent fixtures, occupancy sensors, and demolition of existing lighting	SF	75,482	$2.83	$213,614	$3.46	$261,168	$474,782
Project Totals:				**$213,614**		**$261,168**	**$474,782**

Material/Labor Cost		$474,782
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$349,088
General Contractor Mark Up at 20.0%	+	$69,818
Construction Cost		$418,906
Professional Fees at 16.0%	+	$67,025
Total Project Cost		**$485,931**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEIS01	**Title:**	REFINISH FLOORING
Priority Sequence:	13		
Priority Class:	3		
Category Code:	IS1A	**System:**	INTERIOR/FINISH SYS.
		Component:	FLOOR
		Element:	FINISHES-DRY
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1, 2		

Project Description

Interior floor finishes consist of vinyl tile, sheet vinyl, carpet, and epoxy flooring. The applications vary in age and condition from area to area. Floor finish upgrades should be considered as part of any future cosmetic improvements or major comprehensive renovation efforts.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEIS01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Carpet	SF	6,420	$5.36	$34,411	$2.00	$12,840	$47,251
Vinyl floor tile	SF	41,700	$3.53	$147,201	$2.50	$104,250	$251,451
Epoxy floor finish application	SF	16,040	$3.20	$51,328	$4.64	$74,426	$125,754
Project Totals:				**$232,940**		**$191,516**	**$424,456**

Material/Labor Cost		$424,456
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$332,818
General Contractor Mark Up at 20.0%	+	$66,564
Construction Cost		$399,382
Professional Fees at 16.0%	+	$63,901
Total Project Cost		**$463,283**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEIS02	**Title:**	REFINISH WALLS
Priority Sequence:	14		
Priority Class:	3		
Category Code:	IS2B	**System:**	INTERIOR/FINISH SYS.
		Component:	PARTITIONS
		Element:	FINISHES
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1, 2		

Project Description

Interior wall finishes are painted plaster or concrete. The applications vary in age and condition from area to area. Wall finish upgrades should be considered as part of any future cosmetic improvements or major comprehensive renovation efforts.

Project Cost

Project Number: LIFEIS02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Standard wall finish (paint, wall covering, etc.)	SF	192,080	$0.17	$32,654	$0.81	$155,585	$188,238
Project Totals:				**$32,654**		**$155,585**	**$188,238**

Material/Labor Cost		$188,238
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$112,697
General Contractor Mark Up at 20.0%	+	$22,539
Construction Cost		$135,237
Professional Fees at 16.0%	+	$21,638
Total Project Cost		**$156,874**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEIS03	**Title:**	REFINISH CEILINGS
Priority Sequence:	15		
Priority Class:	3		
Category Code:	IS3B	**System:**	INTERIOR/FINISH SYS.
		Component:	CEILINGS
		Element:	REPLACEMENT
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1, 2		

Project Description

Ceiling finishes are lay-in, acoustical tile or painted plaster. The applications vary in age and condition from area to area. Ceiling finish upgrades should be considered as part of any future cosmetic improvements or major comprehensive renovation efforts.

Project Cost

Project Number: LIFEIS03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Acoustical tile ceiling system	SF	57,740	$2.12	$122,409	$2.98	$172,065	$294,474
Painted ceiling finish application	SF	6,420	$0.17	$1,091	$0.81	$5,200	$6,292
Project Totals:				**$123,500**		**$177,265**	**$300,766**

Material/Labor Cost		$300,766
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$215,302
General Contractor Mark Up at 20.0%	+	$43,060
Construction Cost		$258,362
Professional Fees at 16.0%	+	$41,338
Total Project Cost		**$299,700**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEIS04	**Title:**	LABORATORY CASEWORK UPGRADES
Priority Sequence:	16		
Priority Class:	3		
Category Code:	IS6B	**System:**	INTERIOR/FINISH SYS.
		Component:	GENERAL
		Element:	CABINETRY
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

While the casework in the newer section of the building is good condition, the laboratory casework in the older section is in overall poor condition. Install new casework as part of a comprehensive laboratory renovation effort.

Project Cost

Project Number: LIFEIS04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Laboratory base cabinetry, wall cabinetry, and shelving per SF of lab space (assumes casework density of 20% of total lab area)	SF	12,080	$17.74	$214,299	$6.41	$77,433	$291,732
Project Totals:				**$214,299**		**$77,433**	**$291,732**

Material/Labor Cost		$291,732
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$255,522
General Contractor Mark Up at 20.0%	+	$51,104
Construction Cost		$306,627
Professional Fees at 16.0%	+	$49,060
Total Project Cost		**$355,687**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEPL01	**Title:**	DOMESTIC HOT WATER HEAT EXCHANGER REPLACEMENT
Priority Sequence:	17		
Priority Class:	3		
Category Code:	PL1E	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	HEATING
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/20/2009		
Project Location:	Item Only: Floor(s) 2		

Project Description

Replacement of the domestic hot water converter is recommended. With age, heat exchanger efficiency is reduced by internal tube scaling. Internal wear will eventually lead to failure, allowing contaminates to enter the water system. Remove the existing system. Install a new heat exchanger, pumps, piping, and controls as needed.

Project Cost

Project Number: LIFEPL01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Heat exchanger, pumps, piping, valves, controls, insulation, demolition	GPM	48	$183	$8,789	$150	$7,177	$15,966
Project Totals:				**$8,789**		**$7,177**	**$15,966**

Material/Labor Cost		$15,966
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$12,532
General Contractor Mark Up at 20.0%	+	$2,506
Construction Cost		$15,039
Professional Fees at 16.0%	+	$2,406
Total Project Cost		**$17,445**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFESI01	**Title:**	SITE PAVING UPGRADES
Priority Sequence:	18		
Priority Class:	3		
Category Code:	SI4A	**System:**	SITE
		Component:	GENERAL
		Element:	OTHER
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 502		
Project Class:	Deferred Maintenance		
Project Date:	10/5/2009		
Project Location:	Undefined: Floor(s) 1		

Project Description

Pedestrian paving systems are in overall poor condition and represent a liability to the owner. New systems, including excavation, grading, base compaction, and paving, are recommended. Vehicular paving systems are in fair condition and will need moderate upgrades.

Project Cost

Project Number: LIFESI01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Concrete pedestrian paving	SF	2,500	$2.97	$7,425	$3.64	$9,100	$16,525
Vehicular paving wear course rehabilitation, sealcoat and striping allowance	SY	975	$7.91	$7,712	$3.79	$3,695	$11,408
Project Totals:				**$15,137**		**$12,795**	**$27,933**

Material/Labor Cost		$27,933
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$21,807
General Contractor Mark Up at 20.0%	+	$4,361
Construction Cost		$26,169
Professional Fees at 16.0%	+	$4,187
Total Project Cost		**$30,356**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEVT01	**Title:**	UPGRADE ELEVATOR NO. 1
Priority Sequence:	19		
Priority Class:	3		
Category Code:	VT7A	**System:**	VERT. TRANSPORTATION
		Component:	GENERAL
		Element:	OTHER
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/12/2009		
Project Location:	Item Only: Floor(s) 1		

Project Description

Replace controller, pumping unit complete with motor, pump, valves, door operator, hangers, hanger tracks, rollers, related door hardware, interlocks, car operating panel, and signal fixtures, and refurbish the car interior.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEVT01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Client-reported cost to upgrade elevator	EA	1	$75,000	$75,000	$0.00	$	$75,000
Project Totals:				**$75,000**		**$**	**$75,000**

Material/Labor Cost	$75,000
Material Index	100.7%
Labor Index	51.3%
Material/Labor Indexed Cost	$75,000
No GCM Required	
Construction Cost	$75,000
No Professional Fees Required	
Total Project Cost	**$75,000**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEAC01	**Title:**	INTERIOR AMENITY ACCESSIBILITY UPGRADES
Priority Sequence:	20		
Priority Class:	4		
Category Code:	AC4A	**System:**	ACCESSIBILITY
		Component:	GENERAL
		Element:	FUNCTIONAL SPACE MOD.
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		

Code Application:	ADAAG	211, 602, 804

Project Class:	Plant Adaption
Project Date:	10/5/2009
Project Location:	Floor-wide: Floor(s) 1, 2

Project Description

The configurations of the break room kitchenettes and drinking fountains are barriers to accessibility. The installation of wheelchair accessible kitchenette cabinetry is recommended where applicable, along with dual level, refrigerated drinking fountains.

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Cost

Project Number: LIFEAC01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA compliant kitchenette unit with base cabinetry, overhead cabinetry, and amenities	SYS	2	$4,894	$9,788	$1,999	$3,998	$13,786
Dual level drinking fountain	EA	4	$1,216	$4,864	$374	$1,496	$6,360
Alcove construction including finishes	EA	4	$877	$3,508	$3,742	$14,968	$18,476
Project Totals:				**$18,160**		**$20,462**	**$38,622**

Material/Labor Cost		$38,622
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$28,784
General Contractor Mark Up at 20.0%	+	$5,757
Construction Cost		$34,541
Professional Fees at 16.0%	+	$5,527
Total Project Cost		**$40,068**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEES04	**Title:**	MEMBRANE ROOF REPLACEMENT
Priority Sequence:	21		
Priority Class:	4		
Category Code:	ES4B	**System:**	EXTERIOR
		Component:	ROOF
		Element:	REPLACEMENT
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Energy Conservation $600		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) R		

Project Description

Part of the older lower roof section has a single-ply membrane roof, which is not expected to outlast the scope of this analysis. Future budget modeling should include a provision for the replacement of all failing roofing systems. Replace this roof with a similar application.

Project Cost

Project Number: LIFEES04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Membrane roof	SF	6,940	$3.79	$26,303	$1.73	$12,006	$38,309
Project Totals:				**$26,303**		**$12,006**	**$38,309**

Material/Labor Cost		$38,309
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$32,646
General Contractor Mark Up at 20.0%	+	$6,529
Construction Cost		$39,175
Professional Fees at 16.0%	+	$6,268
Total Project Cost		**$45,443**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEEL03	**Title:**	EXTERIOR LIGHTING REPLACEMENT
Priority Sequence:	22		
Priority Class:	4		
Category Code:	EL4A	**System:**	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	EXTERIOR LIGHTING
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Energy Conservation $980		
Code Application:	NEC 410		
Project Class:	Capital Renewal		
Project Date:	10/20/2009		
Project Location:	Building-wide: Floor(s) 1		

Project Description

Exterior areas adjacent to the building are illuminated by building-mounted HID fixtures that are currently in good condition. However, their replacement should be scheduled within the outlook of this report due to predictable wear. Install new energy-efficient fixtures, and place them on photocell activation.

Project Cost

Project Number: LIFEEL03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HID wall-mount fixture and demolition of existing fixture	EA	15	$406	$6,090	$190	$2,850	$8,940
Project Totals:				**$6,090**		**$2,850**	**$8,940**

Material/Labor Cost		$8,940
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$7,595
General Contractor Mark Up at 20.0%	+	$1,519
Construction Cost		$9,114
Professional Fees at 16.0%	+	$1,458
Total Project Cost		**$10,572**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEPL02	**Title:**	WATER SUPPLY PIPING REPLACEMENT
Priority Sequence:	23		
Priority Class:	4		
Category Code:	PL1A	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	PIPING NETWORK
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	IPC Chapter 6		
Project Class:	Capital Renewal		
Project Date:	10/20/2009		
Project Location:	Floor-wide: Floor(s) 1, 2		

Project Description

Replace water supply and process piping as needed throughout the facility. Remove the aging water supply and process piping. Install new copper water supply piping with fiberglass insulation. Provide isolation valves, pressure regulators, shock absorbers, and backflow prevention devices in appropriate areas. Install new process piping as needed such as gas lines, vacuum lines, compressed air lines, purified water lines, process steam lines, etc., along with related isolation valves and gas cocks. Clearly label exposed piping for identification of the conveyed fluids and gases. Cost excludes the 1999 addition.

Project Cost

Project Number: LIFEPL02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Water and specialty pipe and fittings, valves, backflow prevention devices, insulation, hangers, labels, demolition, and cut and patching materials	SF	17,090	$2.46	$42,041	$6.15	$105,104	$147,145
Project Totals:				**$42,041**		**$105,104**	**$147,145**

Material/Labor Cost		$147,145
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$96,254
General Contractor Mark Up at 20.0%	+	$19,251
Construction Cost		$115,505
Professional Fees at 16.0%	+	$18,481
Total Project Cost		**$133,985**

Specific Project Details

Facility Condition Analysis
Section Three
LIFE : LIFE SCIENCES BUILDING

Project Description

Project Number:	LIFEPL03	**Title:**	REPLACE PROCESS AIR EQUIPMENT
Priority Sequence:	24		
Priority Class:	4		
Category Code:	PL3A	**System:**	PLUMBING
		Component:	SPECIAL SYSTEMS
		Element:	PROCESS GAS/FLUIDS
Building Code:	LIFE		
Building Name:	LIFE SCIENCES BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/20/2009		
Project Location:	Item Only: Floor(s) 1		

Project Description

The medical air compressor and vacuum system will reach the end of their useful service life within the scope of this report, and renewal is recommended. Replace the compressor and air dryer with a modern application. Additionally, upgrade the vacuum pump system with a modern application.

Project Cost

Project Number: LIFEPL03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Process duplex air compressor system with air dryer, all connections, demolition, and disposal fees	HP	20	$3,190	$63,800	$910	$18,200	$82,000
Process duplex vacuum pump system, all connections, demolition, and disposal fees	HP	10	$910	$9,100	$210	$2,100	$11,200
Project Totals:				**$72,900**		**$20,300**	**$93,200**

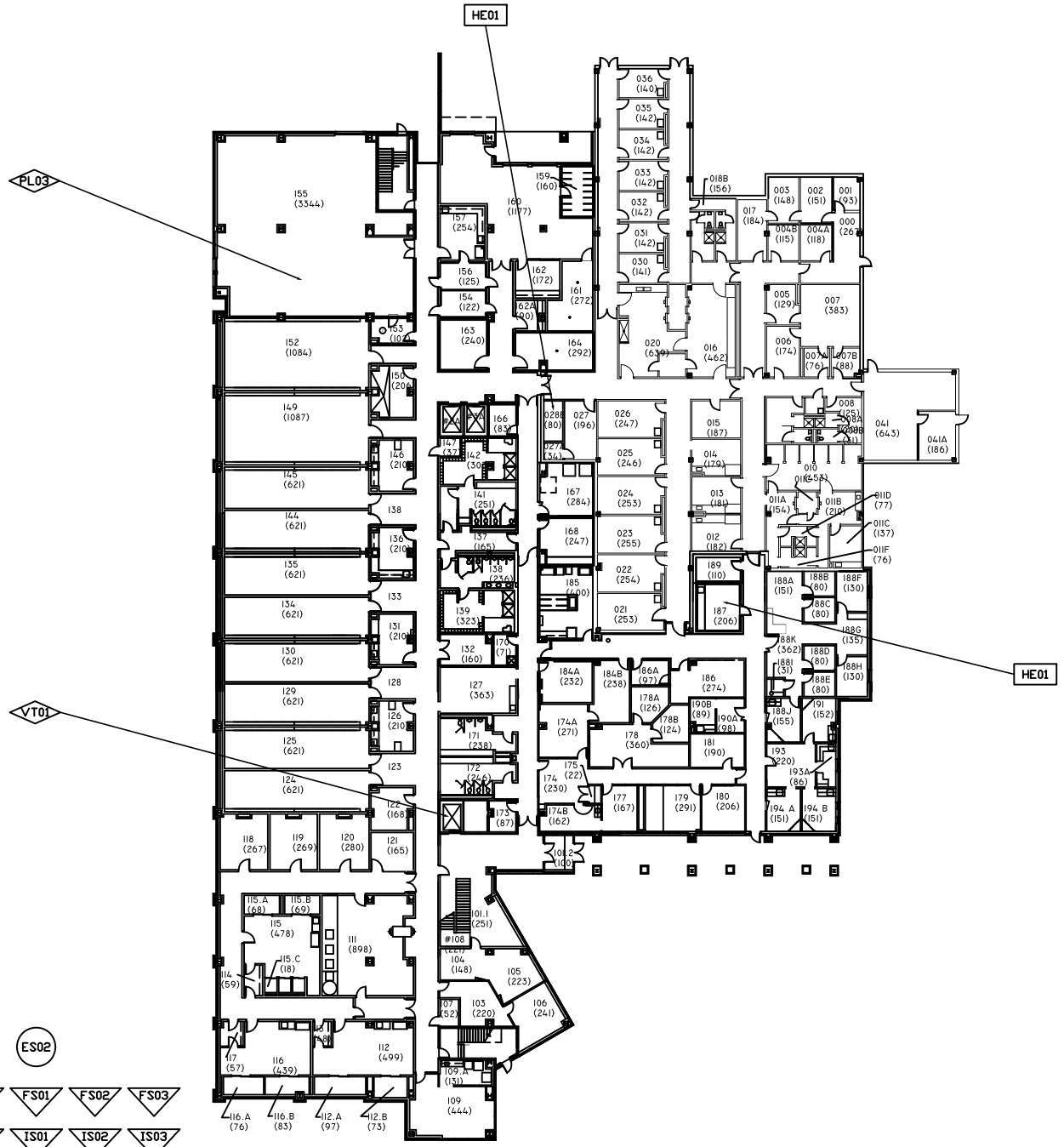
Material/Labor Cost		$93,200
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		$83,824
General Contractor Mark Up at 20.0%	+	$16,765
Construction Cost		$100,589
Professional Fees at 16.0%	+	$16,094
Total Project Cost		**$116,683**

FACILITY CONDITION ANALYSIS

SECTION 4

DRAWINGS AND PROJECT LOCATIONS

EAST CAROLINA UNIVERSITY



LIFE SCIENCES BUILDING

BLDG NO. LIFE

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2165 West Park Court
Suite N
Stone Mountain GA 30087
770.879.7376

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/09/09
Drawn by: J.T.V.
Project No. 09-041

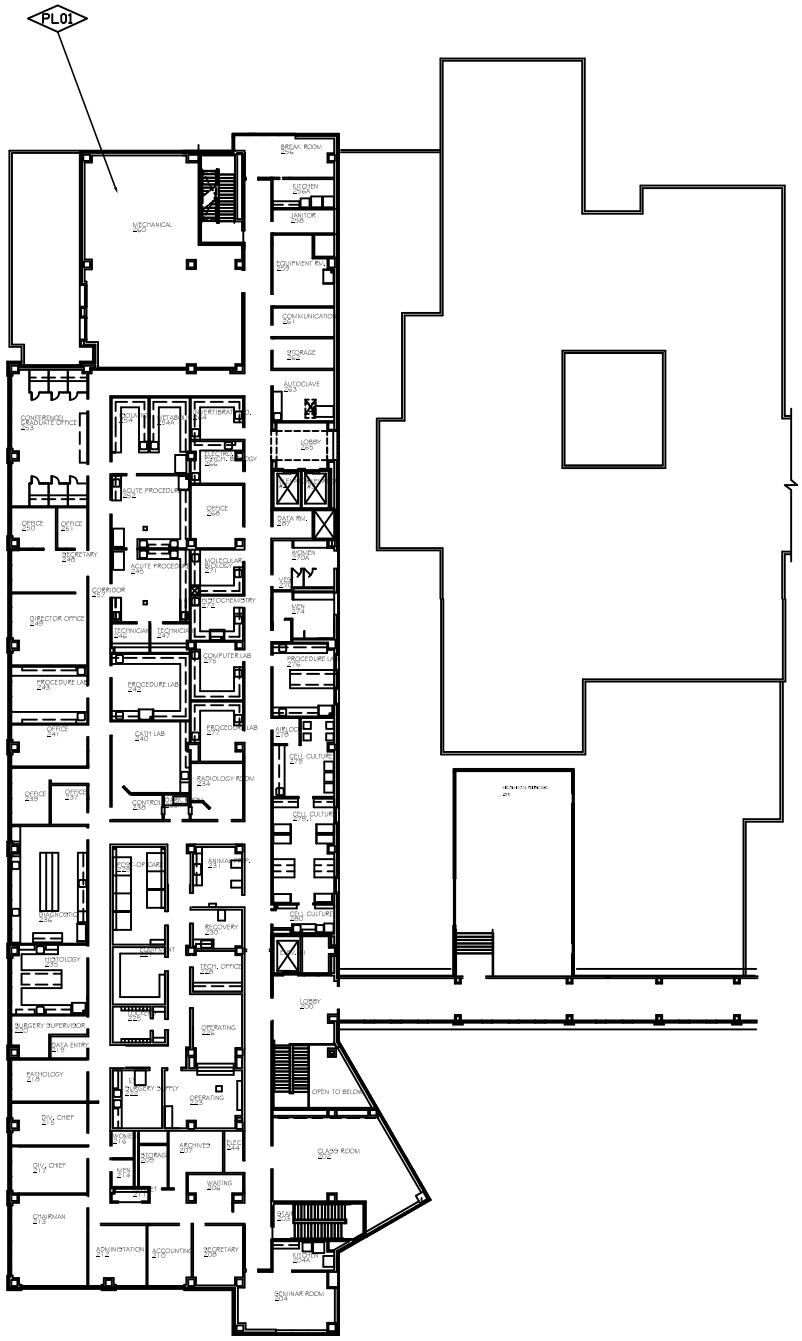
FIRST FLOOR PLAN

Sheet No.
1 of 2

EAST CAROLINA UNIVERSITY

ROOF

ES03 ES04 HV01 HV02



AC01 EL01 EL02 FS01 FS02 FS03

FS04 HV01 HV02 IS01 IS02 IS03

PL02

LIFE SCIENCES BUILDING

BLDG NO. LIFE

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2165 West Park Court
Suite N
Stone Mountain GA 30087
770.879.7376

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/09/09
Drawn by: J.T.V.
Project No. 09-041

SECOND FLOOR PLAN

Sheet No.
2 of 2

FACILITY CONDITION ANALYSIS

SECTION 5

LIFE CYCLE MODEL SUMMARY AND PROJECTIONS

Life Cycle Model

Building Component Summary

LIFE : LIFE SCIENCES BUILDING

Uniformat Code	Component Description	Qty	Units	Unit Cost	Complx Adj	Total Cost	Install Date	Life Exp
B2010	EXTERIOR FINISH RENEWAL	4,430	SF	$1.30	.31	$1,790	1980	10
B2010	EXTERIOR FINISH RENEWAL	14,830	SF	$1.30	.31	$5,993	1999	10
B2020	STANDARD GLAZING AND CURTAIN WALL	1,110	SF	$104.04		$115,481	1980	55
B2020	STANDARD GLAZING AND CURTAIN WALL	3,710	SF	$104.04		$385,976	1999	55
B2030	OVERHEAD GARAGE DOOR	4	EA	$7,425.74		$29,703	1999	30
B2030	HIGH TRAFFIC EXTERIOR DOOR SYSTEM	2	LEAF	$4,311.24		$8,622	1980	20
B2030	HIGH TRAFFIC EXTERIOR DOOR SYSTEM	4	LEAF	$4,311.24		$17,245	1999	20
B2030	LOW TRAFFIC EXTERIOR DOOR SYSTEM	9	LEAF	$2,863.29		$25,770	1980	40
B2030	LOW TRAFFIC EXTERIOR DOOR SYSTEM	2	LEAF	$2,863.29		$5,727	1999	40
B3010	BUILT-UP ROOF	29,160	SF	$6.70		$195,449	1999	20
B3010	BUILT-UP ROOF	10,180	SF	$6.70		$68,233	1980	20
B3010	MEMBRANE ROOF	6,940	SF	$6.41		$44,463	2000	15
C1020	STANDARD DOOR AND FRAME INCLUDING HARDWARE	40	LEAF	$783.68		$31,347	1999	35
C1020	RATED DOOR AND FRAME INCLUDING HARDWARE	160	LEAF	$1,489.06		$238,250	1999	35
C1020	INTERIOR DOOR HARDWARE	160	EA	$423.04		$67,687	1999	15
C1020	INTERIOR DOOR HARDWARE	40	EA	$423.04		$16,922	1999	15
C3010	STANDARD WALL FINISH (PAINT, WALL COVERING, ETC.)	192,080	SF	$0.80		$153,864	1999	10
C3020	CARPET	6,420	SF	$8.75		$56,152	1999	10
C3020	VINYL FLOOR TILE	41,700	SF	$6.59		$274,714	1999	15
C3020	EPOXY FLOOR FINISH APPLICATION	16,040	SF	$7.64		$122,510	1999	15
C3030	ACOUSTICAL TILE CEILING SYSTEM	57,740	SF	$4.99		$288,296	1999	15
C3030	PAINTED CEILING FINISH APPLICATION	6,420	SF	$0.80		$5,143	1999	15
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	1	EA	$158,628.64		$158,629	1999	25
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	2	EA	$158,628.64		$317,257	1999	25
D1010	ELEVATOR CAB RENOVATION - PASSENGER	2	EA	$26,616.80		$53,234	1999	12
D2010	PLUMBING FIXTURES - LABORATORY	58,392	SF	$10.78		$629,201	1999	35
D2010	PLUMBING FIXTURES - LABORATORY	17,090	SF	$10.78		$184,153	1980	35
D2020	WATER / PROCESS PIPING - LABORATORY	58,392	SF	$7.67		$448,006	1999	35
D2020	WATER / PROCESS PIPING - LABORATORY	17,090	SF	$7.67		$131,121	1980	35
D2020	WATER HEATER, SHELL AND TUBE HEAT EXCHANGE	48	GPM	$355.69		$17,073	1980	24

Life Cycle Model
Building Component Summary
LIFE : LIFE SCIENCES BUILDING

Uniformat Code	Component Description	Qty	Units	Unit Cost	Complx Adj	Total Cost	Install Date	Life Exp
D2030	DRAIN PIPING - LABORATORY	58,392	SF	$11.66		$680,957	1999	40
D2030	DRAIN PIPING - LABORATORY	17,090	SF	$11.66		$199,301	1980	40
D2050	AIR COMPRESSOR PACKAGE (AVERAGE SIZE)	1	SYS	$6,456.49		$6,456	1980	25
D2050	AIR COMPRESSOR PACKAGE (AVERAGE SIZE)	1	SYS	$6,456.49		$6,456	1999	25
D2050	MED / LAB AIR COMPRESSOR SYS. INC. DRYER	20	HP	$5,013.71		$100,274	1999	20
D2050	MED / LAB VACUUM PUMP SYSTEM	10	HP	$1,393.81		$13,938	1999	20
D2050	MEDICAL GAS CONTROL PANEL	4	EA	$252.46		$1,010	1999	20
D3020	BOILER (2000-10,000 MBH)	2,000	MBH	$30.18		$60,360	1999	30
D3030	COLD BOX REFRIGERATION SYSTEM	2	SYS	$6,324.50		$12,649	1999	15
D3040	CONDENSATE RECEIVER	1	SYS	$9,504.01		$9,504	1980	15
D3040	CONDENSATE RECEIVER	1	SYS	$9,504.01		$9,504	1999	15
D3040	EXHAUST FAN - CENTRIFUGAL ROOF EXHAUSTER OR SIMILAR	2	EA	$2,768.62		$5,537	1980	20
D3040	EXHAUST FAN - CENTRIFUGAL ROOF EXHAUSTER OR SIMILAR	2	EA	$2,768.62		$5,537	1999	20
D3040	FUME HOOD INCLUDING MECH. SYS	2	SYS	$41,216.93		$82,434	1980	20
D3040	FUME HOOD INCLUDING MECH. SYS	13	SYS	$41,216.93		$535,820	1999	20
D3040	HVAC SYSTEM - LABORATORY	58,392	SF	$73.54		$4,294,152	1999	25
D3040	HVAC SYSTEM - LABORATORY	17,090	SF	$73.54		$1,256,800	1980	25
D3040	BASE MTD. PUMP - UP TO 15 HP	10	HP	$3,175.77		$31,758	1999	20
D3040	BASE MTD. PUMP - 15 HP TO 50 HP	20	HP	$1,142.19		$22,844	1980	20
D3040	BASE MTD. PUMP - 50 HP TO 150 HP	80	HP	$782.99		$62,639	1999	25
D4010	FIRE SPRINKLER SYSTEM	58,392	SF	$6.86		$400,633	1999	80
D4010	FIRE SPRINKLER HEADS	58,392	SF	$0.38		$22,023	1999	20
D5010	ELECTRICAL SYSTEM - LABORATORY	58,392	SF	$14.42		$842,016	1999	50
D5010	ELECTRICAL SYSTEM - LABORATORY	17,090	SF	$14.42		$246,439	1980	50
D5010	ELECTRICAL SWITCHGEAR 277/480V	1,600	AMP	$39.56		$63,302	1997	20
D5010	TRANSFORMER, OIL, 5-15KV (500-1500 KVA)	750	KVA	$47.02		$35,265	1997	30
D5010	VARIABLE FREQUENCY DRIVE (OVER 50 HP)	80	HP	$237.46		$18,997	1999	12
D5020	EXIT SIGNS (CENTRAL POWER)	12	EA	$163.78		$1,965	1980	20
D5020	EXIT SIGNS (CENTRAL POWER)	42	EA	$163.78		$6,879	1999	20

Life Cycle Model

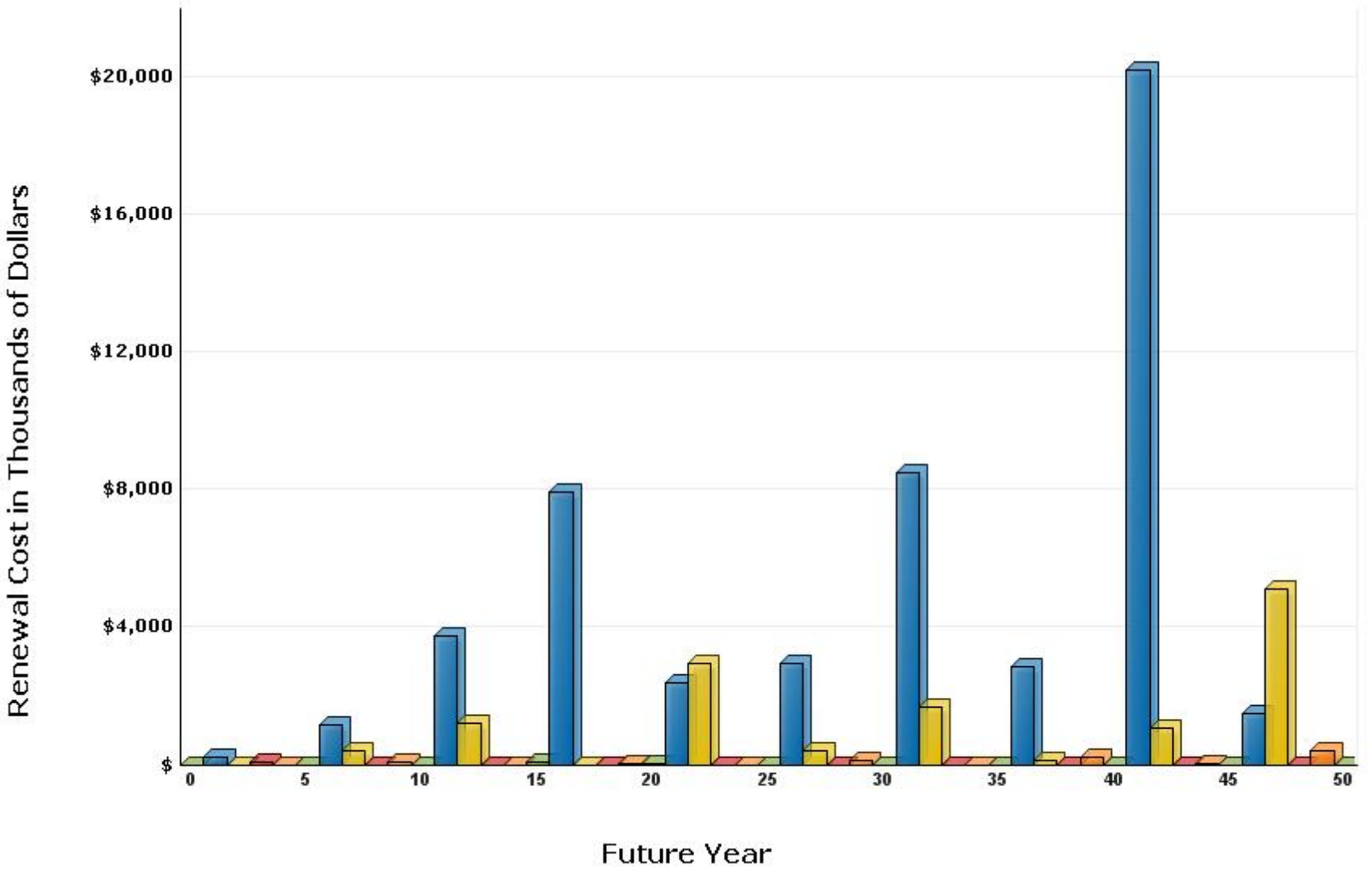
Building Component Summary

LIFE : LIFE SCIENCES BUILDING

Uniformat Code	Component Description	Qty	Units	Unit Cost	Complx Adj	Total Cost	Install Date	Life Exp
D5020	EXTERIOR LIGHT (HID)	15	EA	$689.58		$10,344	1999	20
D5020	LIGHTING - LABORATORY	58,392	SF	$6.29		$367,471	1999	20
D5020	LIGHTING - LABORATORY	17,090	SF	$6.29		$107,550	1980	20
D5030	FIRE ALARM SYSTEM, POINT ADDRESSABLE	75,482	SF	$2.61		$197,354	1999	15
D5040	GENERATOR, DIESEL (200-500 KW)	300	KW	$377.78		$113,335	1999	25
E2010	KITCHENETTE UNIT WITH CABINETRY AND AMENITIES	2	LOT	$5,940.22		$11,880	1999	20
E2010	LABORATORY CASEWORK (20% CASEWORK DENSITY)	12,080	SF	$28.82		$348,180	1980	20
E2010	LABORATORY CASEWORK (20% CASEWORK DENSITY)	40,760	SF	$28.82		$1,174,818	1999	20
F1020	ENVIRONMENTAL CHAMBER	160	SF	$139.02		$22,243	1999	35
						$15,486,632		

Life Cycle Model Expenditure Projections

LIFE : LIFE SCIENCES BUILDING



Average Annual Renewal Cost Per SqFt $7.45

FACILITY CONDITION ANALYSIS

SECTION 6

PHOTOGRAPHIC LOG

Photo Log - Facility Condition Analysis

LIFE : LIFE SCIENCES BUILDING

Photo ID No	Description	Location	Date
LIFE001a	Roof detail	Roof	9/1/2009
LIFE001e	Rooftop HVAC equipment	Roof	9/1/2009
LIFE002a	Roof detail	Roof	9/1/2009
LIFE002e	Exhaust unit EAU4	Roof	9/1/2009
LIFE003a	Stair handrail design	Second floor	9/1/2009
LIFE003e	Air handling unit AHU4	Mechanical room LSB260	9/1/2009
LIFE004a	Stairwell design	Second floor	9/1/2009
LIFE004e	Hot water pump	Mechanical room LSB260	9/1/2009
LIFE005a	Lever door hardware and Braille signage	Second floor	9/1/2009
LIFE005e	Domestic hot water heat exchanger	Mechanical room LSB260	9/1/2009
LIFE006a	Corridor finishes	Second floor	9/1/2009
LIFE006e	Steam boiler for animal research area	Mechanical room LSB260	9/1/2009
LIFE007a	Non-compliant sink design	Second floor	9/1/2009
LIFE007e	Control air compressor	Mechanical room LSB260	9/1/2009
LIFE008a	Single level drinking fountain	Second floor	9/1/2009
LIFE008e	Hot water boiler	Mechanical room LSB260	9/1/2009
LIFE009a	Fire penetrations	Second floor	9/1/2009
LIFE009e	Heat exchanger and condensate return unit	Mechanical room LSB260	9/1/2009
LIFE010a	Window detail	Second floor	9/1/2009
LIFE010e	Typical thermostat	Second floor	9/1/2009
LIFE011a	Lab detail	Second floor	9/1/2009
LIFE011e	Xenon strobe	Second floor	9/1/2009
LIFE012a	Classroom finishes	Second floor	9/1/2009
LIFE012e	T8 fluorescent fixture	Second floor	9/1/2009
LIFE013a	Stairwell design	Second floor	9/1/2009
LIFE013e	Medical gas panel	Room LSB252	9/1/2009
LIFE014a	Roof detail	Roof	9/1/2009
LIFE014e	Air handling unit AHU3	Mechanical room LSB255	9/1/2009
LIFE015a	Roof detail	Roof	9/1/2009
LIFE015e	Air handling unit AHU5	Mechanical room LSB255	9/1/2009
LIFE016a	Roof detail	Roof	9/1/2009
LIFE016e	ABB variable frequency drive	Mechanical room LSB255	9/1/2009
LIFE017a	Corridor finishes	First floor	9/1/2009

Photo Log - Facility Condition Analysis

LIFE : LIFE SCIENCES BUILDING

Photo ID No	Description	Location	Date
LIFE017e	Exhaust fan	Lower roof	9/1/2009
LIFE018a	Corridor finishes	First floor	9/1/2009
LIFE018e	Restroom exhaust fan	Lower roof	9/1/2009
LIFE019a	Corridor finishes	First floor	9/1/2009
LIFE019e	Original fume hood exhaust fans	Mechanical room	9/1/2009
LIFE020a	Door detail	First floor	9/1/2009
LIFE020e	Hydraulic elevator motor	Elevator room 173	9/1/2009
LIFE021a	North facade	Exterior elevation	9/1/2009
LIFE021e	Typical fume hood	Lab 185	9/1/2009
LIFE022a	North facade	Exterior elevation	9/1/2009
LIFE022e	Emergency shower and eyewash	Lab 185	9/1/2009
LIFE023a	North facade	Exterior elevation	9/1/2009
LIFE023e	Environmental cooler	Room 187	9/1/2009
LIFE024a	East facade	Exterior elevation	9/1/2009
LIFE024e	Steam generators	Mechanical room 187A	9/1/2009
LIFE025a	East facade	Exterior elevation	9/1/2009
LIFE025e	Original fluorescent exit sign	Original first floor	9/1/2009
LIFE026a	South facade	Exterior elevation	9/1/2009
LIFE026e	Original air handling unit AHU1	Mechanical room LS41	9/1/2009
LIFE027a	South facade	Exterior elevation	9/1/2009
LIFE027e	1980s heat exchanger	Mechanical room LS41	9/1/2009
LIFE028a	South facade	Exterior elevation	9/1/2009
LIFE028e	Updated control air compressor	Mechanical room LS41	9/1/2009
LIFE029a	West facade	Exterior elevation	9/1/2009
LIFE029e	Hot water pumps	Mechanical room LS41	9/1/2009
LIFE030e	New variable ABB variable frequency drives	Mechanical room LS41	9/1/2009
LIFE031e	1999 hydraulic elevator	Elevator room 166	9/1/2009
LIFE032e	Original fusible link sprinkler head	Room 152	9/1/2009
LIFE033e	Environmental coolers	Rooms 154 and 156	9/1/2009
LIFE034e	Medical vacuum	Mechanical room 155	9/1/2009
LIFE035e	Medical air compressor	Mechanical room 155	9/1/2009
LIFE036e	Variable frequency drives and Johnson Control panels	Mechanical room 155	9/1/2009
LIFE037e	Automatic transfer switch	Mechanical room 155	9/1/2009

Photo Log - Facility Condition Analysis

LIFE : LIFE SCIENCES BUILDING

Photo ID No	Description	Location	Date
LIFE038e	Main 1,600 amp switchboard	Mechanical room 155	9/1/2009
LIFE039e	Condensate return units	Mechanical room 155	9/1/2009
LIFE040e	Chilled water pumps	Mechanical room 155	9/1/2009
LIFE041e	Condensate return unit	Mechanical room 155	9/1/2009
LIFE042e	Control air compressor	Mechanical room 155	9/1/2009
LIFE043e	Service entrance transformer	Northwest corner	9/1/2009
LIFE044e	Caterpillar diesel generator	North facade	9/1/2009
LIFE045e	HID exterior fixture	North facade	9/1/2009

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LIFE001E.jpg

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LIFE002E.jpg

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