

EAST CAROLINA UNIVERSITY

WEST ACADEMIC BUILDING

ASSET CODE: WRAB

FACILITY CONDITION ANALYSIS

DECEMBER 21, 2009



EAST CAROLINA UNIVERSITY
Facility Condition Analysis

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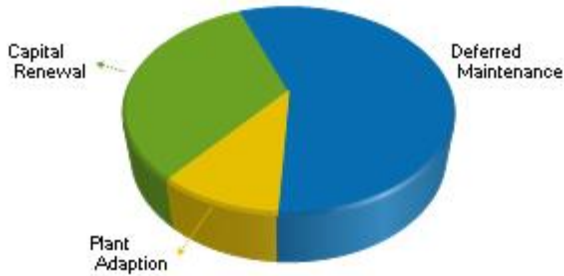
FACILITY CONDITION ANALYSIS

SECTION 1

GENERAL ASSET INFORMATION

EXECUTIVE SUMMARY - WEST ACADEMIC BUILDING

PROJECT COSTS BY CLASSIFICATION



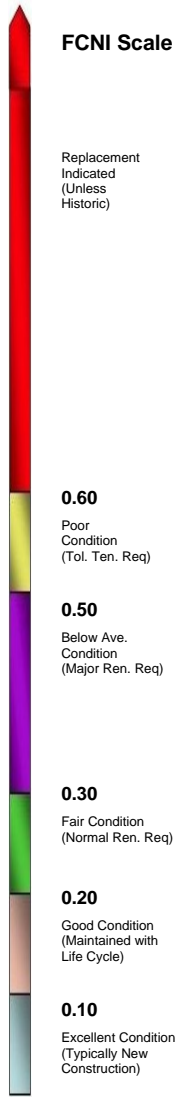
Building Code: WRAB
Building Name: WEST ACADEMIC BUILDING
Year Built: 1960
Building Use: Office / Administrative
Square Feet: 24,047

Project Costs by Priority

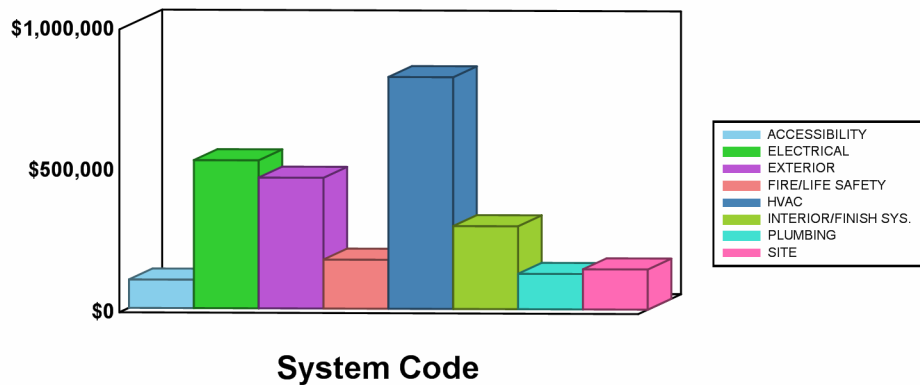
Priority 1: \$0
Priority 2: \$168,558
Priority 3: \$1,878,174
Priority 4: \$592,782
Total Project Costs: **\$2,639,513**

Facility Replacement Cost: **\$6,388,000**

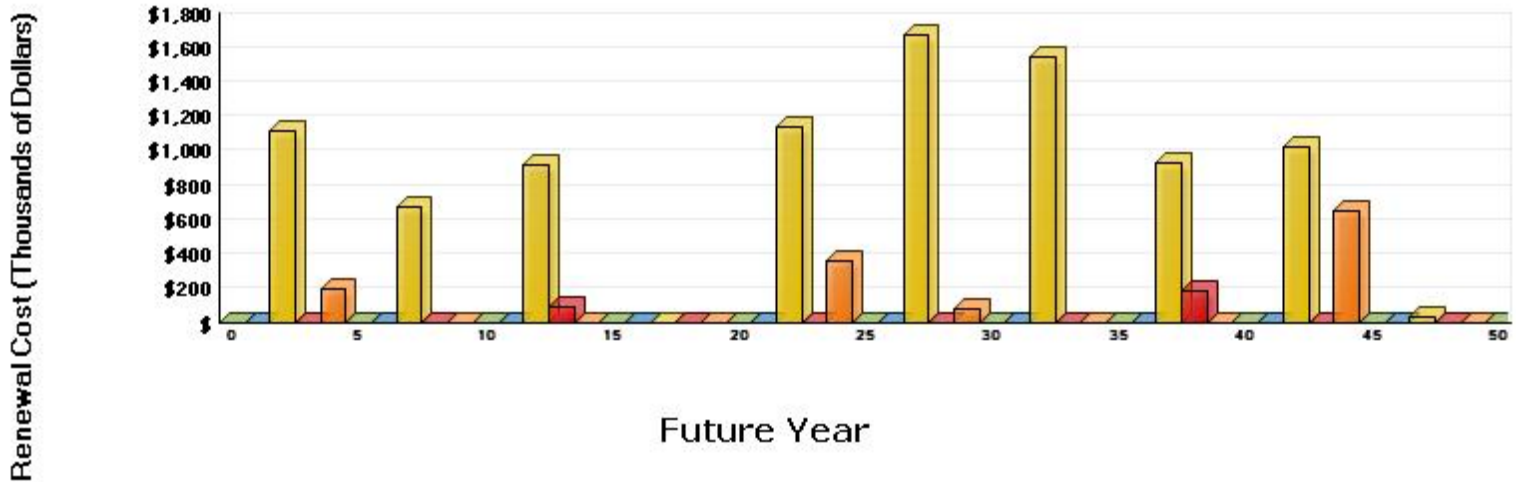
Facility Condition Needs Index (FCNI): **0.41**
 (Project Costs / Replacement Cost)



PROJECT COSTS BY SYSTEM CODE



LIFE CYCLE MODEL EXPENDITURE PROJECTIONS



Average Annual Renewal Cost Per SqFt \$4.56

B. ASSET SUMMARY

Built in 1960, the West Academic Building is a single-story research and office building. The building is constructed of concrete on a slab-on-grade foundation. The exterior finishes consist of brick and stone facades and a fully ballasted single-ply membrane roof system. This building, which has an inner courtyard, houses an area in which historical artifacts are prepared and studied. The building also houses several offices and classrooms. At the time of the inspection, the building was mostly abandoned, and had only a few occupants. The West Academic Building totals 24,047 square feet and is located off-site near 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 3, 2009.

SITE

Landscaping around the building consists of grassy lawns, ornamental shrubs, and some mature trees. The landscaping is in average condition, but should outlast the ten-year scope of this report with routine maintenance.

Pedestrian paving systems are in overall average condition, and will need replacement in the next ten years. New systems, including excavation, grading, base compaction, and paving, are recommended. Vehicular paving systems are in poor condition and need major upgrades.

EXTERIOR STRUCTURE

Brick veneer is the primary exterior finish on three facades of this facility. 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.

Stone masonry is the primary exterior finish on the north facade. While the stone is fundamentally sound, exposure to the elements has caused some deterioration of the mortar joints and construction joints. Cleaning, surface preparation, and selective repairs are recommended to restore the aesthetics and integrity of this building facade.

It is recommended that aged and inefficient exterior door systems be replaced. This project includes all primary and secondary entrance, service, and overhead roll-up doors. The replacement units should maintain the architectural design aspects of this facility. They should be modern, energy-efficient applications that will protect the interior of the building from the elements.

It is recommended that the single-pane metal window applications be upgraded to thermal-pane systems. Such double-pane systems will reduce the energy required to operate the building. Repair or replacement of the windowsills and trim may also be necessary.

The single-ply membrane roofing system 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 include carpet, vinyl tile, terrazzo, and unfinished concrete. The interior wall finish is painted plaster. Ceiling finishes include lay-in acoustical tile or painted ceilings. Floor, wall, and ceiling finish upgrades should be considered as part of any future cosmetic improvements or major comprehensive renovation efforts.

Interior doors appeared to be in good condition at the time of the inspection. Doors were properly fire-rated and equipped with lever hardware. No interior door replacements or upgrades should be needed in the next ten years.

ACCESSIBILITY

The north main entrance has a set of stairs that prevents wheelchair access. The south entry door is equipped with a ramp system that provides wheelchair access. Once inside, two areas have transitions in level and require some form of vertical transportation. The remaining areas are easily accessed by a wheelchair. Several amenities are recommended for upgrade to meet modern accessibility legislation.

Present legislation pertaining to handicapped access within buildings requires that goods and services offered in buildings be generally available to all persons. There are level changes from the artifact area to the corridor on the southeast interior and at a small set of stairs leading to classroom 131. It is recommended that a wheelchair lift or stair climber be installed at each of these locations to provide ADA compliant access.

Similarly, the configuration of the break room kitchenette and drinking fountain is a barrier to accessibility. The installation of wheelchair-accessible kitchenette cabinetry is recommended, and the single-level refrigerated drinking fountain should be replaced with a dual-level unit.

The restroom fixtures and finishes are mostly original to the year of construction or latest major renovation. The fixtures are sound but dated, and are spaced such that clearances are not ADA compliant. A comprehensive restroom renovation, including the installation of new fixtures, finishes, partitions, and accessories, is recommended. Restroom expansion may be necessary to meet modern minimum fixture counts and accessibility legislation.

Current accessibility legislation has established signage requirements for all permanent spaces in a building. While the interior doors are in good condition and are equipped with lever hardware, signage does not meet modern requirements. Compliant signage should meet specific size, graphical, Braille, height, and location requirements. To comply with this legislation, it is recommended that all non-compliant signage be upgraded to conform to appropriate accessibility standards. This scope includes directional signage.

HEALTH

Suspected asbestos containing material was observed in the elbows of the abandoned domestic hot water heater located in the main mechanical room. Proper procedure should be adhered to contain airborne particulates during abatement process and removal of the abandoned domestic hot water heater. No formal recommendation is being made due to minimal cost.

FIRE / LIFE SAFETY

The paths of egress in this building are adequate with regard to fire rating. There are no compromises involving doors, partitions, or stairs. No fire or life safety issues related to architectural features were observed during the inspection of this facility.

Fire and life safety protection within the structure is provided by an addressable Simplex fire alarm system estimated to have been installed within the past five years. The relatively new system is equipped with combination audible annunciators and xenon strobes. Smoke detectors were not observed in the egress corridors or unoccupied rooms, such as mechanical / electrical / storage rooms, and janitor's closets. The fire alarm system should remain serviceable for the scope of this assessment. Installation of smoke detectors is not required if an automatic fire suppression system is installed.

This facility is not protected by any form of automatic fire suppression system. Manual, dry chemical fire extinguishers are available for immediate use. However it is recommended that an automatic fire suppression system be installed throughout the unprotected areas of the facility. This project will reduce overall liability and potential for loss.

Emergency exits are indicated by emergency-powered LED type exit signs. The exit signs are in fair condition and anticipated to reach the end of their useful service life within the next ten years. The installation of additional exit signs is required near the front lobby area. Replace the existing exit signs with modern, efficient LED type 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 the inspection was during daylight hours, 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 source is hot water produced by three Phoenix natural gas hot water heaters installed approximately in 2007. The hot water heaters are interconnected and provide heating water to the air handler's heating coils, hot water reheat boxes, and hot water unit heaters. Heating hot water is circulated via two, base-mounted, three horsepower hot water pumps and four fractional-power hot water pumps. The hot water pumps are at the end of their expected life cycle, and renewal is recommended within the next three years. The replacement cost is included in the overall HVAC upgrade recommendation addressed below.

Chilled water is the primary cooling medium. It is produced by two 70 ton 1992 vintage Carrier liquid air-cooled chillers. Chilled water is circulated by two antiquated three horsepower chilled water pumps located in the mechanical room 117. The chilled water system is at the end of its useful service life and renewal should be considered within the next five years.

Air distribution throughout the structure is provided by a variable air volume Carrier air handling unit known as AHUC2, and an original multi-zone air handling unit, AHU1, both of which are located in mechanical room 117. The air handler's supply and return fans are equipped with variable frequency drives. Building exhaust is provided by approximately four centrifugal exhaust fans, and two through-wall exhaust fans. Although pneumatic control devices were observed, no building-wide automation system was located. Judging from the condition of the devices, they appear to have been in service for more than thirty years and are anticipated to become maintenance-intensive with age. A complete upgrade of the HVAC system is recommended.

An inoperable fume hood was observed in laboratory room 116. This fume hood and its associated mechanical exhaust fan 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 120/208 volt, three-phase power via a service entrance transformer located at the north corner of the building. The related 1600 amp Square D switchboard resides in electrical room 118 and has been in service for more than forty years. Budgetary consideration is allocated for the renewal of the switchboard within the next five years.

Additionally, the electrical distribution network supplies 120/208 volt power throughout the building. Aging components, such as the circuit breakers, serve as potential fire hazards should they fail to open a circuit in an overload or short circuit condition. Remove existing aged electrical components and branch circuitry. Install new power panels, switches, raceways, conductors, and devices. Provide molded case thermal-magnetic circuit breakers and HACR circuit breakers for HVAC equipment. Redistribute the electrical loads to the appropriate areas to ensure safe and reliable power to building occupants. Provide ground fault circuit interrupter (GFCI) protection where required and clearly label all panels for circuit identification.

Emergency power is supplied by a diesel Caterpillar generator located in the nearby generator building. Although inaccessible at the time of inspection, the generator is of mid 1990s vintage and in good condition. It should remain serviceable for the scope of this report. Therefore, no upgrade recommendation is warranted.

The current lighting configuration for this facility consists of lay-in and surface-mounted T12 fluorescent and aging incandescent fixtures. Based on life cycle depletion, 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.

Nighttime illumination is provided by eight wall-mounted HID fixtures installed approximately in the mid-1990s. Due to the daytime inspection, verification of the illumination level was not easily accomplished. Based on their present location, there appear to be sufficient quantities. A formal cost estimate was created for renewal of exterior lighting within the next five years.

PLUMBING

Potable water is distributed throughout this facility via a copper piping network. Sanitary waste and storm water is conveyed by cast-iron, bell-and-spigot piping construction with copper runouts. The supply and drain piping networks are aged and should be replaced. Failure to undertake such upgrades will likely lead to leaks, drainage issues, and other problems that will require costly maintenance. The plumbing fixtures are recommended for replacement. This action is detailed in the proposed restroom renovation.

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 3, 2009

INSPECTION TEAM PERSONNEL:

<u>NAME</u>	<u>POSITION</u>	<u>SPECIALTY</u>
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:

<u>NAME</u>	<u>POSITION</u>
William Bagwell	Associate Vice Chancellor, Campus Operations

REPORT DEVELOPMENT:

Report Development by: ISES Corporation
2165 West Park Court
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.

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

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:

	<u>PRIORITY CLASS 1</u>	
CODE	PROJECT NO.	PRIORITY SEQUENCE
HV2C	0001HV04	01
PL1D	0001PL02	02

	<u>PRIORITY CLASS 2</u>	
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

<u>Building Number</u>	<u>Photo Sequence</u>	<u>Arch / Eng / VT</u>
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

AC1A - AC4B
EL1A - EL8A
ES1A - ES6E
FS1A - FS6A
HE1A - HE7A
HV1A - HV8B
IS1A - IS6D
PL1A - PL5A
SI1A - SI4A
SS1A - SS7A
VT1A - VT7A

SYSTEM DESCRIPTION

ACCESSIBILITY
ELECTRICAL
EXTERIOR STRUCTURE
FIRE / LIFE SAFETY
HEALTH
HVAC
INTERIOR FINISHES / SYSTEMS
PLUMBING
SITE
SECURITY SYSTEMS
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.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
EL4C	DEVICES AND FIXTURES	LIGHTING CONTROLLERS	Motion sensors, photocell controllers, lighting contactors, etc.
EL4D	DEVICES AND FIXTURES	GFCI PROTECTION	Ground fault protection including GFCI receptacles and breakers.
EL4E	DEVICES AND FIXTURES	LIGHTNING PROTECTION	Lightning arrestation systems including air terminals and grounding conductors.
EL5A	EMERGENCY POWER SYSTEM	GENERATION/ DISTRIBUTION	Includes generators, central battery banks, transfer switches, emergency power grid, etc.
EL6A	SYSTEMS	UPS/DC POWER SUPPLY	Uninterruptible power supply systems and DC motor-generator sets and distribution systems.
EL7A	INFRASTRUCTURE	ABOVE GROUND TRANSMISSION	Includes poles, towers, conductors, insulators, fuses, disconnects, etc.
EL7B	INFRASTRUCTURE	UNDERGROUND TRANSMISSION	Includes direct buried feeders, ductbanks, conduit, manholes, feeders, switches, disconnects, etc.
EL7C	INFRASTRUCTURE	SUBSTATIONS	Includes incoming feeders, breakers, buses, switchgear, meters, CTs, PTs, battery systems, capacitor banks, and all associated auxiliary equipment.
EL7D	INFRASTRUCTURE	DISTRIBUTION SWITCHGEAR	Stand-alone sectionalizing switches, distribution switchboards, etc.
EL7F	INFRASTRUCTURE	AREA AND STREET LIGHTING	Area and street lighting systems including stanchions, fixtures, feeders, etc.
EL8A	GENERAL	OTHER	Electrical system components not catalogued elsewhere.
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.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
ES6D	GENERAL	SUPERSTRUCTURE	Finish and structural work on non-standard structures with exposed load-bearing elements such as stadiums, bag houses, bleachers, freestanding towers, etc.
ES6E	GENERAL	OTHER	Any exterior work not specifically categorized elsewhere including finish and structural work on freestanding boiler stacks.
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.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
HE5B	FOOD SERVICE	COLD STORAGE	Includes the cold storage room and all associated refrigeration equipment.
HE6A	HAZARDOUS MATERIAL	STRUCTURAL ASBESTOS	Testing, abatement and disposal of structural and building finish materials containing asbestos.
HE6B	HAZARDOUS MATERIAL	MECHANICAL ASBESTOS	Testing, abatement and disposal of mechanical insulation materials containing asbestos.
HE6C	HAZARDOUS MATERIAL	PCBs	Includes testing, demolition, disposal and cleanup of PCB contaminated substances.
HE6D	HAZARDOUS MATERIAL	FUEL STORAGE	Includes monitoring, removal and replacement of above and below ground fuel storage and distribution systems. Also includes testing and disposal of contaminated soils.
HE6E	HAZARDOUS MATERIAL	LEAD PAINT	Testing, removal and disposal of lead-based paint systems.
HE6F	HAZARDOUS MATERIAL	OTHER	Handling, storage, and disposal of other hazardous materials.
HE7A	GENERAL	OTHER	Health related issues not catalogued elsewhere.
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.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
HV5C	STEAM/HYDRONIC DISTRIBUTION	HEAT EXCHANGERS	Including shell and tube heat exchangers and plate heat exchangers for heating and cooling.
HV6A	CONTROLS	COMPLETE SYSTEM UPGRADE	Replacement of HVAC control systems.
HV6B	CONTROLS	MODIFICATIONS/ REPAIRS	Repair or modification of HVAC control system.
HV6C	CONTROLS	AIR COMPRESSORS/ DRYERS	Repair or modification of control air compressors and dryers.
HV7A	INFRASTRUCTURE	STEAM/HOT WATER GENERATION	Generation of central steam and/or hot water including boilers and related components.
HV7B	INFRASTRUCTURE	STEAM/HOT WATER DISTRIBUTION	Distribution system for central hot water and/or steam.
HV7C	INFRASTRUCTURE	CHILLED WATER GENERATION	Generation of central chilled water including chillers and related components.
HV7D	INFRASTRUCTURE	CHILLED WATER DISTRIBUTION	Distribution system for central chilled water.
HV7E	INFRASTRUCTURE	TUNNELS/ MANHOLES/ TRENCHES	Repairs, installation, 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	CABINETY	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.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
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			
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	Alterations 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.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
SYSTEM DESCRIPTION: SECURITY SYSTEMS			
SS1A	LIGHTING	EXTERIOR	Fixtures, stanchions, foliage interference, cleanliness, locations, etc.
SS2A	SITE	FENCING	Perimeter campus fencing, individual building fencing, includes both pedestrian and vehicular control fences.
SS2B	SITE	GENERAL	Hidden areas due to foliage, fencing, parking, walls, etc.
SS3A	COMMUNICATIONS	EMERGENCY PHONES	Access, locations, visibility, function, reliability, etc.
SS4A	ACCESS CONTROL	DOORS	Access, locks, keys, two way speakers, reliability, redundancy, etc.
SS4B	ACCESS CONTROL	WINDOWS	Locks, screens, access, reliability, etc.
SS4C	ACCESS CONTROL	SYSTEMS	Card key, proximity devices, data control, data use, reliability, system design, etc.
SS5A	MONITORING	SYSTEMS	Cameras, audio communication, monitoring stations, locations, system design, etc.
SS6A	CIRCULATION	PEDESTRIAN	On campus as well as to and from off campus housing and class locations, etc.
SS6B	CIRCULATION	VEHICULAR	Guard gates, access, systems, data control and use, identification, etc.
SS7A	GENERAL	OTHER	General information/projects pertaining to security issues.
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
 WRAB : WEST ACADEMIC BUILDING**

System Code	System Description	Priority Classes				Subtotal
		1	2	3	4	
AC	ACCESSIBILITY	0	0	0	100,657	100,657
EL	ELECTRICAL	0	0	523,225	0	523,225
ES	EXTERIOR	0	0	66,721	395,606	462,327
FS	FIRE/LIFE SAFETY	0	168,558	0	4,706	173,264
HV	HVAC	0	0	819,347	0	819,347
IS	INTERIOR/FINISH SYS.	0	0	201,486	91,812	293,299
PL	PLUMBING	0	0	125,316	0	125,316
SI	SITE	0	0	142,078	0	142,078
	TOTALS	0	168,558	1,878,174	592,782	2,639,513

Facility Replacement Cost	\$6,388,000
Facility Condition Needs Index	0.41

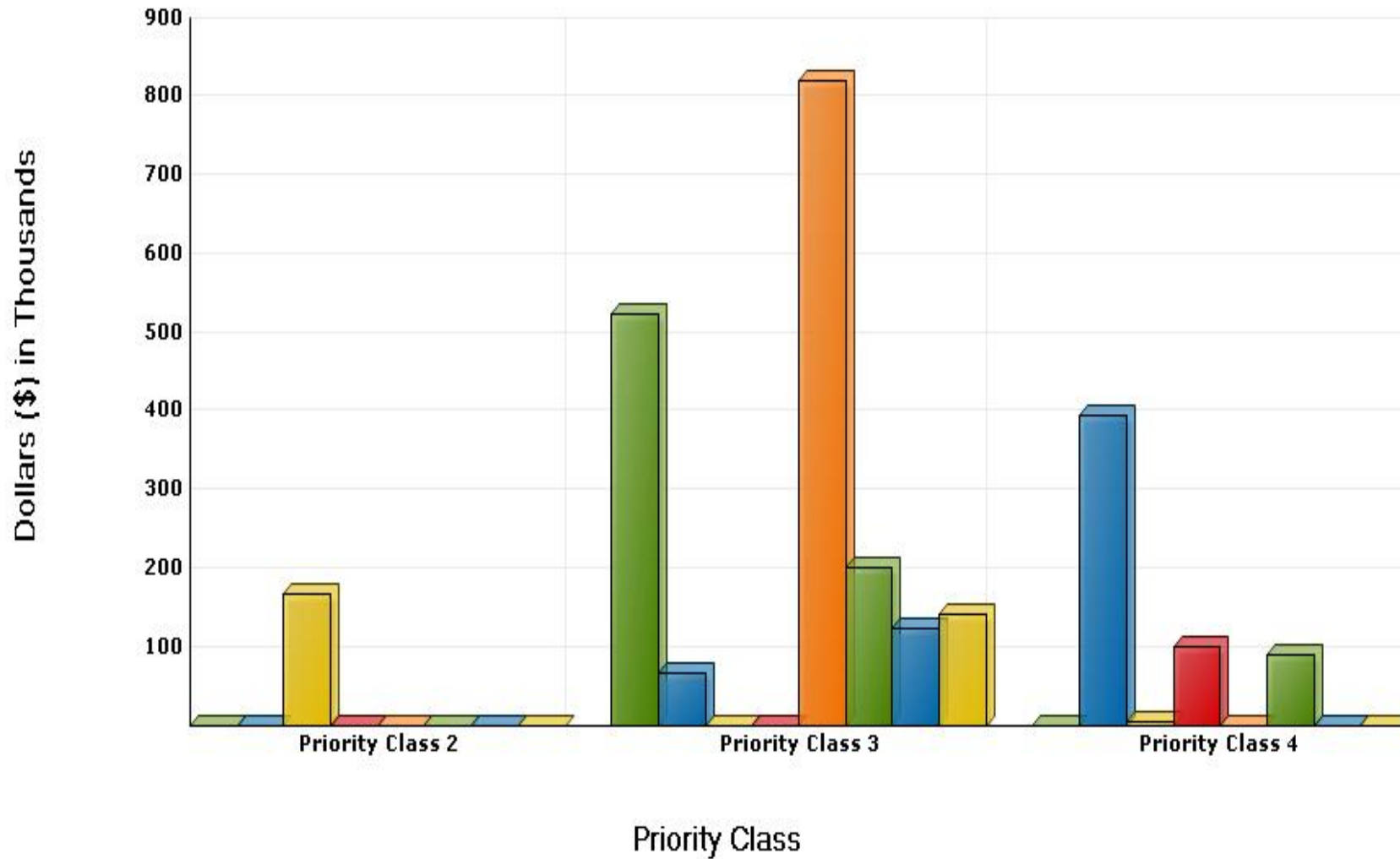
Gross Square Feet	24,047
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Total Cost Per Square Foot	\$109.76
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FACILITY CONDITION ANALYSIS

System Code by Priority Class

WRAB : WEST ACADEMIC BUILDING



**Detailed Project Totals
 Facility Condition Analysis
 System Code by Project Class
 WRAB : WEST ACADEMIC BUILDING**

System Code	System Description	Project Classes			Subtotal
		Capital Renewal	Deferred Maintenance	Plant Adaption	
AC	ACCESSIBILITY	0	0	100,657	100,657
EL	ELECTRICAL	0	523,225	0	523,225
ES	EXTERIOR	411,075	51,252	0	462,327
FS	FIRE/LIFE SAFETY	4,706	0	168,558	173,264
HV	HVAC	167,848	651,498	0	819,347
IS	INTERIOR/FINISH SYS.	293,299	0	0	293,299
PL	PLUMBING	0	125,316	0	125,316
SI	SITE	0	142,078	0	142,078
	TOTALS	876,928	1,493,371	269,215	2,639,513

Facility Replacement Cost	\$6,388,000
Facility Condition Needs Index	0.41

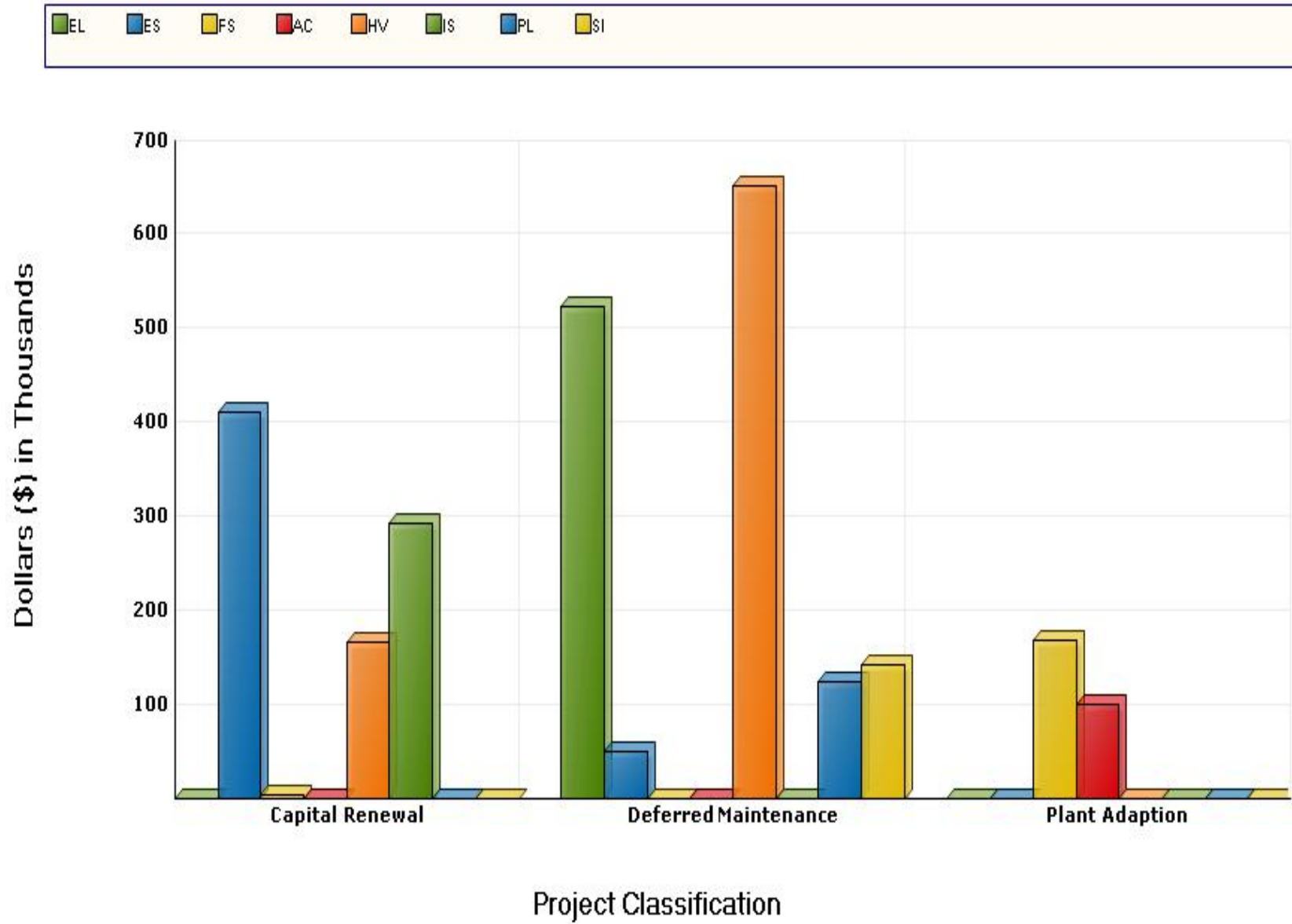
Gross Square Feet	24,047
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Total Cost Per Square Foot	\$109.76
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FACILITY CONDITION ANALYSIS

System Code by Project Class

WRAB : WEST ACADEMIC BUILDING



Detailed Project Summary
Facility Condition Analysis
Project Class by Priority Class
WRAB : WEST ACADEMIC BUILDING

Project Class	Priority Classes				Subtotal
	1	2	3	4	
Capital Renewal	0	0	384,803	492,124	876,928
Deferred Maintenance	0	0	1,493,371	0	1,493,371
Plant Adaption	0	168,558	0	100,657	269,215
TOTALS	0	168,558	1,878,174	592,782	2,639,513

Facility Replacement Cost	\$6,388,000
Facility Condition Needs Index	0.41

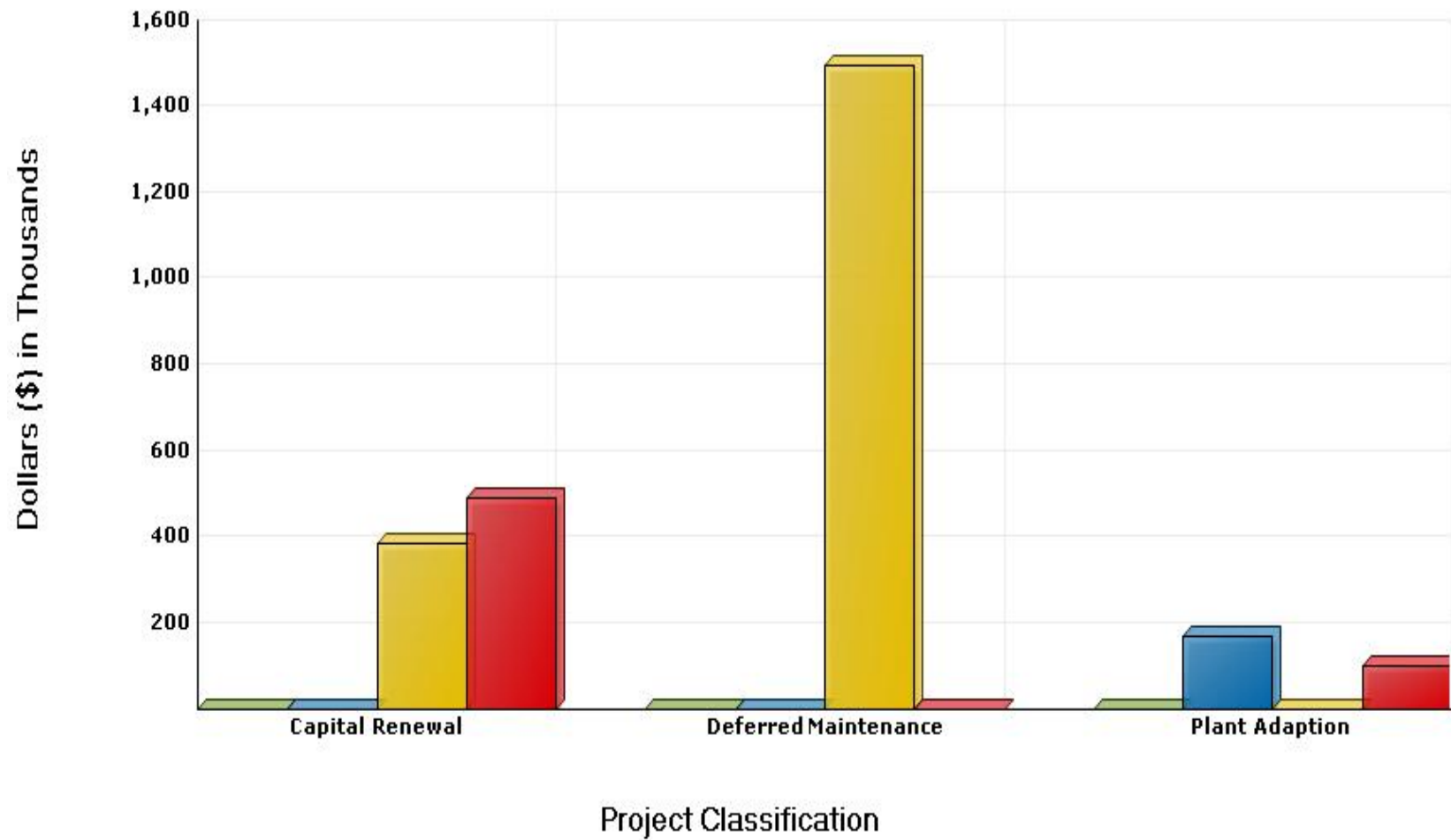
Gross Square Feet	24,047
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Total Cost Per Square Foot	\$109.76
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FACILITY CONDITION ANALYSIS

Project Class by Priority Class

WRAB : WEST ACADEMIC BUILDING



Detailed Project Summary
Facility Condition Analysis
Priority Class - Priority Sequence
WRAB : WEST ACADEMIC BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
FS3A	WRABFS01	2	1	FIRE SPRINKLER SYSTEM INSTALLATION	145,308	23,249	168,558
Totals for Priority Class 2					145,308	23,249	168,558
ES5A	WRABES03	3	2	EXTERIOR DOOR REPLACEMENT	44,183	7,069	51,252
ES2B	WRABES01	3	3	RESTORE BRICK VENEER	11,775	1,884	13,659
ES2B	WRABES02	3	4	RESTORE STONE FINISH	1,560	250	1,810
HV3A	WRABHV01	3	5	HVAC SYSTEM REPLACEMENT	525,332	84,053	609,385
HV4B	WRABHV03	3	6	FUME HOOD REPLACEMENT	36,305	5,809	42,113
HV2A	WRABHV02	3	7	REPLACE AIR-COOLED CHILLER	144,697	23,151	167,848
EL2A	WRABEL01	3	8	REPLACE 120/208 VOLT SWITCHGEAR	42,821	6,851	49,673
EL3B	WRABEL03	3	9	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	250,165	40,026	290,192
EL4B	WRABEL02	3	10	INTERIOR LIGHTING UPGRADE	153,209	24,513	177,722
EL4A	WRABEL04	3	11	EXTERIOR LIGHTING REPLACEMENT	4,861	778	5,638
IS1A	WRABIS01	3	12	REFINISH FLOORING	137,802	22,048	159,850
IS2B	WRABIS02	3	13	REFINISH WALLS	35,893	5,743	41,636
PL1A	WRABPL01	3	14	WATER SUPPLY PIPING REPLACEMENT	42,869	6,859	49,728
PL2A	WRABPL02	3	15	DRAIN PIPING REPLACEMENT	65,162	10,426	75,588
SI4A	WRABSI01	3	16	SITE PAVING UPGRADES	122,481	19,597	142,078
Totals for Priority Class 3					1,619,115	259,058	1,878,174
FS1A	WRABFS02	4	17	REPLACE AND ADD EXIT SIGNS	4,057	649	4,706
AC4B	WRABAC01	4	18	INTERIOR PATH OF TRAVEL ACCESSIBILITY UPGRADES	19,055	3,049	22,104
AC4A	WRABAC02	4	19	INTERIOR AMENITY ACCESSIBILITY UPGRADES	12,207	1,953	14,161
AC3D	WRABAC04	4	20	INTERIOR SIGNAGE UPGRADES	4,132	661	4,794
AC3E	WRABAC03	4	21	RESTROOM RENOVATION	51,379	8,221	59,599
ES4B	WRABES05	4	22	MEMBRANE ROOF REPLACEMENT	135,758	21,721	157,479
ES5B	WRABES04	4	23	WINDOW REPLACEMENT	205,282	32,845	238,127
IS3B	WRABIS03	4	25	REFINISH CEILINGS	79,148	12,664	91,812
Totals for Priority Class 4					511,019	81,763	592,782
Grand Total:					2,275,443	364,071	2,639,513

Detailed Project Summary
Facility Condition Analysis
Project Cost Range
WRAB : WEST ACADEMIC BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
ES2B	WRABES01	3	3	RESTORE BRICK VENEER	11,775	1,884	13,659
ES2B	WRABES02	3	4	RESTORE STONE FINISH	1,560	250	1,810
ES5A	WRABES03	3	2	EXTERIOR DOOR REPLACEMENT	44,183	7,069	51,252
IS2B	WRABIS02	3	13	REFINISH WALLS	35,893	5,743	41,636
HV4B	WRABHV03	3	6	FUME HOOD REPLACEMENT	36,305	5,809	42,113
EL2A	WRABEL01	3	8	REPLACE 120/208 VOLT SWITCHGEAR	42,821	6,851	49,673
EL4A	WRABEL04	3	11	EXTERIOR LIGHTING REPLACEMENT	4,861	778	5,638
PL1A	WRABPL01	3	14	WATER SUPPLY PIPING REPLACEMENT	42,869	6,859	49,728
PL2A	WRABPL02	3	15	DRAIN PIPING REPLACEMENT	65,162	10,426	75,588
Totals for Priority Class 3					285,429	45,669	331,098
AC4B	WRABAC01	4	18	INTERIOR PATH OF TRAVEL ACCESSIBILITY UPGRADES	19,055	3,049	22,104
AC4A	WRABAC02	4	19	INTERIOR AMENITY ACCESSIBILITY UPGRADES	12,207	1,953	14,161
AC3E	WRABAC03	4	21	RESTROOM RENOVATION	51,379	8,221	59,599
AC3D	WRABAC04	4	20	INTERIOR SIGNAGE UPGRADES	4,132	661	4,794
IS3B	WRABIS03	4	25	REFINISH CEILINGS	79,148	12,664	91,812
FS1A	WRABFS02	4	17	REPLACE AND ADD EXIT SIGNS	4,057	649	4,706
Totals for Priority Class 4					169,979	27,197	197,175
Grand Totals for Projects < 100,000					455,408	72,865	528,273

Detailed Project Summary
Facility Condition Analysis
Project Cost Range
 WRAB : WEST ACADEMIC BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
FS3A	WRABFS01	2	1	FIRE SPRINKLER SYSTEM INSTALLATION	145,308	23,249	168,558
Totals for Priority Class 2					145,308	23,249	168,558
IS1A	WRABIS01	3	12	REFINISH FLOORING	137,802	22,048	159,850
SI4A	WRABSI01	3	16	SITE PAVING UPGRADES	122,481	19,597	142,078
HV2A	WRABHV02	3	7	REPLACE AIR-COOLED CHILLER	144,697	23,151	167,848
EL4B	WRABEL02	3	10	INTERIOR LIGHTING UPGRADE	153,209	24,513	177,722
EL3B	WRABEL03	3	9	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	250,165	40,026	290,192
Totals for Priority Class 3					808,354	129,337	937,691
ES5B	WRABES04	4	23	WINDOW REPLACEMENT	205,282	32,845	238,127
ES4B	WRABES05	4	22	MEMBRANE ROOF REPLACEMENT	135,758	21,721	157,479
Totals for Priority Class 4					341,040	54,566	395,606
Grand Totals for Projects >= 100,000 and < 500,000					1,294,703	207,152	1,501,855

Detailed Project Summary
Facility Condition Analysis
Project Cost Range
 WRAB : WEST ACADEMIC BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
HV3A	WRABHV01	3	5	HVAC SYSTEM REPLACEMENT	525,332	84,053	609,385
				Totals for Priority Class 3	525,332	84,053	609,385
				Grand Totals for Projects >= 500,000	525,332	84,053	609,385
				Grand Totals For All Projects:	2,275,443	364,071	2,639,513

Detailed Project Summary
Facility Condition Analysis
Project Classification
WRAB : WEST ACADEMIC BUILDING

Cat Code	Project Number	Pri. Seq.	Project Classification	Pri. Cls	Project Title	Total Cost
ES2B	WRABES01	3	Capital Renewal	3	RESTORE BRICK VENEER	13,659
ES2B	WRABES02	4	Capital Renewal	3	RESTORE STONE FINISH	1,810
HV2A	WRABHV02	7	Capital Renewal	3	REPLACE AIR-COOLED CHILLER	167,848
IS1A	WRABIS01	12	Capital Renewal	3	REFINISH FLOORING	159,850
IS2B	WRABIS02	13	Capital Renewal	3	REFINISH WALLS	41,636
FS1A	WRABFS02	17	Capital Renewal	4	REPLACE AND ADD EXIT SIGNS	4,706
ES4B	WRABES05	22	Capital Renewal	4	MEMBRANE ROOF REPLACEMENT	157,479
ES5B	WRABES04	23	Capital Renewal	4	WINDOW REPLACEMENT	238,127
IS3B	WRABIS03	25	Capital Renewal	4	REFINISH CEILINGS	91,812
Totals for Capital Renewal						876,928
ES5A	WRABES03	2	Deferred Maintenance	3	EXTERIOR DOOR REPLACEMENT	51,252
HV3A	WRABHV01	5	Deferred Maintenance	3	HVAC SYSTEM REPLACEMENT	609,385
HV4B	WRABHV03	6	Deferred Maintenance	3	FUME HOOD REPLACEMENT	42,113
EL2A	WRABEL01	8	Deferred Maintenance	3	REPLACE 120/208 VOLT SWITCHGEAR	49,673
EL3B	WRABEL03	9	Deferred Maintenance	3	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	290,192
EL4B	WRABEL02	10	Deferred Maintenance	3	INTERIOR LIGHTING UPGRADE	177,722
EL4A	WRABEL04	11	Deferred Maintenance	3	EXTERIOR LIGHTING REPLACEMENT	5,638
PL1A	WRABPL01	14	Deferred Maintenance	3	WATER SUPPLY PIPING REPLACEMENT	49,728
PL2A	WRABPL02	15	Deferred Maintenance	3	DRAIN PIPING REPLACEMENT	75,588
SI4A	WRABSI01	16	Deferred Maintenance	3	SITE PAVING UPGRADES	142,078
Totals for Deferred Maintenance						1,493,371
FS3A	WRABFS01	1	Plant Adaption	2	FIRE SPRINKLER SYSTEM INSTALLATION	168,558
AC4B	WRABAC01	18	Plant Adaption	4	INTERIOR PATH OF TRAVEL ACCESSIBILITY UPGRADES	22,104
AC4A	WRABAC02	19	Plant Adaption	4	INTERIOR AMENITY ACCESSIBILITY UPGRADES	14,161
AC3D	WRABAC04	20	Plant Adaption	4	INTERIOR SIGNAGE UPGRADES	4,794
AC3E	WRABAC03	21	Plant Adaption	4	RESTROOM RENOVATION	59,599
Totals for Plant Adaption						269,215
Grand Total:						2,639,513

Detailed Project Summary
Facility Condition Analysis
Energy Conservation
 WRAB : WEST ACADEMIC BUILDING

Cat Code	Project Number	Pri Cls	Pri Seq	Project Title	Total Cost	Annual Savings	Simple Payback
HV3A	WRABHV01	3	5	HVAC SYSTEM REPLACEMENT	609,385	13,610	44.77
EL4B	WRABEL02	3	10	INTERIOR LIGHTING UPGRADE	177,722	7,360	24.15
EL4A	WRABEL04	3	11	EXTERIOR LIGHTING REPLACEMENT	5,638	520	10.84
Totals for Priority Class 3					792,746	21,490	36.89
FS1A	WRABFS02	4	17	REPLACE AND ADD EXIT SIGNS	4,706	10	470.58
ES4B	WRABES05	4	22	MEMBRANE ROOF REPLACEMENT	157,479	2,100	74.99
ES5B	WRABES04	4	23	WINDOW REPLACEMENT	238,127	500	476.25
Totals for Priority Class 4					400,312	2,610	153.38
Grand Total:					1,193,058	24,100	49.5

Detailed Project Summary
Facility Condition Analysis
Category/System Code
WRAB : WEST ACADEMIC BUILDING

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
AC4B	WRABAC01	4	18	INTERIOR PATH OF TRAVEL ACCESSIBILITY UPGRADES	19,055	3,049	22,104
AC4A	WRABAC02	4	19	INTERIOR AMENITY ACCESSIBILITY UPGRADES	12,207	1,953	14,161
AC3D	WRABAC04	4	20	INTERIOR SIGNAGE UPGRADES	4,132	661	4,794
AC3E	WRABAC03	4	21	RESTROOM RENOVATION	51,379	8,221	59,599
Totals for System Code: ACCESSIBILITY					86,774	13,884	100,657
EL2A	WRABEL01	3	8	REPLACE 120/208 VOLT SWITCHGEAR	42,821	6,851	49,673
EL3B	WRABEL03	3	9	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	250,165	40,026	290,192
EL4B	WRABEL02	3	10	INTERIOR LIGHTING UPGRADE	153,209	24,513	177,722
EL4A	WRABEL04	3	11	EXTERIOR LIGHTING REPLACEMENT	4,861	778	5,638
Totals for System Code: ELECTRICAL					451,056	72,169	523,225
ES5A	WRABES03	3	2	EXTERIOR DOOR REPLACEMENT	44,183	7,069	51,252
ES2B	WRABES01	3	3	RESTORE BRICK VENEER	11,775	1,884	13,659
ES2B	WRABES02	3	4	RESTORE STONE FINISH	1,560	250	1,810
ES4B	WRABES05	4	22	MEMBRANE ROOF REPLACEMENT	135,758	21,721	157,479
ES5B	WRABES04	4	23	WINDOW REPLACEMENT	205,282	32,845	238,127
Totals for System Code: EXTERIOR					398,558	63,769	462,327
FS3A	WRABFS01	2	1	FIRE SPRINKLER SYSTEM INSTALLATION	145,308	23,249	168,558
FS1A	WRABFS02	4	17	REPLACE AND ADD EXIT SIGNS	4,057	649	4,706
Totals for System Code: FIRE/LIFE SAFETY					149,365	23,898	173,264
HV3A	WRABHV01	3	5	HVAC SYSTEM REPLACEMENT	525,332	84,053	609,385
HV4B	WRABHV03	3	6	FUME HOOD REPLACEMENT	36,305	5,809	42,113
HV2A	WRABHV02	3	7	REPLACE AIR-COOLED CHILLER	144,697	23,151	167,848
Totals for System Code: HVAC					706,333	113,013	819,347
IS1A	WRABIS01	3	12	REFINISH FLOORING	137,802	22,048	159,850
IS2B	WRABIS02	3	13	REFINISH WALLS	35,893	5,743	41,636
IS3B	WRABIS03	4	25	REFINISH CEILINGS	79,148	12,664	91,812
Totals for System Code: INTERIOR/FINISH SYS.					252,844	40,455	293,299
PL1A	WRABPL01	3	14	WATER SUPPLY PIPING REPLACEMENT	42,869	6,859	49,728
PL2A	WRABPL02	3	15	DRAIN PIPING REPLACEMENT	65,162	10,426	75,588
Totals for System Code: PLUMBING					108,031	17,285	125,316
SI4A	WRABSI01	3	16	SITE PAVING UPGRADES	122,481	19,597	142,078
Totals for System Code: SITE					122,481	19,597	142,078

Detailed Project Summary
Facility Condition Analysis
Category/System Code
WRAB : WEST ACADEMIC BUILDING

Grand Total:	2,275,443	364,071	2,639,513
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FACILITY CONDITION ANALYSIS

SECTION 3

SPECIFIC PROJECT DETAILS
ILLUSTRATING DESCRIPTION / COST

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABFS01	Title:	FIRE SPRINKLER SYSTEM INSTALLATION
Priority Sequence:	1		
Priority Class:	2		
Category Code:	FS3A	System:	FIRE/LIFE SAFETY
		Component:	SUPPRESSION
		Element:	SPRINKLERS
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	NFPA	1, 13, 13R, 101	
Project Class:	Plant Adaption		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1		

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.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABFS01

Task Cost Estimate

Task Description	Unit	Qty	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	24,047	\$3.08	\$74,065	\$3.77	\$90,657	\$164,722
Project Totals:				\$74,065		\$90,657	\$164,722

Material/Labor Cost		\$164,722
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$121,090
General Contractor Mark Up at 20.0%	+	\$24,218
Construction Cost		\$145,308
Professional Fees at 16.0%	+	\$23,249
Total Project Cost		\$168,558

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABES03	Title:	EXTERIOR DOOR REPLACEMENT
Priority Sequence:	2		
Priority Class:	3		
Category Code:	ES5A	System:	EXTERIOR
		Component:	FENESTRATIONS
		Element:	DOORS
Building Code:	WRAB		
Building Name:	WEST ACADEMIC 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

It is recommended that aged and inefficient exterior door systems be replaced. This project includes all primary and secondary entrance, service, and overhead roll-up doors. The replacement units should maintain the architectural design aspects of this facility. They should be modern, energy-efficient applications that will protect the interior of the building from the elements.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABES03

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
High traffic door system	LEAF	4	\$1,978	\$7,912	\$1,999	\$7,996	\$15,908
Low traffic door system	LEAF	2	\$1,031	\$2,062	\$1,250	\$2,500	\$4,562
Commercial-grade overhead garage door	EA	5	\$2,551	\$12,755	\$3,332	\$16,660	\$29,415
Project Totals:				\$22,729		\$27,156	\$49,885

Material/Labor Cost		\$49,885
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$36,819</u>
General Contractor Mark Up at 20.0%	+	<u>\$7,364</u>
Construction Cost		<u>\$44,183</u>
Professional Fees at 16.0%	+	<u>\$7,069</u>
Total Project Cost		<u>\$51,252</u>

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABES01	Title:	RESTORE BRICK VENEER
Priority Sequence:	3		
Priority Class:	3		
Category Code:	ES2B	System:	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	FINISH
Building Code:	WRAB		
Building Name:	WEST ACADEMIC 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 on most facades. 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
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABES01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Cleaning and surface preparation	SF	7,170	\$0.11	\$789	\$0.22	\$1,577	\$2,366
Selective mortar and / or sealant repairs (assumes 10 linear feet for every 100 square feet of envelope)	LF	717	\$2.45	\$1,757	\$4.99	\$3,578	\$5,334
Applied finish or sealant	SF	7,170	\$0.22	\$1,577	\$0.82	\$5,879	\$7,457
Project Totals:				\$4,123		\$11,035	\$15,157

Material/Labor Cost		\$15,157
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$9,812
General Contractor Mark Up at 20.0%	+	\$1,962
Construction Cost		\$11,775
Professional Fees at 16.0%	+	\$1,884
Total Project Cost		\$13,659

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABES02	Title:	RESTORE STONE FINISH
Priority Sequence:	4		
Priority Class:	3		
Category Code:	ES2B	System:	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	FINISH
Building Code:	WRAB		
Building Name:	WEST ACADEMIC 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

Stone masonry is the primary exterior finish on the north facade. While the stone is fundamentally sound, exposure to the elements has caused some deterioration of the mortar joints and construction joints. Cleaning, surface preparation, and selective repairs are recommended to restore the aesthetics and integrity of the building envelope.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABES02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Cleaning and surface preparation	SF	1,790	\$0.11	\$197	\$0.22	\$394	\$591
Selective mortar and / or sealant repairs (assumes 10 linear feet for every 100 square feet of envelope)	LF	179	\$2.45	\$439	\$4.99	\$893	\$1,332
Project Totals:				\$635		\$1,287	\$1,922

Material/Labor Cost		\$1,922
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$1,300
General Contractor Mark Up at 20.0%	+	\$260
Construction Cost		\$1,560
Professional Fees at 16.0%	+	\$250
Total Project Cost		\$1,810

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABHV01	Title:	HVAC SYSTEM REPLACEMENT
Priority Sequence:	5		
Priority Class:	3		
Category Code:	HV3A	System:	HVAC
		Component:	HEATING/COOLING
		Element:	SYSTEM RETROFIT/REPLACE
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Energy Conservation	\$13,610	
Code Application:	ASHRAE	62-2004	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1, R		

Project Description

A complete redesign and replacement of the HVAC system is recommended. Demolish and dispose of existing equipment. Install a new modern HVAC system with variable air volume and constant volume air distribution as needed. This includes new air handlers, exhaust fans, ductwork, terminal units, 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
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABHV01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Air handlers, exhaust fans, ductwork, VAVs, VFDs, DDCs, pumps, piping, electrical connections, and demolition of existing equipment	SF	24,047	\$11.14	\$267,884	\$13.62	\$327,520	\$595,404
Project Totals:				\$267,884		\$327,520	\$595,404

Material/Labor Cost		\$595,404
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$437,777
General Contractor Mark Up at 20.0%	+	\$87,555
Construction Cost		\$525,332
Professional Fees at 16.0%	+	\$84,053
Total Project Cost		\$609,385

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABHV03	Title:	FUME HOOD REPLACEMENT
Priority Sequence:	6		
Priority Class:	3		
Category Code:	HV4B	System:	HVAC
		Component:	AIR MOVING/VENTILATION
		Element:	EXHAUST FANS
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ASHRAE	62-2004, 110-1995	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1, R		

Project Description

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

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABHV03

Task Cost Estimate

Task Description	Unit	Qty	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	1	\$24,990	\$24,990	\$9,920	\$9,920	\$34,910
Project Totals:				\$24,990		\$9,920	\$34,910

Material/Labor Cost		\$34,910
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$30,254
General Contractor Mark Up at 20.0%	+	\$6,051
Construction Cost		\$36,305
Professional Fees at 16.0%	+	\$5,809
Total Project Cost		\$42,113

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABHV02	Title:	REPLACE AIR-COOLED CHILLER
Priority Sequence:	7		
Priority Class:	3		
Category Code:	HV2A	System:	HVAC
		Component:	COOLING
		Element:	CHILLERS/CONTROLS
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ASHRAE	15-2004	
Project Class:	Capital Renewal		
Project Date:	10/8/2009		
Project Location:	Item Only: Floor(s) 1		

Project Description

The existing air-cooled chiller is recommended for replacement. Remove the existing chiller. Install a new chiller, along with electrical connections and related controls and programming. Specify an energy-efficient replacement system that utilizes a non-CFC refrigerant.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABHV02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Air-cooled chiller replacement and removal of existing unit	TON	140	\$761	\$106,568	\$185	\$25,861	\$132,429
Project Totals:				\$106,568		\$25,861	\$132,429

Material/Labor Cost		\$132,429
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$120,581</u>
General Contractor Mark Up at 20.0%	+	<u>\$24,116</u>
Construction Cost		<u>\$144,697</u>
Professional Fees at 16.0%	+	<u>\$23,151</u>
Total Project Cost		<u>\$167,848</u>

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABEL01	Title:	REPLACE 120/208 VOLT SWITCHGEAR
Priority Sequence:	8		
Priority Class:	3		
Category Code:	EL2A	System:	ELECTRICAL
		Component:	MAIN DISTRIBUTION PANELS
		Element:	CONDITION UPGRADE
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	NEC	Article 230	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Item Only: Floor(s) 1		

Project Description

The 120/208 V switchgear is recommended for replacement. The existing aged circuit breakers could serve as fire hazards should they fail to interrupt a circuit in an overload or short circuit condition. The existing switchgear should be replaced in its entirety. New switchgear components should include a ground fault main circuit breaker, digital metering for remote control / monitoring, and transient surge protection.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABEL01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
120/208 V switchgear, including switchboard, circuit breakers, feeders, digital metering, transient surge protector, and demolition of existing equipment	AMP	1,600	\$15.52	\$24,832	\$13.01	\$20,816	\$45,648
Project Totals:				\$24,832		\$20,816	\$45,648

Material/Labor Cost		\$45,648
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$35,684
General Contractor Mark Up at 20.0%	+	\$7,137
Construction Cost		\$42,821
Professional Fees at 16.0%	+	\$6,851
Total Project Cost		\$49,673

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABEL03	Title:	UPGRADE ELECTRICAL DISTRIBUTION NETWORK
Priority Sequence:	9		
Priority Class:	3		
Category Code:	EL3B	System:	ELECTRICAL
		Component:	SECONDARY DISTRIBUTION
		Element:	DISTRIBUTION NETWORK
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	NEC	Articles 110, 210, 220, 230	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

An upgrade of the building electrical system is recommended. Aging components, such as the circuit breakers, could serve as fire hazards if they fail to open a circuit in an overload or short circuit condition. Remove existing aged electrical components and branch circuitry. Install new power panels, switches, raceways, conductors, and devices. Provide molded case thermal-magnetic circuit breakers and HACR circuit breakers for HVAC equipment. Redistribute the electrical loads to the appropriate areas to ensure safe and reliable power to building occupants. Provide GFCI protection where required, and clearly label all panels for circuit identification.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABEL03

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Power panels, conductors, raceways, devices, demolition, and cut and patching materials	SF	24,047	\$4.88	\$117,349	\$7.32	\$176,024	\$293,373
Project Totals:				\$117,349		\$176,024	\$293,373

Material/Labor Cost		\$293,373
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$208,471
General Contractor Mark Up at 20.0%	+	\$41,694
Construction Cost		\$250,165
Professional Fees at 16.0%	+	\$40,026
Total Project Cost		\$290,192

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABEL02	Title:	INTERIOR LIGHTING UPGRADE
Priority Sequence:	10		
Priority Class:	3		
Category Code:	EL4B	System:	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	INTERIOR LIGHTING
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Energy Conservation	\$7,360	
Code Application:	NEC	Articles 210, 410	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1		

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
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABEL02

Task Cost Estimate

Task Description	Unit	Qty	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	24,047	\$3.25	\$78,153	\$3.97	\$95,467	\$173,619
Project Totals:				\$78,153		\$95,467	\$173,619

Material/Labor Cost		\$173,619
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$127,674
General Contractor Mark Up at 20.0%	+	\$25,535
Construction Cost		\$153,209
Professional Fees at 16.0%	+	\$24,513
Total Project Cost		\$177,722

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABEL04	Title:	EXTERIOR LIGHTING REPLACEMENT
Priority Sequence:	11		
Priority Class:	3		
Category Code:	EL4A	System:	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	EXTERIOR LIGHTING
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Energy Conservation	\$520	
Code Application:	NEC	410	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Building-wide: Floor(s) 1, R		

Project Description

Exterior lighting upgrades are recommended. Replace exterior light fixtures as needed. Specify high efficiency fixtures with photocells for lighting control.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABEL04

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of HID wall-mount fixture and demolition of existing fixture	EA	8	\$406	\$3,248	\$190	\$1,520	\$4,768
Project Totals:				\$3,248		\$1,520	\$4,768

Material/Labor Cost		\$4,768
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$4,051
General Contractor Mark Up at 20.0%	+	\$810
Construction Cost		\$4,861
Professional Fees at 16.0%	+	\$778
Total Project Cost		\$5,638

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABIS01	Title:	REFINISH FLOORING
Priority Sequence:	12		
Priority Class:	3		
Category Code:	IS1A	System:	INTERIOR/FINISH SYS.
		Component:	FLOOR
		Element:	FINISHES-DRY

Building Code:	WRAB
Building Name:	WEST ACADEMIC 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
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Project Description

Interior floor finishes include carpet, vinyl tile, terrazzo, and unfinished concrete. The applications vary in age and condition from area to area. Carpet and vinyl tile upgrades should be considered as part of any future cosmetic improvements or major comprehensive renovation efforts.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABIS01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Carpet	SF	12,990	\$5.36	\$69,626	\$2.00	\$25,980	\$95,606
Vinyl floor tile	SF	6,490	\$3.53	\$22,910	\$2.50	\$16,225	\$39,135
Project Totals:				\$92,536		\$42,205	\$134,741

Material/Labor Cost		\$134,741
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$114,835
General Contractor Mark Up at 20.0%	+	\$22,967
Construction Cost		\$137,802
Professional Fees at 16.0%	+	\$22,048
Total Project Cost		\$159,850

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABIS02	Title:	REFINISH WALLS
Priority Sequence:	13		
Priority Class:	3		
Category Code:	IS2B	System:	INTERIOR/FINISH SYS.
		Component:	PARTITIONS
		Element:	FINISHES

Building Code: WRAB
Building Name: WEST ACADEMIC 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

Interior wall finishes consists of painted plaster walls. Wall 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
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABIS02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Standard wall finish (paint, wall covering, etc.)	SF	50,980	\$0.17	\$8,667	\$0.81	\$41,294	\$49,960
Project Totals:				\$8,667		\$41,294	\$49,960

Material/Labor Cost		\$49,960
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$29,911
General Contractor Mark Up at 20.0%	+	\$5,982
Construction Cost		\$35,893
Professional Fees at 16.0%	+	\$5,743
Total Project Cost		\$41,636

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABPL01	Title:	WATER SUPPLY PIPING REPLACEMENT
Priority Sequence:	14		
Priority Class:	3		
Category Code:	PL1A	System:	PLUMBING
		Component:	DOMESTIC WATER
		Element:	PIPING NETWORK
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	IPC	Chapter 6	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

Replacement of the aging water piping network is recommended. Failure to replace the water piping will result in frequent leaks and escalating maintenance costs. Remove the existing water supply network. Install new copper water supply piping with fiberglass insulation. Install isolation valves, pressure regulators, shock absorbers, backflow preventers, and vacuum breakers as needed.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABPL01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Copper pipe and fittings, valves, backflow prevention devices, insulation, hangers, demolition, and cut and patching materials	SF	24,047	\$0.65	\$15,631	\$1.62	\$38,956	\$54,587
Project Totals:				\$15,631		\$38,956	\$54,587

Material/Labor Cost		\$54,587
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$35,724
General Contractor Mark Up at 20.0%	+	\$7,145
Construction Cost		\$42,869
Professional Fees at 16.0%	+	\$6,859
Total Project Cost		\$49,728

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABPL02	Title:	DRAIN PIPING REPLACEMENT
Priority Sequence:	15		
Priority Class:	3		
Category Code:	PL2A	System:	PLUMBING
		Component:	WASTEWATER
		Element:	PIPING NETWORK
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	IPC	Chapters 7-11	
Project Class:	Deferred Maintenance		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

Replacement of the aging drain piping is recommended throughout the facility. Failure to replace the old piping will result in frequent leaks and escalating maintenance costs. Remove sanitary and storm drain piping as needed. Install new cast-iron drain piping networks with copper run-outs to the fixtures. Install new floor drains, roof drains, and traps.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABPL02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Cast-iron drain piping and fittings, copper pipe and fittings, floor / roof drains, traps, hangers, demolition, and cut and patching materials	SF	24,047	\$1.03	\$24,768	\$2.38	\$57,232	\$82,000
Project Totals:				\$24,768		\$57,232	\$82,000

Material/Labor Cost		\$82,000
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$54,302
General Contractor Mark Up at 20.0%	+	\$10,860
Construction Cost		\$65,162
Professional Fees at 16.0%	+	\$10,426
Total Project Cost		\$75,588

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABSI01	Title:	SITE PAVING UPGRADES
Priority Sequence:	16		
Priority Class:	3		
Category Code:	SI4A	System:	SITE
		Component:	GENERAL
		Element:	OTHER
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/5/2009		
Project Location:	Undefined: Floor(s) 1		

Project Description

Pedestrian paving systems are in overall average condition, but will need replacement in the next ten years. New systems, including excavation, grading, base compaction, and paving, are recommended. Vehicular paving systems are in poor condition and will need major upgrades.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABSI01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Brick pedestrian paving (500 sf minimum)	SF	1,000	\$6.98	\$6,980	\$6.77	\$6,770	\$13,750
Asphalt vehicular paving system replacement	SY	5,200	\$12.82	\$66,664	\$9.16	\$47,632	\$114,296
Project Totals:				\$73,644		\$54,402	\$128,046

Material/Labor Cost		\$128,046
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$102,068</u>
General Contractor Mark Up at 20.0%	+	<u>\$20,414</u>
Construction Cost		<u>\$122,481</u>
Professional Fees at 16.0%	+	<u>\$19,597</u>
Total Project Cost		<u>\$142,078</u>

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABFS02	Title:	REPLACE AND ADD EXIT SIGNS
Priority Sequence:	17		
Priority Class:	4		
Category Code:	FS1A	System:	FIRE/LIFE SAFETY
		Component:	LIGHTING
		Element:	EGRESS LTG./EXIT SIGNAGE
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Energy Conservation	\$10	
Code Application:	NFPA	101-47	
	IBC	1011	
Project Class:	Capital Renewal		
Project Date:	10/8/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

Replace the existing exit signage throughout the building and install new exit signs as needed. The new units should have individual battery packs for backup power. LED type exit signs are recommended because they are energy efficient and require minimal maintenance.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABFS02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replacement of existing exit signs with new battery pack LED exit signs	EA	12	\$132	\$1,584	\$142	\$1,704	\$3,288
Installation of new battery pack LED exit signs, including all connections	EA	3	\$184	\$552	\$231	\$693	\$1,245
Project Totals:				\$2,136		\$2,397	\$4,533

Material/Labor Cost		\$4,533
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$3,381
General Contractor Mark Up at 20.0%	+	\$676
Construction Cost		\$4,057
Professional Fees at 16.0%	+	\$649
Total Project Cost		\$4,706

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABAC01	Title:	INTERIOR PATH OF TRAVEL ACCESSIBILITY UPGRADES
Priority Sequence:	18		
Priority Class:	4		
Category Code:	AC4B	System:	ACCESSIBILITY
		Component:	GENERAL
		Element:	OTHER
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG	410, 505	
Project Class:	Plant Adaption		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

Present legislation pertaining to handicapped access within buildings requires that goods and services offered in buildings be generally available to all persons. There are level changes from the artifact area to the corridor on the southeast interior and a small set of stairs leading to classroom 131. It is recommended that a wheelchair lift or stair climber be installed at these locations to provide wheelchair access.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABAC01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair lift / stair climber, conduit, wiring, tools, and supplies	EA	2	\$6,520	\$13,040	\$1,333	\$2,666	\$15,706
Wall-mounted handrail system, painted (15 feet minimum)	LF	20	\$50.50	\$1,010	\$35.40	\$708	\$1,718
Project Totals:				\$14,050		\$3,374	\$17,424

Material/Labor Cost		\$17,424
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$15,879</u>
General Contractor Mark Up at 20.0%	+	<u>\$3,176</u>
Construction Cost		<u>\$19,055</u>
Professional Fees at 16.0%	+	<u>\$3,049</u>
Total Project Cost		<u>\$22,104</u>

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABAC02	Title:	INTERIOR AMENITY ACCESSIBILITY UPGRADES
Priority Sequence:	19		
Priority Class:	4		
Category Code:	AC4A	System:	ACCESSIBILITY
		Component:	GENERAL
		Element:	FUNCTIONAL SPACE MOD.
Building Code:	WRAB		
Building Name:	WEST ACADEMIC 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		

Project Description

Accessibility legislation requires that building amenities be generally available to all persons. The configuration of the break room kitchenette and drinking fountain is a barrier to accessibility. The installation of wheelchair-accessible kitchenette cabinetry is recommended, and the single-level refrigerated drinking fountain should be replaced with a dual-level unit.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABAC02

Task Cost Estimate

Task Description	Unit	Qty	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	1	\$4,894	\$4,894	\$1,999	\$1,999	\$6,893
Dual level-drinking fountain	EA	1	\$1,216	\$1,216	\$374	\$374	\$1,590
Alcove construction, including finishes	EA	1	\$877	\$877	\$3,742	\$3,742	\$4,619
Project Totals:				\$6,987		\$6,115	\$13,102

Material/Labor Cost		\$13,102
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$10,173
General Contractor Mark Up at 20.0%	+	\$2,035
Construction Cost		\$12,207
Professional Fees at 16.0%	+	\$1,953
Total Project Cost		\$14,161

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABAC04	Title:	INTERIOR SIGNAGE UPGRADES
Priority Sequence:	20		
Priority Class:	4		
Category Code:	AC3D	System:	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	SIGNAGE
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG	703.1	
Project Class:	Plant Adaption		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

Current accessibility legislation has established signage requirements for all permanent spaces in a building. The signage in this facility does not meet modern requirements. It should meet specific size, graphical, Braille, height, and location specifications. To comply with ADA legislation, it is recommended that all non-compliant signage be upgraded to conform to appropriate accessibility standards. This scope includes directional signage.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABAC04

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA compliant signage	EA	56	\$53.11	\$2,974	\$15.62	\$875	\$3,849
Project Totals:				\$2,974		\$875	\$3,849

Material/Labor Cost		\$3,849
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$3,444
General Contractor Mark Up at 20.0%	+	\$689
Construction Cost		\$4,132
Professional Fees at 16.0%	+	\$661
Total Project Cost		\$4,794

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABAC03	Title:	RESTROOM RENOVATION
Priority Sequence:	21		
Priority Class:	4		
Category Code:	AC3E	System:	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	RESTROOMS/BATHROOMS
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG	604, 605, 606, 607, 608	
Project Class:	Plant Adaption		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

The restroom fixtures and finishes are mostly original to the year of construction or latest major renovation. The fixtures are sound but dated, and are spaced such that clearances are not ADA compliant. A comprehensive restroom renovation, including the installation of new fixtures, finishes, partitions, and accessories, is recommended. Restroom expansion may be necessary to meet modern minimum fixture counts and accessibility legislation.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABAC03

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Major restroom renovation, including fixtures, finishes, partitions, accessories, and expansion if necessary (assumes 55 square feet of restroom area per fixture)	FIXT	15	\$1,969	\$29,535	\$1,699	\$25,485	\$55,020
Project Totals:				\$29,535		\$25,485	\$55,020

Material/Labor Cost		\$55,020
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$42,816
General Contractor Mark Up at 20.0%	+	\$8,563
Construction Cost		\$51,379
Professional Fees at 16.0%	+	\$8,221
Total Project Cost		\$59,599

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABES05	Title:	MEMBRANE ROOF REPLACEMENT
Priority Sequence:	22		
Priority Class:	4		
Category Code:	ES4B	System:	EXTERIOR
		Component:	ROOF
		Element:	REPLACEMENT
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Energy Conservation	\$2,100	
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Floor-wide: Floor(s) R		

Project Description

The single-ply membrane roofing system 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.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABES05

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Membrane roof	SF	24,050	\$3.79	\$91,150	\$1.73	\$41,607	\$132,756
Project Totals:				\$91,150		\$41,607	\$132,756

Material/Labor Cost		\$132,756
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$113,132</u>
General Contractor Mark Up at 20.0%	+	<u>\$22,626</u>
Construction Cost		<u>\$135,758</u>
Professional Fees at 16.0%	+	<u>\$21,721</u>
Total Project Cost		<u><u>\$157,479</u></u>

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABES04	Title:	WINDOW REPLACEMENT
Priority Sequence:	23		
Priority Class:	4		
Category Code:	ES5B	System:	EXTERIOR
		Component:	FENESTRATIONS
		Element:	WINDOWS
Building Code:	WRAB		
Building Name:	WEST ACADEMIC BUILDING		
Subclass/Savings:	Energy Conservation	\$500	
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/5/2009		
Project Location:	Building-wide: Floor(s) 1		

Project Description

It is recommended that the single-pane metal window applications be upgraded to thermal-pane systems. Such double-pane systems will reduce the energy required to operate the building. Repair or replacement of the windowsills and trim may also be necessary.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABES04

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Typical standard glazing applications	SF	2,240	\$57.27	\$128,285	\$36.45	\$81,648	\$209,933
Project Totals:				\$128,285		\$81,648	\$209,933

Material/Labor Cost		\$209,933
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$171,068</u>
General Contractor Mark Up at 20.0%	+	<u>\$34,214</u>
Construction Cost		<u>\$205,282</u>
Professional Fees at 16.0%	+	<u>\$32,845</u>
Total Project Cost		<u>\$238,127</u>

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Description

Project Number:	WRABIS03	Title:	REFINISH CEILINGS
Priority Sequence:	25		
Priority Class:	4		
Category Code:	IS3B	System:	INTERIOR/FINISH SYS.
		Component:	CEILINGS
		Element:	REPLACEMENT
Building Code:	WRAB		
Building Name:	WEST ACADEMIC 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

Ceiling finishes include lay-in acoustical tile or painted ceilings. 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.

Specific Project Details
Facility Condition Analysis
Section Three
WRAB : WEST ACADEMIC BUILDING

Project Cost

Project Number: WRABIS03

Task Cost Estimate

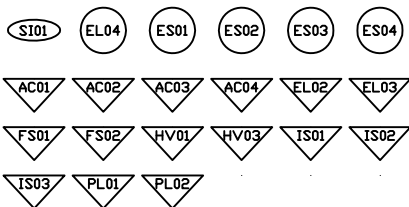
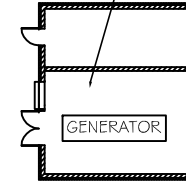
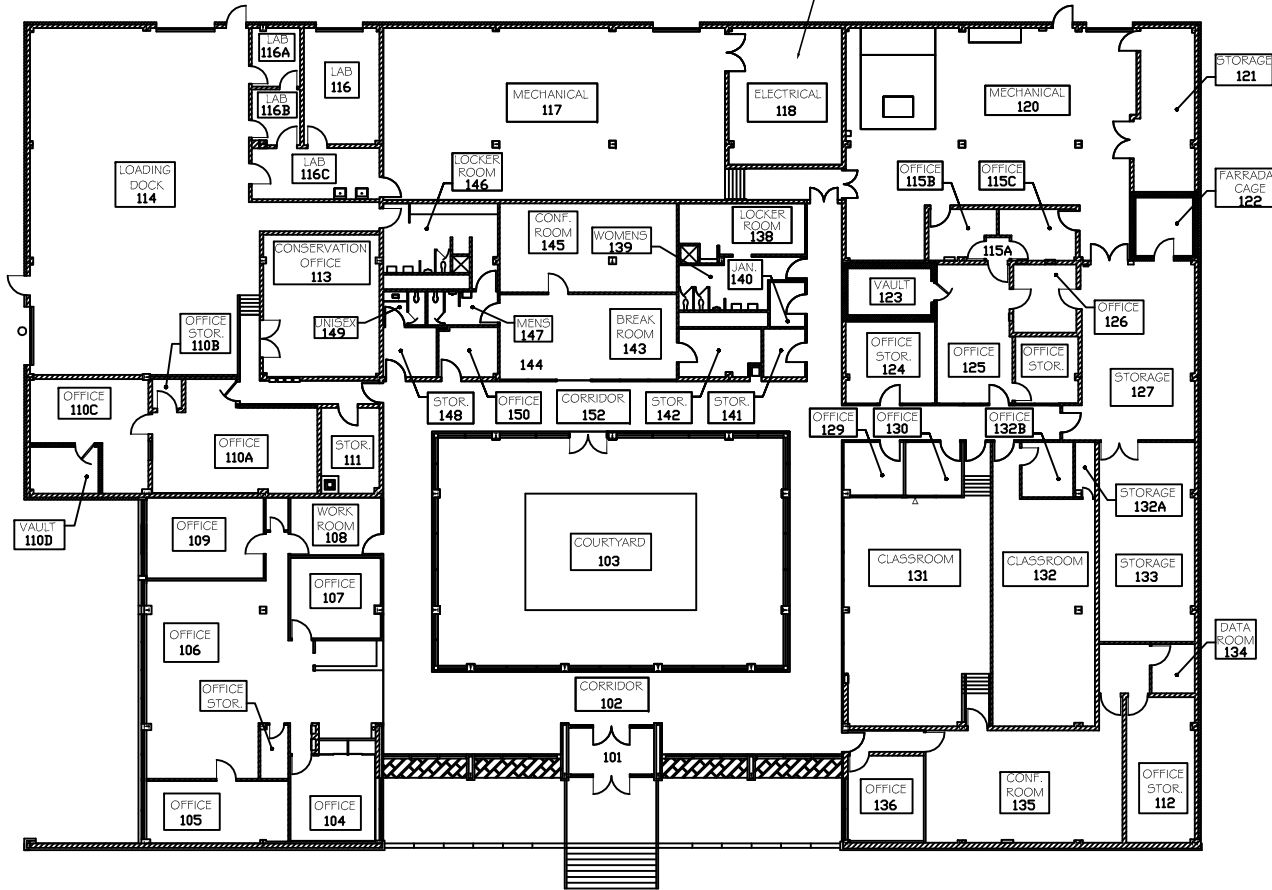
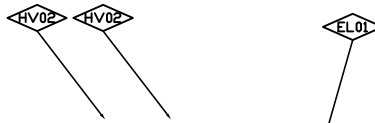
Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Acoustical tile ceiling system	SF	17,310	\$2.12	\$36,697	\$2.98	\$51,584	\$88,281
Painted ceiling finish application	SF	4,330	\$0.17	\$736	\$0.81	\$3,507	\$4,243
Project Totals:				\$37,433		\$55,091	\$92,524

Material/Labor Cost		\$92,524
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$65,957</u>
General Contractor Mark Up at 20.0%	+	<u>\$13,191</u>
Construction Cost		<u>\$79,148</u>
Professional Fees at 16.0%	+	<u>\$12,664</u>
Total Project Cost		<u>\$91,812</u>

FACILITY CONDITION ANALYSIS

SECTION 4

**DRAWINGS
AND PROJECT LOCATIONS**



WEST ACADEMIC BUILDING

BLDG NO. WRAB



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

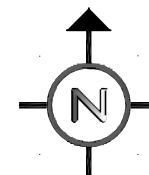
PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

Date: 12/17/09
Drawn by: J.T.V.
Project No. 09-041

FIRST FLOOR PLAN

Sheet No. 1 of 1



FACILITY CONDITION ANALYSIS

SECTION 5

LIFE CYCLE MODEL SUMMARY
AND PROJECTIONS

Life Cycle Model
Building Component Summary
WRAB : WEST ACADEMIC BUILDING

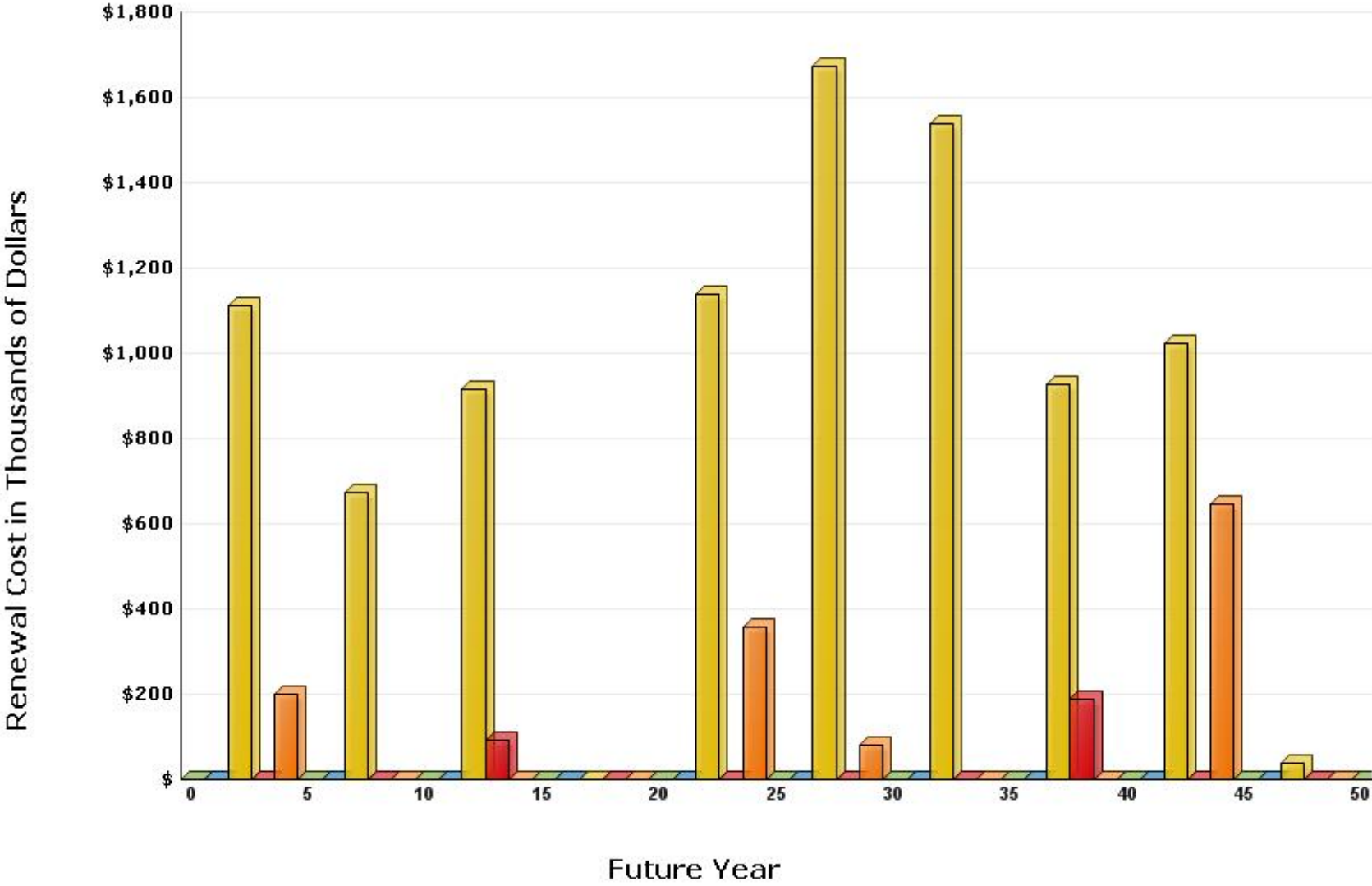
Unifomat Code	Component Description	Qty	Units	Unit Cost	Complex Adj	Total Cost	Install Date	Life Exp
B2010	EXTERIOR FINISH RENEWAL	1,790	SF	\$1.30		\$2,333	1960	10
B2010	EXTERIOR FINISH RENEWAL	7,170	SF	\$1.30	.31	\$2,897	1960	10
B2020	STANDARD GLAZING AND CURTAIN WALL	2,240	SF	\$104.04		\$233,042	1960	55
B2030	OVERHEAD GARAGE DOOR	5	EA	\$7,425.74		\$37,129	1960	30
B2030	HIGH TRAFFIC EXTERIOR DOOR SYSTEM	4	LEAF	\$4,311.24		\$17,245	1960	20
B2030	LOW TRAFFIC EXTERIOR DOOR SYSTEM	2	LEAF	\$2,863.29		\$5,727	1960	40
B3010	MEMBRANE ROOF	24,050	SF	\$6.41		\$154,084	2000	15
C1020	RATED DOOR AND FRAME INCLUDING HARDWARE	56	LEAF	\$1,489.06		\$83,387	2000	35
C1020	INTERIOR DOOR HARDWARE	56	EA	\$423.04		\$23,690	2000	15
C3010	STANDARD WALL FINISH (PAINT, WALL COVERING, ETC.)	50,980	SF	\$0.80		\$40,837	2000	10
C3020	CARPET	12,990	SF	\$8.75		\$113,617	2000	10
C3020	VINYL FLOOR TILE	6,490	SF	\$6.59		\$42,755	2000	15
C3020	RESURFACE AND SEAL CONCRETE OR TERRAZZO	2,160	SF	\$5.85		\$12,629	2000	50
C3030	ACOUSTICAL TILE CEILING SYSTEM	17,310	SF	\$4.99		\$86,429	2000	15
C3030	PAINTED CEILING FINISH APPLICATION	4,330	SF	\$0.80		\$3,469	2000	15
D2010	PLUMBING FIXTURES - OFFICE / ADMINISTRATION	24,047	SF	\$2.85		\$68,616	1960	35
D2020	WATER PIPING - OFFICE / ADMINISTRATION	24,047	SF	\$2.03		\$48,814	1960	35
D2030	DRAIN PIPING - OFFICE / ADMINISTRATION	24,047	SF	\$3.08		\$74,113	1960	40
D2050	AIR COMPRESSOR PACKAGE (AVERAGE SIZE)	1	SYS	\$6,456.49		\$6,456	1960	25
D2050	AIR COMPRESSOR PACKAGE (AVERAGE SIZE)	1	SYS	\$6,456.49		\$6,456	1980	25
D3020	BOILER (UP TO 2000 MBH)	600	MBH	\$56.73		\$34,040	2007	30
D3030	CHILLER - AIR COOLED (60-100 TONS)	140	TON	\$1,260.62		\$176,486	1992	20
D3040	EXHAUST FAN - CENTRIFUGAL ROOF EXHAUSTER OR SIMILAR	4	EA	\$2,768.62		\$11,074	1960	20
D3040	EXHAUST FAN - PROPELLER TYPE OR SIMILAR	2	EA	\$1,357.34		\$2,715	1960	20
D3040	FUME HOOD INCLUDING MECH. SYS	1	SYS	\$41,216.93		\$41,217	1960	20
D3040	HVAC SYSTEM - OFFICE / ADMINISTRATION	24,047	SF	\$24.80		\$596,424	1960	25
D3040	BASE MTD. PUMP - UP TO 15 HP	6	HP	\$3,175.77		\$19,055	1960	20
D3040	BASE MTD. PUMP - UP TO 15 HP	9	HP	\$3,175.77		\$28,582	1960	20
D5010	ELECTRICAL SYSTEM - OFFICE / ADMINISTRATION	24,047	SF	\$11.82		\$284,146	1960	50
D5010	ELECTRICAL SWITCHGEAR 120/208V	1,600	AMP	\$32.96		\$52,742	1960	20

**Life Cycle Model
Building Component Summary
WRAB : WEST ACADEMIC BUILDING**

Unifomat Code	Component Description	Qty	Units	Unit Cost	Complex Adj	Total Cost	Install Date	Life Exp
D5010	TRANSFORMER, OIL, 5-15KV (500-1500 KVA)	500	KVA	\$47.02		\$23,510	1960	30
D5020	EXIT SIGNS (BATTERY)	12	EA	\$280.76		\$3,369	1995	20
D5020	EXTERIOR LIGHT (HID)	8	EA	\$689.58		\$5,517	1980	20
D5020	LIGHTING - OFFICE / ADMINISTRATION	24,047	SF	\$7.24		\$174,012	1960	20
D5030	FIRE ALARM SYSTEM, POINT ADDRESSABLE	24,047	SF	\$2.61		\$62,873	2005	15
D5040	GENERATOR, DIESEL (100-200 KW)	125	KW	\$493.93		\$61,741	1996	25
E2010	KITCHENETTE UNIT WITH CABINETRY AND AMENITIES	1	LOT	\$5,940.22		<u>\$5,940</u>	1960	20
						\$2,647,169		

Life Cycle Model Expenditure Projections

WRAB : WEST ACADEMIC BUILDING



Average Annual Renewal Cost Per SqFt \$4.56

FACILITY CONDITION ANALYSIS

SECTION 6

PHOTOGRAPHIC LOG

**Photo Log - Facility Condition
Analysis
WRAB : WEST ACADEMIC BUILDING**

Photo ID No	Description	Location	Date
WRAB001a	Roof detail	Roof	9/3/2009
WRAB001e	Emergency generator	Generator building	9/3/2009
WRAB002a	Roof detail	Roof	9/3/2009
WRAB002e	Air-cooled condensing unit	North facade	9/3/2009
WRAB003a	Central courtyard	Exterior courtyard	9/3/2009
WRAB003e	Service entrance transformer	North facade	9/3/2009
WRAB004a	Parapet caulking	Roof	9/3/2009
WRAB004e	Air handler AHUC2	Mechanical room	9/3/2009
WRAB005a	North parking lot	North site	9/3/2009
WRAB005e	Variable frequency drive	Mechanical room	9/3/2009
WRAB006a	North parking lot	North site	9/3/2009
WRAB006e	Control air compressor	Mechanical room	9/3/2009
WRAB007a	Shop area	First floor	9/3/2009
WRAB007e	T12 lighting fixture	Mechanical room	9/3/2009
WRAB008a	Interior finishes in work room	Room 110A	9/3/2009
WRAB008e	Roof exhaust fan	Roof	9/3/2009
WRAB009a	Interior corridor finishes	First floor	9/3/2009
WRAB009e	Hot water pumps	Mechanical room 117	9/3/2009
WRAB010a	Interior finishes in office	Room 109	9/3/2009
WRAB010e	Domestic hot water heaters	Mechanical room 117	9/3/2009
WRAB011a	Interior finishes in office	Room 135	9/3/2009
WRAB011e	Original chilled water pump	Mechanical room 117	9/3/2009
WRAB012a	Interior corridor finishes	First floor	9/3/2009
WRAB012e	Evaporative coil of chiller	Mechanical room 117	9/3/2009
WRAB013a	Steps into classroom	Room 131	9/3/2009
WRAB013e	Through-wall exhaust fan	Mechanical room 117	9/3/2009
WRAB014a	Ceiling finishes in classroom	Room 131	9/3/2009
WRAB014e	Control air compressor	Mechanical room 117	9/3/2009
WRAB015a	Single-level drinking fountain	First floor	9/3/2009
WRAB015e	Multizone air handler	Mechanical room 117	9/3/2009
WRAB016a	Break room sink	Room 142	9/3/2009
WRAB016e	Inoperable domestic hot water heater	Mechanical room 117	9/3/2009
WRAB017a	South facade	Exterior elevation	9/3/2009

**Photo Log - Facility Condition
Analysis
WRAB : WEST ACADEMIC BUILDING**

Photo ID No	Description	Location	Date
WRAB017e	Inoperable fume hood	Room 116	9/3/2009
WRAB018a	South facade	Exterior elevation	9/3/2009
WRAB018e	Emergency shower and eyewash	Room 116	9/3/2009
WRAB019a	South facade	Exterior elevation	9/3/2009
WRAB019e	Hot water unit heater	Garage/ open bay 114	9/3/2009
WRAB020a	East facade	Exterior elevation	9/3/2009
WRAB020e	LED exit sign	Garage/ open bay 114	9/3/2009
WRAB021a	East facade	Exterior elevation	9/3/2009
WRAB021e	Original electrical panel	Garage/ open bay 114	9/3/2009
WRAB022a	North facade	Exterior elevation	9/3/2009
WRAB022e	Typical pneumatic thermostat	Hallway	9/3/2009
WRAB023a	North entrance	Exterior elevation	9/3/2009
WRAB023e	Xenon strobe and audible annunciator	Egress corridor	9/3/2009
WRAB024a	North facade	Exterior elevation	9/3/2009
WRAB024e	Addressable fire alarm panel	Lobby	9/3/2009
WRAB025a	West facade	Exterior elevation	9/3/2009
WRAB025e	Main 1600 amp switchboard	Main electrical room 118	9/3/2009
WRAB026e	HID fixture	East facade	9/3/2009
WRAB027e	Through wall exhaust fan	East facade	9/3/2009

Facility Condition Analysis - Photo Log



WRAB001A.jpg



WRAB001E.jpg



WRAB002A.jpg



WRAB002E.jpg



WRAB003A.jpg



WRAB003E.jpg



WRAB004A.jpg



WRAB004E.jpg



WRAB005A.jpg



WRAB005E.jpg



WRAB006A.jpg



WRAB006E.jpg



WRAB007A.jpg



WRAB007E.jpg



WRAB008A.jpg



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Facility Condition Analysis - Photo Log



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WRAB010A.jpg



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WRAB011A.jpg



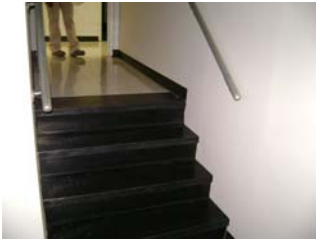
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WRAB012A.jpg



WRAB012E.jpg



WRAB013A.jpg



WRAB013E.jpg



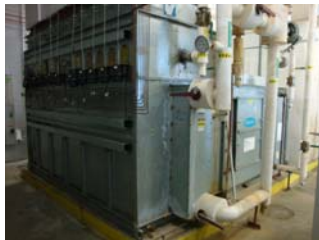
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WRAB015A.jpg



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WRAB016A.jpg



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Facility Condition Analysis - Photo Log



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Facility Condition Analysis - Photo Log



WRAB025A.jpg



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