

EAST CAROLINA UNIVERSITY

STEAM PLANT 14TH STREET

ASSET CODE: FSSP

FACILITY CONDITION ANALYSIS

AUGUST 24, 2010



EAST CAROLINA UNIVERSITY
Facility Condition Analysis

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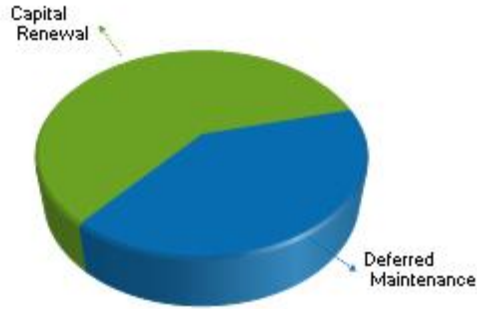
FACILITY CONDITION ANALYSIS

SECTION 1

GENERAL ASSET INFORMATION

EXECUTIVE SUMMARY - STEAM PLANT 14TH STREET

PROJECT COSTS BY CLASSIFICATION



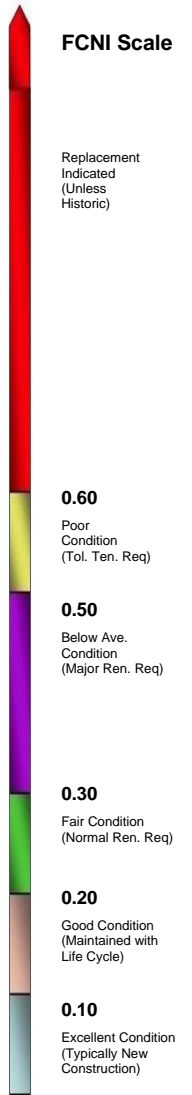
Building Code: FSSP
Building Name: STEAM PLANT 14TH STREET
Year Built: 1968
Building Use: Physical Plant / Utility
Square Feet: 16,914

Project Costs by Priority

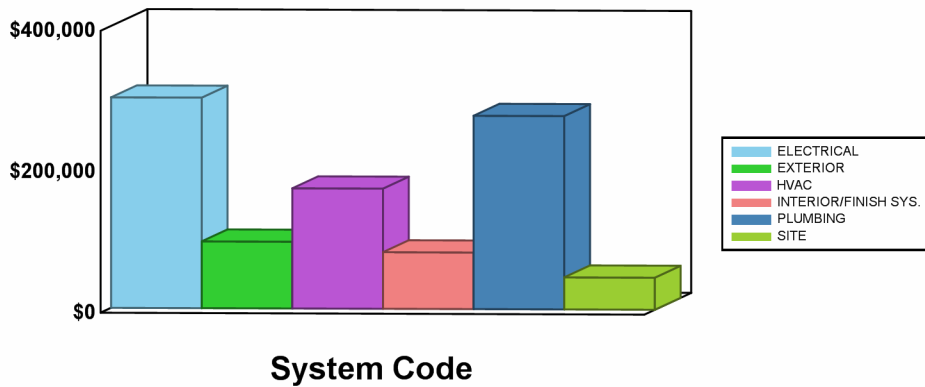
Priority 1:	\$0
Priority 2:	\$0
Priority 3:	\$477,168
Priority 4:	\$487,067
Total Project Costs:	\$964,235

Facility Replacement Cost: \$4,049,915

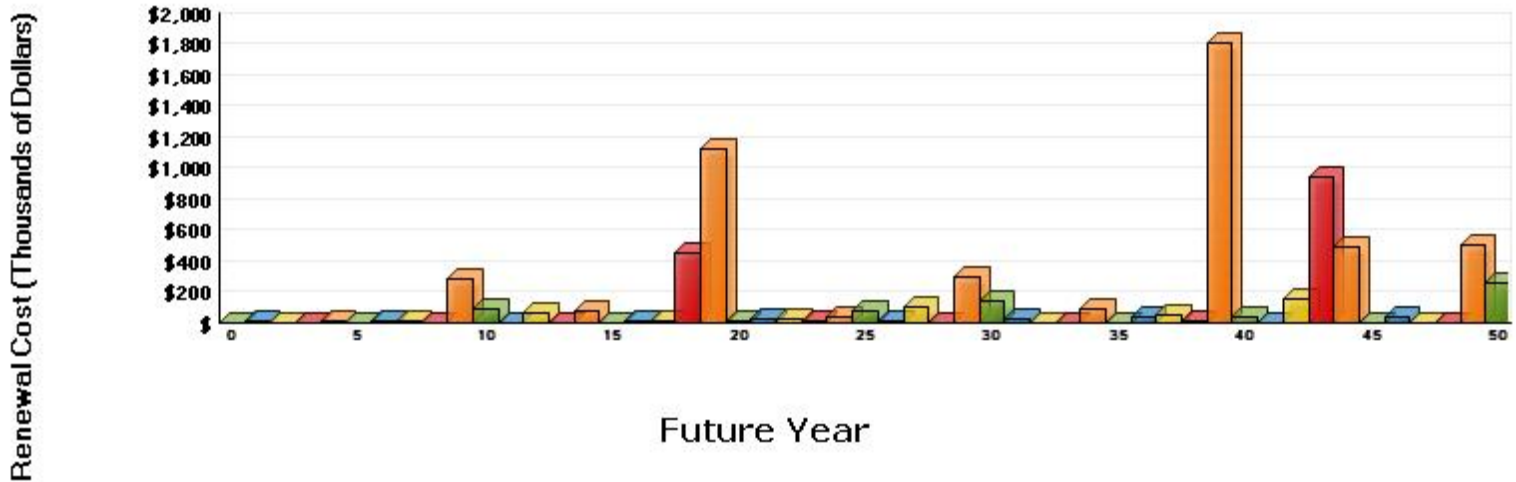
Facility Condition Needs Index (FCNI): 0.24
 (Project Costs / Replacement Cost)



PROJECT COSTS BY SYSTEM CODE



LIFE CYCLE MODEL EXPENDITURE PROJECTIONS



Average Annual Renewal Cost Per SqFt \$3.52

B. ASSET SUMMARY

The Steam Plant 14th Street, located in the central area of the main campus of East Carolina University in Greenville, North Carolina, was reported to have been originally constructed in 1968, with a few subsequent additions and renovations over the ensuing years. The last major boiler bay extension was reportedly completed within the last ten years.

The majority of the interior of the building is a large high bay equipment area for the steam boilers, with the balance of the building providing various maintenance shops and administrative areas supporting the campus engineering services office. The building provides for the centralized steam generation that is distributed underground to the adjacent campus buildings.

The utilitarian brick masonry and metal sided building includes a small basement level for utility tunnel access, a single above-ground level, and upper service walkways for equipment access. The current overall total area of the building is comprised of approximately 16,914 total gross square feet.

Information for this report was gathered during an onsite review that concluded on September 18, 2009.

SITE

The building is sited on a sloped parcel of land in a campus setting. Portions of the general site around the building are reasonably well landscaped, appear to be adequately maintained, and are in overall good condition. The site is predominantly planted with turf grasses, minimal ornamental shrubbery, and a few native trees.

Storm water drainage systems around the building include graded swales, diversion curbs, underground collection and piping systems, and controlled surface runoff that appear to divert water away from the structure adequately. No significant storm water issues were observed during the on-site review that appear to have negatively impacted the building.

Vehicular parking for this building is accommodated through a split level parking lot located to the west, with additional parking areas to the north and east. The quantity of parking spaces associated with this facility appears to be adequate, and no vehicular parking issues have been reported by onsite facility personnel. A service drive encircles the building, providing access to the high bay areas and fuel depots. Vehicular paving systems in service vehicle parking and service drives are in fair to poor condition and will need moderate upgrades to assure long-term performance and to prevent further damage.

Significant onsite features include a fueling station with reportedly double wall compliant 12,000 gallon USTs for service vehicles and a large diesel fuel tank farm depot with one 150,000 gallon and two 100,000 gallon above-grade fuel tanks within a concrete containment basin on the eastern side of the site. An additional above-grade 10,000 gallon diesel tank independently supports the emergency generator and is located adjacent to the main building and generator.

EXTERIOR STRUCTURE

The building structure is apparently supported by soil bearing spread footings that show no visible evidence of displacement or structural distress. The primary building structural frame includes reinforced concrete, structural steel, and load bearing masonry. Brick masonry veneer is the primary exterior finish, with lesser areas of painted metal siding and architectural concrete panels. While the brick masonry 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 for long-term performance.

The architectural concrete panels on the exterior facade have become visibly soiled, and the construction joints are failing. Cleaning, surface preparation, selective repairs, and applied finish upgrades are recommended to restore the aesthetics and integrity of the building envelope and long-term performance.

Building fenestration includes exterior metal-framed painted doors with frame transom and side lites with single pane glazing units, large overhead type service access doors, and additional egress pathway exit discharge doors in the exterior building walls. Replacements are recommended for some of the exterior door systems. This project includes primary and secondary entrance and service doors. The replacement units should maintain the architectural design aspects of this facility and be modern, energy-efficient applications.

The flat roof includes two primary levels, an upper and a lower, that have a multi-ply, built-up roofing system with a fine granular surface. The upper level was installed in 2008, while the lower level is estimated to have been installed in 1999. Both roof systems are currently in relatively good condition and expected to perform consistently with their life cycle through the end of the current review period.

The compressor room enclosure located at the southwest corner of the main building is reportedly inadequate to support the amount of equipment needed for the current boiler equipment and control system. The removal of the existing shed enclosure and the addition of a larger framed structural steel and metal panel clad building addition is recommended in response to the need.

INTERIOR FINISHES / SYSTEMS

The predominant interior finishes in this building are generally in a variety of conditions ranging from poor to fair to relatively new. Ceiling systems in the building include the open bay structure, with minor areas of suspended acoustical tiles in the restrooms and office areas. Flooring in the building includes natural sealed concrete flooring surfaces, with vinyl composition tile (VCT) in circulation corridors, restrooms, locker areas, and offices. In general, the ceiling and flooring systems in most areas of the building are adequately maintained and acceptable in appearance for the shop environment. No ceiling or floor finish upgrade requirements are anticipated during this review period.

Interior partitions are typically painted concrete masonry units in the corridors, offices, and restrooms that are performing consistently with their in-place age and use. In general, the existing wall and partition finish systems in most areas of the building are well maintained and acceptable in appearance but will require ongoing refinishing and periodic replacements to maintain quality institutional appearances.

Interior doors throughout the building are typically solid core, painted hollow metal applications with painted hollow metal frames. The doors appear to date from the original construction more than fifteen years ago, and they generally lack ADA compliant hardware. The condition of some of the systems is such that door system replacements are recommended as part of a comprehensive renovation effort. Complete demolition of these failing door systems and replacement according to a code compliant plan to protect egress passages properly is recommended.

Most of the casework, storage cabinets, and benches in the service shops date from the original construction. Partial renewal and replacements are recommended to maintain a high quality and effective service work area. The employee restroom fixtures and finishes are mostly original to the year of construction or latest renovation. The fixtures are sound but aged and inefficient, and the finishes are outdated. A comprehensive restroom renovation, including new fixtures, finishes, partitions, accessories, and a new dual level drinking fountain, is recommended.

ACCESSIBILITY

One of the primary building entrances provides compliant, grade-level access to the main floor of this non-public service building. The older original public restrooms in the building do not meet current ADA accessibility standards. However, individual, single fixture, fully accessible restrooms have been added on the main floor of the building, and these provide adequate, compliant restroom facilities for the disabled.

The multi-fixture employee restroom facilities on the main floor of the building are generally non-compliant with accessibility standards. These restrooms are aging and a modernization project, including finishes and fixtures, is recommended under a complimentary Interior Finishes / Systems project recommendation. The single level drinking fountain should also be replaced with a dual level unit as part of this upgrade.

Interior doors and associated operable hardware throughout the building are generally non-compliant with ADA standards and have inadequate maneuvering space at door jambs and non-graspable knob door hardware. Door and hardware replacements recommended in the Interior Finishes / Systems section of this report should address these issues.

HEALTH

No health-related issues were observed or reported by facility personnel at the time of the onsite review for this building. Therefore, no recommendations or assessment comment is included in this report.

FIRE / LIFE SAFETY

The facility appears to have adequate and reasonable egress paths consistent with its age and compliance with building codes at the time of construction / renovation. No apparent building egress deficiencies, obstructed egress pathways, or visible compromises to fire-rated assemblies in the egress corridors were observed during the limited onsite review of the building.

This facility is protected by a central fire alarm system. The 4100U point addressable fire alarm control panel was manufactured by Simplex and is located in the Electric Shop. The devices that serve this system include manual pull stations, audible / visible devices, and smoke and heat detectors. The fire alarm system is adequate and in excellent condition, with the control panel and most devices having been installed in 2006. With proper testing and maintenance, it will outlast the purview of this analysis. This facility is not served by an automatic sprinkler system. Manual, dry-chemical fire extinguishers are available to provide fire suppression for the building.

The exit signs in this facility are LED-illuminated and are connected to the emergency power network. Emergency lighting is available through wall-mounted sealed beam fixtures connected to a central battery system. A 750 kW diesel generator also supplies backup power for the building and steam plant infrastructure systems equipment housed in the building. All egress lighting systems are adequate and in good condition. There are no related projects to recommend at this time.

HVAC

This facility houses steam boilers that supply the campus steam distribution system. Steam is circulated as the heating medium to unit heaters in the plant and shop areas. Shops typically have two or three of the heaters. These units appear to be in good condition throughout. The eight units in the boiler room were replaced in 2008. Two new gas-fired radiant unit heaters were also installed at that time. Numerous roof-mounted centrifugal fans and several propeller fans provide ventilation for the boiler room and shop areas. Centrifugal units are expected to require life cycle replacement during the period of this report. Propeller exhaust fans are installed in selected locations, such as the compressor room on the railroad (southwest) side of the building.

Mechanical cooling consists of split systems with condensing units located around the outside perimeter of the building, along with a single unit on the shop area roof. These units are typically conventional DX cooling types with indoor air handling units, but include some heat pumps and ductless types. Ages of these systems vary, with the couple of oldest condensing units dating to 1985-86. The two newest units are ductless heat pumps installed in 2007. Most units are presently in good operating condition or better and are controlled with electronic thermostats. Age and normal life cycles predict that most or all of the units will need to be replaced over the next ten years, with most likely to survive through the next several years. The recommended project proposes funding in six to ten years. One through-wall unit serving room 110 is in good condition but, due to life cycles for such units, is likely to need replacement in six to ten years as well. Because of the limited cost, no project is included herein.

ELECTRICAL

Power is supplied to this facility at 277/480 volts. The 277/480 volt power is distributed by an 800 amp main distribution panel manufactured by General Electric. Among the major loads served from the panel is a 5-section 800 amp motor control center in nearby room 109 that provides power to the major boiler plant pump, fan, compressor, and related loads, some of which are modulated by variable frequency drives located in the room. The motor control center also supplies a 112.5 kVA transformer for 120/208 volt panels. Most of this equipment is at or near predicted service lives and is recommended for replacement on that basis to sustain reliable service to critical building and plant infrastructure systems.

The secondary transformer and original 120/208 volt distribution system equipment are also recommended for life cycle replacement. A small percentage of the equipment, including the 225 amp, 42 breaker panelboard by office 101C, was very recently installed and needs only to have the panel directory completed.

The interior spaces of this facility are illuminated by a mix of fixture types that includes older T12 industrial style fixtures, retrofitted and newer fixtures equipped with T8 lamps, and HID fixtures. Office areas are typically equipped with lay-in fluorescent fixtures with T8 tubes and attractive small-grid parabolic lenses. Shop areas typically have the industrial fluorescent types and some HID fixtures, while the boiler room has predominantly HID types with a limited number of fluorescent units for emergency lighting and illumination during HID fixture restarts. Although fixtures are well maintained and effective, aging fixture components, deteriorating efficiency, and normal replacement cycles for ballasts and lamps make mass replacement with new fixtures advisable. The proposed project addresses this recommendation. Specify energy-efficient light fixtures for the new interior lighting systems, and install occupancy sensors where possible.

The exterior areas adjacent to the building are illuminated by building-mounted high intensity discharge (HID) fixtures. These exterior lighting systems are generally aged and weathered, but serviceable for at least several more years. It is recommended that they be replaced within the next six to ten years. Install new, energy-efficient fixtures, and place them on photocell activation.

Emergency power for this facility is produced by a local diesel-fired emergency generator. This unit has a 750 kW capacity, generates 277/480 volt power, and was manufactured by Kohler. This generator is currently adequate and should remain a reliable source of standby power throughout the purview of this analysis.

PLUMBING

Potable water is distributed throughout this facility via a copper piping network. Based on the expected life for copper piping, a proposed project addresses replacement of the network. Sanitary waste and storm water piping is typically of cast-iron, bell-and-spigot construction with copper or galvanized steel runouts. No-hub piping has been utilized as part of renovations, but no evidence was seen of previous or impending failures of the cast-iron piping. Pending development of unexpected drainage system problems or major fixture or equipment replacements, it is recommended that the existing drain piping systems be retained in service for the foreseeable future. Plumbing fixtures are in good condition with evidence of previous selective replacements and upgrades. Hands-free flush valves are in use in most applications. The older utility sink was noted to be in satisfactory condition for continued use and, although not originally equipped with a vacuum break, has a suitable screw-on type affixed and providing the required anti-siphoning protection.

Domestic water for the facility is heated by an electric, residential-grade water heater. This unit is approaching the end of its expected life cycle. It should be anticipated that it will require replacement within the scope of this analysis. However, no project has been prescribed due to limited cost. Building program processes are supported by the use of central compressed air systems. These systems have served to the point where reliability is a concern. Replace them soon in order to maintain reliable service.

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 18, 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.
EL4C	DEVICES AND FIXTURES	LIGHTING CONTROLLERS	Motion sensors, photocell controllers, lighting contactors, etc.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
EL4D	DEVICES AND FIXTURES	GFCI PROTECTION	Ground fault protection including GFCI receptacles and breakers.
EL4E	DEVICES AND FIXTURES	LIGHTNING PROTECTION	Lightning arrestation systems including air terminals and grounding conductors.
EL5A	EMERGENCY POWER SYSTEM	GENERATION/DISTRIBUTION	Includes generators, central battery banks, transfer switches, emergency power grid, etc.
EL6A	SYSTEMS	UPS/DC POWER SUPPLY	Uninterruptible power supply systems and DC motor-generator sets and distribution systems.
EL7A	INFRASTRUCTURE	ABOVE GROUND TRANSMISSION	Includes poles, towers, conductors, insulators, fuses, disconnects, etc.
EL7B	INFRASTRUCTURE	UNDERGROUND TRANSMISSION	Includes direct buried feeders, ductbanks, conduit, manholes, feeders, switches, disconnects, etc.
EL7C	INFRASTRUCTURE	SUBSTATIONS	Includes incoming feeders, breakers, buses, switchgear, meters, CTs, PTs, battery systems, capacitor banks, and all associated auxiliary equipment.
EL7D	INFRASTRUCTURE	DISTRIBUTION SWITCHGEAR	Stand-alone sectionalizing switches, distribution switchboards, etc.
EL7F	INFRASTRUCTURE	AREA AND STREET LIGHTING	Area and street lighting systems including stanchions, fixtures, feeders, etc.
EL8A	GENERAL	OTHER	Electrical system components not catalogued elsewhere.
SYSTEM DESCRIPTION: EXTERIOR			
ES1A	FOUNDATION/FOOTING	STRUCTURE	Structural foundation improvements involving structural work on foundation wall/footing, piers, caissons, piles including crack repairs, shoring & pointing
ES1B	FOUNDATION/FOOTING	DAMP/PROOFING/DEWATERING	Foundation/footing waterproofing work including, damp proofing, dewatering, insulation, etc.
ES2A	COLUMNS/BEAMS/WALLS	STRUCTURE	Structural work to primary load-bearing structural components aside from floors including columns, beams, bearing walls, lintels, arches, etc.
ES2B	COLUMNS/BEAMS/WALLS	FINISH	Work involving restoration of the appearance and weatherproof integrity of exterior wall/structural envelope components including masonry/pointing, expansion joints, efflorescence & stain removal, grouting, surfacing, chimney repairs, etc.
ES3A	FLOOR	STRUCTURE	Work concerning the structural integrity of the load supporting floors both exposed and unexposed including deformation, delamination, spalling, shoring, crack repair, etc.
ES4A	ROOF	REPAIR	Work on waterproof horizontal finish (roof) involving repair and/or limited replacement (<40% total) including membrane patching, flashing repair, coping caulk/resetting, PPT wall parging/coating, walkpad installation, skylight and roof hatch R&R, etc.
ES4B	ROOF	REPLACEMENT	Work involving total refurbishment of roofing system including related component rehab.
ES5A	FENESTRATIONS	DOORS	Work on exterior exit/access door including storefronts, airlocks, air curtains, vinyl slat doors, all power/manual operating hardware (except handicapped), etc.
ES5B	FENESTRATIONS	WINDOWS	Work on exterior fenestration closure & related components including glass/metal/wood curtain walls, fixed or operable window sashes, glazing, frames, sills, casings, stools, seats, coatings, treatments, screens, storm windows, etc.
ES6A	GENERAL	ATTACHED STRUCTURE	Work on attached exterior structure components not normally considered in above categories including porches, stoops, decks, monumental entrance stairs, cupolas, tower, etc.
ES6B	GENERAL	AREAWAYS	Work on attached grade level or below structural features including subterranean light wells, areaways, basement access stairs, etc.
ES6C	GENERAL	TRIM	Work on ornamental exterior (generally non-structural) elements including beltlines, quoins, porticos, soffits, cornices, moldings, trim, etc.
ES6D	GENERAL	SUPERSTRUCTURE	Finish and structural work on non-standard structures with exposed load-bearing elements such as stadiums, bag houses, bleachers, freestanding towers, etc.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
ES6E	GENERAL	OTHER	Any exterior work not specifically categorized elsewhere including finish and structural work on freestanding boiler stacks.
SYSTEM DESCRIPTION: FIRE / LIFE SAFETY			
FS1A	LIGHTING	EGRESS LIGHTING/EXIT SIGNAGE	R & R work on exit signage and packaged AC/DC emergency lighting.
FS2A	DETECTION/ALARM	GENERAL	Repair or replacement of fire alarm/detection system/components including alarms, pull boxes, smoke/heat detectors, annunciator panels, central fire control stations, remote dialers, fire station communications, etc.
FS3A	SUPPRESSION	SPRINKLERS	Repair or installation of water sprinklers type automatic fire suppressions including wet pipe & dry pipe systems, heads, piping, deflectors, valves, monitors, associated fire pump, etc.
FS3B	SUPPRESSION	STANDPIPE/HOSE	Repair or installation of standpipe system or components including hardware, hoses, cabinets, nozzles, necessary fire pumping system, etc.
FS3C	SUPPRESSION	EXTINGUISHERS	Repairs or upgrades to F.E. cabinets/wall fastenings and handheld extinguisher testing/replacement.
FS3D	SUPPRESSION	OTHER	Other fire suppression items not specifically categorized elsewhere including fire blankets, carbon dioxide automatic systems, Halon systems, dry chemical systems, etc.
FS4A	HAZARDOUS MATERIALS	STORAGE ENVIRONMENT	Installation or repair of special storage environment for the safe holding of flammable or otherwise dangerous materials/supplies including vented flammables storage cabinets, holding pens/rooms, cages, fire safe chemical storage rooms, etc.
FS4B	HAZARDOUS MATERIALS	USER SAFETY	Improvements, repairs, installation, or testing of user safety equipment including emergency eyewashes, safety showers, emergency panic/shut-down system, etc.
FS5A	EGRESS PATH	DESIGNATION	Installation, relocation or repair of posted diagrammatic emergency evacuation routes.
FS5B	EGRESS PATH	DISTANCE/GEOMETRY	Work involving remediation of egress routing problems including elimination of dead end corridors, excessive egress distance modifications and egress routing inadequacies.
FS5C	EGRESS PATH	SEPARATION RATING	Restoration of required fire protective barriers including wall rating compromises, fire rated construction, structural fire proofing, wind/safety glazing, transom retrofitting, etc.
FS5D	EGRESS PATH	OBSTRUCTION	Clearance of items restricting the required egress routes.
FS5E	EGRESS PATH	STAIRS RAILING	Retrofit of stair/landing configurations/structure, railing heights/geometries, etc.
FS5F	EGRESS PATH	FIRE DOORS/HARDWARE	Installation/replacement/repair of fire doors and hardware including labeled fire doors, fire shutters, closers, magnetic holders, panic hardware, etc.
FS5G	EGRESS PATH	FINISH/FURNITURE RATINGS	Remediation of improper fire/smoke ratings of finishes and furniture along egress routes.
FS6A	GENERAL	OTHER	Life/fire safety items not specifically categorized elsewhere.
SYSTEM DESCRIPTION: HEALTH			
HE1A	ENVIRONMENTAL CONTROL	EQUIPMENT AND ENCLOSURES	Temperature control chambers (both hot and cold) for non-food storage. Includes both chamber and all associated mechanical equipment.
HE1B	ENVIRONMENTAL CONTROL	OTHER	General environmental control problems not catalogued elsewhere.
HE2A	PEST CONTROL	GENERAL	Includes all measures necessary to control and destroy insects, rodents and other pests.
HE3A	REFUSE	GENERAL	Issues related to the collection, handling and disposal of refuse.
HE4A	SANITATION EQUIPMENT	LABORATORY AND PROCESS	Includes autoclaves, cage washers, steam cleaners, etc.
HE5A	FOOD SERVICE	KITCHEN EQUIPMENT	Includes ranges, grilles, cookers, sculleries, etc.
HE5B	FOOD SERVICE	COLD STORAGE	Includes the cold storage room and all associated refrigeration equipment.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
HE6A	HAZARDOUS MATERIAL	STRUCTURAL ASBESTOS	Testing, abatement and disposal of structural and building finish materials containing asbestos.
HE6B	HAZARDOUS MATERIAL	MECHANICAL ASBESTOS	Testing, abatement and disposal of mechanical insulation materials containing asbestos.
HE6C	HAZARDOUS MATERIAL	PCBs	Includes testing, demolition, disposal and cleanup of PCB contaminated substances.
HE6D	HAZARDOUS MATERIAL	FUEL STORAGE	Includes monitoring, removal and replacement of above and below ground fuel storage and distribution systems. Also includes testing and disposal of contaminated soils.
HE6E	HAZARDOUS MATERIAL	LEAD PAINT	Testing, removal and disposal of lead-based paint systems.
HE6F	HAZARDOUS MATERIAL	OTHER	Handling, storage, and disposal of other hazardous materials.
HE7A	GENERAL	OTHER	Health related issues not catalogued elsewhere.
SYSTEM DESCRIPTION: HVAC			
HV1A	HEATING	BOILERS/STACKS/ CONTROLS	Boilers for heating purposes including their related stacks, flues, and controls.
HV1B	HEATING	RADIATORS/ CONVECTORS	Including cast iron radiators, fin tube radiators, baseboard radiators, etc.
HV1C	HEATING	FURNACE	Furnaces and their related controls, flues, etc.
HV1D	HEATING	FUEL SUPPLY/STORAGE	Storage and/or distribution of fuel for heating purposes, including tanks and piping networks and related leak detection/monitoring.
HV2A	COOLING	CHILLERS/ CONTROLS	Chiller units for production of chilled water for cooling purposes, related controls (not including mods for CFC compliance).
HV2B	COOLING	HEAT REJECTION	Repair/replacement of cooling towers, dry coolers, air-cooling and heat rejection. (Includes connection of once-through system to cooling tower.)
HV3A	HEATING/COOLING	SYSTEM RETROFIT/ REPLACE	Replacement or major retrofit of HVAC systems.
HV3B	HEATING/COOLING	WATER TREATMENT	Treatment of hot water, chilled water, steam, condenser water, etc.
HV3C	HEATING/COOLING	PACKAGE/SELF-CONTAINED UNITS	Repair/replacement of self-contained/package type units including stand up units, rooftop units, window units, etc; both air conditioners and heat pumps.
HV3D	HEATING/COOLING	CONVENTIONAL SPLIT SYSTEMS	Repair, installation, or replacement of conventional split systems; both air conditioners and heat pumps including independent component replacements of compressors and condensers.
HV4A	AIR MOVING/ VENTILATION	AIR HANDLERS/ FAN UNITS	Includes air handlers & coils, fan coil units, unit ventilators, filtration upgrades, etc., not including package/self-contained units, split systems or other specifically categorized systems.
HV4B	AIR MOVING/ VENTILATION	EXHAUST FANS	Exhaust fan systems including fans, range and fume hoods, controls, and related ductwork.
HV4C	AIR MOVING/ VENTILATION	OTHER FANS	Supply, return, or any other fans not incorporated into a component categorized elsewhere.
HV4D	AIR MOVING/ VENTILATION	AIR DISTRIBUTION NETWORK	Repair, replacement, or cleaning of air distribution network including ductwork, terminal reheat/cool, VAV units, induction units, power induction units, insulation, dampers, linkages, etc.
HV5A	STEAM/HYDRONIC DISTRIBUTION	PIPING NETWORK	Repair/replacement of piping networks for heating and cooling systems including pipe, fittings, insulation, related components, etc.
HV5B	STEAM/HYDRONIC DISTRIBUTION	PUMPS	Repair or replacement of pumps used in heating and cooling systems, related control components, etc.
HV5C	STEAM/HYDRONIC DISTRIBUTION	HEAT EXCHANGERS	Including shell and tube heat exchangers and plate heat exchangers for heating and cooling.
HV6A	CONTROLS	COMPLETE SYSTEM	Replacement of HVAC control systems.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
		UPGRADE	
HV6B	CONTROLS	MODIFICATIONS/ REPAIRS	Repair or modification of HVAC control system.
HV6C	CONTROLS	AIR COMPRESSORS/ DRYERS	Repair or modification of control air compressors and dryers.
HV7A	INFRASTRUCTURE	STEAM/HOT WATER GENERATION	Generation of central steam and/or hot water including boilers and related components.
HV7B	INFRASTRUCTURE	STEAM/HOT WATER DISTRIBUTION	Distribution system for central hot water and/or steam.
HV7C	INFRASTRUCTURE	CHILLED WATER GENERATION	Generation of central chilled water including chillers and related components.
HV7D	INFRASTRUCTURE	CHILLED WATER DISTRIBUTION	Distribution system for central chilled water.
HV7E	INFRASTRUCTURE	TUNNELS/ MANHOLES/ TRENCHES	Repairs, installation, replacement of utility system access chambers.
HV7F	INFRASTRUCTURE	OTHER	HVAC infrastructure issues not specifically categorized elsewhere.
HV8A	GENERAL	CFC COMPLIANCE	Chiller conversions/replacements for CFC regulatory compliance, monitoring, etc.
HV8B	GENERAL	OTHER	HVAC issues not catalogued elsewhere.
SYSTEM DESCRIPTION: INTERIOR FINISHES / SYSTEMS			
IS1A	FLOOR	FINISHES-DRY	R & R of carpet, hardwood strip flooring, concrete coating, vinyl linoleum & tile, marble, terrazzo, rubber flooring, underlayment in predominantly dry areas ("dry" includes non-commercial kitchens)
IS1B	FLOOR	FINISHES-WET	Flooring finish/underlayment work in predominantly "wet" areas including work with linoleum, rubber, terrazzo, concrete coating, quarry tile, ceramic tile, epoxy aggregate, etc.
IS2A	PARTITIONS	STRUCTURE	Structural work on full height permanent interior partitions including wood/metal stud & drywall systems, CMU systems, structural brick, tile, glass block, etc.
IS2B	PARTITIONS	FINISHES	Work on full height permanent interior partitions including R & R to gypsum board, plaster, lath, wood paneling, acoustical panels, wall coverings, column coverings, tile, paint, etc.
IS3A	CEILINGS	REPAIR	Repair of interior ceilings (<40% of total) including tiles, gypsum board, plaster, paint, etc.
IS3B	CEILINGS	REPLACEMENT	Major refurbishments (>40% of total) to interior ceiling systems including grid system replacements, structural framing, new suspended systems, paint, plastering, etc.
IS4A	DOORS	GENERAL	Any work on interior non-fire rated doors, roll-up counter doors, mechanical/plumbing access doors, and all door hardware (except for reasons of access improvement).
IS5A	STAIRS	FINISH	Any finish restorative work to stair tower walking surfaces including replacement of rubber treads, safety grips, nosings, etc. (except as required to accommodate disabled persons).
IS6A	GENERAL	MOLDING	R & R to interior trim/molding systems including rubber/vinyl/wood base, crown/chair/ornamental moldings, cased openings, etc.
IS6B	GENERAL	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.
IS6D	GENERAL	OTHER	Any work on interior elements not logically or specifically categorized elsewhere including light coves, phone booths, interior light wells, etc.
SYSTEM DESCRIPTION: PLUMBING			

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
PL1A	DOMESTIC WATER	PIPING NETWORK	Repair or replacement of domestic water supply piping network, insulation, hangers, etc.
PL1B	DOMESTIC WATER	PUMPS	Domestic water booster pumps, circulating pumps, related controls, etc.
PL1C	DOMESTIC WATER	STORAGE/TREATMENT	Equipment or vessels for storage or treatment of domestic water.
PL1D	DOMESTIC WATER	METERING	Installation, repair, or replacement of water meters.
PL1E	DOMESTIC WATER	HEATING	Domestic water heaters including gas, oil, and electric water heaters, shell and tube heat exchangers, tank type and instantaneous.
PL1F	DOMESTIC WATER	COOLING	Central systems for cooling and distributing drinking water.
PL1G	DOMESTIC WATER	FIXTURES	Plumbing fixtures including sinks, drinking fountains, water closets, urinals, etc.
PL1H	DOMESTIC WATER	CONSERVATION	Alternations made to the water distribution system to conserve water.
PL1I	DOMESTIC WATER	BACKFLOW PROTECTION	Backflow protection devices including backflow preventers, vacuum breakers, etc.
PL2A	WASTEWATER	PIPING NETWORK	Repair or replacement of building wastewater piping network.
PL2B	WASTEWATER	PUMPS	Pump systems used to lift wastewater including sewage ejectors and other sump systems.
PL3A	SPECIAL SYSTEMS	PROCESS GAS/FLUIDS	Generation and/or distribution of process steam, compressed air, natural and LP gas, process water, vacuum, etc.
PL4A	INFRASTRUCTURE	POTABLE WATER STORAGE/TREATMENT	Storage and treatment of potable water for distribution.
PL4B	INFRASTRUCTURE	INDUSTRIAL WATER DISTRIBUTION/TREATMENT	Storage and treatment of industrial water for distribution.
PL4C	INFRASTRUCTURE	SANITARY WATER COLLECTION	Sanitary water collection systems, sanitary sewer systems; including combined systems.
PL4D	INFRASTRUCTURE	STORM WATER COLLECTION	Storm water collection systems, storm sewer systems; storm water only.
PL4E	INFRASTRUCTURE	POTABLE WATER DISTRIBUTION	Potable water distribution network.
PL4F	INFRASTRUCTURE	WASTEWATER TREATMENT	Wastewater treatment plants, associated equipment, etc.
PL5A	GENERAL	OTHER	Plumbing issues not categorized elsewhere.
SYSTEM DESCRIPTION: SITE			
SI1A	ACCESS	PEDESTRIAN	Paved pedestrian surfaces including walks, site stairs, step ramps, paths, pedestrian signage, sidewalk bridges/canopies, pedestrian plaza/mall areas, etc.
SI1B	ACCESS	VEHICULAR	Paved vehicular surfaces including roads, paths, curbs, guards, bollards, bridges, skyways, joints, shoulder work, culverts, ditches, vehicular signage, etc.
SI2A	LANDSCAPE	GRADE/FLORA	Landscape related work including new grass/turf refurbishment, grade improvements, catch basins, swales, berms, pruning, new ornamental flora, etc.
SI3A	HARDSCAPE	STRUCTURE	Permanent hard site features, predominantly ornamental, including terraces, fences, statues, freestanding signage, fountains, benches, etc.
SI4A	GENERAL	OTHER	Other site work not specifically categorized elsewhere.
SYSTEM DESCRIPTION: SECURITY SYSTEMS			
SS1A	LIGHTING	EXTERIOR	Fixtures, stanchions, foliage interference, cleanliness, locations, etc.

CATEGORY CODE REPORT			
CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
SS2A	SITE	FENCING	Perimeter campus fencing, individual building fencing, includes both pedestrian and vehicular control fences.
SS2B	SITE	GENERAL	Hidden areas due to foliage, fencing, parking, walls, etc.
SS3A	COMMUNICATIONS	EMERGENCY PHONES	Access, locations, visibility, function, reliability, etc.
SS4A	ACCESS CONTROL	DOORS	Access, locks, keys, two way speakers, reliability, redundancy, etc.
SS4B	ACCESS CONTROL	WINDOWS	Locks, screens, access, reliability, etc.
SS4C	ACCESS CONTROL	SYSTEMS	Card key, proximity devices, data control, data use, reliability, system design, etc.
SS5A	MONITORING	SYSTEMS	Cameras, audio communication, monitoring stations, locations, system design, etc.
SS6A	CIRCULATION	PEDESTRIAN	On campus as well as to and from off campus housing and class locations, etc.
SS6B	CIRCULATION	VEHICULAR	Guard gates, access, systems, data control and use, identification, etc.
SS7A	GENERAL	OTHER	General information/projects pertaining to security issues.
SYSTEM DESCRIPTION: VERTICAL TRANSPORTATION			
VT1A	MACHINE ROOM	GENERAL	Machine, worm gear, thrust bearing, brake, motors, sheaves, generator, controller, selector, governor, pump(s), valves, oil, access, lighting, ventilation, floor.
VT2A	CAR	GENERAL	Position indicator, lighting, floor, gate-doors, operation devices, safeties, safety shoe, light ray/detection, emergency light, fire fighter service, car top, door operator, stop switch, car frame, car guides, sheaves, phone, ventilation.
VT3A	HOISTWAY	GENERAL	Enclosure, fascia, interlock, doors, hangers, closers, sheaves, rails, hoistway switches, ropes, traveling cables, selector tape, weights, compensation.
VT4A	HALL FIXTURES	GENERAL	Operating panel, position indicator, hall buttons, lobby panel, hall lanterns, fire fighter service, audible signals, card/key access.
VT5A	PIT	GENERAL	Buffer(s), guards, sheaves, hydro packing, floor, lighting, safety controls.
VT6A	OPERATING CONDITIONS	GENERAL	Door open time, door close time, door thrust, acceleration, deceleration, leveling, dwell time, speed, OFR time, nudging.
VT7A	GENERAL	OTHER	General information/projects relating to vertical transportation system components.

FACILITY CONDITION ANALYSIS

SECTION 2

DETAILED PROJECT SUMMARIES
AND TOTALS

**Detailed Project Totals
 Facility Condition Analysis
 System Code by Priority Class
 FSSP : STEAM PLANT 14TH STREET**

System Code	System Description	Priority Classes				Subtotal
		1	2	3	4	
EL	ELECTRICAL	0	0	61,811	236,914	298,725
ES	EXTERIOR	0	0	94,765	0	94,765
HV	HVAC	0	0	0	170,533	170,533
IS	INTERIOR/FINISH SYS.	0	0	37,400	42,929	80,329
PL	PLUMBING	0	0	237,676	36,691	274,367
SI	SITE	0	0	45,516	0	45,516
	TOTALS	0	0	477,168	487,067	964,235

Facility Replacement Cost	\$4,049,915
Facility Condition Needs Index	0.24

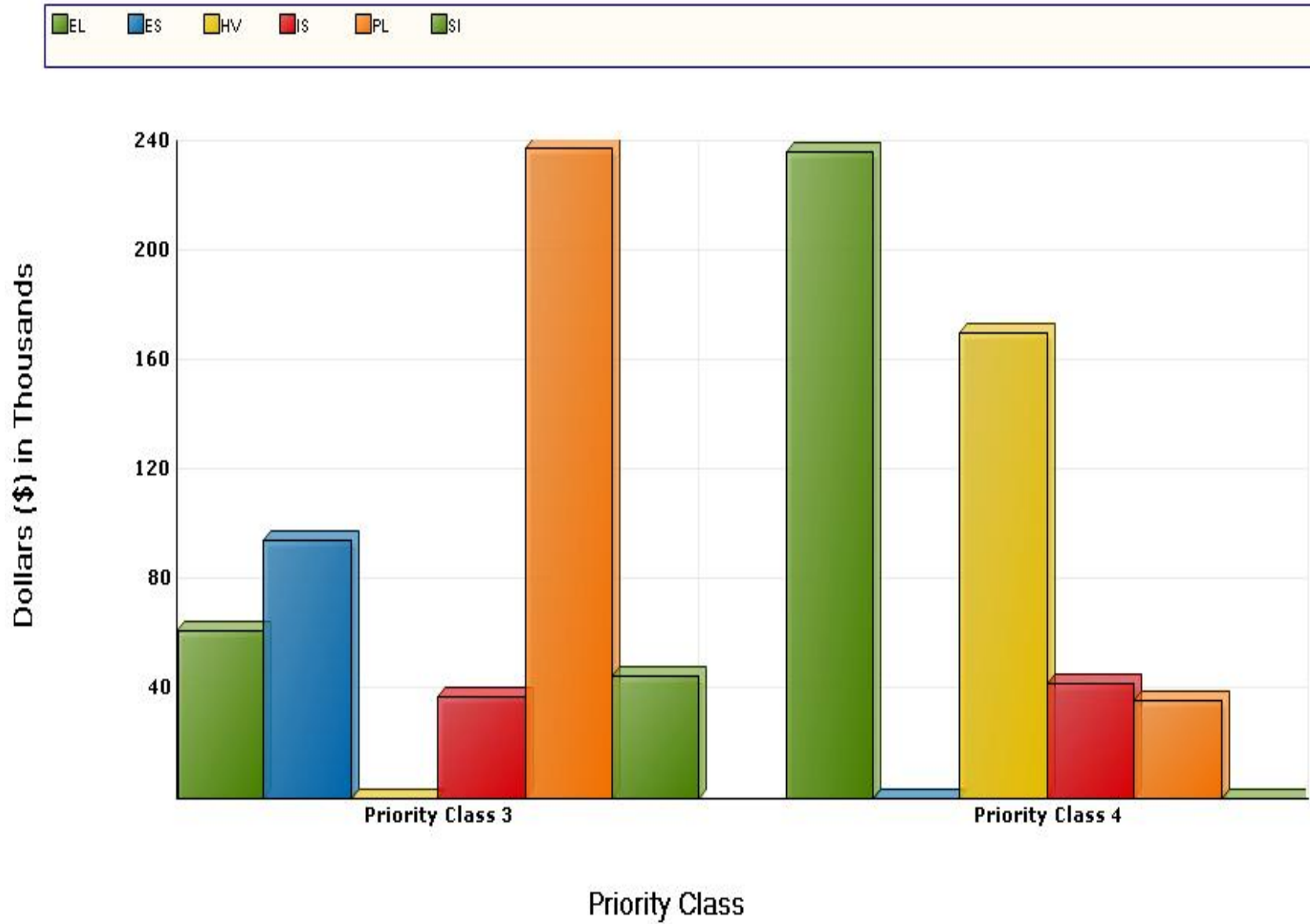
Gross Square Feet	16,914
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Total Cost Per Square Foot	\$57.01
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FACILITY CONDITION ANALYSIS

System Code by Priority Class

FSSP : STEAM PLANT 14TH STREET



**Detailed Project Totals
 Facility Condition Analysis
 System Code by Project Class
 FSSP : STEAM PLANT 14TH STREET**

System Code	System Description	Project Classes			Subtotal
		Capital Renewal	Deferred Maintenance	Plant Adaption	
EL	ELECTRICAL	298,725	0	0	298,725
ES	EXTERIOR	27,272	67,493	0	94,765
HV	HVAC	170,533	0	0	170,533
IS	INTERIOR/FINISH SYS.	42,929	37,400	0	80,329
PL	PLUMBING	36,691	237,676	0	274,367
SI	SITE	0	45,516	0	45,516
	TOTALS	576,150	388,085	0	964,235

Facility Replacement Cost	\$4,049,915
Facility Condition Needs Index	0.24

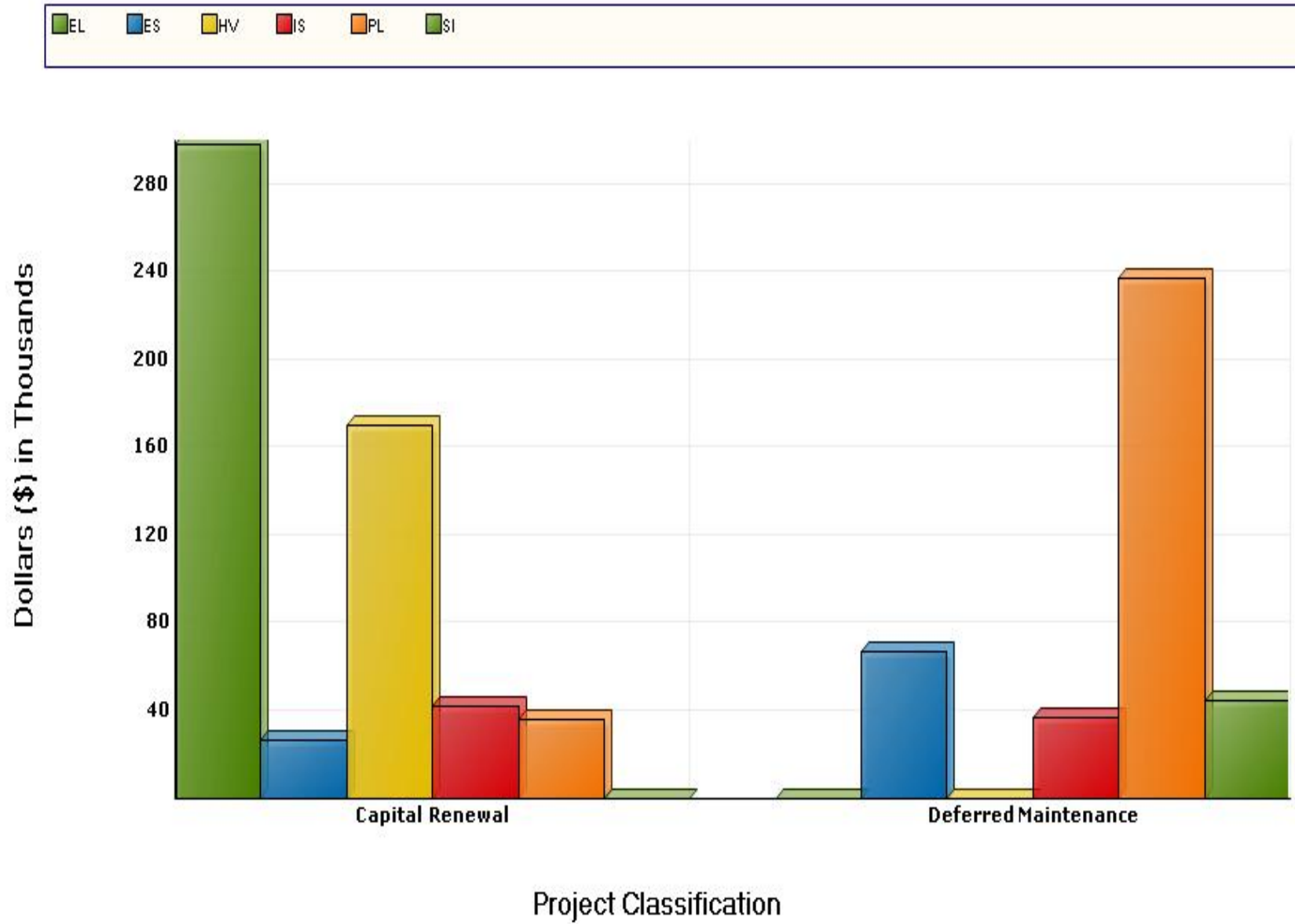
Gross Square Feet	16,914
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Total Cost Per Square Foot	\$57.01
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FACILITY CONDITION ANALYSIS

System Code by Project Class

FSSP : STEAM PLANT 14TH STREET



Detailed Project Summary
Facility Condition Analysis
Project Class by Priority Class
FSSP : STEAM PLANT 14TH STREET

Project Class	Priority Classes				Subtotal
	1	2	3	4	
Capital Renewal	0	0	89,082	487,067	576,150
Deferred Maintenance	0	0	388,085	0	388,085
TOTALS	0	0	477,168	487,067	964,235

Facility Replacement Cost	\$4,049,915
Facility Condition Needs Index	0.24

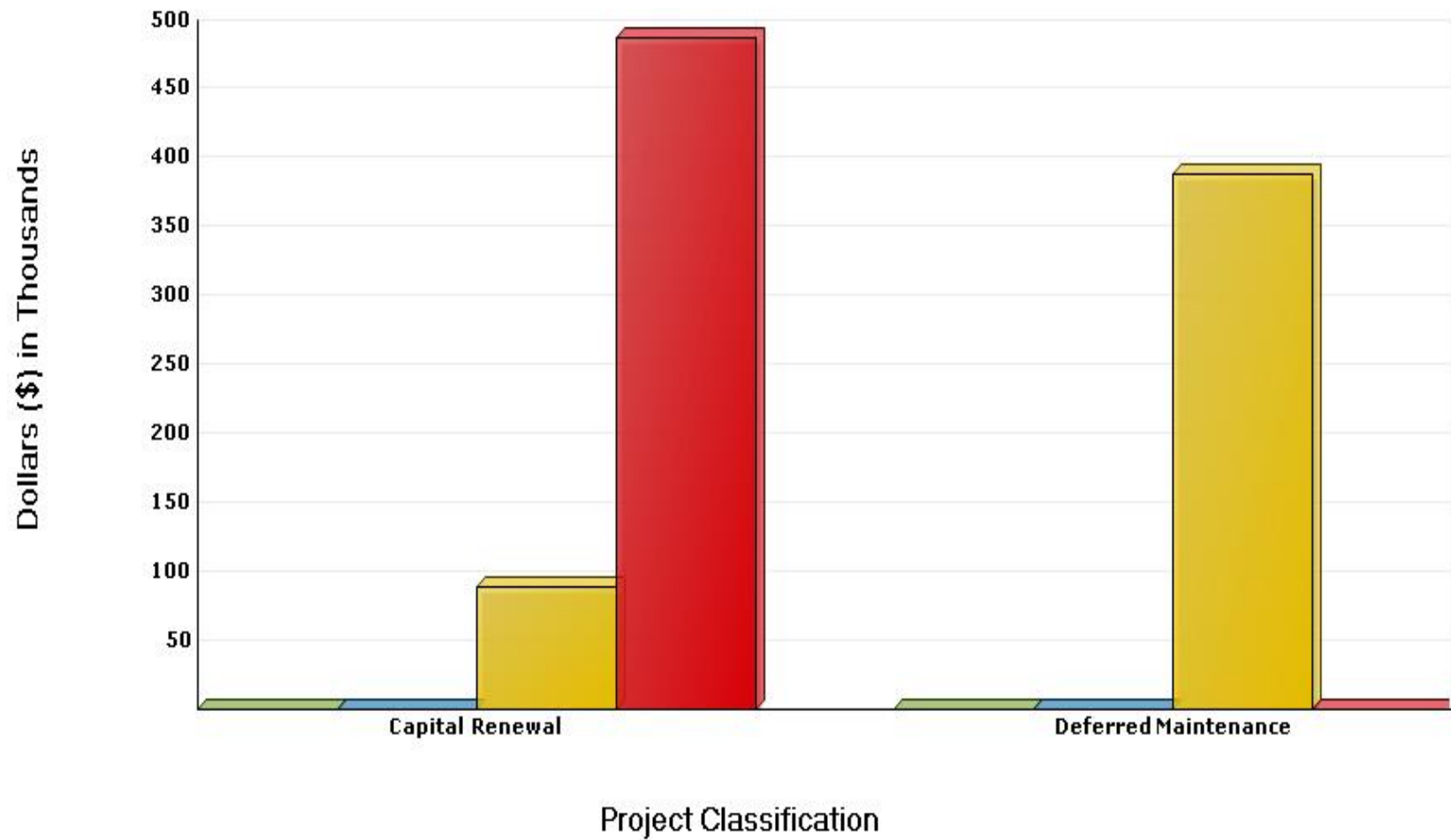
Gross Square Feet	16,914
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Total Cost Per Square Foot	\$57.01
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FACILITY CONDITION ANALYSIS

Project Class by Priority Class

FSSP : STEAM PLANT 14TH STREET



Detailed Project Summary
Facility Condition Analysis
Priority Class - Priority Sequence
FSSP : STEAM PLANT 14TH STREET

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
ES5A	FSSPES04	3	1	EXTERIOR DOOR REPLACEMENTS	40,265	6,442	46,708
ES2B	FSSPES01	3	2	RESTORE BRICK MASONRY VENEER	13,786	2,206	15,992
ES2B	FSSPES02	3	3	RESTORE ARCHITECTURAL CONCRETE PANELS	4,132	661	4,794
ES6E	FSSPES03	3	4	COMPRESSOR ROOM ADDITION	23,510	3,762	27,272
EL4B	FSSPEL02	3	5	INTERIOR LIGHTING UPGRADE	53,285	8,526	61,811
IS2B	FSSPIS01	3	6	REFINISH INTERIOR WALLS	3,703	593	4,296
IS4A	FSSPIS02	3	7	REPLACE INTERIOR DOORS	16,668	2,667	19,335
IS6B	FSSPIS03	3	8	REPLACE AND RENEW STANDARD CASEWORK	11,870	1,899	13,769
PL3A	FSSPPL02	3	9	REPLACE PROCESS AIR COMPRESSORS	204,893	32,783	237,676
SI1B	FSSPSI01	3	10	VEHICULAR PAVEMENT UPGRADES	39,238	6,278	45,516
Totals for Priority Class 3					411,352	65,816	477,168
HV3A	FSSPHV01	4	11	REPLACE SPLIT DX SYSTEMS	66,215	10,594	76,810
HV4B	FSSPHV02	4	12	EXHAUST FAN REPLACEMENT	80,796	12,927	93,724
EL2A	FSSPEL01	4	13	REPLACE ELECTRICAL DISTRIBUTION EQUIPMENT	55,103	8,816	63,919
EL3B	FSSPEL03	4	14	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	140,988	22,558	163,546
EL4A	FSSPEL04	4	15	EXTERIOR LIGHTING UPGRADE	8,146	1,303	9,449
IS6D	FSSPIS04	4	16	RESTROOM RENOVATION	37,008	5,921	42,929
PL1A	FSSPPL01	4	17	WATER SUPPLY PIPING REPLACEMENT	31,630	5,061	36,691
Totals for Priority Class 4					419,886	67,182	487,067
Grand Total:					831,237	132,998	964,235

Detailed Project Summary
Facility Condition Analysis
Project Cost Range
FSSP : STEAM PLANT 14TH STREET

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
EL4B	FSSPEL02	3	5	INTERIOR LIGHTING UPGRADE	53,285	8,526	61,811
ES2B	FSSPES01	3	2	RESTORE BRICK MASONRY VENEER	13,786	2,206	15,992
ES2B	FSSPES02	3	3	RESTORE ARCHITECTURAL CONCRETE PANELS	4,132	661	4,794
ES6E	FSSPES03	3	4	COMPRESSOR ROOM ADDITION	23,510	3,762	27,272
ES5A	FSSPES04	3	1	EXTERIOR DOOR REPLACEMENTS	40,265	6,442	46,708
IS2B	FSSPIS01	3	6	REFINISH INTERIOR WALLS	3,703	593	4,296
IS4A	FSSPIS02	3	7	REPLACE INTERIOR DOORS	16,668	2,667	19,335
IS6B	FSSPIS03	3	8	REPLACE AND RENEW STANDARD CASEWORK	11,870	1,899	13,769
SI1B	FSSPSI01	3	10	VEHICULAR PAVEMENT UPGRADES	39,238	6,278	45,516
Totals for Priority Class 3					206,458	33,033	239,492
HV3A	FSSPHV01	4	11	REPLACE SPLIT DX SYSTEMS	66,215	10,594	76,810
HV4B	FSSPHV02	4	12	EXHAUST FAN REPLACEMENT	80,796	12,927	93,724
EL2A	FSSPEL01	4	13	REPLACE ELECTRICAL DISTRIBUTION EQUIPMENT	55,103	8,816	63,919
EL4A	FSSPEL04	4	15	EXTERIOR LIGHTING UPGRADE	8,146	1,303	9,449
PL1A	FSSPPL01	4	17	WATER SUPPLY PIPING REPLACEMENT	31,630	5,061	36,691
IS6D	FSSPIS04	4	16	RESTROOM RENOVATION	37,008	5,921	42,929
Totals for Priority Class 4					278,898	44,624	323,521
Grand Totals for Projects < 100,000					485,356	77,657	563,013

Detailed Project Summary
Facility Condition Analysis
Project Cost Range
 FSSP : STEAM PLANT 14TH STREET

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
PL3A	FSSPPL02	3	9	REPLACE PROCESS AIR COMPRESSORS	204,893	32,783	237,676
Totals for Priority Class 3					204,893	32,783	237,676
EL3B	FSSPEL03	4	14	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	140,988	22,558	163,546
Totals for Priority Class 4					140,988	22,558	163,546
Grand Totals for Projects >= 100,000 and < 500,000					345,881	55,341	401,222
Grand Totals For All Projects:					831,237	132,998	964,235

Detailed Project Summary
Facility Condition Analysis
Project Classification
FSSP : STEAM PLANT 14TH STREET

Cat Code	Project Number	Pri. Seq.	Project Classification	Pri. Cls	Project Title	Total Cost
ES6E	FSSPES03	4	Capital Renewal	3	COMPRESSOR ROOM ADDITION	27,272
EL4B	FSSPEL02	5	Capital Renewal	3	INTERIOR LIGHTING UPGRADE	61,811
HV3A	FSSPHV01	11	Capital Renewal	4	REPLACE SPLIT DX SYSTEMS	76,810
HV4B	FSSPHV02	12	Capital Renewal	4	EXHAUST FAN REPLACEMENT	93,724
EL2A	FSSPEL01	13	Capital Renewal	4	REPLACE ELECTRICAL DISTRIBUTION EQUIPMENT	63,919
EL3B	FSSPEL03	14	Capital Renewal	4	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	163,546
EL4A	FSSPEL04	15	Capital Renewal	4	EXTERIOR LIGHTING UPGRADE	9,449
IS6D	FSSPIS04	16	Capital Renewal	4	RESTROOM RENOVATION	42,929
PL1A	FSSPPL01	17	Capital Renewal	4	WATER SUPPLY PIPING REPLACEMENT	36,691
Totals for Capital Renewal						576,150
ES5A	FSSPES04	1	Deferred Maintenance	3	EXTERIOR DOOR REPLACEMENTS	46,708
ES2B	FSSPES01	2	Deferred Maintenance	3	RESTORE BRICK MASONRY VENEER	15,992
ES2B	FSSPES02	3	Deferred Maintenance	3	RESTORE ARCHITECTURAL CONCRETE PANELS	4,794
IS2B	FSSPIS01	6	Deferred Maintenance	3	REFINISH INTERIOR WALLS	4,296
IS4A	FSSPIS02	7	Deferred Maintenance	3	REPLACE INTERIOR DOORS	19,335
IS6B	FSSPIS03	8	Deferred Maintenance	3	REPLACE AND RENEW STANDARD CASEWORK	13,769
PL3A	FSSPPL02	9	Deferred Maintenance	3	REPLACE PROCESS AIR COMPRESSORS	237,676
SI1B	FSSPSI01	10	Deferred Maintenance	3	VEHICULAR PAVEMENT UPGRADES	45,516
Totals for Deferred Maintenance						388,085
Grand Total:						964,235

Detailed Project Summary
Facility Condition Analysis
Energy Conservation
 FSSP : STEAM PLANT 14TH STREET

Cat Code	Project Number	Pri Cls	Pri Seq	Project Title	Total Cost	Annual Savings	Simple Payback
EL4B	FSSPEL02	3	5	INTERIOR LIGHTING UPGRADE	61,811	6,900	8.96
Totals for Priority Class 3					61,811	6,900	8.96
EL4A	FSSPEL04	4	15	EXTERIOR LIGHTING UPGRADE	9,449	850	11.12
Totals for Priority Class 4					9,449	850	11.12
Grand Total:					71,260	7,750	9.19

Detailed Project Summary
Facility Condition Analysis
Category/System Code
FSSP : STEAM PLANT 14TH STREET

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Total Cost
EL4B	FSSPEL02	3	5	INTERIOR LIGHTING UPGRADE	53,285	8,526	61,811
EL2A	FSSPEL01	4	13	REPLACE ELECTRICAL DISTRIBUTION EQUIPMENT	55,103	8,816	63,919
EL3B	FSSPEL03	4	14	UPGRADE ELECTRICAL DISTRIBUTION NETWORK	140,988	22,558	163,546
EL4A	FSSPEL04	4	15	EXTERIOR LIGHTING UPGRADE	8,146	1,303	9,449
Totals for System Code: ELECTRICAL					257,521	41,203	298,725
ES5A	FSSPES04	3	1	EXTERIOR DOOR REPLACEMENTS	40,265	6,442	46,708
ES2B	FSSPES01	3	2	RESTORE BRICK MASONRY VENEER	13,786	2,206	15,992
ES2B	FSSPES02	3	3	RESTORE ARCHITECTURAL CONCRETE PANELS	4,132	661	4,794
ES6E	FSSPES03	3	4	COMPRESSOR ROOM ADDITION	23,510	3,762	27,272
Totals for System Code: EXTERIOR					81,694	13,071	94,765
HV3A	FSSPHV01	4	11	REPLACE SPLIT DX SYSTEMS	66,215	10,594	76,810
HV4B	FSSPHV02	4	12	EXHAUST FAN REPLACEMENT	80,796	12,927	93,724
Totals for System Code: HVAC					147,011	23,522	170,533
IS2B	FSSPIS01	3	6	REFINISH INTERIOR WALLS	3,703	593	4,296
IS4A	FSSPIS02	3	7	REPLACE INTERIOR DOORS	16,668	2,667	19,335
IS6B	FSSPIS03	3	8	REPLACE AND RENEW STANDARD CASEWORK	11,870	1,899	13,769
IS6D	FSSPIS04	4	16	RESTROOM RENOVATION	37,008	5,921	42,929
Totals for System Code: INTERIOR/FINISH SYS.					69,249	11,080	80,329
PL3A	FSSPPL02	3	9	REPLACE PROCESS AIR COMPRESSORS	204,893	32,783	237,676
PL1A	FSSPPL01	4	17	WATER SUPPLY PIPING REPLACEMENT	31,630	5,061	36,691
Totals for System Code: PLUMBING					236,523	37,844	274,367
SI1B	FSSPSI01	3	10	VEHICULAR PAVEMENT UPGRADES	39,238	6,278	45,516
Totals for System Code: SITE					39,238	6,278	45,516
Grand Total:					831,237	132,998	964,235

FACILITY CONDITION ANALYSIS

SECTION 3

SPECIFIC PROJECT DETAILS
ILLUSTRATING DESCRIPTION / COST

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPES04	Title:	EXTERIOR DOOR REPLACEMENTS
Priority Sequence:	1		
Priority Class:	3		
Category Code:	ES5A	System:	EXTERIOR
		Component:	FENESTRATIONS
		Element:	DOORS
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/2/2009		
Project Location:	Building-wide: Floor(s) 1		

Project Description

Replacements are recommended for some of the exterior door systems. This project includes primary and secondary entrance and service doors. The replacement units should maintain the architectural design aspects of this facility and be modern, energy-efficient applications.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPES04

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	8	\$1,978	\$15,824	\$1,999	\$15,992	\$31,816
Low traffic door system	LEAF	5	\$1,031	\$5,155	\$1,250	\$6,250	\$11,405
Project Totals:				\$20,979		\$22,242	\$43,221

Material/Labor Cost		\$43,221
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$32,536</u>
General Contractor Mark Up at 20.0%	+	<u>\$6,507</u>
Inflation	+	<u>\$1,222</u>
Construction Cost		<u>\$40,265</u>
Professional Fees at 16.0%	+	<u>\$6,442</u>
Total Project Cost		<u>\$46,708</u>

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPES01	Title:	RESTORE BRICK MASONRY VENEER
Priority Sequence:	2		
Priority Class:	3		
Category Code:	ES2B	System:	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	FINISH
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/2/2009		
Project Location:	Building-wide: Floor(s) 1		

Project Description

Brick masonry veneer is the primary exterior finish, with lesser areas of painted metal siding and architectural concrete panels. While the brick masonry 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 for long-term performance.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPES01

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	8,140	\$0.11	\$895	\$0.22	\$1,791	\$2,686
Selective mortar and / or sealant repairs (assumes 10 linear feet for every 100 square feet of envelope)	LF	814	\$2.45	\$1,994	\$4.99	\$4,062	\$6,056
Applied finish or sealant	SF	8,140	\$0.22	\$1,791	\$0.82	\$6,675	\$8,466
Project Totals:				\$4,681		\$12,527	\$17,208

Material/Labor Cost		\$17,208
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$11,140
General Contractor Mark Up at 20.0%	+	\$2,228
Inflation	+	\$418
Construction Cost		\$13,786
Professional Fees at 16.0%	+	\$2,206
Total Project Cost		\$15,992

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPES02	Title:	RESTORE ARCHITECTURAL CONCRETE PANELS
Priority Sequence:	3		
Priority Class:	3		
Category Code:	ES2B	System:	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	FINISH
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/2/2009		
Project Location:	Building-wide: Floor(s) 1		

Project Description

The architectural concrete panels on the exterior facade have become visibly soiled, and the construction joints are failing. Cleaning, surface preparation, selective repairs, and applied finish upgrades are recommended to restore the aesthetics and integrity of the building envelope and long-term performance.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPES02

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	2,440	\$0.11	\$268	\$0.22	\$537	\$805
Selective mortar and / or sealant repairs (assumes 10 linear feet for every 100 square feet of envelope)	LF	244	\$2.45	\$598	\$4.99	\$1,218	\$1,815
Applied finish or sealant	SF	2,440	\$0.22	\$537	\$0.82	\$2,001	\$2,538
Project Totals:				\$1,403		\$3,755	\$5,158

Material/Labor Cost		\$5,158
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$3,339
General Contractor Mark Up at 20.0%	+	\$668
Inflation	+	\$125
Construction Cost		\$4,132
Professional Fees at 16.0%	+	\$661
Total Project Cost		\$4,794

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPES03	Title:	COMPRESSOR ROOM ADDITION
Priority Sequence:	4		
Priority Class:	3		
Category Code:	ES6E	System:	EXTERIOR
		Component:	GENERAL
		Element:	OTHER
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/2/2009		
Project Location:	Area Wide: Floor(s) 1		

Project Description

The compressor room enclosure located at the southwest corner of the main building is reportedly inadequate to support the amount of equipment needed for the current boiler equipment and control system. The removal of the existing shed enclosure and the addition of a larger framed structural steel and metal panel clad building addition is recommended in response to the need.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPES03

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Steel-framed, metal panel clad building addition	SF	400	\$27.58	\$11,032	\$38.44	\$15,376	\$26,408
Project Totals:				\$11,032		\$15,376	\$26,408

Material/Labor Cost		\$26,408
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$18,997
General Contractor Mark Up at 20.0%	+	\$3,799
Inflation	+	\$714
Construction Cost		\$23,510
Professional Fees at 16.0%	+	\$3,762
Total Project Cost		\$27,272

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPEL02	Title:	INTERIOR LIGHTING UPGRADE
Priority Sequence:	5		
Priority Class:	3		
Category Code:	EL4B	System:	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	INTERIOR LIGHTING
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Energy Conservation	\$6,900	
Code Application:	NEC	Articles 210, 410	
Project Class:	Capital Renewal		
Project Date:	9/28/2009		
Project Location:	Floor-wide: Floor(s) 1, B		

Project Description

An interior lighting upgrade is recommended. Replace existing aged and / or inefficient fluorescent 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
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPEL02

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	16,914	\$1.56	\$26,386	\$1.90	\$32,137	\$58,522
Project Totals:				\$26,386		\$32,137	\$58,522

Material/Labor Cost		\$58,522
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$43,057
General Contractor Mark Up at 20.0%	+	\$8,611
Inflation	+	\$1,617
Construction Cost		\$53,285
Professional Fees at 16.0%	+	\$8,526
Total Project Cost		\$61,811

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPIS01	Title:	REFINISH INTERIOR WALLS
Priority Sequence:	6		
Priority Class:	3		
Category Code:	IS2B	System:	INTERIOR/FINISH SYS.
		Component:	PARTITIONS
		Element:	FINISHES
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/2/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

Interior wall finish applications vary in age, type, and condition. 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
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPIS01

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	5,100	\$0.17	\$867	\$0.81	\$4,131	\$4,998
Project Totals:				\$867		\$4,131	\$4,998

Material/Labor Cost		\$4,998
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$2,992
General Contractor Mark Up at 20.0%	+	\$598
Inflation	+	\$112
Construction Cost		\$3,703
Professional Fees at 16.0%	+	\$593
Total Project Cost		\$4,296

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPIS02	Title:	REPLACE INTERIOR DOORS
Priority Sequence:	7		
Priority Class:	3		
Category Code:	IS4A	System:	INTERIOR/FINISH SYS.
		Component:	DOORS
		Element:	GENERAL
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/2/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

The condition of some of the interior door systems is such that door system replacements are recommended as part of a comprehensive renovation effort. Complete demolition of these failing existing door systems and replacement according to a code compliant plan to protect egress passages properly is recommended.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPIS02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Interior door and frame installation with all hardware and accessible signage	EA	12	\$370	\$4,440	\$396	\$4,752	\$9,192
Rated door and rated metal frame, including all hardware and accessible signage	EA	6	\$672	\$4,032	\$812	\$4,872	\$8,904
Project Totals:				\$8,472		\$9,624	\$18,096

Material/Labor Cost		\$18,096
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$13,468
General Contractor Mark Up at 20.0%	+	\$2,694
Inflation	+	\$506
Construction Cost		\$16,668
Professional Fees at 16.0%	+	\$2,667
Total Project Cost		\$19,335

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPIS03	Title:	REPLACE AND RENEW STANDARD CASEWORK
Priority Sequence:	8		
Priority Class:	3		
Category Code:	IS6B	System:	INTERIOR/FINISH SYS.
		Component:	GENERAL
		Element:	CABINETRY
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	10/2/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

Most of the casework, storage cabinets, and benches in the service shops date from the original construction. Partial renewal and replacements are recommended to maintain a high quality and effective service work area.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPIS03

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Base or wall cabinetry	LF	48	\$156	\$7,488	\$83.30	\$3,998	\$11,486
Project Totals:				\$7,488		\$3,998	\$11,486

Material/Labor Cost		\$11,486
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$9,592
General Contractor Mark Up at 20.0%	+	\$1,918
Inflation	+	\$360
Construction Cost		\$11,870
Professional Fees at 16.0%	+	\$1,899
Total Project Cost		\$13,769

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPPL02	Title:	REPLACE PROCESS AIR COMPRESSORS
Priority Sequence:	9		
Priority Class:	3		
Category Code:	PL3A	System:	PLUMBING
		Component:	SPECIAL SYSTEMS
		Element:	PROCESS GAS/FLUIDS
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Deferred Maintenance		
Project Date:	9/28/2009		
Project Location:	Item Only: Floor(s) 1		

Project Description

Building program processes are supported by the use of central compressed air systems. These units will require near-term replacement. Replace the compressors with modern, comparable units.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPPL02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Process air compressors with after-coolers, all connections, demolition, and disposal fees	HP	45	\$3,190	\$143,550	\$910	\$40,950	\$184,500
Project Totals:				\$143,550		\$40,950	\$184,500

Material/Labor Cost		\$184,500
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$165,562
General Contractor Mark Up at 20.0%	+	\$33,112
Inflation	+	\$6,219
Construction Cost		\$204,893
Professional Fees at 16.0%	+	\$32,783
Total Project Cost		\$237,676

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPSI01	Title:	VEHICULAR PAVEMENT UPGRADES
Priority Sequence:	10		
Priority Class:	3		
Category Code:	SI1B	System:	SITE
		Component:	ACCESS
		Element:	VEHICULAR
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG	502	
Project Class:	Deferred Maintenance		
Project Date:	10/2/2009		
Project Location:	Undefined: Floor(s) 1		

Project Description

Vehicular paving systems in service vehicle parking and service drives are in fair to poor condition and will need moderate upgrades to assure long-term performance and to prevent further damage.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPSI01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Vehicular paving sealcoat and striping allowance	SY	1,500	\$0.89	\$1,335	\$1.25	\$1,875	\$3,210
Vehicular paving wear course rehabilitation, sealcoat, and striping allowance	SY	2,256	\$7.91	\$17,845	\$3.79	\$8,550	\$26,395
Asphalt vehicular paving system replacement	SY	400	\$12.82	\$5,128	\$9.16	\$3,664	\$8,792
Project Totals:				\$24,308		\$14,089	\$38,397

Material/Labor Cost		\$38,397
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$31,706
General Contractor Mark Up at 20.0%	+	\$6,341
Inflation	+	\$1,191
Construction Cost		\$39,238
Professional Fees at 16.0%	+	\$6,278
Total Project Cost		\$45,516

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPHV01	Title:	REPLACE SPLIT DX SYSTEMS
Priority Sequence:	11		
Priority Class:	4		
Category Code:	HV3A	System:	HVAC
		Component:	HEATING/COOLING
		Element:	SYSTEM RETROFIT/REPLACE
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	ASHRAE	62-2004	
Project Class:	Capital Renewal		
Project Date:	9/28/2009		
Project Location:	Item Only: Floor(s) 1, R		

Project Description

Remove the existing split DX air conditioning systems, including condensing units, evaporator fan units, refrigeration piping, controls, and connections. Install new split DX systems of the latest energy-efficient design.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPHV01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace split DX air conditioning systems	TON	34	\$1,196	\$40,660	\$720	\$24,483	\$65,143
Project Totals:				\$40,660		\$24,483	\$65,143

Material/Labor Cost		\$65,143
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		<u>\$53,505</u>
General Contractor Mark Up at 20.0%	+	<u>\$10,701</u>
Inflation	+	<u>\$2,010</u>
Construction Cost		<u>\$66,215</u>
Professional Fees at 16.0%	+	<u>\$10,594</u>
Total Project Cost		<u>\$76,810</u>

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPHV02	Title:	EXHAUST FAN REPLACEMENT
Priority Sequence:	12		
Priority Class:	4		
Category Code:	HV4B	System:	HVAC
		Component:	AIR MOVING/VENTILATION
		Element:	EXHAUST FANS
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	ASHRAE	62-2004	
Project Class:	Capital Renewal		
Project Date:	9/28/2009		
Project Location:	Floor-wide: Floor(s) 1,R		

Project Description

The exhaust fans are recommended for replacement. The statistical life cycle for an exhaust fan is approximately twenty years. At or beyond this time, exhaust fans can incur high maintenance costs that justify replacement. Replace the existing fans with new units to include all electrical connections. Modify existing ductwork, as necessary, to accommodate the new fans.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPHV02

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace centrifugal roof exhauster (MEDIUM SIZE, belt-driven)	EA	12	\$1,350	\$16,200	\$1,300	\$15,600	\$31,800
Replace propeller exhaust fan (MEDIUM SIZE, belt-driven)	EA	3	\$810	\$2,430	\$350	\$1,050	\$3,480
Replace exhaust system ductwork	CFM	15,000	\$2.26	\$33,900	\$0.50	\$7,500	\$41,400
Project Totals:				\$52,530		\$24,150	\$76,680

Material/Labor Cost		\$76,702
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$65,287
General Contractor Mark Up at 20.0%	+	\$13,057
Inflation	+	\$2,452
Construction Cost		\$80,796
Professional Fees at 16.0%	+	\$12,927
Total Project Cost		\$93,724

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPEL01	Title:	REPLACE ELECTRICAL DISTRIBUTION EQUIPMENT
Priority Sequence:	13		
Priority Class:	4		
Category Code:	EL2A	System:	ELECTRICAL
		Component:	MAIN DISTRIBUTION PANELS
		Element:	CONDITION UPGRADE
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	NEC	Article 230	
Project Class:	Capital Renewal		
Project Date:	9/28/2009		
Project Location:	Room Only: Floor(s) 1		

Project Description

The main electrical distribution equipment components are recommended for replacement. This includes the 277/480 volt switchgear, secondary transformer, and 120/208 volt switchgear. The existing aged circuit breakers could serve as fire hazards due to their inability to interrupt a circuit in an overload or short circuit condition. The switchgear should be replaced in its entirety. Main switchgear components should include ground fault main circuit breaker, digital metering for remote monitoring and control, and transient surge protection. Replace the secondary transformer as well. Issues related to transformer failure include high replacement cost for burned-out motors associated with phase loss, loss of computer data, and loss in productivity due to unavailable power.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPEL01

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
120/208 volt switchgear, including switchboard, circuit breakers, feeders, digital metering, transient surge protector, and demolition of existing equipment	AMP	800	\$15.52	\$12,416	\$13.01	\$10,408	\$22,824
277/480 volt switchgear, including switchboard, circuit breakers, feeders, digital metering, transient surge protector, and demolition of existing equipment	AMP	800	\$18.62	\$14,896	\$15.61	\$12,488	\$27,384
112.5 dry-type transformer (277/480 volt primary, 120/208 volt secondary), connections, and demolition of existing equipment	EA	1	\$4,720	\$4,720	\$1,020	\$1,020	\$5,740
Project Totals:				\$32,032		\$23,916	\$55,948

Material/Labor Cost		\$55,948
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$44,525
General Contractor Mark Up at 20.0%	+	\$8,905
Inflation	+	\$1,672
Construction Cost		\$55,103
Professional Fees at 16.0%	+	\$8,816
Total Project Cost		\$63,919

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPEL03	Title:	UPGRADE ELECTRICAL DISTRIBUTION NETWORK
Priority Sequence:	14		
Priority Class:	4		
Category Code:	EL3B	System:	ELECTRICAL
		Component:	SECONDARY DISTRIBUTION
		Element:	DISTRIBUTION NETWORK
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	NEC	Articles 110, 210, 220, 230	
Project Class:	Capital Renewal		
Project Date:	9/28/2009		
Project Location:	Floor-wide: Floor(s) 1, B		

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 ground fault circuit interrupter (GFCI) protection where required, and clearly label all panels for circuit identification.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPEL03

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	16,914	\$3.79	\$64,104	\$5.69	\$96,241	\$160,345
Project Totals:				\$64,104		\$96,241	\$160,345

Material/Labor Cost		\$160,345
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$113,924
General Contractor Mark Up at 20.0%	+	\$22,785
Inflation	+	\$4,279
Construction Cost		\$140,988
Professional Fees at 16.0%	+	\$22,558
Total Project Cost		\$163,546

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPEL04	Title:	EXTERIOR LIGHTING UPGRADE
Priority Sequence:	15		
Priority Class:	4		
Category Code:	EL4A	System:	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	EXTERIOR LIGHTING
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Energy Conservation	\$850	
Code Application:	NEC	410	
Project Class:	Capital Renewal		
Project Date:	9/28/2009		
Project Location:	Floor-wide: Floor(s) 1		

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
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPEL04

Task Cost Estimate

Task Description	Unit	Qty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
HID wall-mount fixture and demolition of existing fixture	EA	13	\$406	\$5,278	\$190	\$2,470	\$7,748
Project Totals:				\$5,278		\$2,470	\$7,748

Material/Labor Cost		\$7,748
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$6,582
General Contractor Mark Up at 20.0%	+	\$1,316
Inflation	+	\$247
Construction Cost		\$8,146
Professional Fees at 16.0%	+	\$1,303
Total Project Cost		\$9,449

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPIS04	Title:	RESTROOM RENOVATION
Priority Sequence:	16		
Priority Class:	4		
Category Code:	IS6D	System:	INTERIOR/FINISH SYS.
		Component:	GENERAL
		Element:	OTHER
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		
Project Class:	Capital Renewal		
Project Date:	10/2/2009		
Project Location:	Floor-wide: Floor(s) 1		

Project Description

The employee restroom fixtures and finishes are mostly original to the year of construction or latest renovation. The fixtures are sound but aged and inefficient, and the finishes are outdated. A comprehensive restroom renovation, including new fixtures, finishes, partitions, accessories, and a new dual level drinking fountain, is recommended.

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPIS04

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	10	\$1,969	\$19,690	\$1,699	\$16,990	\$36,680
Dual level drinking fountain	EA	1	\$1,168	\$1,168	\$359	\$359	\$1,527
Project Totals:				\$20,858		\$17,349	\$38,207

Material/Labor Cost		\$38,207
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$29,904
General Contractor Mark Up at 20.0%	+	\$5,981
Inflation	+	\$1,123
Construction Cost		\$37,008
Professional Fees at 16.0%	+	\$5,921
Total Project Cost		\$42,929

Specific Project Details
Facility Condition Analysis
Section Three
FSSP : STEAM PLANT 14TH STREET

Project Description

Project Number:	FSSPPL01	Title:	WATER SUPPLY PIPING REPLACEMENT
Priority Sequence:	17		
Priority Class:	4		
Category Code:	PL1A	System:	PLUMBING
		Component:	DOMESTIC WATER
		Element:	PIPING NETWORK
Building Code:	FSSP		
Building Name:	STEAM PLANT 14TH STREET		
Subclass/Savings:	Not Applicable		
Code Application:	IPC	Chapter 6	
Project Class:	Capital Renewal		
Project Date:	9/28/2009		
Project Location:	Floor-wide: Floor(s) 1, B		

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
FSSP : STEAM PLANT 14TH STREET

Project Cost

Project Number: FSSPPL01

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	16,914	\$0.66	\$11,163	\$1.65	\$27,908	\$39,071
Project Totals:				\$11,163		\$27,908	\$39,071

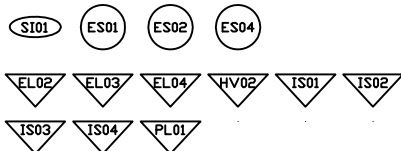
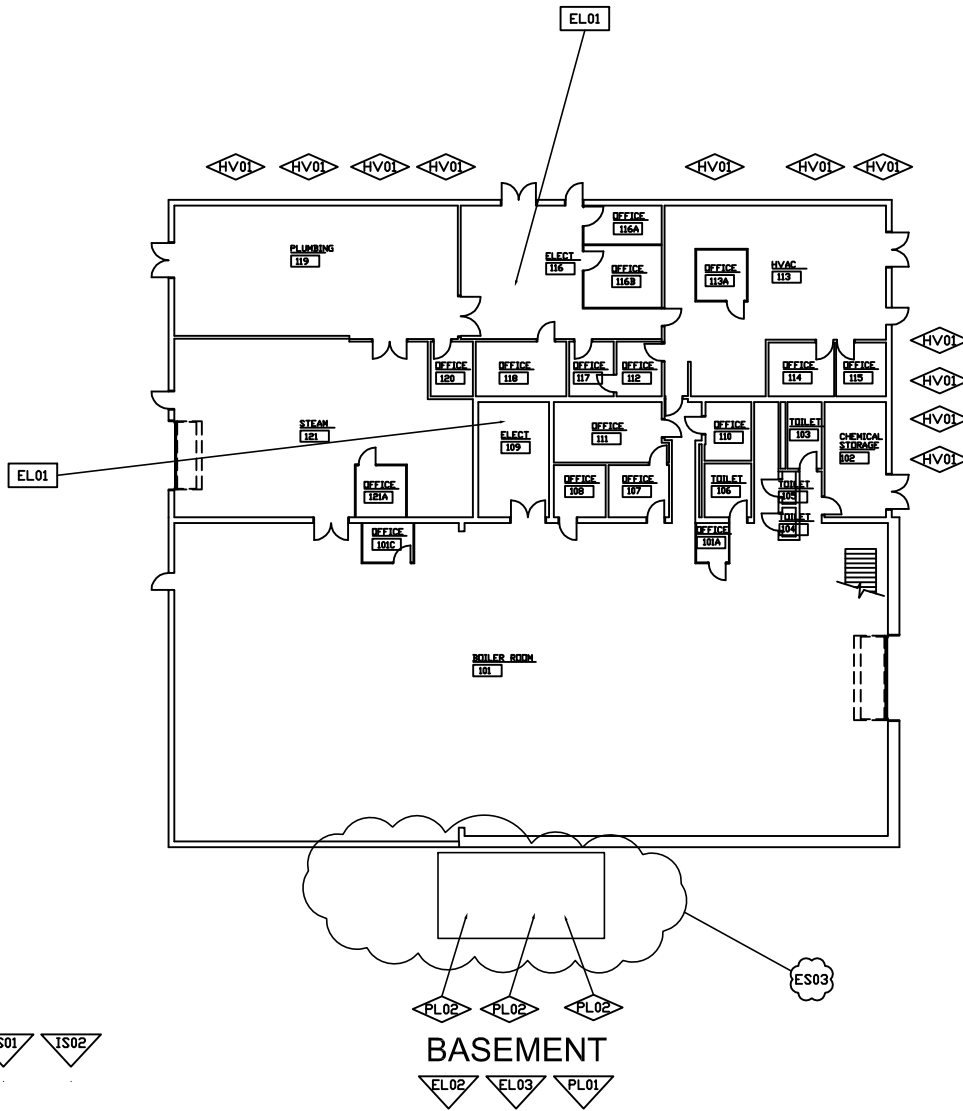
Material/Labor Cost		\$39,071
Material Index		100.7%
Labor Index		51.3%
Material/Labor Indexed Cost		\$25,558
General Contractor Mark Up at 20.0%	+	\$5,112
Inflation	+	\$960
Construction Cost		\$31,630
Professional Fees at 16.0%	+	\$5,061
Total Project Cost		\$36,691

FACILITY CONDITION ANALYSIS

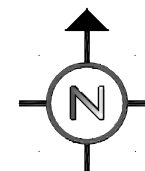
SECTION 4

**DRAWINGS
AND PROJECT LOCATIONS**

ROOF



BASEMENT



STEAM PLANT
14TH STREET

BLDG NO. FSSP



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: 12/07/09

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
FSSP : STEAM PLANT 14TH STREET

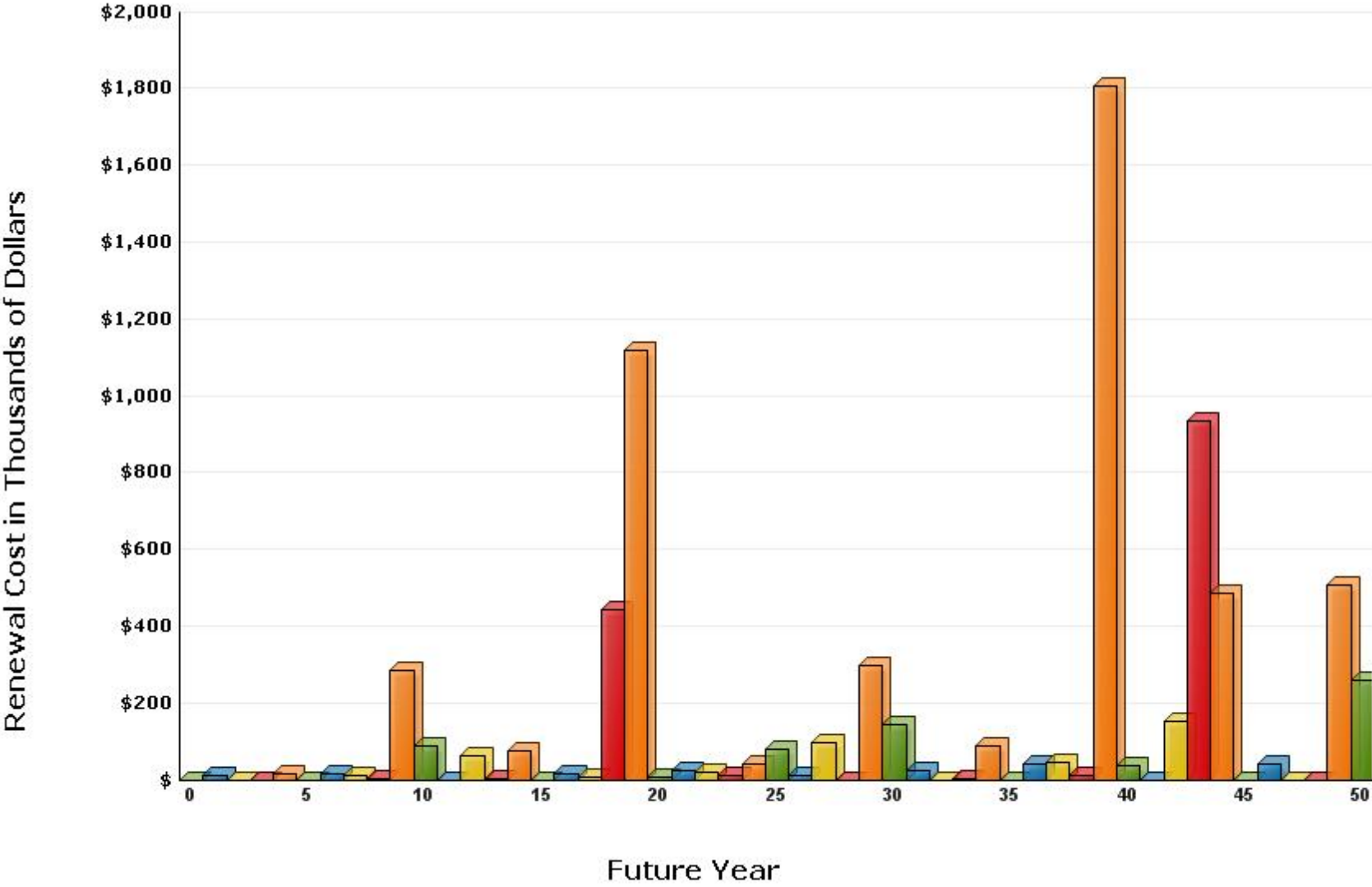
Unifomat Code	Component Description	Qty	Units	Unit Cost	Complex Adj	Total Cost	Install Date	Life Exp
B2010	EXTERIOR FINISH RENEWAL	2,440	SF	\$1.30		\$3,181	1968	10
B2010	EXTERIOR FINISH RENEWAL	8,140	SF	\$1.30	.31	\$3,289	1968	10
B2010	PAINTED METAL SIDING	5,700	SF	\$7.36		\$41,955	1988	35
B2030	OVERHEAD GARAGE DOOR	2	EA	\$7,425.74	1.25	\$18,564	1998	30
B2030	HIGH TRAFFIC EXTERIOR DOOR SYSTEM	8	LEAF	\$4,311.24		\$34,490	1998	20
B2030	LOW TRAFFIC EXTERIOR DOOR SYSTEM	5	LEAF	\$2,863.29		\$14,316	1968	40
B3010	BUILT-UP ROOF	9,130	SF	\$6.70		\$61,195	2008	20
B3010	BUILT-UP ROOF	7,770	SF	\$6.70		\$52,079	1999	20
C1020	STANDARD DOOR AND FRAME INCLUDING HARDWARE	12	LEAF	\$783.68		\$9,404	1968	35
C1020	STANDARD DOOR AND FRAME INCLUDING HARDWARE	8	LEAF	\$783.68		\$6,269	2000	35
C1020	RATED DOOR AND FRAME INCLUDING HARDWARE	6	LEAF	\$1,489.06		\$8,934	1968	35
C1020	INTERIOR DOOR HARDWARE	6	EA	\$423.04		\$2,538	1968	15
C1020	INTERIOR DOOR HARDWARE	12	EA	\$423.04		\$5,077	1968	15
C1020	INTERIOR DOOR HARDWARE	8	EA	\$423.04		\$3,384	2000	15
C3010	STANDARD WALL FINISH (PAINT, WALL COVERING, ETC.)	5,100	SF	\$0.80		\$4,085	1968	10
D2010	PLUMBING FIXTURES - SHOPS / TRADES	16,914	SF	\$2.90	.4	\$19,648	1968	35
D2010	PLUMBING FIXTURES - SHOPS / TRADES	16,914	SF	\$2.90	.6	\$29,472	1999	35
D2020	WATER PIPING - SHOPS / TRADES	16,914	SF	\$2.08		\$35,109	1968	35
D2020	WATER HEATER (RES., ELEC.)	80	GAL	\$47.95		\$3,836	1999	10
D2030	DRAIN PIPING - SHOPS / TRADES	16,914	SF	\$3.15		\$53,247	1968	40
D2050	AIR COMPRESSOR PACKAGE (AVERAGE SIZE)	3	SYS	\$6,456.49		\$19,369	1968	25
D2050	MED / LAB AIR COMPRESSOR SYS. INC. DRYER	15	HP	\$5,013.71		\$75,206	1968	20
D2050	MED / LAB AIR COMPRESSOR SYS. INC. DRYER	15	HP	\$5,013.71		\$75,206	1968	20
D2050	MED / LAB AIR COMPRESSOR SYS. INC. DRYER	15	HP	\$5,013.71		\$75,206	1968	20
D3020	HEATING SYSTEM, STEAM OR HYDRONIC	16,914	SF	\$7.30		\$123,504	1968	25
D3040	CONDENSATE RECEIVER	1	SYS	\$9,504.01		\$9,504	1968	15
D3040	EXHAUST FAN - CENTRIFUGAL ROOF EXHAUSTER OR SIMILAR	12	EA	\$2,768.62		\$33,223	1968	20
D3040	EXHAUST FAN - PROPELLER TYPE OR SIMILAR	3	EA	\$1,357.34		\$4,072	1968	20
D3050	SPLIT DX SYSTEM	5	TON	\$2,143.89		\$10,719	1985	15

**Life Cycle Model
Building Component Summary
FSSP : STEAM PLANT 14TH STREET**

Unifomat Code	Component Description	Qty	Units	Unit Cost	Complex Adj	Total Cost	Install Date	Life Exp
D3050	SPLIT DX SYSTEM	5	TON	\$2,143.89		\$10,719	1986	15
D3050	SPLIT DX SYSTEM	5	TON	\$2,143.89		\$10,719	1995	15
D3050	SPLIT DX SYSTEM	3	TON	\$2,143.89		\$6,432	1998	15
D3050	SPLIT DX SYSTEM	2	TON	\$2,143.89		\$4,288	2002	15
D3050	SPLIT DX SYSTEM	10	TON	\$2,143.89		\$21,439	2003	15
D3050	SPLIT DX SYSTEM	4	TON	\$2,143.89		\$8,576	2004	15
D3050	THRU-WALL AC UNIT	1	TON	\$1,528.27		\$1,528	2002	10
D5010	ELECTRICAL SYSTEM - SHOPS / TRADES	16,914	SF	\$8.72	.9	\$132,742	1968	50
D5010	ELECTRICAL SWITCHGEAR 120/208V	800	AMP	\$32.96		\$26,371	1968	20
D5010	ELECTRICAL SWITCHGEAR 277/480V	800	AMP	\$39.56		\$31,651	1968	20
D5020	EMERGENCY LIGHT (BATTERY)	16	EA	\$283.62		\$4,538	2006	20
D5020	EXIT SIGNS (CENTRAL POWER)	20	EA	\$163.78		\$3,276	1999	20
D5020	EXTERIOR LIGHT (HID)	13	EA	\$689.58		\$8,965	1968	20
D5020	LIGHTING - SHOPS / TRADES	2,537	SF	\$2.80		\$7,102	1968	20
D5020	LIGHTING - SHOPS / TRADES	14,377	SF	\$2.80		\$40,245	1968	20
D5030	FIRE ALARM SYSTEM, POINT ADDRESSABLE	16,914	SF	\$2.61		\$44,223	2006	15
D5040	GENERATOR, DIESEL (OVER 500KW)	750	KW	\$348.71		\$261,530	2002	25
E2010	STANDARD BASE OR WALL CABINETRY	120	LF	\$272.50		<u>\$32,700</u>	1968	20
						\$1,493,129		

Life Cycle Model Expenditure Projections

FSSP : STEAM PLANT 14TH STREET



Average Annual Renewal Cost Per SqFt \$3.52

FACILITY CONDITION ANALYSIS

SECTION 6

PHOTOGRAPHIC LOG

**Photo Log - Facility Condition
Analysis
FSSP : STEAM PLANT 14TH STREET**

Photo ID No	Description	Location	Date
FSSP001a	Main site entrance	North elevation	9/18/2009
FSSP001e	Fan-powered ventilator	Boiler room roof	9/18/2009
FSSP002a	Rust staining from metal boiler stacks	Upper roof	9/18/2009
FSSP002e	Fan-powered ventilator	Boiler room roof	9/18/2009
FSSP003a	Built-up roofing membrane system	Upper roof	9/18/2009
FSSP003e	General view of boiler room roof area	Boiler room roof	9/18/2009
FSSP004a	Built-up roofing membrane system	Upper roof	9/18/2009
FSSP004e	General view of boiler room roof area	Boiler room roof	9/18/2009
FSSP005a	Built-up roofing membrane system	Lower roof	9/18/2009
FSSP005e	Fuel tanks	Southeast end of plant	9/18/2009
FSSP006a	Built-up roofing membrane system and staining from standing water	Lower roof	9/18/2009
FSSP006e	Shops area roof equipment	Southeast end of plant	9/18/2009
FSSP007a	Built-up roofing membrane system and staining from standing water	Lower roof	9/18/2009
FSSP007e	Shops area roof equipment	Central area	9/18/2009
FSSP008a	U/G fuel station	Site southwest	9/18/2009
FSSP008e	Shops area roof equipment	Central and northwest area	9/18/2009
FSSP009a	Metal clad piping penthouse	Upper roof	9/18/2009
FSSP009e	Typical HID fixture	Boiler room	9/18/2009
FSSP010a	Building facade with brick masonry and concrete	North elevation	9/18/2009
FSSP010e	Utility sink showing vacuum break attached	Restroom area corridor	9/18/2009
FSSP011a	Building facade with brick masonry and concrete	North elevation	9/18/2009
FSSP011e	Typical industrial fluorescent fixture and horn strobe	Restroom area corridor	9/18/2009
FSSP012a	Building facade with brick masonry and concrete	West elevation	9/18/2009
FSSP012e	One of eight steam unit heaters (2008)	Boiler room	9/18/2009
FSSP013a	Building facade with brick masonry and concrete	South elevation	9/18/2009
FSSP013e	New Square D panel LB	Boiler room outside office 107	9/18/2009
FSSP014a	Building facade with brick masonry and concrete	North elevation	9/18/2009
FSSP014e	Typical emergency egress light	Boiler room	9/18/2009
FSSP015a	Generator and above-ground fuel tank	South exterior building wall	9/18/2009
FSSP015e	Typical emergency egress light	Boiler room	9/18/2009
FSSP016a	Inadequate compressor room enclosure	South exterior building wall	9/18/2009
FSSP016e	Split system air handler and unit heater	Steam shop	9/18/2009

**Photo Log - Facility Condition
Analysis
FSSP : STEAM PLANT 14TH STREET**

Photo ID No	Description	Location	Date
FSSP017a	Building facade with brick masonry and concrete	South elevation	9/18/2009
FSSP017e	Split system air handler	Boiler room near basement stairs	9/18/2009
FSSP018a	Generator and above-ground fuel tank	South exterior building wall	9/18/2009
FSSP018e	Split system condensing units	End of building near northeast corner	9/18/2009
FSSP019a	Building facade with brick masonry and concrete	East elevation	9/18/2009
FSSP019e	5 ton Trane condensing unit	Front of building near northeast corner	9/18/2009
FSSP020a	Metal clad piping penthouse	East elevation	9/18/2009
FSSP020e	11,800 BTUH ductless split system condensing unit	Front of building near northeast corner	9/18/2009
FSSP021a	Building facade with brick masonry and concrete	South elevation	9/18/2009
FSSP021e	11,800 BTUH ductless split system condensing unit	Front of building near northeast corner	9/18/2009
FSSP022a	Large wall louver	North elevation	9/18/2009
FSSP022e	1986 model 5 ton Trane condensing unit	Front of building toward northwest corner	9/18/2009
FSSP023a	Boiler bay addition	West elevation	9/18/2009
FSSP023e	1998 3 ton Concorde condensing unit	Front of building toward northwest corner	9/18/2009
FSSP024a	Building facade with brick masonry and concrete	West elevation	9/18/2009
FSSP024e	1985 model 5 ton Trane condensing unit	Front of building toward northwest corner	9/18/2009
FSSP025a	Failing panel and joint sealants	North elevation	9/18/2009
FSSP025e	2003 model 10 ton Trane condensing unit	Front of building toward northwest corner	9/18/2009
FSSP026a	Failing panel and joint sealants	North elevation	9/18/2009
FSSP027a	Typical exterior entry door	East elevation	9/18/2009
FSSP028a	Deteriorating service doors	Exterior door	9/18/2009
FSSP029a	Deteriorating service doors	Exterior door	9/18/2009
FSSP030a	Overview of boiler bay	Interior	9/18/2009
FSSP031a	Overview of boiler bay	Interior	9/18/2009
FSSP032a	Chemical storage room	Interior	9/18/2009
FSSP033a	Staff break room	Interior	9/18/2009
FSSP034a	Older interior doors and hardware	Interior	9/18/2009
FSSP035a	Electrical shop	Interior	9/18/2009

**Photo Log - Facility Condition
Analysis
FSSP : STEAM PLANT 14TH STREET**

Photo ID No	Description	Location	Date
FSSP036a	Plumbing shop	Interior	9/18/2009
FSSP037a	Failing asphalt overlay	Service drive	9/18/2009
FSSP038a	Failing asphalt overlay	Service drive	9/18/2009
FSSP039a	Failing asphalt overlay	Service vehicle parking	9/18/2009
FSSP040a	Natural gas meter	Site south	9/18/2009
FSSP041a	Fenced service vehicle parking and fuel depot	Site south	9/18/2009
FSSP042a	Fenced service vehicle parking	Site west	9/18/2009
FSSP043a	Fenced service vehicle parking, two level	Site west	9/18/2009
FSSP044a	Fenced service vehicle parking, two level	Site west	9/18/2009
FSSP045a	Fuel depot for plant boilers in containment basin	Site east	9/18/2009

Facility Condition Analysis - Photo Log



FSSP001A.jpg



FSSP001E.jpg



FSSP002A.jpg



FSSP002E.jpg



FSSP003A.jpg



FSSP003E.jpg



FSSP004A.jpg



FSSP004E.jpg



FSSP005A.jpg



FSSP005E.jpg



FSSP006A.jpg



FSSP006E.jpg



FSSP007A.jpg



FSSP007E.jpg



FSSP008A.jpg



FSSP008E.jpg



FSSP009A.jpg



FSSP009E.jpg



FSSP010A.jpg



FSSP010E.jpg

Facility Condition Analysis - Photo Log



FSSP011A.jpg



FSSP011E.jpg



FSSP012A.jpg



FSSP012E.jpg



FSSP013A.jpg



FSSP013E.jpg



FSSP014A.jpg



FSSP014E.jpg



FSSP015A.jpg



FSSP015E.jpg



FSSP016A.jpg



FSSP016E.jpg



FSSP017A.jpg



FSSP017E.jpg



FSSP018A.jpg



FSSP018E.jpg



FSSP019A.jpg



FSSP019E.jpg



FSSP020A.jpg



FSSP020E.jpg

Facility Condition Analysis - Photo Log



FSSP021A.jpg



FSSP021E.jpg



FSSP022A.jpg



FSSP022E.jpg



FSSP023A.jpg



FSSP023E.jpg



FSSP024A.jpg



FSSP024E.jpg



FSSP025A.jpg



FSSP025E.jpg



FSSP026A.jpg



FSSP027A.jpg



FSSP028A.jpg



FSSP029A.jpg



FSSP030A.jpg



FSSP031A.jpg



FSSP032A.jpg



FSSP033A.jpg



FSSP034A.jpg



FSSP035A.jpg

Facility Condition Analysis - Photo Log



FSSP036A.jpg



FSSP037A.jpg



FSSP038A.jpg



FSSP039A.jpg



FSSP040A.jpg



FSSP041A.jpg



FSSP042A.jpg



FSSP043A.jpg



FSSP044A.jpg



FSSP045A.jpg