PENNSTATE

Office of Physical Plant

The Pennsylvania State University
Physical Plant Building
University Park, PA 16802-1118

DATE: March 2, 2012

SUBJECT: Mueller and Whitmore Laboratories Renovation,
University Park

TO: Short Listed Firms

Goody Clancy
Payette
Stantec

I am pleased to inform you that the above listed firms have been chosen to be interviewed by the Screening Committee in anticipation of selecting a team for appointment by the Board of Trustees.

Interviews will be conducted at The Penn Stater Conference Center, University Park on Monday, March 12, 2012. The interview schedule is as follows:

Goody Clancy	9:20 A.M. – 10:20 A.M. Room 104
Payette	10:30 A.M. – 11:30 A.M. Room 102
Stantec	12:15 P.M. – 1:15 P.M. Room 102

Each firm will be limited to no more than 40 minutes for their presentation allowing us 20 minutes for follow-up questions. I urge you to use the time wisely and refrain from simply repeating the material already submitted in your proposal. We are most interested in your approach to our specific project, your understanding of the key issues that will shape it and any initial broad ideas or concepts that you may have developed during this process. To help you assemble your presentation, enclosed you will find building plans and the latest condition report. It is most important to us that the key team members assigned to this project and any major consultants be present for the interview; however, please limit the number of team attendees to five. A projection screen will be provided for your use.

In the event that your firm is selected, we will show the Board of Trustees examples representative of your work; with this in mind, we require that you submit to us photographs in digital format no later than 12:00 noon on Monday March 12, 2012. Requirements for the photographs are described in the attached sheet. It is important that the photographs be representative of the type of project and function that we are addressing. In addition, I have also included a diagram of the interview room.

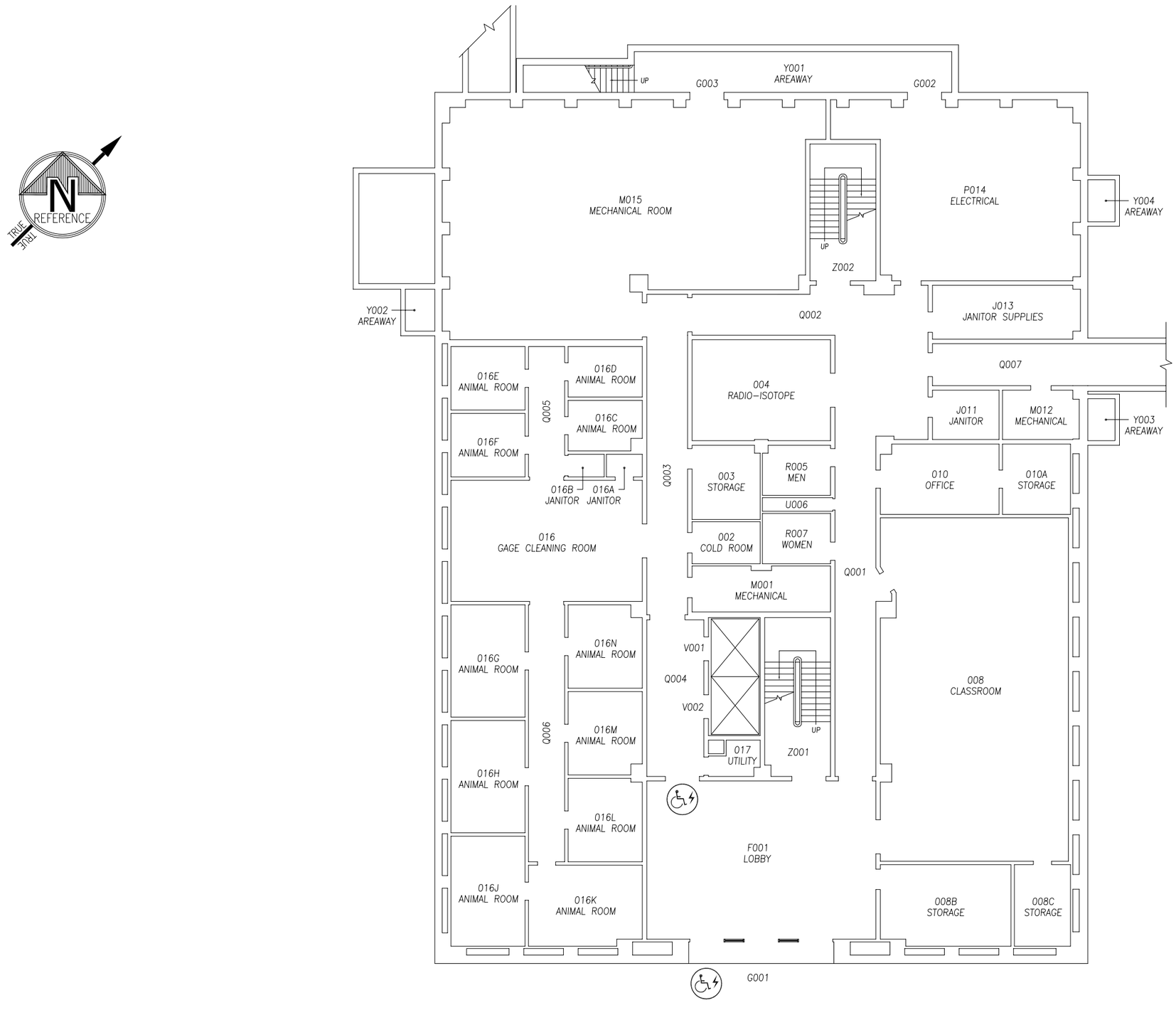
The result of the interviews will be announced at the Board of Trustees meeting on Friday March 16, 2012 and posted to our website.

Please do not hesitate to call me if we can be of further assistance.

Sincerely,

David Zehngut
University Architect
(814) 863-3158, fax (814) 863-7757,
E-mail dxz3@psu.edu

Enclosures



MUELLER LABORATORY

PSU BUILDING NAME

GROUND FLOOR PLAN

BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA

PSU CAMPUS LOCATION

PENNSTATE

FACILITIES RESOURCES AND PLANNING

THE PENNSYLVANIA STATE UNIVERSITY
BENEDICT HOUSE
UNIVERSITY PARK, PA 16802

OFFICE: 814.865.1595 FAX: 814.865.1610 www.facilities.psu.edu

SCALE 0 8' 16' 32' / 4' 12'

06/01/95
CREATION DATE

08/04/10
REVISED DATE

Campus block plans are for referential use only. Drawings are not to be used for architectural engineering purposes.

0409-000
BUILDING NUMBER

1 OF 8
SHEET NUMBER

GD
FLOOR LEVEL

MUELLER LABORATORY
PSU BUILDING NAME

FIRST FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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SCALE 0 4' 8' 12' 16' 32'

06/01/95
CREATION DATE
08/04/10
REVISED DATE

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0409-000
BUILDING NUMBER

2 OF 8
SHEET NUMBER

1
FLOOR LEVEL

MUELLER LABORATORY

PSU BUILDING NAME

SECOND FLOOR PLAN

BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA

PSU CAMPUS LOCATION

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REVISED DATE

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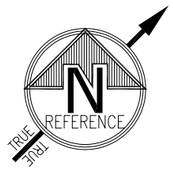
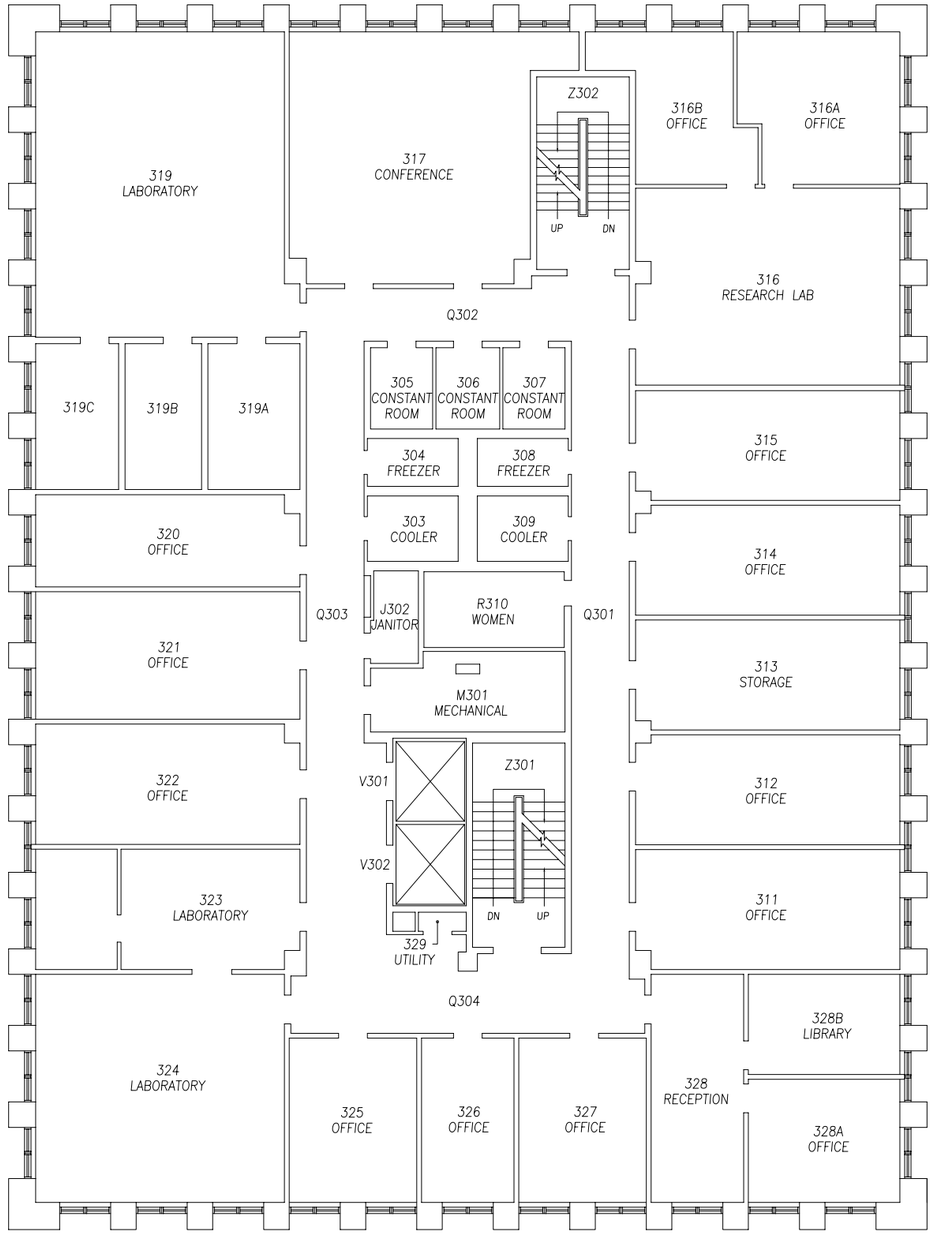
0409-000
BUILDING NUMBER

3 OF 8
SHEET NUMBER

2
FLOOR LEVEL





MUELLER LABORATORY

PSU BUILDING NAME

THIRD FLOOR PLAN

BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA

PSU CAMPUS LOCATION

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0409-000
BUILDING NUMBER

4 OF 8
SHEET NUMBER

3
FLOOR LEVEL

MUELLER LABORATORY

PSU BUILDING NAME

FOURTH FLOOR PLAN

BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA

PSU CAMPUS LOCATION

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REVISED DATE

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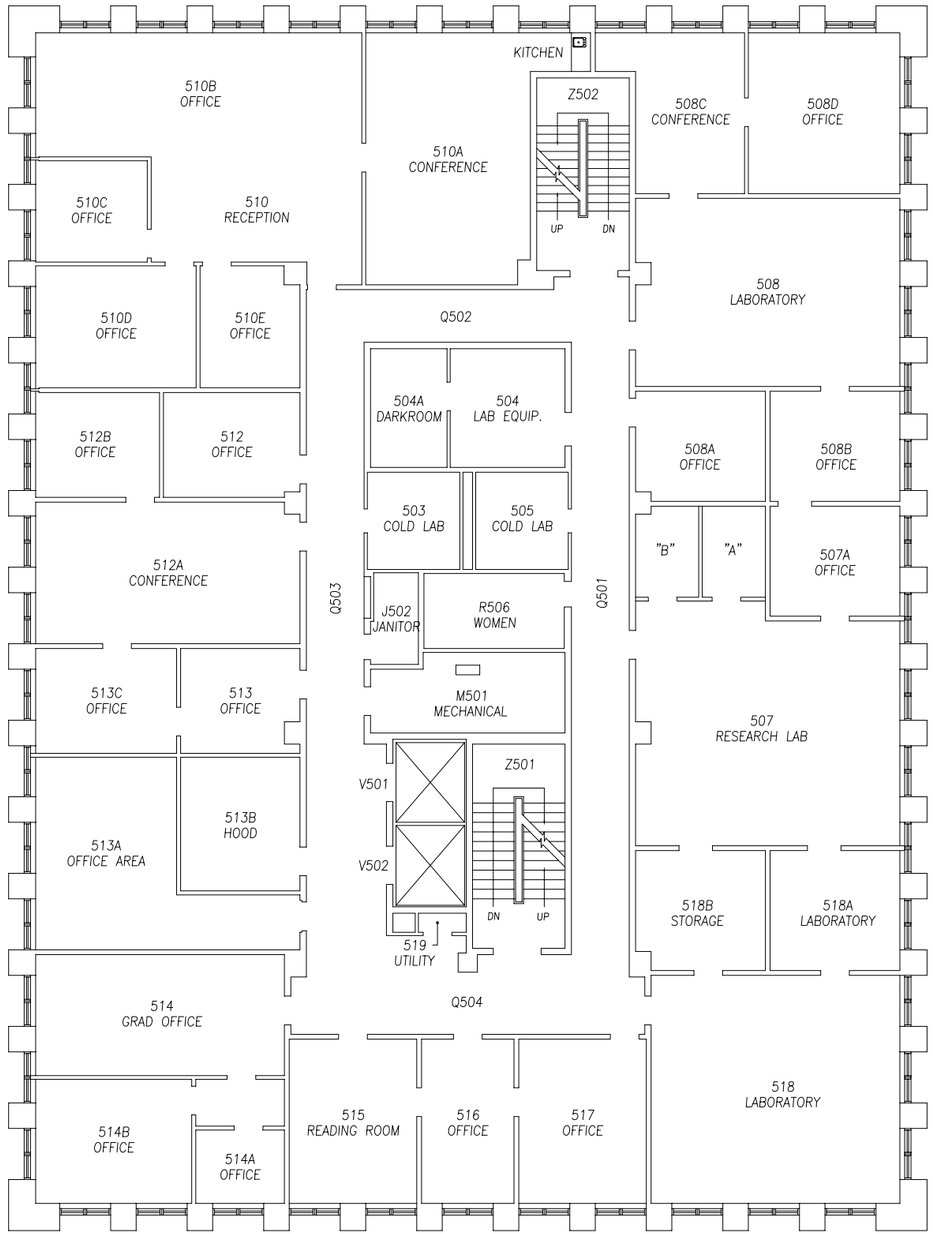
0409-000
BUILDING NUMBER

5 OF 8
SHEET NUMBER

4
FLOOR LEVEL



MUELLER LABORATORY
PSU BUILDING NAME

FIFTH FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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4' 12'

06/01/95
CREATION DATE
08/04/10
REVISED DATE

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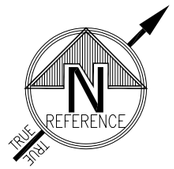
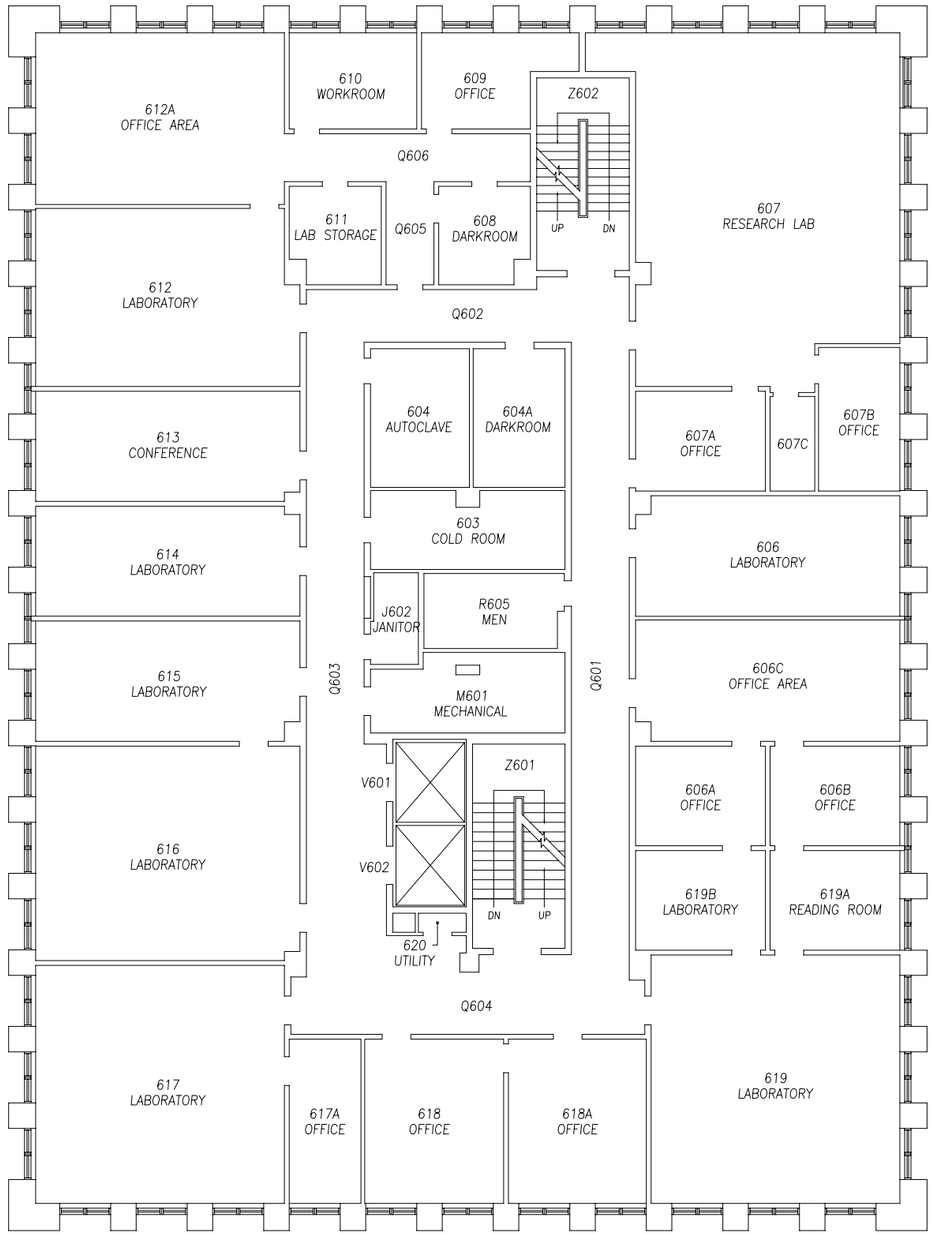
0409-000
BUILDING NUMBER
6 OF 8
SHEET NUMBER
5
FLOOR LEVEL





MUELLER LABORATORY
PSU BUILDING NAME

SIXTH FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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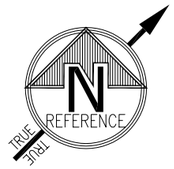
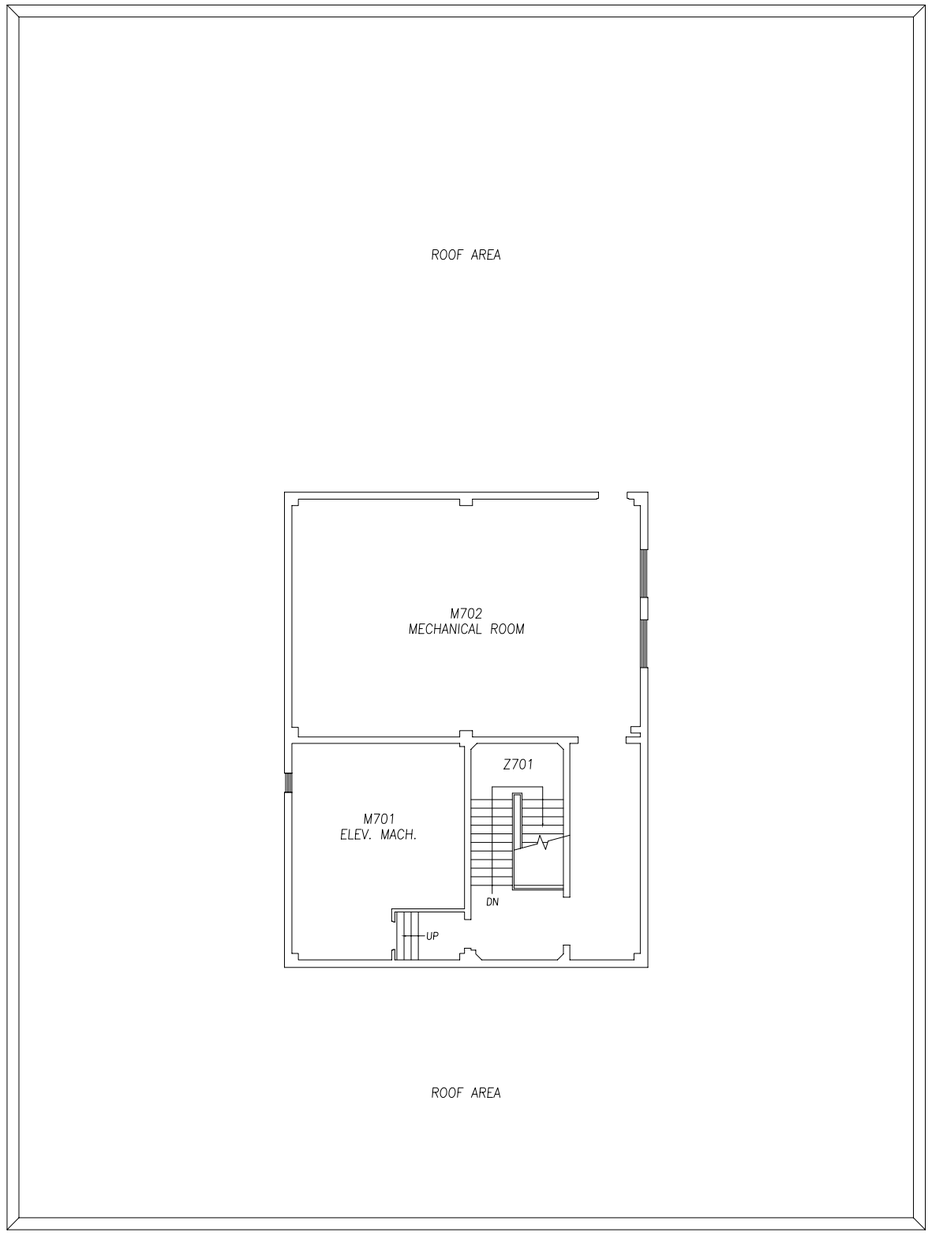
SCALE 0 8' 16' 32'
4' 12'

06/01/95
CREATION DATE
08/04/10
REVISED DATE

0409-000
BUILDING NUMBER
7 OF 8
SHEET NUMBER
6
FLOOR LEVEL





MUELLER LABORATORY
PSU BUILDING NAME

PENTHOUSE PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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REVISED DATE

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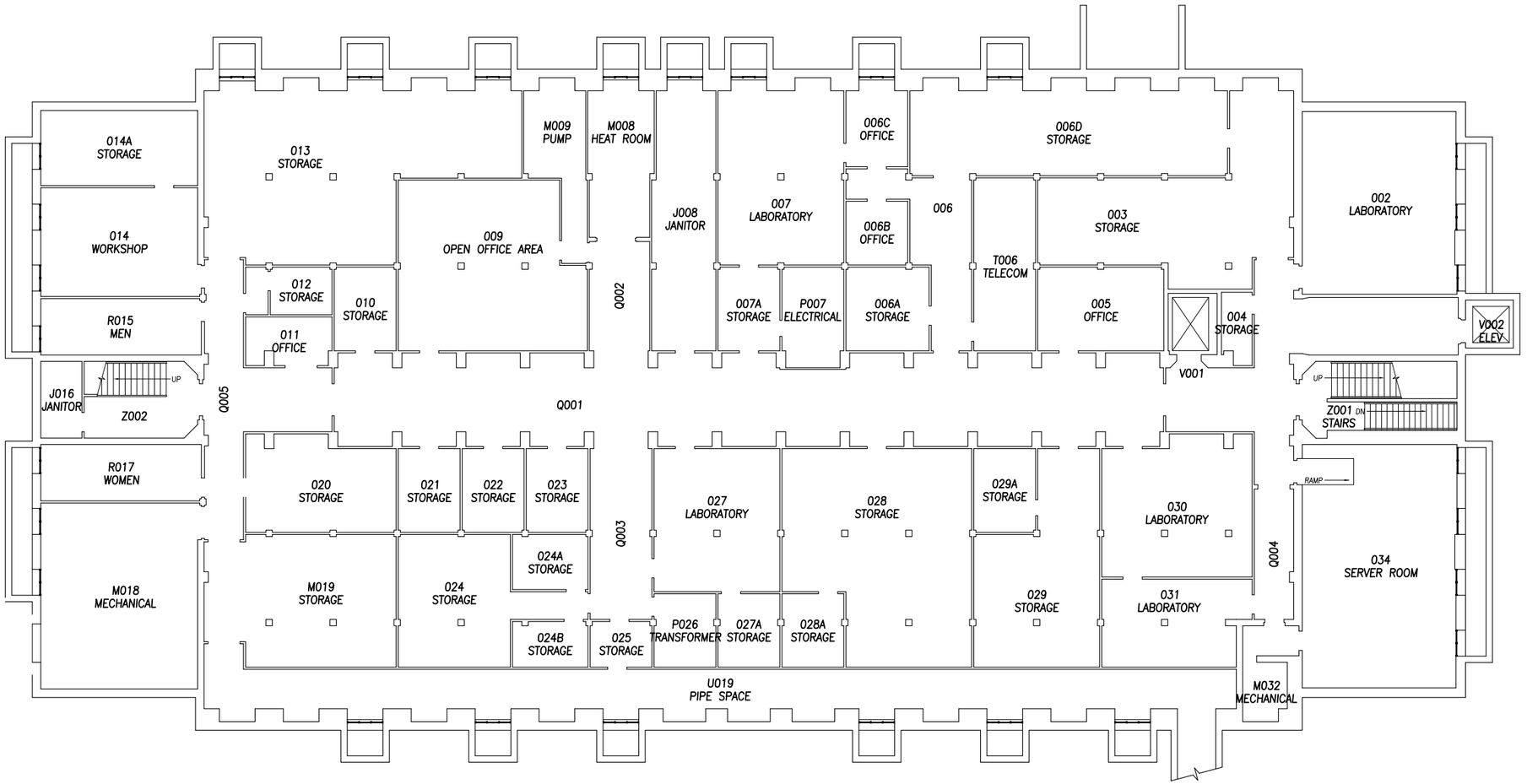
0409-000
BUILDING NUMBER
8 OF 8
SHEET NUMBER
PH
FLOOR LEVEL



WHITMORE LABORATORY
PSU BUILDING NAME

BASEMENT FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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SCALE 0 5' 10' 15' 20' 40'

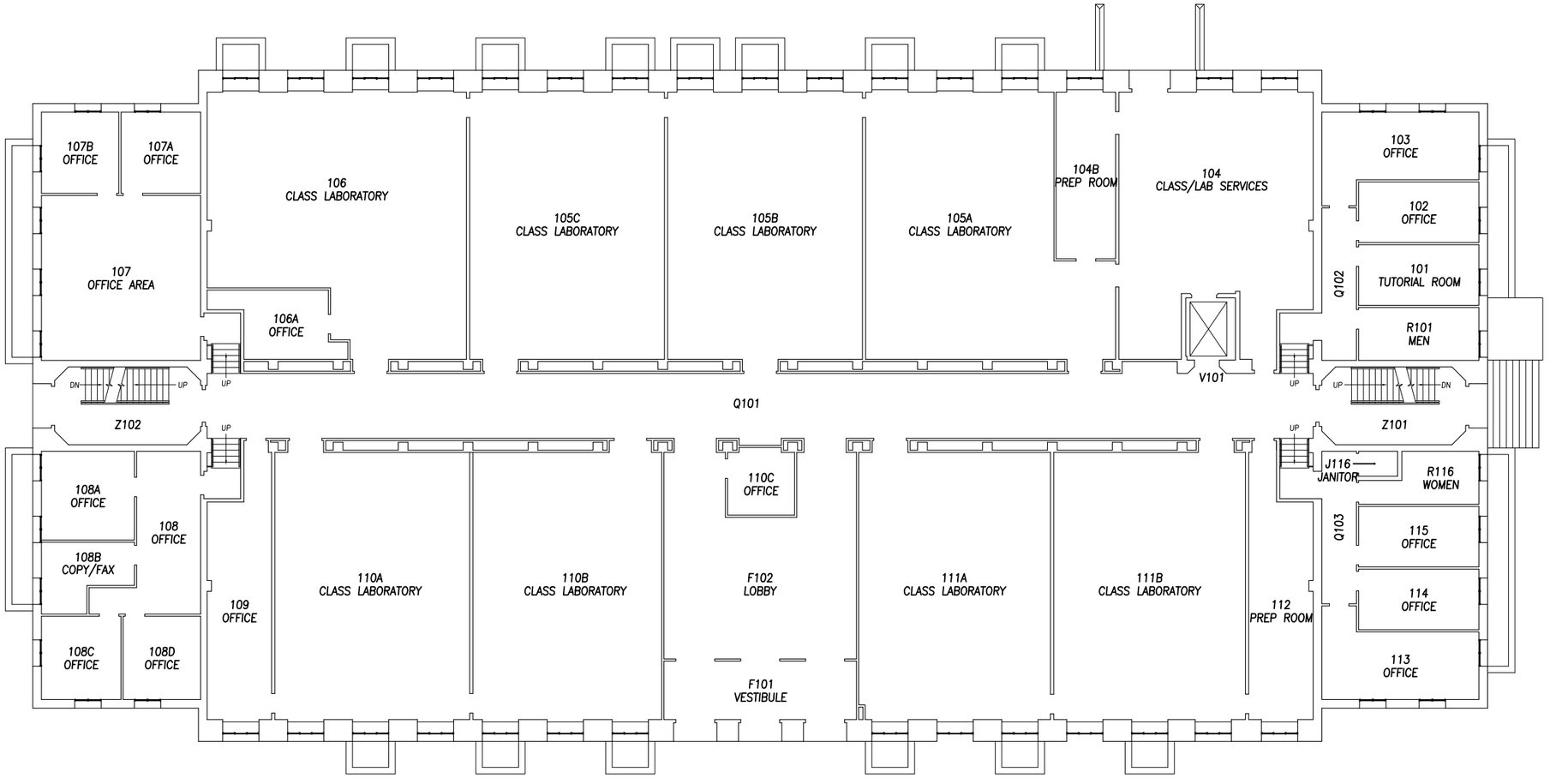
10/16/97
CREATION DATE

7/12/11
REVISED DATE

0406-000
BUILDING NUMBER

1 OF 5
SHEET NUMBER

B
FLOOR LEVEL



WHITMORE LABORATORY
PSU BUILDING NAME

FIRST FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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SCALE 0 5' 10' 15' 20' 40'

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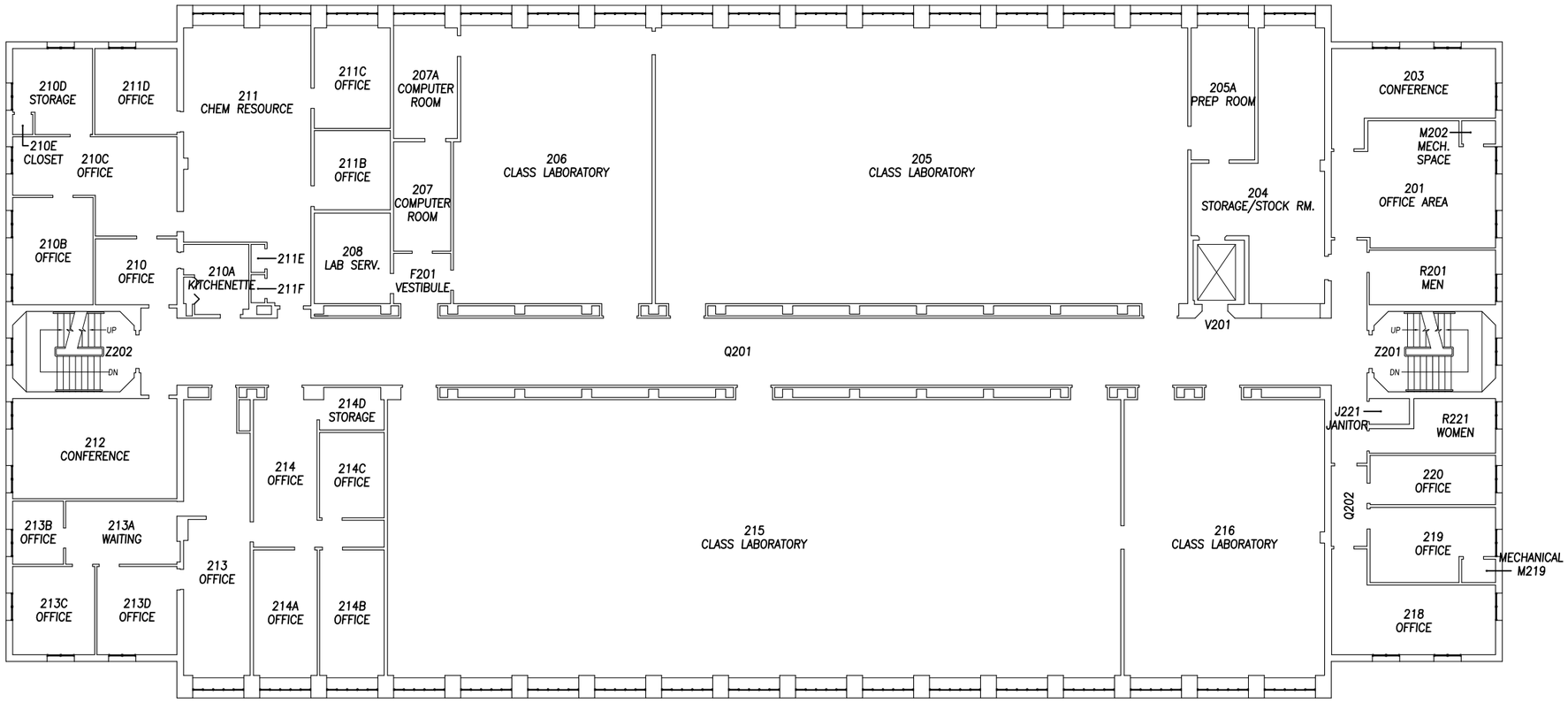
0406-000
BUILDING NUMBER

2 OF 5
SHEET NUMBER

1
FLOOR LEVEL



WHITMORE LABORATORY
PSU BUILDING NAME

SECOND FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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10/16/97
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REVISED DATE

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0406-000
BUILDING NUMBER
3 OF 5
SHEET NUMBER
2
FLOOR LEVEL

WHITMORE LABORATORY
PSU BUILDING NAME

THIRD FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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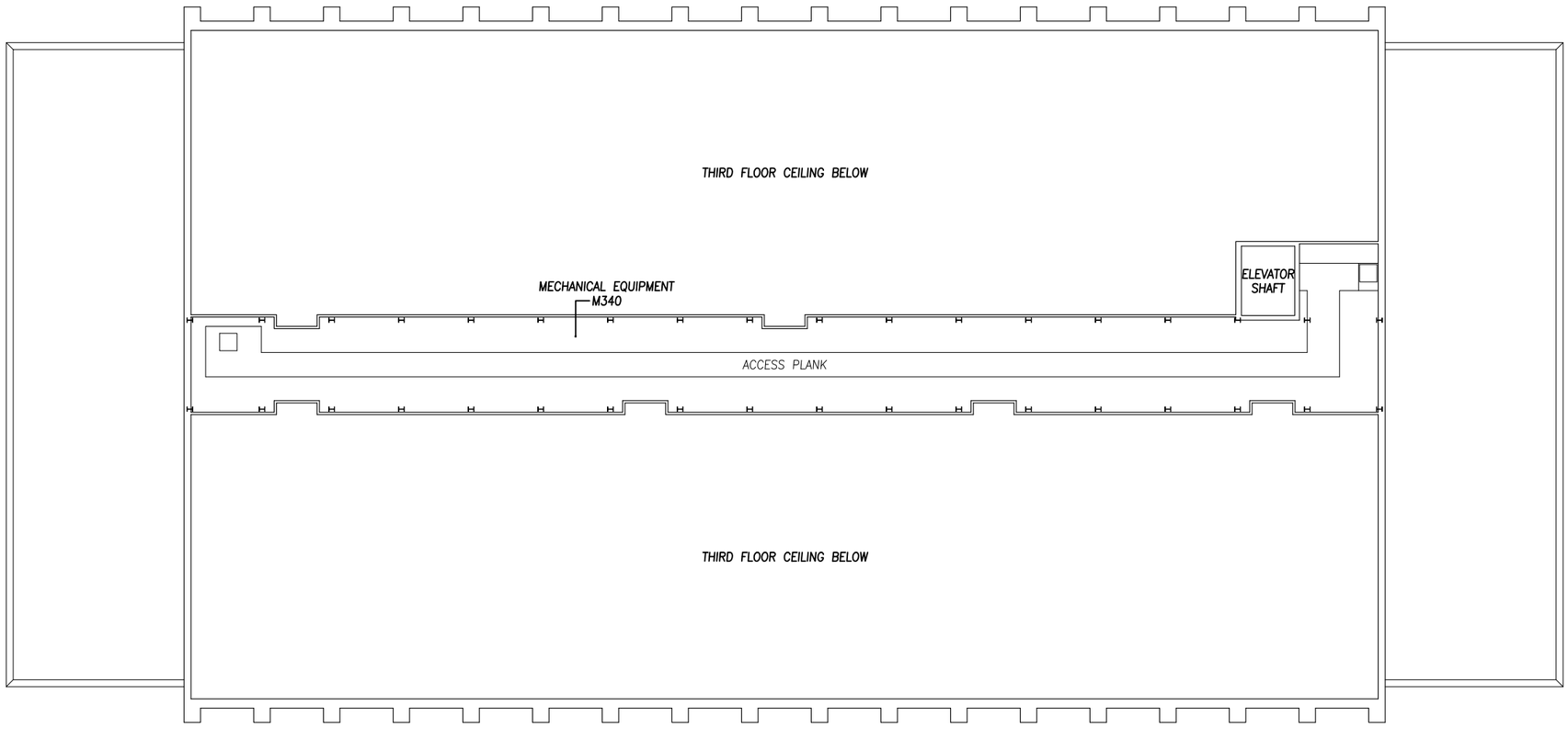
0406-000
BUILDING NUMBER

4 OF 5
SHEET NUMBER

3
FLOOR LEVEL



WHITMORE LABORATORY
PSU BUILDING NAME

LOFT FLOOR PLAN
BUILDING FLOOR LEVEL

UNIVERSITY PARK CAMPUS, UNIVERSITY PARK, PA
PSU CAMPUS LOCATION

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UNIVERSITY PARK, PA 16802
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SCALE 0 5' 10' 15' 20' 40'

10/16/97
CREATION DATE
7/12/11
REVISED DATE

0406-000
BUILDING NUMBER
5 OF 5
SHEET NUMBER
LF
FLOOR LEVEL

PENNSYLVANIA STATE UNIVERSITY
Facility Condition Analysis

MUELLER LABORATORY

BUILDING NUMBER: 0409-000
2008 UPDATE

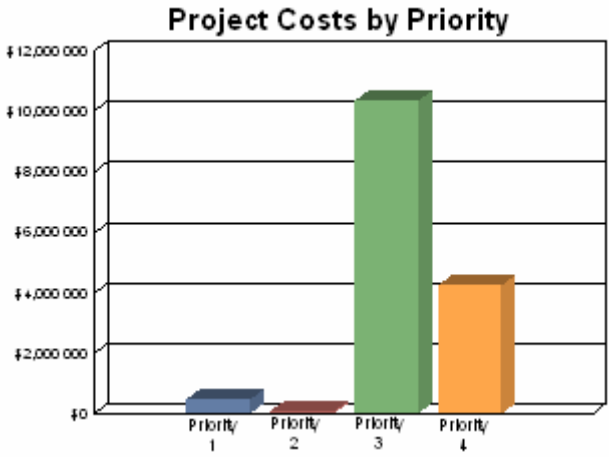
FACILITY CONDITION ANALYSIS

AUGUST 27, 2008

PENNSYLVANIA STATE UNIVERSITY
Facility Condition Analysis

TABLE OF CONTENTS

A. EXECUTIVE SUMMARY - MUELLER LABORATORY

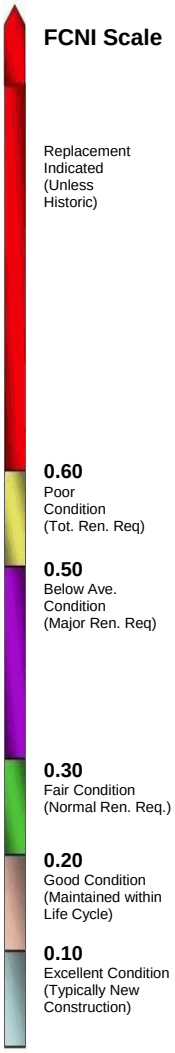


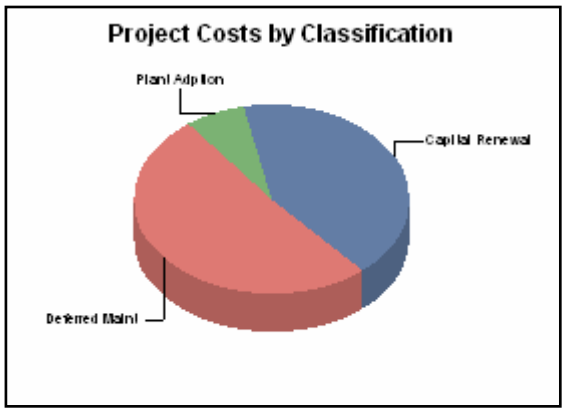
Building Code: 0409-000
Building Name: MUELLER LABORATORY
Year Built: 1965
Building Use: Laboratory
Square Feet: 75,482

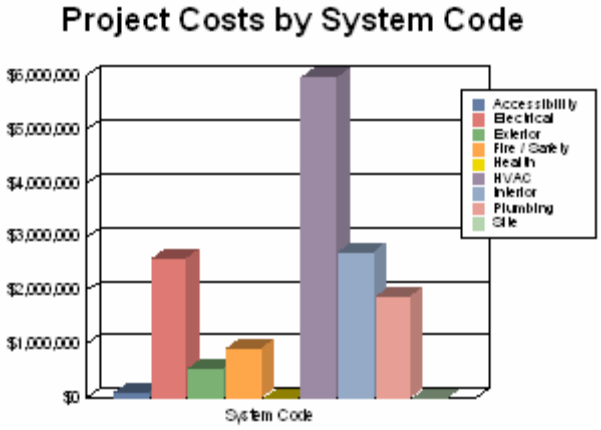
Project Costs by Priority

Priority 1:	$468,021
Priority 2:	$99,609
Priority 3:	$10,379,054
Priority 4:	$4,241,998
Total Project Costs:	**$15,188,682**
Facility Replacement Cost:	**$39,320,801**

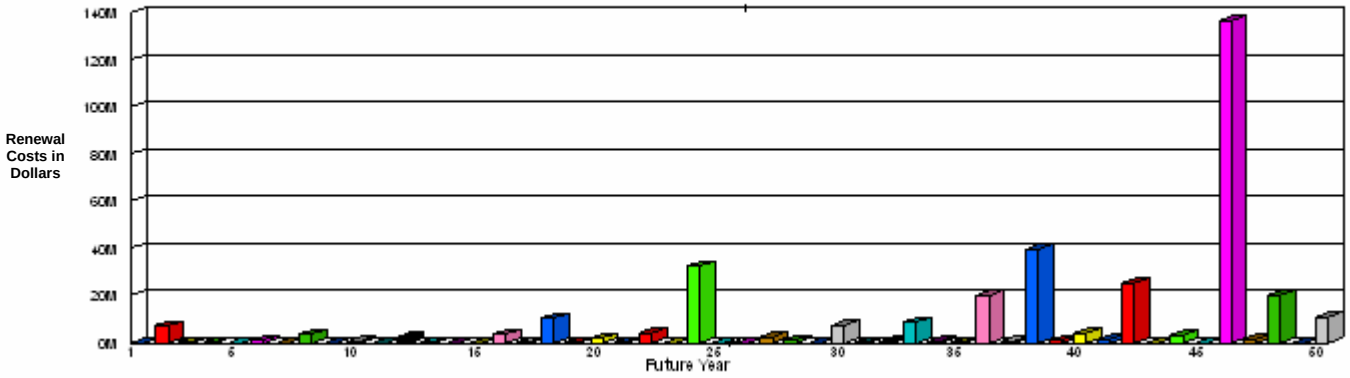
Facility Condition Needs Index (FCNI): 0.39
(Project Costs / Replacement Cost)







Life Cycle Model Expenditure Projections



Average Annual Renewal Cost per SqFt $10.71

PENNSYLVANIA STATE UNIVERSITY
Facility Condition Analysis
Section One

ADMINISTRATIVE OVERVIEW

This analysis is intended to update the initial Facility Condition Analysis prepared for Mueller Laboratory. The facility was reinspected by ISES Corporation personnel to determine the number of previously recommended projects which had been completed and to ascertain the extent of new damage to the facility since the original inspection. The building was also surveyed for compliance with the Americans with Disabilities Act (ADA). This document is a reproduction of the original report information updated for subsequent damage, inflation, and new legislative requirements. Previously estimated project costs have been inflated based upon construction cost information published in Engineering News Record. Deficiencies which have been corrected since the original inspection have been eliminated from this report. New deficiencies observed during the reinspection have been incorporated into this report by either editing existing projects or adding new ones. Edited projects are identified by the addition of "(REV 2/08)" to the project title. New projects are indicated by the addition of "(2/08)" at the end of the title.

B. ASSET SUMMARY

The Mueller Laboratory is a multi-story building originally constructed as an administration and teaching laboratory used by the Biology Department. This facility is located on the main campus of Pennsylvania State University. Constructed in 1965, this 75,482 square foot facility has a ground floor and levels one through six. The building is currently being used to support laboratories and offices. The mechanical room in this building is located on the ground floor. The exterior finishes consist of brick, aluminum-framed windows, glass and metal doors, and an EPDM flat roofing system.

SITE

The site landscaping is in very good condition and appears to be on a consistent renewal application. This well maintained landscaping program is expected to present a pleasant and enhanced look to the buildings site. There are no upgrades for the landscaping at this time.

The asphalt parking area is in fair condition considering the age of the application. However, without resurfacing within the next ten years this surface will break down. Cracking and settlement of the asphalt were evident where the asphalt meets the concrete. It is recommended that any cracks be repaired and that any areas where elevation problems are evident be repaved. After these repairs are complete, it is recommended that asphalt, Type II slurry seal be applied along the asphalt pavement.

The existing sidewalk is in fair condition considering the age of the applications. There are a few areas that require some attention such as the curbing sections that match the asphalt surface finish. However, overall the sidewalks are expected to have a normal life cycle that extends beyond the ten-year outlook of this report. No work is required at this time.

EXTERIOR STRUCTURE

During the time of the inspection, the roof was covered with snow. Reports indicate that the existing roofing consists of an EPDM system. This ballasted roofing system had a warranty that expired in 2004. This is an indication that the roofing system is at life cycle depletion. It is recommended that the existing roofing system be replaced with a modified bitumen system.

The exterior brick mortar joints appear to be in fair condition. However, due to harsh winter conditions, it is anticipated that mortar joints will begin to fail and require tuck pointing within the next ten years. This work is selective, so matching mortar should be applied. Following a detailed examination of the brick and repair of the mortar construction joints, the entire building should be pressure washed to remove soil and stains.

There is significant rebar exposure in the ceiling deck of mechanical room M015. This deterioration of the concretize structure was cause by mechanical related equipment and has deteriorated the concrete to the point where the concrete beam supports are questionable. This situation can be dangerous and potentially cause a structural failure in that area. It is recommended that the occupants of the deck above be relocated and that temporary steel supports be added. A structural analysis is recommended, along with immediate repair.

The exterior aluminum window applications are in very good condition. There were no issues that surfaced during the time of the inspection. Therefore, no upgrades or recommendations are required at this time. The exterior service doors and access store front systems are in good condition and are expected to have a normal life cycle that extends beyond the ten-year outlook of this report. There are no recommendations for the exterior door systems at this time.

INTERIOR FINISHES / SYSTEMS

The interior finishes in this building vary, as selected offices and laboratories have been upgraded to include new casework, flooring, suspended ceiling, and painted wall finishes. However, additional recommendations are being made to upgrade the interior finishes of this building.

There are painted walls throughout the entire facility. The interior finishes are in good condition, but will require an almost continual program of renewal in order to maintain an acceptable interior appearance. Cyclical painting should be considered as a standard approach to maintaining the quality of the interior finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Budgetary considerations are taken into account for the next ten years for interior repairs and maintenance. Minor repairs should be completed before work begins.

The interior floor finishes include carpeting, 12 x 12 vinyl floor tile, 6 x 6 quarry floor tile, 9 x 9 vinyl composition tile, and terrazzo flooring. Selected areas of the building have been upgraded to include new 12 x 12 floor tile, carpeting, and seamless vinyl composition flooring. The interior offices are primarily carpet. There are laboratories, offices, stair landings, and janitor's closets that still have 9 x 9 floor tile. Historically, carpeting has been placed over the 9 x 9 tile, which has been known to have asbestos containing material (ACM). As part of an overall level of effort, it is recommended that the carpeting throughout the building be replaced. Also, the 9 x 9 flooring should be replaced with 12 x 12 vinyl flooring. It is further recommended that the flooring in the laboratories be upgraded to a seamless floor

with seamless cove base. The floor tiles and mastic should be sampled and tested for asbestos prior to any effort to refinish and reoccupy the building. The installation of some vinyl floor tile in the appropriate areas is recommended. All confirmed ACMs should be handled and disposed of according to all federal, state, and local rules and regulations.

Laboratory casework and countertops vary in design, age, and degree of deterioration within floors and suites. Many of the laboratories have been upgraded to include new casework. However, there are numerous laboratories that require a complete upgrade. Continuous contact with corrosive chemicals, reagents, and abrasives accelerates the wear of this furniture. Selective replacement of both base cabinets and countertops should be anticipated within ten years. Approximately 30 percent of the laboratory cabinetry and countertops are recommended for replacement. The new cabinetry is to be designed in accordance with current ADA requirements and include utility upgrades.

The suspended acoustical ceilings in this facility are in overall fair condition, and most do not presently need to be upgraded. However, over the next ten years, almost half of these tiles will need to be replaced. Install new suspended acoustical ceilings throughout the building.

The condition of the interior corridor doors varies, but it is generally fair. The majority of the doors are louvered along the bottom, and many of them lack door knobs. Various renovations in selected areas have included replacement of the doors and hardware. In an effort to upgrade the appearance of the corridors, security of the rooms, and overall quality of the system, the replacement of interior doors and hardware is recommended. The replacement units should be properly rated doors and should include new lever actuated locksets and closers.

ACCESSIBILITY

Present ADA legislation pertaining to building accessibility requires that building goods, services, and amenities be generally available. Selected area upgrades have been made in the past, including partial provisions to meet the ADA. However, this building still lacks full compliance with current ADA standards.

The difference in elevation between the main granite entrance and the asphalt pavement exceeds current accessibility requirements. This type of condition is a tripping hazard. Current legislation requires that changes in level up to one-quarter inch can be made without a transition. It is recommended that the surfaces be modified to create a smooth transition. The exterior steps at the loading dock also require repair. A corner of the step has broken off and can be a tripping hazard.

The existing drinking fountains are a single-level design. This geometry tends to serve the needs of persons in wheelchairs or those who have difficulty stooping, but not both. To comply with the intent of current ADA legislation, it is recommended that one drinking fountain on each floor be replaced with a dual-level, refrigerated unit. The construction of wall alcoves may be necessary where the code required clearances are not available. Also, the seating in classroom 008 consists of chairs with table arms. This seating should be modified to accommodate wheelchair users.

There are eight restroom facilities. Each varies in condition and degree of accessibility. The interior finishes include terrazzo flooring, tiled walls, metal partitions, mirrors, and plumbing fixtures. These restrooms do not conform to current ADA legislation, as they lack proper space clearances and fixtures. As part of an overall level of effort, it is recommended that each restroom be completely upgraded to

include reconditioned flooring, regrouted wall finishes, new suspended ceiling, an expansion of the area to obtain proper clearances, new fixtures, mirrors, coat hooks, and towel dispensers. A detailed design will be necessary for each restroom as renovation or retrofit is accomplished in conjunction with renovations in that area.

HEALTH

Apart from the suspected asbestos flooring, there were no health related issues observed or reported by management during the inspection of this facility.

FIRE / LIFE SAFETY

Structural fire separations are not maintained according to code requirements for new construction in significant areas of this facility. Past conduit installations have not been fire protected in the annular space around the conduit and concrete structure. All penetrations through fire-rated separations should be properly sealed in accordance with industry standards.

The openings between the rails in the interior stairway do not meet the modern 4 inch sphere tests for opening size. Local codes now require that railing systems prevent the passage of a specific diameter sphere. To comply with code and limit university liability, it is recommended that infill be added to conform to the sphere test.

The guardrail along the exterior stairs at the northwest corner of the first floor does not conform to current codes. The opening between the rails exceeds the maximum 4 inch sphere test requirement. To prevent injury and liability, it is recommended that the railing be modified to conform to current codes.

This research lab structure and animal resource facility has no fire suppression. It is recommended by the NFPA that facilities of this type, use, and size be sprinkled throughout, and that sprinkling systems be fully supervised by a fire alarm system. Install fire suppression throughout the facility, including piping, sprinkler heads (as required by code), pipe bracing, and supervising and alarm devices, as needed. This project should be coordinated with other piping, major HVAC/R, interior ceiling, and wall finish upgrades recommended elsewhere in this report to help reduce overall costs and the duplication of work efforts.

The fire alarm system is outdated and does not comply with ADA standards for visual alarm and pull station locations. Remove the existing system, and install a modern zone-type fire alarm system. Specify a point addressable, multi-zone, four-wire, Class A, supervised fire alarm panel with an annunciator. This work includes pull stations, audible / visual and visual devices, smoke detectors, duct smoke detectors, and heat detectors. Install all devices in accordance with current NFPA and ADA requirements. The system should report activation or trouble to an applicable receiving station, such as campus security and / or the local fire department.

The exit signs throughout the building are becoming timeworn and are recommended for replacement. The signage is not brightly illuminated and would be difficult to see in a smoke-filled corridor. LED applications are recommended for their low maintenance and energy-efficient features. Connect the new exit signs to the emergency circuit.

This facility is equipped with eyewash showers and emergency fountains, but there are not enough in some areas to provide a high margin of safety. In addition, some of the existing units are timeworn, and some of the eyewashes are low-grade, portable units. Remove the existing worn or low-grade showers and eyewashes. Install new emergency showers and eyewash fountains in all areas where related hazards exist. These should be permanent fixtures, connected to the building's water supply network, and provided with drains. They need to be clearly identified and located in unobstructed areas for easy access.

HVAC

Mueller Laboratory is on the university's high pressure steam loop. Heat exchangers and heating media components are largely original. Chilled water is supplied by a 1997 vintage, 11 ton process chiller (backs up the animal colony systems) and a 400 ton, 2003 vintage, air-cooled package chiller, with a glycol interface to tempered space. Air distribution is accomplished with built-up air conditioning units on the roof and a central station air handling unit in the ground floor mechanical room. Makeup air units deliver tempered air to fume hoods. With the exception of the recent cooling plant upgrade, the HVAC system has been in continuous service since 1965, but has sustained some direct digital control (DDC) upgrades, pump upgrades, and damper upgrades. The DDC system is partly Staefa and partly Automated Logic design. Despite recent fume hood system improvements, controls upgrades, and some pump replacements, the system remains a poor design. Corridor doors are louvered to return supplied air through door louvers and exhaust the air at the hood faces. This design is antiquated by modern lab design standards, and many system components are quite old and operating under capacity. The future of this facility should include a complete HVAC redesign and replacement so that pressure gradients can be properly maintained and heat (or cooling) energy can be recovered.

Complete system redesign is needed. Demolish and dispose of all outdated equipment, and install a new modern HVAC system with variable air volume VAV and constant volume air distribution, as needed. This includes new air handlers, ductwork, terminal units, heat exchangers, pumps, piping, controls, and electrical connections. Specify DDCs for the new equipment. Incorporate variable frequency drives (VFD) into the new HVAC design, as applicable.

Lab fume hoods have been upgraded over time and the rooftop exhaust fans include some heat recovery and similar modern features. Generally, these systems have some remaining life that should be utilized before replacement. No major fume hood upgrade is recommended at this time because of the remaining service life of the base elements.

ELECTRICAL

Electrical power is supplied to the building through two 12,470 volt feeders. The dry-type transformers have rated capacities of 500 kVA and 750 kVA. The GE switchgear and distribution sections are original to the 1965 year of construction. Considering many decades of continuous service, the transformers and switchgear have exceeded their statistical life cycles and need to be scheduled for replacement. Additionally, primary electrical upgrades are recommended to augment proposed HVAC, lighting, and electrical upgrades. Remove the existing primary equipment, and install new transformers and switchgear that include 480 volt power for lighting and mechanical equipment and 208 volt power for other circuits.

Emergency power for the building consists of two automatic transfer switches connected to the campus emergency power network. These do not alternately power the elevator according to records and university reports. The existing transfer switches power emergency power distribution panels supporting exit signs, corridor lights, and stair lights. It is recommended that the university increase the emergency feeder size and add an additional transfer switch to power one of the two elevators for emergency fire service control.

The secondary electrical system includes a combination of outdated Westinghouse, Square D, and GE breaker panels. These are original vintage panels. The increased use of electrical equipment for research, as well as proposed HVAC upgrades, serves to overburden a system that was designed without consideration of these loads. There are reports of overloaded circuits and inadequate power. Electrical devices, including switches and receptacles, are uniformly worn. It is recommended that the secondary electrical system be replaced in its entirety to ensure safe and reliable power to building occupants.

Lighting throughout the facility is mainly fluorescent, but there are incandescent lights in mechanical rooms and other utility areas. The lamps in the fluorescent fixtures were noted to be distinctly different. There is a combination of green tipped, T12 lamps, and fixtures that have been retrofit with modern T8 lamps and electronic ballasts. Most of the fixtures and diffusers are in fair to poor condition, with the exception of those in some of the recently renovated laboratory spaces. Since lighting quality is gauged by both efficiency and proficiency, a complete lighting upgrade is recommended in conjunction with other proposed electrical upgrades. Older fixtures retrofitted with lower illuminating components do not improve lighting quality necessarily. Replace incandescent and worn fluorescent light fixtures with new energy-efficient units. The new lighting system should operate on 277 volts for improved energy efficiency.

PLUMBING

The water main enters the building in the ground floor mechanical room. There is presently no backflow preventer at the water main to protect against cross-contamination of the building`s water system with the domestic water supply. However, the assembly is presently on-site and assembled. The completion of this work was scheduled the week of last reinspection, so this report considers the work completed from the perspective of future budgeting needs.

Replacement of the domestic hot water converter is recommended. As it ages, the heat exchanger's efficiency is reduced by internal tube scaling and weakening of heat transfer support surfaces. A new heat exchanger, circulating pump, controls, and associated piping and electrical equipment are recommended. This work includes the demolition of existing equipment.

This facility includes piping for domestic water, distilled water, natural gas, compressed air, and other specialty systems. Water supply piping is mostly copper and original. Laboratory process fluids piping is mostly threaded pipe and original. Shutoff valves and gas cocks are uniformly worn. Failure to replace the water and process piping within the scope of this report will result in frequent leaks and consequential maintenance costs. In coordination with other recommended plumbing upgrades, replacement of the water and process piping is recommended. During demolition, areas affected by hazardous materials will be encountered. Remediation costs are included.

Drain piping throughout the facility is threaded galvanized and cast-iron pipe for normal wastes. Laboratory waste piping consists of acid resistant plastic and Pyrex glass piping. Most of the drain piping is original. Failure to replace the drain piping within the scope of this report will result in frequent leaks and increasing maintenance costs. There is one duplex sewage ejector system in the lower level. This system has been restored, but maintains some original components. It is suitable for additional service. In coordination with other recommended plumbing upgrades, replacement of the acid and normal waste drain piping is recommended. It was reported that mercury and other hazardous material residues are present in the existing drain lines. Remediation costs are included for this project.

The base fixtures in the restrooms appear to be original to the 1965 construction. Fixtures are outdated and showing considerable signs of wear. The components and valves on these fixtures are also dated and in need of replacement. New water closets and urinals consume approximately one-half the amount of water as the older vintage fixtures. It is recommended that all plumbing fixtures that are original to the 1965 construction be replaced with new fixtures that meet all applicable ADA regulations. It is also recommended that hands-free faucets and automatic flush valves be installed for their sanitary benefits and water saving features.

VERTICAL TRANSPORTATION

Mueller Lab is served by two, seven-stop passenger elevator units that were installed in 1964. These General Elevator traction units have a travel speed of 100 fpm and a capacity of 2,500 pounds each. The elevators do not contain emergency phones, light screens, fire service features, door restrictors, and fire extinguishers. Additionally, the handrails are located too high for industry standards. Ground fault circuit interrupter (GFCI) receptacles were not observed in the machine room and pits. Hall call buttons are 52 inches above the floor, above the 42 inch height required by industry standards. Braille strips are located at 54 inches above the floor but should be placed at 60 inches. The units will need a complete modernization in the next two to five years to include new or refurbished machines, controllers, governors, hoistway equipment, hall equipment, and new car operating panels.

WORK COMPLETED SINCE LAST INSPECTION

- Backflow preventer was on-site and assembled, yet not yet installed. This work is considered complete from the perspective of future budget needs.
- Fire rating compromises have been upgraded.

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.

Backlog Retirement Summary
Completed and Partially Completed Projects
0409-000 : MUELLER LABORATORY

Project Number	Project Title	Pri Cls	Date	Project Notes	Total Cost	Actual Cost To Date	Remaining Cost	Percen Complete
0409-000FS01	FIRE RATING COMPROMISE REPAIRS	2	8/28/200	Ed Conklin - priority okay	$24,583	1	$24,582	
0409-000PL01	INSTALL A BACKFLOW PREVENTER ON THE WATER MAIN	2	2/14/200	Backflow preventer was on-site and assembled, hence this project is considered complete from the perspective of future budget needs.	$10,512	10,552	($40)	Complet
				Subtotal for Priority Class 2	**$35,095**	**$10,553**	**$24,542**	
				Grand Totals	**$35,095**	**$10,553**	**$24,542**	

Backlog Retirement Summary
Completed Projects

0409-000 : MUELLER LABORATORY

Project Number	Project Title	Pri Cls	Date	Project Notes	Total Cost	Actual Cost To Date	Variance
0409-000BL01	INSTALL A BACKFLOW PREVENTER ON THE WATER MAIN	2	2/14/200	Backflow preventer was on-site and assembled, hence this project is considered complete from the perspective of future budget needs.	$10,512	$10,552	($40)
				Subtotal for Priority Class 2	**$10,512**	**$10,552**	**($40)**
				Grand Totals	**$10,512**	**$10,552**	**($40)**

D. INSPECTION TEAM DATA

DATE OF INSPECTION: February 14, 2008

INSPECTION TEAM PERSONNEL:

NAME	POSITION	SPECIALTY
Mark Byrd	Facility Analyst	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health
Doug Fredendall	Facility Analyst	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Rob Gasaway	Facility Analyst	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health
Matthew Gregory	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Michael Jordan	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Laura Voisin George	Facility Analyst	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health

FACILITY CONTACTS:

NAME	POSITION
Kathy Bamat	Manager, Work Control Center

REPORT DEVELOPMENT:

Report Development by: ISES CORPORATION
2165 West Park Court
Suite N
Stone Mountain, GA 30087

Contact: Michael Jordan, Project Manager
770-879-7376

E. FACILITY CONDITION ANALYSIS - DEFINITIONS

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

1. **REPORT DESCRIPTION**

Section 1: Asset Executive Summary, Asset Summary, Backlog Retirement 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 - <$25,000]
D. Detailed Projects by Cost within range [≥ $25,000 - < $1,000,000]
E. Detailed Projects by Cost within range [≥ $1,000,000]
F. Detailed Projects by Project Classification
G. Detailed Projects by Project Rating Type - Energy Conservation
H. Detailed Projects by Category / System Code
I. Detailed Projects by Score

FCNI = Facility Condition Needs Index, Total Cost vs. Replacement Cost. The FCNI provides a life cycle cost comparison. Facility replacement cost based on replacement with current construction standards for facility use type, and not original design parameters. This index gives the University a comparison within all buildings for identifying worst case / best case building conditions.

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

Section 3: Specific Project Details Illustrating Description / Cost

Section 4: Drawings with Iconography

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

Section 5: Life Cycle Model Building Component Summary

Section 6: Photographic Log

Note: For Sections 2 and 3, at the end of the reports and project detail, an *Inflation Adjustment Factor* will be designed and built into the program for update purposes. Updates will not be reflected in the original report.

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 effect the needed repairs. Deferred maintenance projects represent catch up expenses.

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

3. PROJECT SUBCLASS TYPE

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

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

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

Example:

PRIORITY CLASS 1

CODE	PROJECT NO.	PRIORITY SEQUENCE
HV2C	0401-000HV04	01
PL1D	0401-000PL02	02

PRIORITY CLASS 2

CODE	PROJECT NO.	PRIORITY SEQUENCE
IS1E	0401-000IS06	03
EL4C	0401-000EL03	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 1, 2, and 3).

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

Cost factors are based on the State College City Index and are adjusted for material and labor cost factors (2008). Refer to the project related labor report found later in this section.

Global Markup Percentages		R.S. MEANS
Local Labor Index:	90.6 %	of National Average
Local Materials Index:	95.6 %	of National average
General Contractor Markup:	20.0 %	Contractor profit and overhead, bonds and insurance
Professional Fees:	15.0 %	Arch. / Eng. Firm design fees and in-house design cost

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

Example:

Project Number = 0401-000-EL-04 (unique for each independent project)

0401-000 - 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 or engineer.

Example: 0401-000006e

Building Number	Photo Sequence	Arch / Eng
0401-000	006	e

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

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

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

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

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

Refer to the following Category Code Report.

Example: Category Code = EL5A

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

CATEGORY CODE			SYSTEM DESCRIPTION
AC1A	-	AC4B	ACCESSIBILITY
EL1A	-	EL8A	ELECTRICAL
ES1A	-	ES6E	EXTERIOR STRUCTURE
FS1A	-	FS6A	FIRE / LIFE SAFETY
HE1A	-	HE7A	HEALTH
HV1A	-	HV8B	HVAC
IS1A	-	IS6D	INTERIOR / FINISH SYSTEMS
PL1A	-	PL5A	PLUMBING
SI1A	-	SI4A	SITE
SS1A	-	SS7A	SECURITY SYSTEMS
VT1A	-	VT7A	VERTICAL TRANSPORTATION

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
SYSTEM DESCRIPTION: ACCESSIBILITY			
AC1A	SITE	STAIR AND RAILINGS	Includes exterior stairs and railings which are not part of the building entrance points.
AC1B	SITE	RAMPS AND WALKS	Includes sidewalks, grade change ramps (except for a building entrance), curb ramps, etc.
AC1C	SITE	PARKING	Designated parking spaces including striping, signage, access aisles and ramps, etc.
AC1D	SITE	TACTILE WARNINGS	Raised tactile warnings located at traffic crossing and elevation changes.
AC2A	BUILDING ENTRY	GENERAL	Covers all aspects of entry into the building itself including ramps, lifts, doors and hardware, power operators, etc.
AC3A	INTERIOR PATH OF TRAVEL	LIFTS/RAMPS/ ELEVATORS	Interior lifts, ramps and elevators designed to accommodate level changes inside a building. Includes both installation and retrofitting.
AC3B	INTERIOR PATH OF TRAVEL	STAIRS AND RAILINGS	Upgrades to interior stairs and handrails for accessibility reasons.
AC3C	INTERIOR PATH OF TRAVEL	DOORS AND HARDWARE	Accessibility upgrades to the interior doors including widening, replacing hardware power, assisted operators, etc.
AC3D	INTERIOR PATH OF TRAVEL	SIGNAGE	Interior building signage upgrades for compliance with ADA.
AC3E	INTERIOR PATH OF TRAVEL	RESTROOMS/ BATHROOMS	Modifications to and installation of accessible public restrooms and bathrooms. Bathrooms, which are an integral part of residential suites, are catalogued under HC4A.
AC3F	INTERIOR PATH OF TRAVEL	DRINKING FOUNTAINS	Upgrading/replacing drinking fountains for reasons of accessibility.
AC3G	INTERIOR PATH OF TRAVEL	PHONES	Replacement/modification of public access telephones.
AC4A	GENERAL	FUNCTIONAL SPACE MODIFICATIONS	This category covers all necessary interior modifications necessary to make the services and functions of a building accessible. It includes installation of assistive listening systems, modification of living quarters, modifications to laboratory workstations, etc. Bathrooms, which are integral to efficiency suites, are catalogued here.
AC4B	GENERAL	OTHER	All accessibility issues not catalogued elsewhere.
SYSTEM DESCRIPTION: ELECTRICAL			
EL1A	INCOMING SERVICE	TRANSFORMER	Main building service transformer.
EL1B	INCOMING SERVICE	DISCONNECTS	Main building disconnect and switchgear.
EL1C	INCOMING SERVICE	FEEDERS	Incoming service feeders. Complete incoming service upgrades, including transformers, feeders, and main distribution panels are catalogued here.
EL1D	INCOMING SERVICE	METERING	Installation of meters to record consumption and/or demand.
EL2A	MAIN DISTRIBUTION PANELS	CONDITION UPGRADE	Main distribution upgrade due to deficiencies in condition.
EL2B	MAIN DISTRIBUTION PANELS	CAPACITY UPGRADE	Main distribution upgrades due to inadequate capacity.
EL3A	SECONDARY DISTRIBUTION	STEP DOWN TRANSFORMERS	Secondary distribution stepdown and isolation transformers.
EL3B	SECONDARY DISTRIBUTION	DISTRIBUTION NETWORK	Includes conduit, conductors, sub-distribution panels, switches, outlets, etc. Complete interior rewiring of a facility is catalogued here.
EL3C	SECONDARY DISTRIBUTION	MOTOR CONTROLLERS	Mechanical equipment motor starters and control centers.
EL4A	DEVICES AND FIXTURES	EXTERIOR LIGHTING	Exterior building lighting fixtures including supply conductors and conduit.
EL4B	DEVICES AND FIXTURES	INTERIOR LIGHTING	Interior lighting fixtures (also system wide emergency lighting) including supply conductors and conduits.
EL4C	DEVICES AND FIXTURES	LIGHTING CONTROLLERS	Motion sensors, photocell controllers, lighting contactors, etc.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
EL4D	DEVICES AND FIXTURES	GFCI PROTECTION	Ground fault protection including GFCI receptacles and breakers.
EL4E	DEVICES AND FIXTURES	LIGHTNING PROTECTION	Lightning arrestation systems including air terminals and grounding conductors.
EL5A	EMERGENCY POWER SYSTEM	GENERATION/ DISTRIBUTION	Includes generators, central battery banks, transfer switches, emergency power grid, etc.
EL6A	SYSTEMS	UPS/DC POWER SUPPLY	Uninterruptible power supply systems and DC motor-generator sets and distribution systems.
EL7A	INFRASTRUCTURE	ABOVE GROUND TRANSMISSION	Includes poles, towers, conductors, insulators, fuses, disconnects, etc.
EL7B	INFRASTRUCTURE	UNDERGROUND TRANSMISSION	Includes direct buried feeders, ductbanks, conduit, manholes, feeders, switches, disconnects, etc.
EL7C	INFRASTRUCTURE	SUBSTATIONS	Includes incoming feeders, breakers, buses, switchgear, meters, CTs, PTs, battery systems, capacitor banks, and all associated auxiliary equipment.
EL7D	INFRASTRUCTURE	DISTRIBUTION SWITCHGEAR	Stand-alone sectionalizing switches, distribution switchboards, etc.
EL7F	INFRASTRUCTURE	AREA AND STREET LIGHTING	Area and street lighting systems including stanchions, fixtures, feeders, etc.
EL8A	GENERAL	OTHER	Electrical system components not catalogued elsewhere.
SYSTEM DESCRIPTION: EXTERIOR			
ES1A	FOUNDATION/FOOTING	STRUCTURE	Structural foundation improvements involving structural work on foundation wall/footing, piers, caissons, piles including crack repairs, shoring & pointing
ES1B	FOUNDATION/FOOTING	DAMPPROOFING/ DEWATERING	Foundation/footing waterproofing work including, damp proofing, dewatering, insulation, etc.
ES2A	COLUMNS/BEAMS/ WALLS	STRUCTURE	Structural work to primary load-bearing structural components aside from floors including columns, beams, bearing walls, lintels, arches, etc.
ES2B	COLUMNS/BEAMS/ WALLS	FINISH	Work involving restoration of the appearance and weatherproof integrity of exterior wall/structural envelope components including masonry/pointing, expansion joints, efflorescence & stain removal, grouting, surfacing, chimney repairs, etc.
ES3A	FLOOR	STRUCTURE	Work concerning the structural integrity of the load supporting floors both exposed and unexposed including deformation, delamination, spalling, shoring, crack repair, etc.
ES4A	ROOF	REPAIR	Work on waterproof horizontal finish (roof) involving repair and/or limited replacement (<40% total) including membrane patching, flashing repair, coping caulk/resetting, PPT wall parging/coating, walkpad installation, skylight and roof hatch R&R, etc.
ES4B	ROOF	REPLACEMENT	Work involving total refurbishment of roofing system including related component rehab.
ES5A	FENESTRATIONS	DOORS	Work on exterior exit/access door including storefronts, airlocks, air curtains, vinyl slat doors, all power/manual operating hardware (except handicapped), etc.
ES5B	FENESTRATIONS	WINDOWS	Work on exterior fenestration closure & related components including glass/metal/wood curtain walls, fixed or operable window sashes, glazing, frames, sills, casings, stools, seats, coatings, treatments, screens, storm windows, etc.
ES6A	GENERAL	ATTACHED STRUCTURE	Work on attached exterior structure components not normally considered in above categories including porches, stoops, decks, monumental entrance stairs, cupolas, tower, etc.
ES6B	GENERAL	AREAWAYS	Work on attached grade level or below structural features including subterranean light wells, areaways, basement access stairs, etc.
ES6C	GENERAL	TRIM	Work on ornamental exterior (generally non-structural) elements including beltlines, quoins, porticos, soffits, cornices, moldings, trim, etc.
ES6D	GENERAL	SUPERSTRUCTURE	Finish and structural work on non-standard structures with exposed load-bearing elements such as stadiums, bag houses, bleachers, freestanding towers, etc.
ES6E	GENERAL	OTHER	Any exterior work not specifically categorized elsewhere including finish and structural work on

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
			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.
HE6A	HAZARDOUS MATERIAL	STRUCTURAL ASBESTOS	Testing, abatement and disposal of structural and building finish materials containing asbestos.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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 UPGRADE	Replacement of HVAC control systems.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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 / FINISH SYSTEMS			
IS1A	FLOOR	FINISHES-DRY	R & R of carpet, hardwood strip flooring, concrete coating, vinyl linoleum & tile, marble, terrazzo, rubber flooring, underlayment in predominantly dry areas ("dry" includes non-commercial kitchens)
IS1B	FLOOR	FINISHES-WET	Flooring finish/underlayment work in predominantly "wet" areas including work with linoleum, rubber, terrazzo, concrete coating, quarry tile, ceramic tile, epoxy aggregate, etc.
IS2A	PARTITIONS	STRUCTURE	Structural work on full height permanent interior partitions including wood/metal stud & drywall systems, CMU systems, structural brick, tile, glass block, etc.
IS2B	PARTITIONS	FINISHES	Work on full height permanent interior partitions including R & R to gypsum board, plaster, lath, wood paneling, acoustical panels, wall coverings, column coverings, tile, paint, etc.
IS3A	CEILINGS	REPAIR	Repair of interior ceilings (<40% of total) including tiles, gypsum board, plaster, paint, etc.
IS3B	CEILINGS	REPLACEMENT	Major refurbishments (>40% of total) to interior ceiling systems including grid system replacements, structural framing, new suspended systems, paint, plastering, etc.
IS4A	DOORS	GENERAL	Any work on interior non-fire rated doors, roll-up counter doors, mechanical/plumbing access doors, and all door hardware (except for reasons of access improvement).
IS5A	STAIRS	FINISH	Any finish restorative work to stair tower walking surfaces including replacement of rubber treads, safety grips, nosings, etc. (except as required to accommodate disabled persons).
IS6A	GENERAL	MOLDING	R & R to interior trim/molding systems including rubber/vinyl/wood base, crown/chair/ornamental moldings, cased openings, etc.
IS6B	GENERAL	CABINETRY	R & R work to interior casework systems including cabinets, countertops, wardrobes, lockers, mail boxes, built-in bookcases, lab/work benches, reagent shelving, etc. (except as required for access by the disabled).
IS6C	GENERAL	SCREENING	Work on temporary or partial height partitioning systems including toilet partitions, urinal/vanity screens, etc.
IS6D	GENERAL	OTHER	Any work on interior elements not logically or specifically categorized elsewhere including light coves, phone booths, interior light wells, etc.
SYSTEM DESCRIPTION: PLUMBING			
PL1A	DOMESTIC WATER	PIPING NETWORK	Repair or replacement of domestic water supply piping network, insulation, hangers, etc.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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.
SS2A	SITE	FENCING	Perimeter campus fencing, individual building fencing, includes both pedestrian and vehicular control fences.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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
0409-000 : MUELLER LABORATORY

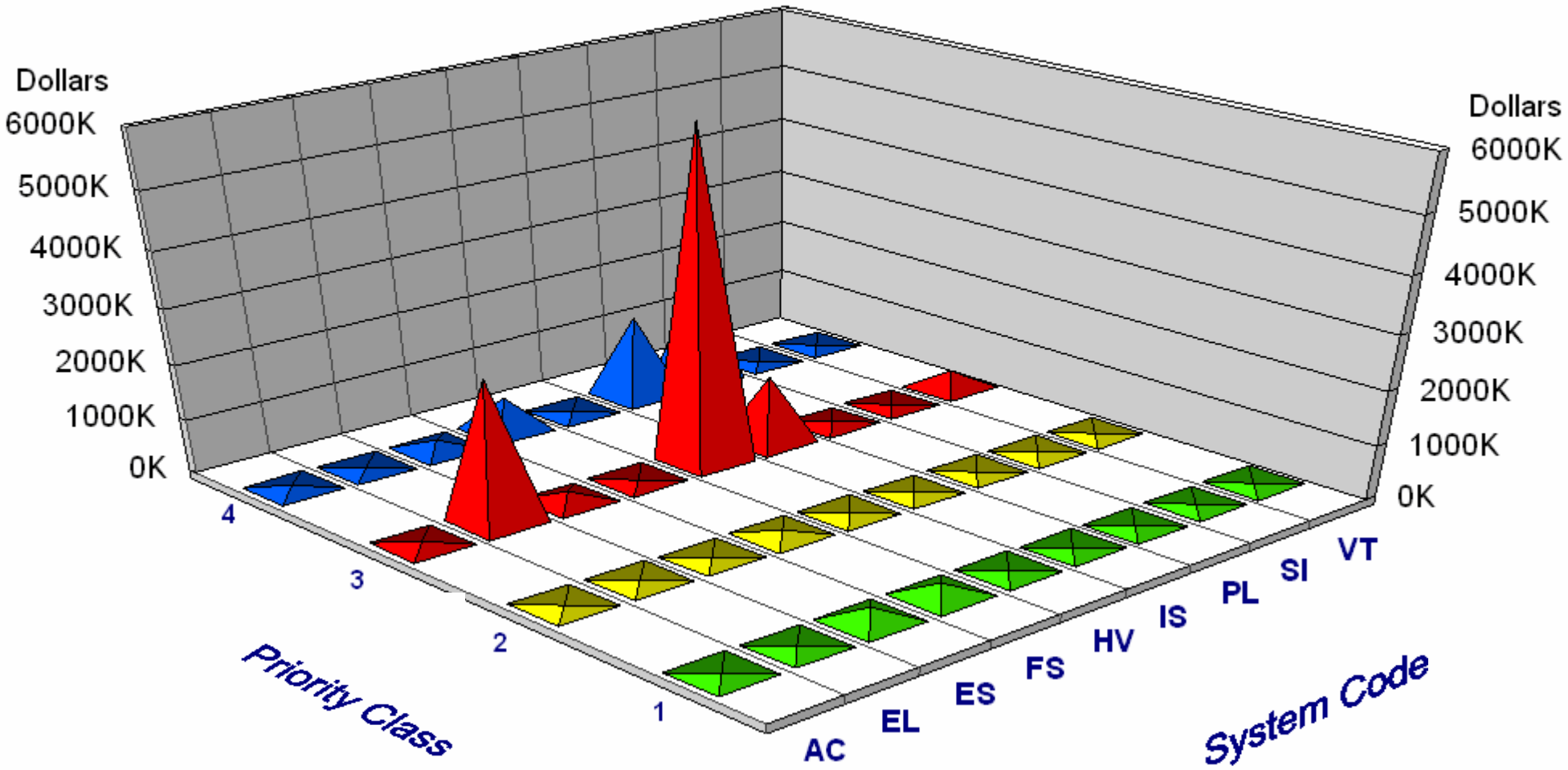
System Code	System Description	Priority Classes 1	2	3	4	Subtotal
AC	ACCESSIBILITY	9,287	0	68,301	54,364	131,952
EL	ELECTRICAL	0	17,608	2,590,262	0	2,607,870
ES	EXTERIOR	224,484	0	163,136	172,018	559,637
FS	FIRE/LIFE SAFETY	234,250	82,001	0	635,887	952,138
HV	HVAC	0	0	5,977,210	0	5,977,210
IS	INTERIOR/FINISH SYS.	0	0	1,230,631	1,508,069	2,738,700
PL	PLUMBING	0	0	26,831	1,871,660	1,898,492
SI	SITE	0	0	6,621	0	6,621
VT	VERT. TRANSPORTATION	0	0	316,062	0	316,062
	TOTALS	$468,021	$99,609	$10,379,054	$4,241,998	$15,188,682

Facility Replacement Cost	$39,320,801
Facility Condition Needs Index	0.39

Gross Square Feet	75,482

Total Cost Per Square Foot	$201.22

FACILITY CONDITION ANALYSIS
System Code by Priority Class
0409-000 : MUELLER LABORATORY



Detailed Project Totals
Facility Condition Analysis
System Code by Project Class
0409-000 : MUELLER LABORATORY

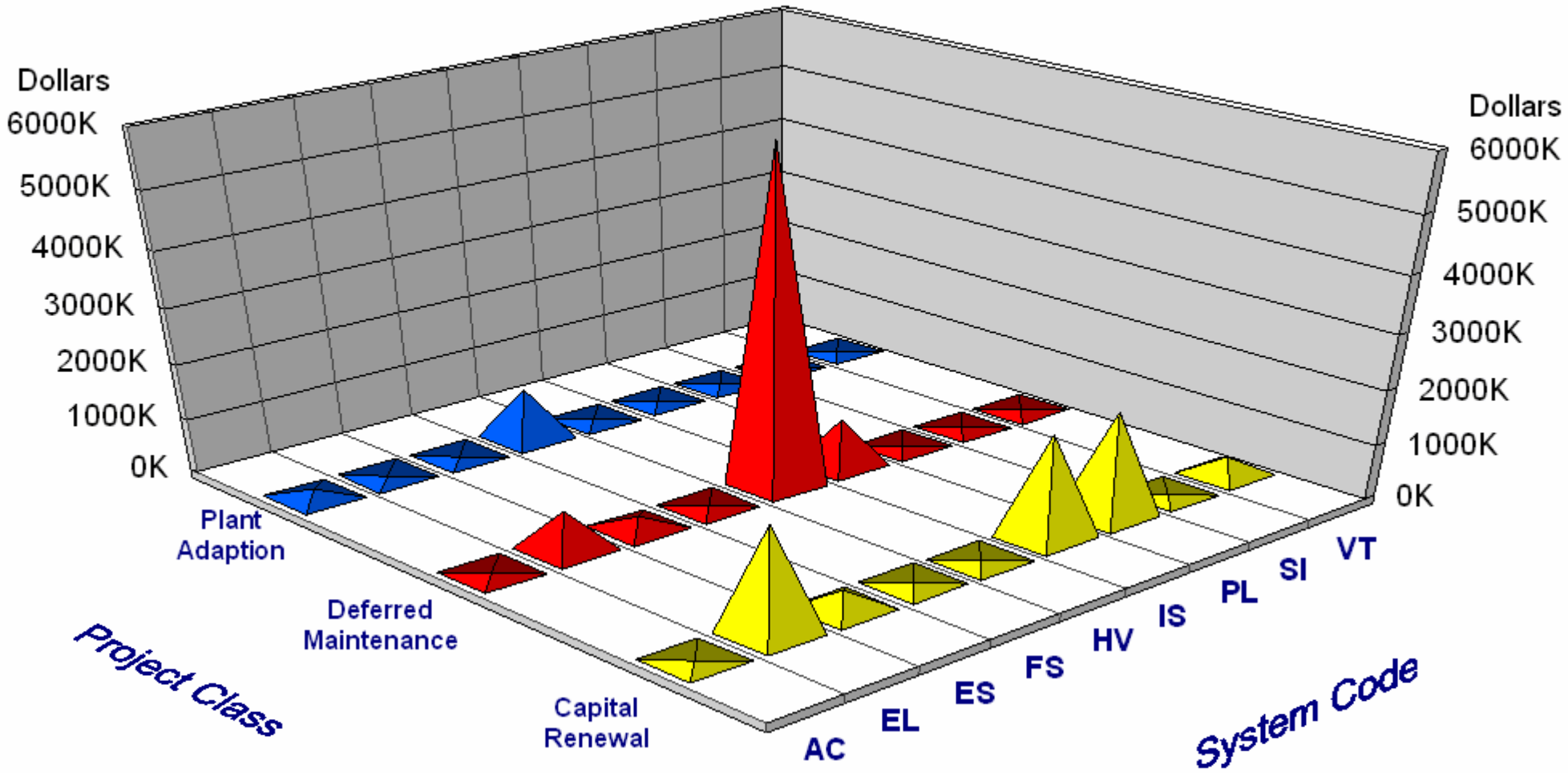
System Code	System Description	Project Classes: Capital Renewal	Deferred Maintenance	Plant Adaption	Subtotal
AC	ACCESSIBILITY	0	0	131,952	131,952
EL	ELECTRICAL	1,898,696	709,175	0	2,607,870
ES	EXTERIOR	335,154	224,484	0	559,637
FS	FIRE/LIFE SAFETY	32,804	0	919,334	952,138
HV	HVAC	0	5,977,210	0	5,977,210
IS	INTERIOR/FINISH SYS.	1,885,414	853,286	0	2,738,700
PL	PLUMBING	1,898,492	0	0	1,898,492
SI	SITE	6,621	0	0	6,621
VT	VERT. TRANSPORTATION	316,062	0	0	316,062
	TOTALS	$6,373,241	$7,764,154	$1,051,286	$15,188,682

Facility Replacement Cost	$39,320,801
Facility Condition Needs Index	0.39

Gross Square Feet	75,482

Total Cost Per Square Foot	$201.22

FACILITY CONDITION ANALYSIS
System Code by Project Class
0409-000 : MUELLER LABORATORY



Detailed Project Summary
Facility Condition Analysis
Project Class by Priority Class
0409-000 : MUELLER LABORATORY

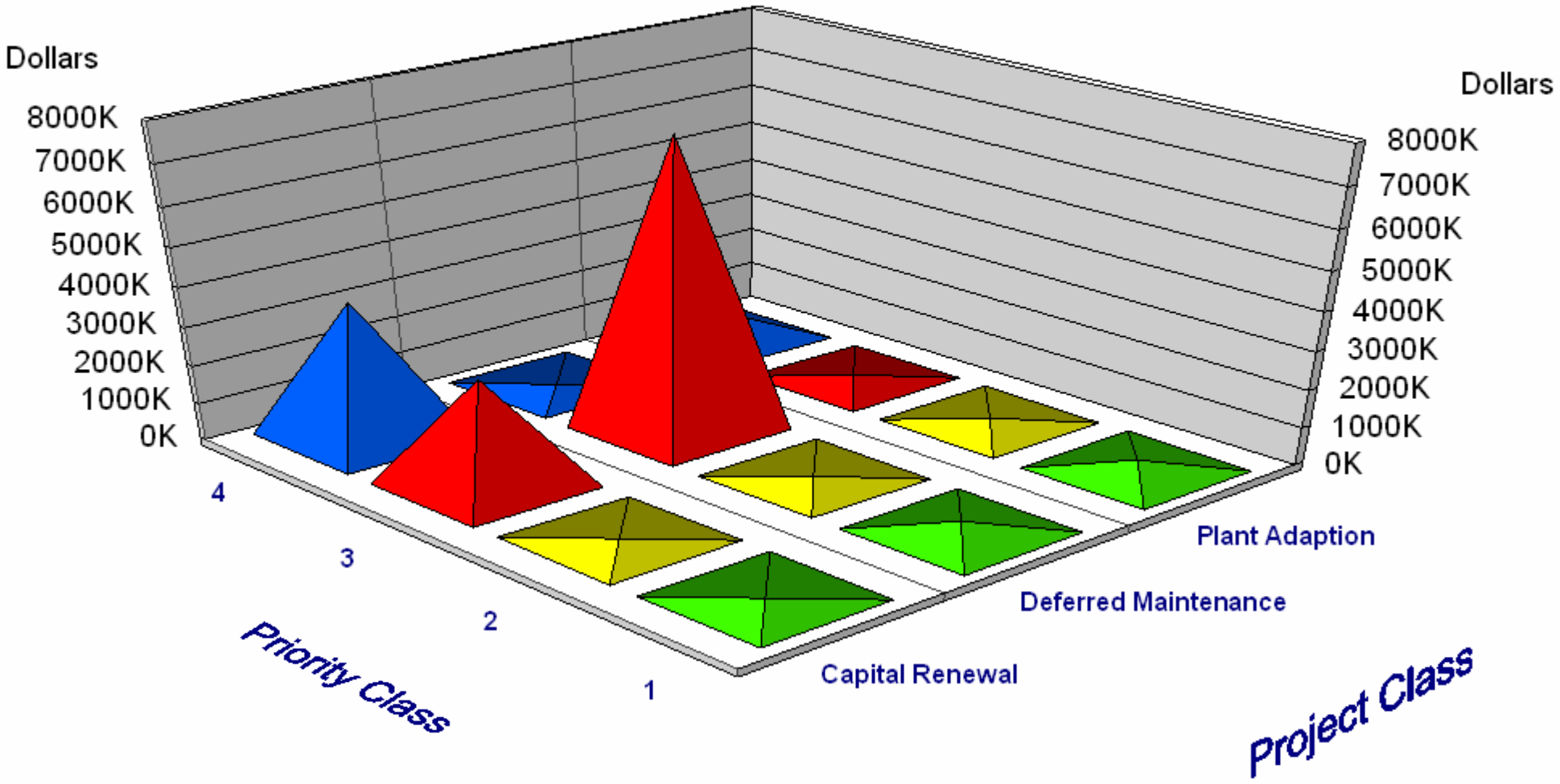
	Priority Classes				
Project Class	**1**	**2**	**3**	**4**	**Subtotal**
Capital Renewal	0	0	2,788,690	3,584,552	6,373,241
Deferred Maintenance	224,484	17,608	7,522,063	0	7,764,154
Plant Adaption	243,537	82,001	68,301	657,447	1,051,286
TOTALS	$468,021	$99,609	$10,379,054	$4,241,998	$15,188,682

Facility Replacement Cost	$39,320,801
Facility Condition Needs Index	0.39

Gross Square Feet	75,482

Total Cost Per Square Foot	$201.22

FACILITY CONDITION ANALYSIS
Project Class by Priority Class
0409-000 : MUELLER LABORATORY



Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
FS2A	0409-000FS05	1	1	REPLACE FIRE ALARM SYSTEM	203,696	30,554	0	234,250
AC2A	0409-000AC03	1	2	REPAIR EXTERIOR ENTRANCE WALKWAY AND LOADING DOCK STEPS	8,075	1,211	0	9,287
ES2A	0409-000ES03	1	3	STRUCTURAL CRACK ANALYSIS AND REPAIR	195,203	29,280	0	224,484
				Totals for Priority Class 1	**406,974**	**61,046**	**0**	**468,021**
FS5C	0409-000FS01	2	4	FIRE RATING COMPROMISE REPAIRS	24,583	0	1	24,582
FS4B	0409-000FS06	2	5	UPGRADE EYEWASH FOUNTAINS	47,410	7,111	0	54,521
FS5E	0409-000FS02	2	6	INSTALL GUARDRAILS	2,898	0	0	2,898
EL5A	0409-000EL04	2	7	EMERGENCY POWER SYSTEM UPGRADE (REV 2/08)	15,311	2,297	0	17,608
				Totals for Priority Class 2	**90,202**	**9,408**	**1**	**99,609**
AC3F	0409-000AC01	3	8	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	59,392	8,909	0	68,301
ES4B	0409-000ES01	3	9	REPLACE FLAT ROOFING SYSTEM	141,857	21,279	0	163,136
HV3A	0409-000HV01	3	10	HVAC SYSTEM CAPITAL REPLACEMENT	5,197,574	779,636	0	5,977,210
EL4B	0409-000EL03	3	11	UPGRADE INTERIOR LIGHTING	601,362	90,204	0	691,567
EL2A	0409-000EL01	3	12	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	155,271	23,291	0	178,561
EL3B	0409-000EL02	3	13	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,495,769	224,365	0	1,720,134
IS2B	0409-000IS01	3	14	INTERIOR PAINT FINISH UPGRADE	328,126	49,219	0	377,345
IS1A	0409-000IS03	3	15	FLOORING UPGRADES	741,988	111,298	0	853,286
PL1E	0409-000PL05	3	16	INSTALL A NEW DOMESTIC HOT WATER CONVERTER	23,332	3,500	0	26,831
SI1B	0409-000SI01	3	17	ASPHALT PAVEMENT IMPROVEMENTS	6,621	0	0	6,621
VT7A	0409-000VT01	3	18	COMPREHENSIVE ELEVATOR MODERNIZATION (2/08)	274,836	41,225	0	316,062
				Totals for Priority Class 3	**9,026,128**	**1,352,926**	**0**	**10,379,054**
FS1A	0409-000FS07	4	19	REPLACE EXIT SIGNS	28,526	4,279	0	32,804

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
FS3A	0409-000FS04	4	20	INSTALL FIRE SPRINKLING SYSTEM	500,426	75,064	0	575,489
FS5E	0409-000FS03	4	21	INTERIOR STAIR HANDRAIL IMPROVEMENTS	23,994	3,599	0	27,593
AC4A	0409-000AC02	4	22	CLASSROOM WHEELCHAIR ACCOMMODATIONS	2,767	415	0	3,182
AC3E	0409-000AC04	4	23	RESTROOM UPGRADE	44,506	6,676	0	51,182
ES2B	0409-000ES02	4	24	CLEAN, POINT, AND REPAIR EXTERIOR BRICK SURFACES	149,581	22,437	0	172,018
IS4A	0409-000IS02	4	25	INTERIOR DOOR AND HARDWARE REPLACEMENTS	249,590	37,439	0	287,029
IS6B	0409-000IS04	4	26	LABORATORY CASEWORK REPLACEMENTS	907,033	136,055	0	1,043,088
IS3B	0409-000IS05	4	27	LAY-IN ACOUSTICAL CEILING REMOVAL AND REPLACEMENT	177,952	0	0	177,952
PL2A	0409-000PL03	4	28	REPLACE DRAIN PIPING NETWORKS	952,521	142,878	0	1,095,399
PL1A	0409-000PL02	4	29	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	602,036	90,305	0	692,341
PL1G	0409-000PL04	4	30	REPLACE RESTROOM PLUMBING FIXTURES	72,974	10,946	0	83,920
				Totals for Priority Class 4	**3,711,905**	**530,093**	**0**	**4,241,998**
				Grand Total:	**13,235,209**	**1,953,473**	**1**	**15,188,682**

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects < 25,000

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
AC2A	0409-000AC03	1	2	REPAIR EXTERIOR ENTRANCE WALKWAY AND LOADING DOCK STEPS	8,075	1,211	0	9,287
				Totals for Priority Class 1	**8,075**	**1,211**	**0**	**9,287**
FS5C	0409-000FS01	2	4	FIRE RATING COMPROMISE REPAIRS	24,583	0	1	24,582
FS5E	0409-000FS02	2	6	INSTALL GUARDRAILS	2,898	0	0	2,898
EL5A	0409-000EL04	2	7	EMERGENCY POWER SYSTEM UPGRADE (REV 2/08)	15,311	2,297	0	17,608
				Totals for Priority Class 2	**42,792**	**2,297**	**1**	**45,088**
SI1B	0409-000SI01	3	17	ASPHALT PAVEMENT IMPROVEMENTS	6,621	0	0	6,621
				Totals for Priority Class 3	**6,621**	**0**	**0**	**6,621**
AC4A	0409-000AC02	4	22	CLASSROOM WHEELCHAIR ACCOMMODATIONS	2,767	415	0	3,182
				Totals for Priority Class 4	**2,767**	**415**	**0**	**3,182**
				Grand Totals For Projects < 25,000	**60,255**	**3,923**	**1**	**64,177**

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects >= 25,000 and < 1,000,000

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
FS2A	0409-000FS05	1	1	REPLACE FIRE ALARM SYSTEM	203,696	30,554	0	234,250
ES2A	0409-000ES03	1	3	STRUCTURAL CRACK ANALYSIS AND REPAIR	195,203	29,280	0	224,484
				Totals for Priority Class 1	**398,899**	**59,835**	**0**	**458,734**
FS4B	0409-000FS06	2	5	UPGRADE EYEWASH FOUNTAINS	47,410	7,111	0	54,521
				Totals for Priority Class 2	**47,410**	**7,111**	**0**	**54,521**
AC3F	0409-000AC01	3	8	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	59,392	8,909	0	68,301
ES4B	0409-000ES01	3	9	REPLACE FLAT ROOFING SYSTEM	141,857	21,279	0	163,136
EL4B	0409-000EL03	3	11	UPGRADE INTERIOR LIGHTING	601,362	90,204	0	691,567
EL2A	0409-000EL01	3	12	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	155,271	23,291	0	178,561
IS2B	0409-000IS01	3	14	INTERIOR PAINT FINISH UPGRADE	328,126	49,219	0	377,345
IS1A	0409-000IS03	3	15	FLOORING UPGRADES	741,988	111,298	0	853,286
PL1E	0409-000PL05	3	16	INSTALL A NEW DOMESTIC HOT WATER CONVERTER	23,332	3,500	0	26,831
VT7A	0409-000VT01	3	18	COMPREHENSIVE ELEVATOR MODERNIZATION (2/08)	274,836	41,225	0	316,062
				Totals for Priority Class 3	**2,326,164**	**348,925**	**0**	**2,675,089**
FS1A	0409-000FS07	4	19	REPLACE EXIT SIGNS	28,526	4,279	0	32,804
FS3A	0409-000FS04	4	20	INSTALL FIRE SPRINKLING SYSTEM	500,426	75,064	0	575,489
FS5E	0409-000FS03	4	21	INTERIOR STAIR HANDRAIL IMPROVEMENTS	23,994	3,599	0	27,593
AC3E	0409-000AC04	4	23	RESTROOM UPGRADE	44,506	6,676	0	51,182
ES2B	0409-000ES02	4	24	CLEAN, POINT, AND REPAIR EXTERIOR BRICK SURFACES	149,581	22,437	0	172,018
IS4A	0409-000IS02	4	25	INTERIOR DOOR AND HARDWARE REPLACEMENTS	249,590	37,439	0	287,029
IS3B	0409-000IS05	4	27	LAY-IN ACOUSTICAL CEILING REMOVAL AND REPLACEMENT	177,952	0	0	177,952

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects >= 25,000 and < 1,000,000

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
PL1A	0409-000PL02	4	29	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	602,036	90,305	0	692,341
PL1G	0409-000PL04	4	30	REPLACE RESTROOM PLUMBING FIXTURES	72,974	10,946	0	83,920
				Totals for Priority Class 4	**1,849,584**	**250,745**	**0**	**2,100,329**
				Grand Totals For Projects >= 25,000 and < 1,000,000	**4,622,057**	**666,616**	**0**	**5,288,673**

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects >= 1,000,000

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
HV3A	0409-000HV01	3	10	HVAC SYSTEM CAPITAL REPLACEMENT	5,197,574	779,636	0	5,977,210
EL3B	0409-000EL02	3	13	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,495,769	224,365	0	1,720,134
				Totals for Priority Class 3	**6,693,343**	**1,004,001**	**0**	**7,697,344**
IS6B	0409-000IS04	4	26	LABORATORY CASEWORK REPLACEMENTS	907,033	136,055	0	1,043,088
PL2A	0409-000PL03	4	28	REPLACE DRAIN PIPING NETWORKS	952,521	142,878	0	1,095,399
				Totals for Priority Class 4	**1,859,554**	**278,933**	**0**	**2,138,487**
				Grand Totals For Projects >= 1,000,000	**8,552,897**	**1,282,935**	**0**	**9,835,831**
				Grand Total for All Projects:	**13,235,209**	**1,953,473**	**1**	**15,188,682**

Detailed Project Summary

Facility Condition Analysis

Section Two

Project Classification

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Seq	Project Classification	Pri Cls	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
ES4B	0409-000ES01	9	Capital Renewal	3	REPLACE FLAT ROOFING SYSTEM	141,857	21,279	0	163,136
EL2A	0409-000EL01	12	Capital Renewal	3	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	155,271	23,291	0	178,561
EL3B	0409-000EL02	13	Capital Renewal	3	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,495,769	224,365	0	1,720,134
IS2B	0409-000IS01	14	Capital Renewal	3	INTERIOR PAINT FINISH UPGRADE	328,126	49,219	0	377,345
PL1E	0409-000PL05	16	Capital Renewal	3	INSTALL A NEW DOMESTIC HOT WATER CONVERTER	23,332	3,500	0	26,831
SI1B	0409-000SI01	17	Capital Renewal	3	ASPHALT PAVEMENT IMPROVEMENTS	6,621	0	0	6,621
VT7A	0409-000VT01	18	Capital Renewal	3	COMPREHENSIVE ELEVATOR MODERNIZATION (2/08)	274,836	41,225	0	316,062
FS1A	0409-000FS07	19	Capital Renewal	4	REPLACE EXIT SIGNS	28,526	4,279	0	32,804
ES2B	0409-000ES02	24	Capital Renewal	4	CLEAN, POINT, AND REPAIR EXTERIOR BRICK SURFACES	149,581	22,437	0	172,018
IS4A	0409-000IS02	25	Capital Renewal	4	INTERIOR DOOR AND HARDWARE REPLACEMENTS	249,590	37,439	0	287,029
IS6B	0409-000IS04	26	Capital Renewal	4	LABORATORY CASEWORK REPLACEMENTS	907,033	136,055	0	1,043,088
IS3B	0409-000IS05	27	Capital Renewal	4	LAY-IN ACOUSTICAL CEILING REMOVAL AND REPLACEMENT	177,952	0	0	177,952
PL2A	0409-000PL03	28	Capital Renewal	4	REPLACE DRAIN PIPING NETWORKS	952,521	142,878	0	1,095,399
PL1A	0409-000PL02	29	Capital Renewal	4	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	602,036	90,305	0	692,341
PL1G	0409-000PL04	30	Capital Renewal	4	REPLACE RESTROOM PLUMBING FIXTURES	72,974	10,946	0	83,920
			Totals for Capital Renewal			**5,566,024**	**807,218**	**0**	**6,373,241**
ES2A	0409-000ES03	3	Deferred Maintenance	1	STRUCTURAL CRACK ANALYSIS AND REPAIR	195,203	29,280	0	224,484
EL5A	0409-000EL04	7	Deferred Maintenance	2	EMERGENCY POWER SYSTEM UPGRADE (REV 2/08)	15,311	2,297	0	17,608

Detailed Project Summary

Facility Condition Analysis

Section Two

Project Classification

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Seq	Project Classification	Pri Cls	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
HV3A	0409-000HV01	10	Deferred Maintenance	3	HVAC SYSTEM CAPITAL REPLACEMENT	5,197,574	779,636	0	5,977,210
EL4B	0409-000EL03	11	Deferred Maintenance	3	UPGRADE INTERIOR LIGHTING	601,362	90,204	0	691,567
IS1A	0409-000IS03	15	Deferred Maintenance	3	FLOORING UPGRADES	741,988	111,298	0	853,286
			Totals for Deferred Maintenance			**6,751,439**	**1,012,716**	**0**	**7,764,154**
FS2A	0409-000FS05	1	Plant Adaption	1	REPLACE FIRE ALARM SYSTEM	203,696	30,554	0	234,250
AC2A	0409-000AC03	2	Plant Adaption	1	REPAIR EXTERIOR ENTRANCE WALKWAY AND LOADING DOCK STEPS	8,075	1,211	0	9,287
FS5C	0409-000FS01	4	Plant Adaption	2	FIRE RATING COMPROMISE REPAIRS	24,583	0	1	24,582
FS4B	0409-000FS06	5	Plant Adaption	2	UPGRADE EYEWASH FOUNTAINS	47,410	7,111	0	54,521
FS5E	0409-000FS02	6	Plant Adaption	2	INSTALL GUARDRAILS	2,898	0	0	2,898
AC3F	0409-000AC01	8	Plant Adaption	3	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	59,392	8,909	0	68,301
FS3A	0409-000FS04	20	Plant Adaption	4	INSTALL FIRE SPRINKLING SYSTEM	500,426	75,064	0	575,489
FS5E	0409-000FS03	21	Plant Adaption	4	INTERIOR STAIR HANDRAIL IMPROVEMENTS	23,994	3,599	0	27,593
AC4A	0409-000AC02	22	Plant Adaption	4	CLASSROOM WHEELCHAIR ACCOMMODATIONS	2,767	415	0	3,182
AC3E	0409-000AC04	23	Plant Adaption	4	RESTROOM UPGRADE	44,506	6,676	0	51,182
			Totals for Plant Adaption			**917,747**	**133,540**	**1**	**1,051,286**
				Grand Total:		**13,235,209**	**1,953,473**	**1**	**15,188,682**

Detailed Project Summary

Facility Condition Analysis

Section Two

Energy Conservation

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Total Cost	Annual Savings	Simple Payback
HV3A	0409-000HV01	3	10	HVAC SYSTEM CAPITAL REPLACEMENT	5,977,210	18,900	316.25
EL4B	0409-000EL03	3	11	UPGRADE INTERIOR LIGHTING	691,567	3,110	222.37
				Totals for Priority Class 3	**6,668,776**	**22,010**	302.99
FS1A	0409-000FS07	4	19	REPLACE EXIT SIGNS	32,804	497	66.00
PL1G	0409-000PL04	4	30	REPLACE RESTROOM PLUMBING FIXTURES	83,920	267	314.31
				Totals for Priority Class 4	**116,724**	**764**	152.78
				Grand Total:	**6,785,501**	**22,774**	297.95

Category/System Code Update Report

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fees	Actual Cost to Date	Remaining Cost
AC2A	0409-000AC03	1	2	REPAIR EXTERIOR ENTRANCE WALKWAY AND LOADING DOCK STEPS	8,075	1,211	0	9,287
AC3F	0409-000AC01	3	8	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	59,392	8,909	0	68,301
AC4A	0409-000AC02	4	22	CLASSROOM WHEELCHAIR ACCOMMODATIONS	2,767	415	0	3,182
AC3E	0409-000AC04	4	23	RESTROOM UPGRADE	44,506	6,676	0	51,182
	Totals for System Code:			**ACCESSIBILITY**	**114,741**	**17,211**	**0**	**131,952**
EL5A	0409-000EL04	2	7	EMERGENCY POWER SYSTEM UPGRADE (REV 2/08)	15,311	2,297	0	17,608
EL4B	0409-000EL03	3	11	UPGRADE INTERIOR LIGHTING	601,362	90,204	0	691,567
EL2A	0409-000EL01	3	12	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	155,271	23,291	0	178,561
EL3B	0409-000EL02	3	13	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,495,769	224,365	0	1,720,134
	Totals for System Code:			**ELECTRICAL**	**2,267,713**	**340,157**	**0**	**2,607,870**
ES2A	0409-000ES03	1	3	STRUCTURAL CRACK ANALYSIS AND REPAIR	195,203	29,280	0	224,484
ES4B	0409-000ES01	3	9	REPLACE FLAT ROOFING SYSTEM	141,857	21,279	0	163,136
ES2B	0409-000ES02	4	24	CLEAN, POINT, AND REPAIR EXTERIOR BRICK SURFACES	149,581	22,437	0	172,018
	Totals for System Code:			**EXTERIOR**	**486,641**	**72,996**	**0**	**559,637**
FS2A	0409-000FS05	1	1	REPLACE FIRE ALARM SYSTEM	203,696	30,554	0	234,250
FS5C	0409-000FS01	2	4	FIRE RATING COMPROMISE REPAIRS	24,583	0	1	24,582
FS4B	0409-000FS06	2	5	UPGRADE EYEWASH FOUNTAINS	47,410	7,111	0	54,521
FS5E	0409-000FS02	2	6	INSTALL GUARDRAILS	2,898	0	0	2,898
FS1A	0409-000FS07	4	19	REPLACE EXIT SIGNS	28,526	4,279	0	32,804
FS3A	0409-000FS04	4	20	INSTALL FIRE SPRINKLING SYSTEM	500,426	75,064	0	575,489

Category/System Code Update Report

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fees	Actual Cost to Date	Remaining Cost
FS5E	0409-000FS03	4	21	INTERIOR STAIR HANDRAIL IMPROVEMENTS	23,994	3,599	0	27,593
	Totals for System Code:			**FIRE/LIFE SAFETY**	**831,532**	**120,608**	**1**	**952,138**
HV3A	0409-000HV01	3	10	HVAC SYSTEM CAPITAL REPLACEMENT	5,197,574	779,636	0	5,977,210
	Totals for System Code:			**HVAC**	**5,197,574**	**779,636**	**0**	**5,977,210**
IS2B	0409-000IS01	3	14	INTERIOR PAINT FINISH UPGRADE	328,126	49,219	0	377,345
IS1A	0409-000IS03	3	15	FLOORING UPGRADES	741,988	111,298	0	853,286
IS4A	0409-000IS02	4	25	INTERIOR DOOR AND HARDWARE REPLACEMENTS	249,590	37,439	0	287,029
IS6B	0409-000IS04	4	26	LABORATORY CASEWORK REPLACEMENTS	907,033	136,055	0	1,043,088
IS3B	0409-000IS05	4	27	LAY-IN ACOUSTICAL CEILING REMOVAL AND REPLACEMENT	177,952	0	0	177,952
	Totals for System Code:			**INTERIOR/FINISH SYS.**	**2,404,689**	**334,011**	**0**	**2,738,700**
PL1E	0409-000PL05	3	16	INSTALL A NEW DOMESTIC HOT WATER CONVERTER	23,332	3,500	0	26,831
PL2A	0409-000PL03	4	28	REPLACE DRAIN PIPING NETWORKS	952,521	142,878	0	1,095,399
PL1A	0409-000PL02	4	29	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	602,036	90,305	0	692,341
PL1G	0409-000PL04	4	30	REPLACE RESTROOM PLUMBING FIXTURES	72,974	10,946	0	83,920
	Totals for System Code:			**PLUMBING**	**1,650,862**	**247,629**	**0**	**1,898,492**
SI1B	0409-000SI01	3	17	ASPHALT PAVEMENT IMPROVEMENTS	6,621	0	0	6,621
	Totals for System Code:			**SITE**	**6,621**	**0**	**0**	**6,621**
VT7A	0409-000VT01	3	18	COMPREHENSIVE ELEVATOR MODERNIZATION (2/08)	274,836	41,225	0	316,062
	Totals for System Code:			**VERT. TRANSPORTATION**	**274,836**	**41,225**	**0**	**316,062**
				Grand Total:	**13,235,209**	**1,953,473**	**1**	**15,188,682**

Detailed Project Summary

Facility Condition Analysis

Section Two

Score Report

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Score	Risk Lvl	Pri Seq	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
EL5A	0409-000EL04	9.35	2	7	EMERGENCY POWER SYSTEM UPGRADE (REV 2/08)	15,311	2,297	0	17,608
HV3A	0409-000HV01	9.35	3	10	HVAC SYSTEM CAPITAL REPLACEMENT	5,197,574	779,636	0	5,977,210
EL2A	0409-000EL01	9.35	3	12	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	155,271	23,291	0	178,561
EL3B	0409-000EL02	9.35	3	13	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,495,769	224,365	0	1,720,134
PL1E	0409-000PL05	9.35	3	16	INSTALL A NEW DOMESTIC HOT WATER CONVERTER	23,332	3,500	0	26,831
			Totals for Score	9.35		**6,887,256**	**1,033,088**	**0**	**7,920,344**
IS4A	0409-000IS02	8.35	4	25	INTERIOR DOOR AND HARDWARE REPLACEMENTS	249,590	37,439	0	287,029
			Totals for Score	8.35		**249,590**	**37,439**	**0**	**287,029**
ES4B	0409-000ES01	7.35	3	9	REPLACE FLAT ROOFING SYSTEM	141,857	21,279	0	163,136
IS2B	0409-000IS01	7.35	3	14	INTERIOR PAINT FINISH UPGRADE	328,126	49,219	0	377,345
IS3B	0409-000IS05	7.35	4	27	LAY-IN ACOUSTICAL CEILING REMOVAL AND REPLACEMENT	177,952	0	0	177,952
PL2A	0409-000PL03	7.35	4	28	REPLACE DRAIN PIPING NETWORKS	952,521	142,878	0	1,095,399
PL1A	0409-000PL02	7.35	4	29	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	602,036	90,305	0	692,341
PL1G	0409-000PL04	7.35	4	30	REPLACE RESTROOM PLUMBING FIXTURES	72,974	10,946	0	83,920
			Totals for Score	7.35		**2,275,466**	**314,627**	**0**	**2,590,093**
ES2B	0409-000ES02	5.35	4	24	CLEAN, POINT, AND REPAIR EXTERIOR BRICK SURFACES	149,581	22,437	0	172,018
			Totals for Score	5.35		**149,581**	**22,437**	**0**	**172,018**

Detailed Project Summary

Facility Condition Analysis

Section Two

Score Report

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Score	Risk Lvl	Pri Seq	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
FS2A	0409-000FS05	14.35	1	1	REPLACE FIRE ALARM SYSTEM	203,696	30,554	0	234,250
AC2A	0409-000AC03	14.35	1	2	REPAIR EXTERIOR ENTRANCE WALKWAY AND LOADING DOCK STEPS	8,075	1,211	0	9,287
ES2A	0409-000ES03	14.35	1	3	STRUCTURAL CRACK ANALYSIS AND REPAIR	195,203	29,280	0	224,484
FS5C	0409-000FS01	14.35	2	4	FIRE RATING COMPROMISE REPAIRS	24,583	0	1	24,582
FS4B	0409-000FS06	14.35	2	5	UPGRADE EYEWASH FOUNTAINS	47,410	7,111	0	54,521
FS5E	0409-000FS02	14.35	2	6	INSTALL GUARDRAILS	2,898	0	0	2,898
AC3F	0409-000AC01	14.35	3	8	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	59,392	8,909	0	68,301
FS1A	0409-000FS07	14.35	4	19	REPLACE EXIT SIGNS	28,526	4,279	0	32,804
FS3A	0409-000FS04	14.35	4	20	INSTALL FIRE SPRINKLING SYSTEM	500,426	75,064	0	575,489
FS5E	0409-000FS03	14.35	4	21	INTERIOR STAIR HANDRAIL IMPROVEMENTS	23,994	3,599	0	27,593
AC4A	0409-000AC02	14.35	4	22	CLASSROOM WHEELCHAIR ACCOMMODATIONS	2,767	415	0	3,182
AC3E	0409-000AC04	14.35	4	23	RESTROOM UPGRADE	44,506	6,676	0	51,182
				Totals for Score	14.35	**1,141,476**	**167,099**	**1**	**1,308,574**
EL4B	0409-000EL03	12.35	3	11	UPGRADE INTERIOR LIGHTING	601,362	90,204	0	691,567
				Totals for Score	12.35	**601,362**	**90,204**	**0**	**691,567**
VT7A	0409-000VT01	11.35	3	18	COMPREHENSIVE ELEVATOR MODERNIZATION (2/08)	274,836	41,225	0	316,062
IS6B	0409-000IS04	11.35	4	26	LABORATORY CASEWORK REPLACEMENTS	907,033	136,055	0	1,043,088
				Totals for Score	11.35	**1,181,869**	**177,280**	**0**	**1,359,150**

Detailed Project Summary

Facility Condition Analysis

Section Two

Score Report

0409-000 : MUELLER LABORATORY

Cat. Code	Project Number	Score	Risk Lvl	Pri Seq	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
IS1A	0409-000IS03	10.35	3	15	FLOORING UPGRADES	741,988	111,298	0	853,286
SI1B	0409-000SI01	10.35	3	17	ASPHALT PAVEMENT IMPROVEMENTS	6,621	0	0	6,621
				Totals for Score	10.35	**748,609**	**111,298**	**0**	**859,907**
				Grand Total:		**13,235,209**	**1,953,473**	**1**	**15,188,682**

FACILITY CONDITION ANALYSIS

SECTION 3

SPECIFIC PROJECT DETAILS ILLUSTRATING DESCRIPTION / COST

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000FS05	**Title:**	REPLACE FIRE ALARM SYSTEM
Priority Sequence:	1		
Priority Class:	1		
Category Code:	FS2A	**System:**	FIRE/LIFE SAFETY
		Component:	DETECTION ALARM
		Element:	GENERAL
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NFPA 1, 101 ADAAG 702.1		
Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

The fire alarm system is outdated and does not comply with ADA standards for visual alarm and pull station locations. Remove the existing system, and install a modern zone-type fire alarm system. Specify a point addressable, multizone, four-wire, Class A, supervised fire alarm panel with an annunciator. This work includes pull stations, audible / visual and visual devices, smoke detectors, duct smoke detectors, and heat detectors. Install all devices in accordance with current NFPA and ADA requirements. The system should report activation or trouble to an applicable receiving station, such as campus security and / or the local fire department.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000FS05

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Fire alarm control panel(s), annunciator, smoke and heat detectors, manual pull stations, audible and visual alarms, wiring, raceways, and cut and patching materials	SF	75,482	$1.08	$81,521	$0.61	$46,044	$127,565
Project Totals:				**$81,521**		**$46,044**	**$127,565**

Material/Labor Cost		$127,565
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$119,650
General Contractor Mark Up at 20.0%	+	$23,930
Inflation	+	$60,116
Construction Cost		$203,696
Professional Fees at 15.0%	+	$30,554
Total Project Cost		**$234,250**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000AC03	**Title:**	REPAIR EXTERIOR ENTRANCE WALKWAY AND LOADING DOCK STEPS
Priority Sequence:	2		
Priority Class:	1		
Category Code:	AC2A	**System:**	ACCESSIBILITY
		Component:	BUILDING ENTRY
		Element:	GENERAL
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 303		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1, G		

Project Description

The difference in elevation between the main granite entrance and the asphalt pavement exceeds current accessibility requirements. This type of condition is a tripping hazard. Current legislation requires that changes in level up to one-quarter inch can be made without a transition. It is recommended that the surfaces be modified to create a smooth transition. The exterior steps at the loading dock also require repair. A corner of the step has broken off and can be a tripping hazard. It is recommended that the steps be repaired.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000AC03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Repair steps	EA	1	$350	$350	$1,200	$1,200	$1,550
Repair walkway	EA	1	$1,200	$1,200	$2,400	$2,400	$3,600
	Project Totals:			**$1,550**		**$3,600**	**$5,150**

Material/Labor Cost		$5,150
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$4,743
General Contractor Mark Up at 20.0%	+	$949
Inflation	+	$2,383
Construction Cost		$8,075
Professional Fees at 15.0%	+	$1,211
Total Project Cost		**$9,287**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000ES03	**Title:**	STRUCTURAL CRACK ANALYSIS AND REPAIR
Priority Sequence:	3		
Priority Class:	1		
Category Code:	ES2A	**System:**	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	STRUCTURE
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Deferred Maintenance	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Area Wide: Floor(s) G		

Project Description

There is significant rebar exposure in the ceiling deck of mechanical room M015. This deterioration of the concretize structure was cause by mechanical related equipment and has deteriorated the concrete to the point where the concrete beam supports are questionable. This situation can be dangerous and potentially cause a structural failure in that area. It is recommended that the occupants of the deck above be relocated and that temporary steel supports be added. A structural analysis is recommended, along with immediate repair.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000ES03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Structural analysis	EA	1	$2,500	$2,500	$9,500	$9,500	$12,000
Repair concrete flooring and concrete beams	SF	500	$34.50	$17,250	$125	$62,500	$79,750
Removal of equipment	LOT	1	$3,500	$3,500	$7,500	$7,500	$11,000
Temporary steel support	LOT	1	$9,500	$9,500	$12,500	$12,500	$22,000
	Project Totals:			**$32,750**		**$92,000**	**$124,750**

Material/Labor Cost		$124,750
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$114,661
General Contractor Mark Up at 20.0%	+	$22,932
Inflation	+	$57,610
Construction Cost		$195,203
Professional Fees at 15.0%	+	$29,280
Total Project Cost		**$224,484**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000FS01	**Title:**	FIRE RATING COMPROMISE REPAIRS
Priority Sequence:	4		
Priority Class:	2		
Category Code:	FS5C	**System:**	FIRE/LIFE SAFETY
		Component:	EGRESS PATH
		Element:	SEPARATION RATING
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NFPA 6.2		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1,2,3,4,5,6,G		

Project Description

Structural fire separations are not maintained according to code requirements for new construction in significant areas of this facility. Past conduit installations have not been fire protected in the annular space around the conduit and concrete structure. All penetrations through fire-rated separations should be properly sealed in accordance with industry standards.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000FS01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Fireproof caulking of annular spaces	FLR	7	$200	$1,400	$1,500	$10,500	$11,900
Masonry closure of corridor wall openings	SF	50	$22.00	$1,100	$56.00	$2,800	$3,900
	Project Totals:			**$2,500**		**$13,300**	**$15,800**

Material/Labor Cost		$15,800
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$14,440
General Contractor Mark Up at 20.0%	+	$2,888
Inflation	+	$7,255
Construction Cost		$24,583
No Professional Fees Required	+	$0
Total Project Cost		**$24,583**
Less Backlog Reduction	-	$1
Remaining Cost		**$24,582**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000FS06	**Title:**	UPGRADE EYEWASH FOUNTAINS
Priority Sequence:	5		
Priority Class:	2		
Category Code:	FS4B	**System:**	FIRE/LIFE SAFETY
		Component:	HAZARDOUS MATERIALS
		Element:	USER SAFETY
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	OSHA 29 CFR 1910.151C		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

This facility is equipped with eyewash showers and emergency fountains, but there are not enough in some areas to provide a high margin of safety. In addition, some of the existing units are timeworn. Some of the eyewashes are low-grade, portable units that lack tempered water supply. Remove the existing worn or low-grade showers and eyewashes. Install new emergency showers and eyewash fountains in all areas where related hazards exist. These should be permanent fixtures, connected to the building's water supply network, and provided with drains. They need to be clearly identified and located in unobstructed areas for easy access.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000FS06

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Eyewash fountain, drain, and rough-in	EA	28	$480	$13,440	$400	$11,200	$24,640
Emergency shower, drain, and rough-in	EA	7	$346	$2,422	$400	$2,800	$5,222
	Project Totals:			**$15,862**		**$14,000**	**$29,862**

Material/Labor Cost		$29,862
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$27,848
General Contractor Mark Up at 20.0%	+	$5,570
Inflation	+	$13,992
Construction Cost		$47,410
Professional Fees at 15.0%	+	$7,111
Total Project Cost		**$54,521**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000FS02	**Title:**	INSTALL GUARDRAILS
Priority Sequence:	6		
Priority Class:	2		
Category Code:	FS5E	**System:**	FIRE/LIFE SAFETY
		Component:	EGRESS PATH
		Element:	STAIRS AND RAILING
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IBC 1003		
Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1		

Project Description

The guardrail along the exterior stairs at the northwest corner of the first floor does not conform to current codes. The opening between the rails exceeds the maximum 4 inch sphere test requirement. To prevent injury and liability, it is recommended that the railing be modified to conform to current codes.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000FS02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Modify guardrail	LOT	1	$975	$975	$850	$850	$1,825
	Project Totals:			**$975**		**$850**	**$1,825**

Material/Labor Cost		$1,825
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$1,702
General Contractor Mark Up at 20.0%	+	$340
Inflation	+	$855
Construction Cost		$2,898
No Professional Fees Required	+	$0
Total Project Cost		**$2,898**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000EL04	**Title:**	EMERGENCY POWER SYSTEM UPGRADE (REV 2/08)
Priority Sequence:	7		
Priority Class:	2		
Category Code:	EL5A	**System:**	ELECTRICAL
		Component:	EMERGENCY POWER SYSTEM
		Element:	GENERATION/DISTRIBUTION
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NEC Article 700		

Project Class:	Deferred Maintenance	**Score:**	9.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

Emergency power for the building consists of two automatic transfer switches connected to the campus emergency power network. These do not alternately power the elevator according to records and university reports. The existing transfer switches power emergency power distribution panels supporting exit signs, corridor lights, and stair lights. It is recommended that the university increase the emergency feeder size, and add an additional transfer switch to power one of the two elevators for emergency fire service control.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000EL04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Automatic transfer switch, feeder upsizing, new power panel for a select elevator, and all connections	EA	1	$5,670	$5,670	$3,944	$3,944	$9,614
	Project Totals:			**$5,670**		**$3,944**	**$9,614**

Material/Labor Cost		$9,614
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$8,994
General Contractor Mark Up at 20.0%	+	$1,799
Inflation	+	$4,519
Construction Cost		$15,311
Professional Fees at 15.0%	+	$2,297
Total Project Cost		**$17,608**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000AC01	**Title:**	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS
Priority Sequence:	8		
Priority Class:	3		
Category Code:	AC3F	**System:**	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	DRINKING FOUNTAINS
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 211, 602		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

The existing drinking fountains are a single-level design. This geometry tends to serve the needs of persons in wheelchairs or those who have difficulty stooping, but not both. To comply with the intent of current ADA legislation, it is recommended that at least one of the existing drinking fountains on each floor be replaced with a dual-level, refrigerated unit. The construction of wall alcoves may be necessary where the code required clearances are not available. The scope of this project includes constructing alcoves at drinking fountains where these minimum clearances cannot be otherwise maintained.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000AC01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Studs, drywall, fasteners, tools, paint (2 coats), and supplies	EA	7	$750	$5,250	$3,200	$22,400	$27,650
Dual-level drinking fountain, piping, supplies, and tools	EA	7	$1,040	$7,280	$320	$2,240	$9,520
Dump truck rental and dumping fee	DAY	1	$475	$475	$144	$144	$619
	Project Totals:			**$13,005**		**$24,784**	**$37,789**

Material/Labor Cost		$37,789
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$34,887
General Contractor Mark Up at 20.0%	+	$6,977
Inflation	+	$17,528
Construction Cost		$59,392
Professional Fees at 15.0%	+	$8,909
Total Project Cost		**$68,301**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000ES01	**Title:**	REPLACE FLAT ROOFING SYSTEM
Priority Sequence:	9		
Priority Class:	3		
Category Code:	ES4B	**System:**	EXTERIOR
		Component:	ROOF
		Element:	REPLACEMENT
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	7.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) R		

Project Description

The existing roofing consists of an EPDM system. This ballasted roofing system has a warranty that expired in 2004. This is an indication that the roofing system is at life cycle depletion. It is recommended that the existing roofing system be replaced with a modified bitumen system.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000ES01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dump truck rental and dumping fee	DAY	10	$475	$4,750	$144	$1,436	$6,186
Modified bitumen roofing, insulation, tools, and supplies	SF	12,000	$3.12	$37,440	$2.88	$34,560	$72,000
Flashing installation	LOT	1	$3,750	$3,750	$7,500	$7,500	$11,250
	Project Totals:			**$45,940**		**$43,496**	**$89,436**

Material/Labor Cost		$89,436
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$83,326
General Contractor Mark Up at 20.0%	+	$16,665
Inflation	+	$41,866
Construction Cost		$141,857
Professional Fees at 15.0%	+	$21,279
Total Project Cost		**$163,136**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000HV01	**Title:**	HVAC SYSTEM CAPITAL REPLACEMENT
Priority Sequence:	10		
Priority Class:	3		
Category Code:	HV3A	**System:**	HVAC
		Component:	HEATING/COOLING
		Element:	SYSTEM RETROFIT/REPLACE
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Energy Conservation $18,900.00		
Code Application:	ASHRAE 62-1999		
	EPA 40 CFR 61M, 763		
	OSHA 29 CFR 1910.1001, 1926.1101		
Project Class:	Deferred Maintenance	**Score:**	9.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G, R		

Project Description

Mueller Laboratory is on the university's high pressure steam loop. Heat exchangers and heating media components are largely original. Chilled water is supplied by a 1997 vintage, 11 ton process chiller (backs up the animal colony systems) and a 400 ton 2003 vintage, air-cooled package chiller, with a glycol interface to tempered space. Air distribution is accomplished with built-up air conditioning units on the roof and a central station air handling unit in the ground floor mechanical room. Makeup air units deliver tempered air to fume hoods. With the exception of the recent cooling plant upgrade, the HVAC system has been in continuous service since 1965, but has sustained some DDC upgrades, pump upgrades, and damper upgrades. The DDC system is partly Staefa and partly Automated Logic design. Despite recent fume hood system improvements, controls upgrades, and some pump replacements, the system remains a poor design. Corridor doors are louvered to return supplied air through door louvers and exhaust the air at the hood faces. This design is antiquated by modern lab design standards, and many system components are quite old and operating under-capacity. The future of this facility should include a complete HVAC redesign and replacement so that pressure gradients can be properly maintained and heat (or cooling) energy can be recovered. Complete system redesign is needed. Demolish and dispose of all outdated equipment, and install a new modern HVAC system with VAV and constant volume air distribution, as needed. This includes new air handlers, ductwork, terminal units, heat exchangers, pumps, piping, controls, and electrical connections. Specify DDCs for the new equipment. Incorporate VFDs into the new HVAC design, as applicable.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000HV01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Air handlers, ductwork, VAVs, VFDs, DDCs, heat exchangers, pumps, piping, electrical connections, demolition of existing equipment, and hazardous materials abatement	SF	75,482	$23.80	$1,796,472	$19.53	$1,474,163	$3,270,635
Project Totals:				**$1,796,472**		**$1,474,163**	**$3,270,635**

Material/Labor Cost		$3,270,635
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$3,053,019
General Contractor Mark Up at 20.0%	+	$610,604
Inflation	+	$1,533,951
Construction Cost		$5,197,574
Professional Fees at 15.0%	+	$779,636
Total Project Cost		**$5,977,210**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000EL03	**Title:**	UPGRADE INTERIOR LIGHTING
Priority Sequence:	11		
Priority Class:	3		
Category Code:	EL4B	**System:**	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	INTERIOR LIGHTING
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Energy Conservation $3,110.00		
Code Application:	NEC Chapter 4, Article 410		
Project Class:	Deferred Maintenance	**Score:**	12.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

Lighting throughout the facility is mainly fluorescent, but there are incandescent lights in mechanical rooms and other utility areas. The lamps in the fluorescent fixtures were noted to be distinctly different. There is a combination of green tipped, T12 lamps, and fixtures that have been retrofit with modern T8 lamps and electronic ballasts. Most of the fixtures and diffusers are in fair to poor condition, with the exception of those in some of the recently renovated laboratory spaces. Since lighting quality is gauged by both efficiency and proficiency, a complete lighting upgrade is recommended in conjunction with other proposed electrical upgrades. Older fixtures retrofitted with lower illuminating components do not improve lighting quality necessarily. Replace incandescent and worn fluorescent light fixtures with new energy-efficient units. The new lighting system should operate on 277 volts for improved energy efficiency.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000EL03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
High efficiency fluorescent lighting, including all connections	SF	75,482	$2.27	$171,344	$2.77	$209,085	$380,429
	Project Totals:			**$171,344**		**$209,085**	**$380,429**

Material/Labor Cost		$380,429
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$353,236
General Contractor Mark Up at 20.0%	+	$70,647
Inflation	+	$177,479
Construction Cost		$601,362
Professional Fees at 15.0%	+	$90,204
Total Project Cost		**$691,567**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000EL01	**Title:**	UPGRADE PRIMARY ELECTRICAL EQUIPMENT
Priority Sequence:	12		
Priority Class:	3		
Category Code:	EL2A	**System:**	ELECTRICAL
		Component:	MAIN DISTRIBUTION PANELS
		Element:	CONDITION UPGRADE
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NEC Chapter 2		

Project Class:	Capital Renewal	**Score:**	9.35
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) G		

Project Description

Electrical power is supplied to the building through two 12,470 volt feeders. The dry-type transformers have rated capacities of 500 kVA and 750 kVA. The GE switchgear and distribution sections are original to the 1965 year of construction. Considering many decades of continuous service, the transformers and switchgear have exceeded their statistical life cycles and need to be scheduled for replacement. Additionally, primary electrical upgrades are recommended to augment proposed HVAC, lighting, and electrical upgrades. Remove the existing primary equipment, and install new transformers and switchgear that include 480 volt power for lighting and mechanical equipment and 208 volt power for other circuits.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000EL01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Transformers, switchgear, all connections, and terminations	SF	75,482	$0.61	$46,044	$0.69	$52,083	$98,127
Project Totals:				**$46,044**		**$52,083**	**$98,127**

Material/Labor Cost		$98,127
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$91,205
General Contractor Mark Up at 20.0%	+	$18,241
Inflation	+	$45,825
Construction Cost		$155,271
Professional Fees at 15.0%	+	$23,291
Total Project Cost		**$178,561**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000EL02	**Title:**	UPGRADE SECONDARY ELECTRICAL SYSTEM
Priority Sequence:	13		
Priority Class:	3		
Category Code:	EL3B	**System:**	ELECTRICAL
		Component:	SECONDARY DISTRIBUTION
		Element:	DISTRIBUTION NETWORK
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NEC Chapters 2, 3		

Project Class:	Capital Renewal	**Score:**	9.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

The secondary electrical system includes a combination of outdated Westinghouse, Square D, and GE breaker panels. These are original vintage panels. The increased use of electrical equipment for research, as well as proposed HVAC upgrades, serves to overburden a system that was designed without consideration of these loads. There are reports of overloaded circuits and inadequate power. Electrical devices, including switches and receptacles, are uniformly worn. It is recommended that the secondary electrical system be replaced in its entirety to ensure safe and reliable power to building occupants.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000EL02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Breaker panels, conductors, devices, demolition, and disposal costs	SF	75,482	$5.03	$379,674	$7.54	$569,134	$948,809
	Project Totals:			**$379,674**		**$569,134**	**$948,809**

Material/Labor Cost		$948,809
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$878,604
General Contractor Mark Up at 20.0%	+	$175,721
Inflation	+	$441,444
Construction Cost		$1,495,769
Professional Fees at 15.0%	+	$224,365
Total Project Cost		**$1,720,134**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000IS01	**Title:**	INTERIOR PAINT FINISH UPGRADE
Priority Sequence:	14		
Priority Class:	3		
Category Code:	IS2B	**System:**	INTERIOR/FINISH SYS.
		Component:	PARTITIONS
		Element:	FINISHES
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	7.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

There are painted walls throughout the entire facility. The interior finishes are in good condition but will require an almost continual program of renewal in order to maintain an acceptable interior appearance. Cyclical painting should be considered as a standard approach to maintaining the quality of the finishes. It is recommended that all previously painted surfaces be repainted according to established cycles for this occupancy and use type. Budgetary considerations are taken into account for the next ten years for interior repairs and maintenance. Minor repairs should be completed before work begins.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000IS01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Paint (2 coats), supplies, and tools	SF	240,000	$0.08	$19,200	$0.42	$100,800	$120,000
Cleanup, masking, and stripping	SF	240,000	$0.01	$2,400	$0.10	$24,000	$26,400
Masking, surface preparation, and tools	SF	240,000	$0.03	$7,200	$0.20	$48,000	$55,200
Minor repairs	LOT	7	$250	$1,750	$1,100	$7,700	$9,450
	Project Totals:			**$30,550**		**$180,500**	**$211,050**

Material/Labor Cost		$211,050
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$192,739
General Contractor Mark Up at 20.0%	+	$38,548
Inflation	+	$96,839
Construction Cost		$328,126
Professional Fees at 15.0%	+	$49,219
Total Project Cost		**$377,345**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000IS03	**Title:**	FLOORING UPGRADES
Priority Sequence:	15		
Priority Class:	3		
Category Code:	IS1A	**System:**	INTERIOR/FINISH SYS.
		Component:	FLOOR
		Element:	FINISHES-DRY
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	OSHA 29 CFR 1910.1001, 1926.1101 EPA 40 CFR 61.M, 763		
Project Class:	Deferred Maintenance	**Score:**	10.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

The interior floor finishes in the building include carpeting, 12 x 12 vinyl floor tile, 6 x 6 quarry floor tile, 9 x 9 vinyl composition tile, and terrazzo flooring. Selected areas of the building have been upgraded to include new 12 x 12 floor tile, carpeting, and seamless vinyl composition flooring. The interior offices are primarily carpet. There are laboratories, offices, stair landings, and janitor's closets that still have 9 x 9 floor tile. Historically, carpeting has been placed over the 9 x 9 tile, which has been known to contain ACMs. As part of an overall level of effort, it is recommended that the carpeting throughout the building be replaced. Also replace the 9 x 9 flooring with 12 x 12 vinyl flooring. It is further recommended that the flooring in the laboratories be upgraded to a seamless floor with seamless cove base. The floor tiles and mastic should be sampled and tested for asbestos prior to any effort to refinish and reoccupy the building. The installation of some vinyl floor tile in the appropriate areas is recommended. All confirmed ACMs should be handled and disposed of according to all federal, state, and local rules and regulations.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000IS03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Remove and replace carpeting	SY	1,500	$24.00	$36,000	$8.00	$12,000	$48,000
Install seamless flooring	SF	48,000	$4.50	$216,000	$2.50	$120,000	$336,000
Remove 9 x 9 floor tile	SF	9,000	$2.50	$22,500	$2.50	$22,500	$45,000
Marbleized vinyl floor tile, mastic, and tools	SF	12,000	$1.98	$23,760	$0.50	$6,000	$29,760
Asbestos sampling, testing, lab work, and removal and disposal allowance	LOT	1	$2,500	$2,500	$3,200	$3,200	$5,700
	Project Totals:			**$300,760**		**$163,700**	**$464,460**

Material/Labor Cost		$464,460
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$435,839
General Contractor Mark Up at 20.0%	+	$87,168
Inflation	+	$218,982
Construction Cost		$741,988
Professional Fees at 15.0%	+	$111,298
Total Project Cost		**$853,286**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000PL05	**Title:**	INSTALL A NEW DOMESTIC HOT WATER CONVERTER
Priority Sequence:	16		
Priority Class:	3		
Category Code:	PL1E	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	HEATING
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	9.35
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) G		

Project Description

Replacement of the domestic hot water converter is recommended. As it ages, the heat exchanger's efficiency is reduced by internal tube scaling and weakening of heat transfer support surfaces. A new heat exchanger, circulating pump, controls, and associated piping and electrical equipment are recommended. This work includes the demolition of existing equipment.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000PL05

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Domestic hot water converter, double-wall, 2" connection, 55 gpm continuous / 115 gpm intermittent, and demolition of existing equipment	SYS	1	$9,997	$9,997	$4,578	$4,578	$14,575
	Project Totals:			**$9,997**		**$4,578**	**$14,575**

Material/Labor Cost		$14,575
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$13,705
General Contractor Mark Up at 20.0%	+	$2,741
Inflation	+	$6,886
Construction Cost		$23,332
Professional Fees at 15.0%	+	$3,500
Total Project Cost		**$26,831**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000SI01	**Title:**	ASPHALT PAVEMENT IMPROVEMENTS
Priority Sequence:	17		
Priority Class:	3		
Category Code:	SI1B	**System:**	SITE
		Component:	ACCESS
		Element:	VEHICULAR
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	10.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) G		

Project Description

The site at this facility consists of grass areas, trees, small shrubs, sidewalks, and a ramp for accessibility. Overall, the landscaping appears to be adequately maintained. The asphalt parking and walkway are in fair condition. However, cracking and settlement of the asphalt were evident where the asphalt meets the concrete. It is recommended that any cracks be repaired and that any areas where elevation problems are evident be repaved. After completing these repairs, it is recommended that an asphalt Type II slurry seal be applied along the asphalt pavement.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000SI01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Rehabilitate existing pavement	SY	500	$2.85	$1,425	$3.55	$1,775	$3,200
Repair asphalt pavement	LOT	1	$250	$250	$750	$750	$1,000
	Project Totals:			**$1,675**		**$2,525**	**$4,200**

Material/Labor Cost		$4,200
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$3,889
General Contractor Mark Up at 20.0%	+	$778
Inflation	+	$1,954
Construction Cost		$6,621
No Professional Fees Required	+	$0
Total Project Cost		**$6,621**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000VT01	**Title:**	COMPREHENSIVE ELEVATOR MODERNIZATION (2/08)
Priority Sequence:	18		
Priority Class:	3		
Category Code:	VT7A	**System:**	VERT. TRANSPORTATION
		Component:	GENERAL
		Element:	OTHER
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ASME A17.1		

Project Class:	Capital Renewal	**Score:**	11.35
Project Date:	04/09/2008		
Project Location:	Item Only: Floor(s) 1		

Project Description

Mueller Lab is served by two, seven-stop, passenger elevator units. The General Elevator units were installed in 1964 and have reached the end of their useful lives. Comprehensive modernization will need to take place within the next two to five years. Modernization should include replacing or rebuilding the traction elevator hoist machine and installing a new AC motor, installing new digital controls, rebuilding the drive and secondary sheaves and replacing the ropes, travel cables, selector, and all non-compliant code related items in the hoistway and pit as needed. Install new hoistway door hardware. Verify that rail bracket spacing is compliant with current code. Renovate cab interior, including all finishes, ceiling, floor, and fixtures. Upgrade the car operating panel, including fire service and instructions. Install ventilation fan and car doors, including hardware, door operators, and door restrictors. Hall fixtures should be replaced. All work and equipment are to meet ADA and code requirements in place at the time of modernization. Additional work may be required in the machine room to meet code.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000VT01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Comprehensive modernization	LOT	2	$53,877	$107,754	$69,546	$139,092	$246,846
	Project Totals:			**$107,754**		**$139,092**	**$246,846**

Material/Labor Cost		$246,846
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$229,030
General Contractor Mark Up at 20.0%	+	$45,806
Inflation	+	$0
Construction Cost		$274,836
Professional Fees at 15.0%	+	$41,225
Total Project Cost		**$316,062**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000FS07	**Title:**	REPLACE EXIT SIGNS
Priority Sequence:	19		
Priority Class:	4		
Category Code:	FS1A	**System:**	FIRE/LIFE SAFETY
		Component:	LIGHTING
		Element:	EGRESS LTG./EXIT SIGNAGE
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Energy Conservation $497.00		
Code Application:	NFPA 101-47		
Project Class:	Capital Renewal	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

The exit signs throughout the building are becoming timeworn and are recommended for replacement. The signage is not brightly illuminated and would be difficult to see in a smoke-filled corridor. LED applications are recommended for their low maintenance and energy-efficient features. Connect the new exit signs to the emergency circuit.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000FS07

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of new exit signs	EA	19	$105	$1,995	$198	$3,762	$5,757
Replacement of existing exit signs with LED units	EA	87	$75.00	$6,525	$66.00	$5,742	$12,267
	Project Totals:			**$8,520**		**$9,504**	**$18,024**

Material/Labor Cost		$18,024
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$16,756
General Contractor Mark Up at 20.0%	+	$3,351
Inflation	+	$8,419
Construction Cost		$28,526
Professional Fees at 15.0%	+	$4,279
Total Project Cost		**$32,804**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000FS04	**Title:**	INSTALL FIRE SPRINKLING SYSTEM
Priority Sequence:	20		
Priority Class:	4		
Category Code:	FS3A	**System:**	FIRE/LIFE SAFETY
		Component:	SUPPRESSION
		Element:	SPRINKLERS
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NFPA 1, 13, 13R, 101		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

This research lab structure and animal resource facility has no fire suppression. It is recommended by the NFPA that facilities of this type, use, and size be sprinkled throughout, and that sprinkling systems be fully supervised by a fire alarm system. Install fire suppression throughout the facility, including piping, sprinkler heads (as required by code), pipe bracing, and supervising and alarm devices, as needed. This project should be coordinated with other plumbing, major HVAC/R, interior ceiling, and wall finish upgrades recommended elsewhere in this report to help reduce overall costs and the duplication of work efforts.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000FS04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install a wet-pipe sprinkler system, including valves, schedule 40 black pipe, sprinkler heads, and associated materials	SF	75,482	$1.60	$120,771	$2.61	$197,008	$317,779
Project Totals:				**$120,771**		**$197,008**	**$317,779**

Material/Labor Cost		$317,779
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$293,947
General Contractor Mark Up at 20.0%	+	$58,789
Inflation	+	$147,690
Construction Cost		$500,426
Professional Fees at 15.0%	+	$75,064
Total Project Cost		**$575,489**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000FS03	**Title:**	INTERIOR STAIR HANDRAIL IMPROVEMENTS
Priority Sequence:	21		
Priority Class:	4		
Category Code:	FS5E	**System:**	FIRE/LIFE SAFETY
		Component:	EGRESS PATH
		Element:	STAIRS AND RAILING
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IBC 1003.2		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

The openings between the rails in the stairway do not meet the modern 4 inch sphere tests for opening size. Local codes now require that railing systems prevent the passage of a specific diameter sphere. To comply with code and limit university liability, it is recommended that infills be added to conform to the sphere test.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000FS03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install additional guardrails	LF	1,680	$3.80	$6,384	$5.25	$8,820	$15,204
	Project Totals:			**$6,384**		**$8,820**	**$15,204**

Material/Labor Cost		$15,204
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$14,094
General Contractor Mark Up at 20.0%	+	$2,819
Inflation	+	$7,081
Construction Cost		$23,994
Professional Fees at 15.0%	+	$3,599
Total Project Cost		**$27,593**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000AC02	**Title:**	CLASSROOM WHEELCHAIR ACCOMMODATIONS
Priority Sequence:	22		
Priority Class:	4		
Category Code:	AC4A	**System:**	ACCESSIBILITY
		Component:	GENERAL
		Element:	FUNCTIONAL SPACE MOD.
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 505		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) G		

Project Description

The seating in classroom 008 consists of chairs with table arms. This seating should be modified to accommodate wheelchair users. It is recommended that seating be provided for individuals confined to a wheelchair.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000AC02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Table and seating modifications	LOT	1	$1,250	$1,250	$475	$475	$1,725
	Project Totals:			**$1,250**		**$475**	**$1,725**

Material/Labor Cost		$1,725
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$1,625
General Contractor Mark Up at 20.0%	+	$325
Inflation	+	$817
Construction Cost		$2,767
Professional Fees at 15.0%	+	$415
Total Project Cost		**$3,182**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000AC04	**Title:**	RESTROOM UPGRADE
Priority Sequence:	23		
Priority Class:	4		
Category Code:	AC3E	**System:**	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	RESTROOMS/BATHROOMS
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 604.1, 604.8, 605.1, 606.1		

Project Class:	Plant Adaption	**Score:**	14.35
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

There are eight restroom facilities. Each varies in condition and degree of accessibility. The interior finishes include terrazzo flooring, tiled walls, metal partitions, mirrors, and plumbing fixtures. These restrooms do not conform to current ADA legislation, as they lack proper space clearances and fixtures. As part of an overall level of effort, it is recommended that each restroom be completely upgraded to include reconditioned flooring, regrouted wall finishes, new suspended ceiling, an expansion of the area to obtain proper clearances, new fixtures, mirrors, coat hooks, and towel dispensers. A detailed design will be necessary for each restroom as renovation or retrofit is accomplished in conjunction with renovations in that area.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000AC04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Doors with all operating hardware, including closer, lever handle, supplies, and tools	EA	1	$600	$600	$380	$380	$980
Partitions and restroom specialties	LOT	1	$6,718	$6,718	$2,189	$2,189	$8,907
Demolition and new partition and drywall construction	LOT	1	$6,887	$6,887	$11,297	$11,297	$18,184
	Project Totals:			**$14,205**		**$13,866**	**$28,071**

Material/Labor Cost		$28,071
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$26,143
General Contractor Mark Up at 20.0%	+	$5,229
Inflation	+	$13,135
Construction Cost		$44,506
Professional Fees at 15.0%	+	$6,676
Total Project Cost		**$51,182**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000ES02	**Title:**	CLEAN, POINT, AND REPAIR EXTERIOR BRICK SURFACES
Priority Sequence:	24		
Priority Class:	4		
Category Code:	ES2B	**System:**	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	FINISH
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	5.35
Project Date:	04/07/2003		
Project Location:	Building-wide: Floor(s) G		

Project Description

The exterior brick mortar joints appear to be in fair condition. However, due to harsh winter conditions, it is anticipated that mortar joints will begin to fail and require tuck pointing within the next ten years. This work is selective, so matching mortar should be applied. Following a detailed examination of the brick and repair of the mortar construction joints, the entire building should be pressure washed to remove soil and stains.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000ES02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Construction joint caulk and backer	LF	1,500	$1.14	$1,710	$2.96	$4,440	$6,150
Pressure wash exterior and seal	SF	26,000	$0.15	$3,900	$0.35	$9,100	$13,000
Tuck pointing of the building facades	SF	15,000	$0.25	$3,750	$4.57	$68,550	$72,300
Scaffolding or boom	LOT	1	$4,750	$4,750	$0.00	$0	$4,750
	Project Totals:			**$14,110**		**$82,090**	**$96,200**

Material/Labor Cost		$96,200
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$87,863
General Contractor Mark Up at 20.0%	+	$17,573
Inflation	+	$44,146
Construction Cost		$149,581
Professional Fees at 15.0%	+	$22,437
Total Project Cost		**$172,018**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000IS02	**Title:**	INTERIOR DOOR AND HARDWARE REPLACEMENTS
Priority Sequence:	25		
Priority Class:	4		
Category Code:	IS4A	**System:**	INTERIOR/FINISH SYS.
		Component:	DOORS
		Element:	GENERAL
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	8.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1,2,3,4,5,6,G		

Project Description

The condition of the interior corridor doors varies, but it is generally fair. The majority of the doors are louvered along the bottom, and many of them lack door knobs. Various renovations in selected areas have included replacement of the doors and hardware. In an effort to upgrade the appearance of the corridors, security of the rooms, and overall quality of the system, the replacement of interior doors and hardware is recommended. The replacement units should be properly rated doors and should include new lever actuated locksets and closers.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000IS02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replacement of stair door and hardware	EA	14	$1,200	$16,800	$450	$6,300	$23,100
Corridor doors and all operating hardware, including closer and lever actuated hardware	EA	122	$725	$88,450	$338	$41,236	$129,686
Dump truck rental and dumping fee	DAY	5	$475	$2,375	$144	$718	$3,093
	Project Totals:			**$107,625**		**$48,254**	**$155,879**

Material/Labor Cost		$155,879
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$146,608
General Contractor Mark Up at 20.0%	+	$29,322
Inflation	+	$73,661
Construction Cost		$249,590
Professional Fees at 15.0%	+	$37,439
Total Project Cost		**$287,029**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000IS04	**Title:**	LABORATORY CASEWORK REPLACEMENTS
Priority Sequence:	26		
Priority Class:	4		
Category Code:	IS6B	**System:**	INTERIOR/FINISH SYS.
		Component:	GENERAL
		Element:	CABINETRY
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG Chapter 9		

Project Class:	Capital Renewal	**Score:**	11.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

Laboratory casework and countertops vary in design, age, and degree of deterioration within floors and suites. Many of the laboratories have been upgraded to include new casework. However, there are numerous laboratories that require a complete upgrade. Continuous contact with corrosive chemicals, reagents, and abrasives accelerate the wear of this furniture. Selective replacement of both base cabinets and countertops should be anticipated within ten years. Approximately 30 percent of the laboratory cabinetry and countertops are recommended for replacement. The new cabinetry is to be designed in accordance with current ADA requirements and include utility upgrades.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000IS04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dump truck rental and dumping fee	DAY	30	$475	$14,250	$144	$4,308	$18,558
Base cabinets and reagent shelving	LF	900	$332	$298,800	$128	$115,200	$414,000
Epoxy resin benchtop	LF	900	$65.00	$58,500	$85.00	$76,500	$135,000
	Project Totals:			**$371,550**		**$196,008**	**$567,558**

Material/Labor Cost		$567,558
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$532,785
General Contractor Mark Up at 20.0%	+	$106,557
Inflation	+	$267,691
Construction Cost		$907,033
Professional Fees at 15.0%	+	$136,055
Total Project Cost		**$1,043,088**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000IS05	**Title:**	LAY-IN ACOUSTICAL CEILING REMOVAL AND REPLACEMENT
Priority Sequence:	27		
Priority Class:	4		
Category Code:	IS3B	**System:**	INTERIOR/FINISH SYS.
		Component:	CEILINGS
		Element:	REPLACEMENT
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	7.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 2,1,3,4,5,6,G		

Project Description

The suspended acoustical ceilings in this facility are in overall fair condition, and most do not presently need to be upgraded. However, over the next ten years, almost half of these tiles will need to be replaced. Install new suspended acoustical ceilings throughout the building.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000IS05

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Non-seismic area suspended acoustical ceiling system, etc.	SF	30,000	$2.46	$73,800	$1.25	$37,500	$111,300
	Project Totals:			**$73,800**		**$37,500**	**$111,300**

Material/Labor Cost		$111,300
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$104,528
General Contractor Mark Up at 20.0%	+	$20,906
Inflation	+	$52,519
Construction Cost		$177,952
No Professional Fees Required	+	$0
Total Project Cost		**$177,952**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000PL03	**Title:**	REPLACE DRAIN PIPING NETWORKS
Priority Sequence:	28		
Priority Class:	4		
Category Code:	PL2A	**System:**	PLUMBING
		Component:	WASTEWATER
		Element:	PIPING NETWORK
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IPC Chapter 6		

Project Class:	Capital Renewal	**Score:**	7.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

Drain piping throughout the facility is threaded galvanized and cast-iron pipe for normal wastes. Laboratory waste piping consists of acid resistant plastic and Pyrex glass piping. Most of the drain piping is original. Failure to replace the drain piping within the scope of this report will result in frequent leaks and increasing maintenance costs. There is one duplex sewage ejector system in the lower level. This system has been restored, but maintains some original components. It is suitable for additional service. In coordination with other recommended plumbing upgrades, replacement of the acid and normal waste drain piping is recommended. It was reported that mercury and other hazardous material residues are present in the existing drain lines. Remediation costs are included for this project.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000PL03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Drain pipe and fittings suitable for laboratory environment, hangers, floor drains, demolition costs, and hazardous materials remediation	SF	75,482	$2.02	$152,474	$6.05	$456,666	$609,140
	Project Totals:			**$152,474**		**$456,666**	**$609,140**

Material/Labor Cost		$609,140
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$559,504
General Contractor Mark Up at 20.0%	+	$111,901
Inflation	+	$281,116
Construction Cost		$952,521
Professional Fees at 15.0%	+	$142,878
Total Project Cost		**$1,095,399**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000PL02	**Title:**	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING
Priority Sequence:	29		
Priority Class:	4		
Category Code:	PL1A	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	PIPING NETWORK
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IPC Chapter 6		

Project Class:	Capital Renewal	**Score:**	7.35
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

This facility includes piping for domestic water, distilled water, natural gas, compressed air, and other specialty systems. Water supply piping is mostly copper and original. Laboratory process fluids piping is mostly threaded pipe and original. Shutoff valves and gas cocks are uniformly worn. Failure to replace the water and process piping within the scope of this report will result in frequent leaks and consequential maintenance costs. In coordination with other recommended plumbing upgrades, replacement of the water and process piping is recommended. During demolition, areas affected by hazardous materials will be encountered. Remediation costs are included.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000PL02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Pipe and fittings, valves, backflow prevention devices, gas cocks, insulation, hangers, demolition, hazardous materials abatement, and cut and patch materials	SF	75,482	$1.65	$124,545	$3.43	$258,903	$383,449
	Project Totals:			**$124,545**		**$258,903**	**$383,449**

Material/Labor Cost		$383,449
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$353,632
General Contractor Mark Up at 20.0%	+	$70,726
Inflation	+	$177,678
Construction Cost		$602,036
Professional Fees at 15.0%	+	$90,305
Total Project Cost		**$692,341**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0409-000PL04	**Title:**	REPLACE RESTROOM PLUMBING FIXTURES
Priority Sequence:	30		
Priority Class:	4		
Category Code:	PL1G	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	FIXTURES
Building Code:	0409-000		
Building Name:	MUELLER LABORATORY		
Subclass/Savings:	Energy Conservation $267.00		
Code Application:	IPC Chapter 4		

Project Class:	Capital Renewal	**Score:**	7.35
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) 1, 2, 3, 4, 5, 6, G		

Project Description

The base fixtures in the restrooms appear to be original to the 1965 construction. Fixtures are outdated and showing considerable signs of wear. The components and valves on these fixtures are also dated and in need of replacement. New water closets and urinals consume approximately one-half the amount of water as the older vintage fixtures. It is recommended that all plumbing fixtures that are original to the 1965 construction be replaced with new fixtures that meet all applicable ADA regulations. It is also recommended that hands-free faucets and automatic flush valves be installed for their sanitary benefits and water saving features.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0409-000PL04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Urinal, automatic flush valve, rough-in, and demolition	EA	7	$595	$4,165	$560	$3,920	$8,085
Water closet, automatic flush valve, rough-in, and demolition	EA	13	$865	$11,245	$515	$6,695	$17,940
Lavatory, automatic faucets, trap, rough-in, and demolition	EA	12	$625	$7,500	$525	$6,300	$13,800
Janitor's sink with vacuum breaker	EA	7	$560	$3,920	$298	$2,086	$6,006
	Project Totals:			**$26,830**		**$19,001**	**$45,831**

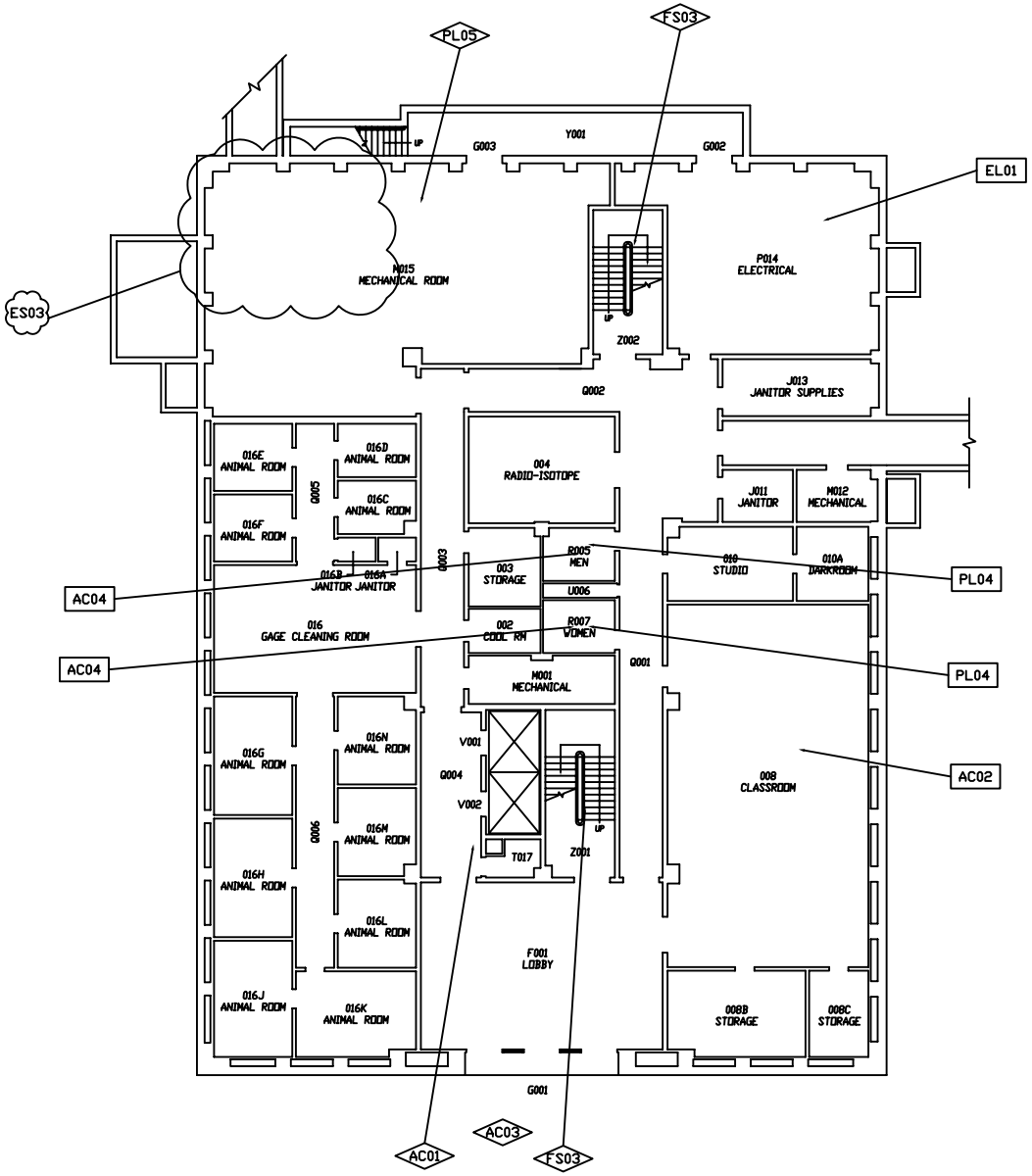
Material/Labor Cost		$45,831
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$42,864
General Contractor Mark Up at 20.0%	+	$8,573
Inflation	+	$21,537
Construction Cost		$72,974
Professional Fees at 15.0%	+	$10,946
Total Project Cost		**$83,920**

FACILITY CONDITION ANALYSIS

SECTION 4

DRAWINGS AND PROJECT LOCATIONS

PENNSYLVANIA STATE UNIVERSITY



ES02

EL02 EL03 EL04 FS01 FS04 FS05

FS06 FS07 HV01 IS01 IS02 IS03

IS04 IS05 PL02 PL03 SI01

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4′ 12′

N

MUELLER LABORATORY

BLDG NO. 0409-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2165 West Park Court Suite N
Stone Mountain, GA 30087
(770) 879-7376

PROJECT NUMBER APPLIES TO ONE ROOM ONLY

PROJECT NUMBER APPLIES TO ONE ITEM ONLY

PROJECT NUMBER APPLIES TO ENTIRE BUILDING

PROJECT NUMBER APPLIES TO ENTIRE FLOOR

PROJECT NUMBER APPLIES TO A SITUATION OF UNDEFINED EXTENTS

PROJECT NUMBER APPLIES TO AREA AS NOTED

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

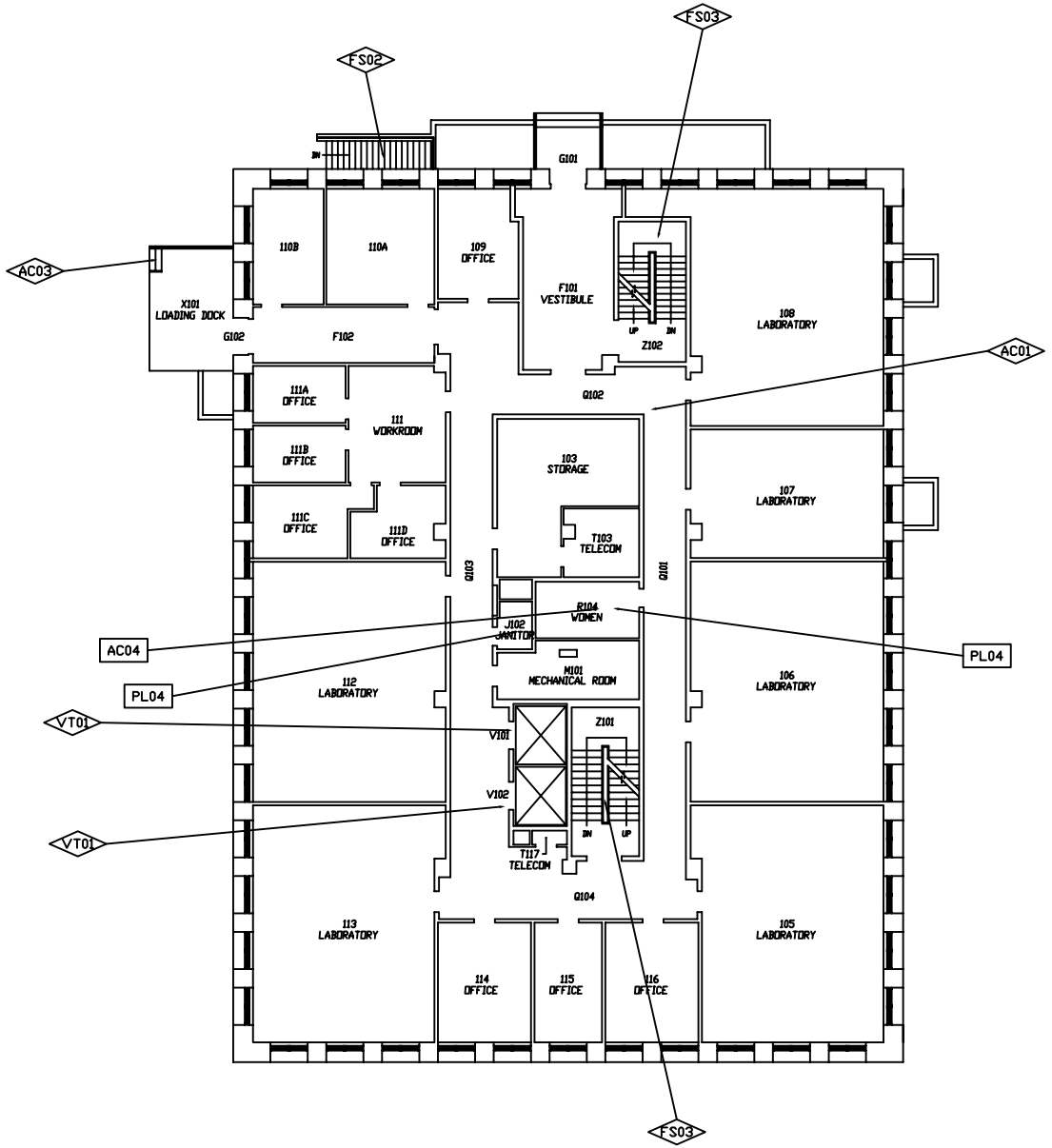
Date: 08/13/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 0409000G

GROUND FLOOR PLAN

Sheet No.

1 of 7

PENNSYLVANIA STATE UNIVERSITY



EL02 EL03 EL04 FS01 FS04 FS05
FS06 FS07 HV01 IS01 IS02 IS03
IS04 IS05 PL02 PL03

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4′ 12′

N

MUELLER LABORATORY

BLDG NO. 0409-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2105 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

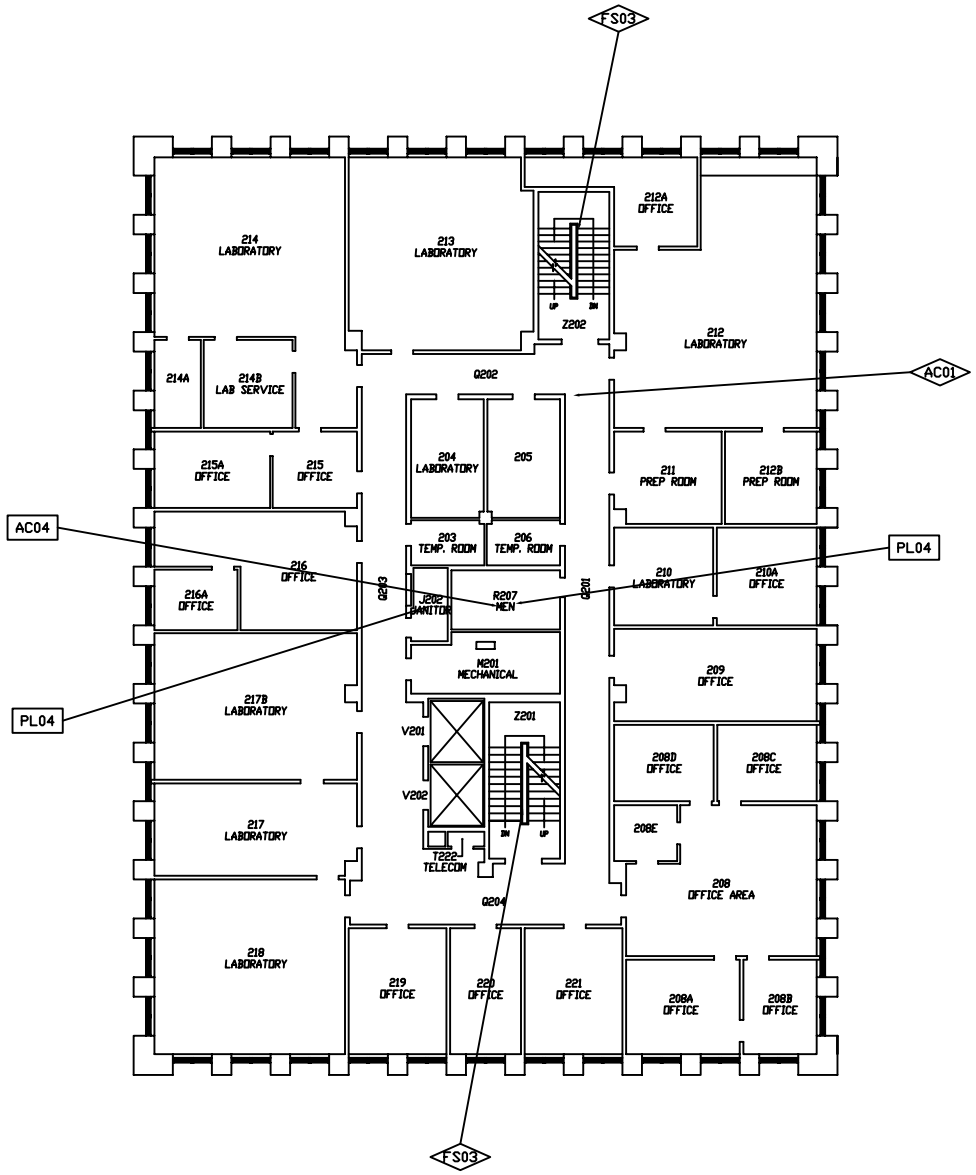
Date: 08/13/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04090001

FIRST FLOOR PLAN

Sheet No.

2 of 7

PENNSYLVANIA STATE UNIVERSITY



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FS06 FS07 HV01 IS01 IS02 IS03
IS04 IS05 PL02 PL03

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4′ 12′

N

MUELLER LABORATORY

BLDG NO. 0409-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

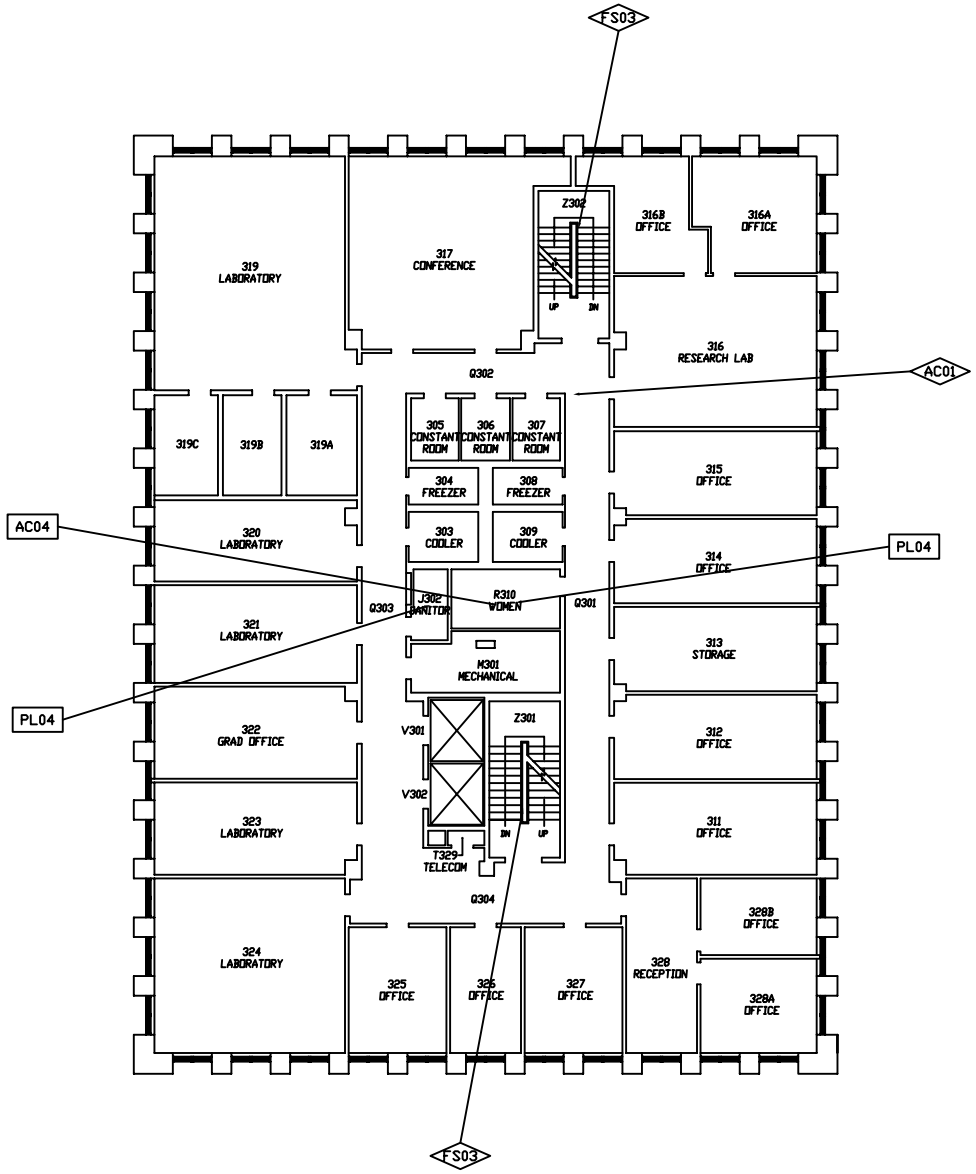
PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

Date: 08/13/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04090002

SECOND FLOOR PLAN

Sheet No.
3 of 7

PENNSYLVANIA STATE UNIVERSITY



EL02 EL03 EL04 FS01 FS04 FS05
FS06 FS07 HV01 IS01 IS02 IS03
IS04 IS05 PL02 PL03

0 8′ 16′ 32′
4′ 12′

N

MUELLER LABORATORY

BLDG NO. 0409-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

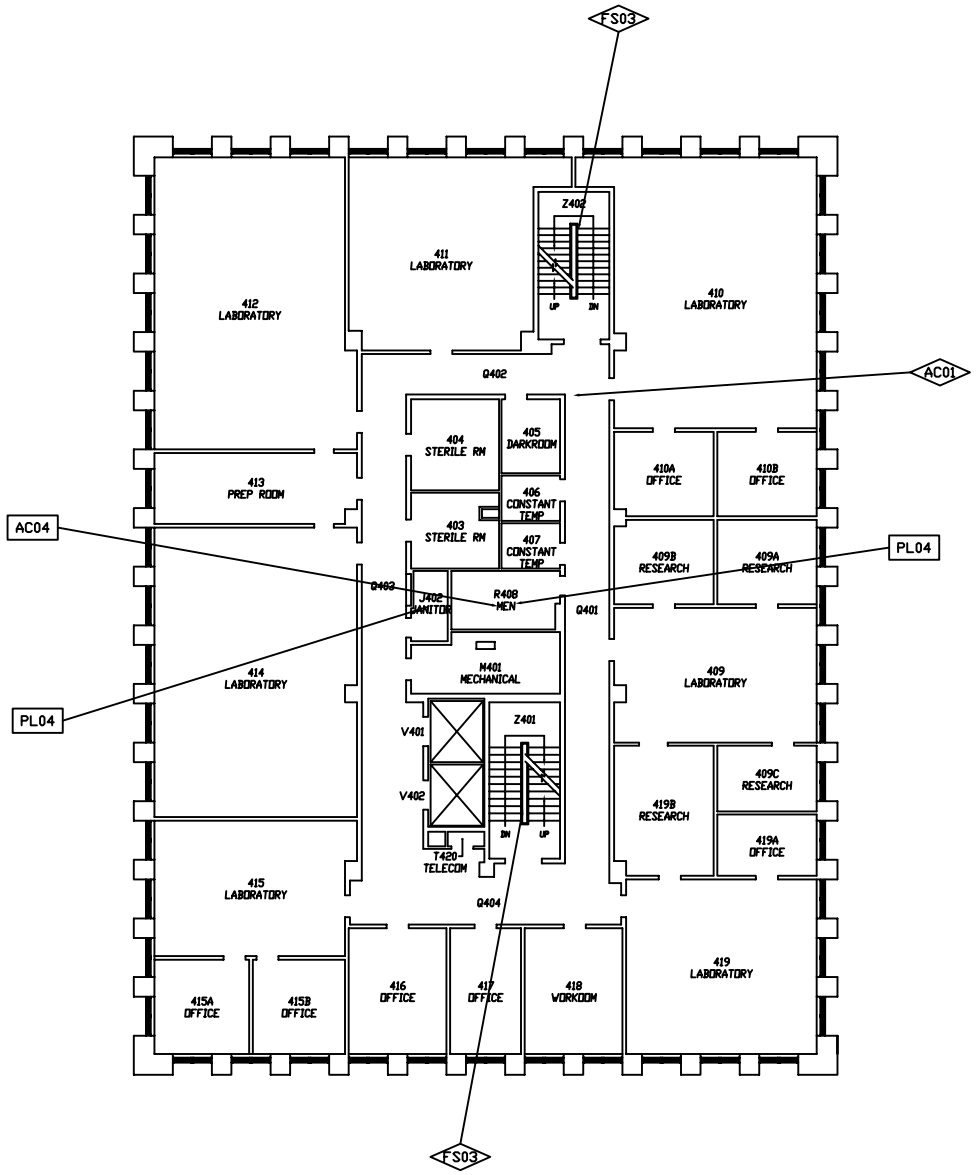
Date: 08/13/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04090003

THIRD FLOOR PLAN

Sheet No.

4 of 7

PENNSYLVANIA STATE UNIVERSITY



EL02 EL03 EL04 FS01 FS04 FS05
FS06 FS07 HV01 IS01 IS02 IS03
IS04 IS05 PL02 PL03

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4′ 12′

N

MUELLER LABORATORY

BLDG NO. 0409-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

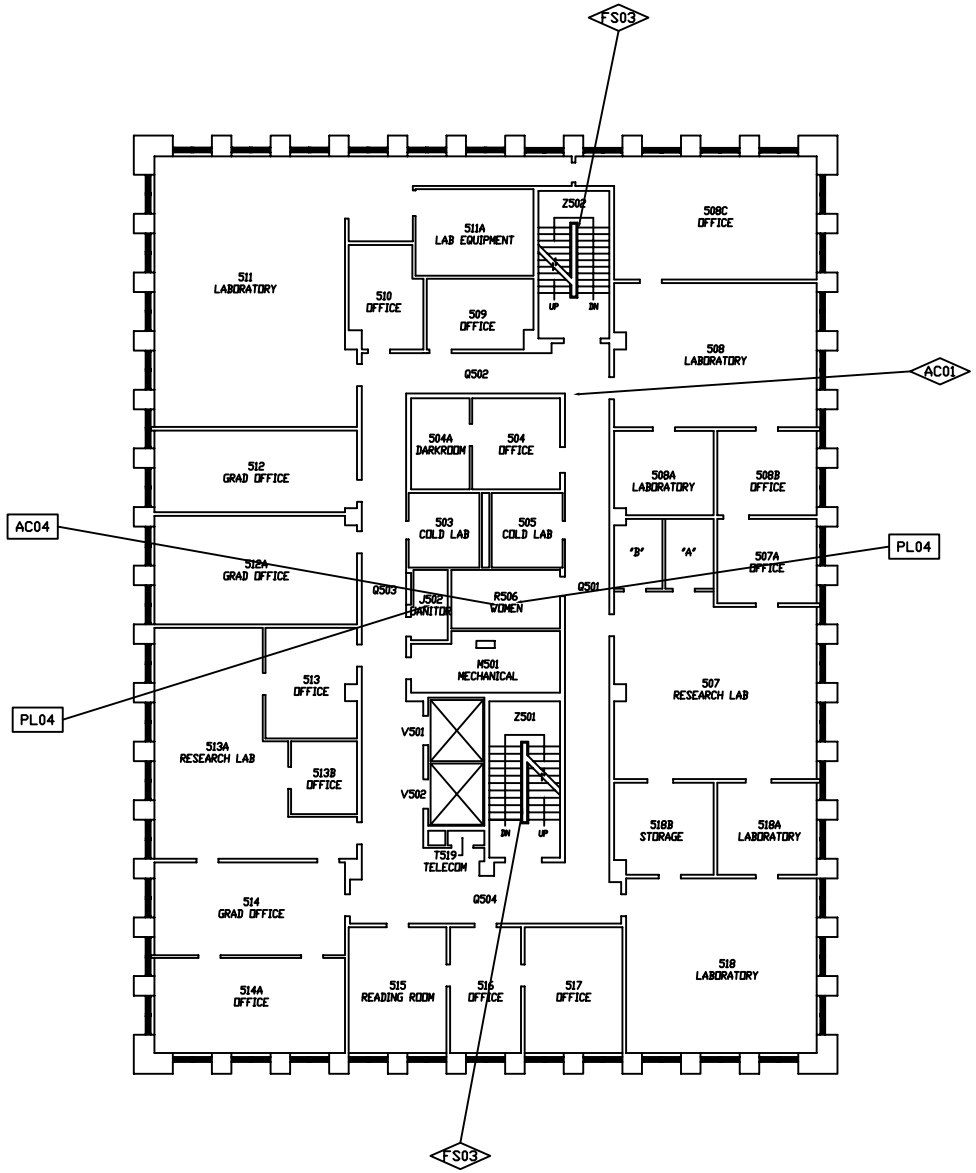
PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

Date: 08/13/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04090004

FOURTH FLOOR PLAN

Sheet No.
5 of 7

PENNSYLVANIA STATE UNIVERSITY



EL02 EL03 EL04 FS01 FS04 FS05
FS06 FS07 HV01 IS01 IS02 IS03
IS04 IS05 PL02 PL03

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4′ 12′

N

MUELLER LABORATORY

BLDG NO. 0409-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

Date: 08/13/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04090005

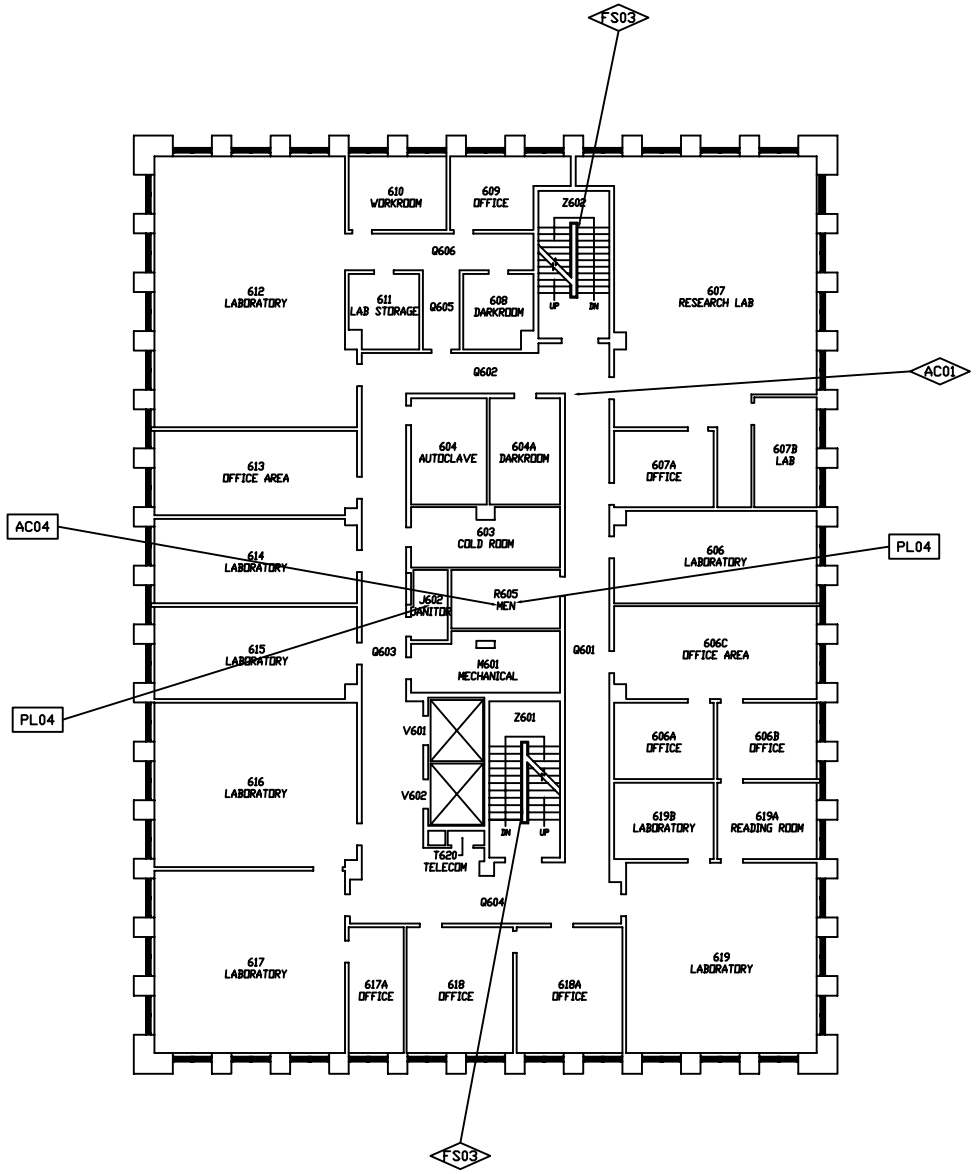
FIFTH FLOOR PLAN

Sheet No.
6 of 7

PENNSYLVANIA STATE UNIVERSITY

ROOF

ES01 HV01



EL02 EL03 EL04 FS01 FS04 FS05

FS06 FS07 HV01 IS01 IS02 IS03

IS04 IS05 PL02 PL03

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4′ 12′

N

MUELLER LABORATORY

BLDG NO. 0409-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

Date: 08/13/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04090006

SIXTH FLOOR PLAN

Sheet No.

7 of 7

FACILITY CONDITION ANALYSIS

SECTION 5

LIFE CYCLE MODEL SUMMARY AND PROJECTIONS

Life Cycle Model

Building Component Summary

0409-000 : MUELLER LABORATORY

Uniformat Code	Component Description	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp
B2010	CLEAN POINT AND CAULK EXTERIOR MASONRY SURFACES	52,000	LF	$10.50		$546,000	1965	20
B2010	EXTERIOR POWER WASH AND STAIN REMOVAL	26,000	SF	$0.32		$8,320	1965	10
B2020	CUSTOM GLASS DOORS	3	EA	$7,214.83		$21,644	1985	20
B2020	EXTERIOR CURTAIN WALL AND WINDOWS	19,599	SF	$89.08		$1,745,879	1989	70
B2030	HI - USE EXT. DOOR LOCKSET REPLACEMENT	6	EA	$504.08		$3,024	1985	5
B2030	EXTERIOR DOORS (METAL)	3	EA	$3,340.58		$10,022	1989	30
B3010	FLAT ROOFING SYSTEM (BALLASTED 1 - PLY)	12,000	SF	$8.38		$100,560	1989	20
B3020	VINYL FLOOR TILE UPGRADES (NO ACM)	33,000	SF	$8.26		$272,580	1985	20
C1020	HI - USE INT. DOOR LOCKSET REPLACEMENT	136	EA	$504.08		$68,555	1989	5
C1020	INTERIOR DOOR REPLACEMENTS (LESS HARDWARE)	136	EA	$1,759.10		$239,238	1989	30
C3010	INTERIOR PAINTING (DRYWALL PLASTER REPAIR INCLD)	240,000	SF	$1.48		$355,200	1989	6
C3020	TERRAZZO FLOORING (CAST-IN-PLACE)	2,500	SF	$18.48		$46,200	1963	75
C3020	QUARRY TILE	3,000	SF	$17.06		$51,180	1963	50
C3020	SHEET VINYL / RUBBER	18,000	SF	$10.71		$192,780	1985	20
C3020	VINYL FLOOR TILE UPGRADES (ACM)	9,000	SF	$8.60		$77,400	1965	20
C3020	HI - USE CARPET REPLACEMENT	1,500	SY	$57.01		$85,515	1985	7
C3030	LAY-IN CEILING GRID REPLACEMENT	57,000	SF	$3.25		$185,250	1989	60
C3030	NON-SEISMIC LAYIN ACOUSTICAL CEILING TILE REPLACEMENT	57,000	SF	$4.42		$251,940	1989	15
D1010	UNDER 3000 LBS CAP. ELEVATOR MACHINE - ROPED	2	EA	$51,487.67		$102,975	1965	25
D1010	ELEVATOR HATCH AND LANDING RENOVATION	14	EA	$13,571.41		$190,000	1965	12
D1010	ELEVATOR CAB RENOVATION - PASSENGER	2	EA	$35,078.30		$70,157	1965	12
D2010	PLUMBING FIXTURE COMPONENTS	75,482	SF	$2.33		$175,873	1963	8
D2010	PLUMBING FIXTURES	75,482	SF	$9.98		$753,310	1965	32
D2020	WATER SUPPLY PIPING - SPECIALTY PIPING	75,482	SF	$8.11		$612,159	1965	25
D2020	WATER HEATER SHELL AND TUBE HEAT EXCHANGER	55	GPM	$405.54		$22,305	1965	24
D2020	REVERSE OSMOSIS SYSTEM UPTO 5000 GPD	220	GPD	$4.15		$913	2003	20
D2030	DRAIN PIPING SYSTEMS	75,482	SF	$12.14		$916,351	1965	40
D2050	AIR COMPRESSOR PACKAGE (MEDIUM SIZE)	1	SYS	$6,457.44		$6,457	1965	25
D3030	COLD BOX REFRIGERATION SYSTEM	4	SYS	$7,112.89		$28,452	1997	15
D3030	CHILLER - AIR COOLED (UPTO 60 TONS)	11	TON	$1,950.33		$21,454	1997	20
D3030	CHILLER - AIR COOLED (OVER 100 TONS)	400	TON	$1,169.02		$467,608	2003	20

Life Cycle Model

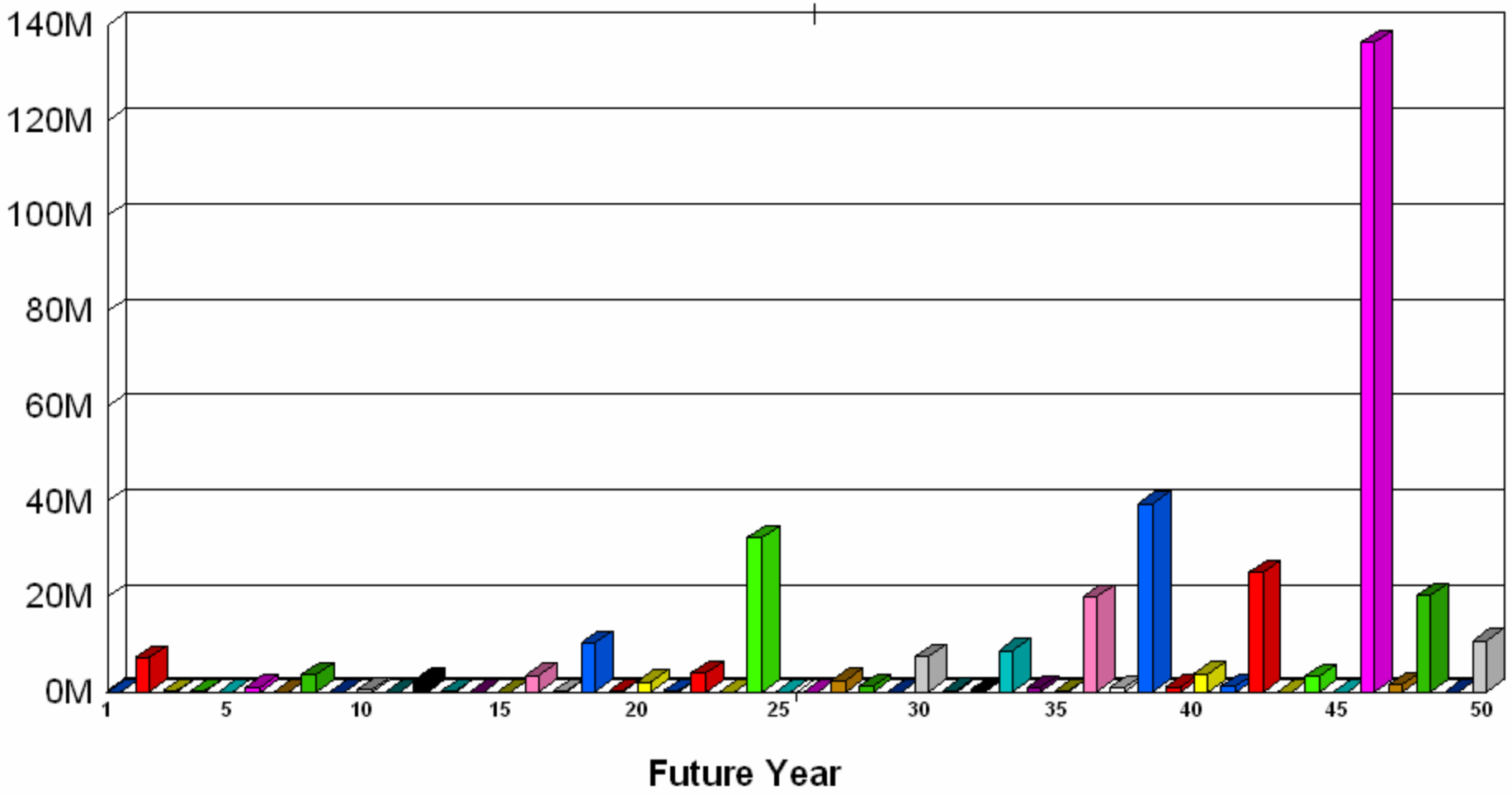
Building Component Summary

0409-000 : MUELLER LABORATORY

Uniformat Code	Component Description	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp
D3030	PACKAGE CHILLER - AIR COOLED 130 TO 210 TONS	400	TON	$1,553.39		$621,356	2003	20
D3040	CONDENSATE RECEIVER	1	SYS	$9,128.51		$9,129	1965	15
D3040	EXHAUST FAN - CENTRIFUGAL ROOF EXHAUSTER OR SIMILAR	4	EA	$3,233.49		$12,934	1965	20
D3040	EXHAUST FAN - UTILITY SET OR SIMILAR	1	EA	$4,027.61		$4,028	1997	20
D3040	HVAC SYSTEM	75,482	SF	$79.89		$6,030,257	1965	22
D3040	BASE MTD. PUMP - UP TO 15 HP	16	HP	$3,466.10		$55,458	1997	20
D3040	BASE MTD. PUMP - UP TO 15 HP	24	HP	$3,466.10		$83,186	1986	20
D3040	BASE MTD. PUMP - 15 HP TO 50 HP	100	HP	$1,281.63		$128,163	2003	20
D3050	PLATE HEAT EXCHANGER	260	GPM	$159.35		$41,431	2003	25
D5010	SECONDARY ELECTRICAL SYSTEM	75,482	SF	$19.05		$1,437,932	1965	50
D5010	ELECTRICAL SWITCHGEAR 1600A 208V	1	EA	$73,688.10		$73,688	1965	20
D5010	ELECTRICAL SWITCHGEAR 1600A 480V	1	EA	$88,425.44		$88,425	1965	20
D5010	TRANSFORMER DRY 15KV 500 TO 1500 KVA	1,250	KVA	$103.06		$128,825	1965	30
D5020	EXIT SIGNS (CENTRAL POWER)	87	EA	$195.64		$17,021	1965	20
D5020	EXTERIOR LIGHT (HID)	6	EA	$731.32		$4,388	1965	20
D5020	INTERIOR LIGHTING	75,482	SF	$9.04		$682,357	1965	20
D5020	SWITCHES AND RECEPTACLES	75,482	SF	$3.40		$256,639	1987	10
D5030	FIRE ALARM SYSTEM NON-ADDRESSABLE	75,482	SF	$2.65		$200,027	1965	15
F1050	6-13 STOP ELEVATOR CONTROLLER - ROPED	2	EA	$54,285.63		$108,571	1965	20
						$17,613,116		

Life Cycle Model Expenditure Projections

0409-000 : MUELLER LABORATORY



Average Annual Renewal Cost per SqFt **$10.71**

FACILITY CONDITION ANALYSIS

SECTION 6

PHOTOGRAPHIC LOG

Photo ID No.	Description	Location	Date
0409-000001a	Flat roofing system with stone ballast	Roof	04/07/2003
0409-000001e	Threaded galvanized drain piping and soldered copper domestic water supply piping	Mechanical room, 601	04/07/2003
0409-000002a	Mechanical equipment on roof	Roof	04/07/2003
0409-000002e	Service sink that is missing a vacuum breaker	Janitors closet 602	04/07/2003
0409-000003a	Interior stairway finishes and handrails	Sixth floor, stairway	04/07/2003
0409-000003e	Air-cooled chiller	Roof	04/07/2003
0409-000004a	Interior door and hardware	Room 616	04/07/2003
0409-000004e	Fume hood exhaust fans	Roof	04/07/2003
0409-000005a	Single-level drinking fountain	Sixth floor	04/07/2003
0409-000005e	Exhaust fans	Roof	04/07/2003
0409-000006a	Interior corridor finishes	Sixth floor	04/07/2003
0409-000006e	Heat recovery unit	Roof	04/07/2003
0409-000007a	Suspended ceiling	Sixth floor	04/07/2003
0409-000007e	Packaged, rooftop air conditioning unit	Roof	04/07/2003
0409-000008a	Interior laboratory finishes	Laboratory 616	04/07/2003
0409-000008e	York brand air conditioning unit	Roof	04/07/2003
0409-000009a	Casework and reagent racks	Laboratory 612	04/07/2003
0409-000009e	Chilled glycol circulating pumps	Mechanical penthouse	04/07/2003
0409-000010a	Interior bathroom finishes	R605	04/07/2003
0409-000010e	HVAC system schematic	Mechanical penthouse	04/07/2003
0409-000011a	Interior bathroom finishes	R605	04/07/2003
0409-000011e	Water purification system	Mechanical penthouse	04/07/2003
0409-000012a	Fire rating compromise	Room 620	04/07/2003
0409-000012e	Fume hood in good condition	Laboratory 615	04/07/2003
0409-000013a	Interior of elevator	Sixth floor	04/07/2003
0409-000013e	New fume hoods	Laboratory 615	04/07/2003
0409-000014a	Emergency shower	Corridor	04/07/2003
0409-000014e	Typical plumbing fixtures	Mens restroom 605	04/07/2003
0409-000015a	Interior laboratory finishes	Laboratory 412	04/07/2003
0409-000015e	Outdated secondary electrical distribution panels	Sixth floor, corridor	04/07/2003
0409-000016a	Wood cabinetry	Workroom	04/07/2003
0409-000016e	Lack of exit signage	Sixth floor, corridor	04/07/2003

Photo ID No.	Description	Location	Date
0409-000017a	Vestibule and doors	F102, G101	04/07/2003
0409-000017e	Outdated exit sign in poor condition	Sixth floor, corridor	04/07/2003
0409-000018a	Lobby and exterior doors	F001, G001	04/07/2003
0409-000018e	Chilled water coils	Fifth floor, laboratory	04/07/2003
0409-000019a	Void	Void	04/07/2003
0409-000019e	Acid resistant laboratory waste piping	Fifth floor, laboratory	04/07/2003
0409-000020a	Suspended ceiling	Corridor	04/07/2003
0409-000020e	Cold room evaporator	Cold room 503	04/07/2003
0409-000021a	Exposed structural rebar	Mechanical room M015	04/07/2003
0409-000021e	Glass laboratory waste piping	Mechanical room 501	04/07/2003
0409-000022a	Exposed structural rebar	M015	04/07/2003
0409-000022e	High voltage switchgear and dry-type transformer	Electrical room P014	04/07/2003
0409-000023a	Exposed structural rebar	M015	04/07/2003
0409-000023e	High voltage switchgear and dry-type transformer	Electrical room P014	04/07/2003
0409-000024a	Exposed structural rebar	M015	04/07/2003
0409-000024e	Outdated fire alarm control panel	Electrical room P014	04/07/2003
0409-000025a	Exposed structural rebar	M015	04/07/2003
0409-000025e	Outdated automatic emergency power transfer switch	Electrical room P014	04/07/2003
0409-000026a	Steel cabinets, stainless steel sink, flooring, and tile walls	Room 016	04/07/2003
0409-000026e	Duplex condensate return unit	Mechanical room M015	04/07/2003
0409-000027a	Interior classroom finishes	Room 008	04/07/2003
0409-000027e	Domestic cold water supply	Mechanical room M015	04/07/2003
0409-000028a	Entrance	South exterior	04/07/2003
0409-000028e	York brand reciprocating chiller	Mechanical room M015	04/07/2003
0409-000029a	Aluminum entrance doors	South exterior	04/07/2003
0409-000029e	Timeworn central station air handling units and modified ductwork	Mechanical room M015	04/07/2003
0409-000030a	Exterior windows	South exterior	04/07/2003
0409-000030e	Chilled water pump and duplex condensate receiver	Mechanical room M015	04/07/2003
0409-000031a	Asphalt pavement	South exterior	04/07/2003
0409-000031e	Shell-and-tube heat exchanger	Mechanical room M015	04/07/2003
0409-000032a	Northeast facade	Northeast exterior	04/07/2003

Photo ID No.	Description	Location	Date
0409-000032e	Chilled water pump	Mechanical room M015	04/07/2003
0409-000033a	Railing requiring guardrail	Northwest exterior	04/07/2003
0409-000033e	York brand reciprocating chiller	Mechanical room M015	04/07/2003
0409-000034a	Steps requiring repair	Northwest exterior	04/07/2003
0409-000034e	Heating water pumps	Mechanical room M015	04/07/2003
0409-000035a	Exterior door and vehicle bumpers that will require replacement	Northwest exterior	04/07/2003
0409-000035e	Distilled water pressure booster pumps	Mechanical room M015	04/07/2003
0409-000036a	West facade	West exterior	04/07/2003
0409-000036e	Water distiller storage tank and secondary electrical distribution panel	Mechanical room M015	04/07/2003
0409-000037a	Asphalt parking	West exterior	04/07/2003
0409-000037e	Domestic hot water heat exchanger and storage tank	Mechanical room M015	04/07/2003
0409-000038a	Snow covered roof application	Roof	05/09/2008
0409-000038e	Air-cooled chiller	Exterior	04/07/2003
0409-000039a	Acoustical tile ceiling application, painted walls and tile floor application with elevator and single-level drinking fountain	Elevator lobby	05/09/2008
0409-000039e	Air-cooled condenser	Exterior	04/07/2003
0409-000040a	Exterior window application	Exterior elevation	05/09/2008
0409-000040e	Air-cooled condenser	Exterior	04/07/2003
0409-000041a	Industrial railing application	Stairs	05/09/2008
0409-000041e	Air-cooled chillers	Exterior	04/07/2003
0409-000042a	Original millwork application	Break room work room	05/09/2008
0409-000042e	Air-cooled 11 ton chiller	West side	02/14/2008
0409-000043a	Rusted lab millwork and cabinets	Lab	05/09/2008
0409-000043e	Water purification system	Room 702	02/14/2008
0409-000044a	Exterior glass storefront system	Lobby	05/09/2008
0409-000044e	Trane 400 ton air-cooled chiller	Roof	02/14/2008
0409-000045a	Double door system	Service entrance	05/09/2008
0409-000045e	Refrigeration condensers	Roof	02/14/2008
0409-000046a	Lavatory from original installation	Restroom	06/05/2008
0409-000046e	Fume hood stack fans	Roof	02/14/2008
0409-000047a	Storefront system	Main lobby	06/05/2008
0409-000047e	Fume hood exhaust fan for special corrosives	Roof	02/14/2008

Photo ID No.	Description	Location	Date
0409-000048a	Interior wooden door system, acoustical tile ceiling and painted walls with tile flooring	Hallway	06/05/2008
0409-000048e	Rooftop package makeup air handler	Roof	02/14/2008
0409-000049a	Ceramic wall tile and floor tile application	Lab	06/05/2008
0409-000049e	Main York air handler for building tempering	Roof	02/14/2008
0409-000050a	Exposed ceiling finish	Lab Hallway	06/05/2008
0409-000050e	Heat recovery coil	Roof	02/14/2008
0409-000051a	Interior directional signage package	Biology department	06/05/2008
0409-000051e	Stack fans and building relief fans	Roof	02/14/2008
0409-000052a	Exterior stairs and railing application	Exterior elevation	06/05/2008
0409-000052e	VFDs for chilled water and glycol pumps	Penthouse	02/14/2008
0409-000053a	Exterior view including windows, landscaping and sidewalk application	Exterior elevation	06/05/2008
0409-000053e	Chilled water pumps	Penthouse	02/14/2008
0409-000054a	Exterior view	Exterior elevation	06/05/2008
0409-000054e	Glycol pumps	Penthouse	02/14/2008
0409-000055e	Glycol concentration regulator	Penthouse	02/14/2008
0409-000056a	Exterior view	Exterior elevation	06/05/2008
0409-000056e	General exhaust system	Penthouse	02/14/2008
0409-000057a	Exterior view	Exterior elevation	06/05/2008
0409-000057e	Plate frame heat exchanger	Penthouse	02/14/2008
0409-000058a	Exterior view	Exterior elevation	06/05/2008
0409-000058e	Step transformer, motor control center, and starters	Penthouse	02/14/2008
0409-000059a	Exterior view	Exterior elevation	06/05/2008
0409-000059e	Steel drain vents	Room 702	02/14/2008
0409-000060a	Exterior concrete stair application	Exterior elevation	06/05/2008
0409-000060e	T12 stair tower light fixture	Sixth floor, stair	02/14/2008
0409-000061a	Exterior sidewalk application	Exterior elevation	06/05/2008
0409-000061e	Fire alarm bell and high pull station	Sixth floor, corridor	02/14/2008
0409-000062a	Exterior brick finish with fixed window application	Exterior elevation	06/05/2008
0409-000062e	Antiquated exit sign	Sixth floor, exit door	02/14/2008
0409-000063e	Corridor door air louvers	Sixth floor, corridor	02/14/2008
0409-000064e	T8 retrofit fluorescent lighting	Room 605	02/14/2008
0409-000065e	Fume hood	Room 605	02/14/2008

Photo ID No.	Description	Location	Date
0409-000066e	Galvanized steel piping	Sixth floor, access central pipe chase	02/14/2008
0409-000067e	Automated Logic control module	Sixth floor, machine room	02/14/2008
0409-000068e	Typical auxiliary cooling fan	Fifth floor	02/14/2008
0409-000069e	Chrome worn badly on lavatory faucet	Room 506	02/14/2008
0409-000070e	Main distribution for corridor panels	Room P014	02/14/2008
0409-000071e	Transfer switch for emergency power	Room P014	02/14/2008
0409-000072e	Main switchgear, step transformer, and HV disconnects	Room P014	02/14/2008
0409-000073e	Primary switchgear	Room P014	02/14/2008
0409-000074e	Transfer switches, step transformers, and other electrical equipment	Room P014	02/14/2008
0409-000075e	Animal colony air handler	Room M015	02/14/2008
0409-000076e	ACF002	Room M015	02/14/2008
0409-000077e	Abandoned overhead air handler	Room M015	02/14/2008
0409-000078e	Duplex condensate accumulator return unit	Room M015	02/14/2008
0409-000079e	Chilled water pump	Room M015	02/14/2008
0409-000080e	No backflow preventer on domestic supply, but unit is standing by to be installed.	Room M015	02/14/2008
0409-000081e	Non-installed backflow preventer	Room M015	02/14/2008
0409-000082e	Main condensate accumulator return unit	Room M015	02/14/2008
0409-000083e	Main heat exchanger	Room M015	02/14/2008
0409-000084e	Main domestic water heat exchanger, storage tank	Room M015	02/14/2008
0409-000085e	Machine room exhaust fan	Room M015	02/14/2008
0409-000086e	Second heat exchanger	Room M015	02/14/2008
0409-000087e	Lab pure water system	Room M015	02/14/2008
0409-000088e	Staefa controls	Room M015	02/14/2008
0409-000089e	Lab pure water pumps	Room M015	02/14/2008
0409-000090e	Pumps and piping	Room M015	02/14/2008
0409-000091e	Heating water pump	Room M015	02/14/2008
0409-000092e	Packaged heating water generator system for ARF	Room M015	02/14/2008
0409-000093e	ACF003 for animal colony	Room M015	02/14/2008
0409-000094e	Sewage ejector system	Room M015	02/14/2008
0409-000095e	Refrigeration condensers	Room M001	02/14/2008
0409-000096e	Galvanized steel piping	Room M001	02/14/2008

Photo ID No.	Description	Location	Date
0409-000097e	Typical exterior lighting	South entrance area	02/14/2008

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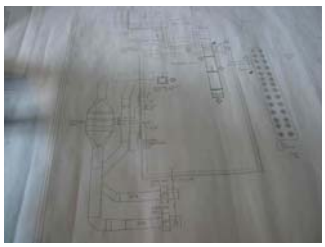

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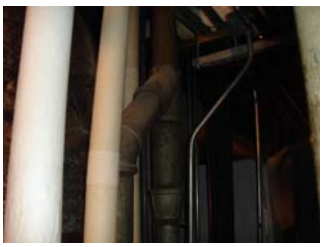

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PENNSYLVANIA STATE UNIVERSITY
Facility Condition Analysis

WHITMORE LABORATORY

BUILDING NUMBER: 0406-000
2008 UPDATE

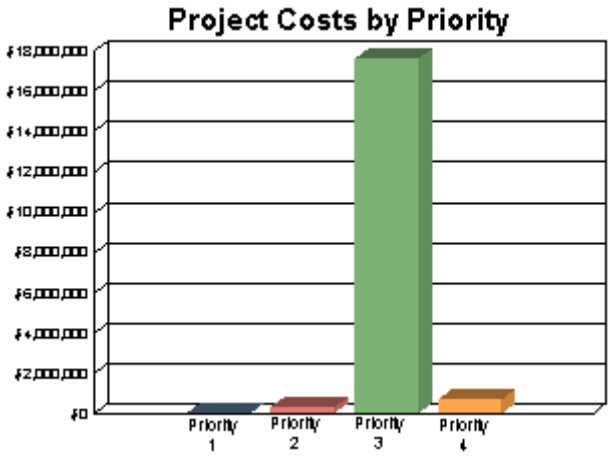
FACILITY CONDITION ANALYSIS

AUGUST 28, 2008

PENNSYLVANIA STATE UNIVERSITY
Facility Condition Analysis

TABLE OF CONTENTS

A. EXECUTIVE SUMMARY - WHITMORE LABORATORY

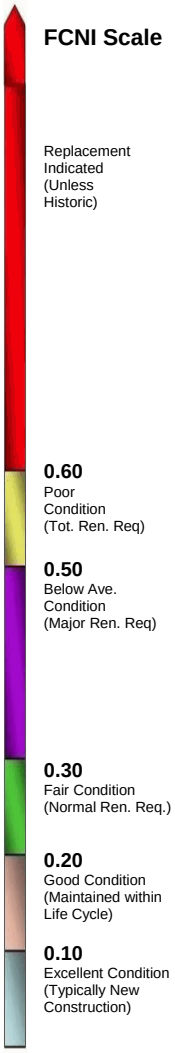


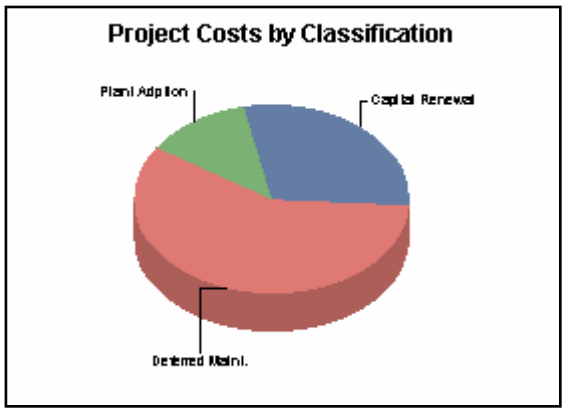
Building Code: 0406-000
Building Name: WHITMORE LABORATORY
Year Built: 1953
Building Use: Classroom / Laboratory
Square Feet: 90,641

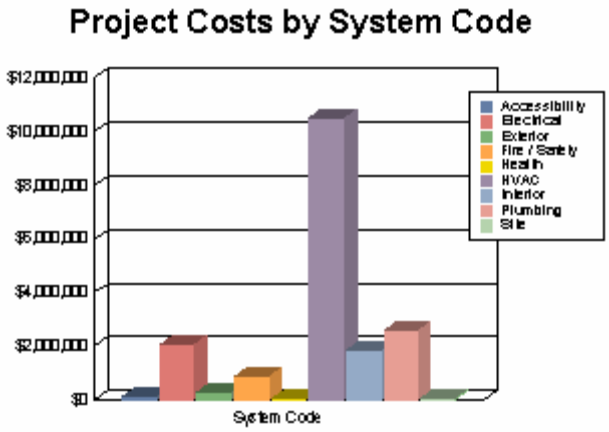
Project Costs by Priority

Priority 1:	$65,421
Priority 2:	$304,178
Priority 3:	$17,596,078
Priority 4:	$756,862
Total Project Costs:	**$18,722,540**
Facility Replacement Cost:	**$36,632,533**

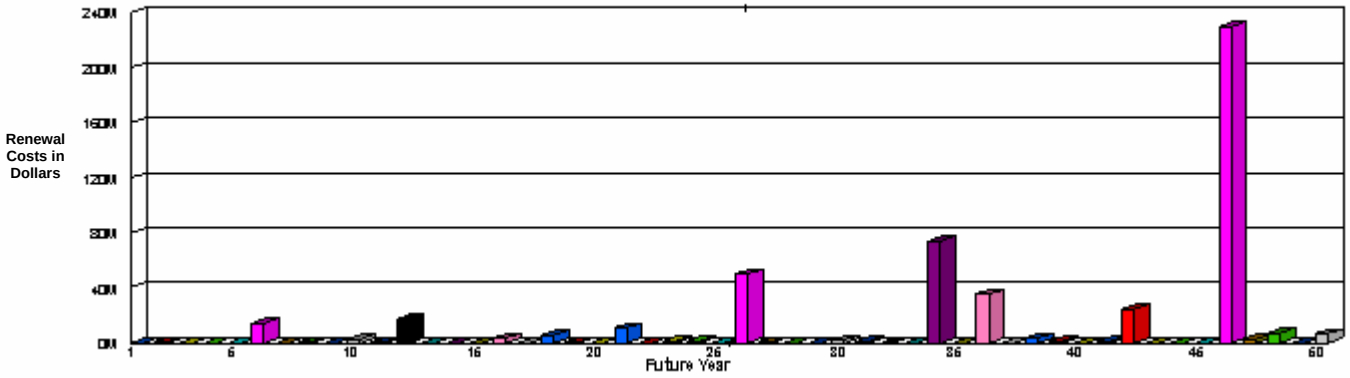
Facility Condition Needs Index (FCNI): 0.51
(Project Costs / Replacement Cost)







Life Cycle Model Expenditure Projections



Average Annual Renewal Cost per SqFt $12.64

PENNSYLVANIA STATE UNIVERSITY
Facility Condition Analysis
Section One

ADMINISTRATIVE OVERVIEW

This analysis is intended to update the initial Facility Condition Analysis prepared for Whitmore Laboratory. The facility was reinspected by ISES Corporation personnel to determine the number of previously recommended projects which had been completed and to ascertain the extent of new damage to the facility since the original inspection. The building was also surveyed for compliance with the Americans with Disabilities Act (ADA). This document is a reproduction of the original report information updated for subsequent damage, inflation, and new legislative requirements. Previously estimated project costs have been inflated based upon construction cost information published in Engineering News Record. Deficiencies which have been corrected since the original inspection have been eliminated from this report. New deficiencies observed during the reinspection have been incorporated into this report by either editing existing projects or adding new ones. Edited projects are identified by the addition of "(REV 2/08)" to the project title. New projects are indicated by the addition of "(2/08)" at the end of the title.

B. ASSET SUMMARY

Whitmore Laboratory is a teaching and research laboratory building on the campus of Pennsylvania State University. Constructed in 1953, this four-level structure has a rectangular footprint, and each floor is organized around a double loaded central corridor. The upper or third floor level is a combination of laboratories and office space. The central corridor also steps down at each end before the two stair towers. The second floor has several large class laboratories and additional administrative space on the north end of the floor. The first floor contains the main entry lobby, entering the building from the west elevation and additional class laboratories. Similar to the third floor corridor, this corridor also steps up to the corner rooms on the north and south end of the building. The basement floor has some additional laboratories, support areas, and building mechanical spaces. All four floors total 90,641 gross square feet. Upper floors can be accessed by a small passenger elevator located on the south end of the building.

SITE

The site around the building is mostly grass and mature trees. There are also some planting beds near the main entry points. The existing landscaping is in keeping with the planting layouts around the campus, and no upgrades are recommended at this time.

The existing concrete sidewalks are in average condition, but only the main entry is at grade-level. Select one of the three secondary entry points to modify with an accessible entry ramp, and install new accessible handrails, as needed. Also, repair the damaged concrete steps at all entrances, as appropriate.

The shared parking lot adjacent to this building is in average condition at this time. For the purposes of this report, a portion of this parking area is allocated to Whitmore Laboratory. This portion of the parking lot should be crack sealed and slurry coated within the next ten years.

EXTERIOR STRUCTURE

The exterior brick facades are in average condition, except for signs of brick deterioration and spalling grout visible on upper portions of the building. These upper sections will need selective repointing and some brick replacement. The exterior institutional-grade, metal, operable and fixed windows are timeworn and should be upgraded with new thermal pane, metal frame, retrofit glazing. Some signs of water infiltration around the window openings were noted during the building inspection. To help prevent additional interior collateral damage, it is recommended that these new window upgrades be installed within the next three to five years.

The exterior paneled, wood entry doors and secondary entry doors are showing signs of weathering and use. These doors should be reworked or replaced in kind within the same three to five years. The lower floor metal service doors should also be upgraded with new metal door assemblies within the next five years.

The existing multi-level, flat, built-up roofing system was installed in 2001 and appears to be in average condition. The roof should not need replacement in the next ten years. However, the upper roof access hatch and the metal transition ladders were not upgraded during the reroofing project. These roof components may have to be replaced before the end of the roofing warranty.

INTERIOR FINISHES / SYSTEMS

A recent renovation was done to the laboratory and office areas on the third floor. While these finishes are in like-new condition, the interior finishes in the rest of the building are in average to fair condition. The interior painted wall finishes appear adequate, but the corridor walls are transite and will need to be replaced with new sheetrock and shaft wall construction. Also, ceilings on the upper floor and portions of the first and second floors are reported to contain asbestos. Other areas on these upper three floors have lay-in, acoustical ceilings that range in condition from average to fair. All of these ceiling finishes will have to be removed to accommodate the recommended building system upgrades. The plaster ceilings will have to be properly abated and disposed of prior to beginning any upgrades in these portions of the laboratory. Once the recommended building system upgrades are completed, new 2 x 2, lay-in, acoustical ceilings should be installed on all three upper floors. The lower floor does not have a formal ceiling at present, and no ceiling finish upgrades appear to be warranted at this time. The basement level also has concrete floor finishes that are adequate at this time.

Vinyl floor tile finishes on all three upper floors are mostly worn, and many of the older vinyl flooring is suspected to contain asbestos. These floor tile areas will also need to be abated prior to installing any new floor finishes. Install new vinyl composite floor tiles in corridor support areas, but a more durable epoxy floor finish is recommended for all laboratory rooms. Carpeting in the administrative areas ranges from worn to average condition. New commercial-grade, roll carpeting is needed in each of these office areas within the next three to five years. The ceramic tile floors and glazed block walls in the restrooms appear dated and timeworn. Finish upgrades in these restrooms are included in the recommended ADA restroom upgrade.

Interior doors in this laboratory building vary from solid core flush wood laboratory doors, with vision panels and non-rated transoms that also swing out into the corridors, to non-rated wood louvered corridor doors on the lower floor. The upper floor laboratory doors should be upgraded as part of the reworking

of the transite paneled corridor service chases, and the lower floor interior doors are past due for upgrade in general. Very few of these doors have lever action hardware, which should be installed. Install new hollow metal interior doors on all four floors, and as previously mentioned, coordinate this work with the corridor shaft wall upgrades

The second floor break room / copy room has cabinetry that is looking somewhat deteriorated. These cabinets and countertops should be upgraded within the next six to ten years. Maintain a similar cabinet layout, and install new break room appliances, as needed.

The existing laboratory bench work in both the smaller laboratories and in the larger teaching classrooms is generally aging and should be considered for selective replacement within the next three to five years. Replace roughly 75 percent of the existing laboratory cabinets with new modular metal base cabinets and reagent shelving. Also, install acid resistance laboratory countertops with each upgrade.

ACCESSIBILITY

This laboratory building has few accessible features. The main entry, as previously mentioned, is the only grade-level entry for the building, and an additional entry point will need to be modified with a permanent, accessible ramp to create an additional accessible entry / egress point. The passenger elevator in the building has some accessible features, but still lacks a two-way communication system. Install a hands-free, two way communicator system in the elevator cab to make it more ADA compliant.

Restrooms on the basement level have been modified and are fully accessible. However, the second floor restrooms have only been partially upgraded, lacking accessible sink assemblies. Replace one of the existing sinks with a new ADA compliant, wall-mounted, accessible sink in both the men's and women's restrooms. The third and first floor restrooms have had interior access stair barriers and have not been upgraded. Although only a percentage of the restrooms in a building are required to be made accessible, the restrooms on the first and third floors have aging fixtures and finishes. These restrooms should be refitted with new ADA compliant fixtures and new ceramic tile floor finishes, once stair lifts are installed to address the existing interior stair barrier problem. Also, upgrade the ceramic tile flooring in the remaining restrooms in the building.

Drinking fountains in the building range from newer and fully accessible to aging and non-accessible. Replace the remainder of the older, non-accessible drinking fountains within the next three to five years, and provide wheelchair accessible, recessed corridor alcoves with each of these new installations.

Present accessibility legislation dealing with wheelchair access by the handicapped requires that building amenities, such as kitchenette fixtures, be generally available to all persons. The kitchenette unit in Room 303 is not wheelchair accessible and is recommended for replacement. To comply with the intent of this legislation, it is recommended that this unit be replaced. The new kitchenette unit is to have a base cabinet, overhead cabinets, and undercounter refrigerator with ice maker, sink, and microwave oven, and be designed in accordance with the present ADA requirements.

As previously mentioned, new interior door upgrades will include levered hardware sets. This building has already been upgraded with new accessible signage throughout. The two main egress stair towers and the four interior corridor steps all need ADA compliant handrail upgrades. The existing guardrails at

stair tower windows will also need to be replaced with new compliant, metal railing sections. The interior corridor stairs at the third floor have been equipped with wheelchair lifts per the previous recommendation. The interior corridor steps at the first floor will still need to be fitted with stair lifts to accommodate wheelchair access to these corner offices, classrooms, and restrooms.

HEALTH

The building has asbestos in the plaster ceilings and in most of the vinyl floor tile. These materials have already been addressed in other portions of the report. Additionally, there are transite panels on the service chases that flank the main building corridors. These panels should be properly removed and disposed of, and these chases should be fitted with new sheetrock and shaft wall finish assemblies. No other structure related heath issues were noted or reported at the time of this building inspection.

FIRE / LIFE SAFETY

The building appears to have adequate egress passages, and no exiting obstructions were noted at the time of the inspection. However, a number of non-rated transfer grilles are located in rated corridor walls, and there are non-rated interior door overhead transoms that compromise the fire separation of the egress passages. Some of these clerestories were closed off on the second floor level, but all of this interior glazing should be removed and the openings closed off with approved fire-rated, wall materials. Unsealed penetrations were also noted in corridor walls of mechanical areas, and service counters had aging or partially compliant automatic fire shutters that should be upgraded. Some interior door assemblies, which have already been recommended for upgrade in this report, further compromise the fire separation of portions of the exit paths.

A substantial amount of volatile and flammable reagents are being stored in original containers. This room is not specially prepared for storage of flammables of this type and much more than a daily or weekly supply is present. It is recommended that safety be enhanced through the installation of a rated, steel storage cabinet for this type of material.

This building has a modern fire alarm system that was recently installed. The system appears to be in good condition and able to adequately serve the building. No automatic fire suppression was noted in this building. A facility of this size and use type should be fully protected by an automatic fire suppression system. Install fire suppression throughout the facility, including piping, sprinkler heads, pipe bracing, and supervising and alarm devices, as needed. This will aid the university in terms of reduced liability and risk of loss.

This facility has eyewash showers and emergency fountains, but they are not located in all of the areas that they are needed. Some areas have emergency showers, but no eyewash fountains. Furthermore, some of the existing units are timeworn. Remove any existing worn emergency showers and eyewashes. Install new emergency showers and eyewash fountains in all areas where related hazards exist. These should be permanent fixtures, connected to the buildings water supply network and provided with drains. They need to be clearly identified and located in unobstructed areas for easy access.

The exit signs throughout the building are becoming timeworn and are recommended for replacement. LED applications are recommended for their low maintenance and energy-efficient features. Connect the new exit signs to the emergency circuit.

HVAC

This building is supplied with steam from the central plant that is used directly in coils and radiators for space heating. Comfort cooling is located sporadically throughout the building. Cooling sources include small air-cooled chillers, package air conditioners, split DX systems, and window air conditioners. Air distribution systems include small air handlers and fan coil units above the ceiling and unit ventilators along outside walls. These HVAC applications are inefficient, outdated, and not suitable for a research laboratory. A complete HVAC redesign and replacement is recommended throughout the building. Demolish and dispose of existing equipment. Install a new modern HVAC system with hot water heating, building-wide comfort cooling, and variable air volume (VAV) and constant volume air handling systems. This includes the installation of chilled water equipment, air handlers, ductwork, terminal units, heat exchangers, pumps, piping, controls, and electrical connections. Specify direct digital controls (DDC) for the new equipment. Incorporate variable frequency drives (VFD) into the new HVAC design, as applicable. Some of the equipment and piping is suspected to be asbestos containing material (ACM). This must be removed and disposed of in accordance with all pertinent regulations.

There are fume hoods in the teaching laboratories and research areas. The fume hood fans are located in the attic. This leaves pressurized discharge stacks inside the space, which creates a health hazard in the event of a leak. While there are some newer fume hoods on the second and third floors, many of the hoods are much older, with some being original equipment. In conjunction with proposed HVAC upgrades, new modern hoods are recommended. Remove all aged fume hoods and their mechanical systems. Install new fume hood systems, integrated with the air distribution system. Provide DDCs for the new hoods.

ELECTRICAL

This building has a fairly new switchgear that delivers 120/208 volt power. It is GE equipment and has a 2,500 amp main breaker. The recommended HVAC upgrades will require additional power. Also, interior lighting can be better served with 277/480 volt power. Install an additional electrical service to the building, providing 277/480 volt power for the proposed HVAC and lighting upgrades. This work includes a transformer, related switchgear, and all connections and terminations.

The secondary electrical system varies in age and condition. There are original 1950s vintage panels, along with newer panels that have been added for renovations and / or additional circuits. Some of the older panels serve as potential fire hazards if they fail to open a circuit in an overload or short circuit condition. Devices, including switches and receptacles, are generally timeworn. Upgrade the secondary electrical system by replacing all worn panels, conductors, raceways, and devices. Install 277/480 volt panels to accommodate proposed lighting and mechanical upgrades. Install additional branch circuits, as needed, to meet the present demands of the occupants. Specify ground fault circuit interrupter (GFCI) receptacles in the appropriate areas to reduce shock hazard.

Lighting throughout the facility includes a combination of fluorescent and incandescent fixtures. Lights have been upgraded in some of the laboratories, but most are inefficient applications with outdated T12 lamps. A complete lighting upgrade is recommended. Replace incandescent and worn fluorescent light fixtures with new energy-efficient, 277 volt fixtures. Convert existing fixtures that are in good condition to operate on 277 volts. Install occupancy sensors in select areas as an additional energy conservation measure.

Emergency power for the building consists of an ASCO transfer switch connected to the campus emergency power network. The available power appears to be inadequate for a modern laboratory facility of this size. It is recommended that an appropriately sized emergency generator and power network be installed. The emergency network should supply power to select light fixtures to maintain code required illumination levels along egress paths. Emergency power should also be provided for the exit signs, fire alarm system, elevator, and critical laboratory and mechanical equipment. If deemed more cost-effective, the university may opt to increase the emergency feeder size and transfer switch in lieu of the generator installation.

PLUMBING

This laboratory facility includes piping for domestic water, natural gas, vacuum, compressed air, and other specialty systems. The water main enters the building in room M018. There is no backflow preventer at the water main to protect against cross-contamination of the building's water system with the domestic water supply. Install a backflow preventer at the water main to protect the potable water supply.

Water supply piping is mostly copper and original. Laboratory process fluids piping is mostly threaded pipe and original. Shutoff valves and gas cocks are uniformly worn. Failure to replace the water and process piping within the scope of this report will result in frequent leaks and consequential maintenance costs. In coordination with other recommended plumbing upgrades, replacement of most of the water and process piping is recommended.

Drain piping throughout the facility includes Duriron for acid wastes and cast-iron for normal and storm wastes. Most of the drain piping is original, and some past failures were noted. Again, increasing failures and maintenance costs can be expected if these systems are not replaced in the near future. Replacement of the original acid and normal waste drain piping is recommended.

Men's and women's restrooms alternate on each floor. The restroom plumbing fixtures are uniformly worn. New water closets and urinals consume approximately one-half the water as these older vintage fixtures. Replacement of the water closets, lavatories, and urinals is recommended in coordination with related restroom accessibility upgrades. Janitor's service sinks are in poor condition and should be replaced at the same time. Laboratory fixtures are uniformly worn throughout, except in some renovated laboratories. Replacement of the deteriorated laboratory sinks is recommended.

There is a steam to domestic hot water converter in mechanical room M018. This unit was new in 1953. Insulation on the converter is suspected to contain asbestos. Replacement of the domestic hot water converter is recommended based on life cycle depletion. Remove and dispose of the asbestos in accordance with all pertinent regulations.

VERTICAL TRANSPORTATION

The facility is served by one traction elevator that is utilized as a passenger unit. The elevator has a capacity of 4,000 pounds with a speed of 100 fpm. The unit was installed in 2000 with no major issues to report. The elevator should continue to provide adequate service for the scope of this report, with no project recommendations.

WORK COMPLETED SINCE THE LAST INSPECTION

- Compliant building signage has been installed throughout the building.
- Two wheelchair stair climbers have been installed in the third floor corridor. This partially completes the previous project.
- The third floor laboratory and office areas have been renovated. This partially completes the interior project to replace flooring, ceilings, and lab cabinetry.
- New laboratory-grade air compressor and vacuum pump systems were installed.
- Lighting was upgraded in some renovated areas, including the third floor.
- The electrical network was upgraded in some renovated areas.
- The HVAC system was partially upgraded on the third floor.
- Lab sinks were replaced on the third floor.

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.

Backlog Retirement Summary
Completed and Partially Completed Projects
0406-000 : WHITMORE LABORATORY

Project Number	Project Title	Pri Cls	Date	Project Notes	Total Cost	Actual Cost To Date	Remaining Cost	Percen Complete
0406-000AC06	INTERIOR WHEELCHAIR STAIR CLIMBER INSTALLATIONS	3	6/4/2008	Wheelchair lifts added to third floor.	$101,112	33,704	$67,408	33%
0406-000EL02	UPGRADE INTERIOR LIGHTING	3	3/12/200	Lighting was upgraded in renovated areas.	$622,818	120,000	$502,818	20%
0406-000EL04	UPGRADE SECONDARY ELECTRICAL SYSTEM	3	3/12/200	The elecrical network was upgraded in some renovated areas.	$1,651,470	240,000	$1,411,470	15%
0406-000HV01	HVAC UPGRADES	3	3/12/200	The HVAC system was paritally upgraded on the thrid floor.	$7,481,976	375,000	$7,106,976	5%
0406-000IS02	INTERIOR FLOOR FINISH RESTORATION	3	6/4/2008	Floor areas were upgraded on the third floor.	$337,594	67,519	$270,075	20%
0406-000IS03	HIGH PERCENTAGE LABORATORY BENCH UPGRADE	3	6/4/2008	Third floor labs have been updated.	$1,291,904	387,571	$904,333	30%
0406-000IS05	LAY-IN ACOUSTICAL CEILING SYSTEM UPGRADES	3	6/4/2008	Third floor ceiling areas have been updated.	$412,182	82,436	$329,746	20%
0406-000PL05	REPLACE LABORATORY FIXTURES	3	3/12/200	Lab sinks were replaced on the third floor.	$848,079	85,000	$763,079	10%
				Subtotal for Priority Class 3	**$12,747,135**	**$1,391,230**	**$11,355,905**	
0406-000AC04	ADDITIONAL BUILDING SIGNAGE UPGRADES	4	6/4/2008	Signage upgraded throughout the building.	$20,289	20,290	($1)	Complet
				Subtotal for Priority Class 4	**$20,289**	**$20,290**	**($1)**	
				Grand Totals	**$12,767,424**	**$1,411,520**	**$11,355,904**	

Backlog Retirement Summary
Completed Projects

0406-000 : WHITMORE LABORATORY

Project Number	Project Title	Pri Cls	Date	Project Notes	Total Cost	Actual Cost To Date	Variance
0406-000AC04	ADDITIONAL BUILDING SIGNAGE UPGRADES	4	6/4/2008	Signage upgraded throughout the building.	$20,289	$20,290	($1)
				Subtotal for Priority Class 4	**$20,289**	**$20,290**	**($1)**
				Grand Totals	**$20,289**	**$20,290**	**($1)**

D. INSPECTION TEAM DATA

DATE OF INSPECTION: March 12, 2008

INSPECTION TEAM PERSONNEL:

NAME	POSITION	SPECIALTY
Mark Byrd	Facility Analyst	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health
Doug Fredendall	Facility Analyst	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Rob Gasaway	Facility Analyst	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health
Matthew Gregory	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Michael Jordan	Project Engineer	Mechanical / Electrical / Plumbing / Energy / Fire Safety / Life Safety / Health
Laura Voisin George	Facility Analyst	Interior Finishes / Exterior / ADA-Handicapped Accessibility / Site / Fire Safety / Life Safety / Health

FACILITY CONTACTS:

NAME	POSITION
Kathy Bamat	Manager, Work Control Center

REPORT DEVELOPMENT:

Report Development by: ISES CORPORATION
2165 West Park Court
Suite N
Stone Mountain, GA 30087

Contact: Michael Jordan, Project Manager
770-879-7376

E. FACILITY CONDITION ANALYSIS - DEFINITIONS

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

1. **REPORT DESCRIPTION**

Section 1: Asset Executive Summary, Asset Summary, Backlog Retirement 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 - <$25,000]
D. Detailed Projects by Cost within range [≥ $25,000 - < $1,000,000]
E. Detailed Projects by Cost within range [≥ $1,000,000]
F. Detailed Projects by Project Classification
G. Detailed Projects by Project Rating Type - Energy Conservation
H. Detailed Projects by Category / System Code
I. Detailed Projects by Score

FCNI = Facility Condition Needs Index, Total Cost vs. Replacement Cost. The FCNI provides a life cycle cost comparison. Facility replacement cost based on replacement with current construction standards for facility use type, and not original design parameters. This index gives the University a comparison within all buildings for identifying worst case / best case building conditions.

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

Section 3: Specific Project Details Illustrating Description / Cost

Section 4: Drawings with Iconography

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

Section 5: Life Cycle Model Building Component Summary

Section 6: Photographic Log

Note: For Sections 2 and 3, at the end of the reports and project detail, an *Inflation Adjustment Factor* will be designed and built into the program for update purposes. Updates will not be reflected in the original report.

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 effect the needed repairs. Deferred maintenance projects represent catch up expenses.

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

3. PROJECT SUBCLASS TYPE

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

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

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

Example:

PRIORITY CLASS 1

CODE	PROJECT NO.	PRIORITY SEQUENCE
HV2C	0401-000HV04	01
PL1D	0401-000PL02	02

PRIORITY CLASS 2

CODE	PROJECT NO.	PRIORITY SEQUENCE
IS1E	0401-000IS06	03
EL4C	0401-000EL03	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 1, 2, and 3).

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

Cost factors are based on the State College City Index and are adjusted for material and labor cost factors (2008). Refer to the project related labor report found later in this section.

Global Markup Percentages		R.S. MEANS
Local Labor Index:	90.6 %	of National Average
Local Materials Index:	95.6 %	of National average
General Contractor Markup:	20.0 %	Contractor profit and overhead, bonds and insurance
Professional Fees:	15.0 %	Arch. / Eng. Firm design fees and in-house design cost

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

Example:

Project Number = 0401-000-EL-04 (unique for each independent project)

0401-000 - 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 or engineer.

Example: 0401-000006e

Building Number	Photo Sequence	Arch / Eng
0401-000	006	e

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

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

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

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

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

Refer to the following Category Code Report.

Example: Category Code = EL5A

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

CATEGORY CODE			SYSTEM DESCRIPTION
AC1A	-	AC4B	ACCESSIBILITY
EL1A	-	EL8A	ELECTRICAL
ES1A	-	ES6E	EXTERIOR STRUCTURE
FS1A	-	FS6A	FIRE / LIFE SAFETY
HE1A	-	HE7A	HEALTH
HV1A	-	HV8B	HVAC
IS1A	-	IS6D	INTERIOR / FINISH SYSTEMS
PL1A	-	PL5A	PLUMBING
SI1A	-	SI4A	SITE
SS1A	-	SS7A	SECURITY SYSTEMS
VT1A	-	VT7A	VERTICAL TRANSPORTATION

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
SYSTEM DESCRIPTION: ACCESSIBILITY			
AC1A	SITE	STAIR AND RAILINGS	Includes exterior stairs and railings which are not part of the building entrance points.
AC1B	SITE	RAMPS AND WALKS	Includes sidewalks, grade change ramps (except for a building entrance), curb ramps, etc.
AC1C	SITE	PARKING	Designated parking spaces including striping, signage, access aisles and ramps, etc.
AC1D	SITE	TACTILE WARNINGS	Raised tactile warnings located at traffic crossing and elevation changes.
AC2A	BUILDING ENTRY	GENERAL	Covers all aspects of entry into the building itself including ramps, lifts, doors and hardware, power operators, etc.
AC3A	INTERIOR PATH OF TRAVEL	LIFTS/RAMPS/ ELEVATORS	Interior lifts, ramps and elevators designed to accommodate level changes inside a building. Includes both installation and retrofitting.
AC3B	INTERIOR PATH OF TRAVEL	STAIRS AND RAILINGS	Upgrades to interior stairs and handrails for accessibility reasons.
AC3C	INTERIOR PATH OF TRAVEL	DOORS AND HARDWARE	Accessibility upgrades to the interior doors including widening, replacing hardware power, assisted operators, etc.
AC3D	INTERIOR PATH OF TRAVEL	SIGNAGE	Interior building signage upgrades for compliance with ADA.
AC3E	INTERIOR PATH OF TRAVEL	RESTROOMS/ BATHROOMS	Modifications to and installation of accessible public restrooms and bathrooms. Bathrooms, which are an integral part of residential suites, are catalogued under HC4A.
AC3F	INTERIOR PATH OF TRAVEL	DRINKING FOUNTAINS	Upgrading/replacing drinking fountains for reasons of accessibility.
AC3G	INTERIOR PATH OF TRAVEL	PHONES	Replacement/modification of public access telephones.
AC4A	GENERAL	FUNCTIONAL SPACE MODIFICATIONS	This category covers all necessary interior modifications necessary to make the services and functions of a building accessible. It includes installation of assistive listening systems, modification of living quarters, modifications to laboratory workstations, etc. Bathrooms, which are integral to efficiency suites, are catalogued here.
AC4B	GENERAL	OTHER	All accessibility issues not catalogued elsewhere.
SYSTEM DESCRIPTION: ELECTRICAL			
EL1A	INCOMING SERVICE	TRANSFORMER	Main building service transformer.
EL1B	INCOMING SERVICE	DISCONNECTS	Main building disconnect and switchgear.
EL1C	INCOMING SERVICE	FEEDERS	Incoming service feeders. Complete incoming service upgrades, including transformers, feeders, and main distribution panels are catalogued here.
EL1D	INCOMING SERVICE	METERING	Installation of meters to record consumption and/or demand.
EL2A	MAIN DISTRIBUTION PANELS	CONDITION UPGRADE	Main distribution upgrade due to deficiencies in condition.
EL2B	MAIN DISTRIBUTION PANELS	CAPACITY UPGRADE	Main distribution upgrades due to inadequate capacity.
EL3A	SECONDARY DISTRIBUTION	STEP DOWN TRANSFORMERS	Secondary distribution stepdown and isolation transformers.
EL3B	SECONDARY DISTRIBUTION	DISTRIBUTION NETWORK	Includes conduit, conductors, sub-distribution panels, switches, outlets, etc. Complete interior rewiring of a facility is catalogued here.
EL3C	SECONDARY DISTRIBUTION	MOTOR CONTROLLERS	Mechanical equipment motor starters and control centers.
EL4A	DEVICES AND FIXTURES	EXTERIOR LIGHTING	Exterior building lighting fixtures including supply conductors and conduit.
EL4B	DEVICES AND FIXTURES	INTERIOR LIGHTING	Interior lighting fixtures (also system wide emergency lighting) including supply conductors and conduits.
EL4C	DEVICES AND FIXTURES	LIGHTING CONTROLLERS	Motion sensors, photocell controllers, lighting contactors, etc.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
EL4D	DEVICES AND FIXTURES	GFCI PROTECTION	Ground fault protection including GFCI receptacles and breakers.
EL4E	DEVICES AND FIXTURES	LIGHTNING PROTECTION	Lightning arrestation systems including air terminals and grounding conductors.
EL5A	EMERGENCY POWER SYSTEM	GENERATION/ DISTRIBUTION	Includes generators, central battery banks, transfer switches, emergency power grid, etc.
EL6A	SYSTEMS	UPS/DC POWER SUPPLY	Uninterruptible power supply systems and DC motor-generator sets and distribution systems.
EL7A	INFRASTRUCTURE	ABOVE GROUND TRANSMISSION	Includes poles, towers, conductors, insulators, fuses, disconnects, etc.
EL7B	INFRASTRUCTURE	UNDERGROUND TRANSMISSION	Includes direct buried feeders, ductbanks, conduit, manholes, feeders, switches, disconnects, etc.
EL7C	INFRASTRUCTURE	SUBSTATIONS	Includes incoming feeders, breakers, buses, switchgear, meters, CTs, PTs, battery systems, capacitor banks, and all associated auxiliary equipment.
EL7D	INFRASTRUCTURE	DISTRIBUTION SWITCHGEAR	Stand-alone sectionalizing switches, distribution switchboards, etc.
EL7F	INFRASTRUCTURE	AREA AND STREET LIGHTING	Area and street lighting systems including stanchions, fixtures, feeders, etc.
EL8A	GENERAL	OTHER	Electrical system components not catalogued elsewhere.
SYSTEM DESCRIPTION: EXTERIOR			
ES1A	FOUNDATION/FOOTING	STRUCTURE	Structural foundation improvements involving structural work on foundation wall/footing, piers, caissons, piles including crack repairs, shoring & pointing
ES1B	FOUNDATION/FOOTING	DAMPPROOFING/ DEWATERING	Foundation/footing waterproofing work including, damp proofing, dewatering, insulation, etc.
ES2A	COLUMNS/BEAMS/ WALLS	STRUCTURE	Structural work to primary load-bearing structural components aside from floors including columns, beams, bearing walls, lintels, arches, etc.
ES2B	COLUMNS/BEAMS/ WALLS	FINISH	Work involving restoration of the appearance and weatherproof integrity of exterior wall/structural envelope components including masonry/pointing, expansion joints, efflorescence & stain removal, grouting, surfacing, chimney repairs, etc.
ES3A	FLOOR	STRUCTURE	Work concerning the structural integrity of the load supporting floors both exposed and unexposed including deformation, delamination, spalling, shoring, crack repair, etc.
ES4A	ROOF	REPAIR	Work on waterproof horizontal finish (roof) involving repair and/or limited replacement (<40% total) including membrane patching, flashing repair, coping caulk/resetting, PPT wall parging/coating, walkpad installation, skylight and roof hatch R&R, etc.
ES4B	ROOF	REPLACEMENT	Work involving total refurbishment of roofing system including related component rehab.
ES5A	FENESTRATIONS	DOORS	Work on exterior exit/access door including storefronts, airlocks, air curtains, vinyl slat doors, all power/manual operating hardware (except handicapped), etc.
ES5B	FENESTRATIONS	WINDOWS	Work on exterior fenestration closure & related components including glass/metal/wood curtain walls, fixed or operable window sashes, glazing, frames, sills, casings, stools, seats, coatings, treatments, screens, storm windows, etc.
ES6A	GENERAL	ATTACHED STRUCTURE	Work on attached exterior structure components not normally considered in above categories including porches, stoops, decks, monumental entrance stairs, cupolas, tower, etc.
ES6B	GENERAL	AREAWAYS	Work on attached grade level or below structural features including subterranean light wells, areaways, basement access stairs, etc.
ES6C	GENERAL	TRIM	Work on ornamental exterior (generally non-structural) elements including beltlines, quoins, porticos, soffits, cornices, moldings, trim, etc.
ES6D	GENERAL	SUPERSTRUCTURE	Finish and structural work on non-standard structures with exposed load-bearing elements such as stadiums, bag houses, bleachers, freestanding towers, etc.
ES6E	GENERAL	OTHER	Any exterior work not specifically categorized elsewhere including finish and structural work on

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
			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.
HE6A	HAZARDOUS MATERIAL	STRUCTURAL ASBESTOS	Testing, abatement and disposal of structural and building finish materials containing asbestos.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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 UPGRADE	Replacement of HVAC control systems.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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 / FINISH SYSTEMS			
IS1A	FLOOR	FINISHES-DRY	R & R of carpet, hardwood strip flooring, concrete coating, vinyl linoleum & tile, marble, terrazzo, rubber flooring, underlayment in predominantly dry areas ("dry" includes non-commercial kitchens)
IS1B	FLOOR	FINISHES-WET	Flooring finish/underlayment work in predominantly "wet" areas including work with linoleum, rubber, terrazzo, concrete coating, quarry tile, ceramic tile, epoxy aggregate, etc.
IS2A	PARTITIONS	STRUCTURE	Structural work on full height permanent interior partitions including wood/metal stud & drywall systems, CMU systems, structural brick, tile, glass block, etc.
IS2B	PARTITIONS	FINISHES	Work on full height permanent interior partitions including R & R to gypsum board, plaster, lath, wood paneling, acoustical panels, wall coverings, column coverings, tile, paint, etc.
IS3A	CEILINGS	REPAIR	Repair of interior ceilings (<40% of total) including tiles, gypsum board, plaster, paint, etc.
IS3B	CEILINGS	REPLACEMENT	Major refurbishments (>40% of total) to interior ceiling systems including grid system replacements, structural framing, new suspended systems, paint, plastering, etc.
IS4A	DOORS	GENERAL	Any work on interior non-fire rated doors, roll-up counter doors, mechanical/plumbing access doors, and all door hardware (except for reasons of access improvement).
IS5A	STAIRS	FINISH	Any finish restorative work to stair tower walking surfaces including replacement of rubber treads, safety grips, nosings, etc. (except as required to accommodate disabled persons).
IS6A	GENERAL	MOLDING	R & R to interior trim/molding systems including rubber/vinyl/wood base, crown/chair/ornamental moldings, cased openings, etc.
IS6B	GENERAL	CABINETRY	R & R work to interior casework systems including cabinets, countertops, wardrobes, lockers, mail boxes, built-in bookcases, lab/work benches, reagent shelving, etc. (except as required for access by the disabled).
IS6C	GENERAL	SCREENING	Work on temporary or partial height partitioning systems including toilet partitions, urinal/vanity screens, etc.
IS6D	GENERAL	OTHER	Any work on interior elements not logically or specifically categorized elsewhere including light coves, phone booths, interior light wells, etc.
SYSTEM DESCRIPTION: PLUMBING			
PL1A	DOMESTIC WATER	PIPING NETWORK	Repair or replacement of domestic water supply piping network, insulation, hangers, etc.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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.
SS2A	SITE	FENCING	Perimeter campus fencing, individual building fencing, includes both pedestrian and vehicular control fences.

CATEGORY CODE REPORT			
CODE	**COMPONENT DESCRIPTION**	**ELEMENT DESCRIPTION**	**DEFINITION**
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
0406-000 : WHITMORE LABORATORY

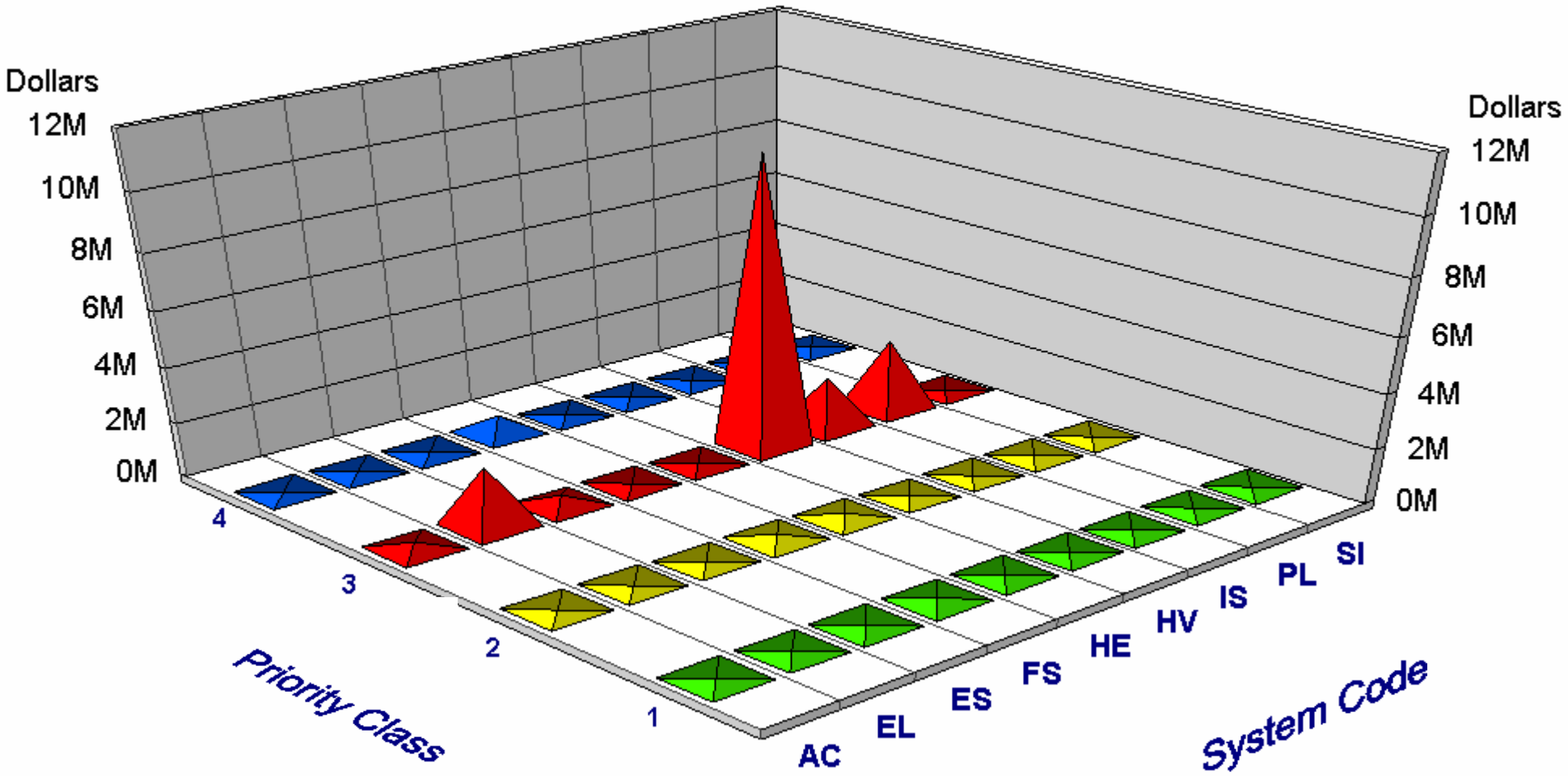
System Code	System Description	Priority Classes 1	2	3	4	Subtotal
AC	ACCESSIBILITY	0	0	199,587	0	199,587
EL	ELECTRICAL	0	0	2,122,256	0	2,122,256
ES	EXTERIOR	0	0	347,584	0	347,584
FS	FIRE/LIFE SAFETY	65,421	176,080	0	691,065	932,565
HE	HEALTH	0	117,587	0	0	117,587
HV	HVAC	0	0	10,485,277	0	10,485,277
IS	INTERIOR/FINISH SYS.	0	0	1,852,899	2,639	1,855,538
PL	PLUMBING	0	10,512	2,588,476	0	2,598,988
SI	SITE	0	0	0	63,159	63,159
	TOTALS	$65,421	$304,178	$17,596,078	$756,862	$18,722,540

Facility Replacement Cost	$36,632,533
Facility Condition Needs Index	0.51

Gross Square Feet	90,641

Total Cost Per Square Foot	$206.56

FACILITY CONDITION ANALYSIS
System Code by Priority Class
0406-000 : WHITMORE LABORATORY



Detailed Project Totals
Facility Condition Analysis
System Code by Project Class
0406-000 : WHITMORE LABORATORY

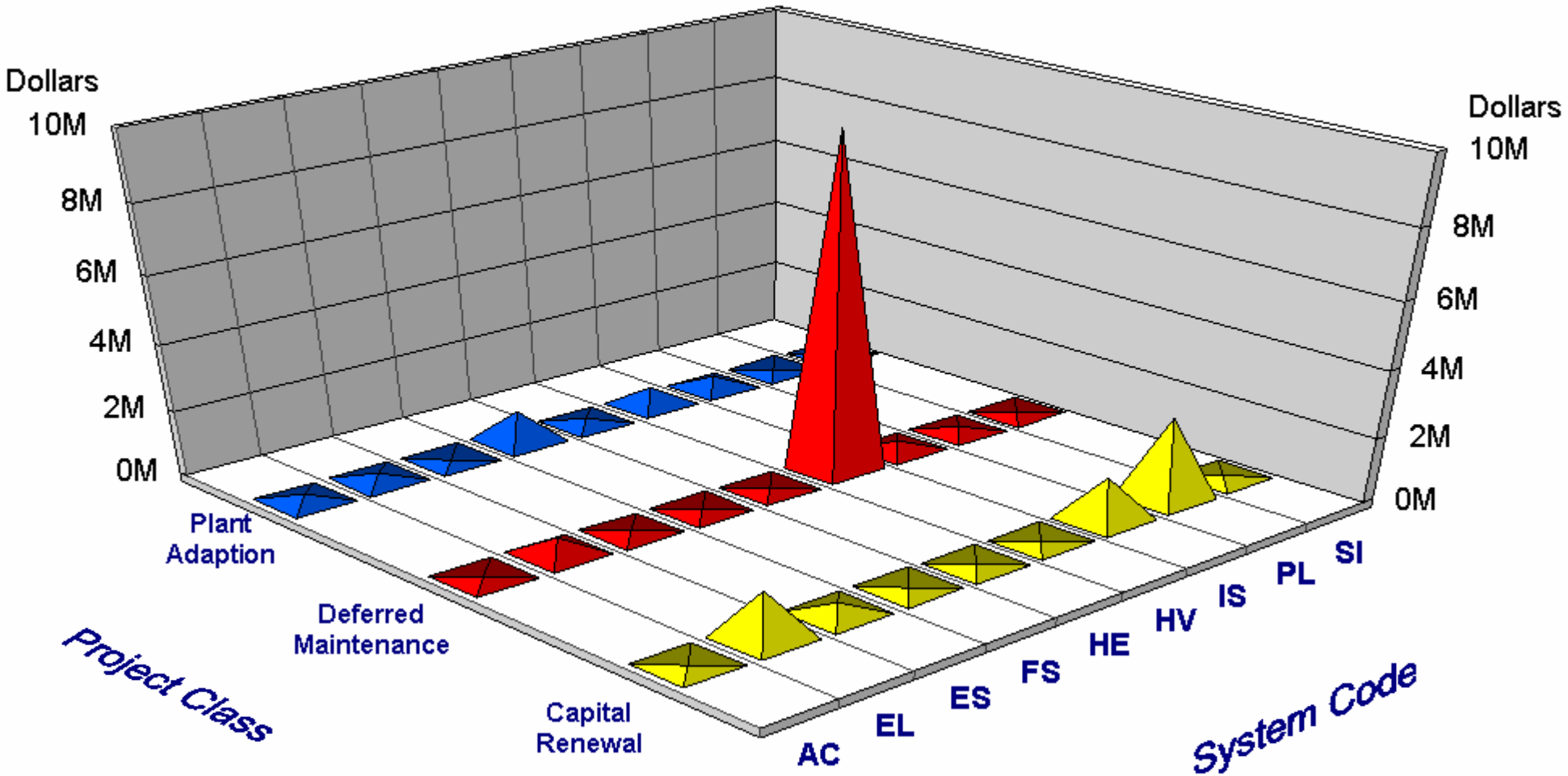
System Code	System Description	Project Classes: Capital Renewal	Deferred Maintenance	Plant Adaption	Subtotal
AC	ACCESSIBILITY	0	0	199,587	199,587
EL	ELECTRICAL	1,411,470	502,818	207,968	2,122,256
ES	EXTERIOR	287,341	60,242	0	347,584
FS	FIRE/LIFE SAFETY	0	18,536	914,029	932,565
HE	HEALTH	0	0	117,587	117,587
HV	HVAC	0	9,918,536	566,741	10,485,277
IS	INTERIOR/FINISH SYS.	1,255,717	270,075	329,746	1,855,538
PL	PLUMBING	2,476,846	111,629	10,512	2,598,988
SI	SITE	63,159	0	0	63,159
	TOTALS	$5,494,534	$10,881,837	$2,346,169	$18,722,540

Facility Replacement Cost	$36,632,533
Facility Condition Needs Index	0.51

Gross Square Feet	90,641

Total Cost Per Square Foot	$206.56

FACILITY CONDITION ANALYSIS
System Code by Project Class
0406-000 : WHITMORE LABORATORY



Detailed Project Summary
Facility Condition Analysis
Project Class by Priority Class
0406-000 : WHITMORE LABORATORY

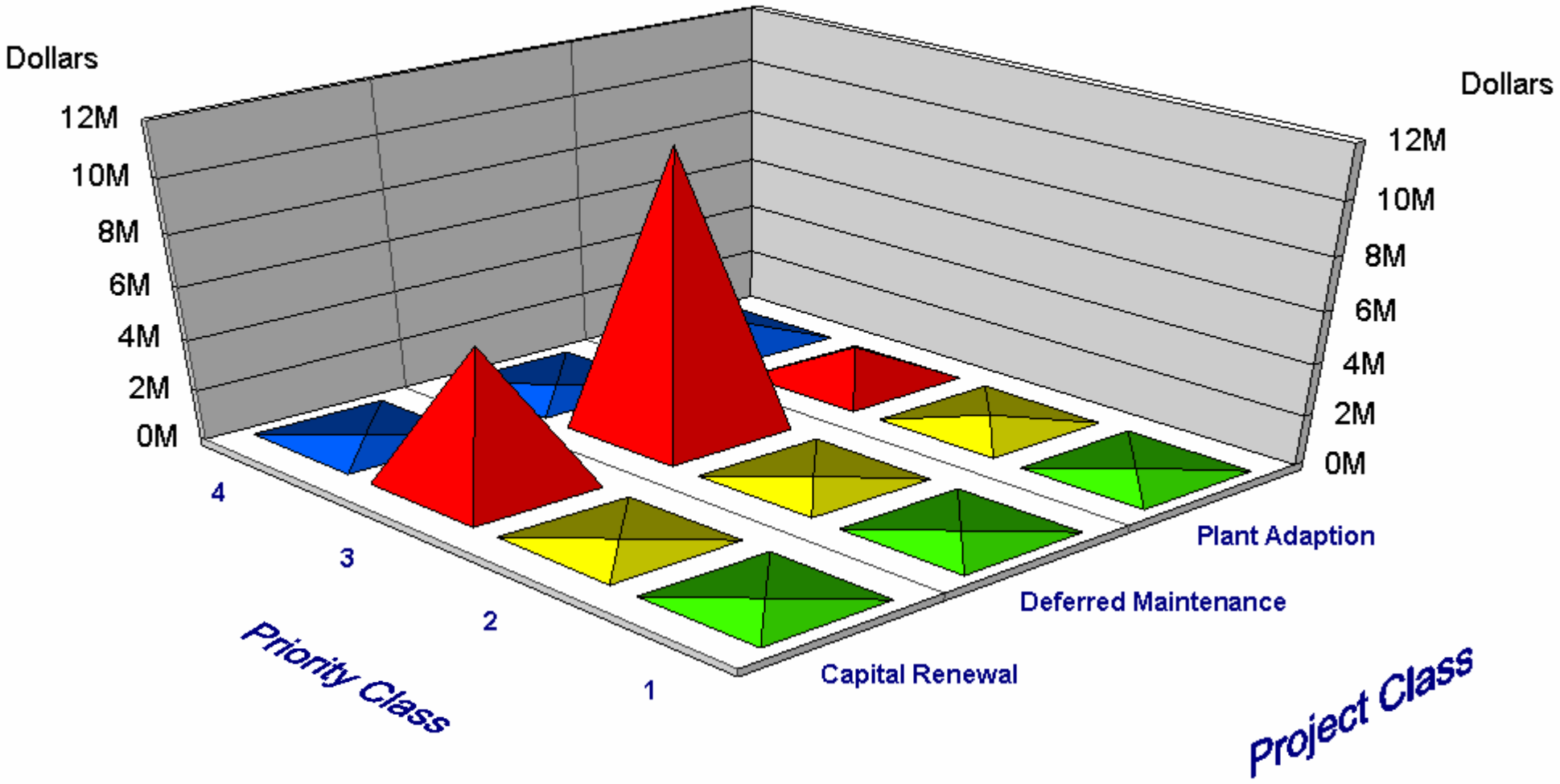
Project Class	Priority Classes 1	2	3	4	Subtotal
Capital Renewal	0	0	5,428,736	65,798	5,494,534
Deferred Maintenance	0	18,536	10,863,301	0	10,881,837
Plant Adaption	65,421	285,643	1,304,041	691,065	2,346,169
TOTALS	$65,421	$304,178	$17,596,078	$756,862	$18,722,540

Facility Replacement Cost	$36,632,533
Facility Condition Needs Index	0.51

Gross Square Feet	90,641

Total Cost Per Square Foot	$206.56

FACILITY CONDITION ANALYSIS
Project Class by Priority Class
0406-000 : WHITMORE LABORATORY



Priority Class - Priority Sequence

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
FS5C	0406-000FS01	1	1	GENERAL FIRE RATING COMPROMISE REPAIRS	55,532	8,330	0	63,861
FS4A	0406-000FS05	1	2	INSTALL FLAMMABLES REAGENT STORAGE CABINET (2/08)	1,356	203	0	1,559
				Totals for Priority Class 1	**56,888**	**8,533**	**0**	**65,421**
FS4B	0406-000FS03	2	3	UPGRADE EYEWASH FOUNTAINS AND EMERGENCY SHOWERS	136,995	20,549	0	157,544
HE6F	0406-000HE01	2	4	SHAFT WALL UPGRADES	102,249	15,337	0	117,587
PL1I	0406-000PL01	2	5	INSTALL BACKFLOW PREVENTER ON WATER MAIN	9,141	1,371	0	10,512
FS1A	0406-000FS04	2	32	REPLACE EXIT SIGNS	16,118	2,418	0	18,536
				Totals for Priority Class 2	**264,503**	**39,675**	**0**	**304,178**
AC3A	0406-000AC06	3	6	INTERIOR WHEELCHAIR STAIR CLIMBER INSTALLATIONS	87,923	13,189	33,704	67,408
AC3B	0406-000AC03	3	7	INTERIOR STAIR HANDRAIL IMPROVEMENTS	5,040	756	0	5,795
AC3A	0406-000AC05	3	8	PASSENGER ELEVATOR COMMUNICATION UPGRADES	4,663	699	0	5,363
AC3E	0406-000AC01	3	9	GENERAL RESTROOM ACCESSIBILITY UPGRADES AND ADDITIONS	66,403	9,960	0	76,364
AC3F	0406-000AC02	3	10	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	32,617	4,893	0	37,509
AC4A	0406-000AC07	3	11	REPLACE KITCHENETTE WITH COMPLIANT UNIT (2/08)	6,216	932	0	7,148
ES5B	0406-000ES02	3	12	REPLACEMENT OF EXTERIOR WINDOWS	203,303	30,496	0	233,799
ES2B	0406-000ES03	3	13	UPPER EXTERIOR BRICK CLADDING REPAIRS	52,385	7,858	0	60,242
ES5A	0406-000ES01	3	14	EXTERIOR ENTRY / SERVICE DOOR UPGRADES	46,559	6,984	0	53,542
HV3A	0406-000HV01	3	15	HVAC UPGRADES	6,506,066	975,910	375,000	7,106,976
HV4B	0406-000HV02	3	16	FUME HOOD UPGRADES	2,444,835	366,725	0	2,811,560
HV2A	0406-000HV03	3	17	INSTALL CHILLED WATER EQUIPMENT	492,818	73,923	0	566,741
EL5A	0406-000EL03	3	18	EMERGENCY POWER SYSTEM UPGRADE	128,522	19,278	0	147,800

Priority Class - Priority Sequence

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
EL2B	0406-000EL01	3	19	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	52,319	7,848	0	60,167
EL3B	0406-000EL04	3	20	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,436,061	215,409	240,000	1,411,470
EL4B	0406-000EL02	3	21	UPGRADE INTERIOR LIGHTING	541,581	81,237	120,000	502,818
IS4A	0406-000IS01	3	22	INTERIOR DOOR REPLACEMENTS	303,257	45,488	0	348,745
IS3B	0406-000IS05	3	23	LAY-IN ACOUSTICAL CEILING SYSTEM UPGRADES	358,419	53,763	82,436	329,746
IS1A	0406-000IS02	3	24	INTERIOR FLOOR FINISH RESTORATION	293,560	44,034	67,519	270,075
IS6B	0406-000IS03	3	25	HIGH PERCENTAGE LABORATORY BENCH UPGRADE	1,123,395	168,509	387,571	904,333
PL1E	0406-000PL06	3	26	REPLACE DOMESTIC HOT WATER CONVERTER	24,448	3,667	0	28,115
PL2A	0406-000PL03	3	27	REPLACE DRAIN PIPING NETWORKS	872,318	130,848	0	1,003,166
PL1A	0406-000PL02	3	28	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	617,914	92,687	0	710,601
PL1A	0406-000PL05	3	29	REPLACE LABORATORY FIXTURES	737,460	110,619	85,000	763,079
PL1G	0406-000PL04	3	30	REPLACE RESTROOM PLUMBING FIXTURES AND SERVICE SINKS	72,621	10,893	0	83,514
				Totals for Priority Class 3	**16,510,703**	**2,476,605**	**1,391,230**	**17,596,078**
FS3A	0406-000FS02	4	31	BUILDING-WIDE FIRE SPRINKLER SYSTEM	600,926	90,139	0	691,065
IS6B	0406-000IS04	4	33	BREAK ROOM CABINETRY UPGRADES	2,639	0	0	2,639
SI1B	0406-000SI01	4	34	SHARED ASPHALT PARKING LOT PAVEMENT IMPROVEMENTS	6,696	0	0	6,696
SI1A	0406-000SI02	4	35	CONCRETE STEP REPAIRS AND RAMP UPGRADE	49,099	7,365	0	56,464
				Totals for Priority Class 4	**659,359**	**97,504**	**0**	**756,862**
				Grand Total:	**17,491,452**	**2,622,318**	**1,391,230**	**18,722,540**

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects < 25,000

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
FS4A	0406-000FS05	1	2	INSTALL FLAMMABLES REAGENT STORAGE CABINET (2/08)	1,356	203	0	1,559
				Totals for Priority Class 1	**1,356**	**203**	**0**	**1,559**
PL1I	0406-000PL01	2	5	INSTALL BACKFLOW PREVENTER ON WATER MAIN	9,141	1,371	0	10,512
FS1A	0406-000FS04	2	32	REPLACE EXIT SIGNS	16,118	2,418	0	18,536
				Totals for Priority Class 2	**25,259**	**3,789**	**0**	**29,048**
AC3B	0406-000AC03	3	7	INTERIOR STAIR HANDRAIL IMPROVEMENTS	5,040	756	0	5,795
AC3A	0406-000AC05	3	8	PASSENGER ELEVATOR COMMUNICATION UPGRADES	4,663	699	0	5,363
AC4A	0406-000AC07	3	11	REPLACE KITCHENETTE WITH COMPLIANT UNIT (2/08)	6,216	932	0	7,148
				Totals for Priority Class 3	**15,918**	**2,388**	**0**	**18,306**
IS6B	0406-000IS04	4	33	BREAK ROOM CABINETRY UPGRADES	2,639	0	0	2,639
SI1B	0406-000SI01	4	34	SHARED ASPHALT PARKING LOT PAVEMENT IMPROVEMENTS	6,696	0	0	6,696
				Totals for Priority Class 4	**9,334**	**0**	**0**	**9,334**
				Grand Totals For Projects < 25,000	**51,867**	**6,380**	**0**	**58,247**

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects >= 25,000 and < 1,000,000

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
FS5C	0406-000FS01	1	1	GENERAL FIRE RATING COMPROMISE REPAIRS	55,532	8,330	0	63,861
				Totals for Priority Class 1	**55,532**	**8,330**	**0**	**63,861**
FS4B	0406-000FS03	2	3	UPGRADE EYEWASH FOUNTAINS AND EMERGENCY SHOWERS	136,995	20,549	0	157,544
HE6F	0406-000HE01	2	4	SHAFT WALL UPGRADES	102,249	15,337	0	117,587
				Totals for Priority Class 2	**239,244**	**35,887**	**0**	**275,131**
AC3A	0406-000AC06	3	6	INTERIOR WHEELCHAIR STAIR CLIMBER INSTALLATIONS	87,923	13,189	33,704	67,408
AC3E	0406-000AC01	3	9	GENERAL RESTROOM ACCESSIBILITY UPGRADES AND ADDITIONS	66,403	9,960	0	76,364
AC3F	0406-000AC02	3	10	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	32,617	4,893	0	37,509
ES5B	0406-000ES02	3	12	REPLACEMENT OF EXTERIOR WINDOWS	203,303	30,496	0	233,799
ES2B	0406-000ES03	3	13	UPPER EXTERIOR BRICK CLADDING REPAIRS	52,385	7,858	0	60,242
ES5A	0406-000ES01	3	14	EXTERIOR ENTRY / SERVICE DOOR UPGRADES	46,559	6,984	0	53,542
HV2A	0406-000HV03	3	17	INSTALL CHILLED WATER EQUIPMENT	492,818	73,923	0	566,741
EL5A	0406-000EL03	3	18	EMERGENCY POWER SYSTEM UPGRADE	128,522	19,278	0	147,800
EL2B	0406-000EL01	3	19	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	52,319	7,848	0	60,167
EL4B	0406-000EL02	3	21	UPGRADE INTERIOR LIGHTING	541,581	81,237	120,000	502,818
IS4A	0406-000IS01	3	22	INTERIOR DOOR REPLACEMENTS	303,257	45,488	0	348,745
IS3B	0406-000IS05	3	23	LAY-IN ACOUSTICAL CEILING SYSTEM UPGRADES	358,419	53,763	82,436	329,746
IS1A	0406-000IS02	3	24	INTERIOR FLOOR FINISH RESTORATION	293,560	44,034	67,519	270,075
PL1E	0406-000PL06	3	26	REPLACE DOMESTIC HOT WATER CONVERTER	24,448	3,667	0	28,115
PL1A	0406-000PL02	3	28	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	617,914	92,687	0	710,601
PL1A	0406-000PL05	3	29	REPLACE LABORATORY FIXTURES	737,460	110,619	85,000	763,079
PL1G	0406-000PL04	3	30	REPLACE RESTROOM PLUMBING FIXTURES AND SERVICE SINKS	72,621	10,893	0	83,514

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects >= 25,000 and < 1,000,000

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
				Totals for Priority Class 3	**4,112,109**	**616,816**	**388,659**	**4,340,267**
FS3A	0406-000FS02	4	31	BUILDING-WIDE FIRE SPRINKLER SYSTEM	600,926	90,139	0	691,065
SI1A	0406-000SI02	4	35	CONCRETE STEP REPAIRS AND RAMP UPGRADE	49,099	7,365	0	56,464
				Totals for Priority Class 4	**650,024**	**97,504**	**0**	**747,528**
				Grand Totals For Projects >= 25,000 and < 1,000,000	**5,056,909**	**758,536**	**388,659**	**5,426,787**

Detailed Project Summary

Facility Condition Analysis

Section Two

Priority Class - Priority Sequence - Projects >= 1,000,000

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fee	Actual Cost to Date	Remaining Cost
HV3A	0406-000HV01	3	15	HVAC UPGRADES	6,506,066	975,910	375,000	7,106,976
HV4B	0406-000HV02	3	16	FUME HOOD UPGRADES	2,444,835	366,725	0	2,811,560
EL3B	0406-000EL04	3	20	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,436,061	215,409	240,000	1,411,470
IS6B	0406-000IS03	3	25	HIGH PERCENTAGE LABORATORY BENCH UPGRADE	1,123,395	168,509	387,571	904,333
PL2A	0406-000PL03	3	27	REPLACE DRAIN PIPING NETWORKS	872,318	130,848	0	1,003,166
				Totals for Priority Class 3	**12,382,675**	**1,857,401**	**1,002,571**	**13,237,506**
				Grand Totals For Projects >= 1,000,000	**12,382,675**	**1,857,401**	**1,002,571**	**13,237,506**
				Grand Total for All Projects:	**17,491,452**	**2,622,318**	**1,391,230**	**18,722,540**

Detailed Project Summary

Facility Condition Analysis

Section Two

Project Classification

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Seq	Project Classification	Pri Cls	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
ES5B	0406-000ES02	12	Capital Renewal	3	REPLACEMENT OF EXTERIOR WINDOWS	203,303	30,496	0	233,799
ES5A	0406-000ES01	14	Capital Renewal	3	EXTERIOR ENTRY / SERVICE DOOR UPGRADES	46,559	6,984	0	53,542
EL3B	0406-000EL04	20	Capital Renewal	3	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,436,061	215,409	240,000	1,411,470
IS4A	0406-000IS01	22	Capital Renewal	3	INTERIOR DOOR REPLACEMENTS	303,257	45,488	0	348,745
IS6B	0406-000IS03	25	Capital Renewal	3	HIGH PERCENTAGE LABORATORY BENCH UPGRADE	1,123,395	168,509	387,571	904,333
PL2A	0406-000PL03	27	Capital Renewal	3	REPLACE DRAIN PIPING NETWORKS	872,318	130,848	0	1,003,166
PL1A	0406-000PL02	28	Capital Renewal	3	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	617,914	92,687	0	710,601
PL1A	0406-000PL05	29	Capital Renewal	3	REPLACE LABORATORY FIXTURES	737,460	110,619	85,000	763,079
IS6B	0406-000IS04	33	Capital Renewal	4	BREAK ROOM CABINETRY UPGRADES	2,639	0	0	2,639
SI1B	0406-000SI01	34	Capital Renewal	4	SHARED ASPHALT PARKING LOT PAVEMENT IMPROVEMENTS	6,696	0	0	6,696
SI1A	0406-000SI02	35	Capital Renewal	4	CONCRETE STEP REPAIRS AND RAMP UPGRADE	49,099	7,365	0	56,464
			Totals for Capital Renewal			**5,398,700**	**808,405**	**712,571**	**5,494,534**
ES2B	0406-000ES03	13	Deferred Maintenance	3	UPPER EXTERIOR BRICK CLADDING REPAIRS	52,385	7,858	0	60,242
HV3A	0406-000HV01	15	Deferred Maintenance	3	HVAC UPGRADES	6,506,066	975,910	375,000	7,106,976
HV4B	0406-000HV02	16	Deferred Maintenance	3	FUME HOOD UPGRADES	2,444,835	366,725	0	2,811,560
EL4B	0406-000EL02	21	Deferred Maintenance	3	UPGRADE INTERIOR LIGHTING	541,581	81,237	120,000	502,818
IS1A	0406-000IS02	24	Deferred Maintenance	3	INTERIOR FLOOR FINISH RESTORATION	293,560	44,034	67,519	270,075
PL1E	0406-000PL06	26	Deferred Maintenance	3	REPLACE DOMESTIC HOT WATER CONVERTER	24,448	3,667	0	28,115

Project Classification

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Seq	Project Classification	Pri Cls	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
PL1G	0406-000PL04	30	Deferred Maintenance	3	REPLACE RESTROOM PLUMBING FIXTURES AND SERVICE SINKS	72,621	10,893	0	83,514
FS1A	0406-000FS04	32	Deferred Maintenance	2	REPLACE EXIT SIGNS	16,118	2,418	0	18,536
			Totals for Deferred Maintenance			**9,951,614**	**1,492,742**	**562,519**	**10,881,837**
FS5C	0406-000FS01	1	Plant Adaption	1	GENERAL FIRE RATING COMPROMISE REPAIRS	55,532	8,330	0	63,861
FS4A	0406-000FS05	2	Plant Adaption	1	INSTALL FLAMMABLES REAGENT STORAGE CABINET (2/08)	1,356	203	0	1,559
FS4B	0406-000FS03	3	Plant Adaption	2	UPGRADE EYEWASH FOUNTAINS AND EMERGENCY SHOWERS	136,995	20,549	0	157,544
HE6F	0406-000HE01	4	Plant Adaption	2	SHAFT WALL UPGRADES	102,249	15,337	0	117,587
PL1I	0406-000PL01	5	Plant Adaption	2	INSTALL BACKFLOW PREVENTER ON WATER MAIN	9,141	1,371	0	10,512
AC3A	0406-000AC06	6	Plant Adaption	3	INTERIOR WHEELCHAIR STAIR CLIMBER INSTALLATIONS	87,923	13,189	33,704	67,408
AC3B	0406-000AC03	7	Plant Adaption	3	INTERIOR STAIR HANDRAIL IMPROVEMENTS	5,040	756	0	5,795
AC3A	0406-000AC05	8	Plant Adaption	3	PASSENGER ELEVATOR COMMUNICATION UPGRADES	4,663	699	0	5,363
AC3E	0406-000AC01	9	Plant Adaption	3	GENERAL RESTROOM ACCESSIBILITY UPGRADES AND ADDITIONS	66,403	9,960	0	76,364
AC3F	0406-000AC02	10	Plant Adaption	3	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	32,617	4,893	0	37,509
AC4A	0406-000AC07	11	Plant Adaption	3	REPLACE KITCHENETTE WITH COMPLIANT UNIT (2/08)	6,216	932	0	7,148
HV2A	0406-000HV03	17	Plant Adaption	3	INSTALL CHILLED WATER EQUIPMENT	492,818	73,923	0	566,741
EL5A	0406-000EL03	18	Plant Adaption	3	EMERGENCY POWER SYSTEM UPGRADE	128,522	19,278	0	147,800
EL2B	0406-000EL01	19	Plant Adaption	3	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	52,319	7,848	0	60,167

Detailed Project Summary

Facility Condition Analysis

Section Two

Project Classification

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Seq	Project Classification	Pri Cls	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
IS3B	0406-000IS05	23	Plant Adaption	3	LAY-IN ACOUSTICAL CEILING SYSTEM UPGRADES	358,419	53,763	82,436	329,746
FS3A	0406-000FS02	31	Plant Adaption	4	BUILDING-WIDE FIRE SPRINKLER SYSTEM	600,926	90,139	0	691,065
			Totals for Plant Adaption			**2,141,138**	**321,171**	**116,140**	**2,346,169**
				Grand Total:		**17,491,452**	**2,622,318**	**1,391,230**	**18,722,540**

Detailed Project Summary

Facility Condition Analysis

Section Two

Energy Conservation

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Total Cost	Annual Savings	Simple Payback
FS1A	0406-000FS04	2	32	REPLACE EXIT SIGNS	18,536	265	69.95
				Totals for Priority Class 2	**18,536**	**265**	69.95
HV3A	0406-000HV01	3	15	HVAC UPGRADES	7,106,976	16,420	432.82
EL4B	0406-000EL02	3	21	UPGRADE INTERIOR LIGHTING	502,818	12,120	41.49
PL1G	0406-000PL04	3	30	REPLACE RESTROOM PLUMBING FIXTURES AND SERVICE SINKS	83,514	255	327.51
				Totals for Priority Class 3	**7,693,308**	**28,795**	267.18
				Grand Total:	**7,711,844**	**29,060**	265.38

Category/System Code Update Report

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fees	Actual Cost to Date	Remaining Cost
AC3A	0406-000AC06	3	6	INTERIOR WHEELCHAIR STAIR CLIMBER INSTALLATIONS	87,923	13,189	33,704	67,408
AC3B	0406-000AC03	3	7	INTERIOR STAIR HANDRAIL IMPROVEMENTS	5,040	756	0	5,795
AC3A	0406-000AC05	3	8	PASSENGER ELEVATOR COMMUNICATION UPGRADES	4,663	699	0	5,363
AC3E	0406-000AC01	3	9	GENERAL RESTROOM ACCESSIBILITY UPGRADES AND ADDITIONS	66,403	9,960	0	76,364
AC3F	0406-000AC02	3	10	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	32,617	4,893	0	37,509
AC4A	0406-000AC07	3	11	REPLACE KITCHENETTE WITH COMPLIANT UNIT (2/08)	6,216	932	0	7,148
Totals for System Code:				**ACCESSIBILITY**	**202,862**	**30,429**	**33,704**	**199,587**
EL5A	0406-000EL03	3	18	EMERGENCY POWER SYSTEM UPGRADE	128,522	19,278	0	147,800
EL2B	0406-000EL01	3	19	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	52,319	7,848	0	60,167
EL3B	0406-000EL04	3	20	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,436,061	215,409	240,000	1,411,470
EL4B	0406-000EL02	3	21	UPGRADE INTERIOR LIGHTING	541,581	81,237	120,000	502,818
Totals for System Code:				**ELECTRICAL**	**2,158,483**	**323,773**	**360,000**	**2,122,256**
ES5B	0406-000ES02	3	12	REPLACEMENT OF EXTERIOR WINDOWS	203,303	30,496	0	233,799
ES2B	0406-000ES03	3	13	UPPER EXTERIOR BRICK CLADDING REPAIRS	52,385	7,858	0	60,242
ES5A	0406-000ES01	3	14	EXTERIOR ENTRY / SERVICE DOOR UPGRADES	46,559	6,984	0	53,542
Totals for System Code:				**EXTERIOR**	**302,247**	**45,337**	**0**	**347,584**
FS5C	0406-000FS01	1	1	GENERAL FIRE RATING COMPROMISE REPAIRS	55,532	8,330	0	63,861
FS4A	0406-000FS05	1	2	INSTALL FLAMMABLES REAGENT STORAGE CABINET (2/08)	1,356	203	0	1,559
FS4B	0406-000FS03	2	3	UPGRADE EYEWASH FOUNTAINS AND EMERGENCY SHOWERS	136,995	20,549	0	157,544

Category/System Code Update Report
0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fees	Actual Cost to Date	Remaining Cost
FS3A	0406-000FS02	4	31	BUILDING-WIDE FIRE SPRINKLER	600,926	90,139	0	691,065
FS1A	0406-000FS04	2	32	REPLACE EXIT SIGNS	16,118	2,418	0	18,536
	Totals for System Code:			**FIRE/LIFE SAFETY**	**810,926**	**121,639**	**0**	**932,565**
HE6F	0406-000HE01	2	4	SHAFT WALL UPGRADES	102,249	15,337	0	117,587
	Totals for System Code:			**HEALTH**	**102,249**	**15,337**	**0**	**117,587**
HV3A	0406-000HV01	3	15	HVAC UPGRADES	6,506,066	975,910	375,000	7,106,976
HV4B	0406-000HV02	3	16	FUME HOOD UPGRADES	2,444,835	366,725	0	2,811,560
HV2A	0406-000HV03	3	17	INSTALL CHILLED WATER EQUIPMENT	492,818	73,923	0	566,741
	Totals for System Code:			**HVAC**	**9,443,719**	**1,416,558**	**375,000**	**10,485,277**
IS4A	0406-000IS01	3	22	INTERIOR DOOR REPLACEMENTS	303,257	45,488	0	348,745
IS3B	0406-000IS05	3	23	LAY-IN ACOUSTICAL CEILING SYSTEM UPGRADES	358,419	53,763	82,436	329,746
IS1A	0406-000IS02	3	24	INTERIOR FLOOR FINISH RESTORATION	293,560	44,034	67,519	270,075
IS6B	0406-000IS03	3	25	HIGH PERCENTAGE LABORATORY BENCH UPGRADE	1,123,395	168,509	387,571	904,333
IS6B	0406-000IS04	4	33	BREAK ROOM CABINETRY UPGRADES	2,639	0	0	2,639
	Totals for System Code:			**INTERIOR/FINISH SYS.**	**2,081,269**	**311,795**	**537,526**	**1,855,538**
PL1I	0406-000PL01	2	5	INSTALL BACKFLOW PREVENTER ON WATER MAIN	9,141	1,371	0	10,512
PL1E	0406-000PL06	3	26	REPLACE DOMESTIC HOT WATER CONVERTER	24,448	3,667	0	28,115
PL2A	0406-000PL03	3	27	REPLACE DRAIN PIPING NETWORKS	872,318	130,848	0	1,003,166
PL1A	0406-000PL02	3	28	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	617,914	92,687	0	710,601
PL1A	0406-000PL05	3	29	REPLACE LABORATORY FIXTURES	737,460	110,619	85,000	763,079
PL1G	0406-000PL04	3	30	REPLACE RESTROOM PLUMBING FIXTURES AND SERVICE SINKS	72,621	10,893	0	83,514

Category/System Code Update Report

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Pri Cls	Pri Seq	Project Title	Construction Cost	Professional Fees	Actual Cost to Date	Remaining Cost
Totals for System Code:				**PLUMBING**	**2,333,902**	**350,085**	**85,000**	**2,598,988**
SI1B	0406-000SI01	4	34	SHARED ASPHALT PARKING LOT PAVEMENT IMPROVEMENTS	6,696	0	0	6,696
SI1A	0406-000SI02	4	35	CONCRETE STEP REPAIRS AND RAMP UPGRADE	49,099	7,365	0	56,464
Totals for System Code:				**SITE**	**55,794**	**7,365**	**0**	**63,159**
				Grand Total:	**17,491,452**	**2,622,318**	**1,391,230**	**18,722,540**

Detailed Project Summary

Facility Condition Analysis

Section Two

Score Report

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Score	Risk Lvl	Pri Seq	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
ES5A	0406-000ES01	9.68	3	14	EXTERIOR ENTRY / SERVICE DOOR UPGRADES	46,559	6,984	0	53,542
EL3B	0406-000EL04	9.68	3	20	UPGRADE SECONDARY ELECTRICAL SYSTEM	1,436,061	215,409	240,000	1,411,470
EL4B	0406-000EL02	9.68	3	21	UPGRADE INTERIOR LIGHTING	541,581	81,237	120,000	502,818
IS1A	0406-000IS02	9.68	3	24	INTERIOR FLOOR FINISH RESTORATION	293,560	44,034	67,519	270,075
PL2A	0406-000PL03	9.68	3	27	REPLACE DRAIN PIPING NETWORKS	872,318	130,848	0	1,003,166
PL1A	0406-000PL02	9.68	3	28	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING	617,914	92,687	0	710,601
				Totals for Score	9.68	**3,807,993**	**571,199**	**427,519**	**3,951,673**
PL1A	0406-000PL05	8.80	3	29	REPLACE LABORATORY FIXTURES	737,460	110,619	85,000	763,079
				Totals for Score	8.80	**737,460**	**110,619**	**85,000**	**763,079**
AC3F	0406-000AC02	8.68	3	10	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS	32,617	4,893	0	37,509
AC4A	0406-000AC07	8.68	3	11	REPLACE KITCHENETTE WITH COMPLIANT UNIT (2/08)	6,216	932	0	7,148
PL1G	0406-000PL04	8.68	3	30	REPLACE RESTROOM PLUMBING FIXTURES AND SERVICE SINKS	72,621	10,893	0	83,514
				Totals for Score	8.68	**111,453**	**16,718**	**0**	**128,171**
IS6B	0406-000IS04	7.68	4	33	BREAK ROOM CABINETRY UPGRADES	2,639	0	0	2,639
SI1B	0406-000SI01	7.68	4	34	SHARED ASPHALT PARKING LOT PAVEMENT IMPROVEMENTS	6,696	0	0	6,696
				Totals for Score	7.68	**9,334**	**0**	**0**	**9,334**
FS4B	0406-000FS03	14.83	2	3	UPGRADE EYEWASH FOUNTAINS AND EMERGENCY SHOWERS	136,995	20,549	0	157,544
				Totals for Score	14.83	**136,995**	**20,549**	**0**	**157,544**

Detailed Project Summary

Facility Condition Analysis

Section Two

Score Report

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Score	Risk Lvl	Pri Seq	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
FS5C	0406-000FS01	14.68	1	1	GENERAL FIRE RATING COMPROMISE REPAIRS	55,532	8,330	0	63,861
FS4A	0406-000FS05	14.68	1	2	INSTALL FLAMMABLES REAGENT STORAGE CABINET (2/08)	1,356	203	0	1,559
AC3B	0406-000AC03	14.68	3	7	INTERIOR STAIR HANDRAIL IMPROVEMENTS	5,040	756	0	5,795
AC3E	0406-000AC01	14.68	3	9	GENERAL RESTROOM ACCESSIBILITY UPGRADES AND ADDITIONS	66,403	9,960	0	76,364
IS4A	0406-000IS01	14.68	3	22	INTERIOR DOOR REPLACEMENTS	303,257	45,488	0	348,745
				Totals for Score	14.68	**431,587**	**64,738**	**0**	**496,325**
ES5B	0406-000ES02	12.68	3	12	REPLACEMENT OF EXTERIOR WINDOWS	203,303	30,496	0	233,799
				Totals for Score	12.68	**203,303**	**30,496**	**0**	**233,799**
IS6B	0406-000IS03	11.90	3	25	HIGH PERCENTAGE LABORATORY BENCH UPGRADE	1,123,395	168,509	387,571	904,333
				Totals for Score	11.90	**1,123,395**	**168,509**	**387,571**	**904,333**
HV3A	0406-000HV01	11.68	3	15	HVAC UPGRADES	6,506,066	975,910	375,000	7,106,976
HV2A	0406-000HV03	11.68	3	17	INSTALL CHILLED WATER EQUIPMENT	492,818	73,923	0	566,741
EL5A	0406-000EL03	11.68	3	18	EMERGENCY POWER SYSTEM UPGRADE	128,522	19,278	0	147,800
EL2B	0406-000EL01	11.68	3	19	UPGRADE PRIMARY ELECTRICAL EQUIPMENT	52,319	7,848	0	60,167
IS3B	0406-000IS05	11.68	3	23	LAY-IN ACOUSTICAL CEILING SYSTEM UPGRADES	358,419	53,763	82,436	329,746
				Totals for Score	11.68	**7,538,145**	**1,130,722**	**457,436**	**8,211,431**
HV4B	0406-000HV02	10.80	3	16	FUME HOOD UPGRADES	2,444,835	366,725	0	2,811,560
				Totals for Score	10.80	**2,444,835**	**366,725**	**0**	**2,811,560**

Detailed Project Summary

Facility Condition Analysis

Section Two

Score Report

0406-000 : WHITMORE LABORATORY

Cat. Code	Project Number	Score	Risk Lvl	Pri Seq	Project Title	Construction Cost	Prof Fees	Actual Cost to Date	Remaining Cost
PL1I	0406-000PL01	10.68	2	5	INSTALL BACKFLOW PREVENTER ON WATER MAIN	9,141	1,371	0	10,512
FS1A	0406-000FS04	10.68	2	32	REPLACE EXIT SIGNS	16,118	2,418	0	18,536
AC3A	0406-000AC06	10.68	3	6	INTERIOR WHEELCHAIR STAIR CLIMBER INSTALLATIONS	87,923	13,189	33,704	67,408
AC3A	0406-000AC05	10.68	3	8	PASSENGER ELEVATOR COMMUNICATION UPGRADES	4,663	699	0	5,363
ES2B	0406-000ES03	10.68	3	13	UPPER EXTERIOR BRICK CLADDING REPAIRS	52,385	7,858	0	60,242
PL1E	0406-000PL06	10.68	3	26	REPLACE DOMESTIC HOT WATER CONVERTER	24,448	3,667	0	28,115
FS3A	0406-000FS02	10.68	4	31	BUILDING-WIDE FIRE SPRINKLER SYSTEM	600,926	90,139	0	691,065
SI1A	0406-000SI02	10.68	4	35	CONCRETE STEP REPAIRS AND RAMP UPGRADE	49,099	7,365	0	56,464
			Totals for Score	10.68		**844,703**	**126,705**	**33,704**	**937,704**
HE6F	0406-000HE01	10.00	2	4	SHAFT WALL UPGRADES	102,249	15,337	0	117,587
			Totals for Score	10.00		**102,249**	**15,337**	**0**	**117,587**
				Grand Total:		**17,491,452**	**2,622,318**	**1,391,230**	**18,722,540**

FACILITY CONDITION ANALYSIS

SECTION 3

SPECIFIC PROJECT DETAILS ILLUSTRATING DESCRIPTION / COST

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000FS01	**Title:**	GENERAL FIRE RATING COMPROMISE REPAIRS
Priority Sequence:	1		
Priority Class:	1		
Category Code:	FS5C	**System:**	FIRE/LIFE SAFETY
		Component:	EGRESS PATH
		Element:	SEPARATION RATING
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NFPA 6.2		

Project Class:	Plant Adaption	**Score:**	14.68
Project Date:	04/07/2003		
Project Location:	Undefined: Floor(s) 1, 2, 3, B		

Project Description

A number of non-rated transfer grilles were noted in the corridors of this research facility, and existing clerestory glazing and earlier clerestory solid panels in the second floor corridors are all examples of non-rated penetrations in the egress corridor walls. All of this interior glazing should be removed and the openings closed off with approved fire-rated wall materials. Coordinate this work with the proposed removal of the plaster ceiling finishes to properly seal any fire rating compromises and ensure that future building system upgrades include proper fire stopping at all rated wall and floor to floor penetrations. This report assumes that the non-rated transfer grilles will be removed and ventilation will be provided by the proposed mechanical system upgrades. Fire rating compromises in the buildings vertical chases will be addressed in the transite removal project in this report.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000FS01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Fireproof caulking and other approved fire stopping materials	LOT	1	$8,755	$8,755	$26,765	$26,765	$35,520
	Project Totals:			**$8,755**		**$26,765**	**$35,520**

Material/Labor Cost		$35,520
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$32,619
General Contractor Mark Up at 20.0%	+	$6,524
Inflation	+	$16,389
Construction Cost		$55,532
Professional Fees at 15.0%	+	$8,330
Total Project Cost		**$63,861**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000FS05	**Title:**	INSTALL FLAMMABLES REAGENT STORAGE CABINET (2/08)
Priority Sequence:	2		
Priority Class:	1		
Category Code:	FS4A	**System:**	FIRE/LIFE SAFETY
		Component:	HAZARDOUS MATERIALS
		Element:	STORAGE ENVIRONMENT
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IBC		

Project Class:	Plant Adaption	**Score:**	14.68
Project Date:	06/04/2008		
Project Location:	Room Only: Floor(s) B Room(s) 014A		

Project Description

A substantial amount of volatile and flammable reagents are being stored in original containers. This room is not specially prepared for storage of flammables of this type and much more than a daily or weekly supply is present. It is recommended that safety be enhanced through the installation of a rated, steel storage cabinet for this type of material.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000FS05

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Modular steel storage cabinet installation	EA	2	$392	$784	$210	$420	$1,204
	Project Totals:			**$784**		**$420**	**$1,204**

Material/Labor Cost		$1,204
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$1,130
General Contractor Mark Up at 20.0%	+	$226
Inflation	+	$0
Construction Cost		$1,356
Professional Fees at 15.0%	+	$203
Total Project Cost		**$1,559**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000FS03	**Title:**	UPGRADE EYEWASH FOUNTAINS AND EMERGENCY SHOWERS
Priority Sequence:	3		
Priority Class:	2		
Category Code:	FS4B	**System:**	FIRE/LIFE SAFETY
		Component:	HAZARDOUS MATERIALS
		Element:	USER SAFETY
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	OSHA 29 CFR 1910.151C		

Project Class:	Plant Adaption	**Score:**	14.83
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

Although eyewash showers and emergency fountains were noted throughout the building, there are not enough in some areas to provide a high margin of safety. In addition, some of the existing units are timeworn. Remove the existing worn or otherwise inadequate emergency showers and eyewashes. Install new and additional emergency showers and eyewash fountains in all areas where related hazards exist. These should be permanent fixtures that are connected to the buildings water supply network and provided with drains. They need to be clearly identified and located in unobstructed areas for easy access.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000FS03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Eyewash fountain, drain, and rough-in	EA	60	$480	$28,800	$400	$24,000	$52,800
Emergency shower, drain, and rough-in	EA	45	$346	$15,570	$400	$18,000	$33,570
	Project Totals:			**$44,370**		**$42,000**	**$86,370**

Material/Labor Cost		$86,370
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$80,470
General Contractor Mark Up at 20.0%	+	$16,094
Inflation	+	$40,431
Construction Cost		$136,995
Professional Fees at 15.0%	+	$20,549
Total Project Cost		**$157,544**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000HE01	**Title:**	SHAFT WALL UPGRADES
Priority Sequence:	4		
Priority Class:	2		
Category Code:	HE6F	**System:**	HEALTH
		Component:	HAZARDOUS MATERIAL
		Element:	OTHER
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	EPA 40 CFR 61.M, 763 OSHA 29 CFR 1910,1001, 1926.1101		
Project Class:	Plant Adaption	**Score:**	10.00
Project Date:	04/07/2003		
Project Location:	Vertical chases along corridors Area Wide: Floor(s) 1, 2, 3		

Project Description

Reports indicate that the vertical service chases located along the corridors on the upper three floors have transite panels providing the fire rating for the corridor side of the various service chases. In some locations, these panels have been damaged, and in general, servicing these chases and upgrading building systems will require the removal of these panel systems. New rated sheetrock corridor wall systems should be installed on these chases to provide a more easily maintained interior wall finish. Also, it is suggested that these chases be increased and provided with service doors on each floor level to facilitate future research support changes and simplify ongoing general maintenance.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000HE01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Interior rated shaft wall assembly	SF	6,900	$1.35	$9,315	$4.09	$28,221	$37,536
Transite panel removal and disposal allowance	LOT	1	$5,200	$5,200	$22,755	$22,755	$27,955
	Project Totals:			**$14,515**		**$50,976**	**$65,491**

Material/Labor Cost		$65,491
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$60,061
General Contractor Mark Up at 20.0%	+	$12,012
Inflation	+	$30,177
Construction Cost		$102,249
Professional Fees at 15.0%	+	$15,337
Total Project Cost		**$117,587**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000PL01	**Title:**	INSTALL BACKFLOW PREVENTER ON WATER MAIN
Priority Sequence:	5		
Priority Class:	2		
Category Code:	PL1I	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	BACKFLOW PREVENTION
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IPC 608		

Project Class:	Plant Adaption	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) B Room(s) M018		

Project Description

The water main enters the building in room M018. There is no backflow preventer at the water main to protect against cross-contamination of the building's water system with the domestic water supply. Install a backflow preventer at the water main to protect the potable water supply.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000PL01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Backflow preventer, isolation valves, piping, etc.	EA	1	$4,100	$4,100	$1,600	$1,600	$5,700
	Project Totals:			**$4,100**		**$1,600**	**$5,700**

Material/Labor Cost		$5,700
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$5,369
General Contractor Mark Up at 20.0%	+	$1,074
Inflation	+	$2,698
Construction Cost		$9,141
Professional Fees at 15.0%	+	$1,371
Total Project Cost		**$10,512**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000AC06	**Title:**	INTERIOR WHEELCHAIR STAIR CLIMBER INSTALLATIONS
Priority Sequence:	6		
Priority Class:	3		
Category Code:	AC3A	**System:**	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	LIFTS/RAMPS/ELEVATORS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 410		

Project Class:	Plant Adaption	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1, 3		

Project Description

The steps at the end of the third floor corridor and at the secondary passages in the first floor corridor pose ADA barriers and will need stair lift assemblies to provide access past these obstacles. Install ADA compliant stair lifts at each of these locations.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000AC06

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wheelchair stair climber system, conduit, wiring, tools, signage, and supplies	EA	6	$5,575	$33,450	$3,618	$21,708	$55,158
	Project Totals:			**$33,450**		**$21,708**	**$55,158**

Material/Labor Cost		$55,158
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$51,646
General Contractor Mark Up at 20.0%	+	$10,329
Inflation	+	$25,949
Construction Cost		$87,923
Professional Fees at 15.0%	+	$13,189
Total Project Cost		**$101,112**
Less Backlog Reduction	-	$33,704
Remaining Cost		**$67,408**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000AC03	**Title:**	INTERIOR STAIR HANDRAIL IMPROVEMENTS
Priority Sequence:	7		
Priority Class:	3		
Category Code:	AC3B	**System:**	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	STAIRS AND RAILINGS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 505		

Project Class:	Plant Adaption	**Score:**	14.68
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1, 2, 3, B		

Project Description

The existing stair handrails in the two interior stair towers and at the ends of the first and third floor main corridors are partially accessible. The stair tower guardrails also do not meet current standards. Upgrade all of these interior handrails and guardrails with new painted metal, ADA compliant handrail assemblies.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000AC03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Painted metal inner and outer handrails and window guardrail sections	LF	270	$7.45	$2,012	$4.24	$1,145	$3,156
	Project Totals:			**$2,012**		**$1,145**	**$3,156**

Material/Labor Cost		$3,156
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$2,960
General Contractor Mark Up at 20.0%	+	$592
Inflation	+	$1,487
Construction Cost		$5,040
Professional Fees at 15.0%	+	$756
Total Project Cost		**$5,795**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000AC05	**Title:**	PASSENGER ELEVATOR COMMUNICATION UPGRADES
Priority Sequence:	8		
Priority Class:	3		
Category Code:	AC3A	**System:**	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	LIFTS/RAMPS/ELEVATORS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 407		

Project Class:	Plant Adaption	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1		

Project Description

The new accessible passenger elevator appears to be fully compliant, except there is no hands-free, two-way commutation unit. Install this communication unit in the empty telephone box, but do not install the box access door so that the communication unit is accessible to the disabled.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000AC05

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA compliant, two-way communication system upgrade	LOT	1	$1,800	$1,800	$1,124	$1,124	$2,924
	Project Totals:			**$1,800**		**$1,124**	**$2,924**

Material/Labor Cost		$2,924
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$2,739
General Contractor Mark Up at 20.0%	+	$548
Inflation	+	$1,376
Construction Cost		$4,663
Professional Fees at 15.0%	+	$699
Total Project Cost		**$5,363**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000AC01	**Title:**	GENERAL RESTROOM ACCESSIBILITY UPGRADES AND ADDITIONS
Priority Sequence:	9		
Priority Class:	3		
Category Code:	AC3E	**System:**	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	RESTROOMS/BATHROOMS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 604.1, 604.8, 605.1, 606.1		

Project Class:	Plant Adaption	**Score:**	14.68
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) 1, 2, 3		

Project Description

The two restrooms on the basement level of this building have been made accessible. The second floor restrooms have some accessible features but require sink upgrades to become fully accessible facilities. The first and third floor restrooms must be reached by corridor steps, and these restrooms have not been upgraded. Although only a percentage of the restrooms in this building are required to be accessible, the remaining older restrooms should still be upgraded. In conjunction with the proposed interior stair lift installations, it is recommended that restroom remodeling on the first and third floors also include accessible fixturing to provide ADA compliant restrooms on all four floors of the building.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000AC01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA compliant plumbing fixtures and accessories and ceramic tile floor finishes	EA	4	$4,950	$19,800	$4,200	$16,800	$36,600
ADA sink and faucet set upgrades	EA	2	$685	$1,370	$270	$540	$1,910
Ceramic floor tile finishes	LOT	1	$1,600	$1,600	$1,685	$1,685	$3,285
	Project Totals:			**$22,770**		**$19,025**	**$41,795**

Material/Labor Cost		$41,795
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$39,005
General Contractor Mark Up at 20.0%	+	$7,801
Inflation	+	$19,597
Construction Cost		$66,403
Professional Fees at 15.0%	+	$9,960
Total Project Cost		**$76,364**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000AC02	**Title:**	DUAL-LEVEL DRINKING FOUNTAIN INSTALLATIONS
Priority Sequence:	10		
Priority Class:	3		
Category Code:	AC3F	**System:**	ACCESSIBILITY
		Component:	INTERIOR PATH OF TRAVEL
		Element:	DRINKING FOUNTAINS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 211, 602		

Project Class:	Plant Adaption	**Score:**	8.68
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1, 2, 3, B		

Project Description

The existing drinking fountains are a combination of single-level, flush-mounted design and aging, freestanding water fountains. There is also a newer dual-level fountain near the basement level women's restrooms. With the exception of the dual-level unit, these fountains are at or past the end of their normal life cycle and should be replaced within the next three to five years. Install new fully accessible drinking fountains, and create recessed corridor alcoves to receive the new dual-level units.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000AC02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Studs, drywall, fasteners, tools, paint (2 coats), and supplies	EA	7	$350	$2,450	$1,050	$7,350	$9,800
Dual-level drinking fountain, piping, supplies, and tools	EA	7	$1,040	$7,280	$320	$2,240	$9,520
Dump truck rental and dumping fee	DAY	2	$475	$950	$144	$287	$1,237
	Project Totals:			**$10,680**		**$9,877**	**$20,557**

Material/Labor Cost		$20,557
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$19,159
General Contractor Mark Up at 20.0%	+	$3,832
Inflation	+	$9,626
Construction Cost		$32,617
Professional Fees at 15.0%	+	$4,893
Total Project Cost		**$37,509**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000AC07	**Title:**	REPLACE KITCHENETTE WITH COMPLIANT UNIT (2/08)
Priority Sequence:	11		
Priority Class:	3		
Category Code:	AC4A	**System:**	ACCESSIBILITY
		Component:	GENERAL
		Element:	FUNCTIONAL SPACE MOD.
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 804		

Project Class:	Plant Adaption	**Score:**	8.68
Project Date:	06/04/2008		
Project Location:	Item Only: Floor(s) 3		

Project Description

Present accessibility legislation dealing with wheelchair access by the handicapped requires that building amenities, such as kitchenette fixtures, be generally available to all persons. The kitchenette unit in Room 303 is not wheelchair accessible and is recommended for replacement. To comply with the intent of this legislation, it is recommended that this unit be replaced. The new kitchenette unit is to have a base cabinet, overhead cabinets, undercounter refrigerator with ice maker, sink, and microwave oven, and be designed in accordance with the present ADA requirements.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000AC07

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA compliant kitchenette unit with base cabinet, overhead cabinets, undercounter refrigerator with ice maker, sink, and microwave oven	LOT	1	$4,200	$4,200	$640	$640	$4,840
Dump truck rental and dumping fee	DAY	1	$475	$475	$144	$144	$619
	Project Totals:			**$4,675**		**$784**	**$5,459**

Material/Labor Cost		$5,459
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$5,180
General Contractor Mark Up at 20.0%	+	$1,036
Inflation	+	$0
Construction Cost		$6,216
Professional Fees at 15.0%	+	$932
Total Project Cost		**$7,148**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000ES02	**Title:**	REPLACEMENT OF EXTERIOR WINDOWS
Priority Sequence:	12		
Priority Class:	3		
Category Code:	ES5B	**System:**	EXTERIOR
		Component:	FENESTRATIONS
		Element:	WINDOWS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	12.68
Project Date:	04/07/2003		
Project Location:	Building-wide: Floor(s) 1, 2, 3, B		

Project Description

The exterior, institutional-grade, single pane, fixed and operable windows are showing signs of aging and should be considered for upgrade within the next four to five years. Select a suitable thermal pane, metal frame, retrofit glazing system to install on all four floor levels.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000ES02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dump truck rental and dumping fee	DAY	3	$475	$1,425	$144	$431	$1,856
Exterior operable glazing units, aluminum-framed	SF	1,885	$48.00	$90,480	$18.25	$34,401	$124,881
	Project Totals:			**$91,905**		**$34,832**	**$126,737**

Material/Labor Cost		$126,737
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$119,419
General Contractor Mark Up at 20.0%	+	$23,884
Inflation	+	$60,001
Construction Cost		$203,303
Professional Fees at 15.0%	+	$30,496
Total Project Cost		**$233,799**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000ES03	**Title:**	UPPER EXTERIOR BRICK CLADDING REPAIRS
Priority Sequence:	13		
Priority Class:	3		
Category Code:	ES2B	**System:**	EXTERIOR
		Component:	COLUMNS/BEAMS/WALLS
		Element:	FINISH
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Deferred Maintenance	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Building-wide: Floor(s) 1		

Project Description

The exterior brick veneer has some signs of localized spalling grout and flaking brick face glazing along the upper courses of brick. Selectively repoint the exterior facades, and replace damaged bricks, as needed.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000ES03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Brick veneer selective replacement, caulking, and repointing - up to six stories	LOT	1	$7,120	$7,120	$26,450	$26,450	$33,570
	Project Totals:			**$7,120**		**$26,450**	**$33,570**

Material/Labor Cost		$33,570
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$30,770
General Contractor Mark Up at 20.0%	+	$6,154
Inflation	+	$15,460
Construction Cost		$52,385
Professional Fees at 15.0%	+	$7,858
Total Project Cost		**$60,242**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000ES01	**Title:**	EXTERIOR ENTRY / SERVICE DOOR UPGRADES
Priority Sequence:	14		
Priority Class:	3		
Category Code:	ES5A	**System:**	EXTERIOR
		Component:	FENESTRATIONS
		Element:	DOORS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 309.4		

Project Class:	Capital Renewal	**Score:**	9.68
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1, B		

Project Description

The exterior custom wood, double, exterior doors around the building are weathered and in need of upgrade. Recreate these doors, and salvage the hardware, where possible. Also, replace the aging, lower level, double, metal service doors. Replace each of these doors in kind within the next two to five years. Include ADA compliant door hardware with each upgrade.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000ES01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Exterior, double, hollow metal service door assembly and hardware	EA	1	$1,245	$1,245	$455	$455	$1,700
Exterior, custom, double door assembly, hardware, and frame	EA	6	$3,465	$20,790	$865	$5,190	$25,980
Dump truck rental and dumping fee	DAY	2	$475	$950	$144	$287	$1,237
	Project Totals:			**$22,985**		**$5,932**	**$28,917**

Material/Labor Cost		$28,917
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$27,348
General Contractor Mark Up at 20.0%	+	$5,470
Inflation	+	$13,741
Construction Cost		$46,559
Professional Fees at 15.0%	+	$6,984
Total Project Cost		**$53,542**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000HV01	**Title:**	HVAC UPGRADES
Priority Sequence:	15		
Priority Class:	3		
Category Code:	HV3A	**System:**	HVAC
		Component:	HEATING/COOLING
		Element:	SYSTEM RETROFIT/REPLACE
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Energy Conservation	$16,420.00	
Code Application:	ASHRAE	62-1999	
	EPA	40 CFR 61.M, 763	
	OSHA	29 CFR 1910.1001, 1926.1101	
Project Class:	Deferred Maintenance	**Score:**	11.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

This building is supplied with steam from the central plant that is used directly in coils and radiators for space heating. Comfort cooling is located sporadically throughout the building. Cooling sources include small air-cooled chillers, package air conditioners, split DX systems, and window air conditioners. Air distribution systems include small air handlers and fan coil units above the ceiling and unit ventilators along outside walls. These HVAC applications are inefficient, outdated, and not suitable for a research laboratory. A complete HVAC redesign and replacement is recommended throughout the building. Demolish and dispose of existing equipment. Install a new modern HVAC system with hot water heating, building-wide comfort cooling, and VAV and constant volume air handling systems. Specify DDCs for the new equipment. Some of the equipment and piping is suspected to be ACM. This must be removed and disposed of in accordance with all pertinent regulations.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000HV01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Air handlers, ductwork, VAVs, VFDs, DDCs, heat exchangers, pumps, piping, electrical connections, demolition of existing equipment, and asbestos abatement	SF	90,641	$24.40	$2,211,640	$20.79	$1,884,426	$4,096,067
Project Totals:				**$2,211,640**		**$1,884,426**	**$4,096,067**

Material/Labor Cost		$4,096,067
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$3,821,619
General Contractor Mark Up at 20.0%	+	$764,324
Inflation	+	$1,920,124
Construction Cost		$6,506,066
Professional Fees at 15.0%	+	$975,910
Total Project Cost		**$7,481,976**
Less Backlog Reduction	-	$375,000
Remaining Cost		**$7,106,976**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000HV02	**Title:**	FUME HOOD UPGRADES
Priority Sequence:	16		
Priority Class:	3		
Category Code:	HV4B	**System:**	HVAC
		Component:	AIR MOVING/VENTILATION
		Element:	EXHAUST FANS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IMC Chapter 5		

Project Class:	Deferred Maintenance	**Score:**	10.80
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

There are fume hoods in the teaching laboratories and research areas. The fume hood fans are located in the attic. This leaves pressurized discharge stacks inside the space, which creates a health hazard in the event of a leak. While there are some newer fume hoods on the second and third floors, many of the hoods are much older, with some being original equipment. In conjunction with proposed HVAC upgrades, new modern hoods are recommended. Remove all aged fume hoods and their mechanical systems. Install new fume hood systems, integrated with the air distribution system. Provide DDCs for the new hoods.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000HV02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Fume hood replacement, including mechanical systems, controls, demolition, and disposal fees	SYS	77	$15,500	$1,193,500	$4,230	$325,710	$1,519,210
Project Totals:				**$1,193,500**		**$325,710**	**$1,519,210**

Material/Labor Cost		$1,519,210
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$1,436,079
General Contractor Mark Up at 20.0%	+	$287,216
Inflation	+	$721,540
Construction Cost		$2,444,835
Professional Fees at 15.0%	+	$366,725
Total Project Cost		**$2,811,560**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000HV03	**Title:**	INSTALL CHILLED WATER EQUIPMENT
Priority Sequence:	17		
Priority Class:	3		
Category Code:	HV2A	**System:**	HVAC
		Component:	COOLING
		Element:	CHILLERS/CONTROLS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ASHRAE 15-1994		
Project Class:	Plant Adaption	**Score:**	11.68
Project Date:	04/07/2003		
Project Location:	Undefined: Floor(s) B		

Project Description

The small air-cooled chillers are nearing life cycle depletion and are of inadequate capacity to meet the comfort cooling needs of this building. To augment proposed HVAC upgrades, the installation of new chilled water equipment is recommended. Install a chiller, cooling tower, pumps, piping, controls, and electrical equipment. Install refrigeration safety equipment and systems in the designated chiller room in accordance with the ASHRAE Safety Code for mechanical refrigeration. This will include a self-contained breathing apparatus, refrigerant leak detection equipment, and an emergency exhaust system.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000HV03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Centrifugal chiller, cooling tower, pumps, piping, controls, connections, and refrigerant safety equipment and systems	LOT	1	$215,120	$215,120	$92,520	$92,520	$307,640
	Project Totals:			**$215,120**		**$92,520**	**$307,640**

Material/Labor Cost		$307,640
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$289,478
General Contractor Mark Up at 20.0%	+	$57,896
Inflation	+	$145,444
Construction Cost		$492,818
Professional Fees at 15.0%	+	$73,923
Total Project Cost		**$566,741**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000EL03	**Title:**	EMERGENCY POWER SYSTEM UPGRADE
Priority Sequence:	18		
Priority Class:	3		
Category Code:	EL5A	**System:**	ELECTRICAL
		Component:	EMERGENCY POWER SYSTEM
		Element:	GENERATION/DISTRIBUTION
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NEC Article 700		
Project Class:	Plant Adaption	**Score:**	11.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

Emergency power for the building consists of an ASCO transfer switch connected to the campus emergency power network. The available power appears to be inadequate for a modern laboratory facility of this size. It is recommended that an appropriately sized emergency generator and power network be installed. The emergency network should supply power to select light fixtures to maintain code required illumination levels along egress paths. Emergency power should also be provided for the exit signs, fire alarm system, elevator, and critical laboratory and mechanical equipment. If deemed more cost-effective, the university may opt to increase the emergency feeder size and transfer switch in lieu of the generator installation.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000EL03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Generator set, including battery charger, muffler and transfer switch, and diesel engine with fuel tank	KW	85	$450	$38,250	$47.00	$3,995	$42,245
Emergency power network, including breaker panels, raceways, conductors, and miscellaneous connection materials	SF	90,641	$0.18	$16,315	$0.24	$21,754	$38,069
	Project Totals:			**$54,565**		**$25,749**	**$80,314**

Material/Labor Cost		$80,314
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$75,493
General Contractor Mark Up at 20.0%	+	$15,099
Inflation	+	$37,930
Construction Cost		$128,522
Professional Fees at 15.0%	+	$19,278
Total Project Cost		**$147,800**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000EL01	**Title:**	UPGRADE PRIMARY ELECTRICAL EQUIPMENT
Priority Sequence:	19		
Priority Class:	3		
Category Code:	EL2B	**System:**	ELECTRICAL
		Component:	MAIN DISTRIBUTION PANELS
		Element:	CAPACITY UPGRADE
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NEC Chapter 2		

Project Class:	Plant Adaption	**Score:**	11.68
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) B		

Project Description

This building has a fairly new switchgear that delivers 120/208 volt power. It is GE equipment and has a 2,500 amp main breaker. The recommended HVAC upgrades will require additional power. Also, interior lighting can be better served with 277/480 volt power. Install an additional electrical service to the building, providing 277/480 volt power for the proposed HVAC and lighting upgrades. This work includes a transformer, related switchgear, and all connections and terminations.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000EL01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Transformer, switchgear, and all connections and terminations	SYS	1	$22,480	$22,480	$10,200	$10,200	$32,680
	Project Totals:			**$22,480**		**$10,200**	**$32,680**

Material/Labor Cost		$32,680
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$30,732
General Contractor Mark Up at 20.0%	+	$6,146
Inflation	+	$15,441
Construction Cost		$52,319
Professional Fees at 15.0%	+	$7,848
Total Project Cost		**$60,167**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000EL04	**Title:**	UPGRADE SECONDARY ELECTRICAL SYSTEM
Priority Sequence:	20		
Priority Class:	3		
Category Code:	EL3B	**System:**	ELECTRICAL
		Component:	SECONDARY DISTRIBUTION
		Element:	DISTRIBUTION NETWORK
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NEC Chapters 2, 3		

Project Class:	Capital Renewal	**Score:**	9.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

The secondary electrical system varies in age and condition. There are original 1950s vintage panels, along with newer panels that have been added for renovations and / or additional circuits. Some of the older panels serve as potential fire hazards should they fail to open a circuit in an overload or short circuit condition. Devices, including switches and receptacles, are generally timeworn. Upgrade the secondary electrical system by replacing all worn panels, conductors, raceways, and devices. Install 277/480 volt panels to accommodate proposed lighting and mechanical upgrades. Install additional branch circuits, as needed, to meet the present demands of the occupants. Specify GFCI receptacles in the appropriate areas to reduce shock hazard.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000EL04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Breaker panels, raceways, conductors, devices, demolition, and disposal costs	SF	90,641	$4.02	$364,377	$6.03	$546,565	$910,942
	Project Totals:			**$364,377**		**$546,565**	**$910,942**

Material/Labor Cost		$910,942
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$843,532
General Contractor Mark Up at 20.0%	+	$168,706
Inflation	+	$423,822
Construction Cost		$1,436,061
Professional Fees at 15.0%	+	$215,409
Total Project Cost		**$1,651,470**
Less Backlog Reduction	-	$240,000
Remaining Cost		**$1,411,470**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000EL02	**Title:**	UPGRADE INTERIOR LIGHTING
Priority Sequence:	21		
Priority Class:	3		
Category Code:	EL4B	**System:**	ELECTRICAL
		Component:	DEVICES AND FIXTURES
		Element:	INTERIOR LIGHTING
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Energy Conservation $12,120.00		
Code Application:	NEC Chapter 4, Article 410		
Project Class:	Deferred Maintenance	**Score:**	9.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

Lighting throughout the facility includes a mixture of fluorescent and incandescent fixtures. Lights have been upgraded in some of the laboratories, but most are inefficient applications with outdated T12 lamps. A complete lighting upgrade is recommended. Replace incandescent and worn fluorescent light fixtures with new energy-efficient, 277 volt fixtures. Convert existing fixtures that are in good condition to operate on 277 volts. Install occupancy sensors in select areas as an additional energy conservation measure. This work should be coordinated with proposed primary and secondary electrical system upgrades.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000EL02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
High efficiency fluorescent lighting, occupancy sensors, and demolition costs	SF	90,641	$1.70	$154,090	$2.08	$188,533	$342,623
Project Totals:				**$154,090**		**$188,533**	**$342,623**

Material/Labor Cost		$342,623
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$318,121
General Contractor Mark Up at 20.0%	+	$63,624
Inflation	+	$159,836
Construction Cost		$541,581
Professional Fees at 15.0%	+	$81,237
Total Project Cost		**$622,818**
Less Backlog Reduction	-	$120,000
Remaining Cost		**$502,818**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000IS01	**Title:**	INTERIOR DOOR REPLACEMENTS
Priority Sequence:	22		
Priority Class:	3		
Category Code:	IS4A	**System:**	INTERIOR/FINISH SYS.
		Component:	DOORS
		Element:	GENERAL
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG 404		

Project Class:	Capital Renewal	**Score:**	14.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

Interior doors in this laboratory building vary from solid core flush wood laboratory doors, with vision panels and non-rated transoms that also swing out into the corridors, to non-rated wood louvered corridor doors on the lower floor. The upper floor laboratory doors should be upgraded as part of the reworking of the transite paneled corridor service chases, and the lower floor interior doors are past due for upgrade in general. Very few of these doors have lever action hardware, which should be installed. Install new hollow metal interior doors on all four floors, and as previously mentioned, coordinate this work with the corridor shaft wall upgrades.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000IS01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Flush hollow metal interior door and frame with vision panel and lever actuated hardware	EA	174	$740	$128,760	$338	$58,812	$187,572
Dump truck rental and dumping fee	DAY	3	$475	$1,425	$144	$431	$1,856
	Project Totals:			**$130,185**		**$59,243**	**$189,428**

Material/Labor Cost		$189,428
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$178,131
General Contractor Mark Up at 20.0%	+	$35,626
Inflation	+	$89,500
Construction Cost		$303,257
Professional Fees at 15.0%	+	$45,488
Total Project Cost		**$348,745**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000IS05	**Title:**	LAY-IN ACOUSTICAL CEILING SYSTEM UPGRADES
Priority Sequence:	23		
Priority Class:	3		
Category Code:	IS3B	**System:**	INTERIOR/FINISH SYS.
		Component:	CEILINGS
		Element:	REPLACEMENT
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	OSHA 29 CFR 1910.1001, 126.1101 EPA 40 CFR 61.M, 763		
Project Class:	Plant Adaption	**Score:**	11.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3		

Project Description

Much of the plaster ceiling finish on the third floor, northern portions of the second floor, and the first floor entry lobby is reported to contain asbestos and will have to be abated prior to any significant renovation work in these areas. The reminder of these upper three floors largely have lay-in, acoustical ceiling finishes, which range in condition from average to good. Proposed building system upgrades, however, also will require the removal of these lay-in ceiling systems to install new ductwork, electrical and piping runs, etc. An allowance for ACM abatement related to the plaster ceiling demolition work is included in this project. Once these building system upgrades are completed and the ceiling areas cleaned, install new 2' x 2', lay-in ceiling systems in the corridors, office areas, and in computer and research laboratories. Also coordinate this work with the proposed transite removal and fire rating compromise upgrades for best results. The basement level does not have formal ceiling finishes and in not part of this project.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000IS05

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Suspended, acoustical ceiling system	SF	54,000	$2.46	$132,840	$1.25	$67,500	$200,340
Asbestos abatement and disposal allowance for plaster ceilings	LOT	1	$8,250	$8,250	$16,000	$16,000	$24,250
	Project Totals:			**$141,090**		**$83,500**	**$224,590**

Material/Labor Cost		$224,590
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$210,533
General Contractor Mark Up at 20.0%	+	$42,107
Inflation	+	$105,780
Construction Cost		$358,419
Professional Fees at 15.0%	+	$53,763
Total Project Cost		**$412,182**
Less Backlog Reduction	-	$82,436
Remaining Cost		**$329,746**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000IS02	**Title:**	INTERIOR FLOOR FINISH RESTORATION
Priority Sequence:	24		
Priority Class:	3		
Category Code:	IS1A	**System:**	INTERIOR/FINISH SYS.
		Component:	FLOOR
		Element:	FINISHES-DRY
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	EPA 40 CFR 61. M, 763		
	OSHA 29 CFR 1910.1001, 1926.1101		
Project Class:	Deferred Maintenance	**Score:**	9.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

This building has a combination of worn and damaged 9 x 9 inch vinyl floor tile. Vinyl floor finishes in the various laboratories are also worn and should be upgraded. Ideally, an epoxy floor finish should be installed throughout the building. However, as a cost saving measure, it is recommended that the corridors receive new vinyl composite floor tiles and the laboratories receive a more appropriate epoxy floor finish. Carpeting in the administrative spaces is also worn and should be replaced with new commercial, roll carpeting at the same time.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000IS02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dump truck rental and dumping fee	DAY	5	$475	$2,375	$144	$718	$3,093
40 oz. nylon, level loop, direct glue down carpet, mastic, tools, and supplies	SY	1,022	$18.00	$18,396	$12.00	$12,264	$30,660
Marbleized vinyl floor tile, mastic, tools, and supplies	SF	24,300	$1.00	$24,300	$0.50	$12,150	$36,450
Textured epoxy floor finish	SF	12,500	$4.35	$54,375	$2.15	$26,875	$81,250
Asbestos abatement allowance	LOT	1	$12,400	$12,400	$20,300	$20,300	$32,700
	Project Totals:			**$111,846**		**$72,307**	**$184,153**

Material/Labor Cost		$184,153
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$172,435
General Contractor Mark Up at 20.0%	+	$34,487
Inflation	+	$86,638
Construction Cost		$293,560
Professional Fees at 15.0%	+	$44,034
Total Project Cost		**$337,594**
Less Backlog Reduction	-	$67,519
Remaining Cost		**$270,075**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000IS03	**Title:**	HIGH PERCENTAGE LABORATORY BENCH UPGRADE
Priority Sequence:	25		
Priority Class:	3		
Category Code:	IS6B	**System:**	INTERIOR/FINISH SYS.
		Component:	GENERAL
		Element:	CABINETRY
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	ADAAG Chapter 9		

Project Class:	Capital Renewal	**Score:**	11.90
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

Laboratory casework and countertops in the various research and teaching laboratories in this facility vary in condition from laboratory to laboratory. Some of these laboratories have had countertop upgrades, but generally, the laboratory bench work is nearing the end of its normal life cycle in many of these areas. Install new metal laboratory benches and more durable countertops in each laboratory, as needed. Replace roughly 75 percent of the laboratory cabinetry within the next the next five years.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000IS03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dump truck rental and dumping fee	DAY	4	$475	$1,900	$144	$574	$2,474
Modular, metal base cabinet, resin countertops, and metal reagent shelving	LF	1,200	$395	$474,000	$188	$225,600	$699,600
	Project Totals:			**$475,900**		**$226,174**	**$702,074**

Material/Labor Cost		$702,074
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$659,874
General Contractor Mark Up at 20.0%	+	$131,975
Inflation	+	$331,546
Construction Cost		$1,123,395
Professional Fees at 15.0%	+	$168,509
Total Project Cost		**$1,291,904**
Less Backlog Reduction	-	$387,571
Remaining Cost		**$904,333**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000PL06	**Title:**	REPLACE DOMESTIC HOT WATER CONVERTER
Priority Sequence:	26		
Priority Class:	3		
Category Code:	PL1E	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	HEATING
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	EPA 40 CFR 61.M, 763 OSHA 29 CFR 1910.1001, 1926.1101		
Project Class:	Deferred Maintenance	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) B		

Project Description

There is a steam to domestic hot water converter in mechanical room M018. This unit was new in 1953. Insulation on the converter is suspected to contain asbestos. Replacement of the domestic hot water converter is recommended based on life cycle depletion. Remove and dispose of the asbestos in accordance with all pertinent regulations.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000PL06

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Domestic hot water converter, demolition of existing equipment, and asbestos abatement	SYS	1	$10,250	$10,250	$5,035	$5,035	$15,285
	Project Totals:			**$10,250**		**$5,035**	**$15,285**

Material/Labor Cost		$15,285
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$14,361
General Contractor Mark Up at 20.0%	+	$2,872
Inflation	+	$7,215
Construction Cost		$24,448
Professional Fees at 15.0%	+	$3,667
Total Project Cost		**$28,115**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000PL03	**Title:**	REPLACE DRAIN PIPING NETWORKS
Priority Sequence:	27		
Priority Class:	3		
Category Code:	PL2A	**System:**	PLUMBING
		Component:	WASTEWATER
		Element:	PIPING NETWORK
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IPC Chapter 6		
Project Class:	Capital Renewal	**Score:**	9.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

Drain piping throughout the facility is a combination of cast-iron and Duriron. Most of the drain piping is original, and some past failures were noted. Failure to replace the drain piping within the scope of this report will result in frequent leaks and increasing maintenance costs. In coordination with other recommended plumbing upgrades, replacement of the acid and normal waste drain piping is recommended. Some areas had piping replacements in the past and are not included in the scope of this work.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000PL03

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Drain pipe and fittings suitable for laboratory environment, hangers, floor drains, and demolition costs	SF	81,500	$1.80	$146,700	$5.04	$410,760	$557,460
	Project Totals:			**$146,700**		**$410,760**	**$557,460**

Material/Labor Cost		$557,460
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$512,394
General Contractor Mark Up at 20.0%	+	$102,479
Inflation	+	$257,446
Construction Cost		$872,318
Professional Fees at 15.0%	+	$130,848
Total Project Cost		**$1,003,166**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000PL02	**Title:**	REPLACE WATER SUPPLY AND PROCESS FLUIDS PIPING
Priority Sequence:	28		
Priority Class:	3		
Category Code:	PL1A	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	PIPING NETWORK
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	IPC Chapter 6 OSHA 29 CFR 1910.1001, 1926.1101 EPA 40 CFR 6.1M, 763		
Project Class:	Capital Renewal	**Score:**	9.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1,2,3,B		

Project Description

This facility includes piping for domestic water, natural gas, compressed air, and other specialty systems. Water supply piping is mostly copper and original. Laboratory process fluids piping is mostly threaded pipe and original. Shutoff valves and gas cocks are uniformly worn. Failure to replace the water and process piping within the scope of this report will result in frequent leaks and consequential maintenance costs. In coordination with other recommended plumbing upgrades, replacement of the water and process piping is recommended. Some of the laboratory areas had piping upgrades in the past and are not included in the scope of this work. Insulation on some of the piping is suspected to contain asbestos. This must be removed and disposed of properly during the demolition phase.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000PL02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Pipe and fittings, valves, backflow prevention devices, gas cocks, insulation, hangers, demolition, cut and patch materials, and asbestos abatement	SF	81,500	$1.55	$126,325	$3.28	$267,320	$393,645
	Project Totals:			**$126,325**		**$267,320**	**$393,645**

Material/Labor Cost		$393,645
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$362,959
General Contractor Mark Up at 20.0%	+	$72,592
Inflation	+	$182,364
Construction Cost		$617,914
Professional Fees at 15.0%	+	$92,687
Total Project Cost		**$710,601**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000PL05	**Title:**	REPLACE LABORATORY FIXTURES
Priority Sequence:	29		
Priority Class:	3		
Category Code:	PL1A	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	PIPING NETWORK
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	8.80
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

Laboratory fixtures are uniformly worn throughout, except in some of the laboratories that have been renovated. Replacement of the deteriorated laboratory sinks is recommended. Coordinate this work with the proposed laboratory bench and cabinetry upgrades.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000PL05

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Resin laboratory cup sinks, wash sinks, rough-ins, fittings, and hazardous materials remediation costs	SF	67,900	$3.29	$223,391	$3.57	$242,403	$465,794
Project Totals:				**$223,391**		**$242,403**	**$465,794**

Material/Labor Cost		$465,794
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$433,179
General Contractor Mark Up at 20.0%	+	$86,636
Inflation	+	$217,645
Construction Cost		$737,460
Professional Fees at 15.0%	+	$110,619
Total Project Cost		**$848,079**
Less Backlog Reduction	-	$85,000
Remaining Cost		**$763,079**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000PL04	**Title:**	REPLACE RESTROOM PLUMBING FIXTURES AND SERVICE SINKS
Priority Sequence:	30		
Priority Class:	3		
Category Code:	PL1G	**System:**	PLUMBING
		Component:	DOMESTIC WATER
		Element:	FIXTURES
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Energy Conservation $255.00		
Code Application:	IPC Chapter 4		
Project Class:	Deferred Maintenance	**Score:**	8.68
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) 1,2,3,B		

Project Description

The restroom plumbing fixtures are uniformly worn. New water closets and urinals consume approximately one-half the amount of water as these older vintage fixtures. Replacement of the water closets, lavatories, and urinals is recommended in coordination with related restroom accessibility upgrades. Specify water conserving fixtures with automatic, hands-free faucets and flush valves. Janitor's service sinks are in poor condition and should be replaced at the same time.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000PL04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Janitor's sink replacement and demolition costs	EA	4	$680	$2,720	$720	$2,880	$5,600
Urinal, automatic flush valve, rough-in, and demolition	EA	7	$595	$4,165	$560	$3,920	$8,085
Water closet, automatic flush valve, rough-in, and demolition	EA	14	$865	$12,110	$515	$7,210	$19,320
Lavatory, automatic faucets, trap, rough-in, and demolition	EA	11	$625	$6,875	$525	$5,775	$12,650
	Project Totals:			**$25,870**		**$19,785**	**$45,655**

Material/Labor Cost		$45,655
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$42,657
General Contractor Mark Up at 20.0%	+	$8,531
Inflation	+	$21,432
Construction Cost		$72,621
Professional Fees at 15.0%	+	$10,893
Total Project Cost		**$83,514**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000FS02	**Title:**	BUILDING-WIDE FIRE SPRINKLER SYSTEM
Priority Sequence:	31		
Priority Class:	4		
Category Code:	FS3A	**System:**	FIRE/LIFE SAFETY
		Component:	SUPPRESSION
		Element:	SPRINKLERS
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	NFPA 1, 13, 13R, 101		

Project Class:	Plant Adaption	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

No automatic fire suppression was noted in this building. A facility of this size and use type should be fully protected by an automatic fire suppression system. Install fire suppression throughout the facility, including piping, sprinkler heads, pipe bracing, and supervising and alarm devices, as needed. This will aid the university in terms of reduced liability and risk of loss.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000FS02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install a wet-pipe sprinkler system, including valves, schedule 40 black pipe, sprinkler heads, and associated materials	SF	90,641	$1.60	$145,026	$2.61	$236,573	$381,599
Project Totals:				**$145,026**		**$236,573**	**$381,599**

Material/Labor Cost		$381,599
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$352,980
General Contractor Mark Up at 20.0%	+	$70,596
Inflation	+	$177,350
Construction Cost		$600,926
Professional Fees at 15.0%	+	$90,139
Total Project Cost		**$691,065**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000FS04	**Title:**	REPLACE EXIT SIGNS
Priority Sequence:	32		
Priority Class:	2		
Category Code:	FS1A	**System:**	FIRE/LIFE SAFETY
		Component:	LIGHTING
		Element:	EGRESS LTG./EXIT SIGNAGE
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Energy Conservation $265.00		
Code Application:	NFPA 101-47		
Project Class:	Deferred Maintenance	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Floor-wide: Floor(s) 1, 2, 3, B		

Project Description

The exit signs throughout the building are becoming timeworn and are recommended for replacement. LED applications are recommended for their low maintenance and energy-efficient features. Connect the new exit signs to the emergency circuit.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000FS04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replacement of existing exit signs with LED units	EA	72	$75.00	$5,400	$66.00	$4,752	$10,152
	Project Totals:			**$5,400**		**$4,752**	**$10,152**

Material/Labor Cost		$10,152
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$9,468
General Contractor Mark Up at 20.0%	+	$1,894
Inflation	+	$4,757
Construction Cost		$16,118
Professional Fees at 15.0%	+	$2,418
Total Project Cost		**$18,536**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000IS04	**Title:**	BREAK ROOM CABINETRY UPGRADES
Priority Sequence:	33		
Priority Class:	4		
Category Code:	IS6B	**System:**	INTERIOR/FINISH SYS.
		Component:	GENERAL
		Element:	CABINETRY
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	7.68
Project Date:	04/07/2003		
Project Location:	Room Only: Floor(s) 2 Room(s) 210a		

Project Description

The small break room on the second floor, room 210a, is a break room and copy area. The cabinetry is showing signs of age and should be upgraded within the next ten years. Install new modular wooden cabinets and plastic laminate countertop in the same location to upgrade the existing staff break area. Also, provide basic appliances and a small refrigerator with this upgrade.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000IS04

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Modular, wood cabinetry and plastic laminate counter, small refrigerator, etc.	LOT	1	$1,100	$1,100	$550	$550	$1,650
	Project Totals:			**$1,100**		**$550**	**$1,650**

Material/Labor Cost		$1,650
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$1,550
General Contractor Mark Up at 20.0%	+	$310
Inflation	+	$779
Construction Cost		$2,639
No Professional Fees Required	+	$0
Total Project Cost		**$2,639**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000SI01	**Title:**	SHARED ASPHALT PARKING LOT PAVEMENT IMPROVEMENTS
Priority Sequence:	34		
Priority Class:	4		
Category Code:	SI1B	**System:**	SITE
		Component:	ACCESS
		Element:	VEHICULAR
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	7.68
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1		

Project Description

The asphalt pavement on the eastern side of the building is shared with several other buildings. For the purposes of this report, a portion of this lot is allocated to this building. This portion of the parking lot is in average condition, but is beginning to show some weathering. It is estimated that the asphalt pavement will need to be crack sealed and slurry coated within the next ten years. This pavement upgrade should include restriping the existing parking spaces and ADA parking areas.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000SI01

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Reseal and restripe parking lot	CSF	75	$22.65	$1,699	$33.98	$2,549	$4,247
	Project Totals:			**$1,699**		**$2,549**	**$4,247**

Material/Labor Cost		$4,247
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$3,933
General Contractor Mark Up at 20.0%	+	$787
Inflation	+	$1,976
Construction Cost		$6,696
No Professional Fees Required	+	$0
Total Project Cost		**$6,696**

Specific Project Details

Facility Condition Analysis

Section Three

Project Description

Project Number:	0406-000SI02	**Title:**	CONCRETE STEP REPAIRS AND RAMP UPGRADE
Priority Sequence:	35		
Priority Class:	4		
Category Code:	SI1A	**System:**	SITE
		Component:	ACCESS
		Element:	PEDESTRIAN
Building Code:	0406-000		
Building Name:	WHITMORE LABORATORY		
Subclass/Savings:	Not Applicable		
Code Application:	Not Applicable		

Project Class:	Capital Renewal	**Score:**	10.68
Project Date:	04/07/2003		
Project Location:	Item Only: Floor(s) 1		

Project Description

The stepped entries at the secondary building access points have damaged concrete steps and aging, non-accessible metal handrails. Repair the steps as needed with epoxy grout, and install new ADA compliant metal handrails. Also select one of these three entries to be upgraded with an accessible concrete entry ramp to provide an alternate entry / egress point for the disabled.

Specific Project Details

Facility Condition Analysis

Section Three

Project Cost

Project Number: 0406-000SI02

Task Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Epoxy grout, ADA metal handrails, and concrete ADA entry ramp and rail	LOT	1	$9,650	$9,650	$21,650	$21,650	$31,300
Project Totals:				**$9,650**		**$21,650**	**$31,300**

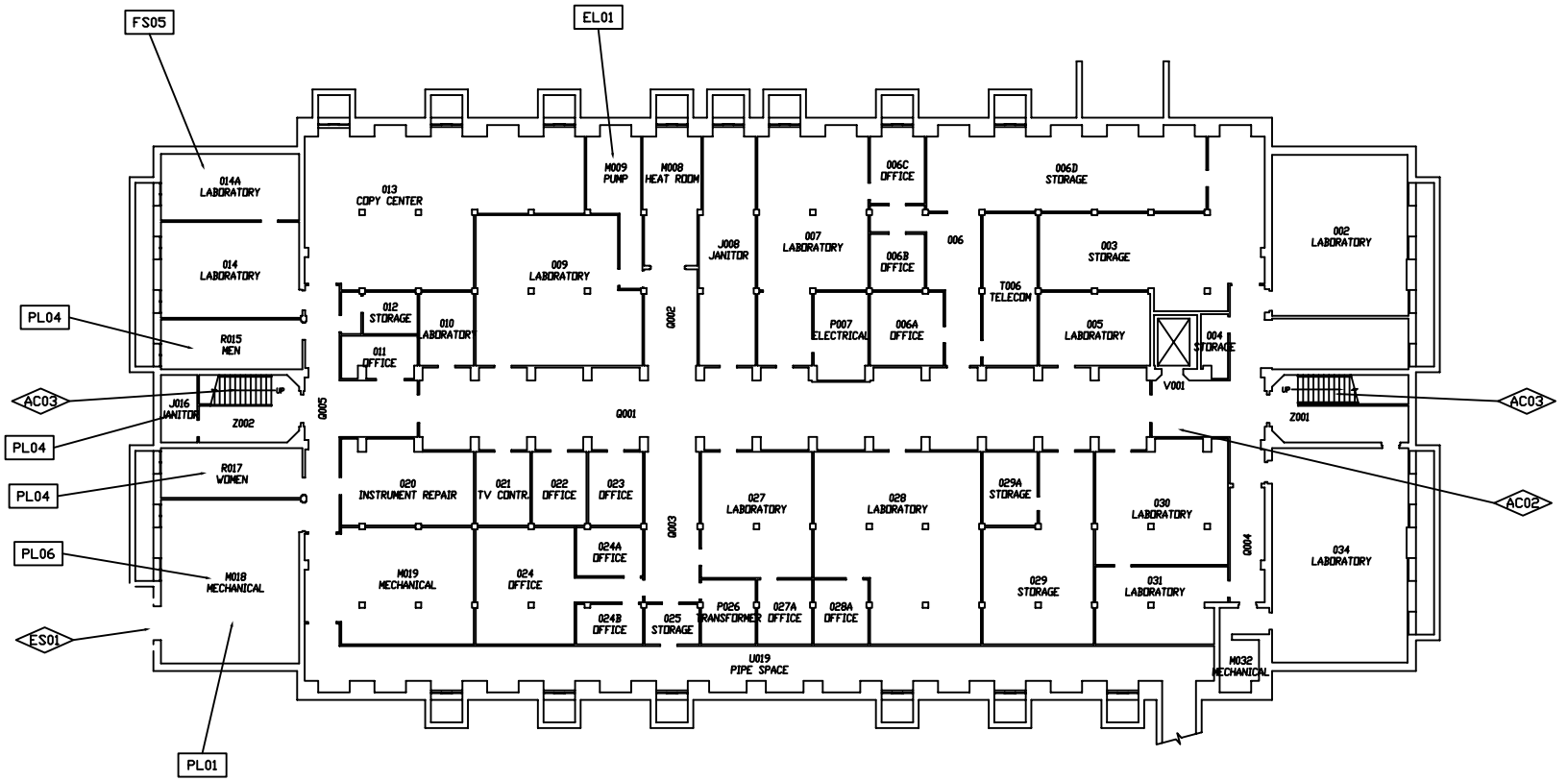
Material/Labor Cost		$31,300
Material Index		95.6%
Labor Index		90.6%
Material/Labor Indexed Cost		$28,840
General Contractor Mark Up at 20.0%	+	$5,768
Inflation	+	$14,490
Construction Cost		$49,099
Professional Fees at 15.0%	+	$7,365
Total Project Cost		**$56,464**

FACILITY CONDITION ANALYSIS

SECTION 4

DRAWINGS AND PROJECT LOCATIONS

PENNSYLVANIA STATE UNIVERSITY



FS01 HV03

EL02 EL03 EL04 FS02 FS03

FS04 HV01 HV02 IS01 IS02 IS03

PL02 PL03 PL05

0 10′ 20′ 40′

5′ 15′

N

WHITMORE LABORATORY

BLDG NO. 0406-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

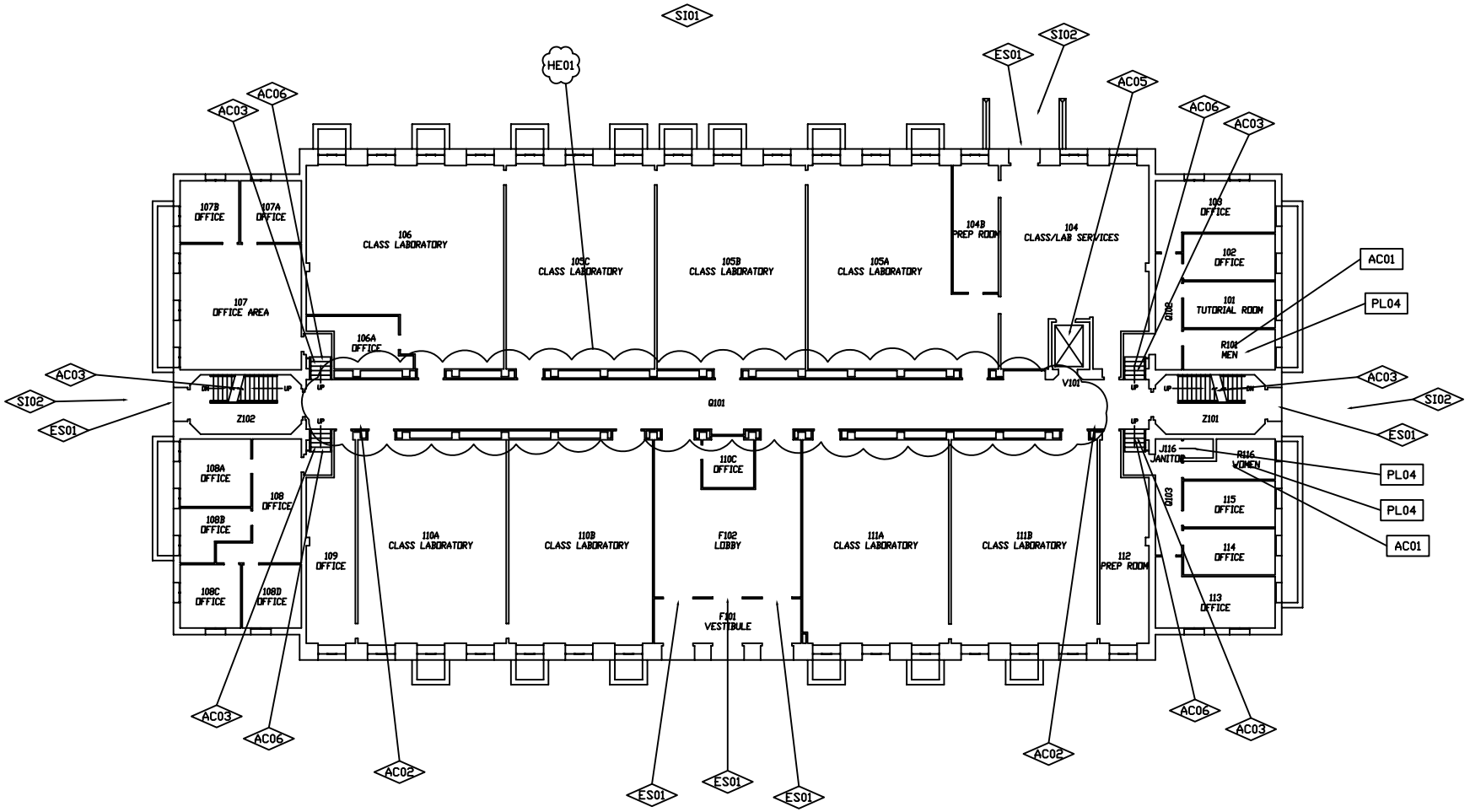
Date: 07/09/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 0406000B

BASEMENT FLOOR PLAN

Sheet No.

1 of 4

PENNSYLVANIA STATE UNIVERSITY



ES02 ES03 FS01

EL02 EL03 EL04 FS02 FS03

FS04 HV01 HV02 IS01 IS02 IS03

IS05 PL02 PL03 PL05

0 10′ 20′ 40′

5′ 15′

N

WHITMORE LABORATORY

BLDG NO. 0406-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

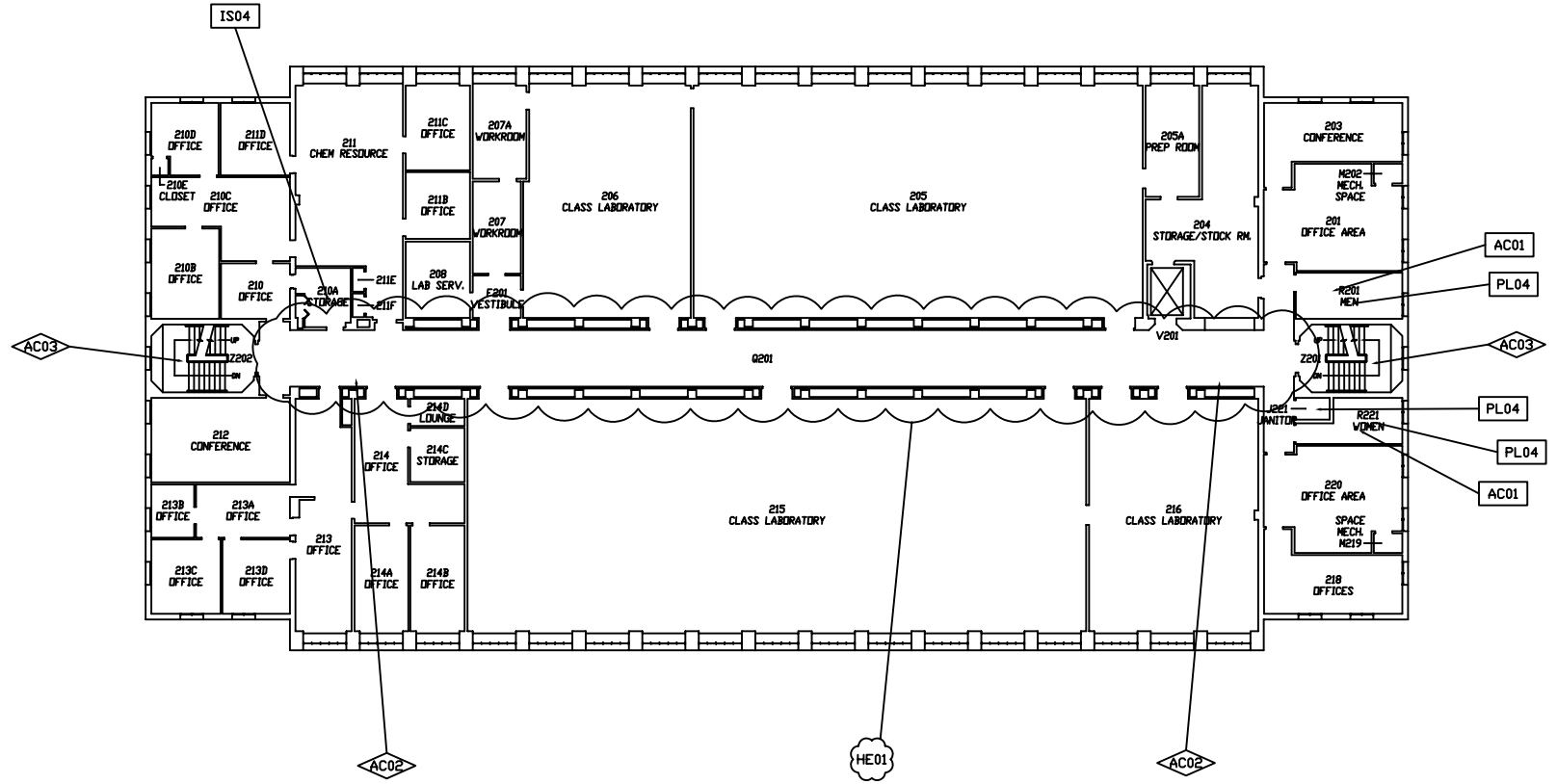
Date: 07/09/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04060001

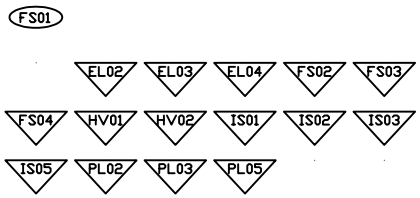
FIRST FLOOR PLAN

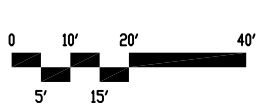
Sheet No.

2 of 4

PENNSYLVANIA STATE UNIVERSITY







WHITMORE LABORATORY

BLDG NO. 0406-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

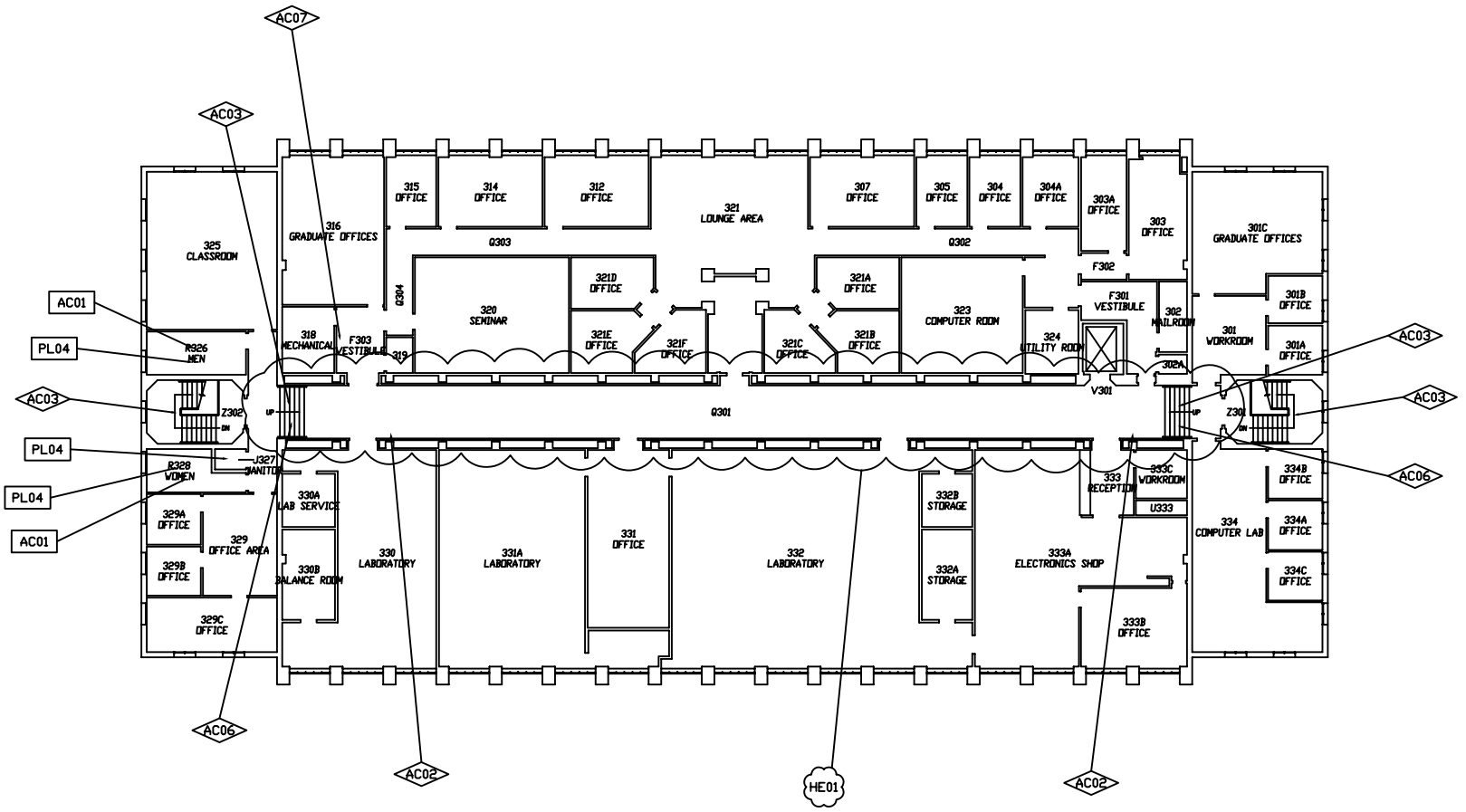
Date: 07/09/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04060002

SECOND FLOOR PLAN

Sheet No.

3 of 4

PENNSYLVANIA STATE UNIVERSITY



FS01

EL02 EL03 EL04 FS02 FS03
FS04 HV01 HV02 IS01 IS02 IS03
IS05 PL02 PL03 PL05

0 10′ 20′ 40′
5′ 15′

N

WHITMORE LABORATORY

BLDG NO. 0406-000

ISES CORPORATION

FACILITY CONDITION ANALYSIS

2185 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

PRIORITY LAYERS			
SI1	SI2	SI3	SI4
ES1	ES2	ES3	ES4
IS1	IS2	IS3	IS4
AC1	AC2	AC3	AC4
HE1	HE2	HE3	HE4
FS1	FS2	FS3	FS4
HV1	HV2	HV3	HV4
PL1	PL2	PL3	PL4
EL1	EL2	EL3	EL4
VT1	VT2	VT3	VT4
SS1	SS2	SS3	SS4

Date: 07/09/08
Drawn: J.T.V.
Project No. 08-007
Drawing: 04060003

THIRD FLOOR PLAN

Sheet No.

4 of 4

FACILITY CONDITION ANALYSIS

SECTION 5

LIFE CYCLE MODEL SUMMARY AND PROJECTIONS

Life Cycle Model

Building Component Summary

0406-000 : WHITMORE LABORATORY

Uniformat Code	Component Description	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp
A2020	FOUNDATION WATERPROOFING (DEPTHS UP TO 10 INC EXCAVATION)	3,520	SF	$60.81		$214,051	1953	25
B2010	CLEAN POINT AND CAULK EXTERIOR MASONRY SURFACES	13,600	LF	$10.50		$142,800	1953	20
B2020	CUSTOM WOOD DOORS	12	EA	$17,531.39		$210,377	1953	50
B2020	WINDOW REPLACEMENT (OPERABLE)	1,885	SF	$94.09		$177,360	1953	70
B2030	HI - USE EXT. DOOR LOCKSET REPLACEMENT	14	EA	$504.08		$7,057	1953	5
B2030	EXTERIOR DOORS (METAL)	2	EA	$3,340.58		$6,681	1953	30
B3010	FLAT ROOFING SYSTEM (BUR) BAD WINTERS	2,280	SF	$5.77		$13,156	1953	15
B3020	VINYL FLOOR TILE UPGRADES (NO ACM)	36,800	SF	$8.26		$303,968	1953	20
C1020	HI - USE INT. DOOR LOCKSET REPLACEMENT	174	EA	$504.08		$87,710	1953	5
C1020	INTERIOR DOOR REPLACEMENTS (LESS HARDWARE)	174	EA	$1,759.10		$306,083	1953	30
C3010	INTERIOR PAINTING (DRYWALL PLASTER REPAIR INCLD)	132,700	SF	$1.48		$196,396	1953	6
C3010	PLASTER WALL REPLACEMENT	92,800	SF	$9.11		$845,408	1953	72
C3020	LO - USE CARPET REPLACEMENT	9,200	SY	$57.01		$524,492	1953	10
C3030	LAY-IN CEILING GRID REPLACEMENT	8,000	SF	$3.25		$26,000	1953	60
C3030	NON-SEISMIC LAYIN ACOUSTICAL CEILING TILE REPLACEMENT	8,000	SF	$4.42		$35,360	1953	15
C3030	PLASTER CEILING REPLACEMENT	21,000	SF	$8.15		$171,150	1953	72
D1010	3000-4000 LBS CAP. ELEVATOR MACHINE - ROPED	1	EA	$63,660.11		$63,660	1953	17
D1010	ELEVATOR HATCH AND LANDING RENOVATION	4	EA	$13,571.41		$54,286	1953	12
D1010	ELEVATOR CAB RENOVATION - PASSENGER	1	EA	$35,078.30		$35,078	1953	12
D2010	DUAL-LEVEL DRINKING FOUNTAIN	8	EA	$3,604.88		$28,839	1953	10
D2010	PLUMBING FIXTURE COMPONENTS	90,641	SF	$2.33		$211,194	1953	8
D2010	PLUMBING FIXTURES	90,641	SF	$9.98		$904,597	1953	32
D2020	WATER SUPPLY PIPING - SPECIALTY PIPING	90,641	SF	$8.11		$735,099	1953	25
D2020	WATER HEATER SHELL AND TUBE HEAT EXCHANGER	65	GPM	$405.54		$26,360	1953	24
D2030	DRAIN PIPING SYSTEMS	90,641	SF	$12.14		$1,100,382	1953	40
D2050	AIR COMPRESSOR PACKAGE (MEDIUM SIZE)	2	SYS	$6,457.44	2.00	$25,830	1953	25
D2050	MED / LAB AIR COMPRESSOR SYS. INC. DRYER	20	HP	$5,061.91		$101,238	2006	20
D2050	MED / LAB VACUUM PUMP SYSTEM	4	HP	$1,848.03		$7,392	2006	20
D3030	PACKAGE CHILLER - AIR COOLED UP TO 80 TONS	75	TON	$2,534.12		$190,059	1953	20

Life Cycle Model

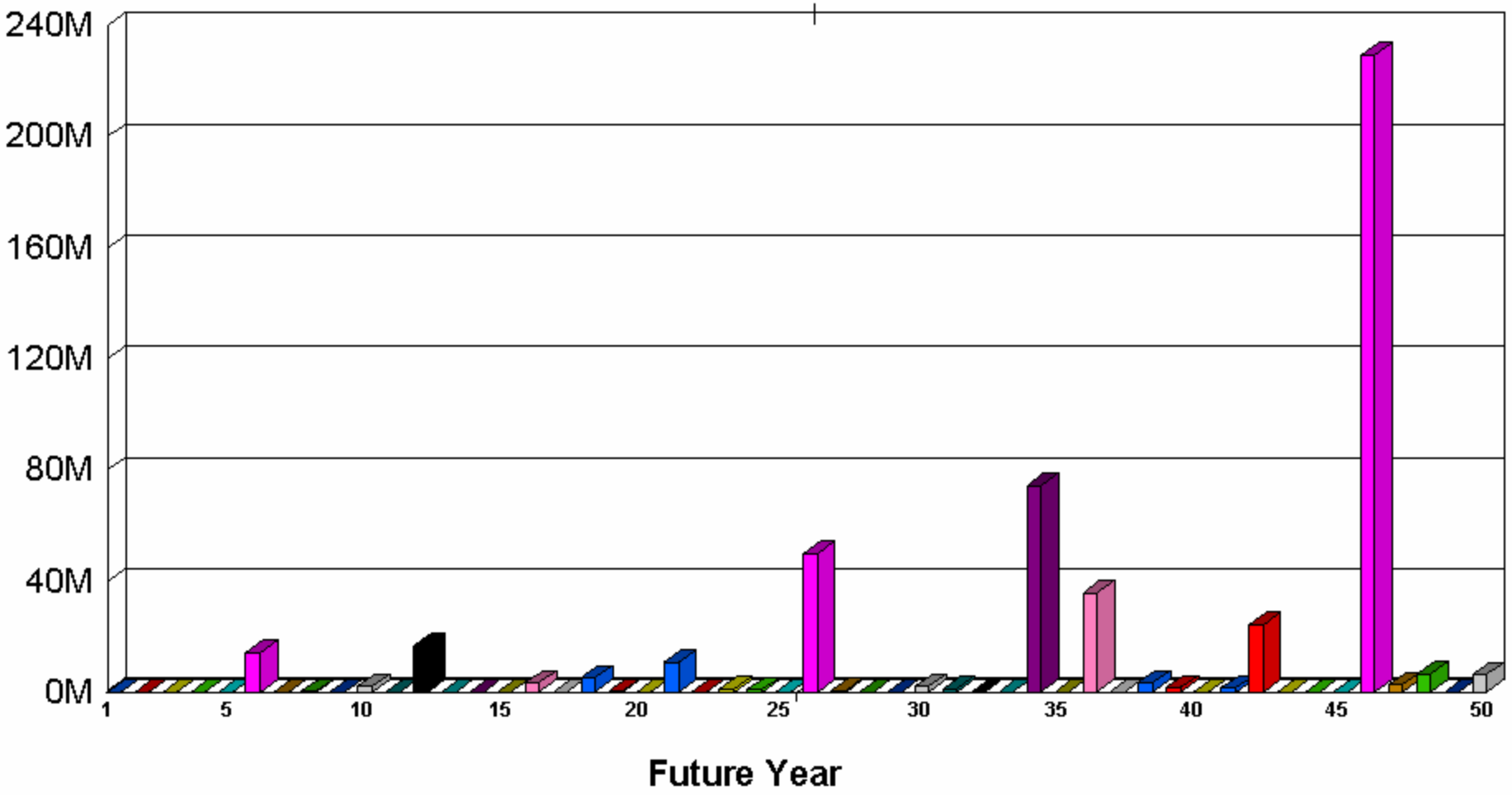
Building Component Summary

0406-000 : WHITMORE LABORATORY

Uniformat Code	Component Description	Qty	Units	Unit Cost	Cmplx Adj	Total Cost	Install Date	Life Exp
D3030	ROOFTOP HVAC UNIT	21	TON	$2,795.24		$58,700	1953	15
D3040	CONDENSATE RECEIVER	1	SYS	$9,128.51		$9,129	1953	15
D3040	EXHAUST SYSTEM DUCTWORK	1,500	CFM	$11.22		$16,830	1953	30
D3040	EXHAUST FAN - CENTRIFUGAL ROOF EXHAUSTER OR SIMILAR	3	EA	$3,233.49		$9,700	1953	20
D3040	EXHAUST FAN - PROPELLER TYPE OR SIMILAR	1	EA	$1,425.67		$1,426	1953	20
D3040	FUME HOOD INCLUDING MECH. SYS	118	SYS	$42,940.16		$5,066,939	1953	20
D3040	HVAC SYSTEM	90,641	SF	$79.89		$7,241,309	1953	22
D3040	COMPUTER PACKAGE UNIT - CHILLED WATER	5	TON	$2,229.36		$11,147	1953	15
D3050	SPLIT DX SYSTEM	15	TON	$2,345.25		$35,179	1953	15
D3050	THRU-WALL AC UNIT	21	TON	$1,681.53		$35,312	1953	10
D5010	SECONDARY ELECTRICAL SYSTEM	90,641	SF	$19.05		$1,726,711	1953	50
D5010	ELECTRICAL SWITCHGEAR 2000A 208V	1	EA	$93,933.24	1.20	$112,720	1994	20
D5010	TRANSFORMER OIL 5-15KV 500 TO 1500 KVA	750	KVA	$47.61		$35,708	1953	30
D5020	EXIT SIGNS (CENTRAL POWER)	70	EA	$195.64		$13,695	1953	20
D5020	INTERIOR LIGHTING	90,641	SF	$5.89		$533,875	1953	20
D5020	SWITCHES AND RECEPTACLES	90,641	SF	$3.40		$308,179	1953	10
D5030	FIRE ALARM SYSTEM POINT ADDRESSABLE	90,641	SF	$2.87		$260,140	2000	15
E2010	LAB CASEWORK REPLACEMENTS	1,640	LF	$853.66		$1,400,002	1953	15
E2010	CABINETRY	10	LF	$165.99		$1,660	1953	20
F1050	2-5 STOP ELEVATOR CONTROLLER - ROPED	1	EA	$36,190.43		$36,190	1953	20
G2020	SEALCOAT ASPHALT PARKING LOT BAD WINTERS	835	SY	$3.10		$2,589	1953	5
G2030	CONCRETE SIDEWALK REPLACEMENT	600	SF	$10.72		$6,432	1953	20
						$23,675,634		

Life Cycle Model Expenditure Projections

0406-000 : WHITMORE LABORATORY



Average Annual Renewal Cost per SqFt **$12.64**

FACILITY CONDITION ANALYSIS

SECTION 6

PHOTOGRAPHIC LOG

Photo ID No.	Description	Location	Date
0406-000001a	Typical level of finish in laboratory	Third floor, laboratory 332	04/07/2003
0406-000001e	Emergency shower and eyewash	Room 332	04/07/2003
0406-000002a	View of corridor doors with non-rated transoms	Third floor, corridor	04/07/2003
0406-000002e	Original vintage laboratory sinks	Room 332	04/07/2003
0406-000003a	Typical level of finish, noting corridor doors swing out into corridor	Third floor, corridor	04/07/2003
0406-000003e	Antiquated lighting scheme	Room 332	04/07/2003
0406-000004a	Single level, surface-mounted drinking fountain	Third floor, corridor	04/07/2003
0406-000004e	Aged fume hood	Room 332	04/07/2003
0406-000005a	Lack of two-way communication system in elevator	Passenger elevator cab	04/07/2003
0406-000005e	Breaker panels and junction box	Third floor, corridor	04/07/2003
0406-000006a	Non-accessible inner and outer handrails	Interior stair tower	04/07/2003
0406-000006e	Original Westinghouse breaker panels	Third floor, corridor	04/07/2003
0406-000007a	Deteriorated vinyl floor tile in laboratory	Third floor, laboratory 332	04/07/2003
0406-000007e	Outdated lavatories	Restroom 328	04/07/2003
0406-000008a	Aging freestanding water fountain	Third floor, corridor near room 330	04/07/2003
0406-000008e	Outdated water closet	Restroom 328	04/07/2003
0406-000009a	Original restroom that is non-accessible	Third floor, men's restroom	04/07/2003
0406-000009e	Timeworn light switch	Restroom 328	04/07/2003
0406-000010a	Transite wall panels on corridor side of vertical support chases	Third floor, corridor	04/07/2003
0406-000010e	Service sink	Room 327	04/07/2003
0406-000011a	Upgraded finishes in office area	Third floor, office 321	04/07/2003
0406-000011e	Incandescent light	Room 327	04/07/2003
0406-000012a	Non-rated shutter on corridor pass-through	Second floor, stockroom pass-through	04/07/2003
0406-000012e	Aged exit sign	Third floor, corridor	04/07/2003
0406-000013a	Typical level of finish	Second floor, corridor	04/07/2003
0406-000013e	Fan coil unit	Room 325	04/07/2003
0406-000014a	Partially accessible restroom	Second floor, women's restroom	04/07/2003
0406-000014e	Additional fan coil unit	Room 301	04/07/2003
0406-000015a	Typical level of finish	Second floor, office	04/07/2003
0406-000015e	Condensate line does not meet code	Room 301C	04/07/2003

Photo ID No.	Description	Location	Date
0406-000016a	Typical level of finish in organic chemistry laboratory	Second floor, laboratory 205	04/07/2003
0406-000016e	Evaporator unit	Room M219	04/07/2003
0406-000017a	View of weathered parking	Eastern side of site	04/07/2003
0406-000017e	Emergency shower and fume hood	Second floor, stockroom	04/07/2003
0406-000018a	View of cabinetry in break / copy room	Second floor, room 210A	04/07/2003
0406-000018e	Fairly new electrical equipment	Second floor, stockroom	04/07/2003
0406-000019a	Deteriorated carpet seam	Conference room 212	04/07/2003
0406-000019e	Renovated laboratory space	Laboratory 205	04/07/2003
0406-000020a	Plaster damage, apparently due to water infiltration at window head	Conference room 212	04/07/2003
0406-000020e	Antiquated Nesbitt unit ventilator	Laboratory 205	04/07/2003
0406-000021a	Non-rated transfer grille	First floor, corridor at transition steps	04/07/2003
0406-000021e	Steam and water lines	Second floor, conference room	04/07/2003
0406-000022a	Void	Void	04/07/2003
0406-000022e	Makeup air unit	Laboratory 215	04/07/2003
0406-000023a	One of three sets of entry doors	West entry doors	04/07/2003
0406-000023e	Aged service sink with leaky faucets	Room 117	04/07/2003
0406-000024a	View of plaster ceiling detail in entry lobby	West entry lobby detail	04/07/2003
0406-000024e	Deteriorating fume hood	Room 104	04/07/2003
0406-000025a	View of different colors of vinyl floor tile used to patch floor	First floor, corridor near men's restroom	04/07/2003
0406-000025e	Laboratory bench and sinks	Room 105A	04/07/2003
0406-000026a	Typical level of finish in corridor, noting no formal ceiling	Basement level, corridor	04/07/2003
0406-000026e	New fire alarm panel	First floor, lobby	04/07/2003
0406-000027a	Non-rated doors on unsprinkled storage room	Basement, room 20	04/07/2003
0406-000027e	Original vintage water heater	Mechanical room M18	04/07/2003
0406-000028a	Spalling paint finish in corridor	Basement, corridor ceiling	04/07/2003
0406-000028e	Chilled water pump	Mechanical room M18	04/07/2003
0406-000029a	View of former copy center now used for storage	Basement, room 13	04/07/2003
0406-000029e	Domestic water main	Mechanical room M18	04/07/2003
0406-000030a	Deteriorated hollow core wood door	Door to room 6	04/07/2003
0406-000030e	Drain and utility piping	Room 013	04/07/2003
0406-000031a	Deteriorated interior door	Basement, corridor	04/07/2003

Photo ID No.	Description	Location	Date
0406-000031e	Original Duriron drain piping	Basement	04/07/2003
0406-000032a	View of flat, built-up roof	Main upper roof	04/07/2003
0406-000032e	Exit sign obscured by pipe	Basement	04/07/2003
0406-000033a	View of lower flat roof	Lower north roof	04/07/2003
0406-000033e	Gutter installation to control leaking drain piping	Basement	04/07/2003
0406-000034a	Spalling finish on inner face of parapet wall	East end of upper roof	04/07/2003
0406-000034e	Incandescent corridor lighting	Basement	04/07/2003
0406-000035a	Spalling face glazing on upper brick wall	Upper face of north elevation at cornice	04/07/2003
0406-000035e	1994 vintage primary electrical equipment	Mechanical room M009	04/07/2003
0406-000036a	Upper ladder mounting brackets are not connected	Roof transition ladder	04/07/2003
0406-000036e	Combustible storage	Room 24	04/07/2003
0406-000037a	Exterior	South elevation	04/07/2003
0406-000037e	Original breaker panel	Basement	04/07/2003
0406-000038a	Spalling face glazing and possible freeze jacking along upper portion of brick veneer	Upper south elevation	04/07/2003
0406-000038e	Emergency power equipment	Room 26	04/07/2003
0406-000039a	Exterior	Partial western front elevation	04/07/2003
0406-000039e	Insulation on water piping may contain asbestos	Laboratory 27	04/07/2003
0406-000040a	Spalling upper brick face	Upper portion of north elevation	04/07/2003
0406-000040e	Antiquated fume hood and laboratory sink	Laboratory 27	04/07/2003
0406-000041a	Exterior	North elevation	04/07/2003
0406-000041e	Breaker panels from three different eras	Basement	04/07/2003
0406-000042a	Non-ADA handrails	North entry steps	04/07/2003
0406-000042e	Edpac computer-grade air conditioner	Room 34	04/07/2003
0406-000043a	Exterior	Partial east elevation	04/07/2003
0406-000043e	Chilled water pump	Room 32	04/07/2003
0406-000044a	Upper roof detail	Roof	03/12/2008
0406-000044e	Disconnected stack for fume hood exhaust	Attic	04/07/2003
0406-000045a	Lower roof detail	Roof	03/12/2008
0406-000045e	Utility fans for fume hoods	Attic	04/07/2003
0406-000046a	Interior corridor finishes	Third floor	03/12/2008
0406-000046e	Chillers and condensing unit	Roof	04/07/2003
0406-000047a	Interior stairwell design	South stairwell	03/12/2008

Photo ID No.	Description	Location	Date
0406-000047e	Fume hood exhaust fans	Attic	04/07/2003
0406-000048a	Remodeled office interior finishes	Room 301C	03/12/2008
0406-000048e	Air intake detail	West elevation	04/07/2003
0406-000049a	Wheelchair lift in corridor	Third floor	03/12/2008
0406-000049e	2006 vintage HVAC unit	Roof	03/12/2008
0406-000050a	Remodeled lab interior finishes	Lab 339	03/12/2008
0406-000050e	Upgraded lighting and ductless HVAC system	Third floor	03/12/2008
0406-000051a	Lever door hardware and appropriate signage in remodeled area	Room 331D	03/12/2008
0406-000051e	Electric baseboard heater	Third floor	03/12/2008
0406-000052a	Lab interior finishes	Lab 332	03/12/2008
0406-000052e	Low-grade eyewash is not easily accessible	Lab 333A	03/12/2008
0406-000053a	Non-compliant built-in kitchenette	Room 303	03/12/2008
0406-000053e	New eyewash, exit sign, and power panels	Lab 332	03/12/2008
0406-000054a	Interior finishes of lounge area	Room 321	03/12/2008
0406-000054e	New fume hood	Lab 330	03/12/2008
0406-000055a	Plaster damage due to water infiltration	Room 218	03/12/2008
0406-000055e	McQuay air handler	Room 318	03/12/2009
0406-000056a	Older lab design	Room 216	03/12/2008
0406-000056e	New energy-efficient lighting	Second floor office, southeast corner	03/12/2008
0406-000057a	Interior corridor finishes	Second floor	03/12/2008
0406-000057e	Laboratory-grade air compressor was new in 2006	Room 006B	03/12/2008
0406-000058a	Interior lab finishes	Lab 205	03/12/2008
0406-000058e	Duriron acid waste piping fitting has been patched with plumbers epoxy	Basement	03/12/2008
0406-000059a	Interior corridor finishes	First floor	03/12/2008
0406-000059e	Original vintage power panels	Basement, electric room	03/12/2008
0406-000060a	Interior lab finishes	Lab 111B	03/12/2008
0406-000060e	Recent vacuum pump installation	Basement, pump room	03/12/2008
0406-000061a	Rusting ceiling grid system	First floor lab	03/12/2008
0406-000061e	Typical older vintage emergency shower	Basement, corridor	03/12/2008
0406-000062a	Interior corridor finishes	Basement	03/12/2008
0406-000062e	Lab sink in abandoned lab	Lab 27	03/12/2008
0406-000063a	Paint not contained in reagent cabinetry	Room 014A	03/12/2008

Photo ID No.	Description	Location	Date
0406-000064a	South entry doors	Exterior elevation	03/12/2008
0406-000065a	South facade	Exterior elevation	03/12/2008
0406-000066a	West facade	Exterior elevation	03/12/2008
0406-000067a	West entry doors	Exterior elevation	03/12/2008
0406-000068a	North facade	Exterior elevation	03/12/2008
0406-000069a	North entry doors	Exterior elevation	03/12/2008
0406-000070a	Site stairs leading to north entry	Exterior site	03/12/2008
0406-000071a	East facade	Exterior elevation	03/12/2008
0406-000072a	Loading dock area	Exterior elevation	03/12/2008

0406-000001A.JPG

0406-000001E.JPG

0406-000002A.JPG

0406-000002E.JPG

0406-000003A.JPG

0406-000003E.JPG

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0406-000005E.JPG

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0406-000007A.JPG

0406-000007E.JPG

0406-000008A.JPG

0406-000008E.JPG

0406-000009A.JPG

0406-000009E.JPG

0406-000010A.JPG

0406-000010E.JPG

Facility Condition Analysis - Photo Log

0406-000011A.JPG

0406-000011E.JPG

0406-000012A.JPG

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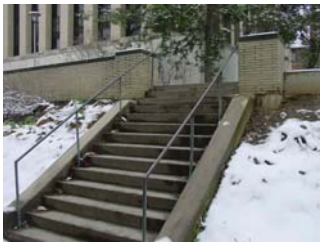

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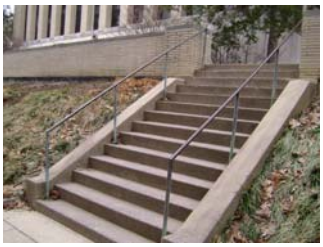

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PENNSTATE

Office of Physical Plant

The Pennsylvania State University
Physical Plant Building
University Park, PA 16802-1118

REQUIREMENTS FOR COLOR PHOTOGRAPHS OF BUILT PROJECTS

Examples of the Architect's / Engineers's built projects are required for presentation to the Board of Trustees as part of the approval process. Images will be used for a Powerpoint presentation and will be presented via widescreen LED monitors.

Approximately (6) high quality exterior and (12) high quality interior photos should be submitted along with a very brief description of each photo. Photos must be of BUILT projects and should be relevant to the proposed project. Hand drawn renderings, computer drawn renderings and models, and photos of study models will NOT be accepted. It is highly recommended that interior shots include people using the space. Please send digital photographs that meet the following minimum standards.

Minimum photo dimensions:
6.5 x 10 inches (975 x 1500 pixels)
Minimum resolution: 150 pixels/inch

(Photos will be inserted into Powerpoint with a 16:9 aspect ratio at a maximum resolution of 220pixels/inch)

Preferred photo formats: .tif, .jpg, .gif for use in a PC environment

File transfer methods:
-email is preferred with a maximum attachment file size of about 5mb/email.
-Files may be zipped (compressed) using WinZip and/or emailed individually.
-photos on CD-rom are acceptable.

Photos should NOT contain any text. A descriptive reference document should be included that provides a project name and location for each photo. Please send to:

Madeline Cantú, RLA
Design Resources Coordinator
Campus Planning & Design
203 Physical Plant Building
University Park, PA 16802
mac56@psu.edu
(814) 863-4242

Please don't hesitate to call or email with any questions or concerns.

Board of Trustees Architect / Engineering Interview Room Layout