Macomb Community College

Education • Enrichment • Economic Development

SOUTH CAMPUS

MACOMB COMMUNITY COLLEGE FACILITIES ASSESSMENT AND DEFERRED MAINTENANCE CAPITAL PLANNING REPORT

Updated March 2018

H+B Project #17-718

Table of Contents

EXECUTIVE SUMMARY.....Tab 1

- Overview
- Purpose of Study
- Glossary of Terms
- DMB Summaries
- CRV Summaries
- FCI Summaries

GENERAL INFORMATION.....Tab 2

- Location Map
- Study Team
- Code/Barrier Free Requirements
- Assessment Summaries

APPENDIX.....Tab 3

- Building Data Sheets

1 Executive Summary

Overview pp. 1.1
Purpose of Study pp. 1.1 – 1.2
Glossary of Terms pp. 1.3 – 1.5
DMB Summaries pp. 1.6 - 1.7
CRV Summaries pp. 1.8 - 1.9
FCI Summaries pp. 1.10 - 1.11

Overview

Macomb Community College commissioned Hobbs+Black Associates, Inc. (H+B) to update the facilities condition analysis (FCA) for South Campus.

There are 18 buildings on South Campus included in this update.

Purpose of the Study

This Facilities Assessment and deferred Maintenance Capital Planning Study, was updated using recent project data, contractor bids and Construction Manager estimates in order to accomplish the following objectives:

- Provide an inventory of the College's facilities in a database format to be easily updated and maintained.
- Determine the general condition of the facilities owned by Macomb Community College and provide the data in a concise format, allowing quick determination of the current replacement value and condition of each facility.
- Determine a Facilities Condition Index (FCI) for each assessed building and an aggregate FCI for all facilities at Macomb Community College. The FCI is a benchmark index that rates the condition of existing College buildings and is used by facilities managers nationwide to quantify and prioritize deferred maintenance projects for capital planning purposes.
- Assist Macomb Community College in meeting its Mission Statement, Strategic Goals and Institutional Vision through timely maintenance of the physical backbone of the College – the buildings of MCC.
- A Summary and detailed narrative description of the findings related to the building deficiencies for the following elements

and systems is provided:

- Roof
- Building Enclosure
- Interior Finishes
- HVAC
- Plumbing
- Fire Protection
- Temperature Controls
- Primary Power
- Secondary Power
- Electrical Distribution
- Lighting
- Voice/Data
- Code/Barrier Free

Estimated costs are itemized by architectural, mechanical and electrical trades, and are totaled under Construction Costs and include any material and labor costs without additional mark-ups. The Project Cost total includes a 45 percent mark-up on construction costs to include such items as A/E design fees, construction contingencies, reimbursable expenses and commissioning. All costs have been expressed in 2017 dollars. Therefore, any work implemented later than 2017 will require an adjustment. In some cases, due to the nature of the work, quantities were estimated and assumptions made in order to establish the course of action. Further development and investigation during future implementation phases will be necessary to determine a more accurate scope of work and a more precise budget estimate.

Glossary of Terms

Building Components

The table below shows the building components used in the report. These are the basic components having a major influence on the replacement value of a building.

Category	Component Name
Envelope	Roof
	Glazing
	Cladding
Mechanical	HVAC Equipment
	Plumbing
	Fire Protection
	Temperature Controls

Building Use Types

The table below shows general building use types and their respective current construction costs per square foot used to develop this database. These costs, based on regionally weighted, preliminary construction cost data provided by contractors, historical cost databases and data from RS Means are for typical college and university buildings. Buildings may contain various uses, and each use is portioned to create the overall building replacement value per square foot.

Use Type	Cost/SF
Administration	$230
Auditorium	$235
Student Services	$247
Classroom	$230
Lab	$321
Library	$239

Building Replacement Value (CRV)

The CRV is the cost to construct a typical replacement building in today's dollars. The figure is based on the square footage of the current structure and the estimated current construction cost for that type of structure. Since some buildings are conglomerations of different uses (i.e.: classroom, library, administration) the CRV is based on estimated proportions of use types in each building. By the nature of the calculations and square foot construction costs, the current replacement value has a ±20% margin of error and will change annually due to market demands.

Facilities Condition Index (FCI)
Simply put, the FCI is the current DMB divided by the CRV. The resulting number is compared against nationally accepted standards and used to determine the condition of the building.
The Association of Higher Education Facilities Officers (APPA) recommends that the FCI for any given building should not exceed 5% for the building to be considered in "Good" condition. The rating of "Fair" indicates that the building requires some attention to bring it up to standard, with some problem areas potentially requiring immediate attention. The rating of "Poor" indicates that the building needs urgent attention to prevent the existing problems from affecting other building systems and compounding future repair costs.

The APPA FCI Ratings, indicating the general condition of the building, are shown here along with the corresponding "traffic signals" that give a quick visual indication of the FCI rating.







Deferred Maintenance Budget (DMB)
This is the cost of upkeep of buildings and equipment postponed from the normal operating budget cycle.

DMB Equilibrium (Annual Cost to maintain current DMB)
This is the dollar amount to be invested annually to keep the FCI (and DMB) from deteriorating – regardless of the current condition of the building.

The number is based on a nationally accepted rule of 2% of the CRV and assumes that building components have a 50-year renewal cycle and depreciate along a straight line. The assumptions were made to simplify calculations; in reality, building components DO NOT expire according to straight-line depreciation, and most components will require replacement within 30-40 years (excluding structure and foundation).

To restate – this annual investment will only maintain the existing FCI and do little or nothing to reduce any existing backlog.
Five Year Cumulative Deferred Maintenance Budget (5YR DMB)
Similar to the One Year DMB, the Five Year DMB represents the total value of projects that will require attention within the next five years, including those that fall under the One Year DMB. This value is included to help determine the investment required over the next five years to repair and/or replace problem items before they become critical.

The Five Year DMB is often more telling of a buildings' condition than the One Year DMB, since the first year number focuses primarily on life safety, code compliance and collateral damage. Most maintenance issues are not so critical as to fall into this category but often become so within 5 years.0

Five Year DMB Excess
Similar to the One Year DMB Excess value, this amount represents the investment to bring the DMB in line with the APPA benchmark of 5% of the Current Replacement Value. In situations where a building is in better than "Good" condition – a bit more difficult over a five year span, the five year DMB excess is shown as zero.

This number is a good starting point for determining budgets – it allows the college to see what to spend to bring buildings into the APPA 'Good" range – with the understanding that complete elimination of the deferred Maintenance Budget is not a likely scenario.

Observation Highlights
This is a focused list of field observations, highlighting major repair/ replacement items and recently completed work.

For example, if a building has a CRV of $1,000,000 and an FCI of 10%, the DMB would be $100,000. This would leave a DMB excess of $50,000 – the amount to be spent to reduce the FCI to within the APPA 5% benchmark.

Vital Statistics
Basic building information – building use types, year built, building area in square feet, and number of floors.

Deferred Maintenance Budgets
The total 5 year DMB per building are as follows:
(Refer to the Building Data Sheets for detailed information)

	Comments	5 year DMB
Building SA (Power house)	-	$ 5,261,162
Building SB (Classrooms, Labs, offices)	Renovation complete summer 2017	$ 172,188
Building SC (Classrooms)	Renovated Summer 2015	0
Building SD (Classrooms, offices)	Renovation scheduled for summer 2019	$ 4,480,172
Building SE (Classrooms)	Renovated summer 2014	0
Building SF (Classrooms)	Renovation scheduled summer 2018	$3,073,281
Building SG (Includes former Building SH) (Student Services)	Renovated summer 2016	0
Building SJ (Classrooms, Library, offices)	Renovation scheduled summer 2018	$6,698,797
Building SK (Student Services, Conference, Dining)	Public safety renov. summer 2014, dining renovation summer 2012	$6,159,704
Building SL (Bunert House) (Science Building)	Currently serves as construction offices	$113,775

	Comments	5 year DMB
Building SM (Classrooms, Auto Labs, Construction Labs)	Updated Assessment from fall 2014	$ 9,785,954
Building SN (Offices, graphic department)	Renovated summer 2012	$ 156,764
Building SP (Athletics)	-	$ 6,945,941
Building SQ (Power house)	Updated Assessment from fall 2014	$ 153,244
Building SR (Classrooms, Graphic Arts Labs)	Updated Assessment from fall 2014	$ 4,978,658
Building SS (Classrooms, conference)	Updated Assessment from fall 2014	$ 4,214,631
Building ST (Classrooms, Industrial Labs)	Updated Assessment from fall 2014	$ 5,751,517

Current Replacement Values

The CRV per building are as follows:

Building SA (Power house)	8,300 S.F.	x	800 / S.F.=	$6,640,000
Building SB (Classrooms, Labs, offices)	28,600 S.F.	x	276 / S.F.=	$7,893,600
Building SC (Classrooms)	50,660 S.F.	x	230/ S.F. =	$11,651,800
Building SD (Classrooms, Offices)	32,760 S.F.	x	230 / S.F. =	$7,534,800
Building SE (Classrooms)	26,130 S.F.	x	230 / S.F. =	$6,009,900
Building SF (Classrooms)	20,600 S.F.	x	230/ S.F. =	$4,738,000
Building SG (Include former bldg SH (Student Services)	63,680 S.F.	x	243/ S.F.=	$15,474,240
Building SJ (Classrooms, Library, Offices)	83,100 S.F.	x	239/ S.F.=	$19,860,900
Building SK (Student Services, Conference, Dining)	91,360 S.F.	x	247 / S.F. =	$22,565,920
Building SL (Bunert House) (Offices)	3,250 S.F.	x	185 / S.F. =	$601,250
Building SM (Cultural Center)	69,640 S.F.	x	309/ S.F. =	$21,518,760
Building SN (Offices, Graphics Dept.)	12,850 S.F.	x	230/ S.F. =	$2,995,500

Building SP (Athletics)	98,260 S.F.	x	235 / S.F. =	$23,091,100
Building SQ (Power house)	8,750 S.F.	x	600 / S.F. =	$5,250,000
Building SR (Classrooms, Graphics, Arts Labs)	38,610 S.F.	x	262/ S.F. =	$10,115,820
Building SS Classrooms, Conference)	22,900 S.F.	x	234 / S.F. =	$5,358,600
Building ST (Classrooms Industrial Labs)	37,580 S.F.	x	308 / S.F. =	$11,574,640

Facility Condition Indices

The 5 year FCI (DMB ÷ CRV) per building are as follows:

Building SA (Power house)	5,261,162	÷	$6,640,000	=	79.2%
Building SB (Classrooms, Labs, Offices)	172,188	÷	$7,893,600	=	2.2%
Building SC (Classrooms)	0	÷	$11,651,800	=	0%
Building SD (Classrooms, Offices)	4,480,172	÷	$7,534,800	=	59.5%
Building SE (Classrooms)	0	÷	$6,009,900	=	0%
Building SF (Classrooms)	3,037,281	÷	$4,738,000	=	64.9%
Building SG (Include former bldg SH) (Student Services)	0	÷	$15,434,601		0%
Building SJ (Classrooms, Library, Offices)	6,698,797	÷	$19,860,900	=	33.7%
Building SK (Student Services, Conference, Dining)	6,159,704	÷	$22,565,920	=	30%
Building SL (Bunert House) (Offices)	113,775	÷	$601,250	=	18.9%
Building SM (Classrooms, Auto-Labs, Constr Labs)	9,785,954	÷	$21,518,760	=	45.5%
Building SN (Offices, Graphics Dept.)	156,764	÷	$2,955,500	=	5.3%
Builiding SP (Athletics)	6,945,941	÷	23,091,100	=	30%

Building SQ (Power House)	$153,244	÷	5,250,000	=	2.9%
Building SR (Classrooms, Graphics Arts Labs)	$4,978,658	÷	10,115,820	=	49.2%
Building SS (Classrooms, Conference)	$4,214,631	÷	5,358,600	=	78.7%
Building ST (Classrooms, Industrial Labs)	5,751,517	÷	11,574,640	=	49.7%

Location Map p. 2.1

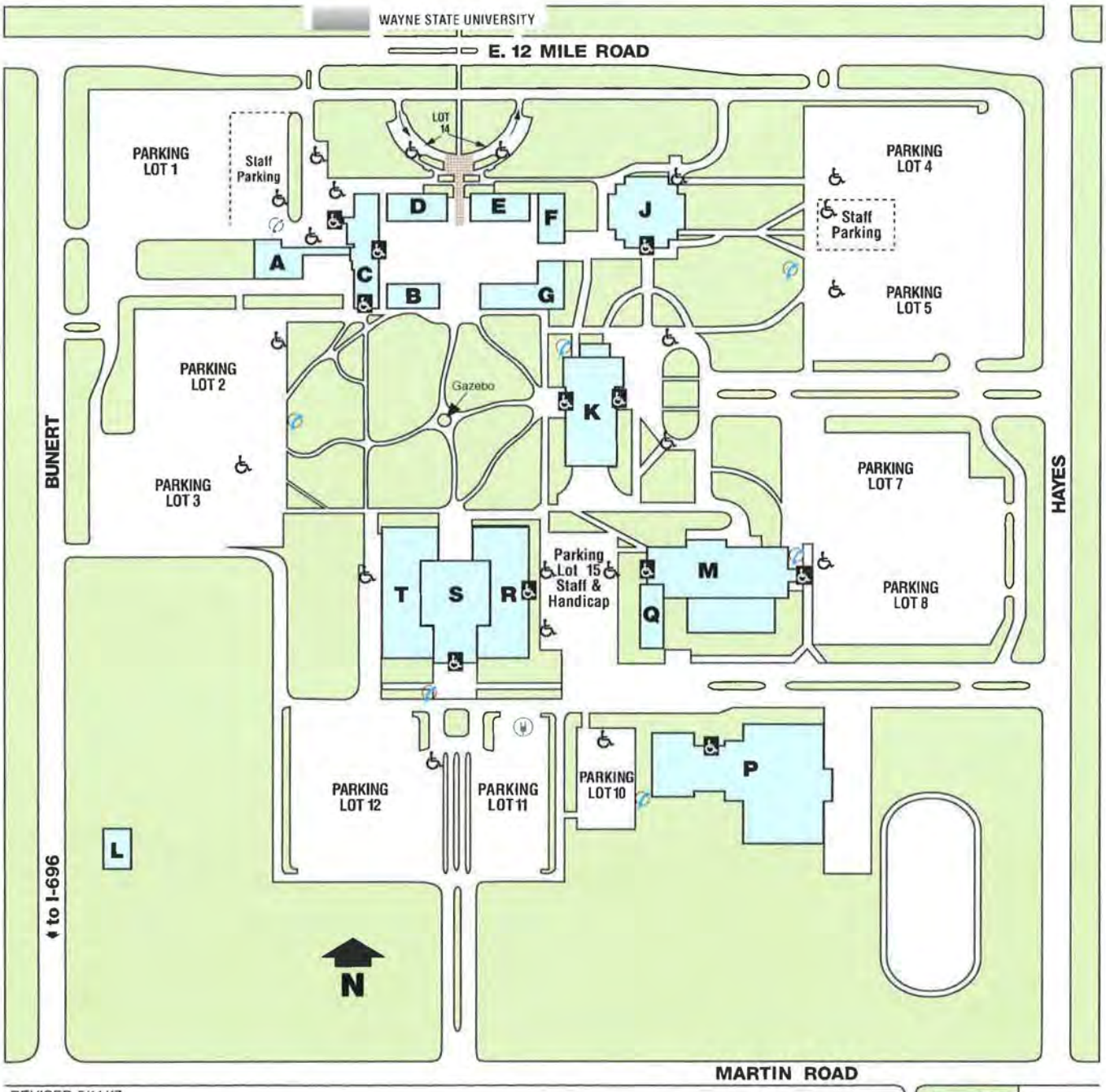
Study Team p. 2.2

Code/Barrier Free Requirements pp. 2.3 – 2.7

Assessment Summaries pp. 2.8 - 2.41

SOUTH CAMPUS

14500 E. 12 Mile Road • Warren, Michigan 48088-3896 • 1.866.Macomb1



REVISED 5/11/17

LEGEND—MAIN BUILDINGS

- **A** Boiler House
- **B** Science Building
- **C** Classroom Building
- **D** Administration Building
- **E** Classroom Building
- **F** Classroom Building
- **G** Classroom, Admissions Counseling, Financial Aid, Career Services Building, Cashier
- **J** Max Thompson Learning Media Center
- **K** John Lewis Student Center College Police Dept. Community Center/Bookstore
- **L** Bunert Conference Center
- **M** Transportation and Energy Technology Building
- **N** College Park Annex
  - Institutional Research
  - Marketing
  - Publications
- **P** Sports & Expo Center
- **Q** Boiler House

Robert E. Turner Complex

- **R** Graphic Technical Building
- **S** Walter E. Bradley Auditorium,
- **T** Mechanical Technical Building

Disabled Parking

Location	Spaces	Location	Spaces
Lot 1A Staff	3	C-Bldg	19
Lot 2	7	J-Bldg	1
Lot 3	4	K-Bldg	11
Lot 4	11	T-Bldg	2
Lot 4 Staff	7	N-Bldg	6
Lot 5	7		
Lot 8	14		
Lot 10	18		
Lot 12	8		
Lot 14	9		
Lot 15 Staff	8		

Blue Light Emergency Phone

Elec.Vehicle Outlet

Disabled Entrances

- **C** East, West & South
- **J** Main
- **K** East & West
- **M** East & West
- **R** East Middle
- **P** North
- **M-TEC** Main

Wireless Available Campus-Wide

INFRASTRUCTURE STUDY TEAM

Administrative Team:

MCC Director of Administrative Services:	William Simonson
H+B Project Manager:	Brian Bagnick

Inspection Team:

Architectural:	William Harvey, H+B
Mechanical:	Greg Hopkins, PBA
Electrical:	Lindsey Stefaniak, PBA

MCC Facilities Team:

Manager of Engineering Services:	Bernard Jacobs
Physical Plant:	Steve Alton
Project Foreman:	Ted Leszkiewicz

Code and Barrier Free Requirements

Building and barrier free codes have changed extensively since many of the buildings on campus were constructed. Attempting to apply today's codes to these buildings is not always practical, but nonetheless, provides a benchmark to evaluate existing conditions. While there is no code mandated requirement to bring an existing building up to current code requirements, any new work would be required to meet current codes.

Renovation work will be governed by the Michigan Rehabilitation Code for Existing Buildings as well as current NFPA life safety requirements. Additionally, renovation work in excess of 50 percent of the building's area will likely require total building code compliance.

Contributing factors that make current code compliance problematic include limitations imposed by existing infrastructure that may prevent or make code compliance extremely difficult, both physically and monetarily. As a result, it may be necessary to consider equivalent code measures or combinations of code systems to achieve a desired life safety improvement or code compliance objective.

In addition to the Michigan Barrier Free Design Code, there are continuing obligations under the Americans with Disabilities Act (ADA) to remove barriers. The ADA is a civil rights act, not a code or standard and therefore, no agency verifies compliance. The Act expects compliance with the intent of the Act, which is to eliminate discrimination of the disabled. Portions of the buildings that are accessible to the public and students fall under the 'public accommodations" classification. These areas are governed by Title III of the ADA that requires the owner to make "readily achievable" changes that are in compliance with the ADA. The barrier free noncompliance issues in this report are based on full compliance to all requirements, although for reasons stated above, removal of all barriers may not be required at this time.

Applicable Codes and Standards

The following codes and standards represent the primary regulations in effect at the time of this report and that would apply to the college. At the time projects are actually implemented, the most current codes and standards that are in effect at the time must be utilized.

Building:	Michigan Department of Energy, Labor and Economic Growth; Bureau of Construction Codes, 2015 Michigan Building Code Incorporating the 2015 Edition of the International Building Code.
	Michigan Department of Energy, Labor and Economic Growth; Bureau of Construction Codes, 2015 Michigan Rehabilitation Code for Existing Buildings incorporating the 2009 Edition of the International Existing Building Code.
	Michigan Department of Energy, Labor and Economic Growth; Bureau of Fire Services, 2012 Edition of the NFPA Life Safety Code.
Barrier Free:	Michigan Department of Energy, Labor and Economic Growth Bureau of Construction Codes, 2015 Michigan Building Code Incorporating the 2015 Edition of the International Building Code.
	Americans with Disabilities Act (ADA), 2010, Accessibility Guidelines for Buildings and Facilities.
	American National Standard, Accessible and Usable Buildings and Facilities, ICC/ANSI A117.1-2010.
Elevator:	Michigan Department of Energy, Labor and Economic Growth, Elevator Safety Division, Elevator Rules, 2005, Incorporating ASME A17.1-2007.
Structural:	Michigan Department of Energy, Labor and Economic Growth; Bureau of Construction Codes, 2015 Michigan Building Code Incorporating the 2015 Edition of the International Building Code.
Mechanical:	Michigan Department of Energy, Labor and Economic Growth; Bureau of Construction Codes, 2015 Michigan Mechanical Code Incorporating the 2015 Edition of the International Mechanical Code.
	ANSI/ASHRAE/IESNA 90.1-2010 Energy Standard for Buildings Except Low-Rise Residential Buildings.
	NFPA 13 – Installation of Sprinkler Systems – 2012 Edition.
Plumbing:	Michigan Department of Energy, Labor and Economic Growth; Bureau of Construction Codes, 2015 Michigan Plumbing Code Incorporating the 2015 Edition of the International Plumbing Code.
Electrical:	Michigan Department of Energy, Labor and Economic Growth; 2009 Michigan Electrical Code Incorporating the 2009 Edition of the National Electrical Code.
	ANSI/ASHRAE/IESNA Standard 90.1-2010 Michigan Energy Code
Fire Alarm:	NFPA 72 – National Fire Alarm Code, 2013 Edition.

Minimum Code Requirements

The following is a general summary of the life safety and barrier free code requirements for all buildings utilizing current applicable codes and standards. The summary is based on the requirements for new construction, only as a benchmark to evaluate existing conditions within each building.

Building Fire and Occupancy Separations

2-hour fire rated separation between different users.

Means of Egress and Fire Ratings

A minimum of two exits from all floors and a maximum common path of egress travel of 75 feet in non sprinklered buildings and 100 feet in fully sprinklered buildings.

Doors shall swing in the direction of egress where serving an occupant load of 50 or more. Doors shall be equipped with panic hardware where serving an occupant load of 50 or more.

Dead end corridors cannot exceed 20 feet in length in non-sprinklered buildings and 50 feet in fully sprinklered buildings.

Maximum total exit access travel distance cannot exceed 200 feet in non-sprinklered buildings and 300 feet in fully sprinklered buildings.

The total width of a level means of egress shall not be less than the total occupant load served multiplied by a factor of 0.2" per occupant, but shall not be less than may be specified elsewhere in the code.

The total width of a means of egress stair shall not be less than the total occupant load served multiplied by a factor of 0.3" per occupant.

Rooms or spaces with an occupant load exceeding 50 or a total square footage greater than 1,000 are required to have two exits or exit access doorways.

Rooms or spaces with an occupant load exceeding 500 require a minimum of three exits.

Stairs and ramps shall have handrails on each side and shall be continuous without interruption.

Guards 42" high shall be provided at all open sided walking surfaces, stairs and ramps higher than 30" above the floor or grade below.

1-hour fire rated corridor walls with 20 minute fire rated doors are typically required in non-sprinklered buildings.

1-hour fire rated stair enclosures with 60 minute B label fire rated doors are typically required where connecting less than 4 floors.

1-hour fire rated elevator shafts and elevator equipment rooms.

Signage is required of the following:

- Tactile "EXIT" sign adjacent to each stairway egress door, exit passageway and exit discharge.
- Elevator floor designation at hoistway.
- Assembly space maximum occupant load. (Spaces with an occupant load exceeding 50.)

Exit Signage

Exits and exit access doors shall be marked with readily visible exit signs.

Viewing distance in and exit access corridor shall not exceed 100 feet.

Emergency Egress Lighting

Lighting along all means of egress to provide not less than an average of 1 footcandle and a minimum of 0.1 footcandle measured along the path of egress at the floor level. Furthermore, a maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

In the event of a power failure, an emergency electrical system shall automatically illuminate the following areas for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator:

- Exit access corridors
- Exit access passageways and aisles in rooms and spaces required to have two or more exits
- Exit stairways

Occupancy Sensors

Michigan Energy Code requires that all buildings over 5,000 square feet be equipped with automatic control devices capable of shutting off light in all spaces without occupant intervention.

Fire Alarm Systems

Manual fire alarm system at Assembly occupancies with an occupant load of 300 or more.

Manual fire alarm system at Business occupancies with a combined occupant load of all floors greater than 500 or an occupant load of more than 100 above or below the lowest level of exit discharge.

Fire Suppression Systems

An automatic sprinkler system at Assembly occupancies with a fire area exceeding 12,000 square feet

Barrier Free Requirements

At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements and accessible spaces that are on the same site. Where more than one means of egress is required, there shall be at least 2 accessible means of egress.

At least 60 percent of all building public entrances shall be accessible.

When a building or portion thereof is required to be accessible, an accessible route shall be provided to each portion of the building, to accessible building entrances connecting accessible pedestrian walkways, and a public way.

Changes in floor level between ¼" minimum to ½" high maximum is to be beveled with a slope no steeper than 1:2.

The minimum width of each door opening shall be sufficient for the occupant load thereof and provide a clear width of at least 32 inches.

Swinging doors must have maneuvering clearances in compliance with ICC/ANSI A117.1.

Door handles, pulls latches, locks and other operating devices on doors required to be accessible must not require tight grasping, tight pinching or twisting of th wrist to operate.

Code compliant signage shall be provided at the following locations:

- Accessible areas of refuge
- Accessible entrances where not all are accessible
- Directional signage at inaccessible entrances
- Unisex toilets
- Accessible toilets where not all are accessible
- Directional signage to accessible toilets at inaccessible toilets

Wall mounted or free standing protruding objects must comply with MBC.

Passenger elevators on an accessible route shall be accessible and comply with applicable provisions of the code.

Plumbing elements and facilities required to be accessible must comply with applicable provisions of the code. At least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing facility must be accessible.

Existing Building Code Application

The legal occupancy of any structure existing on the date of adoption of the code shall be permitted to continue without change unless deemed necessary by the building official for the general safety and welfare of the occupants and the public.

Existing buildings undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the Michigan Rehabilitation Code for existing Buildings.

New work, including renovations and additions to any structure shall conform to the code requirements for new construction. Modifications and repairs shall not cause the existing structure to be in violation of the code. Portions not altered or affected by the modifications need not comply with the current building code.

OVERVIEW

CRV = $6,640,000

Use: Powerhouse

Year Built: 1965

Year Renovated: NA

Gross Area: 8,300 SF

Stories: Two
Date of Assessment: October 2017

Five Year FCI
79.2%

DMB
$5,261,162





FIVE YEAR

ASSESSMENT SUMMARY

Roof:
- PVC duro-last roof was installed in 2007 and expected 25 year life (2032)

Enclosure:
- Windows are single glazed and should be replaced.
- Exterior doors+frames are rusted and should be reparied.

Finishes:
- Ceilings should be replaced to facilitate mechanical upgrades.

HVAC:
- Ventilation and exhaust systems should be added.
- Boilers should be replaced.
- louvers are inefficient.
- Ductwork needs cleaning.

Plumbing:
- Insulation should be repaired.

- Leaks should be repaired

Fire Protection:
- Fire suppression should be added.

- Fire Alarm should be upgraded.

Temperature Controls:
- Controls should be upgraded with new HVAC equipment.

Electrical Distribution:
- Panel boards should be replaced.

Lighting:
- Lighting is outdated and should be replaced with LED.

- Emergency & exit lighting should be upgraded.

Code/Barrier Free:
- There is no toilet room in the garage area.

- A barrier free EWC should be added.

OVERVIEW

CRV = $7,893,600

Use: Classrooms & Labs

Year Built: 1967

Year Renovated: 2017

Gross Area: 28,600 SF

Stories: 3 plus basement

Date of Assessment: October 2017

Five Year FCI 2.2%

DMB $172,188





FIVE YEAR

ASSESSMENT SUMMARY

Roof:

- Tremco roof was replaced in 1998.

Expected 25 year life will require replacement 2023.

Enclosure:

- Windows were replaced summer 2017.
- Insulation was added at perimeter wall.

Finishes:

- All finishes were replaced summer 2017.

HVAC:

- All systems were replaced summer 2017.

Plumbing:

- Piping was replaced summer 2017

Fire Protection:

- Fire Suppression was added summer 2017.

Temperature Controls:

- Controls were replaced with new HVAC equipment.

Electrical Distributions:

- Panelboards were replaced summer 2017; except the existing panel boards on the fourth floor remained.

Lighting:

- All lighting was replaced with LED.

Code/Barrier Free:

- Door hardware was upgraded summer 2017.

- Toilet rooms were upgraded summer 2017.

OVERVIEW

CRV = $ 11,651,800

Use: Classrooms

Year Built: 1965 North/1969 South

Gross Area: 50,660 SF

Stories: 3

Date of Assessment: October 2017

Five Year FCI
0%

DMB
0





FIVE YEAR

ASSESSMENT SUMMARY

Roof:

- New roof was provided over the west expansion in 2015.
- The remaining roof duro-last was installed in 2002 and should be replaced by 2027.

Enclosure:

- Windows were replaced summer 2015.
- Insulation was added at perimeter wall.

Finishes:

- All finishes were replaced in 2015.

HVAC:

- All systems were replaced in 2015.

Plumbing:

- Piping was replaced summer 2015.

Electrical Distribution:

- Panel boards were replaced in 2015; except for three panelboards in the lower level.

Lighting:

- All lighting was replaced LED.

Temperature Controls:

- Temperature controls were replaced with new HVAC.

Code/Barrier Free:

- Door hardware was upgraded summer 2015.
- Toilet rooms were upgraded summer 2015.

OVERVIEW

CRV = $ 7,534,800

Use: Classrooms/offices

Year Built: 1967

Year Renovated: Pres. suite 2015

Gross Area: 32,760 SF

Stories: 2 plus basement

Date of Assessment: October 2017

Five Year
FCI
59.5%

DMB
$4,480,172





FIVE YEAR

ASSESSMENT SUMMARY

Roof:
- Roof should be replaced by 2023.

Finishes:
- Finishes are new in the Pres. Suite.
- Remaining carpet should be replaced.

Enclosure:
- Windows are single glazed.
- Exterior walls are uninsulated

HVAC:
- Mechanical system should be replaced.

Plumbing:
- Galvanized steel piping should be replaced.

Fire protection:
- Building is only partially suppressed.

Temperature Controls:
- Controls should be upgraded with new HVAC.

Electrical Distributions:
- Visual and infra-red inspection should be performed.

Lighting:
- Outdated fluorescent fixtures should be replaced.
- Emergency & exit lights should be replaced.

Code/Barrier Free:
- No exit devices or latches at stairs.
- Stair guardrails and headrails non-compliant.
- Door knobs non-compliant.
- Toilet rooms not full accessible.

OVERVIEW

CRV = $ 6,009,900

Use: Classrooms
Year Built: 1967

Year Renovated: 2014

Gross Area: 26,130 SF

Stories: Two plus basement

Date of Assessment: October 2017

Five Year FCI
0%

DMB
0





FIVE YEAR

ASSESSMENT SUMMARY

Roof:
- Duro-last roof was installed in 2002 and will require replacement by 2027.

Enclosure:
- Windows were replaced summer 2014.
- Insulation was added at perimeter wall.

Finishes:
- All finishes were replaced summer 2014.

HVAC:
- All systems were replaced summer 2014.

BUILDING SE
Assessment Summary

Plumbing:
- Piping was replaced summer 2014.

Fire Protection:
- Fire suppression was added summer 2014.

Temperature Controls:
- Controls were replaced with new HVAC equipment.

Electrical Distribution:
- Panel boards were replaced summer 2014.

Lighting:
- Lighting was replaced summer 2014.

Code/Barrier Free:
- Hardware and toilet rooms were upgraded summer 2014.

OVERVIEW

CRV = $4,738,000

Use: Classrooms

Year Built: 1967

Year Renovated: scheduled for summer 2018

Gross Area: 20,600 SF

Stories: 2 plus basement

Date of Assessment: October 2017

Five Year FCI 64.9%

DMB $3,073,281





FIVE YEAR

ASSESSMENT SUMMARY

Roof:

- Roof was installed in 2000 and should be replaced in 2026.

Enclosure:

- Original single glazed windows should be replaced.
- Concrete foundations for precast columns are deteriorated.

Finishes:

- Vinyl tile should be replaced.
- Elevator should be replaced.
- Ceilings should be replaced for fire suppression.

HVAC:

- Mechanical system should be replaced.

Plumbing:
- Galvanized piping should be replaced.

Fire Protection:
- Fire suppression should be added.

Temperature Controls:
- Controls should be upgraded for new HVAC.

Electrical Distribution:
- Visual and infrared inspections should be performed.

Lighting:
- New LED lighting should be provided.
- Lighting controls should be upgraded.
- Emergency/exit lights should be upgraded.

Code/Barrier Free:
- Guardrails/handrails are non-compliant.
- Toilet fixtures should be upgraded.

OVERVIEW

CRV = $ 15,474,240

Use: Student Sevices

Year Built: 1976

Year Renovated: 2016

Gross Area: 63,680 SF

Stories: 2 plus basement

Date of Assessment:October 2017

Five Year FCI
0%

DMB
0





FIVE YEAR

ASSESSMENT SUMMARY

Roof:
- Firestone EDPM roof was installed in 2016 and should be replaced in 2042.

Finishes:
- All finishes were replaced summer 2016.

HVAC:
- All systems were replaced summer 2016.

Enclosure:
- Windows were replaced summer 2016.
- Insulation was added at perimeter wall.

Plumbing:
- Piping was replaced summer 2016.

Fire Protection:
- Fire suppression was provided summer 2016.

Temperature Controls:
- Temperature controls were replaced with new HVAC.

Electrical Distribution:
- Panel boards were replaced summer 2016.

Lighting:
- Lighting was replaced with LED.

Code/Barrier Free:
- Guard/hand rails were upgraded.

Hardware was upgraded.

Toilet rooms were renovated.

OVERVIEW

CRV = $ 19,860,900

Use: Classrooms, libraries, and offices

Year Built: 1970

Year Renovated:Scheduled for summer 2018.

Gross Area: 83,100 SF

Stories: 3 plus penthouse

Date of Assessment: October 2017

Five Year FCI 33.7%

DMB $6,698,797



FIVE YEAR

ASSESSMENT SUMMARY

Roof:

- John Manville single ply roof was installed in 2010 and should last until 2036.

Finishes:

- Coffered ceilings are outdated.

HVAC:

- Mechanical systems should be replaced.

Enclosure:

- Exterior H.M doors and frames are in poor condition.
- Windows are single glazed.
- Sealant is failing

Plumbing:
- No pipe identification

- Replace galvanizied piping

Fire Protection:
- Extended partial fire suppression

Temperature Controls:
- Upgrade for new HVAC.

Electrical Distribution:
- Visual and infrared inspections should be performed.

Lighting:
- Replace fluorescent lighting with LED.

Code/Barrier Free:
- Stair/guard railings are non-compliant.

- Toilet rooms are non-compliant.

OVERVIEW

CRV = $ 22,565,920

Use: Student Services and Conference, Dining

Year Built: 1971/1976

Year Renovated: Public safety 2014/Dining 2012

Gross Area: 91,360 SF

Stories: 2 plus basement

Five Year FCI 27.3%

DMB $6,159,704





FIVE YEAR

Date of Assessment: October 2017

ASSESSMENT SUMMARY

Roof:

- John Manville single ply roof was replaced in 2010 and should be replaced by 2036.

Enclosure:

- 1971 Building is single glazed.
- Receiving dock needs repair.

Finishes:

- Cracked terrazzo flooring can be covered with rubber tile.
- Carpet should be replaced.
- Wood doors are in poor condition.

HVAC:

- Outside Air is inadequate.
- Ductwork needs cleaning.

BUILDING SK
Assessment Summary

Plumbing:
- No comments

Fire Protection:
- Piping should be painted where exposed.

Temperature Controls:
- Relocate sensors

Electrical Distribution:
- Provide visual and infra-red inspection.

Lighting:
- Replace fluorescent lighting with LED.

Code/Barrier Free:
- Door hardware is non-compliant
- Toilet stalls are non-compliant.
- Room ID signs are non-compliant.

OVERVIEW

CRV = $ 601,250

Use: Offices

Year Built: 1950

Year Renovated: NA

Gross Area: 3,250 SF

Stories: 2 plus basement

Date of Assessment: October 2017

Five Year FCI 18.9%

DMB $113,775



ASSESSMENT SUMMARY

Roof:
- Shingles are in servicable condition.

Enclosure:
- Brick veneer is in good condition.
- Siding/trim need repair/paint.

Finishes:
- Resilient tile in basement is in poor condition.
- Carpet should be replaced.

HVAC:
- Furnace is beyond its expected life.

FIVE YEAR

BUILDING SL (Bunert House) Assessment Summary

Plumbing:
- Shower drain needs repair

Fire Protection:
- There is no fire suppression

Temperature Controls:
- Rework with new furnance.

Electrical Distribution:
- Visual and infa-red inspection should be performed.

Lighting:
- Fluorsecent lights should be replaced with LED.

Code/Barrier Free:
- Building entrances are not accessible.

OVERVIEW

CRV = $ 21,518,760

Use: Industrial and Automotive Labs and Classrooms

Year Built: 1982

Gross Area: 69,640 SF

Stories: Two

Five Year FCI 45.5%

DMB $9,785,954



FIVE YEAR

Date of Assessment: October 2017

ASSESSMENT SUMMARY

Roof:

•The PVC single ply roof was replaced in 2006 but in its current condition it will require a lot of maintenance.
•The sloped metal roofing is deteriorated and should be replaced.
•Gravel stops should be re-secured or replaced.

Enclosure:

•The sloped glazing system has numerous broken lites and leaks throughout.It should be replaced with consideration given to a sloped metal roof system.
•The natural ventilation louver system is damaged, rusted, and does not work.Consideration should be given to remove and replace it with traditional ventilation systems.
•The Clerestory window ventilation system does not function and should be replaced with new Clerestory windows.
•The sloped block landscape walls should be repaired or replaced with a product(s) more suitable to sloping.
•The masonry veneer on the automotive vehicle screen wall should be cleaned, tuck pointed and a coping should be added.
•The water proofing at the wall partially below grade should be replaced.
•The abandoned underground storage tanks should be removed.

Finishes:

•The floor tile on the lower level corridor is failing and should be replaced.
•The trench drain in automotive service area is collapsing and should be replaced.
•Interior walls will need to be repaired after leaks are repaired.

HVAC:

•HVAC and duct systems are at or beyond their expected life, and should be replaced. In general the central air handling units and H&V are in poor condition. The roof mount H&V unites serving the auto shop area are in extremely poor condtion.
•The outside air quantities required for proper ventilation of the space do not meet current code requirements.
•The dust collector serving the Fabrication shop is in poor condition.
•The vehicle exhaust system components, including the connection points, hoses, fans, etc. are in poor condition.
•The builidng is fed from the central steam and chilled water distribution system.
•There is damaged and missing insulation on the chilled water and hot water heating piping.

•The originally designedsolar heating system has since been abandoned. Most of the equipment and piping has been removed and any interconnection betweent the solar hot water system and the building heating system have been cut and capped. There is a 12,000 gal- which should be removed.
•There is significant signs of leaking piping and corrosion from condensation of the chilled water piping.
•The perimeter and tempering coil central heating sytem including the heat exchangers, pump,controls, etc. are all in poor condition and should be replaced.

Plumbing:

•The east entrance of the building floods during heavy rains because the area drain located in the area is connected to a catch basin in the adjacent parking lot that is at a higher elevation. Whenever there is heavy rain the rain water from the parking lot fills the manhole which overflow out of the area drain by the building entrance.
•Plumbing fixtures are from the original 1980 construction and consume latge amounts of water are not accesible and should be replaced.
•The circular hand washing sinks in the classrooms have exceeded their useful life an dare no longer repairable. Spare parts to replace the broken mechanisms are no longer available.
•The domestic hot water system was renovated. The existing steam-to-water heat exchanger was taken out of service and abandoned. The system is now served by two electric storage type water heaters. The water heaters appear to be in good condition.
•The trench drain trough and grade are in extremely poor condition. The trench does not drain properly and the grated cover failing.
•Provide oil and sand separator to serve the drainage from the automotive service area.

Fire Protection:

The existing building is fully sprinkled.

Temperature Controls:

•The existing control system is comprised of an older MCMI Andover i2920 Series DDC system with pneumatic valve and damper actutors. The system has exceed its useful life expectancy and should be repalced.
•The space temperature sensors are not installed to meet current accessibility requirements.
•The pneumatic control system is no good anymore wiht many leaks in the system. Most of the central and secondary equipment is operated manually and druns continuously unless turned off manually.

Electrical Distribution:

•Perform infrared and visual inspection.
•Fed from campus 13.2 KV distribution.
•A 1500 KVA unit substation is located in th adjacent SQ building (Boiler Room).
•The main building 480 to 208V transformer is installed in a small closet with inadequate clearances.
•Main 480V motor control center in the mechanical room has significant rust damage and should be replaced.
•There is a large water line directly above the MCC.
•The Main distribution panel is a fuse/switch panel. There are early signs of corrosion at the bottom of the panel.

Lighting:

•Emergency lighting is no adequate, fluorescent lamps (T-12) are outdated, and there are no lighting controls.
•All should be replaced.
•All exterior lighting should be replaced.
•Lighting systems utilize T-12 fluorsecent lamps, with some exceptions.
•Classroom lighting, in general, is in poor condition.
•Corridor lighting is controlled by relays. There are no automatic controls in classroom.

Code/Barrier Free:

•Stair handrails and upper level quadrails do not comply with graspability and spacing requirements.
•Accessible stalls in toilet rooms will need to be modified to current requirements.

OVERVIEW

CRV = $ 2,955,500

Use: Offices

Year Built: 1986

Year Renovated: 2012

Gross Area: 12,850 SF

Stories: 1

Date of Assessment: October 2017

Five Year FCI
5.3%

DMB
156,764





FIVE YEAR

ASSESSMENT SUMMARY

Roof:
•PVC roof was replaced in 2002 and should last till 2028.

Finishes:
•Updated in 2012.

Enclosure:
•Exterior is in good condition

HVAC:
•Updated in 2012.

Plumbing:
•Upgraded in 2012.

Fire Protection:
•There is no fire suppression system.

Temperature Controls:
•Upgraded in 2012.

Electrical Distribution:
•System is in good condition

Lighting:
•Fluorescent lighting should be replaced with LED.

Code/Barrier Free:
•Upgraded in 2012.

OVERVIEW

CRV = $ 123,091,100

Use: Athletics
Physical Education

Year Built: 1975

Year Renovated: NA

Gross Area: 98,260 SF

Stories: 1
Date of Assessment: October 2017

Five Year
FCI
30%

DMB
$6,945,941





FIVE YEAR

ASSESSMENT SUMMARY

Roof:
•PVC roof was installed in 1998 and will not require replacement until 2024..

Enclosure:
•North elevation is single glazed.

•Exterior canopy needs painting.

Finishes:
•Ceilings should be reworked for fire suppression.

•Carpet tile should be replaced.

•Athletic sports floor should be replaced.

HVAC:
•Ventilate mech/elec/stor rooms.

•Provide outside air per MMC.

BUILDING SP Assessment Summary

Plumbing:
•Replace condensate pump.

•Provide backflow at concessions.

•Provide pipe identification.

Fire Protection:
•Extend partial system throughout building.

Temperature Controls:
•Relocate temperature sensors to 48" A.F.F

Electrical Distribution:
•Perform infrared and visual inspection.

Lighting:
•Replace fluorescent lights with LED.

•Replace controls.

•Add emergency/exit lights.

Code/Barrier Free:
•Replace door knobs with levers.

•Electrical room doors do not swing in direction of egress.

OVERVIEW

CRV = $ 5,250,000

Use: Powerhouse

Year Built: 1967

Year Renovated: NA

Gross Area: 8,750 SF

Stories: 1

Date of Assessment:October 2017

Five Year FCI
2.9%

DMB
$153,244



FIVE YEAR

ASSESSMENT SUMMARY

Roof:
•PVC roof was installed in 2002 and will not require replacement until 2028.

Enclosure:
•Water leaks are evident on west wall below grade.

Finishes:
•Hollow metal door frames are rusted.

HVAC:
•Provide unit heaters.

•Ventilate electrical room.

Plumbing:
•Repair pipe leaks.

•Repair pipe insulation.

•Provide pipe identification.

Fire Protection:
•There is no fire suppression in the building.

Temperature Controls:
•Provide with unit heaters.

Electrical Distribution:
•Perform infrared and visual observation.

Lighting:
•Replace fluorescent with LED.
•Provide automatic controls.

Code/Barrier Free:
•Not applicable

OVERVIEW

CRV = $ 10.115.820

Use: Main Floor-Classroom/Lab
Penthouse-Mechanical

Year Built: 1968

Gross Area: 38,610 SF
(excludes Penthouse)

Stories: One plus penthouse

Date of Assessment: October 2017

Five Year
FCI
49.2%

DMB
$4,978,658





FIVE YEAR

ASSESSMENT SUMMARY

Roof:

•The modified bitumen roof has been well maintained.
However, it was installed in 1991 and is near the end of its expected life.
The metal mansard roofing should be refinished.

Enclosure:

•Numerous cracks in plaster soffit & fascia should be repaired.
•Single glazed aluminum windows shoud be replaced, including damanged spandrel panels below windows.
•Original doors and frames should be replaced.

Finishes:

•The terrazo flooring has numerous cracks, and will need to be resurfaced; or covered with rubber tile.
•Ceilings will need to be replaced to accommodate mechanical, electrical and fire suppression upgrades.
•Vinyl and carpet tile are damaged and worn in many areas, and will need to be replaced.

HVAC:

•HVAC and duct systems are at or beyond their expected life, and should be replaced.
•Outside air quantities required for proper ventilation of the space do not meet current code requirements.
•The building is fed from the central steam and chilled water distribution system.
•The steam condensate return unit in the tunnel is in poor condition and needs to be replaced.
•One of the two existing air handling units serving the building was replaced with a custom air handling unit and is in good condition. The controls are DDC with pneumatic operators. The other air handling unit is original to the building and is over 40 years old and shows significant signs of deterioration.
•There is damaged and missing insulation on the chilled water and hot water heating piping.
•The perimeter and tempering coil central hearing system including heat exchangers, pumps, controls, etc are all in poor condition and should be replaced.
A portion of the S building addition is fed from the central HVAC system in R building.

Plumbing:

•It is believed that a portion of the domestic cold water piping is galvanized steel and due to the age of the building could have significant build-up of calcium restricting flow and volume.
•Plumbing fixtures appear to be from the original 1968 construction and consume large amounts of water and should be replaced.
•Domestic steam-to-water exchanger is in poor conditon and should be replaced.

Fire Protection:

•The exisiting building is not sprinkled, the addition of an automatic fire suppression system should be considered.

Temperature Controls:

•The existing controls system is comprised of an older MCMI Andover SCX 920 Series DDC system with pneumatic valve and damper actuators. The system has exceeded its useful life expectancy and should be replaced.
•The space temperature sensors are not installed to meet current accessibility requirements.

Electrical Distribution:

•Perform infrared and visual inspection.
•Panel boards, motor controls and panels are obsolete. Parts are not available and these should be replaced.
•Fed from campus 13.2KV distribution.
•There is a 208V substation and a 480V substation located off the tunnel system connecting the builidings.
•Primary switches and low voltage distribution are original, exceeding 50 years old and beyond servicable life.
•The main transformers are dry type, 150 deg C rise and are likely not original. The age is not clear, but can be safe to assume that the original oil filled transformers were replaced in the early 80s due to PCB. 40 year old dry type transformer should be replaced in any significant renovation.
•Distribution switchboards are molded case circuit breaker type.
•Due to the age of the equipment, reliable operation is questionable.
•Fault current interupting ratings are not marked on any of the equipment.
•The 208V switchboard has begun to rust at the bottom.
•Distribution panels in the mechanical penthouse are ITE fusible switch type. There is less concern with reliable operation of aged fusible switch equipment than molded case circuit breakers, however mechanical switching mechanisms tend to fail with age, original replacement parts are not available.
•Panel boards serving lighting and branch circuits are recessed in corridor walls and are not in dedicated electrical rooms.
•All distribution equipment is recommended to be replaced.

Lighting:

•Emergency lighting is not adequate, fluorescent lamps (T-12) are outdated and there are no lighting controls. All should be replaced.
•All exterior lighting should be replaced.
•Lighting systems utilize T-12 flourescent lamps, with some exceptions.
•There are no automatic controls.
•Corridors, in general appear to be over lit to todays standards.
•Emergency lighting is fed from a tap ahead of the main and is no longer considered a reliable emergency source.

Code/Barrier Free:

•Toilet rooms do not have adequate barrier free clearance.
•Lavatories require pipe protection and mixing valves.
•The number of toilet facilities for women does not meet plumbing code required numbers.

OVERVIEW

CRV = $ 5,358,600

Use: Main Floor-Classrooms
Penthouse-Mechanical

Year Built: Original-1968
Addition-1988

Gross Area: 22,900 SF
(excl. Penthouse)

Stories: One, plus Penthouse

Five Year
FCI
89.6%

DMB
$4,801,363



FIVE
YEAR

Date of Assessment: October 2017

ASSESSMENT SUMMARY

Roof:

•The north portion has a modified bitumen roof. Although it has been well maintained, it was installed in 1991 and is near the end of its expected life.

•The south portion has a single ply reinforced PVC roof. Although it was installed in 2003, it will require maintenance and repairs in order to achieve its expected life.

•The metal mansard roofing should be refinished.

Enclosure:

•Numerous cracks in plaster soffit & fascia should be repaired.
•Pavements and curbing in the courtyard should be replaced.
•Single glazed aluminum windows should be replaced, including damaged spandrel panels below windows.
•Original doors and frames should be replaced.

Finishes:

•The terrazo flooring has numerous cracks, and will need to be resurfaced; or covered with rubber tile.
•Ceilings will need to be replaced to accommodate mechanical, electrical and fire suppression upgrades.
•Vinyl and carpet tile are damaged and worn in many areas, and will need to be replaced.

HVAC:

•HVAC and duct systems are at or beyond their expected life, and should be replaced.
•Outside air quantities required for proper ventilation of the space do not meet current code requirements.
•The original existing S building is served by an indoor air handling unit located in a penthouse enclosure.The unit, ductwork, piping controls, etc. are all in poor condition.
•The addition constructed in 1987 is partially an extension of the HVAC systems including air and water serving buildings T and R.
•A small portion of the 1987 addition is served by a packaged variable air volume air conditioning unit that is in poor condition.
•There is damaged and missing insulation on the chilled and water and hot water heating piping.
•The perimeter and tempering coil central heating system serving the original S building including the heat exchangers, pumps, controls, etc. which is part of the R and T building are all in poor condtion and should be replaced. Some of the pumps have been partially disassembled.

Plumbing:

•The plumbing is an extension of the T and R buildings. It is believed that a portion of the doestic cold water piping is galvanized steel and due to the age of the building could have significant build-up of calcium restricting flow and volume.
•Plumbing fixtures in the original S building appear to be from the orginal 1968 construction and consume large amounts of water and should be replaced.
•Domestic steam-to-water heater serving the original S building is in poor condition and should be replaced.

Fire Protection:

•The existing bulding is not sprinkled, the addition of an automatic fire suppression system should be considered.

Temperature Controls:

•The existng controls system is copromised of an older MCMI Andover SCX 920 Series DDC system with pneumatic valce and damper actuators. The system has exceeded its useful life expectancy and should be replaced.
•The space temperature sensors are not installed to meet current accessibility requirements.

Electrical Distribution:

•Perform infrared and visual inspection.
•Panel boards, transformer, and panels are obsolete; and should be replaced.
•Fed from a 480V feeder from the ST substation.
•480V distribution is located in the penthous.
•A 480V-208V 112.5KVA dry type transformer serves plug load. Distribution panels in the mechanical penthouse are ITE fusible switch type. There is less concern with reliable operation of aged fusible switch equipment than molded case curcuit breakers, however, mechanical switching mechanisms tend to fail with age, original replacement parts are not available.
•Panel boards serving lighting and branch curcuits are recessed in corridor walls and are not dedicated electrical rooms.
•All distribution equipment is recommended to be replaced.

Lighting:

•Emergency lighting is not adequate, fluorescent lamps (T-12) are outdated, and there are no lighting controls.
•All should be replaced.
•All exterior lighting should be replaced.
•A variety of different lighting systems are employed in this building.
•There are no automatic controls.
•Generally, lighting is dated and there is an opportunity for more efficient lighting systems.
•Emergency lighting is fed from a tap ahead of the main and is no longer considered a reliable energy source.

Code/Barrier Free:

•Toilet rooms do not have adequate barrier free clearance.
•Lavatories require pipe protection and mixing valves.
•The number of toilet faciliteis for women doe not meet plumbing code required numbers.
•Post occupancy load at auditorium/lecture hall.
•Provide accessible audio system in auditorium/lecture hall.
•There are a few locations where doors have round knobs in lieu of levers, and should be replaced.

OVERVIEW

CRV = $ 11.574.640

Use: Industrial Lab/Classroom

Year Built: 1968

Gross Area: 37,580 SF
(excl. Penthouse
Stories: One plus Penthouse

Data of Assessment:October 2017

Five Year
FCI
49.7%

DMB
$5,751,517



FIVE YEAR

ASSESSMENT SUMMARY

Roof:

•The modified bitumen roof has been well maintained. However, it was installed in 1991 and is near the end of its expected life.
•The metal mansard roofing should be refinished.

Enclosure:

•Numerous cracks in plaster soffit & fascia should be repaired.
Single glazed aluminum windows should be replaced, including damaged spandrel panels below windows.
•Original doors and frames should be replaced.

Finishes:

•The terrazo flooring has numerous cracks, and will need to be resurfaced; or covered with rubber tile.
•Ceilings will need to be replaced to accommodate mechanical, electrical and fire suppression upgrades.
•Vinyl and carpet tile are damaged and worn in many areas, and will need to be replaced.

HVAC:

•HVAC and duct systems are at or beyond their expected life, and should be replaced.
•Outside air quantities required for proper ventilation of the space do not meet current code requirements.
•The building is fed from the central steam and chilled water distribution.
•The steam condensate return unit in the tunnel is in poor condition and needs to be replaced.
•There is damaged and missing insulation on the chiled water and hot water heating piping.
•The perimeter and tempering coil central heating system including heat exchangers, pumps,controls, etc. are all in poor condition and all should be be replaced.
•There are several independent split system air conditioning units serving various areas of the building with roof mounted air cooler condensing units. The units appear to be newer and are in good condition
•A portion of the S building addition is fed fromt eh central HVAC system in the T building.
•The welding lab was renovated in 2006 and a roof mounted welding exhaust/energy recovery unit ventilation system was added. It has been identified through a seperate study that when the students are ARC or MIG and need to be replaced. The study identified that the long term solution is to provide a parallel exhaust fan to be operated when the ARC or MIG welding is going on and only utilize the ERU exhaust fan during the remainder of the time.

•To make-up air units should be replaced to provide tempered air to the space when the exhaust is running through the ARC/MIG welding operation parallel fan.

Plumbing:

•It is believed that a portion of the domestic cold water piping is galvanized steel and due to the age of the building could have significant build-up of clacium restricting flow and volume.
•Plumbing fixtures appear to be fro the original 1968 construction and consume large amounts of water and should be replaced.
•Domestic stream-to-water exchanger is in poor condition and should be replaced.

Fire Protection:

•The existing buildingis partially sprinkled, the automatic fire suppression system should be extended to serve the remaining portions of the building.

Temperature Controls:

•The existing controls system is comprised of and MCMI Andover DDC system that was renovated in 2006. The system has pneumatic valve and damper ectuators. Portions of the existing system has exceeded its useful life expectancy and should be replaced.
•The space temperature sensors are not installed to meet current accessibility requirements.

Electrical Distribution:

•Perform infrared and visual inspection.
•Panel boards, motor controls and panels are obsolete. Parts are not available and these should be replaced.
•Fed from campus 13.2KV distribution.
•There is a 208V substation and a 480V substation located off the tunnel sytem connecting the buildings.
Primary switches and low voltage distribution are original, exceeding 50 years old and beyone serviceable life.
•The main transformers are dry type, 150 deg C rise and are likely not original. The age is not clear, but it can be safe to assume that the original oil filled transformers were replaced in the early 80's due to PCB. 40 year old dry type transformer should be replaced in any significant renovation.
•Distribution switchboards are molded case circuit breaker type. Due to the age of the equipment reliable operation is questionable.
•Fault is current interrupting ratings are not marked on any of the equipment.
•The 208V switchboard has begun to rust at the bottom.
•Distribution panels in the mechanical penthouse are ITE fusible switch type. There is les concern with reliable operation of aged fusible switch equipment than molded case curcuit breakers, however mechanical switching mechanisms tend to fail with age, original replacement parts are not available.
•Panel boards serving lighting and branch circuits are recessed in corridor walls and are not in dedicated elevtrical rooms.
•All distribution equipment is recommended to be replaced.

Lighting:

•Emergency lighting is not adequate, fluorescent lamps (T-12) are outdated, and there are no lighting controls.
All should be replaced.
•All exterior lighting should be replaced.
Lighting systems utilize T-12 flourescent lamps, with some exceptions.
•There are no automatic controls.
•Corridors, in general, appear to be over lit to todays standards.
•Emergency lighting is fed from a tap ahead of the main and is no longer considered a reliable emergency.

Code/Barrier Free:

•Toilet rooms do not have adequate barrier free clearance.
•Lavatories require pipe protection and mixing valves.
•The number of toulet faciliteis for women does not meet plumbingcode required numbers.

Building Data Sheets pp. 3.1-3.138

Building: SA
Gross Area:8,300 S.F.
Year Built: 1965
No. of Floors: 2
Evaluation Date: October 2017

Use Types:
75% Classroom
10% Lab
15% Offices

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy: 25 yrs (Duro-Last)

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Windows	South Elev	Replace with aluminum & insul. glass	12 EA	610	$7320	$10614
Door/Frames	South Elev	Replace rusted doors & frames	2	21400	$42800	$52216
Sealant	South Elev	Replace sealant joints	150 LF	7.90	$1185	$1718
Concrete Wall	Loading ock	Repair concrete	40 SF	61	$2440	$3538
OH Doors	East Elev	Patch and Paint	3	530	$1590	$2306

Finish System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Ceiling Tile	Offices	Replace to facilitate Fire Suppression	300 SF	4.58	$1374	$1992
Gyp. Ceilings	Toilet Rooms	Replace to facilitate Fire Suppression	600 SF	6.50	$3900	$5655

Fixed Equipment

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

MECHANICAL

HVAC System Age: 52 yrs Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Transfer Air	Corr/Lockers Paint shop	Fill transfer op'g in wall	2	250	$500	$725
Gar. Vent	Garage	Provide heating & Ventilating unit	1	54500	$54500	$79025
Ventilation	Rooms 102-111	Provide New RTU/Ventilating Unit	1	75260	$75260	$109127
CO Exhaust	Garage	Replace exist. system	1	17490	$17490	$25361
Ventilation	Stor. Room	Provide ventilation for rooms 200-202	1	53265	$53265	$77234
Ductwork	Entire Bldg	Clean exist. ductwork	1	21200	$21200	$30740
Absorbers	Rm SA 100	Replace absorbers	3	6519	$19557	$28358
Chiller	Rm SA 100	New 1000 Ton Chiller	1	1455380	$1455380	$2110301
Pumps	Rm SA 100	Condensor and chilled water pumps	6	34980	$209880	$304326
CO Exhaust	Garage South	Add Vehicle Exhaust	1	12455	$12455	$18060
Condensate Tank	SA 100	Condensate return tank leaks	1	76108	$76108	$110357
Boilers	SA 100	New energy efficient boilers	1	1166000	$1166000	$1690700
Louvers	SA 100	Dampers for combustion air louvers	1	13992	$13992	$20288

Plumbing System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Pipe ID	throughout	Add pipe identification	300	2.70	$810	$1,175
Pipe Insulation	throughout	Replace damaged pipe insulation	1	10000	$10,000	$14,500
Gas Piping	throughout	Paint gas piping yellow	1	3180	$3,180	$4,611
Pipe Leaks	throughout	Repair pipe leaks throughout	1	10000	$10,000	$14,500

Fire Protection

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Auto Suppression	throughout	Add F.S throughout Building	8300SF	5.50/SF	$45,650	$66,193
Fire Alarm	throughout	Replace fire alarm system	8300 SF	1.96	$16,268	$23,589

Temperature Controls

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

ELECTRICAL

Primary Power System Age: 7 years

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Primary switch line-up (outdoor) incoming DTE and campus feeders are in good condition. Primary switch and transformer serving building are in good condition.				
		Perform routine maintenance testing on switch and transformer				
			LS	$5,000	$5,000	$7,250

Secondary Power System Age: 50+/-

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
MCC	Boiler Room	Replace 12 section Motor Control Station	1	203520	$203,520	$295104

Distribution System Age: 40+yrs

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Panel Boards	throughout	Replace outdated panel boards	3	4028	$12,084	$17522
GFCI	Toilet Rooms	Provide GRCI receptacles in toilets	4	360	$1,440	$2088

Lighting System Age: 43 yrs Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	throughout	Replace lighting throughout w/ LED	8300	$ 5.50	$45,650	$66,193
Controls	throughout	Add lighting control system	8300	$ 1.50	$12,450	$18,053
Emergency Lighting	throughout	(Included above)				

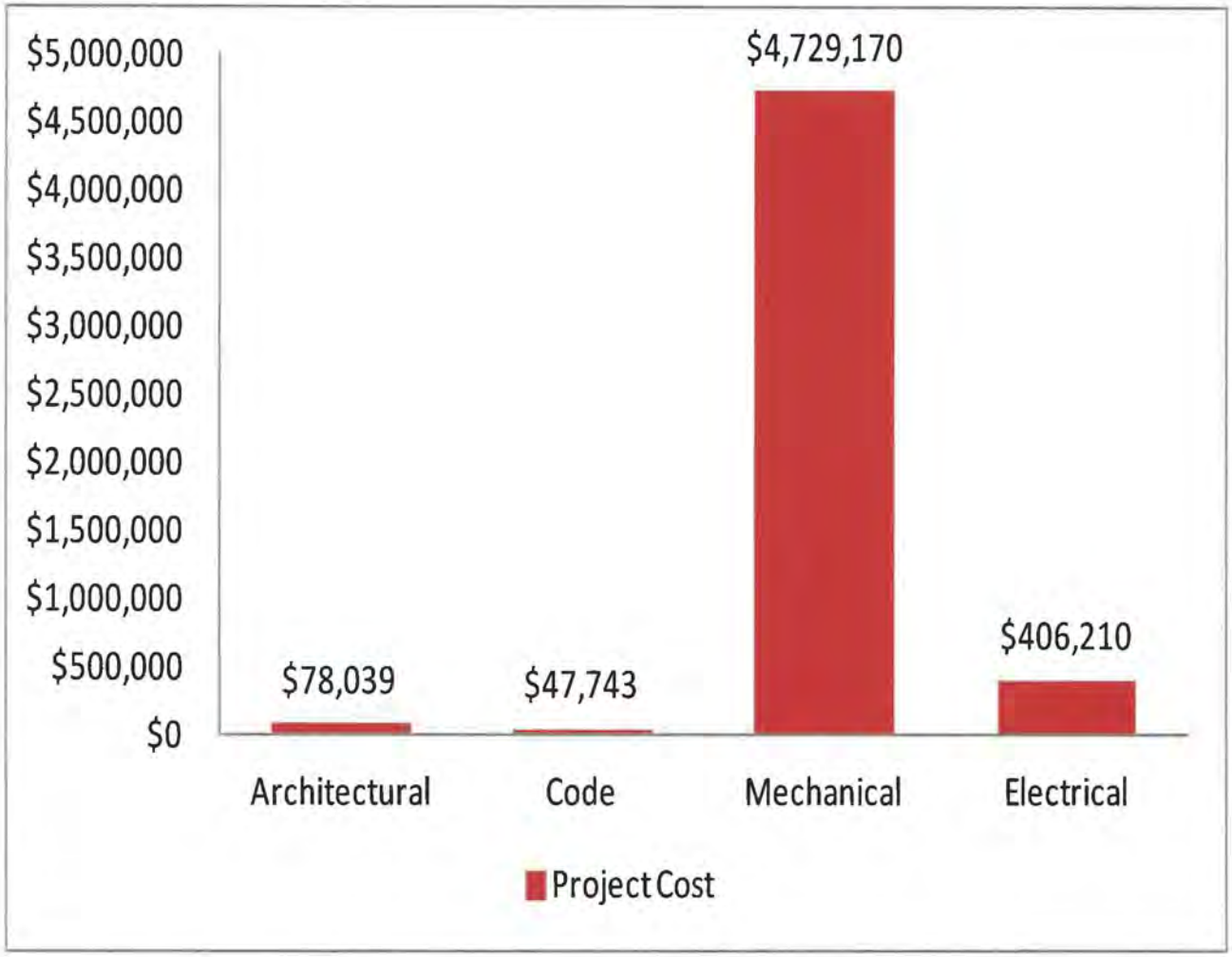
CODE AND BARRIER FREE

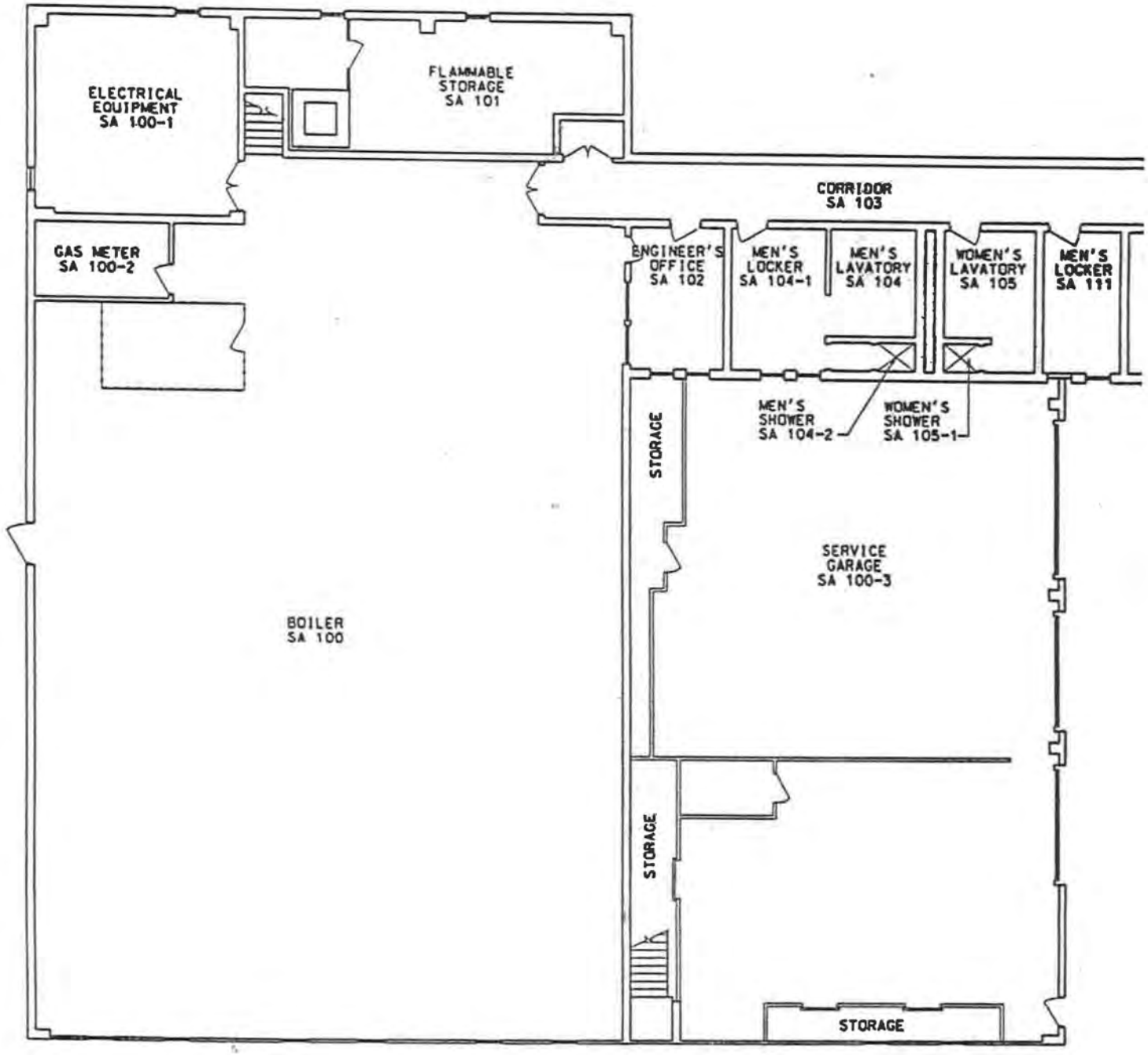
Code System

Item	Location	Comments	Quanti-ty/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Toilets	Garage	Add toilet room for service garage	1	28,726	$28,726	$41,653

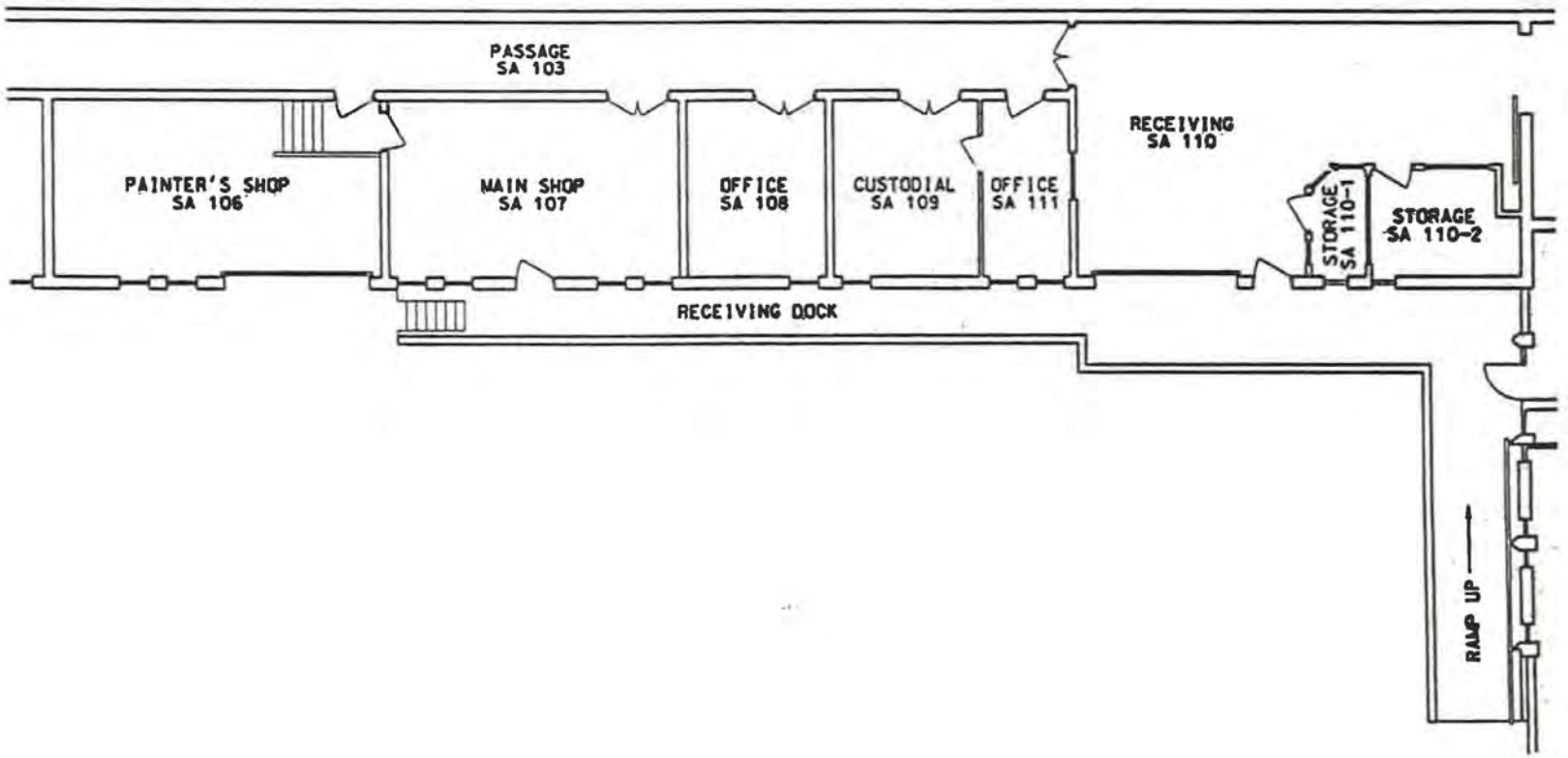
Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
EWC	SA 100	Add barrier free electric water cooler	1	4,200	$4,200	$6,090


$5,000,000
$4,500,000
$4,000,000
$3,500,000
$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$78,039
$47,743
$4,729,170
$406,210
Architectural
Code
Mechanical
Electrical
Project Cost

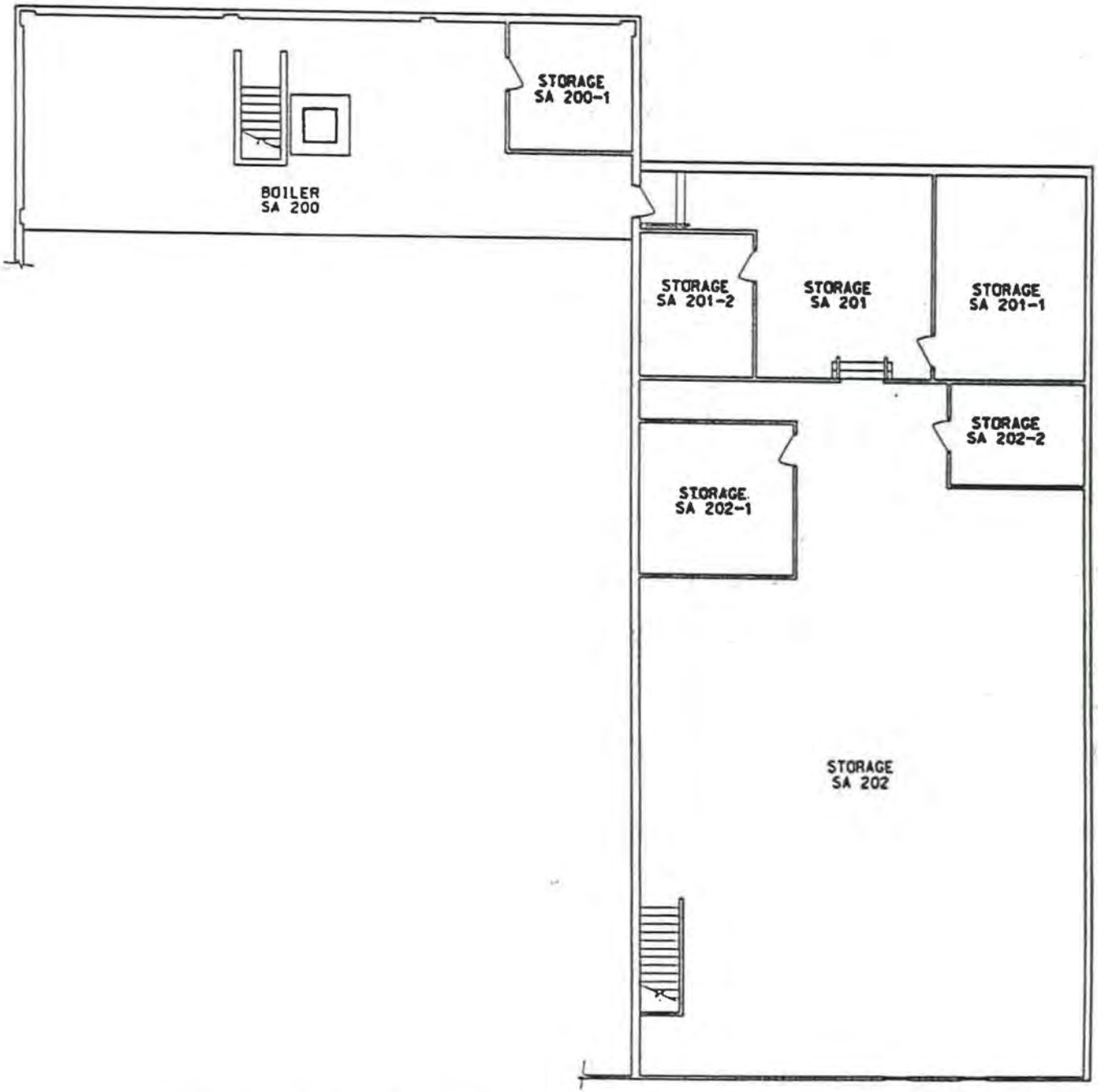


BUILDING "SA" MAIN FLOOR



BUILDING "SA" PASSAGE

NORTH



BUILDING "SA" SECOND FLOOR

Building: SB
Gross Area: 28,600 S.F.
Year Built: 1967
No. of Floors: 3 plus basement
Evaluation Date: October 2017

Use Types:
Classrooms

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: 19 yrs. Life Expectancy: 25 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Membrane	roof	roof is servicable but near the end of its life	9500 SF	12.50	$118,750	$172,188

Enclosure System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Upgraded Summer 2017				

Finish System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Upgraded Summer 2017				

MECHANICAL

HVAC System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2017				

Plumbing System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2017				

Fire Protection

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2017				

Temperature Controls Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgrades Summer 2017				

ELECTRICAL

Primary Power System Age: 50 yrs

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Existing primary switch remains. Maintenance and infra-red testing should be performed every 5 years.				

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New distribution panels and panel boards were installed in 2017; except for the panel boards located on the fourth floor.				

Distribution System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New wiring devices were installed summer 2017; except fourth floor lab spaces.				

Lighting System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New LED light fixtures and lighting controls were installed in 2017.				

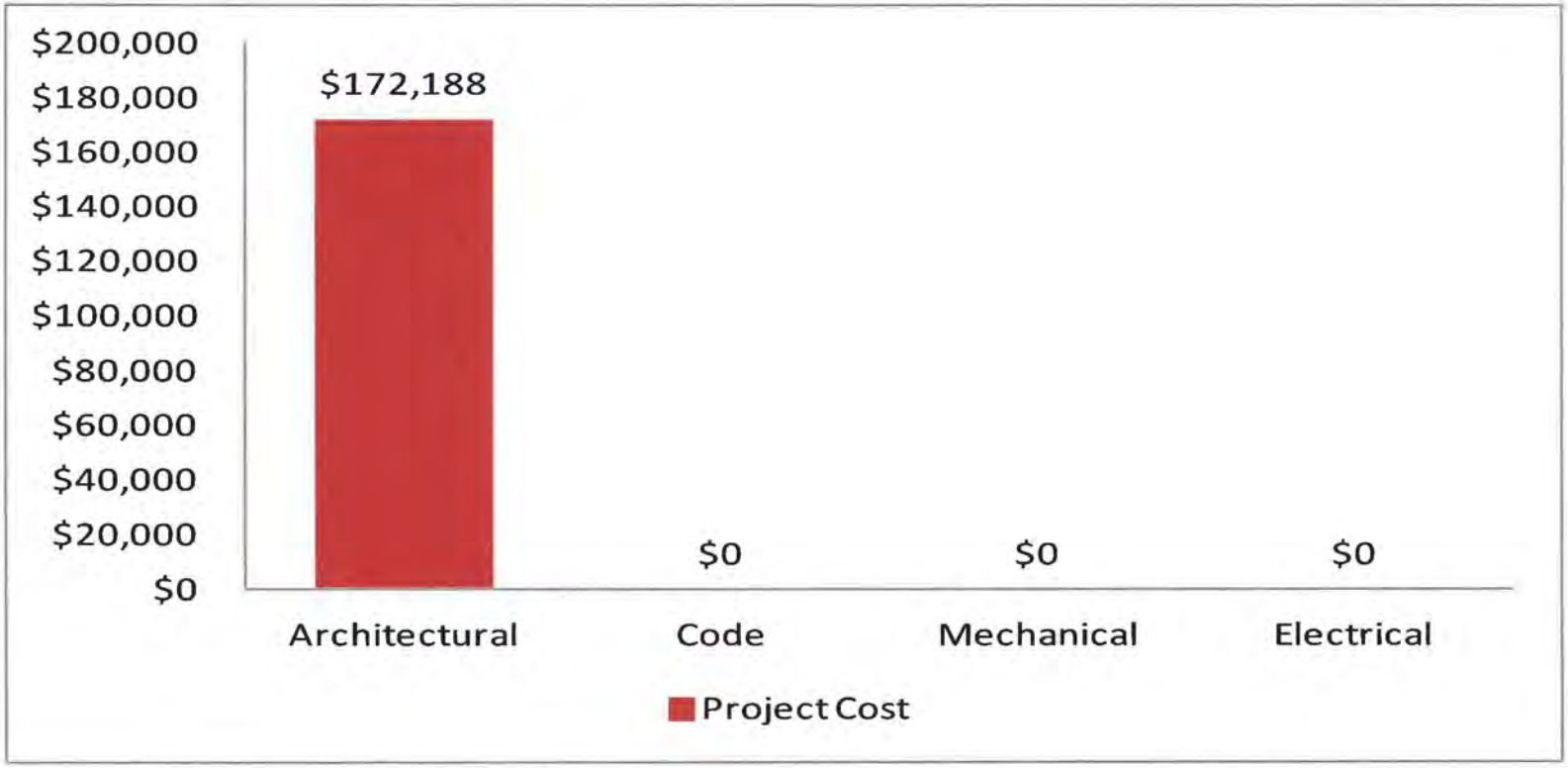
CODE AND BARRIER FREE

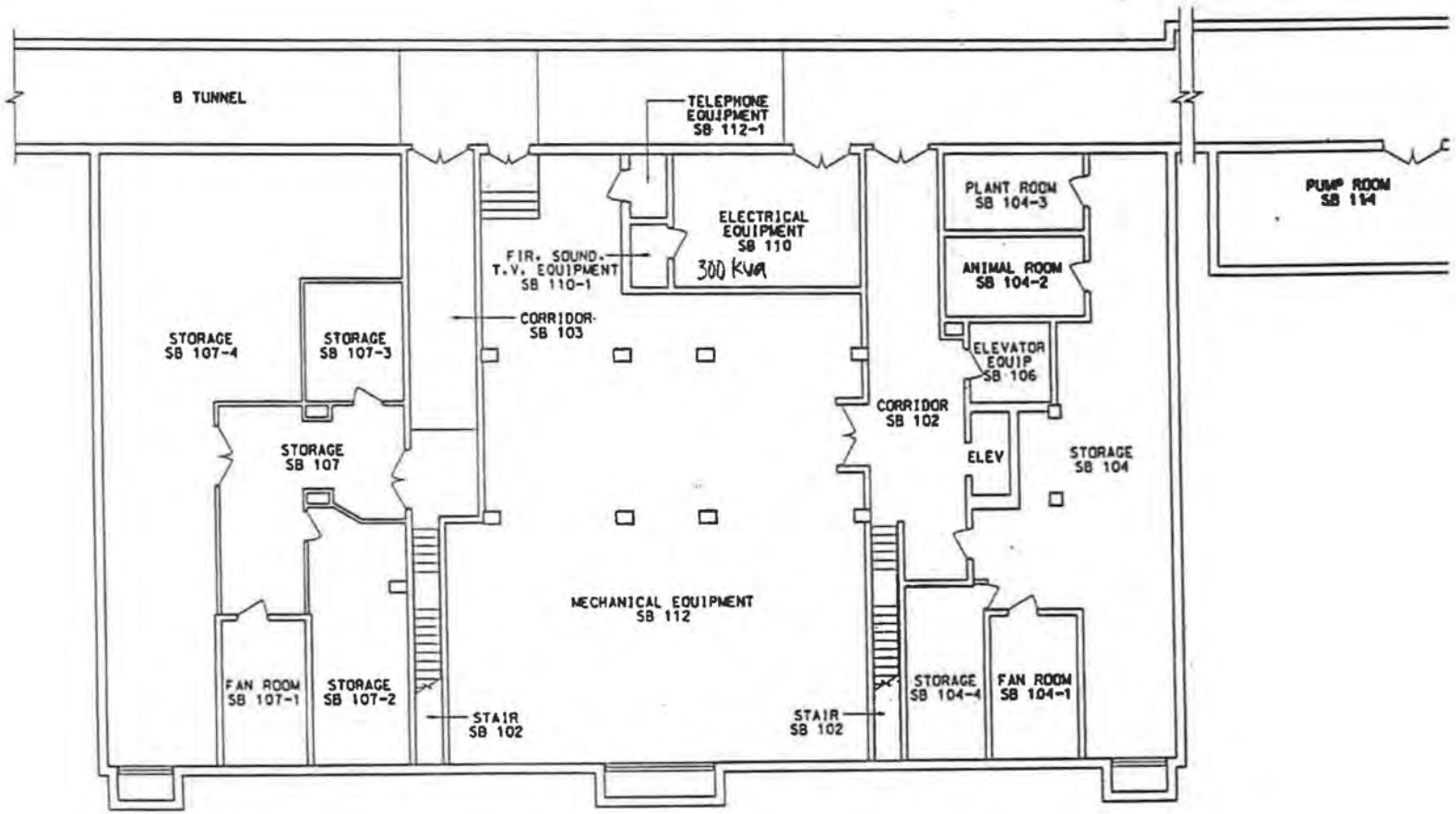
Code System

Item	Location	Comments	Quan-tity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2017				

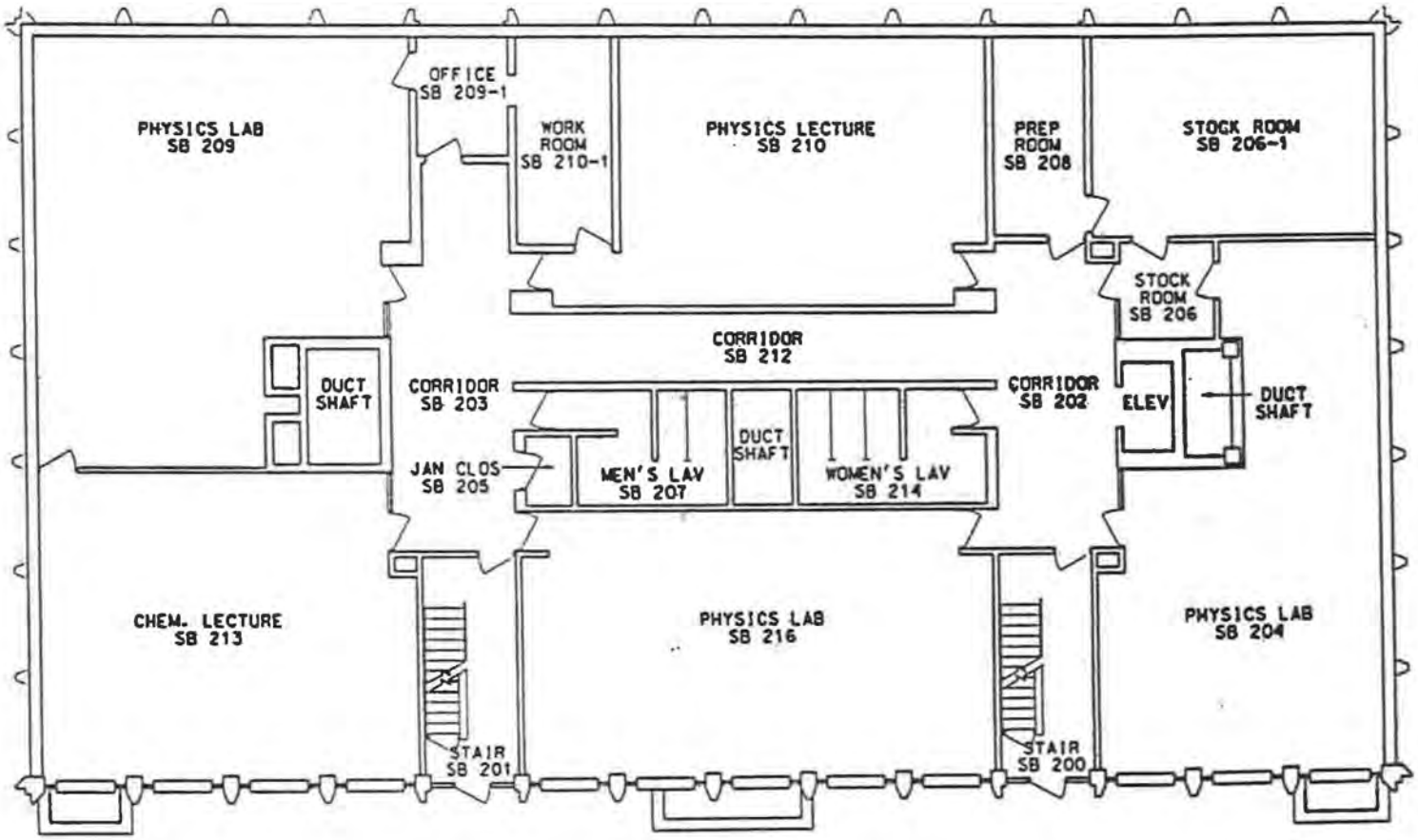
Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2017				


$200,000
$180,000
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
$172,188
$0
$0
$0
Architectural
Code
Mechanical
Electrical
Project Cost

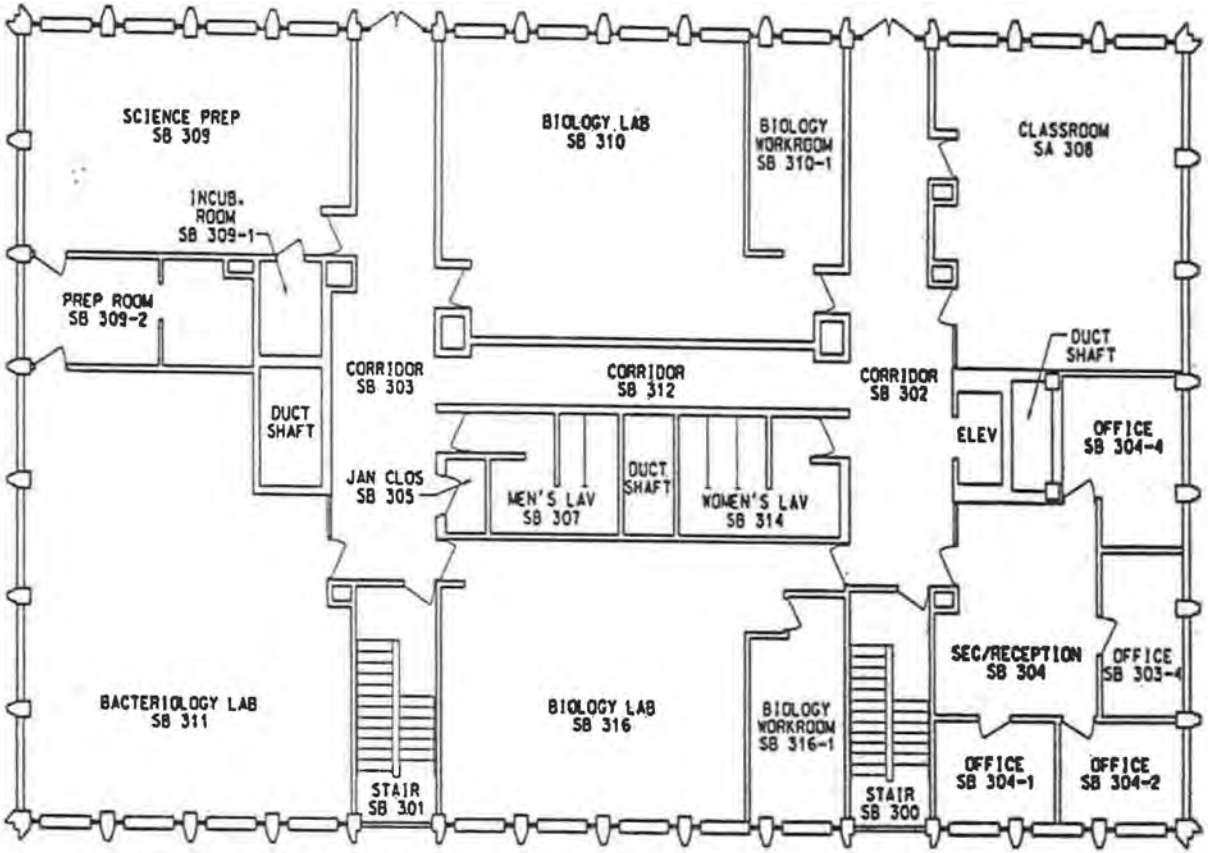


BUILDING "SB" BASEMENT

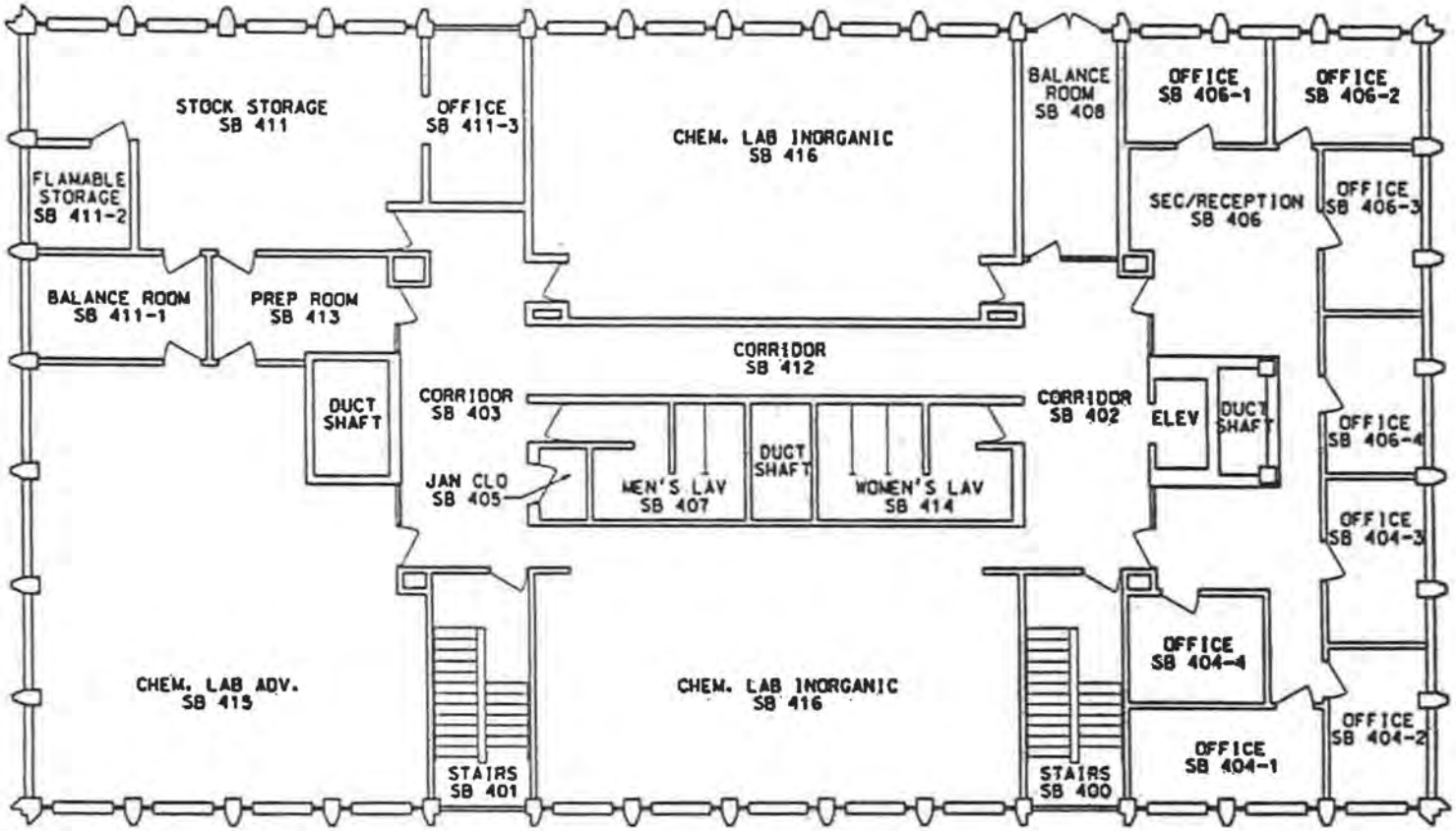


BUILDING "SB" LOWER FLOOR

NORTH



BUILDING "SB" MAIN FLOOR



BUILDING "SB" SECOND FLOOR

NORTH

Building: SC
Gross Area: 50,660 S.F.
Year Built: 1965 North 1969 South
No. of Floors: 3
Evaluation Date: October 2017

Use Types:
Classrooms

Notes:
1. Project cost is 1.45 times construction cost
2. Costs are in 2017 dollars.
3. Support spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Membrane	roof	replacement anticipated 2027	18,000	12.50	$225,000	$326,250

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Upgraded Summer 2015				

Finish System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Upgraded summer 2015				

Fixed Equipment

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Upgraded summer 2015				

MECHANICAL

HVAC System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2015				

Plumbing System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2015				

Fire Protection

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2015				

Temperature Controls Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2015				

ELECTRICAL

Primary Power system Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Main transformer was replaced in summer 2015.				

Secondary Power System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		All panelboards were replaced in summer 2015; except the three panels in the existing lower level suite.				

Distribution System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2015				

Lighting System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		LED light fixtures were installed in summer 2015; except for the existing lower level suite.				

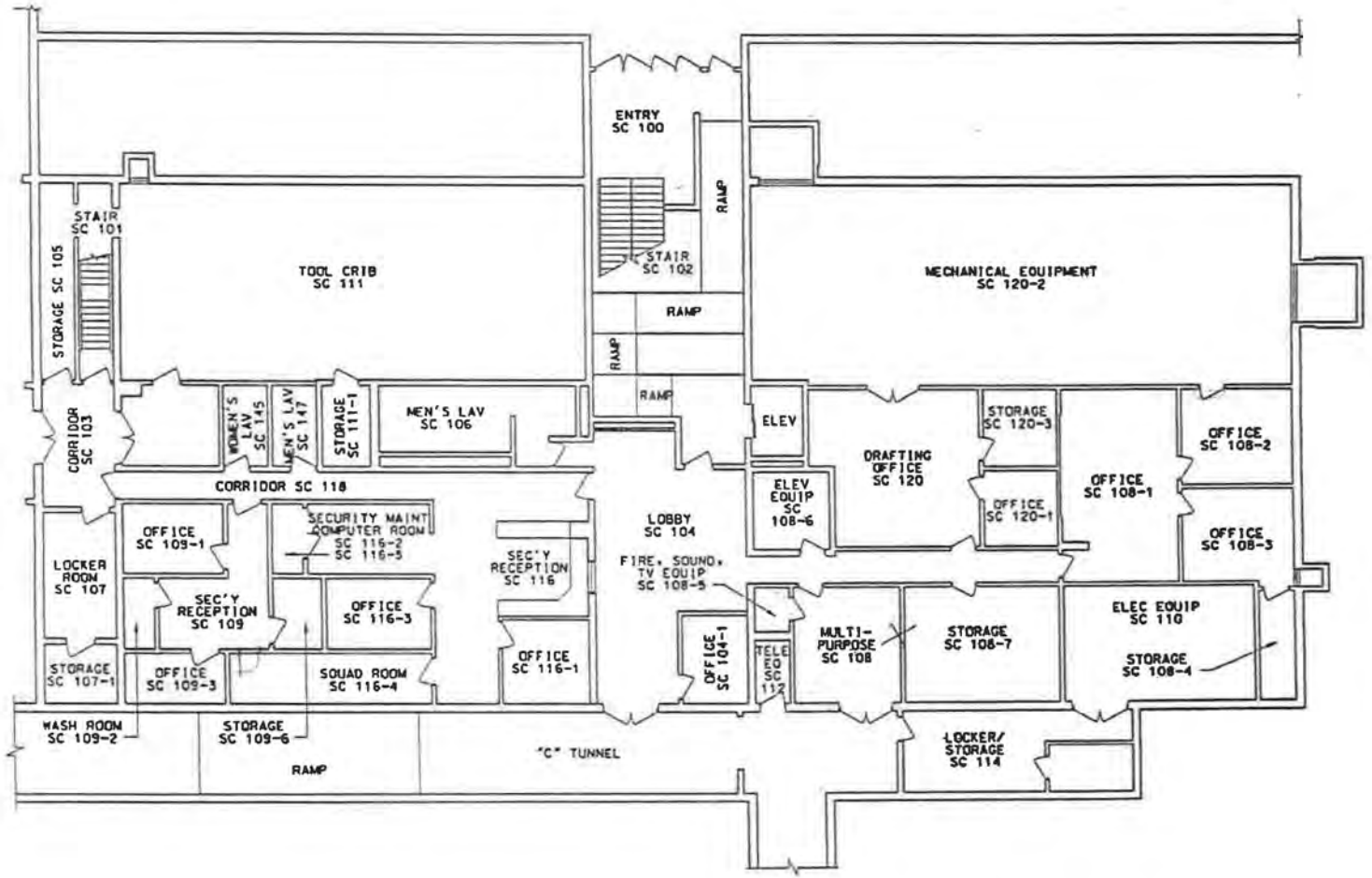
CODE AND BARRIER FREE

Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2015				

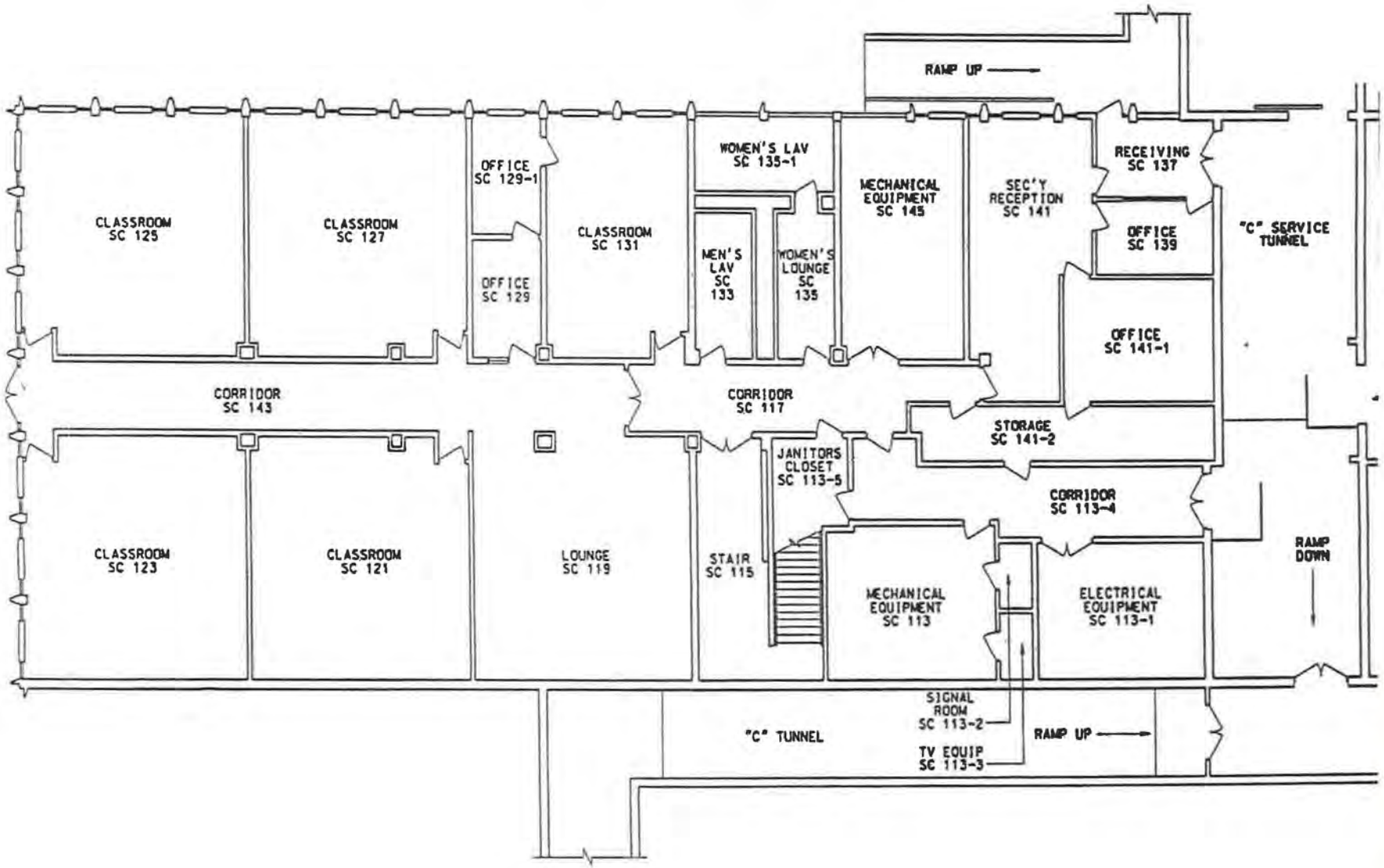
Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded Summer 2015				

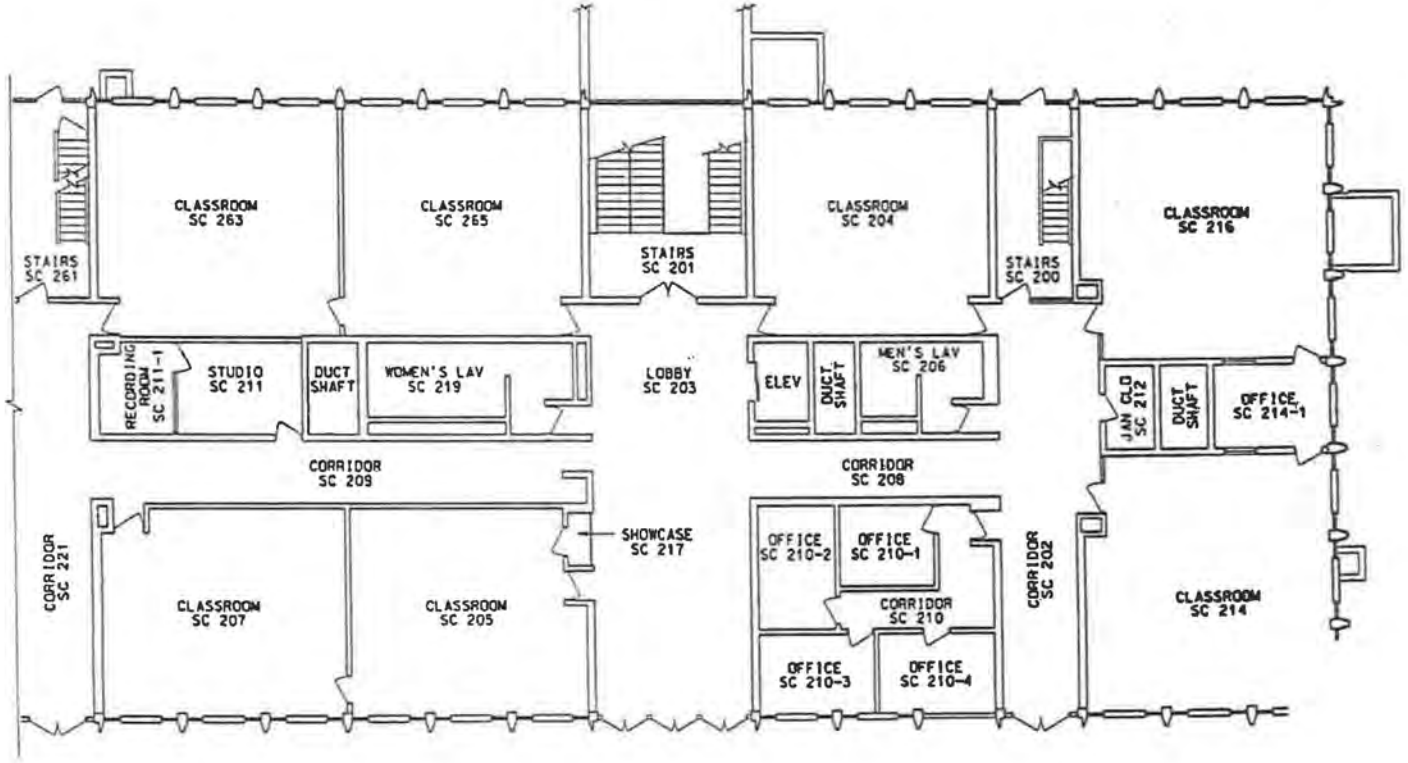


BUILDING "SC" LOWER FLOOR (NORTH)

NORTH

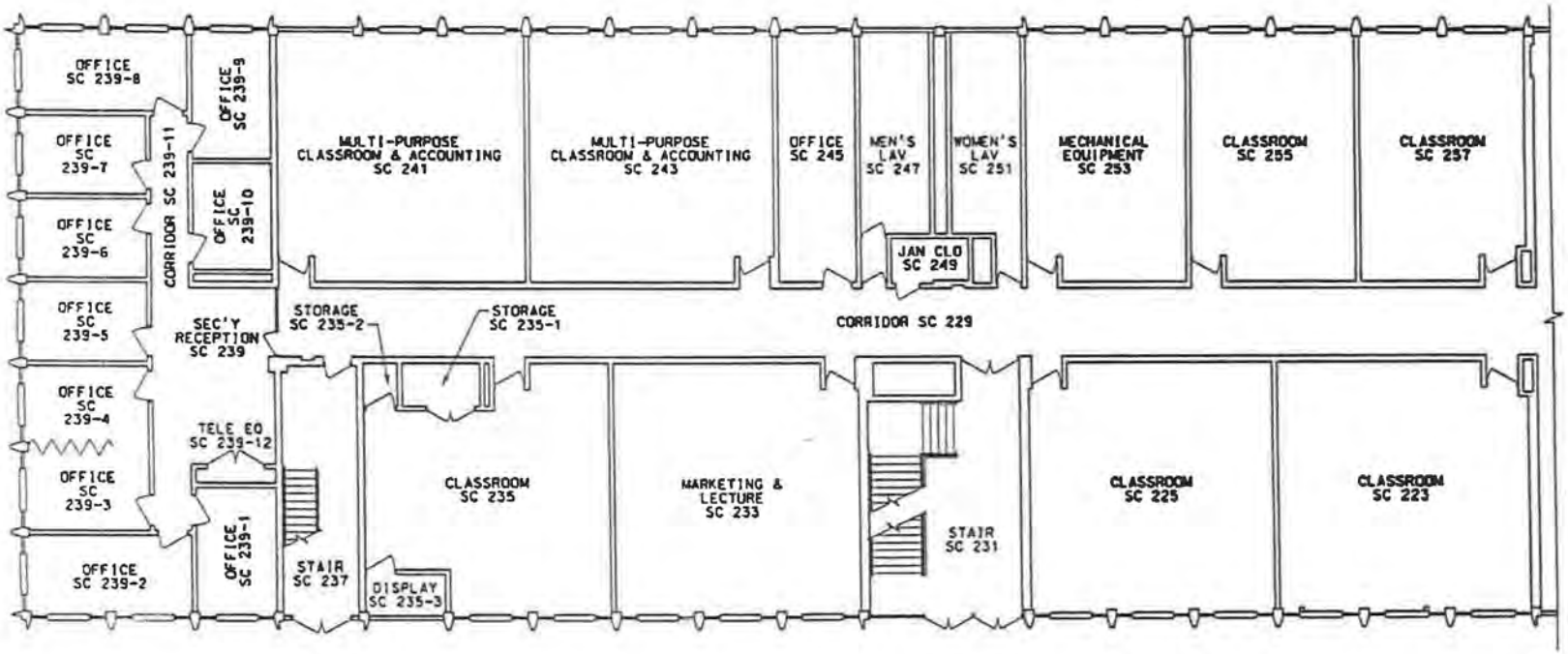


BUILDING "SC" LOWER FLOOR (SOUTH) NORTH



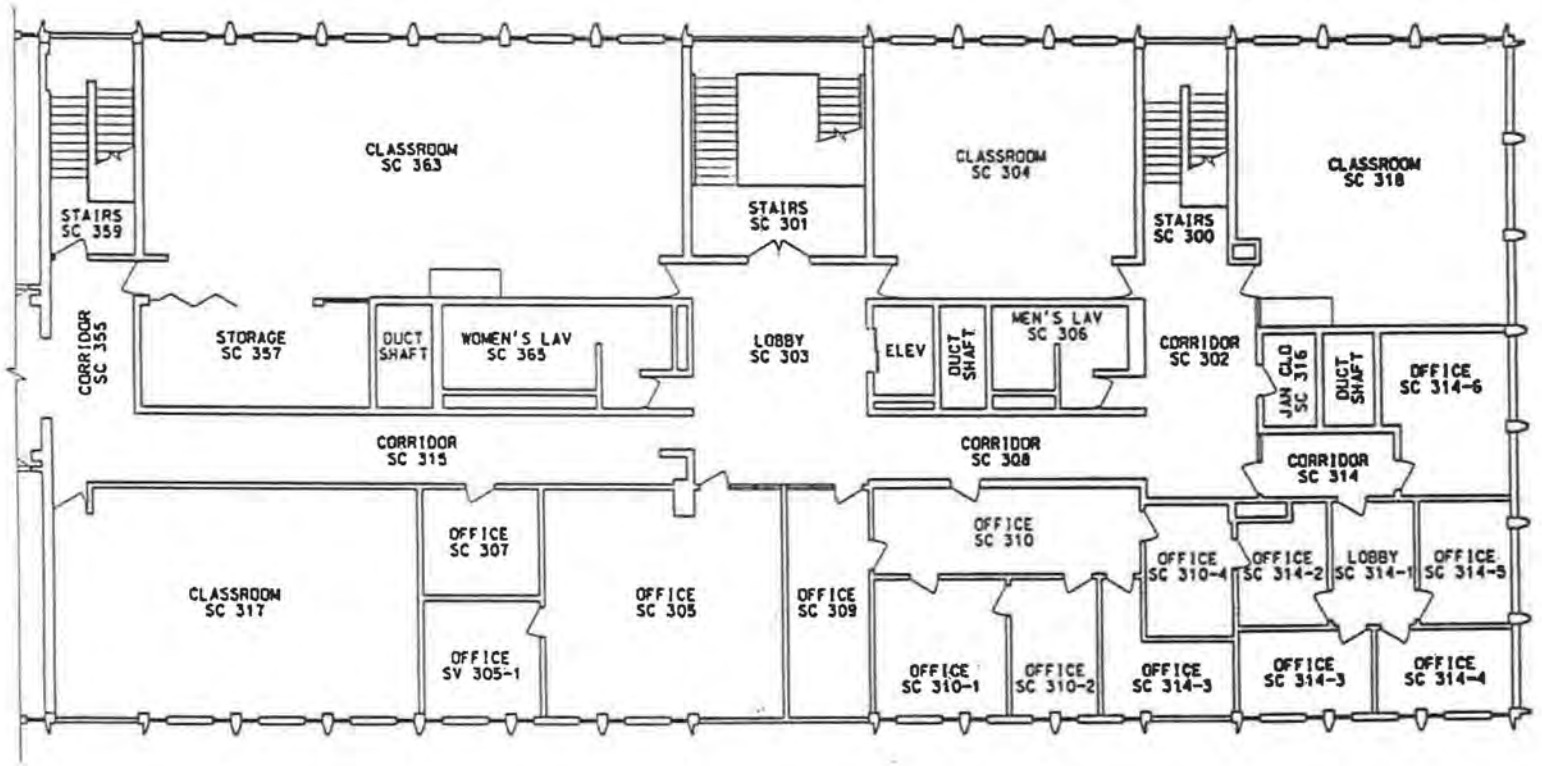
BUILDING "SC" MAIN FLOOR (NORTH)

NORTH

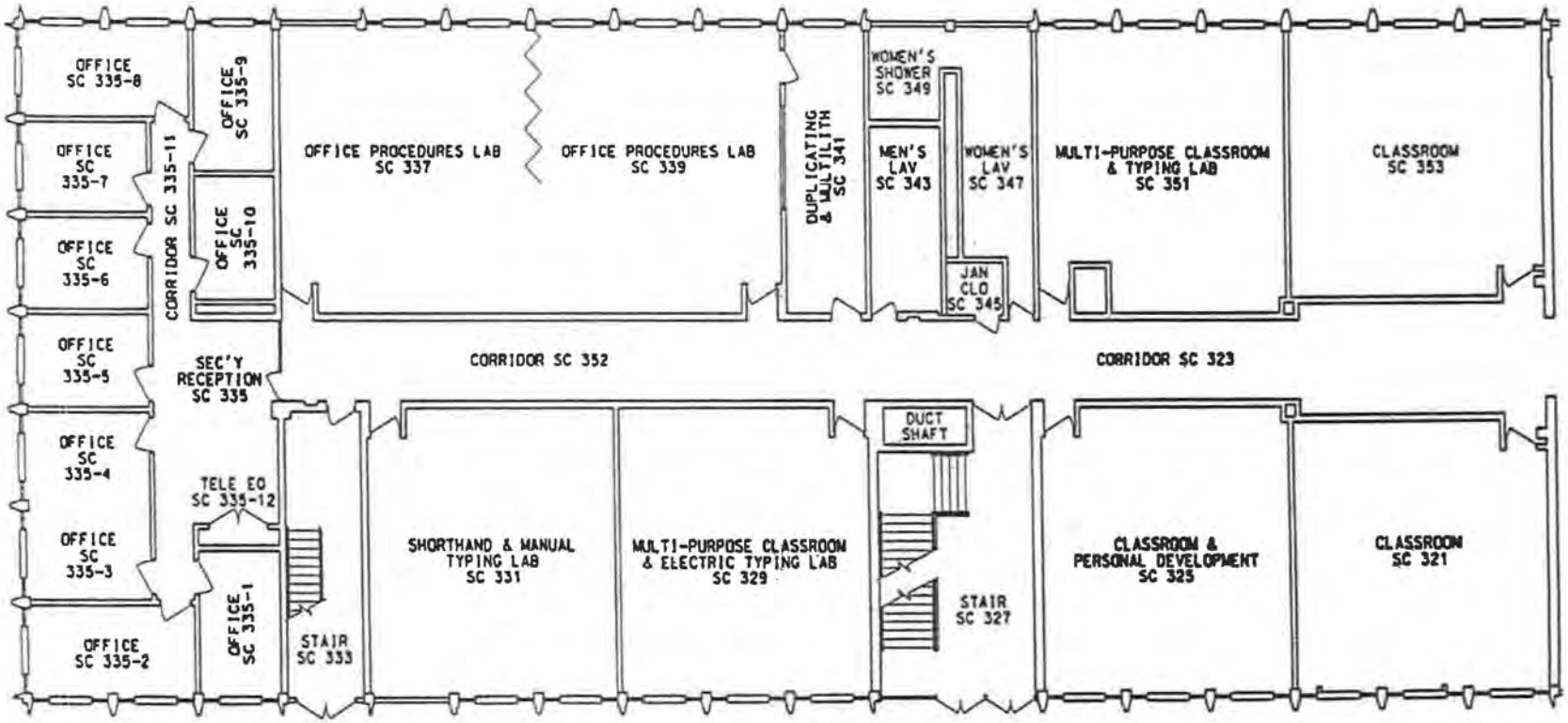


BUILDING "SC" MAIN FLOOR (SOUTH)

NORTH



BUILDING "SC" SECOND FLOOR (NORTH)



BUILDING "SC" SECOND FLOOR (SOUTH)

NORTH

Building: SD
Gross Area: 32,760 S.F.
Year Built: 1967
No. of Floors: 2 plus basement
Evaluation Date:October 2017

Use Types:
Classrooms/offices

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
membrane	roof	Roof should be replaced by 2023	16380	12.50	$204,750	$296,888

Enclosure System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
storefront	all floors	replace windows and entrances	2000	60	$120,000	$174,000
curtain wall	N&Selevation	replace curtainwall	440	95	$41,800	$60,610

Finish System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
laying clgs	throughout	Replace ceilings to accomodate fire suppression	19570	4.58	$89,631	$129,964
Gyp. Clgs	toilet rooms	Replace ceilings to accomodate fire suppression	1480	4.88	$7,222	$10,472
VCT	corr/stairs	Replace with rubber tile	2260	9.00	$20,340	$29,493
Carpet	offices/class-rooms	Replace carpet tile	17530	3.66	$64,160	$93,032
Doors/ hr	throughout	Upgrade door hardware	75	520	$39,000	$56,550

MECHANICAL

HVAC System Age: 50 years Life Expectancy: 20-30 years

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
HVAC System	Throughout	Replace all Heating Ventilating and Air Conditioning Systems	32,760	$34.50	$1,130,220	$1,638,819

Plumbing System Age: 50 years Life Expectancy: 20-50 years

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Galv. Piping	Throughout	All galvanized piping	32,760	$4.83	$158,231	$229,435

Fire Protection

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Suppression	throughout	provide fire suppression throughout	32760	$2.76	$90,418	$131,106
Alarm	throughout	upgrade fire alarm system	32760	$1.96	$64,210	$93,105

Temperature Controls

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Controls	Throughout	Replace temperature controls	32,760	$6.41	$209,992	$304,488

ELECTRICAL

Primary Power System Age: Original

Trans-former		Replace main transformer	LS	$50,000	$50,000	$72,500
Testing		Provide maintenance and testing on the primary switch; and provide fuses.	LS	$5,000	$5,000	$7,250

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Switchboard		Replace main switchboard	LS	$100,000	$100,000	$145,000
HVAC		Electrical to support new HVAC	32,760 SF	$2.00	$65,250	$95,004

Distribution System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Panel boards	all floors	Replace outdated panel boards and branch circuits.	32,760 SF	$5.00	$163,800	$237,510

Lighting System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	throughout	Replace fluorescent lighting w/LED	32760	$10.00	$327,600	$475,020
Controls	throughout	Replace lighting controls	32760	2.00	$65,520	$95,004
Emer/ exit	throughout	(Included in cost above)				

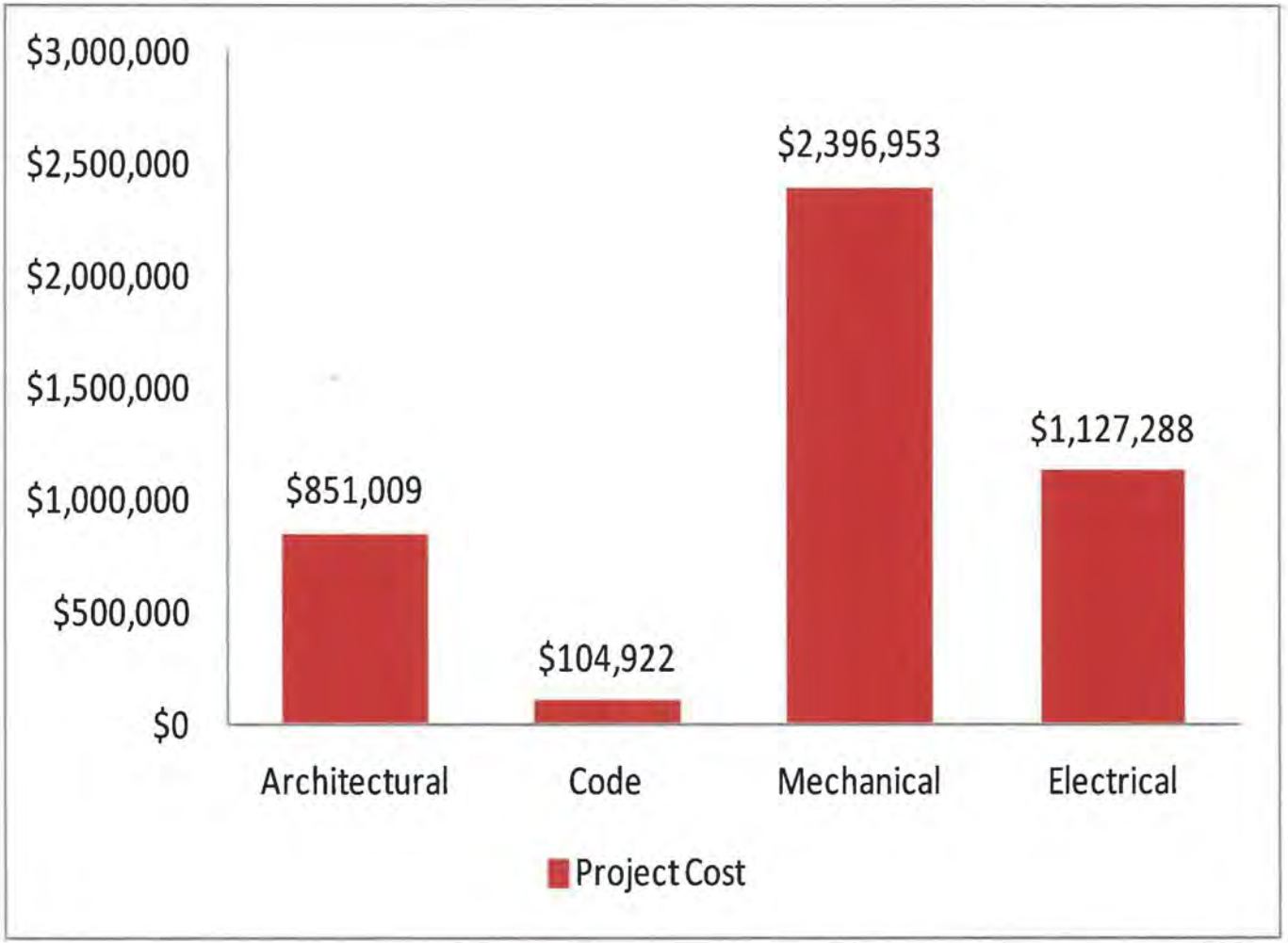
CODE AND BARRIER FREE

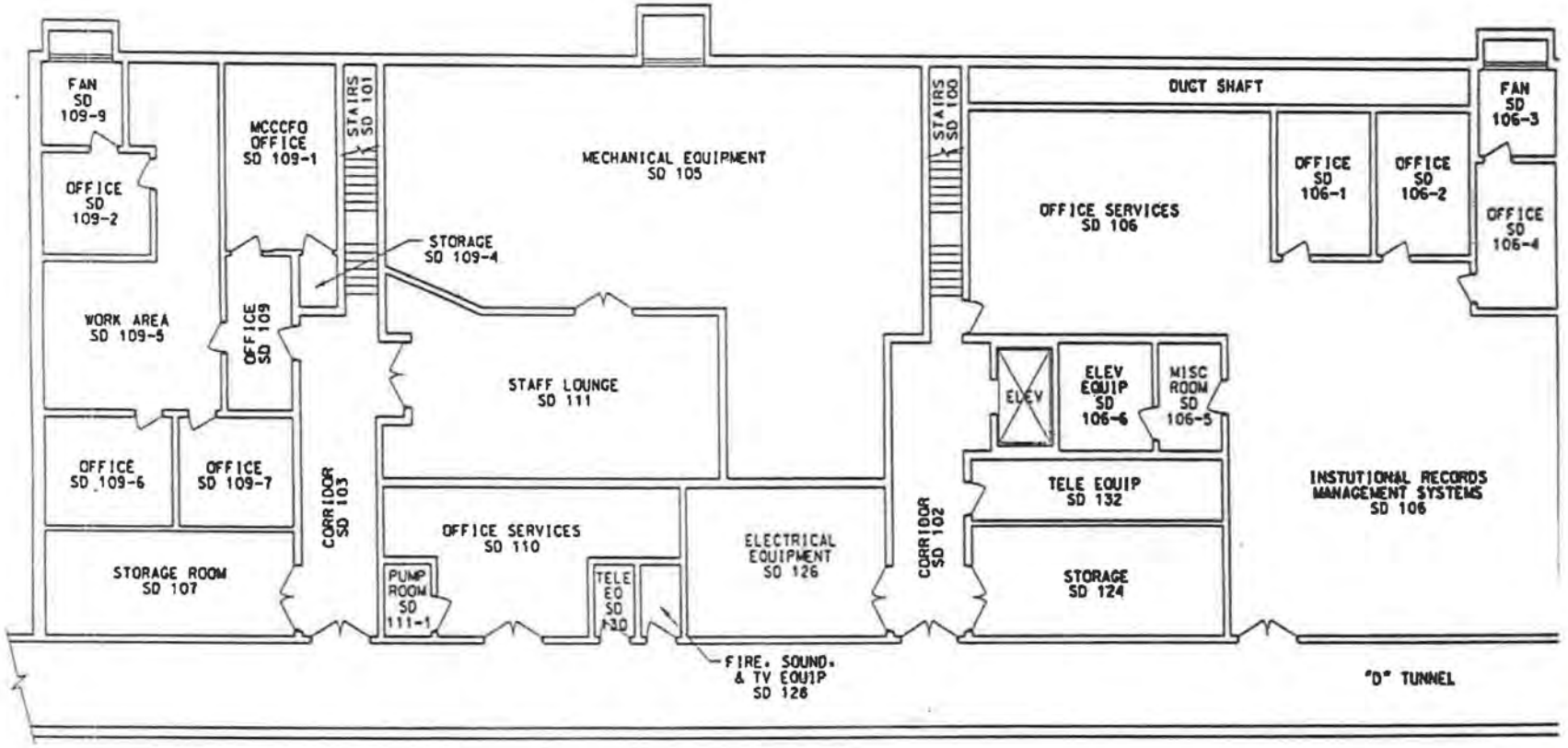
Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
railings	stairs	guards and handrails are non-compli-ant	80 L.F	92	7360	10672

Barrier Free System

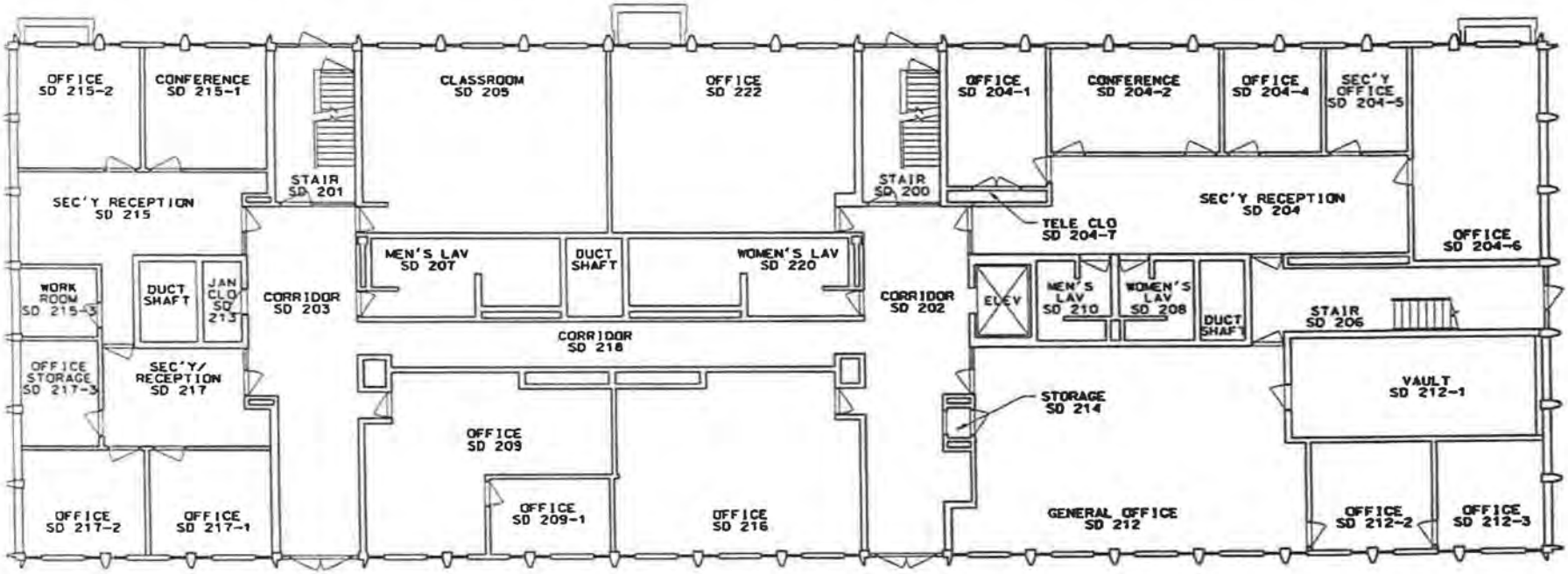
Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Signs	all rooms	signs are non-equipment	50	100	5000	7250
Lav/wc/urnial	TH. rms	modify toilet room fixtures	4	15000	60000	87000


$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$851,009
$104,922
$2,396,953
$1,127,288
Architectural
Code
Mechanical
Electrical
Project Cost

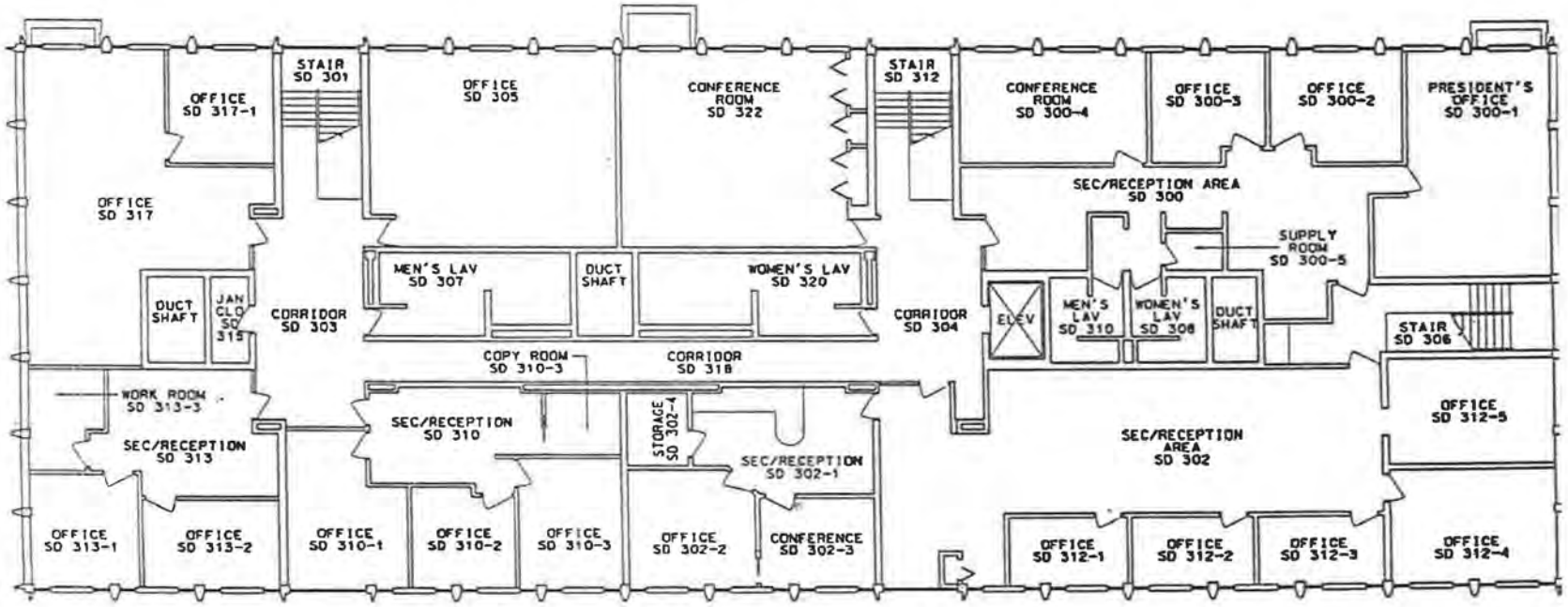


BUILDING "SD" LOWER LEVEL

NORTH



BUILDING "SD" MAIN FLOOR



BUILDING "SD" SECOND FLOOR

Building: SE
Gross Area: 26,130 S.F.
Year Built: 1967
No. of Floors: 2 plus basement
Evaluation Date: October 2017

Use Types:
Classrooms

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
membrane	roof	will require replacement 2027				

Enclosure System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		upgraded summer 2014				

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		upgraded summer 2014				

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		upgraded summer 2014				

MECHANICAL

HVAC System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2014				

Plumbing System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2014				

Fire Protection Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2014				

Temperature Controls Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2014				

ELECTRICAL

Primary Power System Age: 50 yrs

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Existing primary switch remains. Provide maintenance and infrared testing on a 5 year interval.				

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New distribution panel and panelboards were installed summer 2014.				

Distribution System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New receptacles were installed summer 2014.				

Lighting System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New LED light fixtures and lighting controls were installed in summer 2014.				

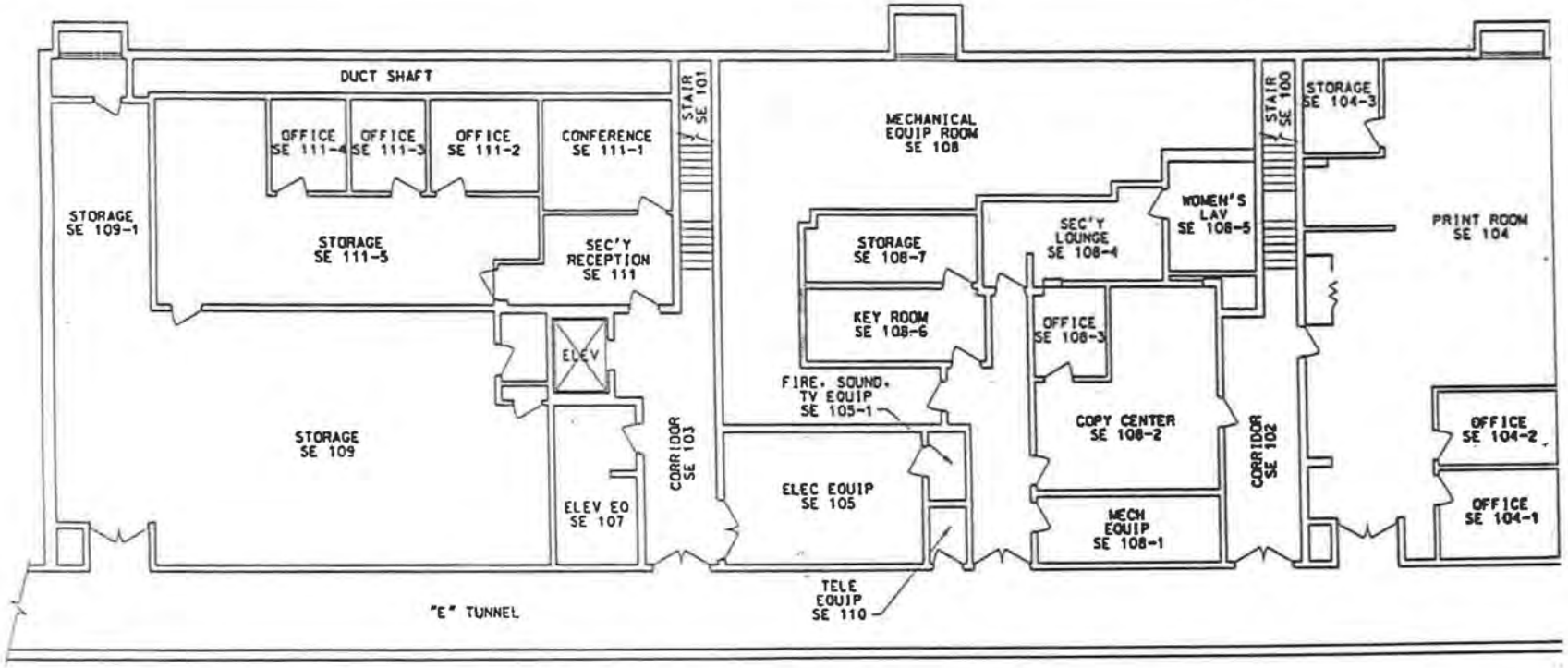
CODE AND BARRIER FREE

Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2014				

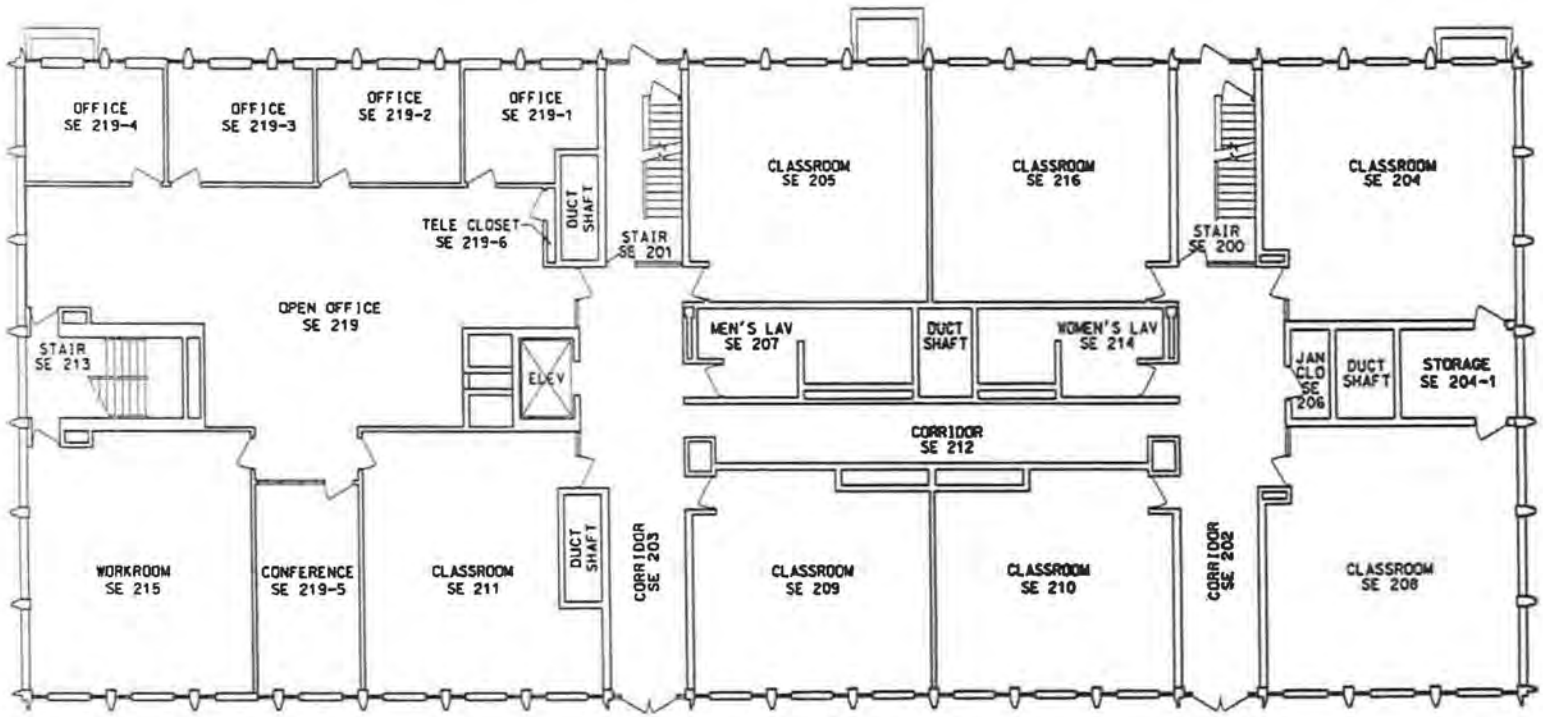
Barrier Free System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2014				



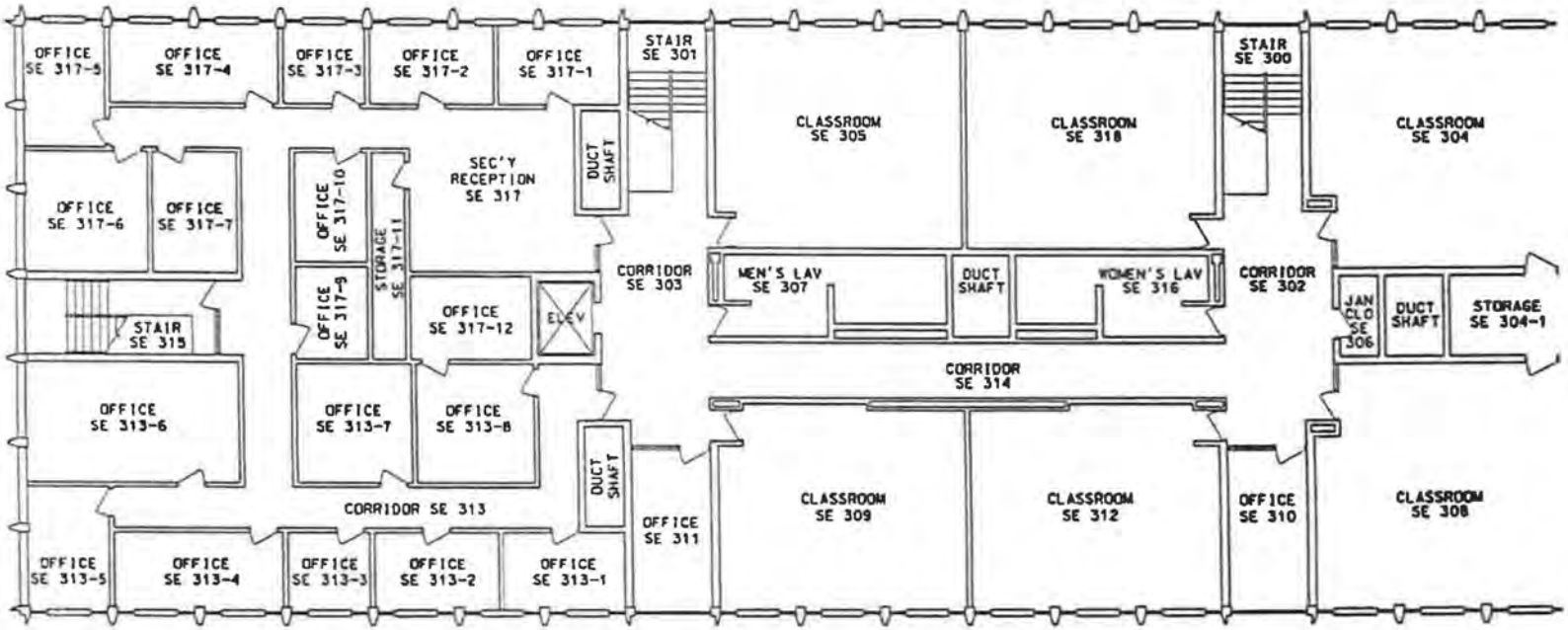
BUILDING "SE" LOWER LEVEL

NORTH



BUILDING "SE" MAIN FLOOR

NORTH



BUILDING "SE" SECOND FLOOR

Building: SF
Gross Area: 19,469
Year Built: 1967
No. of Floors: Two plus basement
Evaluation Date: October 2017

Use Types:
Classrooms

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
membrane	Roof	Roof was intalled in 2000 and should be replaced by 2026				

Enclosure System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Storefront	all floors	replace windows and entrances	600 SF	60	$36,000	52500
curtain wall	east & west	Replace curtainwall	1200 SF	95	$114,000	165300
Foundtations	Precast cols	Repair footings at precst cols	4	780	$3,120	$4,524

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Layin clgs.	throughout	Replace lay in clgs for mech & F.S.	16700	4.58	$76,486	$110,905
Gyp clgs.	toilet rooms	Replace gyp clgs for mech & F.S	700	6.50	$4,550	$6,598
VCT	cooridors	Replace VCT with rubber tile	3640	9.00	$32,760	$47,502
Carpet	classrooms/offices	Replace carpet tile	11330	3.66	$41,468	$60,129
Door Hardware	throughout	Rework door hardware	70	520	$36,400	$52,780
Elevator	all floors	Replace elevtor & entrances	1	140,000	$140,000	$203,000

Fixed Equipment

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

MECHANICAL

HVAC System Age: 50 yrs. Life Expectancy: 20-30 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
HVAC System	Throughout	Replace Heating, Ventilating and Air Conditioning throughout	20,600	$34.50	$710,700	$1,030,515

Plumbing System Age: 50 yrs. Life Expectancy: 20-50 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Gav. Piping	Throughout	Replace all galvanized piping	20,600	$4.83	$99,498	$144,272

Fire Protection

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
suppression	throughout	provide fire suppression	20600	$2.76	$56,856	$82,441
alarm	throughout	upgrade fire alarm system	20600	$1.96	$40,376	$58,545

Temperature Controls Age:50 years Life Expectancy: 15 years

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Controls	Throughout	Replace temperature controls	20,600	$6.41	$132,046	$191,467

ELECTRICAL

Primary Power System Age: 50 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Preventive maintenance is scheduled for primary switch summer 2018.				

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Substation	Basement	Main transformer and distribution panel scheduled for replacement summer 2018.	1	216,000	$216,000	$313,200

Distribution System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Panel Boards	all floors	New panelboards and receptacles are scheduled for replacement summer 2018.	6	9120	$54,720	$79,344

Lighting System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	throughout	replace fluorescent lighting w/ LED	20600	8.15	$16,7890	$243,441
Controls	throughout	replace lighting controls	20600	2.26	$46,556	$67,506
Emergency/exit	throughout	replace emergency/ exit lights	20600	1.68	$34,608	$50,182

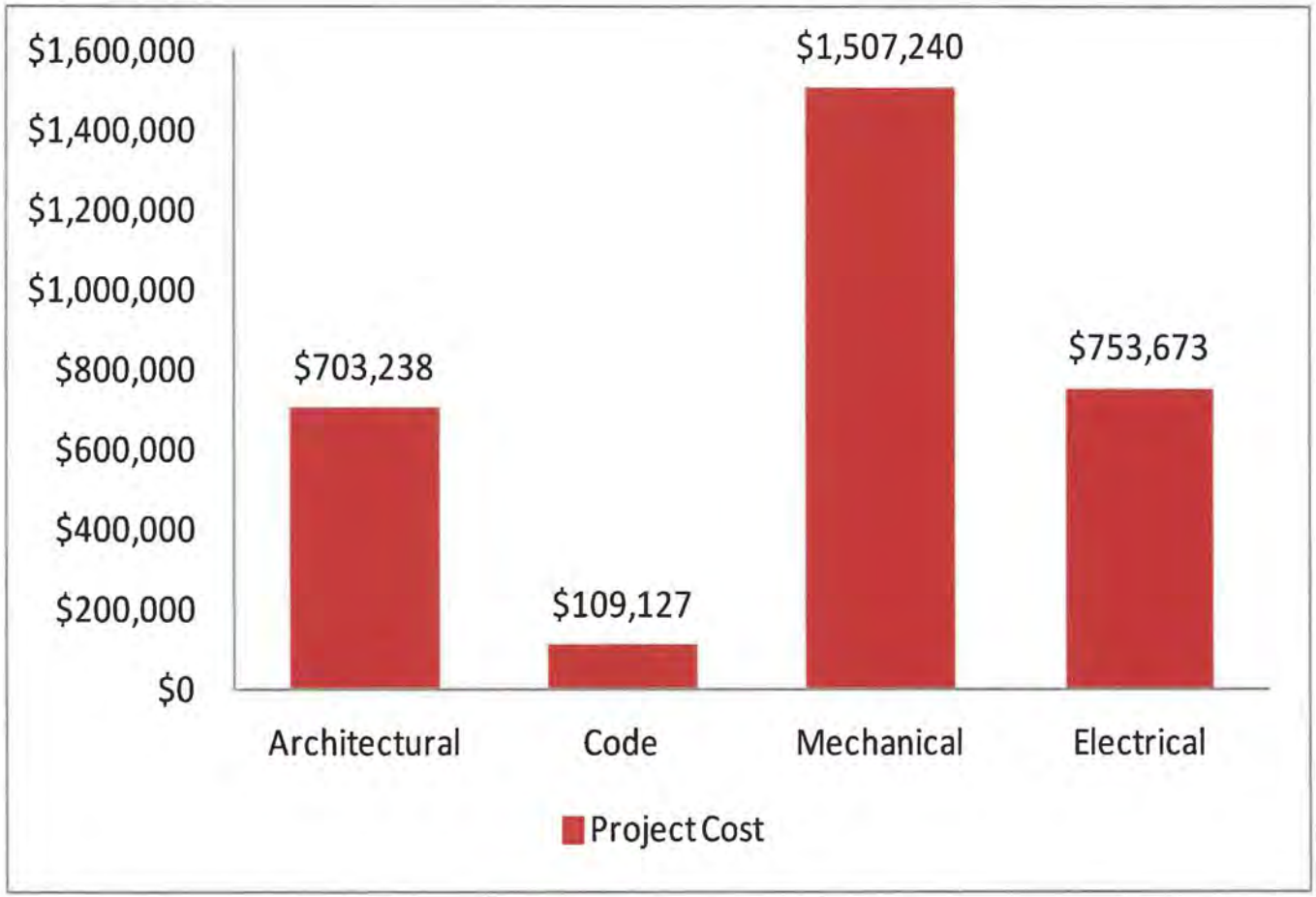
CODE AND BARRIER FREE

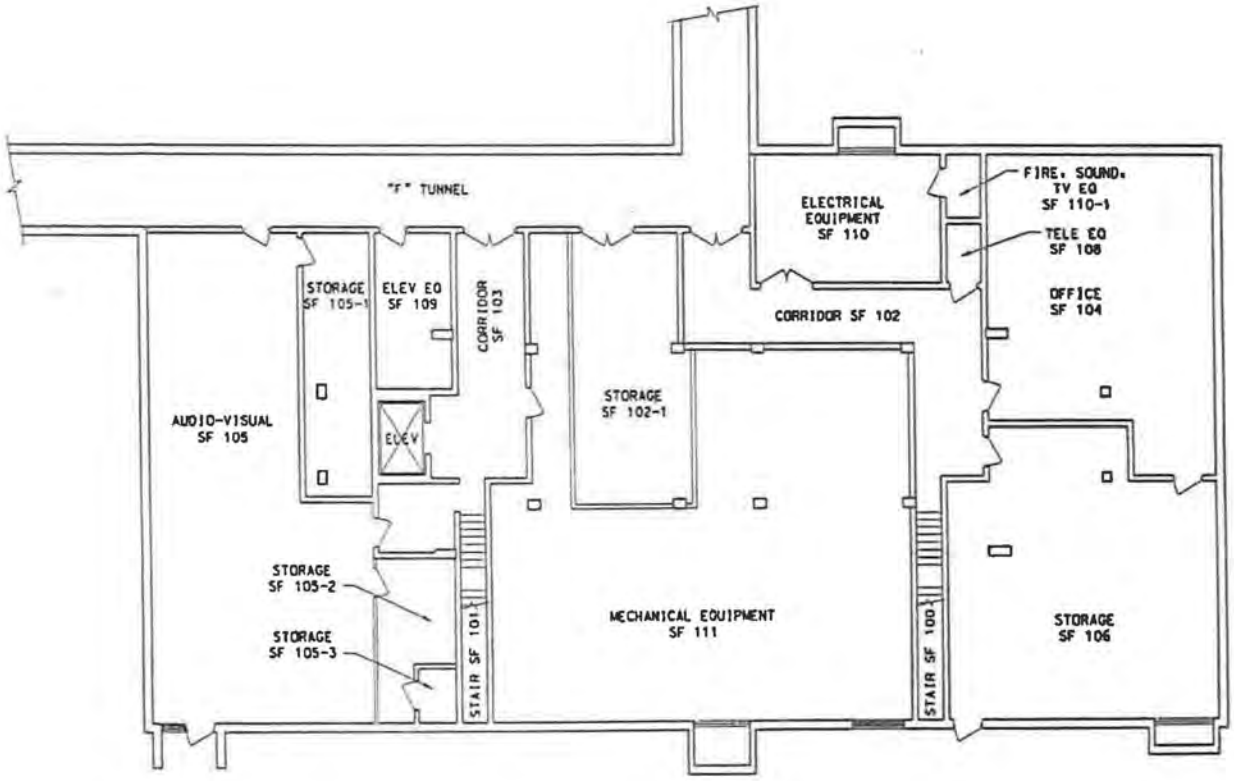
Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
railings	stairs	guards and handrails are non-compliant	80	92	7360	10672

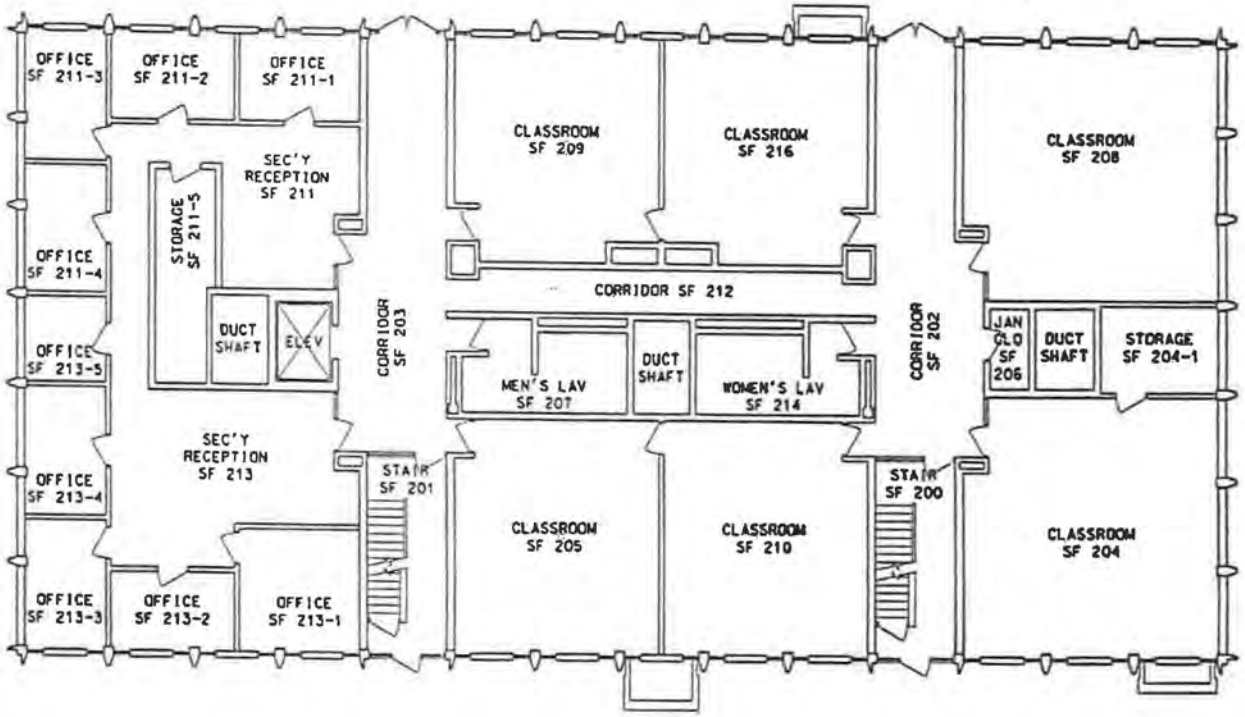
Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
signs	all rooms	signs are non-compliant	55	100	$5,500	$7,975
Lavs/urinals/ WC	toilet rooms	modify fixtures to accomodate height	4	15,000	$60,000	$87,000
coat racks	classrooms	rework to acceptable height	12	200	$2,400	$3,480

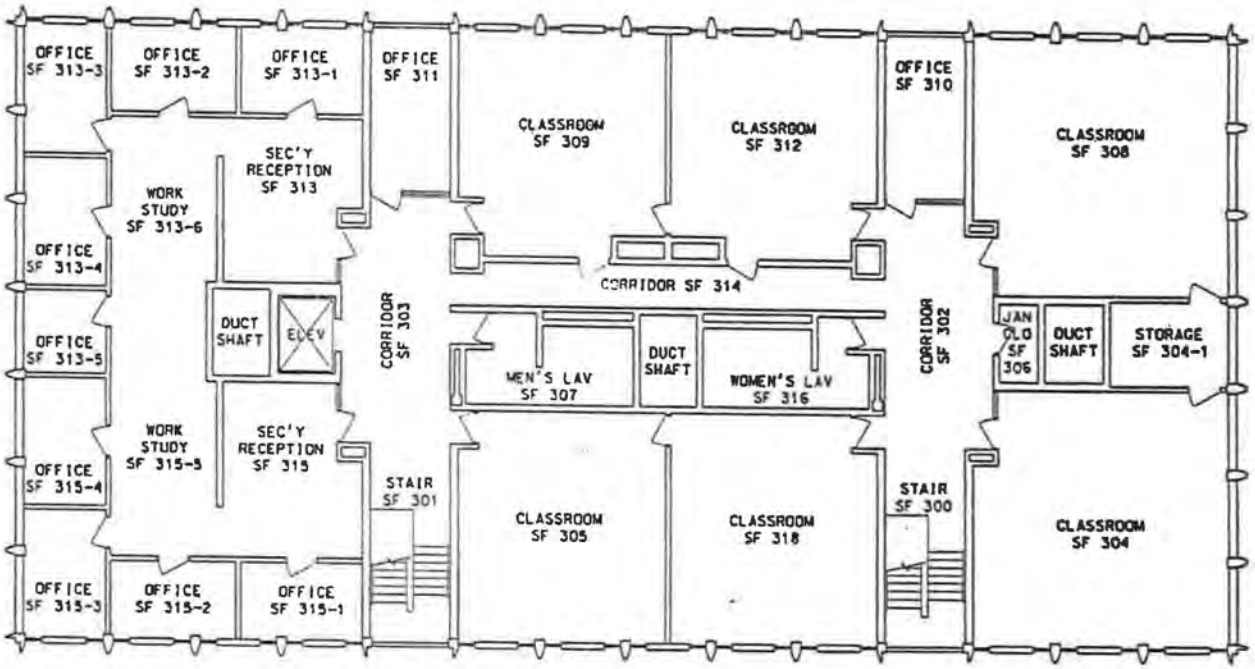

$1,600,000
$1,400,000
$1,200,000
$1,000,000
$800,000
$600,000
$400,000
$200,000
$0
$703,238
$109,127
$1,507,240
$753,673
Architectural
Code
Mechanical
Electrical
Project Cost



BUILDING "SF" LOWER FLOOR



BUILDING "SF" MAIN FLOOR



BUILDING "SF" SECOND FLOOR

NORTH

Building: SG/SH
Gross Area:63,680
Year Built: 1976
No. of Floors: 3 stories plus basement
Evaluation Date: October 2017

Use Types:
Student Services

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		roof was replaced summer 2016.				

Enclosure System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		upgraded summer 2016				

Finish System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		upgraded summer 2016				

MECHANICAL

HVAC System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2016				

Plumbing System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2016				

Fire Protection

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2016				

Temperature Controls

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2016				

ELECTRICAL

Primary Power System Age: 41 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Existing primary switch remains. Provide maintenance and infrared testing every 5 years.				

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New main transformer and distribution panel installed summer 2016.				

Distribution System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New panelboards and receptacles installed summer 2016.				

Lighting System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		New LED light fixtures and lighting controls installed summer 2016.				

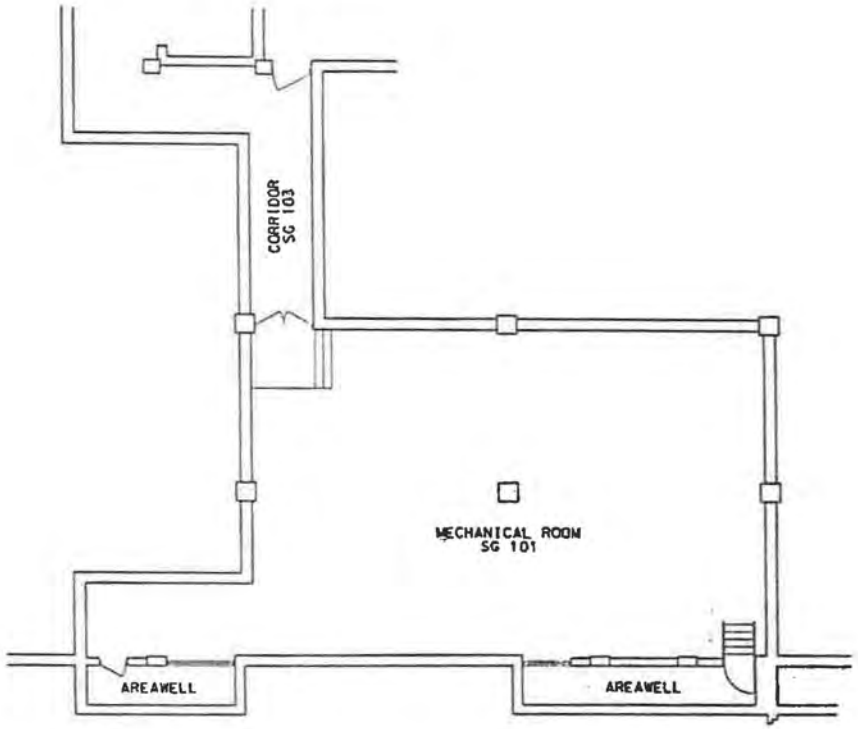
CODE AND BARRIER FREE

Code System

Item	Location	Comments	Quanti-ty/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2016				

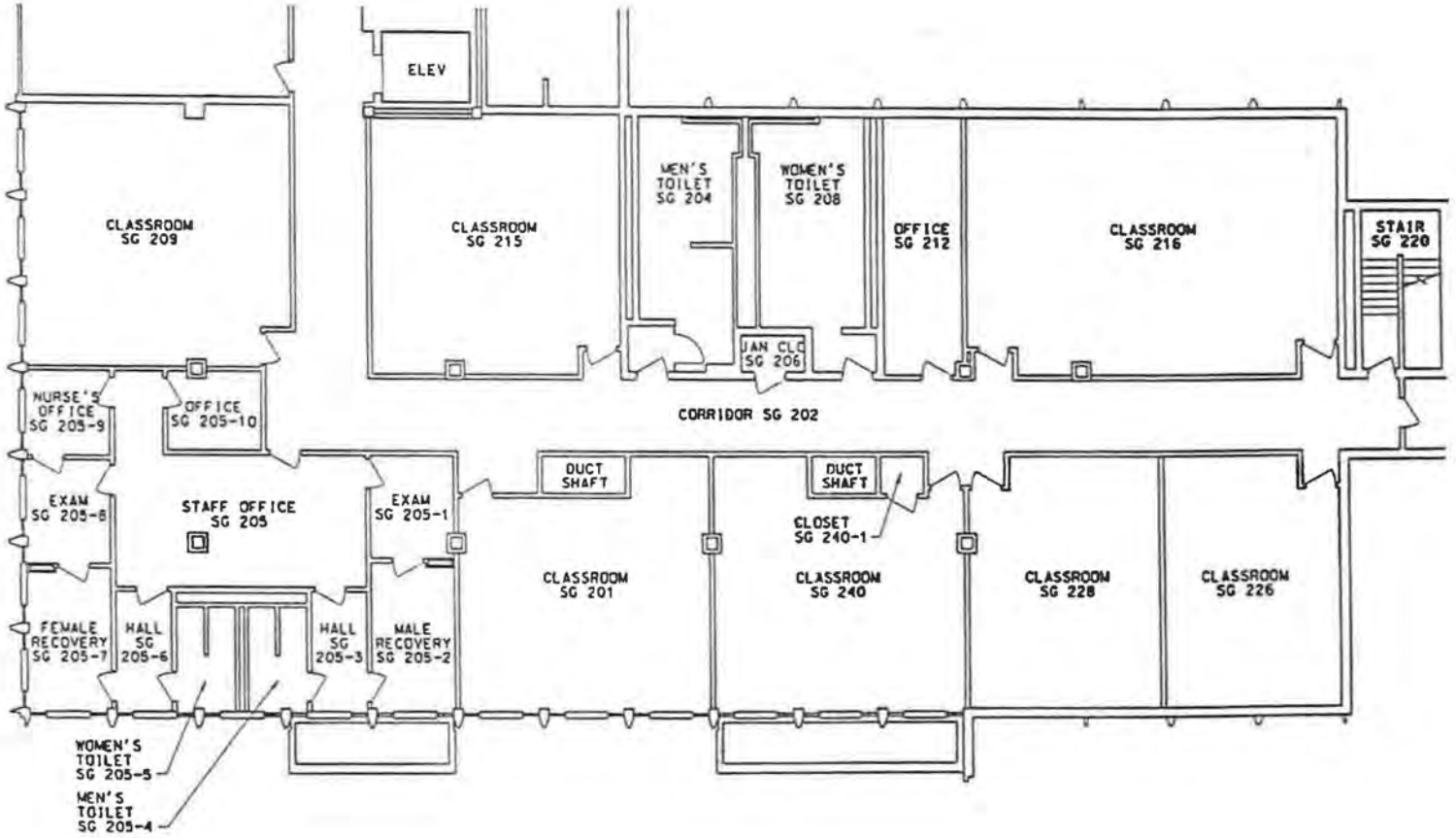
Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		upgraded summer 2016				



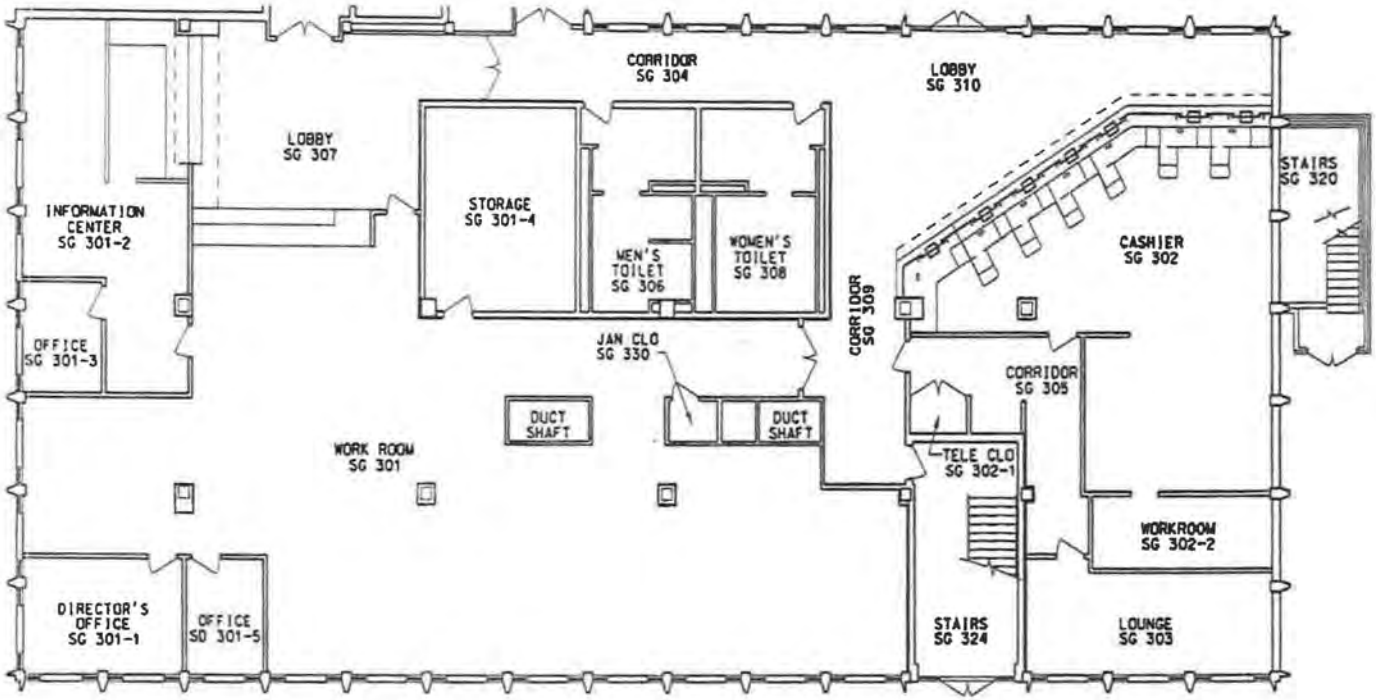
BUILDING "SG" BASEMENT

NORTH



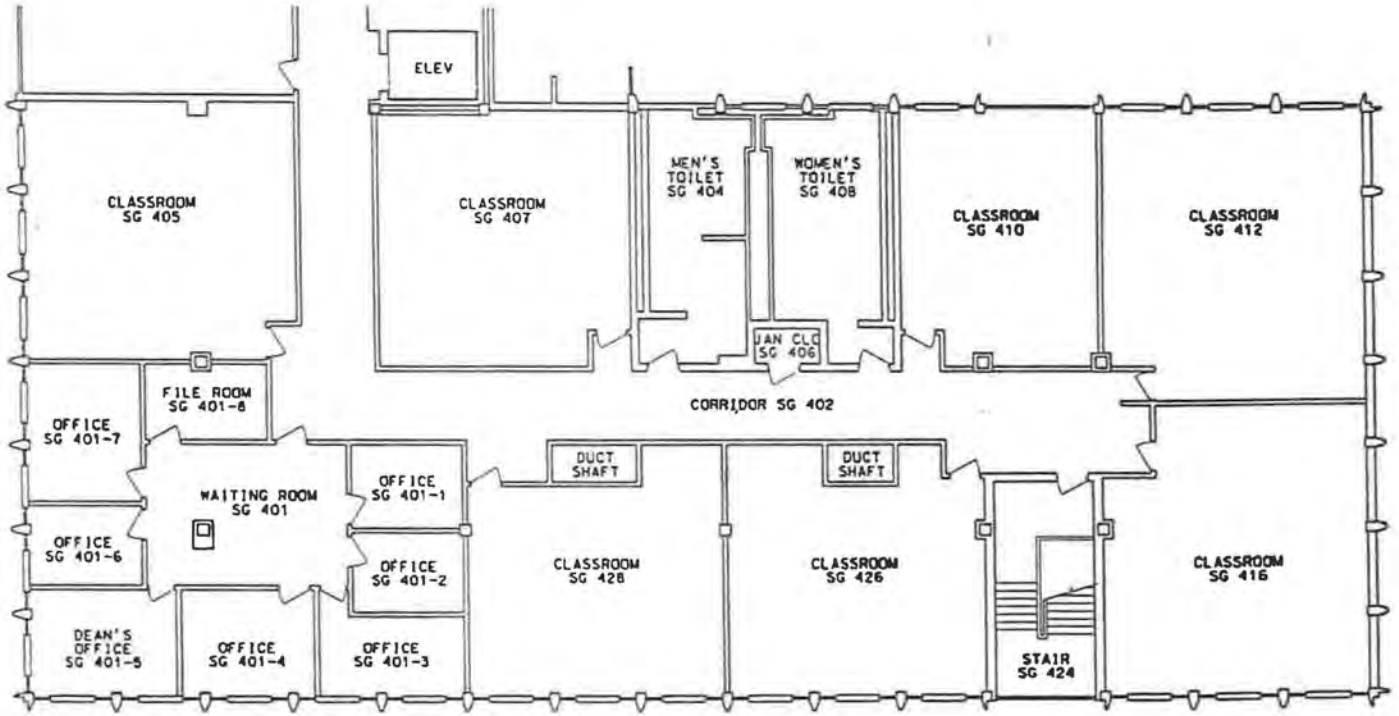
BUILDING "SG" LOWER LEVEL

NORTH



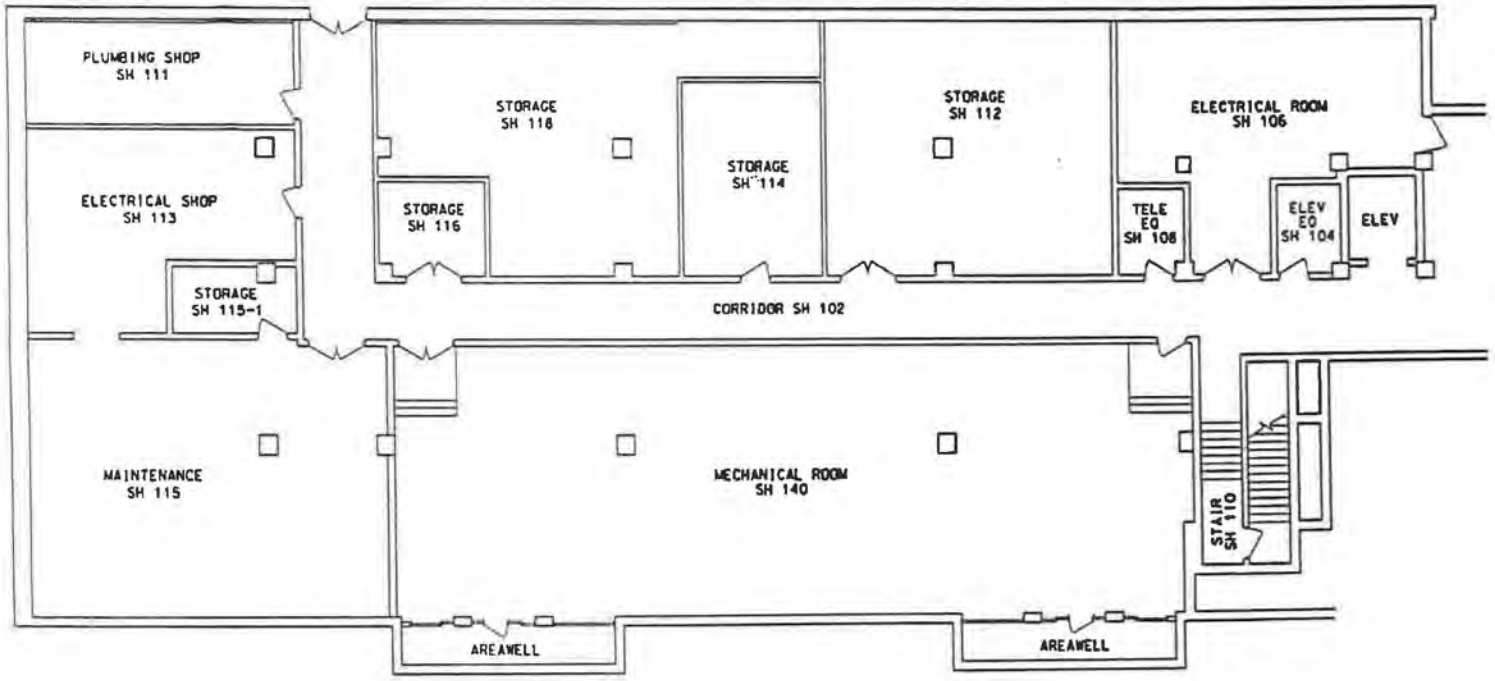
BUILDING "SG" MAIN FLOOR

NORTH

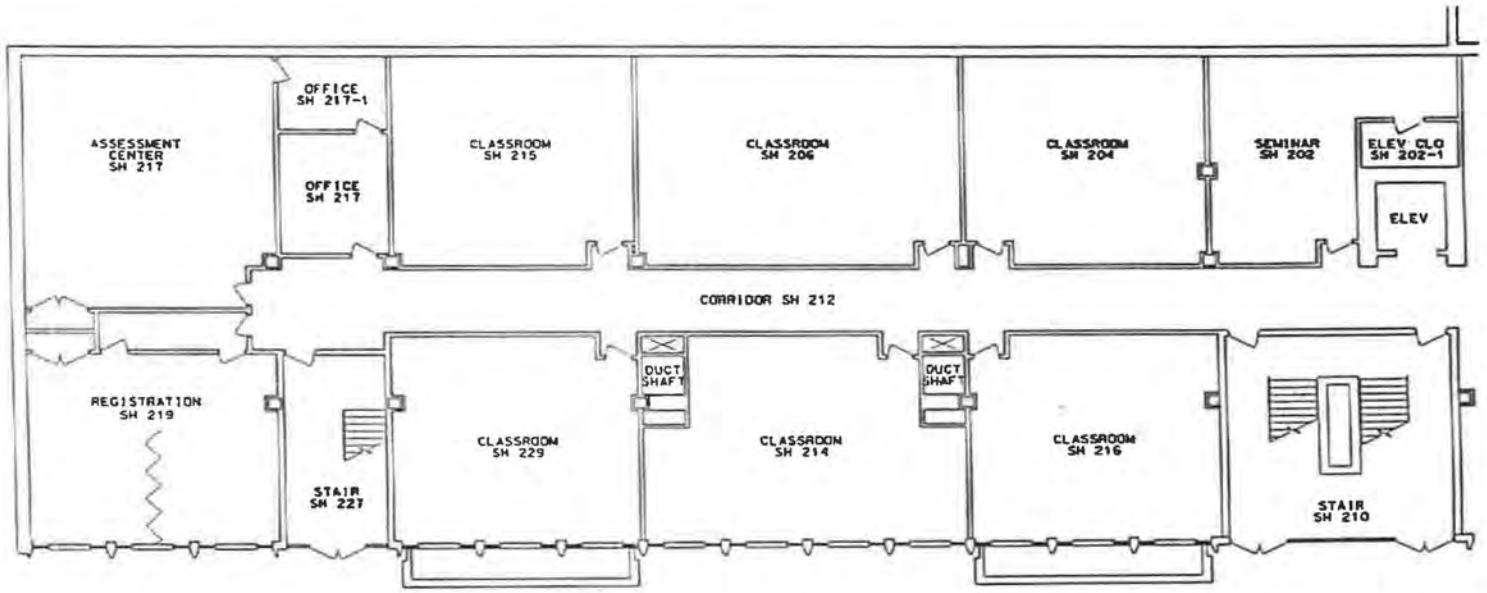


BUILDING "SG" SECOND FLOOR

NORTH



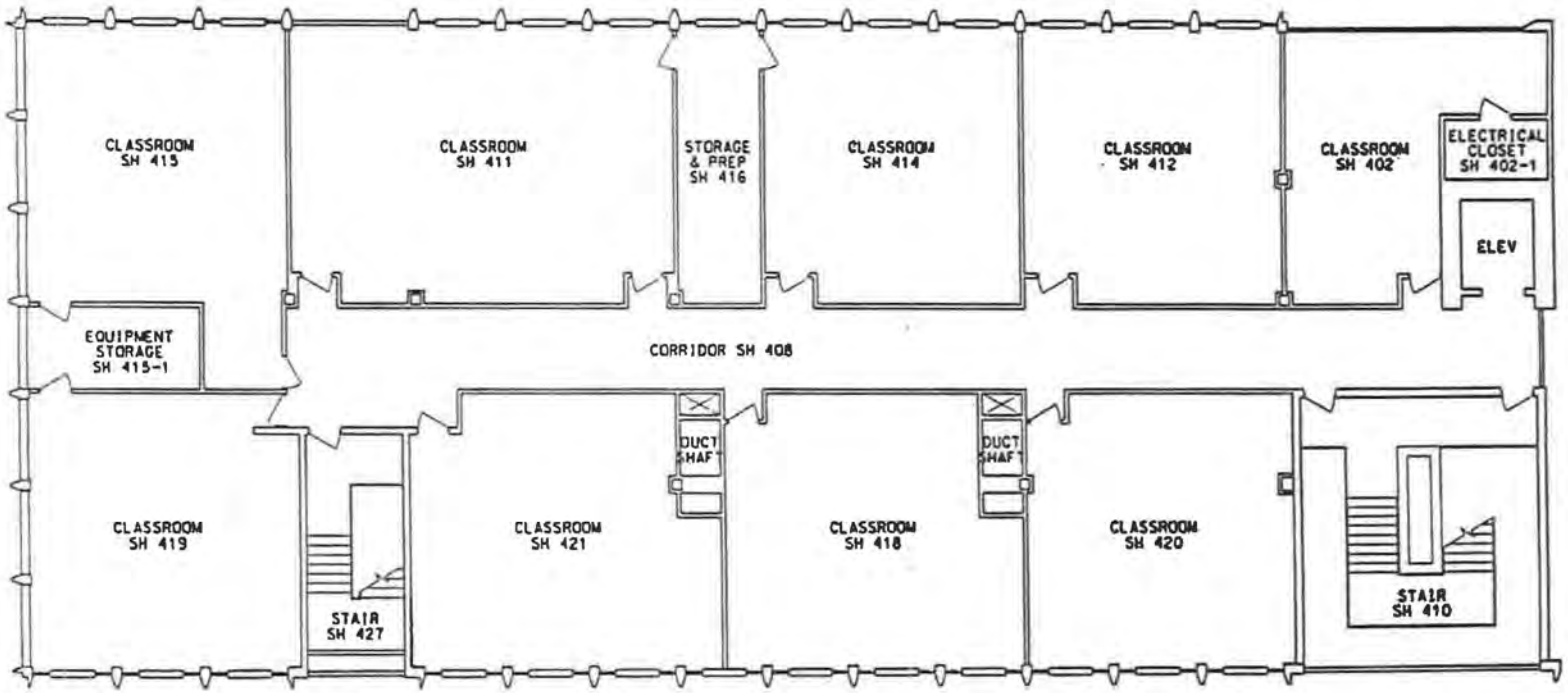
BUILDING "SH" BASEMENT



BUILDING "SH" LOWER LEVEL



BUILDING "SH" MAIN FLOOR



BUILDING "SH" SECOND FLOOR

NORTH

Building: SJ
Gross Area: 83100
Year Built: 1970
No. of Floors: 3 plus Penthouse
Evaluation Date: October 2017

Use Types:
Library
Offices

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		roof membrane was replaced in 2010.				

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
storefront	all floors	replace windows and entrances	1400	60	$84,000	$121,800
curtainwall	South Elev	replace curtainwall	600	95	$57,000	$82,650
sealant	throughout	replace sealant	1	12000	$12,000	$17,400
precast	throughout	clean and seal	1	5000	$5,000	$7,250

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
lay in clg.	throughout	replace lay in clgs. for fire suppression	47400	4.58	$217,092	$314,783
Gyp clg.	throughout	replace gyp. ceilings for fire suppression	4500	6.00	$27,000	$39,150
Hardware	throughout	upgraded door hardware	70	520	$36,400	$52,780
VCT	corr/stairs	Replace with rubber tile	5000	9.00	$45,000	$65,250
Carpet	classrooms/Lib	Replace carpet tile	35000	3.66	$128,100	$185,745

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

MECHANICAL

HVAC System Age:47 years Life Expectancy: 20-30 years

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
HVAC System	Throughout	Replace Heating & AC system	83,100	$18.70	$1,553,970	$2,253,257

Plumbing System Age: 47 years Life Expectancy: 20-50 years

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Piping	throughout	Repalce piping	83,100	$3.33	$276,723	$401,248

Fire Protection

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Suppression	throughout	Extend suppression throughout bldg.	58600	$2.82	$165,252	$239,615
Alarm	throughout	Upgrade F.A. system	83100	$1.96	$162,876	$236,170

Temperature Controls Age: 47 years Life Expectancy: 20-50 years

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Controls	Throughout	Replace temperature controls	83,100	$3.33	$276,723	$401,248

ELECTRICAL

Primary Power System Age: 37 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Primary Switch		Provide preventive maintenance	LS	$5,000	$5,000	$7,250

Secondary Power System Age: 37 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Panelboards		Provide preventive maintenance and infra-red testing	LS	$15,000	$15,000	$21,750
Motor Controls		Replace with distribution panel	LS	$10,000	$10,000	$14,500
HVAC		Electrical to support HVAC revisions	83,100	$2.00	$66,200	$95,990

Distribution System Age: 37 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Receptacles	Throughout	New receptacles and cover plates	83,100	$1.50	$124,650	$180,743

Lighting System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lights	throughout	Repalce fluorescent with LED	83100	$11,00	$914,100	$1,325,445
Controls	throughout	Upgrade light controls	83100	$1.50	$124,650	$180,743
Emergency/exit	throughout	Included above				

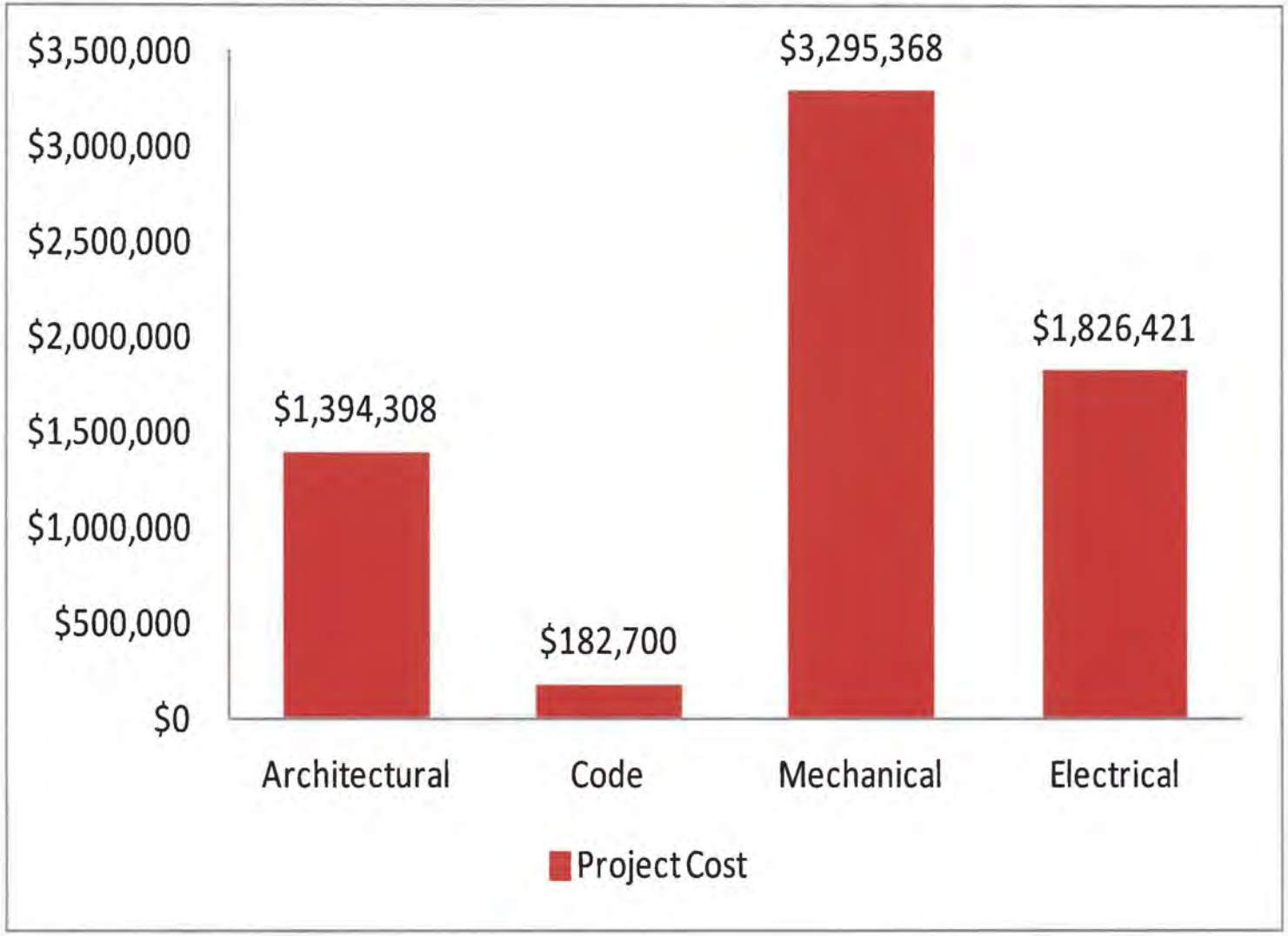
CODE AND BARRIER FREE

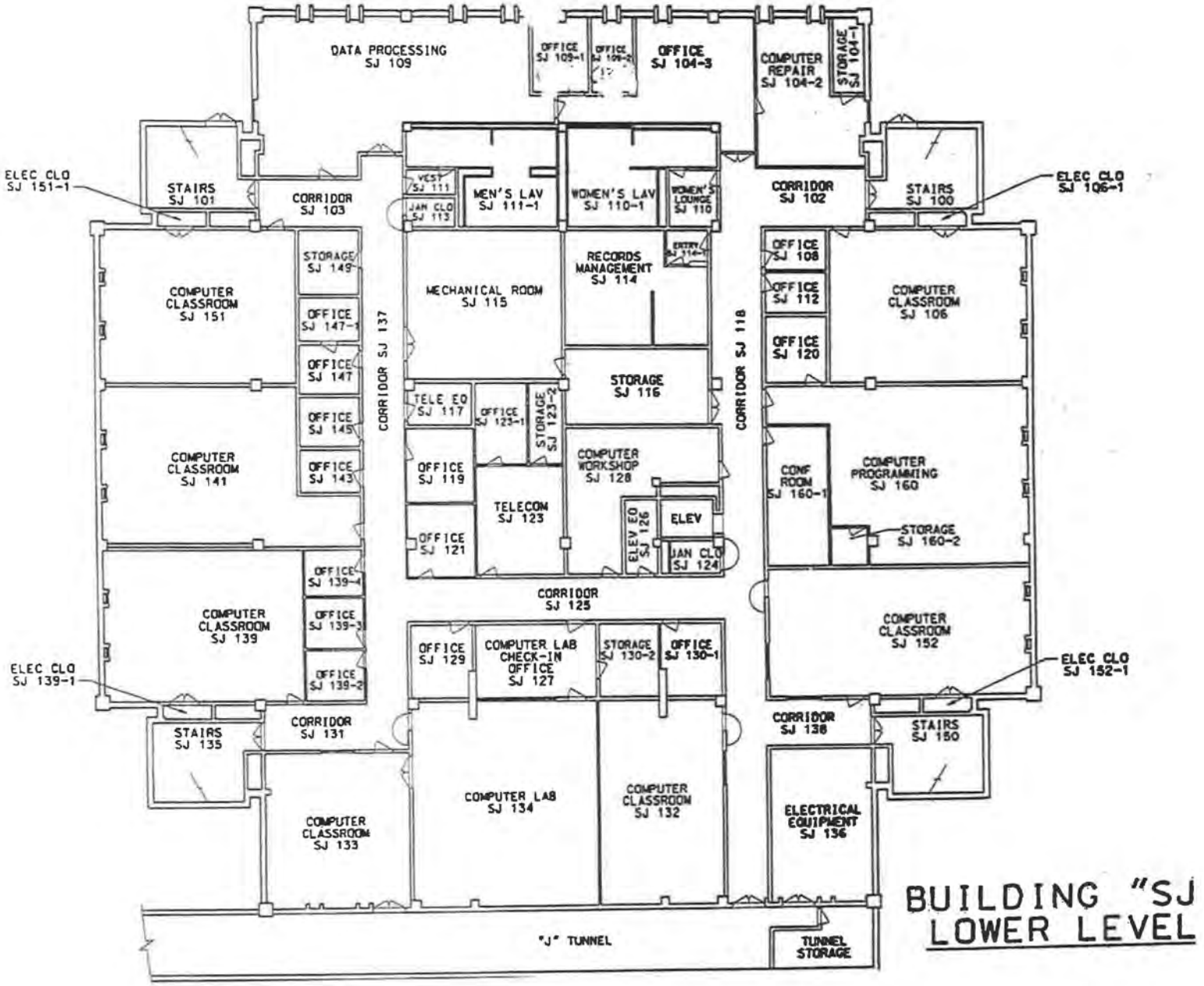
Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Railings	stairs	Rework guard and hand rails	600	90	$54,000	$78,300

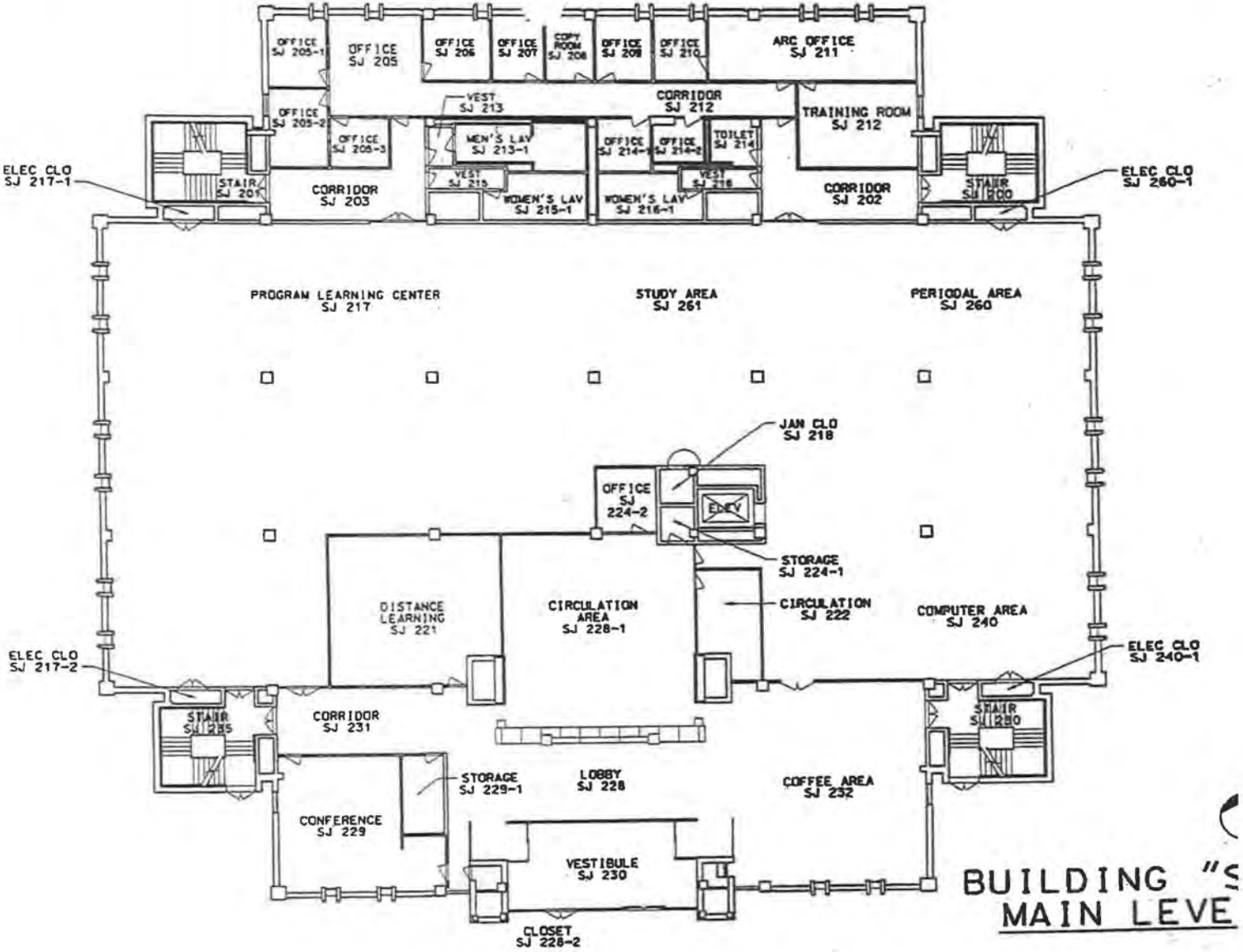
Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lavs/urnials WC's	Toilet rooms	Renovate for B.F. accessibility	6	12000	$72,000	$104,400

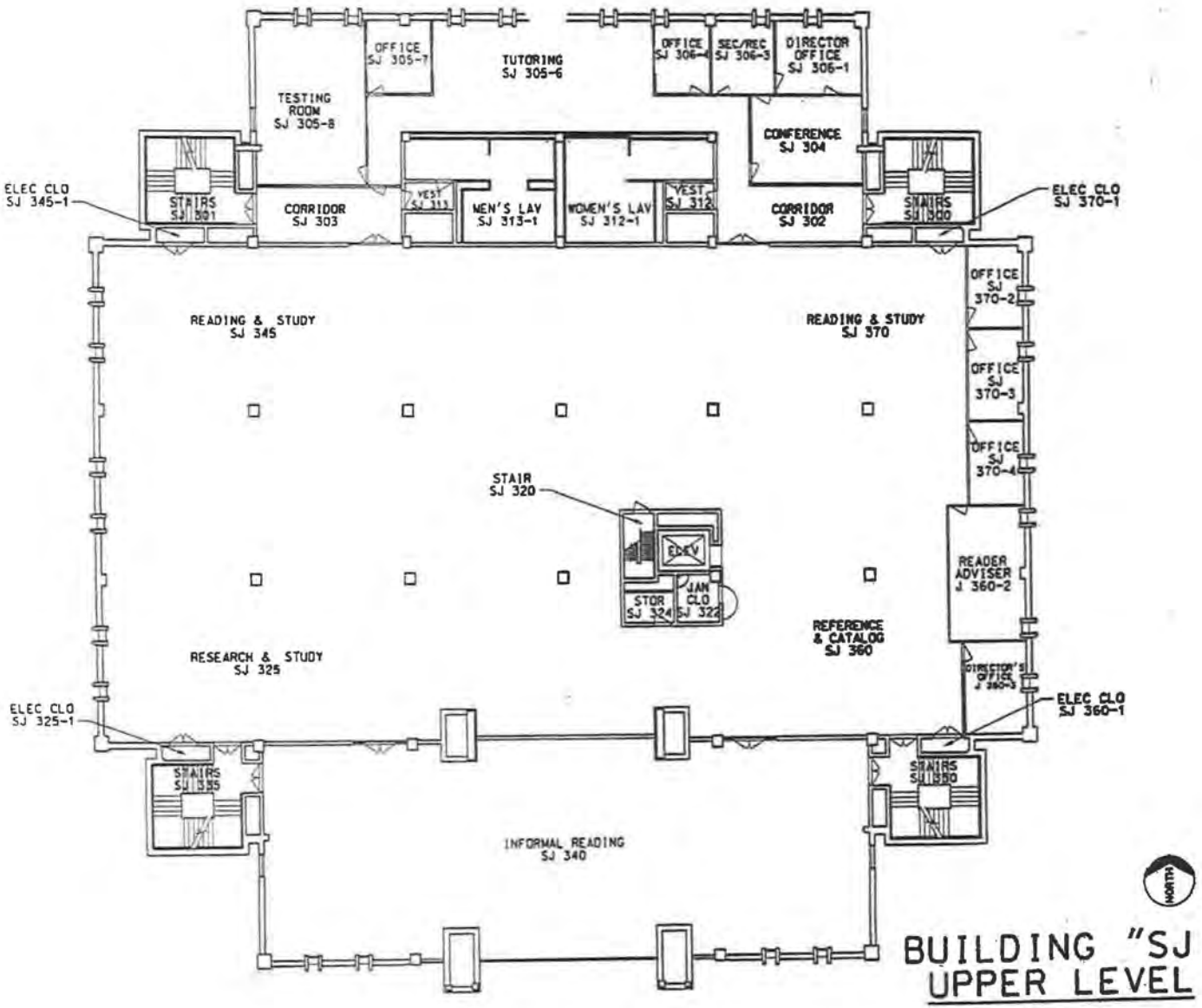

$3,500,000
$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$1,394,308
$182,700
$3,295,368
$1,826,421
Architectural
Code
Mechanical
Electrical
Project Cost



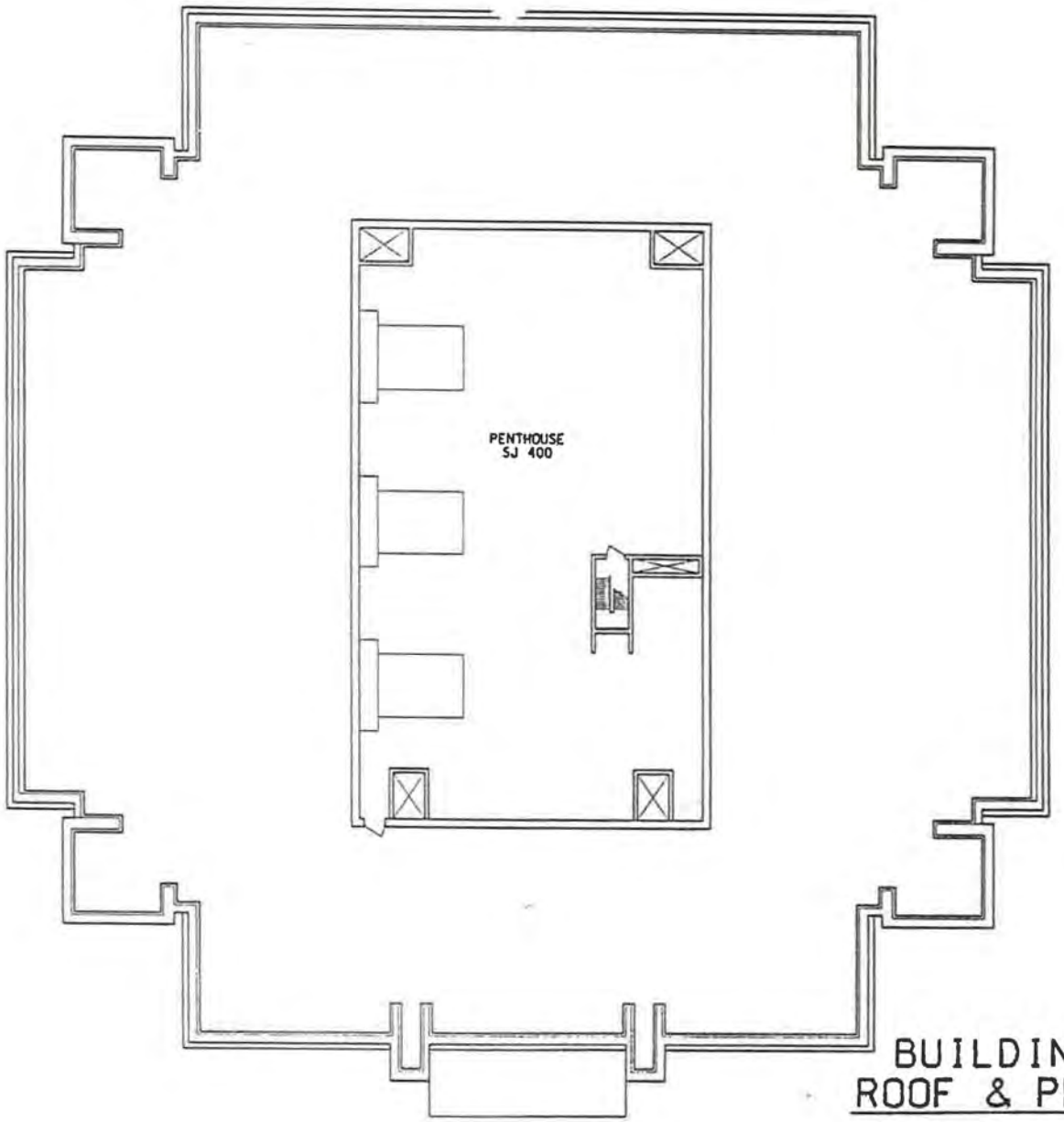
BUILDING "SJ LOWER LEVEL



BUILDING "S
MAIN LEVE



BUILDING "SJ
UPPER LEVEL



BUILDING "SJ"
ROOF & PENTHOUS

Building: SK
Gross Area: 91,360 S.F.
Year Built: 1971/1976
No. of Floors:2 plus basement
Evaluation Date: October 2017

Use Types:
Student Services
Conference
Dining

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Roof was replaced in 2010				

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
storefront	All floors	Windows and entrances	300	60	$18,000	$26,100
curtainwall	North end	Replace curtainwaill	1400	95	$133,000	$192,850
concrete	Canopies	Repair concrete canopies	1	15000	$15,000	$21,750
dock equipment	loading dock	Repair loading dock equipment	1	6000	$6,000	$8,700
brick	East elevator	Tuck point and repalce cracked brick	1	5000	$5,000	$7,250

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Lay in clg	throughout	Replace coffers with lay-in clgs	33000	4.58	$151,140	$219,153
Gyp. clg	toilet rooms	Replace for fire suppression	1600	6.00	$9,600	$13,920
Hardware	throughout	Upgrade door hardware	200	520	$104,000	$150,800
VCT	service areas	Replace with rubber tile	1800	9.00	$16,200	$23,490
Carpet	conference room/office	Replace with carpet tile	3600	3.66	$131,766	$19,105
Wood doors	2nd floor	Repale damaged doors	70	700	$49,000	$71,050

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

MECHANICAL

HVAC System Age: 3-46 yrs. Life Expectancy: 20-30 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Ventilation	Warehouse	Add ventilation	1	200,690	$200,690	$291,000
Outside Air	Mechanical Rm	Rework ductowkr for O.A regit	1	165,517	$165,517	$240,000
Exhaust	Toilet/lockers LC	Improve exhaust in toilet rooms	14	2586	$36,204	$52,500
VAV	store/lobby/ theater	Provide VAV system	1	420,000	$420,000	$609,000
Ductwork	throughout	clean ductwork	1	80,000	$80,000	$116,000
HVAC	throughout	Miscellaneous HVAC revisions	1	517,240	$517,240	$750,000
Pumps	Mech. Room	Replace heating pumps	4	4,483	$17,932	$26,000

Plumbing System Age:3-46 yrs. Life Expectancy: 20-50 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
EWC	1st floor	Replace electric water cooler	1	1,724	$1,724	$2,500

Fire Protection Age: 46 yrs. Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Fire Alarm	throughout	Upgrade Fire Alarm system	91360	1.96	$179,066	$259,646

Temperature Controls Age: 7 yrs. Life Expectancy: 15 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Sensors	through-out	relocate temperature sensors	1	48000	$48,000	$69,600
Controls	through-out	Update controls for changes in HVAC	1	41,379	$41,379	$60,000

ELECTRICAL

Primary Power System Age: 46 yrs. Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Provide preventive maintenance and IR testing on primary switch.	LS	$10,000	$10,000	$14,500

Secondary Power System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Replace main transformers	LS	$100,000	$100,000	$145,000
		Replace main distribution panels	LS	$60,000	$60,000	$87,000

Distribution System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Replace receptacles and cover plates	91,360 SF	$1.50	$137,040	$198,708

Lighting System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lights	throughout	Replace fluorescent with LED	91360	$10.00	$913,600	$1,324,720
Controls	throughout	Upgrade light controls	91360	$1.50	$137,040	$198,708
Emergency/exit	throughout	Included above				

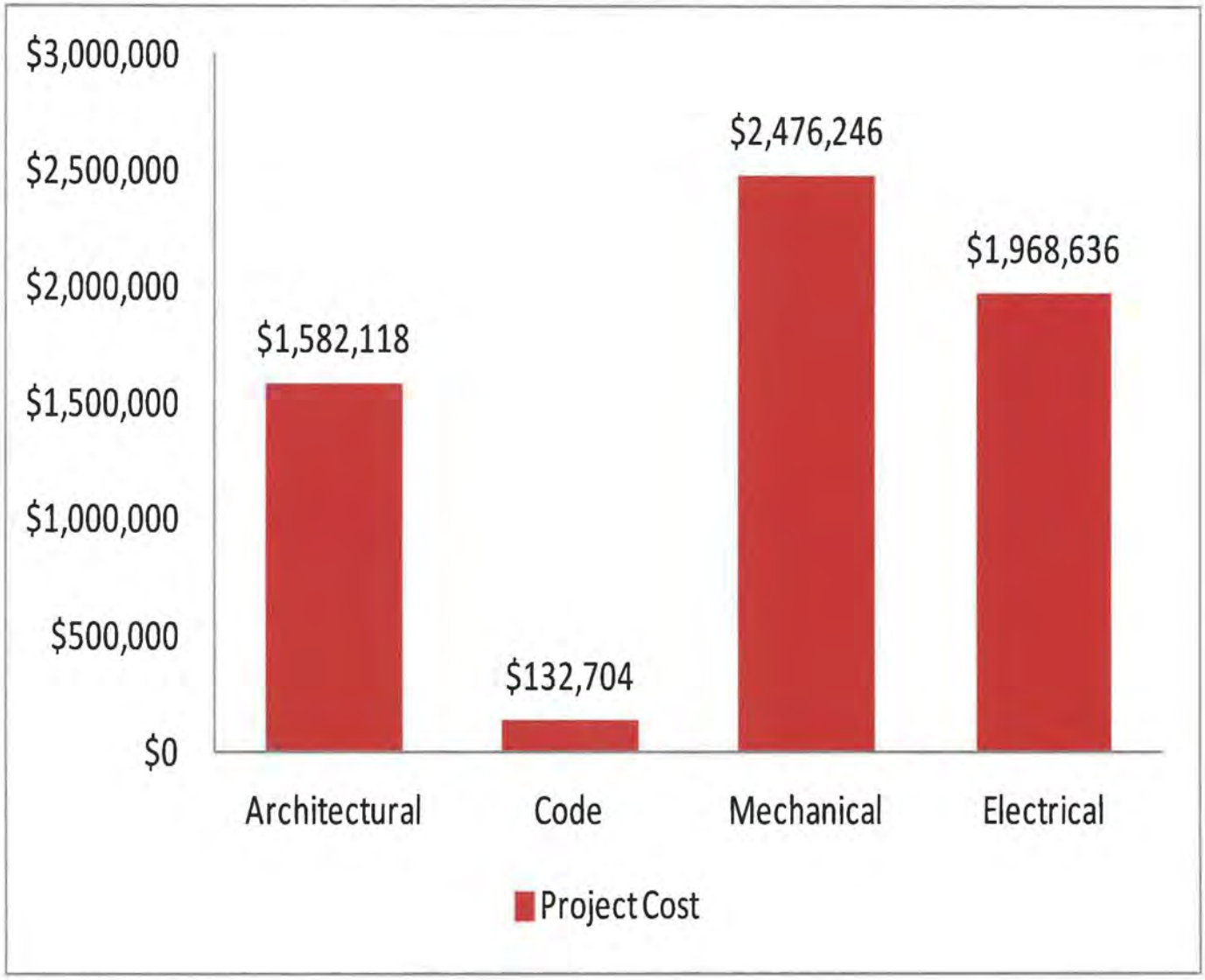
CODE AND BARRIER FREE

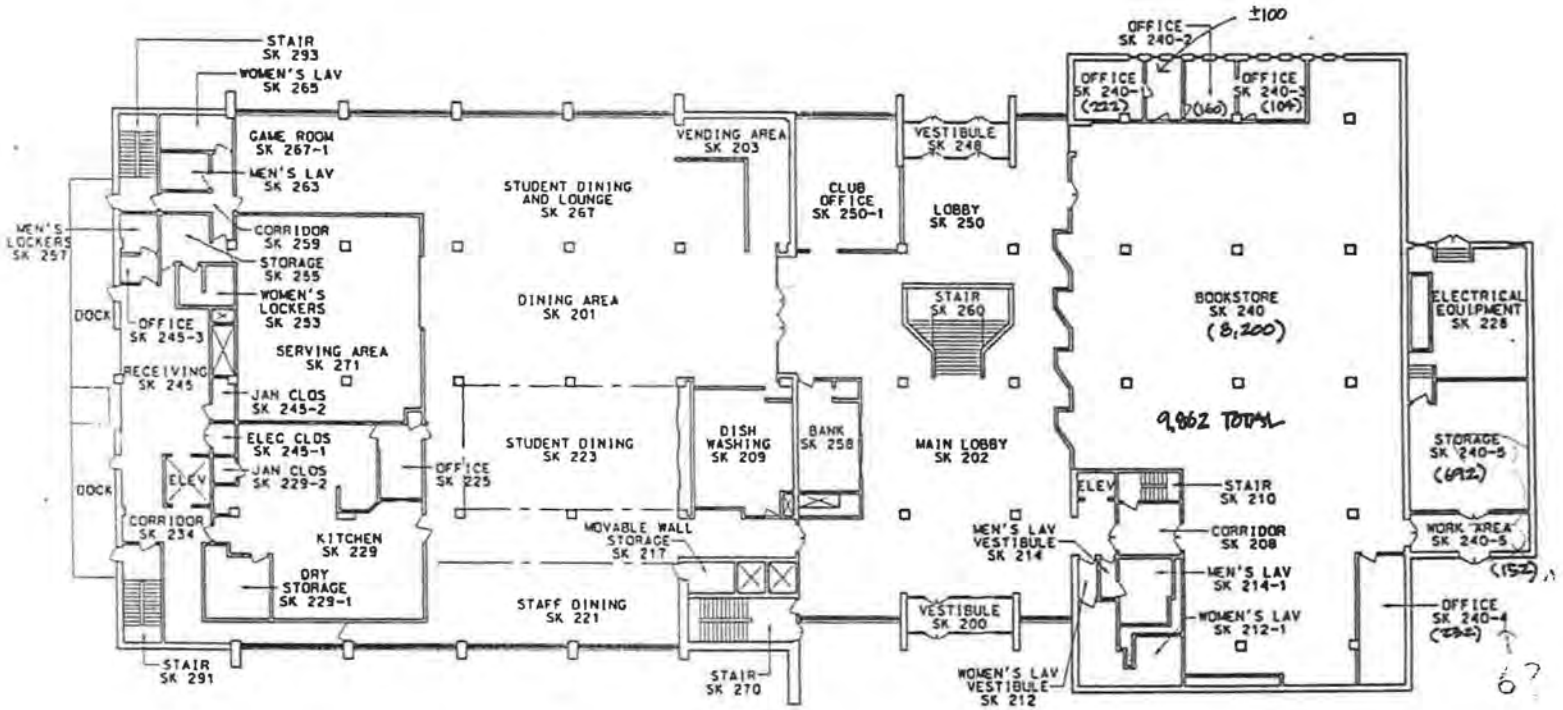
Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Railings	stairs	Guards & handrails are non compliant	150	92	13,800	20,010
Signs	Conference rooms	Add Occ Load Signs	6	120	720	1044

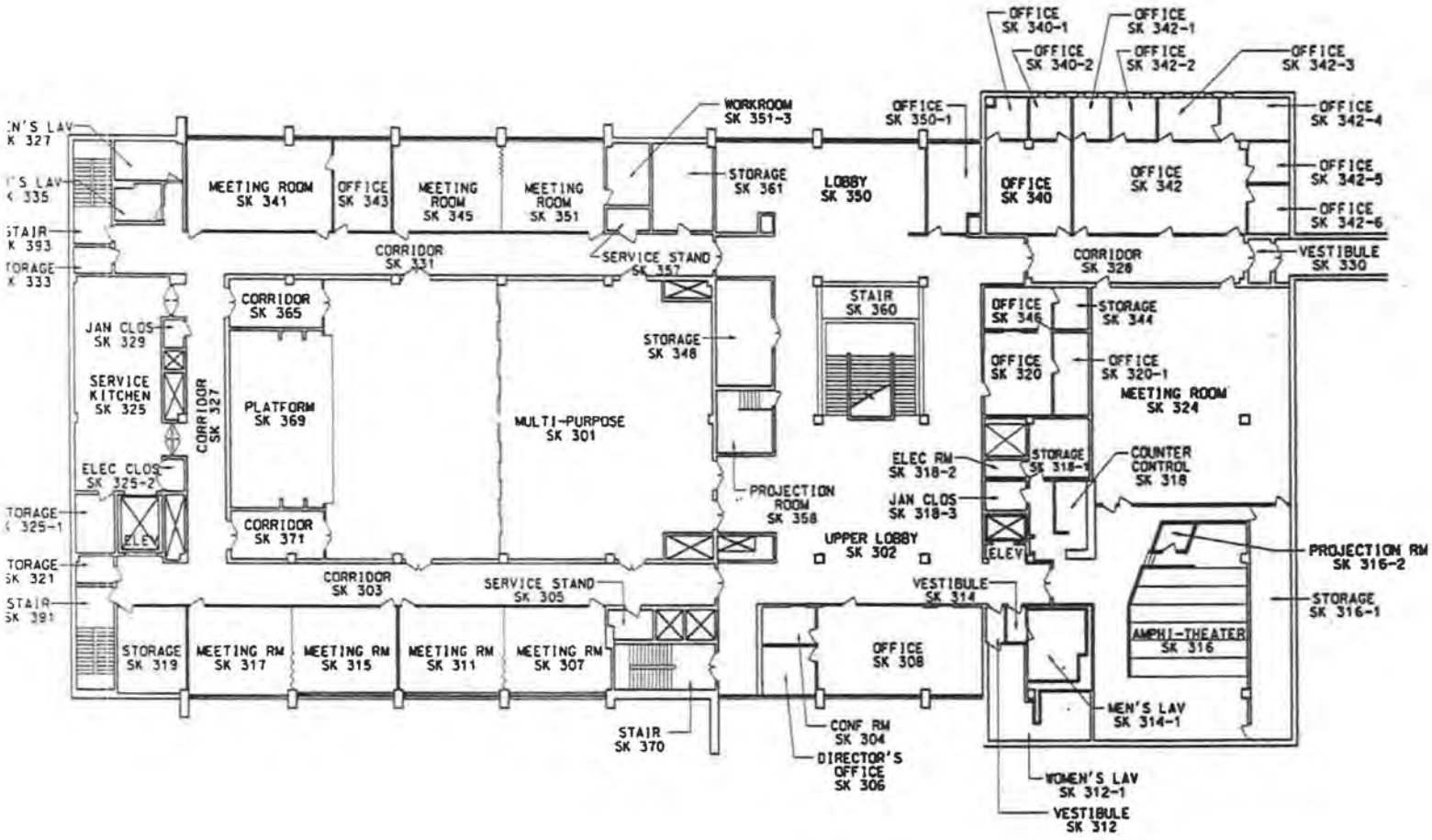
Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Signs	throughout	Signs do nto meet ADA require-ments	75	120	$9,000	$13,050
Lavs/urnials/ WC's	toilet rooms	Rework toilet rooms	4	12000	$48,000	$69,600
Sound sys-tems	Auditoriums	Provide hearing impaired system	1	20000	$20,000	$29,000

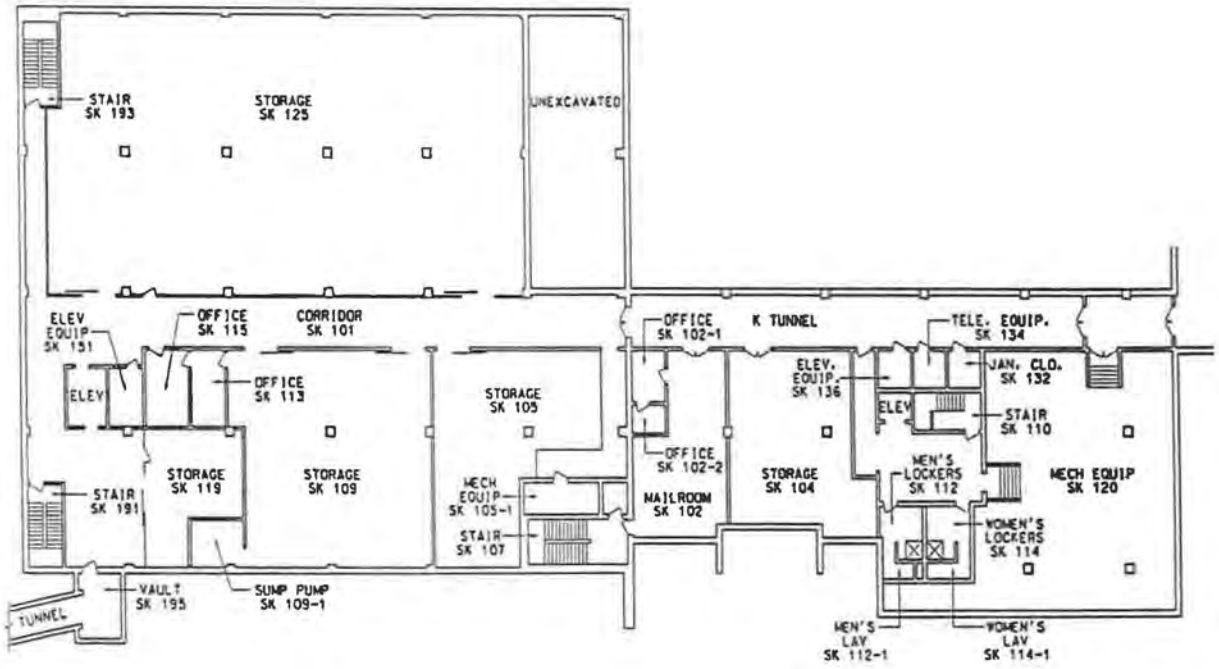

$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$1,582,118
$132,704
$2,476,246
$1,968,636
Architectural
Code
Mechanical
Electrical
Project Cost



BUILDING "SK" MAIN FLOOR



BUILDING "SK" UPPER FLOOR



BUILDING "SK" BASEMENT

NORTH

Building: SL
Gross Area: 3,250 S.F.
Year Built: 1950
No. of Floors: 2 plus basement
Evaluation Date: October 2017

Use Types:
Offices

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

Enclosure System Age:. Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Siding/trim	all sides	Siding and trim should be patched and painted	1	5000	$5,000	$7,250

Finish System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
VCT	basement	Replace with rubber tile	900	9.00	$8,100	$11,745
Carpet	throughout	Replace with carpet tile	3250	3.66	$11,895	$17,248

Fixed Equipment

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

MECHANICAL

HVAC System Age: 67 yrs. Life Expectancy: 15-20 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Furnace	Basement	Replace furnace	1	10,345	$10,345	$15,000

Plumbing System Age: 67 yrs. Life Expectancy: 15-20 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Sanitizing	Shower	Repair shower drain	1	750	750	$1,088

Fire Protection

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		there is no fire suppression				

Temperature Controls Age:67 yrs Life Expectancy: 15 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
T-stat	1st floor	Repalce with furnace				

ELECTRICAL

Primary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		No Comments				

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

Distribution System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
GFI	sink	Add GFI at sink	1	$150	$150	$218

Lighting System Age:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	throughout	Replace incondescent and fluorescent with LED	3250	$10.10	$32,500	$47,125
Controls	throughout	Provide automatic lighting controls	3250 SF	$1.50	$4,875	$7,069

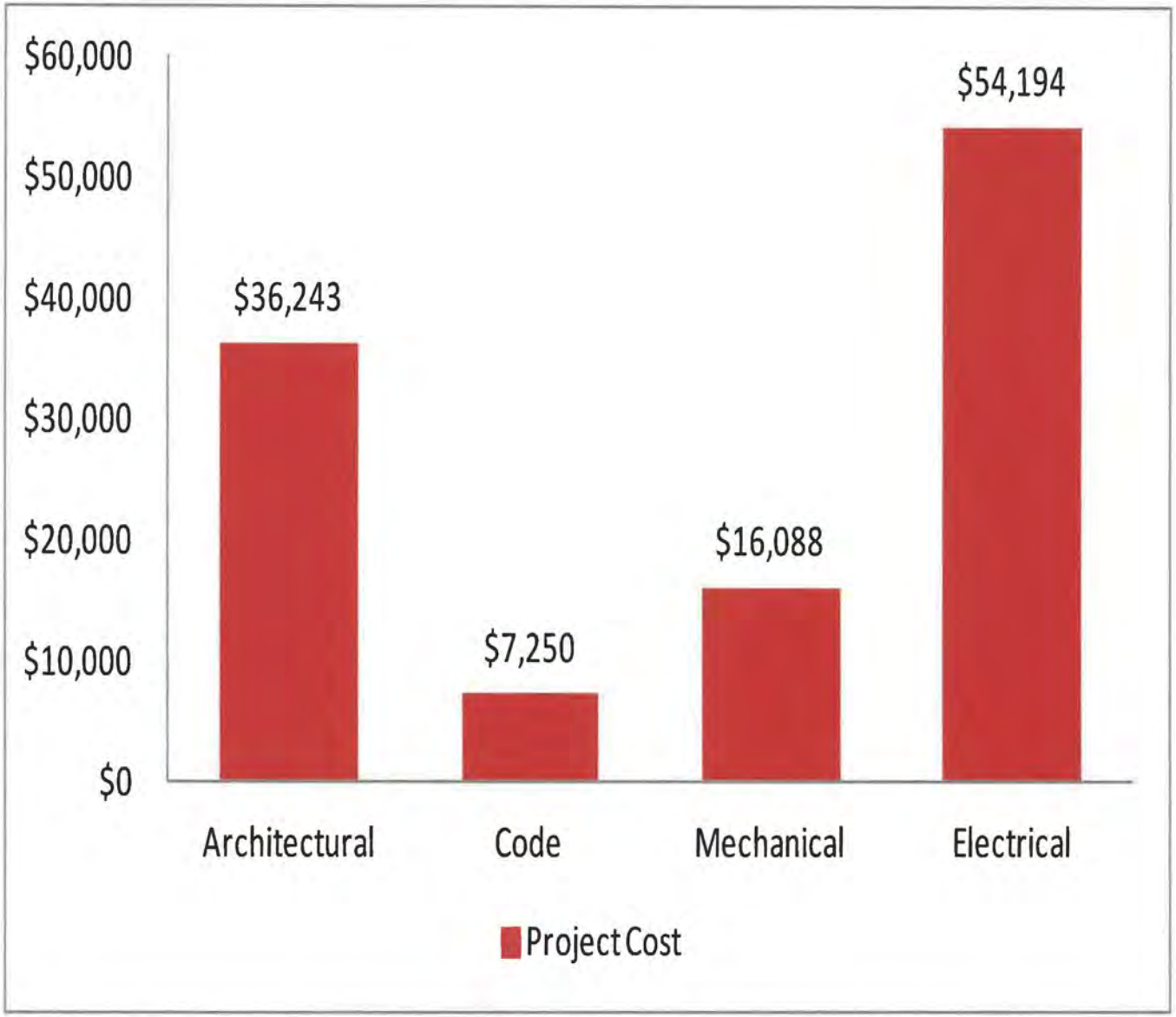
CODE AND BARRIER FREE

Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Ramp	Entrance	Provide ramp at entrance	1	5000	$5,000	$7,250


$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
$36,243
$7,250
$16,088
$54,194
Architectural
Code
Mechanical
Electrical
Project Cost

Building: SM
Gross Area: 69,640 S.F.
Year Built: 1982
No. of Floors: Two
Evaluation Date: October 2017

Use Types:
10% Classrooms
5% Offices
85% Lab

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
*Membrane Roof	Low Slope	The PVC roof was installed in 2006 but is in poor condition and should be replaced.	48,000 S.F.	12.50	$600,000	$870,000
*Metal Roof	Steep Slope	The sloped metal roofing is deteriorating and should be replaced.	11,000 S.F.	37.10 SF	$408,100	$591,745
*Flashing	Perimeter	Flashings around the building should be secured.	1,100 L.F.	12.72 L.F.	$13,992	$20,288

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
*Glazing	Sloped Roof	The sloped glazing system has numerous broken lites and leaks. The system should be repalced with metal roofing,.	10,000 S.F.	37.10 S.F.	$371,000	$537,950
* Vents	Clerestory	The operable Clerestory window vents to not operate, and leak in many areas. They should be replaced wiht fixed Clerestory win-dows.	1,000 S.F.	63.60 S.F.	$63,600	$92,220
*Vents	Louvers	The operable louver vents do not work and parts are not available. They should be repalced with typical wall construction.	1,500 S.F.	31.80 S.F.	$47,700	$69,165
*Block	Landscape walls	The sloping block landscape walls should be replaced with tiered walls.	2,000 S.F.	37.10 S.F.	$74,200	$107,590
*Block	Screen Wall	The automobile screen wall should be repaired and capped with flashing.	600 L.F.	26.50 L.F.	$15,900	$23,055
*Storage Tanks	West Side	The underground storage tanks on west side should be removed.	2 ea.	5300	$10,600	$15,370
*Waterproofing	Behind Berm	The waterproofing behind the berm should be replaced.	2,500 S.F.	15.9 S.F.	$39,750	$57,638

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Tile	Corridor	The faux brick tile is failing and should be replaced	3,000 S.F.	26.5 S.F.	$79,500	$115,275
Trench Drain	Auto Lab	The trench drain in the Auto shop is bent	200 L.F.	79.5 L.F.	$15,900	$23,055
Suspended Ceilings	Throughout	The suspended ceilings will need to be replaced to accomodate new mechanical systems.	6,000 S.F.	3.71 S.F.	$22,260	$32,277
Wall Patches	Throughout	After roof Clerestory and sloped glazing leaks are patched-the wall should be patched.	L.S.	10600 L.S.	$10,600	$15,370

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Marker Boards	Classrooms/Labs	Classrooms and labs should recieve new sliding	16 rms.	5,300/rm	$84,800	$122,960
Storage Cubbies	Labs	Storage cubicles should be provided in labs for coats, backpacks, etc.	12 rms.	2120/rm	$25,440	$36,888

Code

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Lavatory Mixing Valves	Toilet Rooms and Sinks	Lavatory and sink faucets are required to have mixing valves to provide scald/burn protection.	24 ea.	410 ea	$9,840	$14,268
Handrails	Stairs to Upper Level	Add Handrail to meet code	80/L.F.	31.8 L.F.	$2,544	$3,689
Guardrails	Stairs & Upper Level	Add intermediates to meet spacing requirement.	1,200/L.F.	31.8 L.F.	$38,160	$55,332

Barrier Free

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
EWC	Corridor	The electric water coolers should be replaced with accessible units.	2 ea.	3,374	$6,748	$9,785
WC's	Toilet Rooms	The toilet stalls should	4 ea.	2,650	$10,600	$15,370
Lavatories	Toilet Rooms	Protective pipe covering should be provided over exposed piping below the accessible lavatory.	4 ea.	169 ea	$676	$980

MECHANICAL

HVAC System — Originally Constructed in 1982 Age:35 yrs — Life Exp: 20-30 yrs

Item	Location	Comments	Equipment/ system Age	Estimated Service Life	Quantities	Units	Cost/Unit	Sub-total Trade	Sub-total Project
HVAC	Building	The buildings HVAC systems are in poor condition and are in need of the following:	32		69,640	sq. ft.	$34.50	$2,402,580	$3,483,741
		Air handling units	32	20			Incl. Above		
		Replace exhaust fans	32	20			Incl. Above		
		Perimeter and Tempering Coil hot water heating system-heat exchangers and pumps.	32	20-24			Incl. Above		
		Steam condensate return unit	32	15			Incl. Above		
		Auto shop H&V units-roof mounted	32	15			Incl. Above		
		Fabrication shop H&V Unit-indoors on mezzanine	32	20			Incl. Above		
Shop Dust Collector	Outdoors	The Fabrication Shop Dust collector which is located outdoors is in very poor condition and should be replaced.	32	20	1	LS	$20,103	$20,103	$29,150
Auto Lab vehicle exhaust	Auto Lab	The vehicle exhaust system is in poor condition and is in need of repair and replacement.	32	24	1	LS	$36,186	$36,186	$52,470
Solar Heating	Building	Renovating existing solar hot water system. 302-solar panels, piping, controls, heat exchangers, storage, tanks, etc.	32	10-30	1	LS	$402,069	$402,069	$583,000

Plumbing System — Age: 35 yrs. — Life Expectancy: 20-30 yrs.

Item	Location	Comments	Equipment/ system Age	Estimated Life Service	Quantities	Units	Cost/Unit	Sub-total Trade	Sub-total Project Cost
Plumbing Fixtures water closets	Toilet Rooms	Water closets should be replaced with water conserving units and accessible units where required.	32	25	13	ea.	$2,332	$30,316	$43,958
Plumbing Fixtures-urnials	Toilet Rooms	Urnials should be replaced with water conserving units and accessible units where required.	32	25	8	ea.	$2,040	$16,320	$23,664
Plumbing Fixtures-Lavatories	Toilet Rooms	Lavatories should be repalced with water conserving units and accessible units where required.	32	25	14	ea.	$1,865	$26,110	$37,860
Plumbing Fixtures-Classroom circular handwashing sink	Classrooms	The classroom semi-circular handwashing sinks are in poor condition and need to be repaired frequently. Recommend replacing with accessible stainless steel sensor operated type.	32	24	10	ea.	$11,660	$116,600	$169,070

Trench Drain	Auto Lab	Trench drain and grate are in poor condtion and need to be replaced (see FINISH SYSTEM)	32	30	0		$0.00	$0.00	$0.00
Trench Drain	Auto Lab	Provide oil and sand interceptor to serve the trench drain and floor drains in the Auto Lab as required by current code to protect the public sewers.	0	0	1	LS	$68,966	$68,966	$100,000

Fire Protection

Item	Location	Comments	Equip-ment/ system Age	Esti-mated Service Life	Quantities	Units	Cost /Unit	Sub-total Trade Cost	Sub-total Project Cost
Sprinklers	Building	The existing building is full sprinkled- no revisions or corrective actions are necessary.			69,640	sq.ft.	$0.00	$0.00	$0.00

Temperature Controls Age: 35 yrs. Life exp: 15 yrs

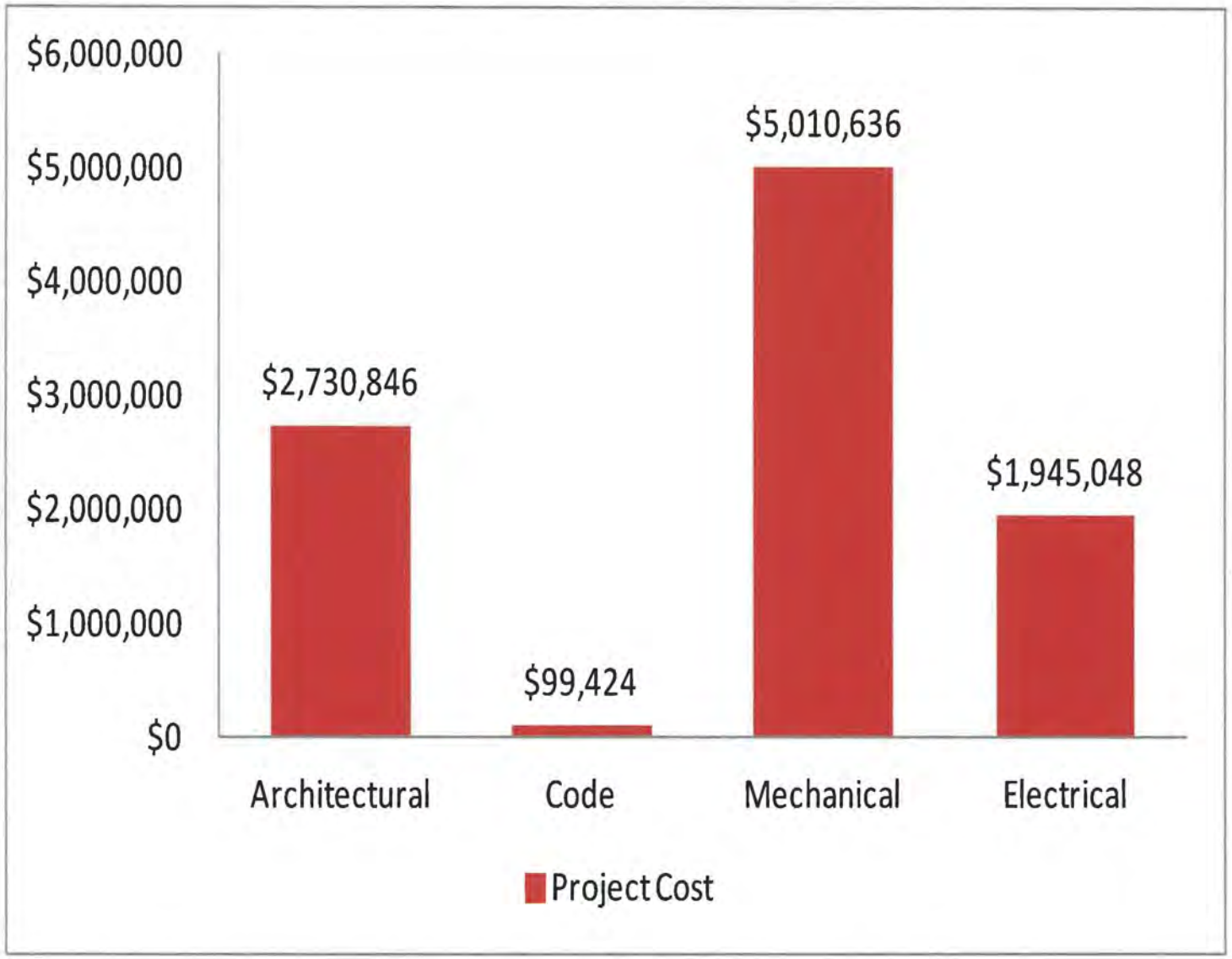
Item	Location	Comments	Equip-ment/ System Age	Estimated Service Life	Quantities	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Replace/Up-grade Controls	Building	Replace and upgrade controllers and control componets for added ef-ficiency and enhanced maintenance functions.	32	15	69,640	sq. ft.	$4.83	$336,361	$487,723

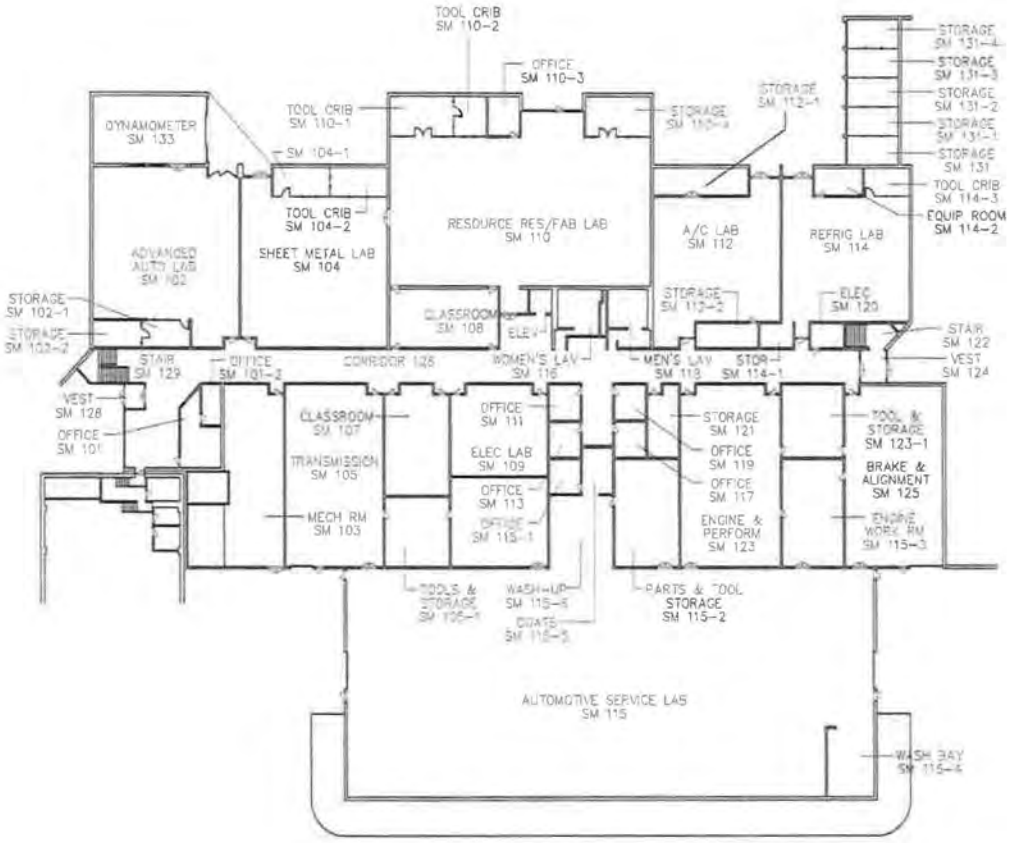
ELECTRICAL 69640 Originally Constructed in 1982

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quanti-ties	Units	Cost/Unit	Sub-total Trade	Sub-total Project Cost
Primary Sub-station	Q Build-ing Boiler Room	Perform maintenance testing on substation	32	35-40	1	ea.	$5,300	$5,300	$7,685
Electrical Distribution	Building	Dry type distribution transformers are near the end of their reliable service life and should be replaced.							
		Replace 300 KVA 480-208/120V transformer	32	30	1	ea.	$33,920	$33,920	$49,184
		Replace 500 KVA 480-208/120V transformer	32	30	1	ea.	$49,820	$49,820	$72,239
		Replace 112.5 KVA 480-208/120V transformer	32	30	1	ea.	$16,960	$16,960	$24,592
		Replace 800A Motor Control Center that is flood dam-aged and deteriorating	32	35-40	1	ea.	$53,000	$53,000	$76,850
		Replace 400A Power Panel (adjacent to MCC) that is flood damaged and deteriorating	32	35-40	1	ea.	$10,600	$10,600	$15,370
		Automotive lab is shy on power outlets and requires e-stops. Upgrade distribution in Automotive lab.			1	lot	$68,900	$68,900	$99,905
		Age of equipment is such that it should be ereplaced when major renovations affect major work in the panel. Upgrade distribution equipment where affected by major renovations.						$0.00	$0.00
		Upgrade distribution equipment associated with me-chanical upgrades.			1	lot	$127,200	$127,200	$184,440
		Replace branch panelboards throughout associated with program requirements.			18	ea.	$5,830	$104,940	$152,163
		Replace distribution panels in lab spaces			5	ea.	$12,720	$63,600	$92,220

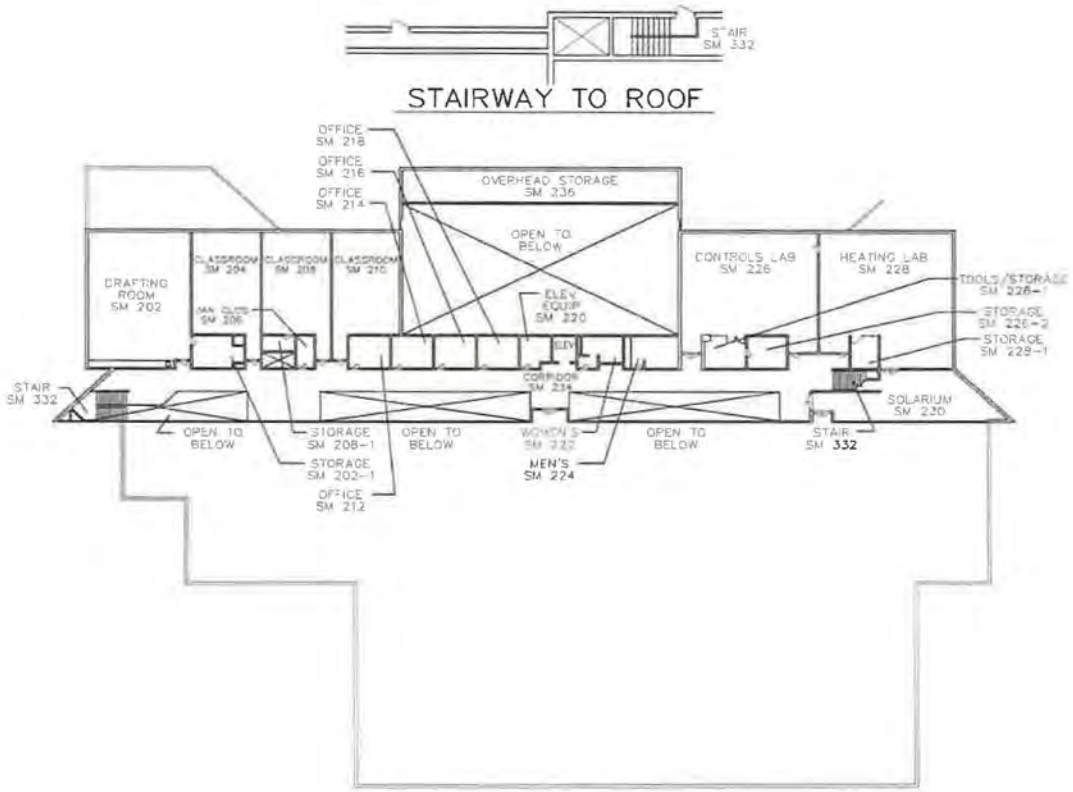
Lighting

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quanti-ties	Units	Cost/Unit	Sub-total Trade	Sub-total Project
Lighting	Building	Replaced outdated lighting systems with new, energy efficient and low maintenance lighting. Lighting levels are not adequate in many spaces for intended use.	30	20	69,640	SFT	$7.69	$535,532	$776,521
Lighting Controls	Building	Add automatic lighting control systems			69,640	SFT	$2.12	$147,637	$214,074
Emergency Lighting	Building	Provide new emergency and exit lighting central or distributed powe source			69,640	SFT	$1.59	$110,728	$160,556


$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
$2,730,846
$99,424
$5,010,636
$1,945,048
Architectural
Code
Mechanical
Electrical
Project Cost



BUILDING "SM" MAIN FLOOR



BUILDING "SM" UPPER FLOOR

Building: SN
Gross Area: 12,850 S.F.
Year Built: 1986
No. of Floors: 1
Evaluation Date: October 2017

Use Types:
Offices

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Replaced in 2002				

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		No comments				

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		Upgraded 2012				

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

MECHANICAL

HVAC System Age: Life Expectancy:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded 2012				

Plumbing System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded 2012				-

Fire Protection

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		There is no fire suppression				-

Temperature Controls Age: 16 yrs. Life Expectancy: 15 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

ELECTRICAL

Primary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Provide IR testing for distribution panels	LS	$3,000	$3,000	$4,350

Distribution System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

Lighting System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	Throughout	Fluorescent lighting should be replaced with LED	12850	$8.18	$105,113	$152,414

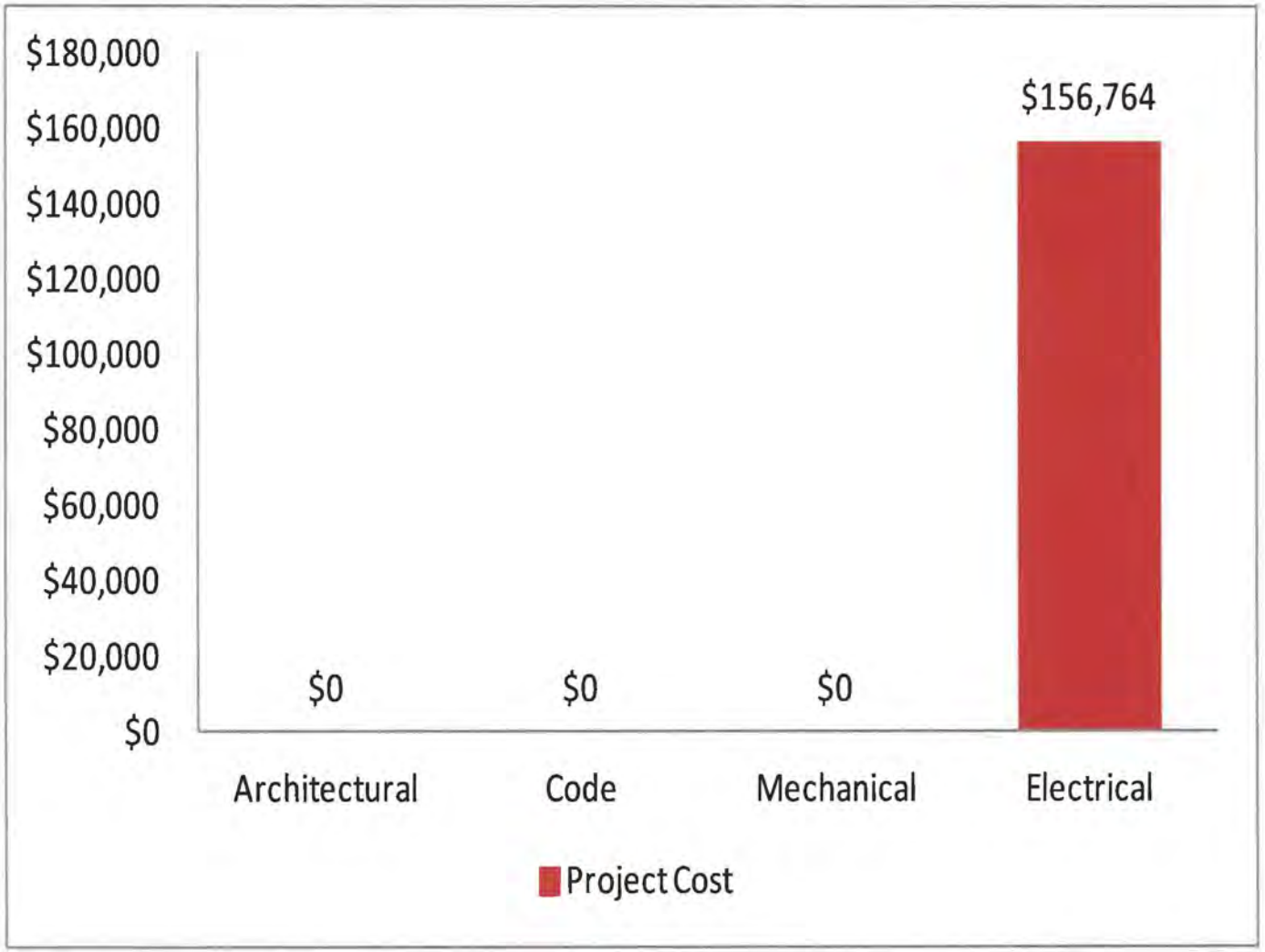
CODE AND BARRIER FREE

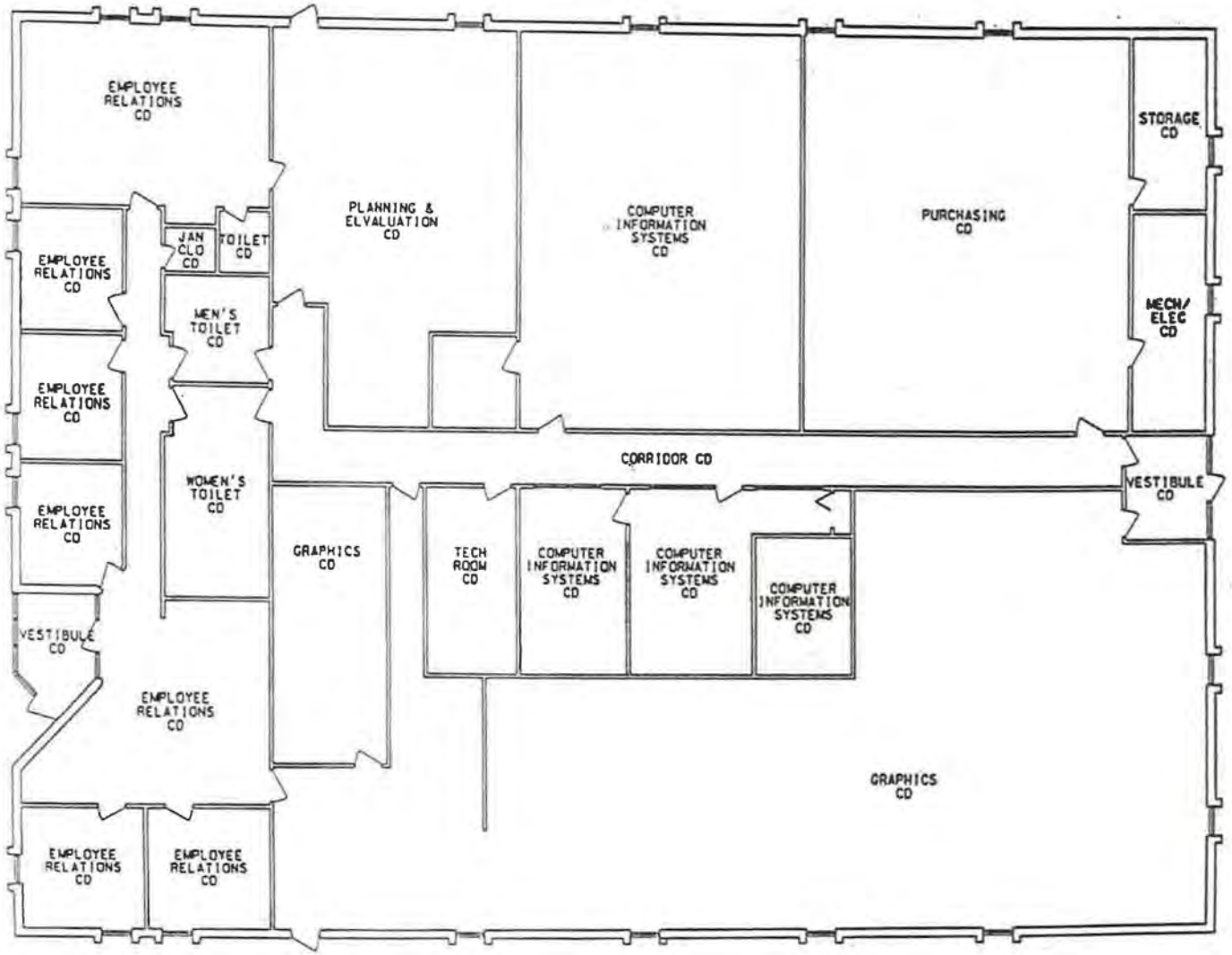
Code System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upraded in 2012				

Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Upgraded in 2012				


$180,000
$160,000
$140,000
$120,000
$100,000
$80,000
$60,000
$40,000
$20,000
$0
$156,764
$0
$0
$0
Architectural
Code
Mechanical
Electrical
Project Cost



BUILDING "SN" MAIN FLOOR

Building: SP
Gross Area: 98,260 S.F.
Year Built: 1975
No. of Floors: One
Evaluation Date:October 2017

Use Types:
Athletics
Physical Education

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
membrane	Roof	PVC roof was repalced in 1998 and will not require replacement until 2024.				

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
storefront	North Elev.	Repalce single glazing	1200	95	$114,000	$165,300
HM Doors	various	Repair & repaint hollow metal doors	16	1200	$19,200	$27,840
Canopy	entry	Repaint	1	5000	$5,000	$7,250

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Laying Clg.	Classrooms/office	Repalce for fire suppression	18000	4.58	$82,440	$119,538
Gyp. Clg	Toilet rooms	Replace for fire suppression	1600	6.00	$9,600	$13,920
Carpet	Classrooms/office	Replace carpet tile	8000	3.66	$29,280	$42,456
Concrete Floor	Locker Rms	Repaint concrete floors	3000	1.85	$14,800	$21,460
Resil flooring	Corridors	Replace with rubber tile	4250	9.00	$38,250	$55,463
Hardware	offices	Rework door hardware	18	520	$9,360	$13,572
Athletic flooring	Gym	Replace athletic flooring	10000	13.00	$130,000	$188,500

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost

MECHANICAL

HVAC System Age:20-42 yrs. Life Expectancy:20-30 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Replace Major HVAC Equip.	Throughout	Replace Galvanized Piping	98,260	24.14	$2,371,996	$3,439,394
Ductwork	Throughout	Clean System	1	25,000	$25,000	$36,250

Plumbing System Age:20-42 yrs. Life Expectancy: 20-50 yrs.

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Backflow	Concessions	Provide Backflow preventors	7	500	$3,500	$5,075
Insulation	Basement	Replace damaged pipe insulation	50	75	$3,750	$5,438
Identification	Throughout	Provide pipe identification	1	5000	$5,000	$7,250
Piping	Women Locker	Remove abandoned piping	1	4000	$4,000	$5,800
Galv. Piping	Throughout	Replace Galv-Piping	1	68,966	$68,966	$100,000

Fire Protection Age:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
suppression	Throughout	Extend suppression throughout building	65000	5.5	$357,500	$518,375

Temperature Controls Age: Life Expectancy: 15 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Controls	Throughout	Update/replace controls for new HVAC	98,260	$4.83	$474,596	$474,596

ELECTRICAL

Primary Power System Age: 40+/18 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		(1) Primary switch/transformer is original (1975 Vintage) and should be replaced. (1999 Switch) transformer is in good condition	LS	200,000	$200,000	$290,000

Secondary Power System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Panelboard	Corridor 112	Items are stored in front panelboard				-
Testing	Elec Rm	Perform infrared and visual inspection of distribution equipment	L.S.	$2,600	$2,600	$3,640

Distribution System Age: 40+/ 18

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

Lighting System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lights	Throughout	Replace fluorescent with LED	98260	8.18	$803,767	$1,165,462
Emergency/ Exit	Throughout	Upgrade emergency/exit lights	98260	1.68	$165,077	$239,362
Controls	Throughout	Included w/ lights above				

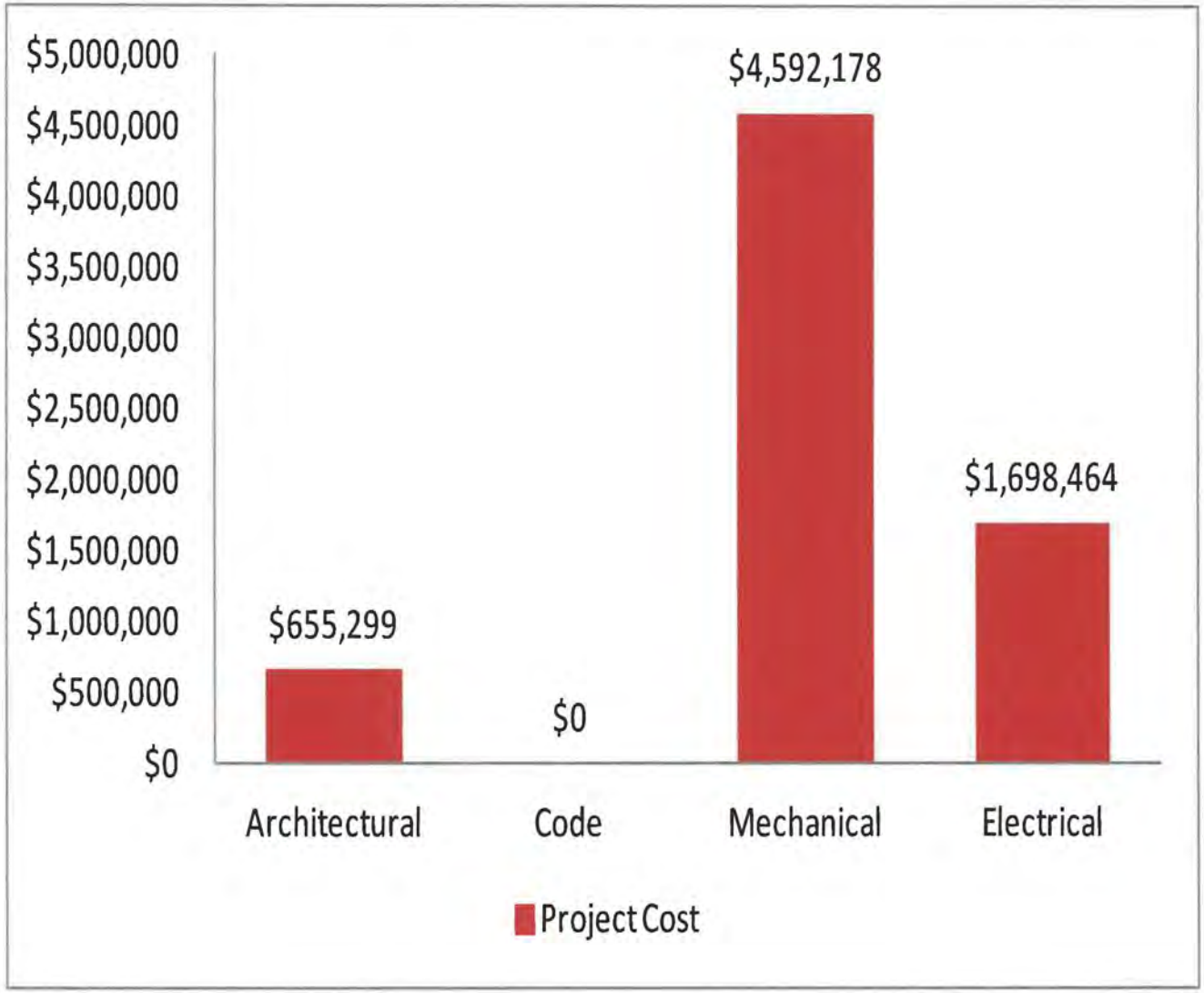
CODE AND BARRIER FREE

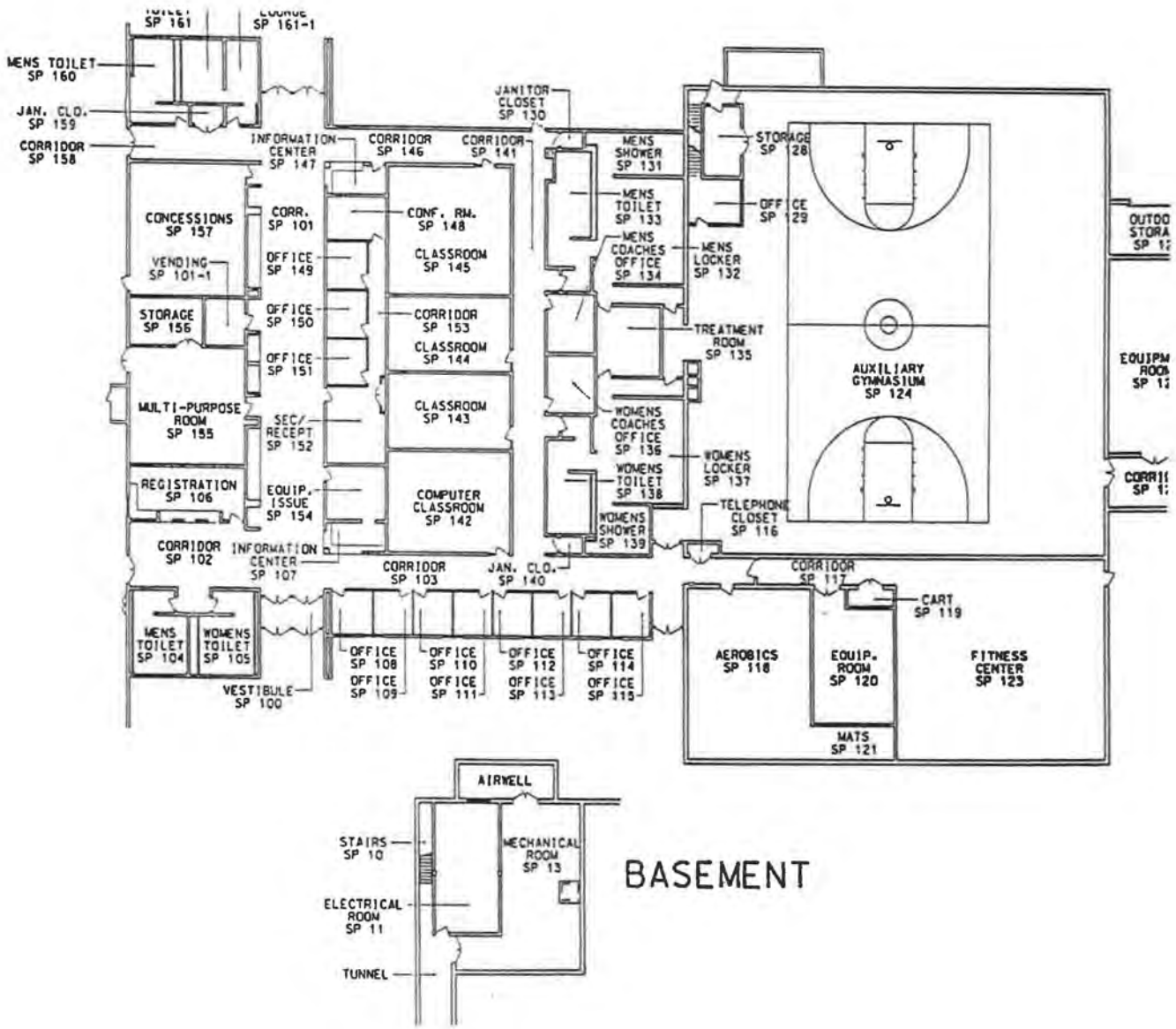
Code System

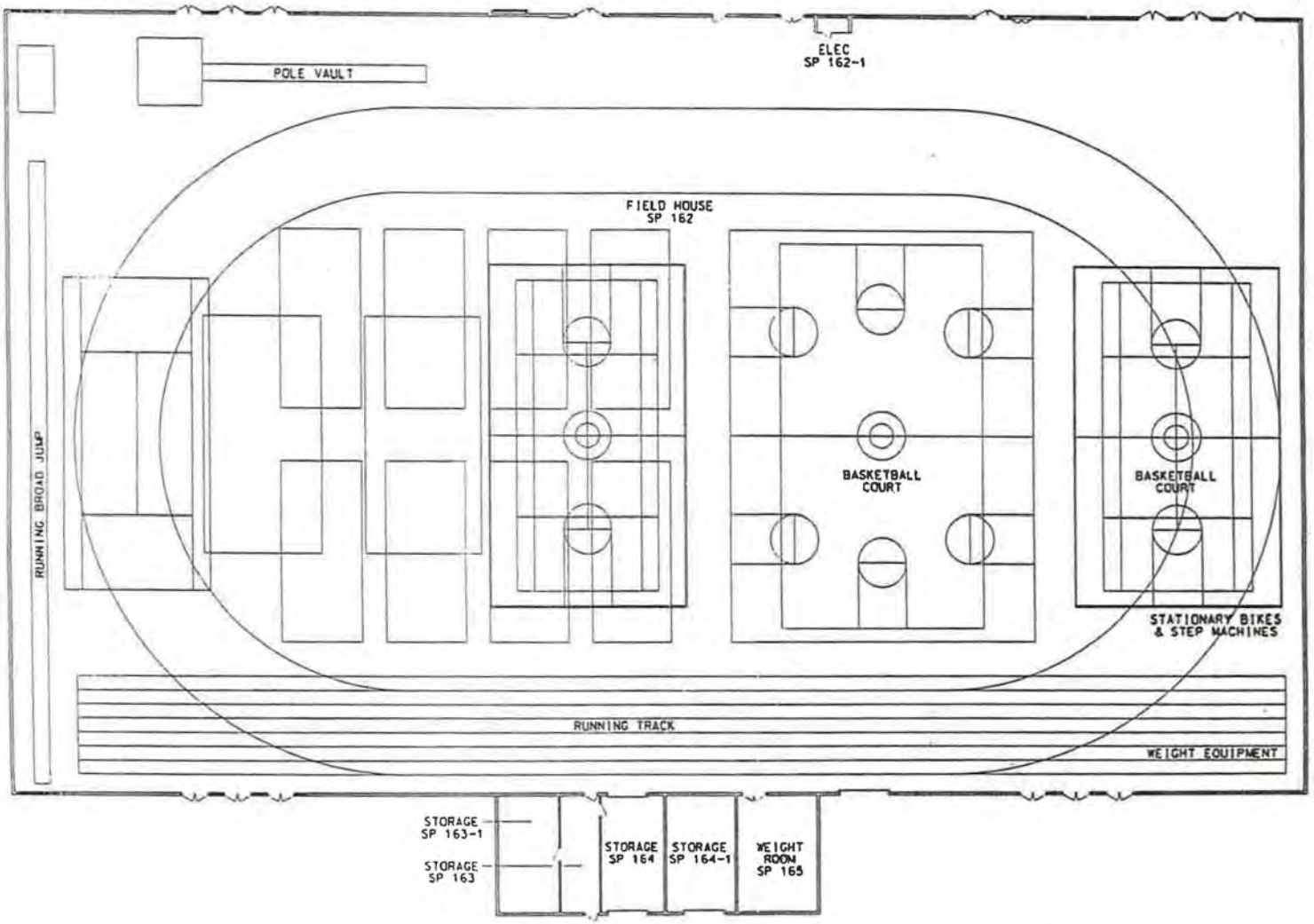
Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost

Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost


$5,000,000
$4,500,000
$4,000,000
$3,500,000
$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$655,299
$0
$4,592,178
$1,698,464
Architectural
Code
Mechanical
Electrical
Project Cost


SP 161
SP 161-1
MENS TOILET SP 160
JAN. CLO. SP 159
CORRIDOR SP 158
INFORMATION CENTER SP 147
CORRIDOR SP 146
CORRIDOR SP 141
JANITOR CLOSET SP 130
MENS SHOWER SP 131
STORAGE SP 128
MENS TOILET SP 133
OFFICE SP 129
MENS COACHES OFFICE SP 134
MENS LOCKER SP 132
CONCESSIONS SP 157
CORR. SP 101
CONF. RM. SP 148
CLASSROOM SP 145
VENDING SP 101-1
OFFICE SP 149
STORAGE SP 156
OFFICE SP 150
CORRIDOR SP 153
CLASSROOM SP 144
TREATMENT ROOM SP 135
OFFICE SP 151
AUXILIARY GYMNASIUM SP 124
MULTI-PURPOSE ROOM SP 155
SEC/ RECEPT SP 152
CLASSROOM SP 143
WOMENS COACHES OFFICE SP 136
WOMENS LOCKER SP 137
REGISTRATION SP 106
EQUIP. ISSUE SP 154
COMPUTER CLASSROOM SP 142
WOMENS TOILET SP 138
WOMENS SHOWER SP 139
TELEPHONE CLOSET SP 116
CORRIDOR SP 102
INFORMATION CENTER SP 107
CORRIDOR SP 103
JAN. CLO. SP 140
CORRIDOR SP 117
CART SP 119
MENS TOILET SP 104
WOMENS TOILET SP 105
OFFICE SP 108
OFFICE SP 109
OFFICE SP 110
OFFICE SP 111
OFFICE SP 112
OFFICE SP 113
OFFICE SP 114
OFFICE SP 115
VESTIBULE SP 100
AEROBICS SP 118
EQUIP. ROOM SP 120
FITNESS CENTER SP 123
MATS SP 121
AIRWELL
STAIRS SP 10
MECHANICAL ROOM SP 13
ELECTRICAL ROOM SP 11
TUNNEL
BASEMENT
BUILDING "SP" MAIN FLOOR
NORTH



BUILDING "SP" FIELDHOUSE NORTH

Building: SQ
Gross Area: 8,750 S.F.
Year Built: 1967
No. of Floors: 1
Evaluation Date:October 2017

Use Types:
Powerhouse

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
PVC membrane	Roof	Replaced in 2002 & should be adequate until 2028				

Enclosure System Age: Life Expectancy:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Foundation	west wall	Repair waterproofing leaks	1	6000	$6,000	$8,700

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
H.M Frames	Toilets/Lockers	Patch & paint H.M. Frames	2	2100	$4,200	$6,090

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
		No Comments				–

MECHANICAL

HVAC System Age:50 yrs. Life Expectancy: 20-30 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Transfer Air	Elec Rm	Provide damper in O.A. Duct	1	2586	$2,586	$3,750
Outside Air	Locker Rm	Provide O.A. per MMC	1	7759	$7,759	$11,250
Space heating	Boiler Rm	Add space heater(s)	1	8534	$8,534	$12,375

Plumbing System Age: 50 yrs. Life Expectancy: 20-50 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Insulation	Throughout	Replace damaged pipe insulation	1	1034	$1,034	$1,500
Identification	Throughout	Add pipe identification	1	1034	$1,034	$1,500
Leak	Boiler	Repair leak near boiler	1	828	$828	$1,200

Fire Protection Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Suppression	Throughout	There is no fire suppression system				
Alarm	Throughout	Upgrade fire alarm system	8970	1.68	$15,070	$21,851

Temperature Controls Age: 50 yrs. Life Expectancy: 15 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
		Included with space heater above				

ELECTRICAL

Primary Power System Age: 14 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Primary Sw	Elec Rm	Good condition, perform maintenance test-ing	LS	5,000	$5,000	$7,250

Secondary Power System Age: 14 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Transformer	Elec Rm	Good condition. Perform maintenance testing	LS	5,000	$5,000	$7,250

Distribution System Age: 14 yrs.

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Main Switch board	Elec. Room	Good condition. No recommendations				

Lighting System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lights	Throughout	Replace fluorescent with LED	8740	4.00	$34,960	$50,692
Controls	Throughout	Add occupancy sensors	12	450	$5,400	$7,830
Emergency Lights	Throughout	Add emergency lights	4	570	$2,280	$3,306

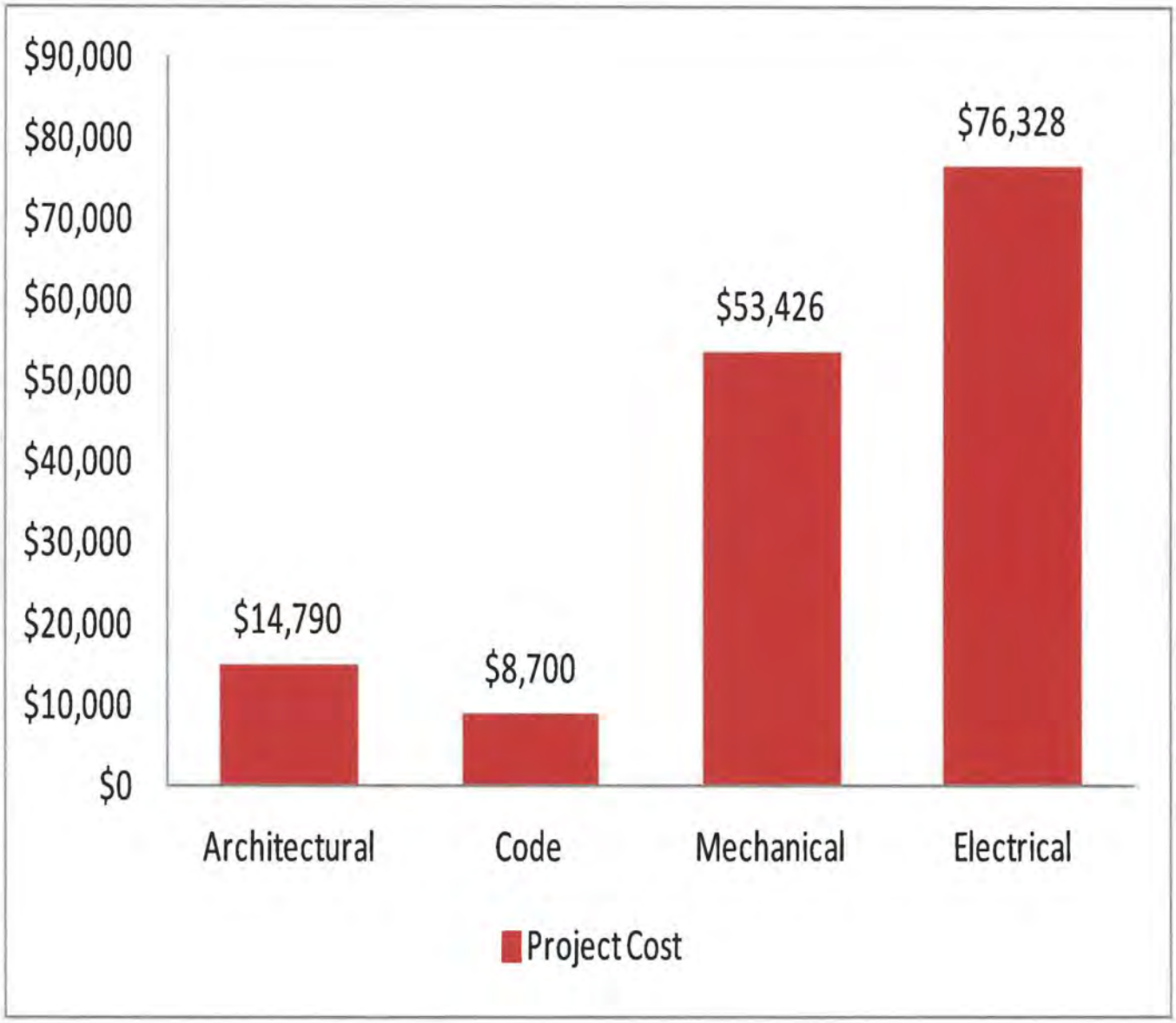
CODE AND BARRIER FREE

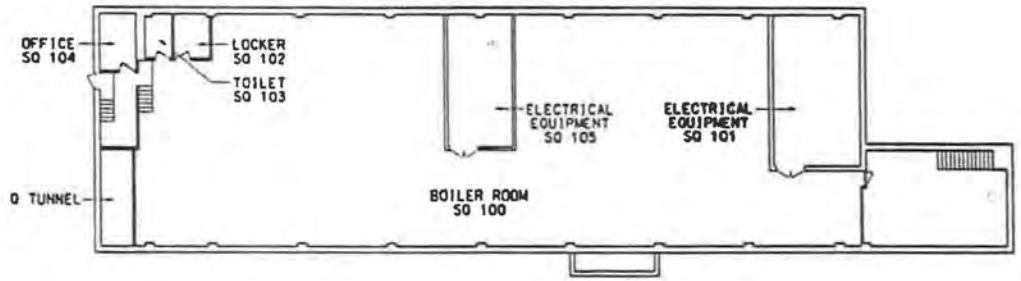
Code System Age:

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
						--

Barrier Free System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lav/WC's	Toilet rooms	Rework for accessibility	2	$3,000	$6,000	$8,700


$90,000
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
$14,790
$8,700
$53,426
$76,328
Architectural
Code
Mechanical
Electrical
Project Cost



BUILDING "SQ" BOILER ROOM

NORTH

Building: SR
Gross Area: 36,610 S.F.
Year Built: 1968
No. of Floors: One plus Penthouse
Evaluation Date: October 2017

Use Types:
40% Classroom
25% Offices
35% Lab

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Mansard	Penthouse	Metal Panels are in good condition bit need to be refinished	3,200 S.F.	3.17 S.F.	$10,144	$14,709
Roofing	Throughout	Modified bitumen roof was installed in 1991 and is near the end of its expected life.	38,610 S.F.	13.50 S.F.	$521,235	$755,791

Enclosure System Age:

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Soffits	Throughout	Cement plaster soffits are cracked and should be patched and refinished.	600 S.F.	4.50 S.F.	$2,700	$3,915
Metal Trim	Top of Brick	Metal trim should be refinished.	1,200 L.F.	9.00 L.F.	$10,800	$15,660
Windows	Throughout	Windows are single glazed and seals are failing; and should be replaced.	3,200 S.F.	67.50 S.F.	$216,000	$313,200
Doors	Throughout	Exterior glass doors are single glazed, seals are failing, and should be replaced.	16 ea.	2,812 ea.	$44,992	$65,238

Finish System

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Terrazo Flooring	Corridors	Terrazo flooring is crracked in numerour locations and should be covered with rubber tile.	6,000 S.F.	9,000 S.F.	$54,000	$78,300
Suspended Ceilings	Throughout	Ceiling systems will need to be replaced to faciliate new mechanical, fire protection and electrical systems.	14,300 S.F.	2.82 S.F.	$40,326	$58,473
Wood Doors	Throughout	Wood doors are in fair to poor condition and should be replaced.	60 ea.	1687 ea.	$101,220	$146,769
VCT	Classrooms	Numerous classrooms have cracked or loose VCTand should be replaced.	2,500 S.F.	6.75 S.F.	$16,875	$24,469
Carpet Tile	Offices/Classrooms	Several areas require new carpet tile.	3,000 S.F.	5.06 S.F.	$15,180	$22,011

Fixed Equipment

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Marker Boards	Classrooms/Labs	Market Boards are old and not adequate, New sliding marker boards should be provided in all classrooms/labs.	16 rms.	5624/rm	$89,984	$130,477
Storage Cubbies	Labs	Storage Cubbies are needed in lab areas, so students can safely store coats and back-packs.	6 rms.	2250/rm	$13,500	$19,575

Code

Item	Location	Comments	Quantity/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Lavatory Mixing Valves	Toilet Rooms and Sinks	Lavatory and sink faucets are required to have mixing valves to provide scald/burn protec-tion.	10 ea.	337 ea.	$3,370	$4,887

MECHANICAL

Barrier Free

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
EWC's	Corridor	The electric water cooler should be replaced with an accessible unit.	1 ea.	3374 ea.	$3,374	$4,892
WC's	Toilet Rooms	The toilet stalls should be reworked to provide accessible water closets in the Men's and Women's rooms.	2 ea.	2650 ea.	$5,300	$7,685
Lavatories	Toilet Rooms	Protective pipe covering should be provided over exposed piping below the accessible lavatory.	10 ea.	168.71 ea.	$1,687	$2,446

HVAC System 38,610 Originally Constructed in 1968/ Minor Renovation in 1987
Age: 49 yrs. Life Expectancy: 20-30 yrs.

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
HVAC System	Building	The building HVAC systems are in poor condition and are in need of replacement include the following:			38,610	sq. ft.	34.50	$1,332,045	$1,931,465
		Air handling units	49/8	20			Incl. Above		
		Replace exhaust fans	49	20			Incl. Above		
		Perimeter and tempering coil hot water heating system-heat exchangers and pumps	49	20-24			Incl. Above		
		Steam condenstate return unit	49	15			Incl. Above		
		The duct system appears to be mostly original, has noticeable leakage. Due to age and potential failure due to pressure, entire supply air duct system should be replaced.	49	30	38,610	sq. ft.	Incl. Above		
		Portion of the chilled water and hot water heating piping have missing and damaged insulation should be replaced. Pipine repair and replacement.	49	20	38,610	sq. ft.	1.35	$52,124	$75,580

MECHANICAL

Plumbing System Age: 49 yrs. Life Expectancy: 20-50 yrs.

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Piping	Building	Portions of the domestic cold water distribution piping system are galganized steel. Due to is age the piping is showing signs of deterioration and should be replaced.	49	30	275	LF	56.24	$15,466	$22,426
Piping	Building	Portions of the cold and hot water piping have missing and damaged insualtion. The insulation should be replaced.	49	20	1	LS	8436	$8,436	$12,232
Plumbing Fixtures Water Closets	Toilet Rooms	Water closets should be replaced with water conserving units and accessible units where required.	49	25	14	ea.	2332	$32,648	$47,340
Plumbing Fixtures Urinals	Toilet Rooms	Urinals should be replaced with water conserving untis and accesible units where required.	49	25	16	ea.	2040	$32,640	$47,328
Plumbing Fixtures Lavatrories	Toilet Rooms	Lavatories should be replaced with water conserving units and accessible units where required.	49	25	13	ea.	1865	$24,245	$35,155
Water Heater	Mechanical Penthosue	Domestic water heater has exceeded its useful life and should be replaced.	49	24	1	LS	9259	$9,259	$13,426

Fire Protection

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Sprinklers	Building	Building not currently sprinkled. Add wet pipe sprinkler system to the entire building.			38,610	sq. ft.	4.44	$171,428	$248,571

Temperature Controls

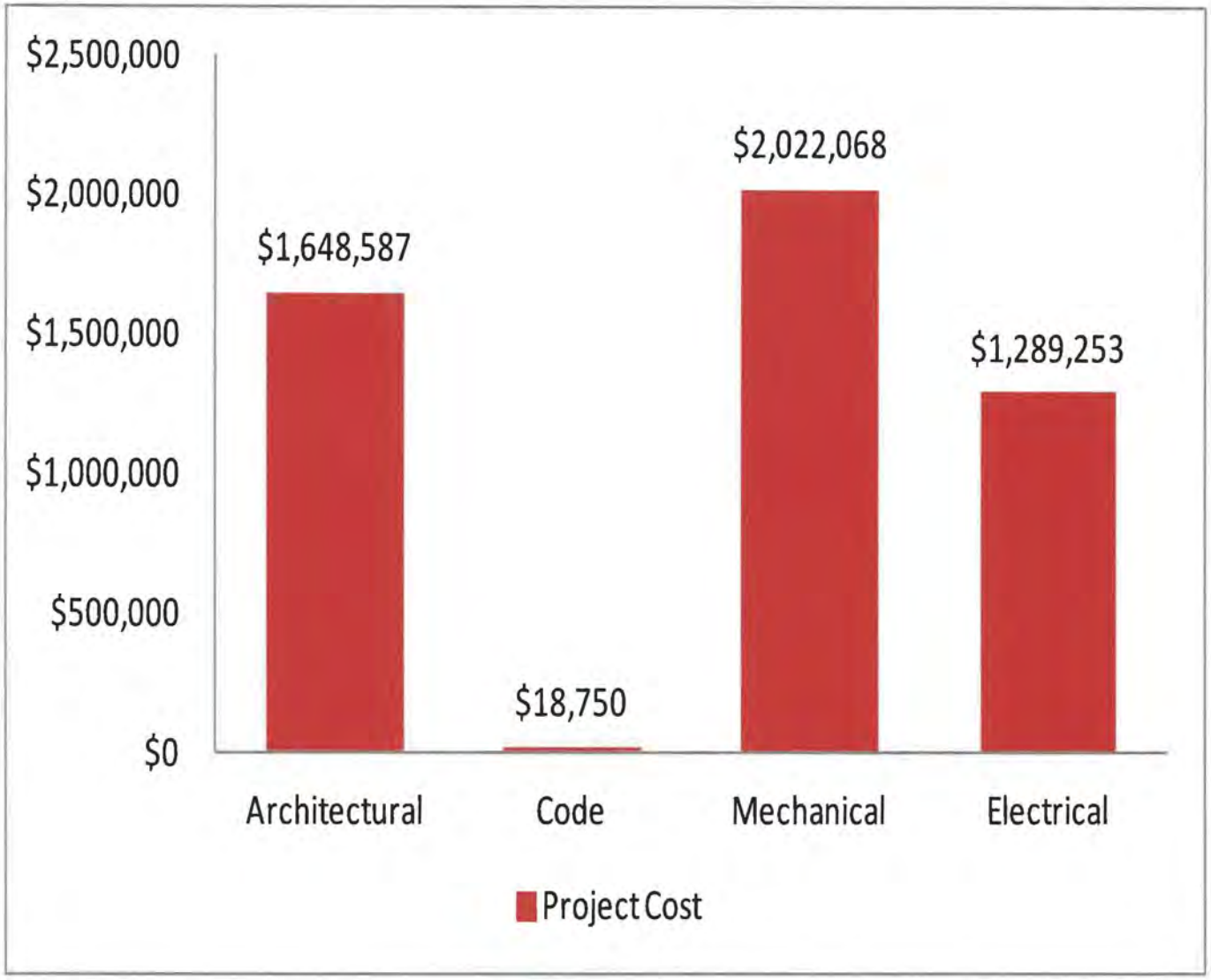
Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Replace/Up-grade Controls	Building	Replace and upgrade controllers and control components for added efficiency and enhance maintenance functions.	20	15	38,610	sq. ft.	7.0	$270,270	$391,892

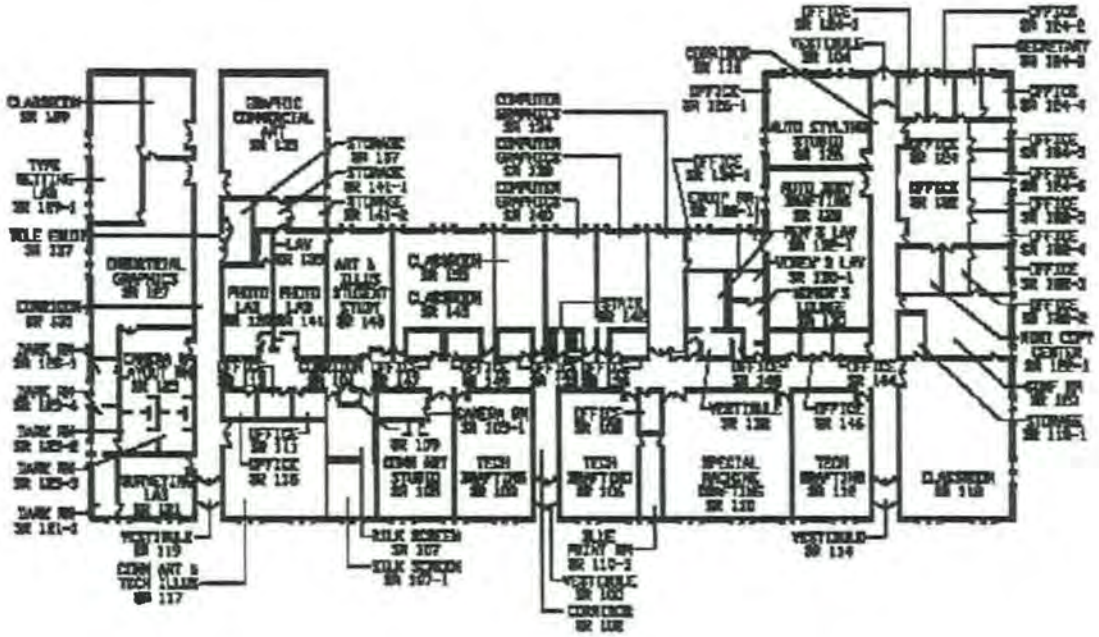
ELECTRICAL

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Primary Subtation	Tunnel Level	Only one exit from room. Provide second exit			1	ea.	13497	$13,497	$19,571
		Primary switchgear is beyond usable life. Replace	46	35	2	ea.	33743	$67,486	$97,855
		Replace 500 KVA 480V substation transformer	35	30	1	ea.	65236	$65,236	$94,592
		Replace 500 KVA 480V substation transformer	35	30	1	ea.	71984	$71,984	$104,377
		Replace 800A 480V switchboard	46	35	1	ea.	39366	$39,366	$57,081
		Replace 1600A 480V switchboard	46	35	1	ea.	52863	$52,863	$76,651
Electrical Distribution	Building	Replace outdated branch circuit panelboards	46	35	9	ea.	6186	$55,674	$80,727
		Replae obsolete Motor Control center in Penthouse	46	35	1	ea.	56238	$56,238	$81,545

Lighting System

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	Building	Replace outdated lighting systems with new, energy efficient and low maintenance lighting.	30	20	38,610	SFT	8.15	$314,672	$456,274
Lighting Controls	Building	Add automatic lighting control system			38,610	SFT	2.26	$87,259	$126,526
Emergency Lighting	Building	Provide new emergency and exit lighting-central or distributed power source			38,610	SFT	1.68	$64,865	$94,054


$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$1,648,587
$18,750
$2,022,068
$1,289,253
Architectural
Code
Mechanical
Electrical
Project Cost



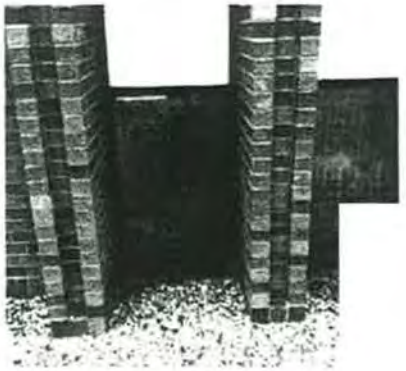
BUILDING 'SR' MAIN FLOOR



Plaster Soffit Damage



Metal Trim Damage



Window Seal Failure



Metal Mansard Paint Failure



Damaged VCT



Damaged Wall Finish



Outdated Lighting



Damaged Wall Finish and Inadequate Window Treatments

Building: SS
Gross Area: 22,900 S.F.
Year Built: 1968 Addition: 1988
No. of Floors: One plus Penthouse
Evaluation Date: October 2017

Use Types:
50% Classrooms
20% Offices
15% Auditorium
15% Student Services

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System

Item	Location	Comments	Quanti-ty/Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Mansard	Penthouse	Metal panels are in good condition but need to be refinished	3,000 S.F.	3.15/S.F.	$9,450	$13,703
Roofing	North	Modified Bitumen roof was installed in 1991 and is near the end of its expected life.	10,000 S.F.	13.50/S.F.	$135,000	$195,750
Roofing	South	PVC roof needs numerous repairs.	12,900 S.F.	2.25/S.F.	$29,025	$42,086

Enclosure System

Item	Location	Comments	Quan-tity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Soffits	Throughout	Cement plaste soffits are cracked and should be patched and refinished	3,000 S.F.	4.50/S.F.	$13,500	$19,575
Windows	Throughout	Windows are single glazed and seals are failing; and should be replaced	4,600 S.F.	106.85/S.F.	$491,510	$712,690
Doors	Throughout	Exterior glass doors are single glazed, seals are failing, and should be replaced.	14 ea.	2811.88 ea.	$39,366	$57,081
Courtyards	West & East Sides	Reset pavers, curbs and trim landscape in courtyards at the east and west sides of the building.	15,000 S.F.	22.50/S.F.	$337,500	$489,375

Finish System

Item	Location	Comments	Quan-tity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Terrazzo Flooring	Corridors	Terrazo flooring is cracked in numerous locations and should be covered with rubber tile.	3,000 S.F	9.00/S.F.	$27,000	$39,150
Suspended Ceil-ings	Throughout	Ceiling systems will need to be replaced to facilitate new mechanical, fire protection and electrical systems.	15,000 S.F.	2.81/S.F.	$42,150	$61,118
Wood Doors	Throughout	Wood doors are in fair to poor condition and should be replaced.	57 ea.	1687.13 ea.	$96,166	$139,441
VCT	Classrooms	Numerous classrooms have cracked or loose VCT and should be replaced	6,000 S.F.	6.75/S.F.	$40,500	$58,725
Carpet Tile	Offices/Classrooms	Several areas require new carpet tile.	1,000 S.F.	5.06/S.F.	$5,060	$7,337
Seating	Auditorium	Replace original seating.	240	302.57 ea.	$72,617	$105,295

Fixed Equipment

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Marker Boards	Classrooms	Marker boards are old and not adequate. New siding marker baords should be provided in all classrooms.	7 rms.	5623.75	$39,366	$57,081

Code

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Lavatory Mixing Valves	Toilet Rooms and Sinks	Lavatory and sink faucets are required to have mixing valves to provide scald/ burn protection.	10 ea.	410ea.	$4,100	$5,945
Signage	Auditorium	Add occupant load signage.	8 ea.	224.95ea.	$1,800	$2,610

Barrier Free

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
EWC	Corridor	The electric water cooler should be replaced with an accessible unit.	2 ea.	3374.25 ea	$6,749	$9,786
WC's	Toilet Rooms	The toilet stalls should be reworked to provide accessible water closets in the Men's and Women's rooms.	4 ea.	2650 ea.	$10,600	$15,370
Lavatories	Toilet Rooms	Protective pipe covering should be provided over exposed piping below the accessible lavatory.	10 ea.	168.71 ea.	$1,687	$2,446

MECHANICAL

HVAC System — Originally Constructed in 1967/Minor Renovation in 1987 Age: 49 yrs. Life Expectancy:20-30 yrs.

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
HVAC System	Building	The buildings HVAC systems are in poor condition and are in need of replacement include the following:			22,900	sq. ft.	34.50	$790,050	$1,145,573
		Air handling units	49				Incl. Above		
		Packaged roof top unit	30				Incl. Above		
		Replace exhaust fans	49/30				Incl. Above		
Duct System	Building	The original S building perimeter and tempering coil hot water heating system-heat exchangers and pump	49	20-24			Incl. Above		
Piping	Building	The duct system appears to be mostly original, has noticable leakage. Due to age and potential failure due to pressure entire supply air duct system should be replaced.	49	30			Incl. Above		
		Portion of the chilled water and hot water heating piping have missin and damaged insulation. Insulation should be replaced. Piping repair and replacement.	49	20	22,900	sq. ft.	1.35	$30,915	$44,827

Plumbing System — Age: 50 yrs. Life Exp: 20-50 yrs.

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Piping	Building	Portions of the cold and hot water piping have missing and damaged insulation. The insulation should be replaced.	49	20	1	LS	8435.63	$8,436	$12,232
Plumbing Fixtures Water Closets	Toilet Rooms	Water closets should be replaced with water conserving units and accessible units where required.	49	25	8	ea.	2332	$18,656	$27,051
Plumbing Fixtures Urinals	Toilet Rooms	Urnials should be replaced with water conserving units and accessible units where required.	49	25	2	ea.	2040	$4,080	$5,916
Water Heater	Mechanical Penthouse	Domestic water heater has exceeded its useful life and should be replaced.	49	24	1	LS	9279	$9279	$13455
Plumbing fixture lavatories	Toilet Rooms	Replace with water saving and ADA accessible.	49	25	8	ea	1865	$14,920	$21,634

Fire Protection

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Sprinklers	Building	Building not currently sprinkled. Add wet pipe sprinkler system to entire building.	20	15	22,900	sq. ft.	4.44	$101,676	$147,430

Temperature Controls Age: 50 yrs. Life Expectancy: 15 yrs.

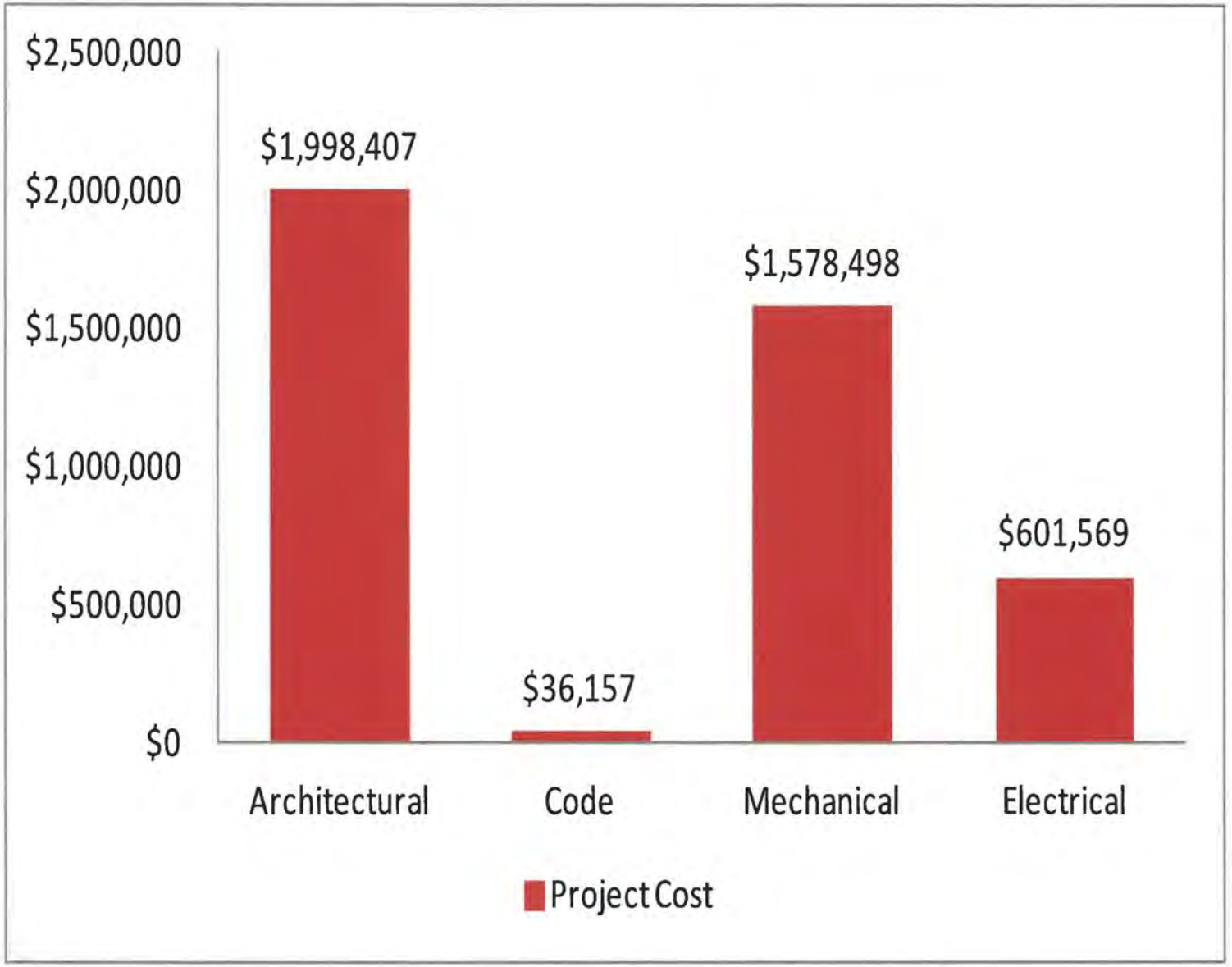
Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Replace/ Upgrade Controls	Building	Replace and upgrade controllers and control components for added effciency and enhanced maintenance functions	20	15	22,900	sq. ft.	4.83	$110,607	$160,380

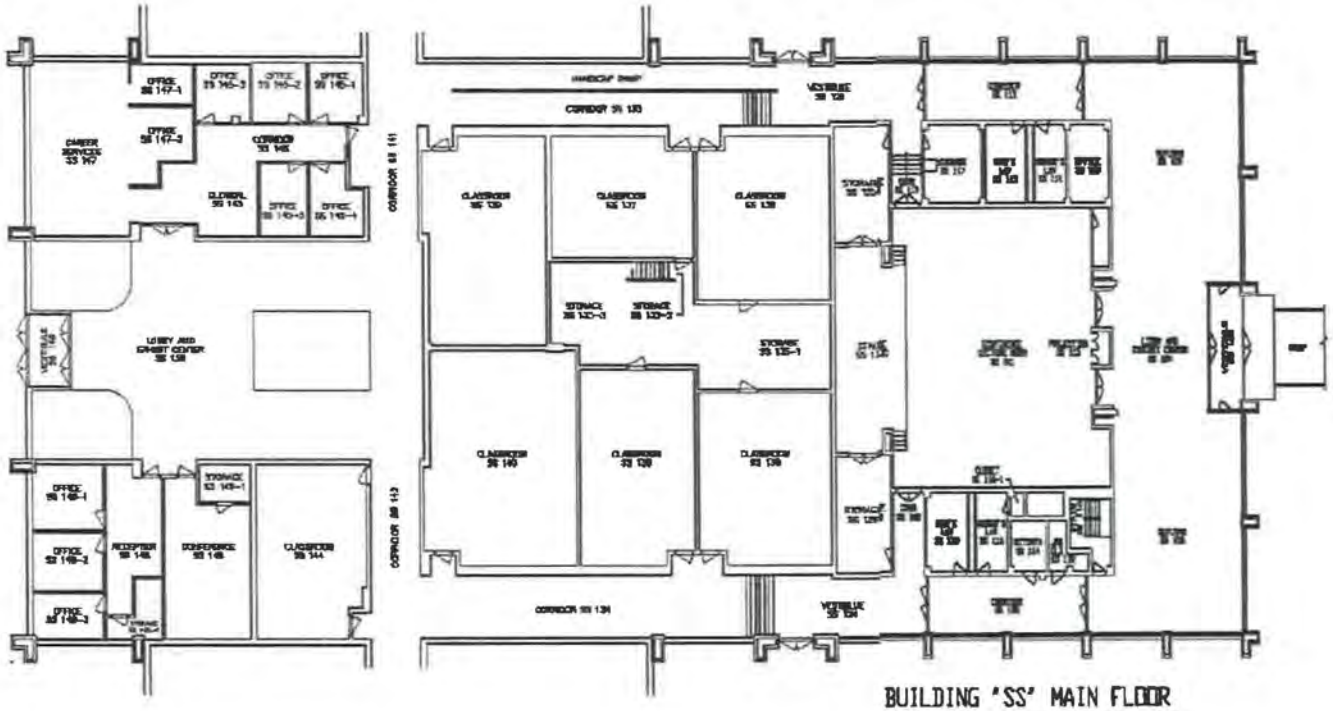
ELECTRICAL 2290 Originally Constructed in 1967/Minor Renovation in 1987

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Primary Substation	Tunnerl Level	Served from primary in ST building						$0.00	$0.00
Electrical Distribution		Replace obsolete 400A distribution panel	46	35	2	ea.	16871.25	$33,743	$48,927
		Replace 112.5 KVA transformer	unk.	30	1	ea.	17996	$17,996	$26,094
		Replace obsolete 400A 208V switchboard	46	30	1	ea.	16871.25	$16,871	$24,463
		Replace ouydated branch curcuit panelboards	46	35	6	ea.	6186.13	$37,117	$53,818

Lighting

Item	Location	Comments	Equipment/ System Age	Estimated Service Life	Quantity/ Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	Building	Replace outdated lighting systems with new, energy efficient and low maintenance lighting.	30	30	22,900	SFT	9.56	$218,924	$317,440
Lighting Controls	Building	Add automatic lighting control system.			22,900	SFT	2.26	$51,754	$75,043
Emergency Lighting	Building	Provide new emergency and exit lighting-central or distributed power source.			22,900	SFT	1.68	$38,472	$55,784


$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$1,998,407
$36,157
$1,578,498
$601,569
Architectural
Code
Mechanical
Electrical
Project Cost



BUILDING 'SS' MAIN FLOOR



Failing Pavers & Curbs in Courtyards



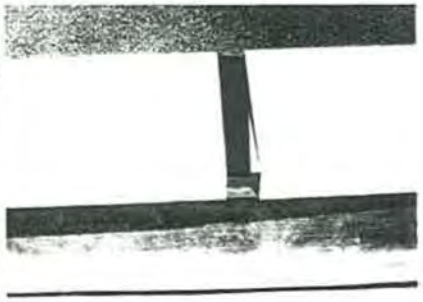
Exterior Plaster Soffit Damage



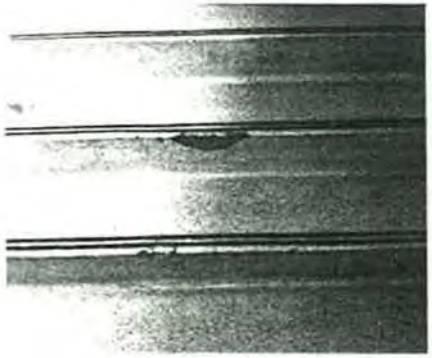
Non-conforming Courtyard Stairs



South Roof Ponding



Loosing Coping



Terrazzo Patch at Stairs



Cracked Terrazzo Flooring



Non-accessible Toilet Rooms



Non-accessible EWC

Building: ST
Gross Area: 56,537
Year Built: 1986
No. of Floors: One plus penthouse
Evaluation Date: October 2017

Use Types:
10% Classrooms
5% Offices
85% Lab

Notes:
1. Project cost is 1.45 times construction cost.
2. Costs are in 2017 dollars.
3. Support Spaces are divided evenly between uses.

ARCHITECTURAL

Roof System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Mansard	Penthouse	Metal panels are in good condition but need to be refinished.	3,200 S.F.	3.15 S.F.	$10,080	$14,616
Roofing	Throughout	Modified Bitumen roof was installed in 1991 and is near the end of its expected life.	37,580 S.F.	13.50 S.F.	$507,330	$735,629

Enclosure System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Soffits	Throughout	Cement plaster soffits are cracked and should be patched and refinished.	600 S.F.	4.50 S.F.	$2,700	$3,915
Metal Trim	Top of Brick	Metal trim should be refinished.	1,200 S.F.	9.00 L.F.	$10,800	$15,660
Windows	Throughout	Windows are single glazed and seals are failing; and should be replaced.	3,200 S.F.	67.49 S.F.	$215,968	$313,154
Doors	Throughout	Exterior glass doors are single glazed, seals are failing, and should be replaced.	16 ea.	2811.58 ea	$44,990	$65,236

Finish System

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-Total Project Cost
Terrazzo Flooring	Corridor	Terrazo flooring is cracked in numerous locations and should be covered with rubber tile.	5,800 S.F.	9.00 S.F.	$52,200	$75,690
Suspended Ceilings	Throughout	Ceiling systems will need to be replaced to faciliate new mechanical, fire protection and electrical systems.	14,000 S.F.	2.82 S.F.	$39,480	$57,246
Wood Doors	Throughout	Wood dorrs are in fair to poor condtion and should be replaced.	60 ea.	1687.13 ea.	$101,228	$146,781
VCT	Classrooms	Numerous classrooms have cracked or loose VCT and should be replaced.	2,500 S.F.	6.75 S.F.	$16,875	$24,469
Carpet Tile	Offices/Classrooms	Several areas require new carpet tile.	3,000 S.F.	5.06 S.F.	$15,180	$22,011

Fixed Equipment

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Marker Boards	Classrooms/Labs	Marker Boards are old and not adequate. New sliding marker boards should be provided in all classrooms and labs.	16 rms.	5623.75/rm	$89,980	$130,471
Storage Cubbies	Labs	Storage cubicles are needed in lab areas, so students can safely store coats and backpacks.	12 rms.	2249.50/rm	$26,994	$39,141

Code

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lavatory Mixing Valves	Toilet Rooms and Sinks	Lavatory and sink faucets are required to have mixing valves to provide scald/burn protection.	10 ea.	410	$4,100	$5,945

Barrier Free

Item	Location	Comments	Quantity/ Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
EWC	Corridor	The electric water cooler should be replaced with an accessible unit.	1 ea.	3374.25 ea.	$3,374	$4,896
WC's	Toilet Rooms	The toilet stalls should be reworked to provide accessible water closets in the Men's and Women's rooms.	2 ea.	2650 ea.	$5,300	$7,685
Lavatories	Toilet Rooms	Protective pipe covering should be provided ove exposed piping below the accessible lavatory.	10 ea.	168.72 ea.	$1,687	$2,446

MECHANICAL

HVAC System — Age: 49 yrs. — Life Expectancy: 20-30 yrs.

Item	Location	Comments	Equip-ment/Sys-tem Age	Estimated Service Life	Quan-tity/Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
HVAC Sys-tem	Building	The building HVAC systems are in poor conditon and are in need of replacement including the following:			37,580	sq. ft	34.50	$1,296,510	$1,879,940
		Air handling units	49	20			Incl. Above		
		Repalce exhaust fans	49	20			Incl. Above		
		Perimeter and tempering coil hot water heating system-heat exchangers and pumps.	49	20-24			Incl. Above		
		Steam Condensate return unit	49	15			Incl. Above		
Duct System	Building	The duct system appears to be mostly original, has noticable leakage. Due to the age and potential failure due to pressure, entire supply air duct system should be replaced.	49	30	37,580	sq. ft	Incl. Above		
Piping	Building	Portions of the chilled water and hot water heating pip-ing have missing and damaged insulation. Insulation should be replaced. Piping repair and replacement.	49	20	37,580	sq. ft	1.35	$50,733	$73,563
Welding Lab Exhaust	Roof	Provide parallel exhaust fan on the welding lab energy recovery unit.	11	24	1	LS	28118.75	$28,119	$40,773
Welding Lab Make-up Air	Roof	Proide parallel exhaust fan on the welding lab energy recovery unit, modify controls to activate energy	49	24	1	LS	50613.75	$50,614	$73,390

Plumbing System — Age: 49 yrs. — Life Expectancy: 20-50 yrs.

Item	Location	Comments	Equip-ment/Sys-tem Age	Estimated Service Life	Quan-tity/Units	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Piping	Building	Portions of the domestic cold water distribution pip-ing systems are galvanized steel. Due to its age the piping is showing signs of deterioration and should be replaced.	49	30	275	LF	56.24	$15,466	$22,426
Piping	Building	Portion of the cold and hot water piping have missing and damaged insulation. Insulation should be replaced.	49	20	1	LS	8435.63	$8,436	$12,232
Plumbing Fixtures-electric wa-ter coolers	Building	Electric water coolers should be replaced with acces-sible units.	49	15	2	ea.	3374.25	$6,749	$9,786

Item	Location	Comments	Equip-ment/Sys-tem Age	Estimated Service Life	Quantity	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Plumbing Fixtures-Water Closets	Toilet Rooms	Water closets should be replaced with water conserving	46	25	9	ea.	2332	$20,988	$30,433
Plumbing Fixtures-Urinals	Toilet Rooms	Urinals should be replaced with water conserving units and accessible units where required.	46	25	15	ea.	2040	$30,600	$44,370
Plumbing Fixtures-Lavatories	Toilet Rooms	Lavatories should be replaced with water conserving units and accessible units where required.	46	25	10	ea.	1865	$18,650	$27,043
Water Heater	Mechani-cal Pent-house	Domestic water heater has exceeded its useful life and should be replaced.	46	24	1	LS	6414	$6,414	$9,300

Fire Protection System

Item	Location	Comments	Equip-ment/Sys-tem Age	Estimated Service Life	Quantity	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Sprinklers	Building	Building is partially sprinkled. Extend the automatic wet pipe sprinkler system to the entire building.	20	15	37,580	sq. ft.	4.44	$166,855	$241,940

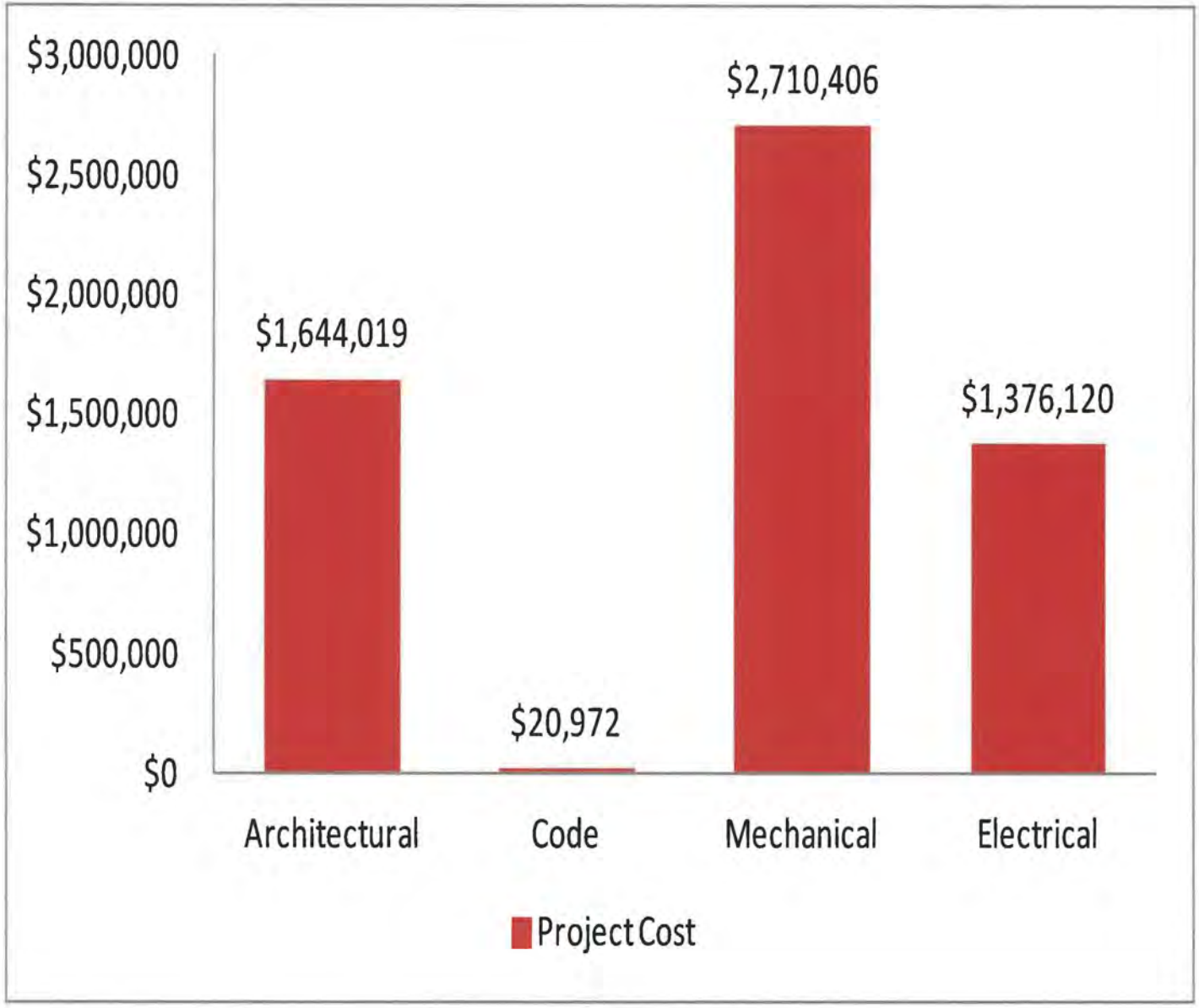
Temperature Controls Age: 49 yrs. Life Expectancy: 15 yrs.

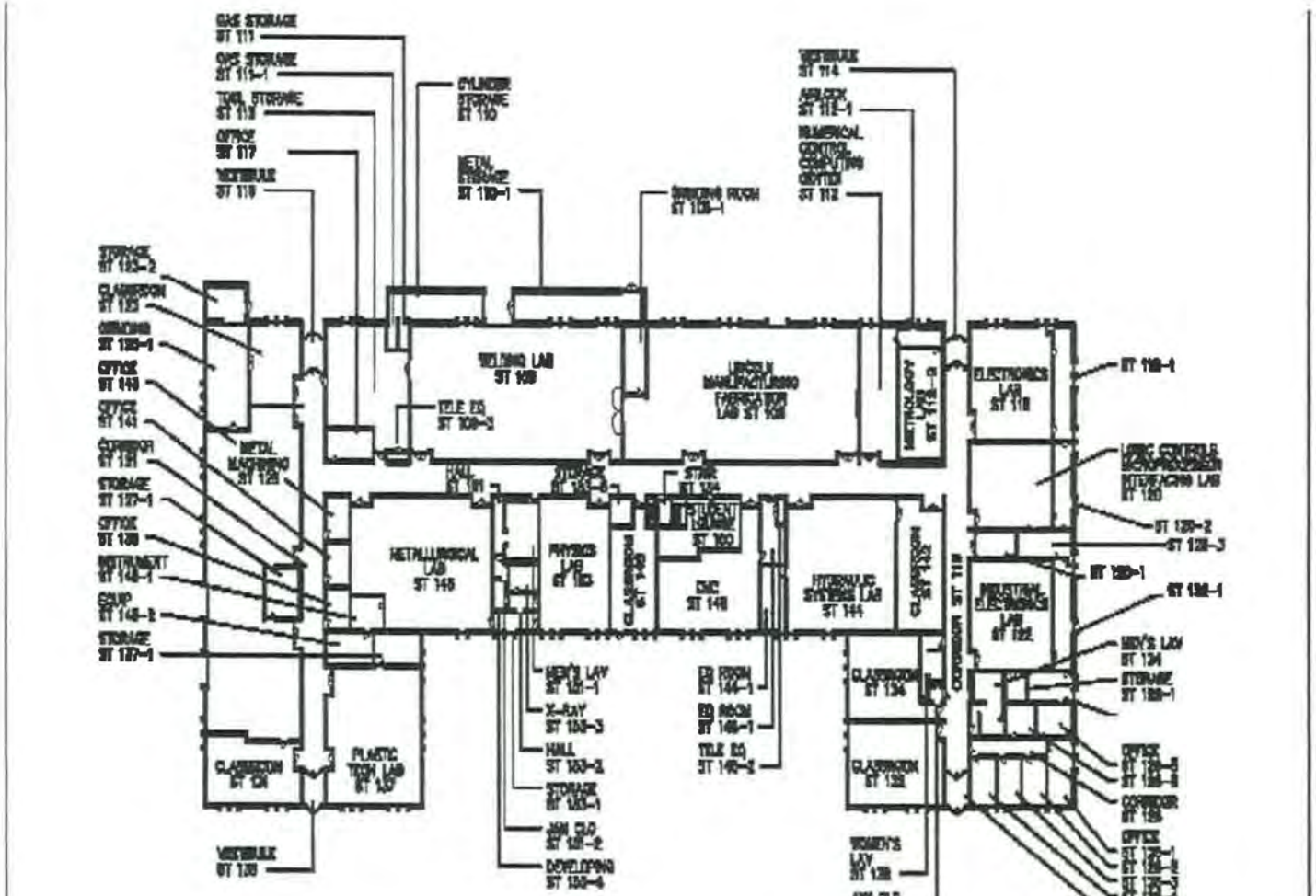
Item	Location	Comments	Equip-ment/Sys-tem Age	Estimated Service Life	Quantity	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Replace/ Controls	Building	Building is partially sprinkled. Extend the automatic wet pipe sprinkler system to the entire building.	20	15	37,580	sq. ft.	4.50	$169,110	$245,210

Item	Location	Comments	Equip-ment/Sys-tem Age	Estimated Service Life	Quantity	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Primary Substation	Tunnel Level	Only one exit from room, Provide second exit.			1	ea.	13497	$13,497	$19,571
		Primary switchgear is beyond usable life. Replace.	46	35	2	ea.	33742.50	$67,485	$97,853
		Replace 500 KVA 480V substation transformer.	35	30	1	ea.	65235.50	$65,236	$94,592
		Replace 1000 KVA 208V substation transformer.	35	30	1	ea.	101227.50	$101,228	$146,781
		Replace 800A 480V switchboard	46	35	1	ea.	39366.25	$39,366	$57,081
		Replace 3000A 208V switchboard	46	35	1	ea.	95603.75	$95,604	$138,626
		Replace outdated branch circuit panelboards	46	35	9	ea.	6186.13	$55,675	$80,729
		Replace Obsolete Motor Control Center in Penthouse.	46	35	1	ea.	56237.50	$56,238	$81,545

Lighting

Item	Location	Comments	Equip-ment/Sys-tem Age	Estimated Service Life	Quantity	Units	Cost per Unit	Sub-total Trade Cost	Sub-total Project Cost
Lighting	Building	Replace outdated lighting systems wiht new energy ef-ficient and low maintenance lighting.	30	20	37,580	SFT	8.15	$306,277	$444,102
Lighting Controls	Building	Add automatic lighting control system			37,580	SFT	2.26	$84,931	$123,150
Emergency Lighting	Building	Provide new emergency and exit lighting- central or distributed power source.			37,580	SFT	1.69	$63,510	$92,090


$3,000,000
$2,500,000
$2,000,000
$1,500,000
$1,000,000
$500,000
$0
$1,644,019
$20,972
$2,710,406
$1,376,120
Architectural
Code
Mechanical
Electrical
Project Cost



BUILDING "ST" MAIN FLOOR



Failed Window Seals



Exterior Door Deterioration



Damanged Plaster Soffit



Rusted Exterior Door Frame/Sill



Non-accessible Lavatory



Non-accessible Urinals



Inadequate Single Occupancy Women's Room



Cracked Terrazzo & Non-compliant EWC