UND GILLETTE BUILDING USE STUDY

UNIVERSITY OF NORTH DAKOTA | GRAND FORKS, ND
NOVEMBER 2023

PRAIRIE DESIGN STUDIO

UND GILLETTE BUILDING USE STUDY

UNIVERSITY OF NORTH DAKOTA | GRAND FORKS, ND

The University of North Dakota requested collaboration with Prairie Design Studio to provide a comprehensive study on UND's Gillette building. This study reviews the existing use of space along with the ideal use of space for the programs that are housed in this building or could relocate into this building. Along with the review of the floor plan and potential space upgrades, Prairie Design has provided a code review that will serve as a reference to understand the existing conditions of the building and what needs to be done to make this building a safer, more compliant environment for staff and students.

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BUILDING HISTORY

GILLETTE HALL

Gillette Hall was built in 1918 originally as the home to chemistry and biology but today houses social work and sociology. It was designed by F. W. Keith of Fargo, ND and was the first Collegiate Gothic style building on campus. Collegiate Gothic is expressed at UND by well-proportioned cream colored limestone surrounds, grouped windows, and stylized parapets. The Gillette name comes from John M. Gillette who was the founding professor and first chair of the Department of Sociology.

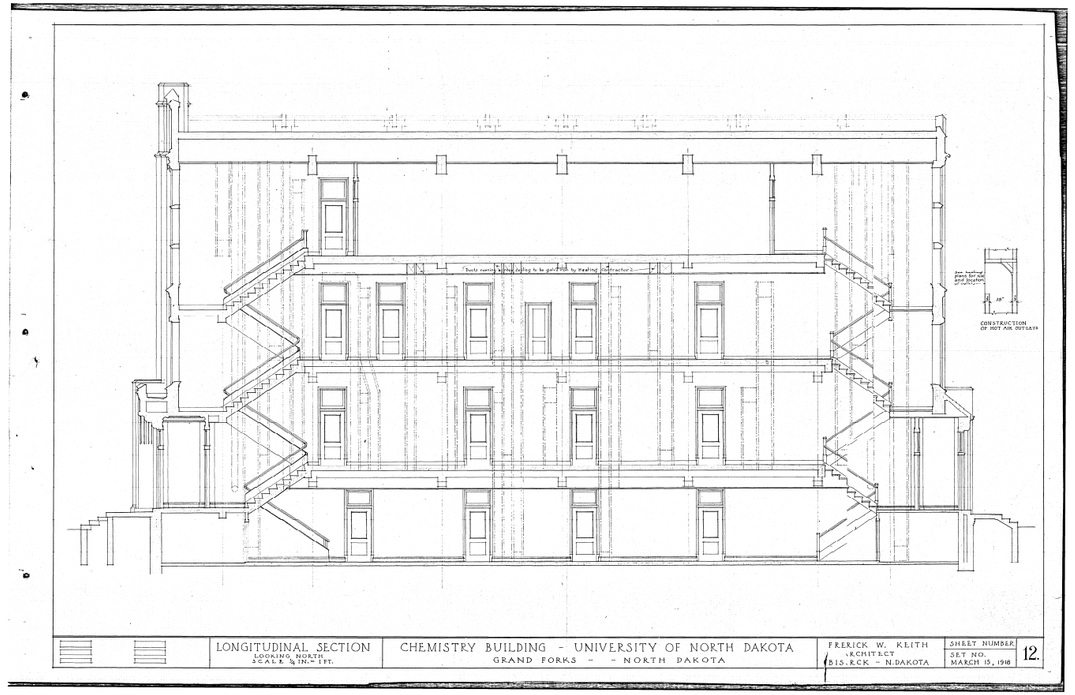
John M. Gillette August 6, 1866 - September 24, 1949

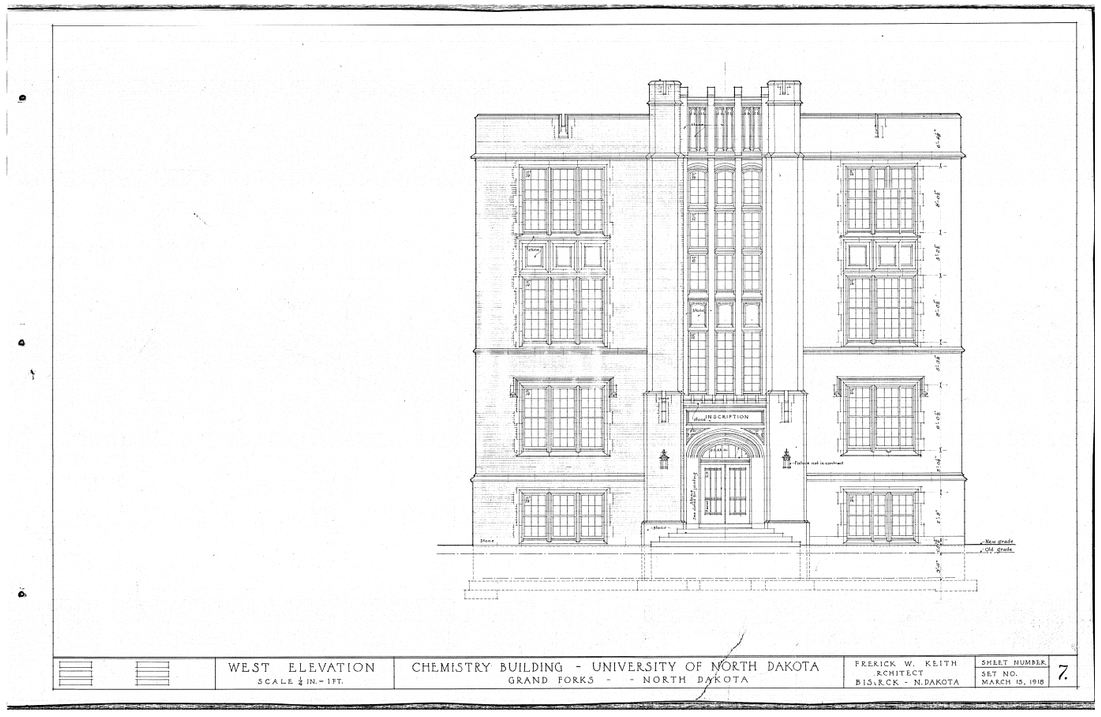
Gillette became Assistant Professor in sociology and an instructor in history at the University of North Dakota in 1907. The following year, he founded and was named chair of the department of sociology where the department was among the first on campus to offer graduate degrees. In later years he re-introduced the study of Anthropology, which had not been apart of the curriculum since 1907.

He published *Rural Sociology* in 1913, which was a highlight of his career as it was the first formal textbook in the sociology field. It won Gillette nation wide acclaim as the founder of this branch of sociology.

Gillette was active in multiple organizations such as, Phi Beta Kappa, the International Sociological Society, the Czechoslovakian National Academy of Agriculture and served as President of the American Sociological Society in 1928. After UND President Thomas Kane retired in 1933, Gillette was offered the presidency, but had turned it down.

He retired from UND in 1948 and was awarded an honorary Doctor of Humanities degree in 1949.





CODE REVIEW

2021 INTERNATIONAL BUILDING CODE

This code analysis is using the current building code but based on extent of remodel, the existing building code can be used and some provisions of the current building code may not be required or less stringent.

A. Gillette Building Description:

Building consists of 4 levels and has links to north and south campus buildings separated by firewalls. Lower level can not be defined as a basement because the floor above is over 6' above the grade plane. Building consists of masonry and concrete construction for the exterior walls and roof and the interior walls are assumed to have wood. Since the exterior walls are brick construction, we can classify this as a type III-B building. Building is currently not sprinklered but if any remodeling is done a sprinklered system is anticipated to be added per UND's preference. Code analysis is based on fully sprinklered building (NFPA 13).

Building Square Footages:
Lower Level: 7,641
First: 7,426
Second: 6,468
Third: 6,468
Total Building: 28,003

B. Occupancy Classification (IBC Chapter 3):

'B' Business Group consisting of:

1. Office spaces with small assembly rooms such as conference rooms
2. Accessory storage rooms
3. Educational classrooms and/or laboratories for students above 12th grade (must be under 50 occ.)

C. General Height and Building Area (IBC Chapter 5):

B Occupancy | III-B Construction
Allowable Building Height: 75' / 4 Stories
Allowable Area Factor: 57,000 (SM)

Frontage Increase (IBC 506.3):
37% of building perimeter has at least 20' of clear frontage = 0.17 frontage increase factor

Allowable area Per Story to be determined in accordance with Equation 5-1:
Aa = At + (NS x If)
where:
Aa = Allowable area (square feet).
At = Tabular allowable area factor (NS, S1, S13R or S13D value, as applicable) in accordance with Table 506.2.
NS = Tabular allowable area factor in accordance with Table 506.2 for non-sprinklered building (regardless of whether the building is sprinklered).
If = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.

Aa = 57,000 + (19,000 x 0.17)
Aa = 60,230 square feet allowed per story

Allowable area of Building to be determined in accordance with Equation 5-2:
Aa = At + (NS x If) x Sa
Where:
Aa = Allowable area (square feet).
At = Tabular allowable area factor (NS, S1, S13R or S13D value, as applicable) in accordance with Table 506.2.
NS = Tabular allowable area factor in accordance with Table 506.2 for nonsprinklered building (regardless of whether the building is sprinklered).
If = Area factor increase due to frontage (percent) as calculated in accordance with Section 506.3.
Sa = 3 where the actual number of stories above grade plane exceeds 3, or
Sa = 4 where the building is equipped throughout with an automatic sprinkler system
The actual area of any individual floor shall not exceed the allowable area per Equation 5-1.

Aa = 57,000 + (19,000 x 0.17) x 4
Aa = 240,920 square feet allowed for entire building

D. Type of Construction (IBC Chapter 6):

Type III: Often referred to as 'Ordinary' construction, type III is divided into two subcategories, A and B. Type A is 'protected combustible' where internal floors and roofs can be wood but are fire resistant for up to one hour. Type B is 'unprotected combustible' where the interior floors and roof may be of wood that is not fire resistant rated. In both types, the exterior walls are non-combustible and have a 2-hour minimum fire rating. In our building we have exterior brick walls that can fall under the type III category and we can assume that the interior elements are not rated, giving us a Type III-B classification.

Fire Resistance Rating Requirements for Building Elements | IBC Table 601

Type III-B :

Primary structural frame	0
Bearing walls	
Exterior	2
Interior	0
Nonbearing walls	
Exterior	(Based on fire separation distance – Table 705.5 – 1 hour if less than 30')
Interior	0
Floor construction	0
Roof Construction	0

E. Interior Finish Requirements for Walls and Ceilings (IBC Chapter 8 Table 803.13):

B Occupancy – Sprinklered
Interior exit stairways, ramps and exit passageways: Class B Rating
Corridors and exit enclosure for exit access stairways and ramps: Class C Rating
Rooms and enclosed spaces: Class C Rating

F. Fire Protection Systems (IBC Chapter 9):

An automatic sprinkler system is anticipated to be provided per NFPA 13 in accordance with Section 903.3
Portable fire extinguishers to be provided in accordance with IBC Section 906.
Fire alarm and detection system to be provided in accordance with Section 907 and NFPA 72.

G. Means of Egress (IBC Chapter 10):

Occupant Load: Because remodel plans are in the schematic phases, occupant load is an approximation based on mainly business uses and a few classroom areas.

Occupant load summary:

Lower Level:
- Approx. 6120 s.f. Business use / 150 = 41 occ.
- Approx. 500 s.f. Classroom use / 20 = 25 occ.
- Total: 66 occ.

Main Level:
- Approx. 5260 s.f. Business use / 150 = 35 occ.
- Approx. 930 sf. Classroom use / 20 = 47 occ.
- Total: 82 occ.

Second Level:
- Approx. 5450 s.f. Business use / 150 = 37 occ.
- Approx 310 s.f. Assembly use (conference) / 15 = 21 occ.
- Total: 58 occ.

Third Level:
- Approx. 5140 s.f. Business use / 150 = 34 occ.
- Approx. 560 Assembly use (conference / lounge) / 15 = 38 occ.
- Total: 72 occ.

Total Building Approximately 278

Means of Egress Sizing:

Stairway Width (1005.3.1 Exception 1): 0.2” x Occupant load
- Lower Level: 13.2”
- Main Level: 16.4”
- Second Level: 11.6”
- Third Level: 14.4”
  - Minimum width required: 44” (IBC 1011.2)
  - Min. Landings depth: width of stairway or 48” (whichever is less)
  - Current Stairs over 44” wide at all levels

Other Egress Components:

(1005.3.2 Exception 1): 0.15” x Occupant load
- Lower Level: 9.9”
- Main Level: 12.3”
- Second Level: 8.7”
- Third Level: 10.8”
- Minimum width required:
  - Corridors: 44” (36” if under 50 occupants)
  - Doors: 32” clear opening (36” doors)

Common Path of Egress Travel (IBC 1006.2.1): Max 100’

Minimum Number of Exits or Exit Access per Story (1-500 Occupants): 2

Exit Configuration (IBC 1007.1.1 Exception 2): Exits shall be not less than 1/3 of the length of the maximum overall diagonal of the area served.
- Current Diagonal: 113’
- Stair Separation: 62’ (Complies)

Accessible Means of Egress (IBC 1009):

Accessible Means of Egress shall be provided with not less than two accessible means of egress where more than one means of egress is required by Section 1006.2 or 1006.3.

In order for stairways to be considered a part of an accessible means of egress, a stairway between stories shall comply with Sections 1009.3.1 through 1009.3.3

Stairways shall have a clear width of 48” minimum between handrails (unless building equipped with sprinkler system)

Area of refuge not required at stairways in buildings equipped with sprinkler system.

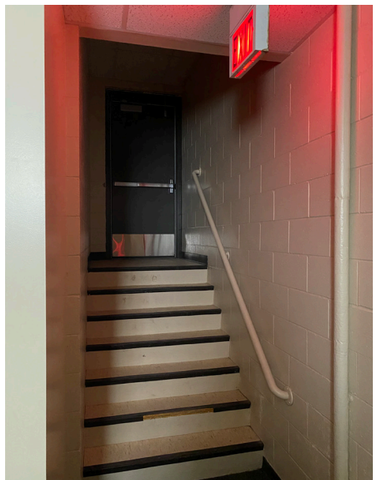
Means of Egress Components:

Doors (IBC Chapter 1010):
- Minimum clear openings of 32” x 80” (exceptions – storage closets under 10 square feet)
- Shall swing in the direction of egress travel (exceptions – under 50 occ.)
- Door handles shall be accessible and shall not require tight pinching or twisting of the wrist to operate
  - **Deficiencies: Doors do not currently comply with handle requirements (currently knobs) and accessible door clearances are not all met**

Stairways (IBC Chapter 1011):
- **Deficiencies: Stair in basement providing egress from classroom does not have handrail on both sides of stairs.**
- **Two main building stairs do not have compliant handrails and guardrails.**
- **Existing mechanical unit at landings does not meet projection clearances of maximum 4”.**
- **Existing stair provided for egress at elevated seating in 3rd level classroom does not meet landing and handrail requirements but elevated seating area is planned to be removed if remodel is completed.**

IBC 1011.7.3 Enclosures under interior stairways

The walls and soffits within enclosed usable spaces under enclosed and unenclosed stairs shall be protected by 1-hour fire resistance-rated construction or the fire-resistance rating of the stairway enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the stairway enclosure (if applicable).
- **Deficiencies: The usable space underneath the exit access stairways is not fully protected.**



Exit Signage required per IBC Chapter 1013.

Handrails (IBC Chapter 1014):
Deficiencies: Handrails not installed at all places required and they do not provide adequate extensions.

Guardrails (IBC Chapter 1015):
Deficiencies: Guardrails are under 42" high requirement and do not comply with 4" max openings.

Exit Access (IBC Chapter 1016-1020):
Egress through intervening spaces shall comply with Section 1016.2.
Exit Access Travel Distance to exits shall not exceed 300' (sprinklered building).
From 3rd (highest level) travel distance approximately 165' from center of building.

Exit Access Stairways (non-enclosed stairs Section 1019):
Must be enclosed with a shaft enclosure constructed in accordance with Section 713.
Exceptions:
4. Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.

Vertical Opening Area between stories = 125 sq. ft.
Stairway run between stories = 125 sq. ft.
125 < 125x2
125 < 250

Deficiencies: Building does not currently have draft curtain at exit access stairways.

Corridors (IBC Chapter 1020):
Dead End Corridors: Cannot exceed 50' in sprinklered building
Fire Resistance Rating: None required with sprinkler system

H. Accessibility Requirements (IBC Chapter 11)

Accessible routes to be provided per section 1104.
Elevator is provided to each story from linked building.
Accessible bathrooms shall be required.
Deficiencies: Bathrooms currently do not comply.
Accessible seating at counters and work surfaces shall be provided per 1109.11.

I. Interior Environment to comply with IBC Chapter 12.

J. Plumbing Fixture Requirements (IBC Table 2902.1):

Deficiencies: Plumbing fixtures and spaces are not compliant due to lacking accessibility and projection clearances/dimensions.

Occupancy	Total Occupants	Water Closets	Required Water Closet	Lavatories	Required Lavatories	Drinking Fountain	Utility Sink
Total Occupancy	278					1 per 100	1 required
'B' Occupancy Males	139	1:25 for the first 50 and 1:50 after	3.8	1:40 for the first 80 and 1:80 after	2.7		
'B' Occupancy Females	139	1:25 for the first 50 and 1:50 after	3.8	1:40 for the first 80 and 1:80 after	2.7		
Total Required			**8 Water Closets**		**6 Lavatories**	**3 Drinking Fountains**	**1 Utility Sink**

Disclaimer:
This report was done solely as a reference guide. The Architect of Record is responsible to provide a final code review that relates to the building construction documents.

Report By:
Leah Petersen, Architect, Prairie Design Studio

BUILDING LAYOUT

EXISTING AND PROPOSED

Currently Sociology department staff is occupying the second floor and part of the lower level; with Social Work department staff occupying the third floor and some of the first floor. The University's goal is to consolidate the building layout and utilize the existing space in a more efficient manner.

The history of enrollment in social work is 323 students in 2019 with the program at 257 in 2023. This may indicate that this department is not growing, however they are reporting that in a 5 to 10-year projection they expect moderate growth. Most of the growth may be on-line from undergraduate to graduate degreed students. The growth rate goal is to be at 300 student enrollments by 2030.

Sociology had 46 students in 2019 with the program at 16 students in 2023. This indicates that the department will see minimal growth, anticipated to be at 25 student enrollments in 2030 as their goal. However, they also provide essential study courses for other degreed programs with a student enrollment of 440 in 2023. Through the essential studies they may need an additional faculty member by 2030.

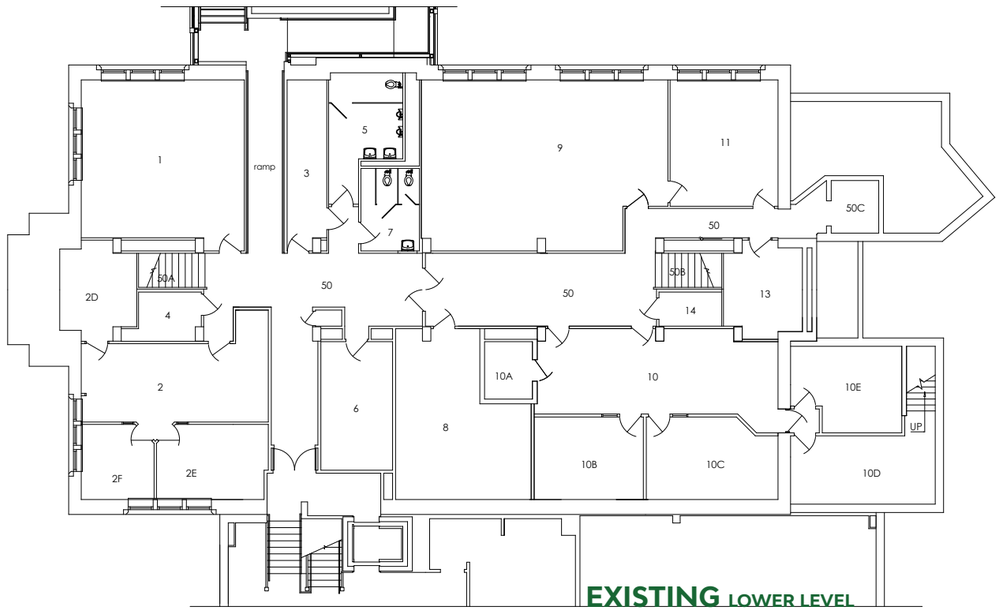
Currently the Kinesiology department is in space that is slated for demolition and needs to be relocated. The program growth has been on the rise with enrollment in 2023 at 157 in person and 316 online. Data for previous years is not available, however UND anticipates the program to have 400 students enrolled at the college in 2030. Internal programs at UND are feeding Kinesiology enrollment which is effecting Pre-med Students to trend into Kinesiology and Athletic Training students are enrolling in Kinesiology due to removal of their undergrad program.

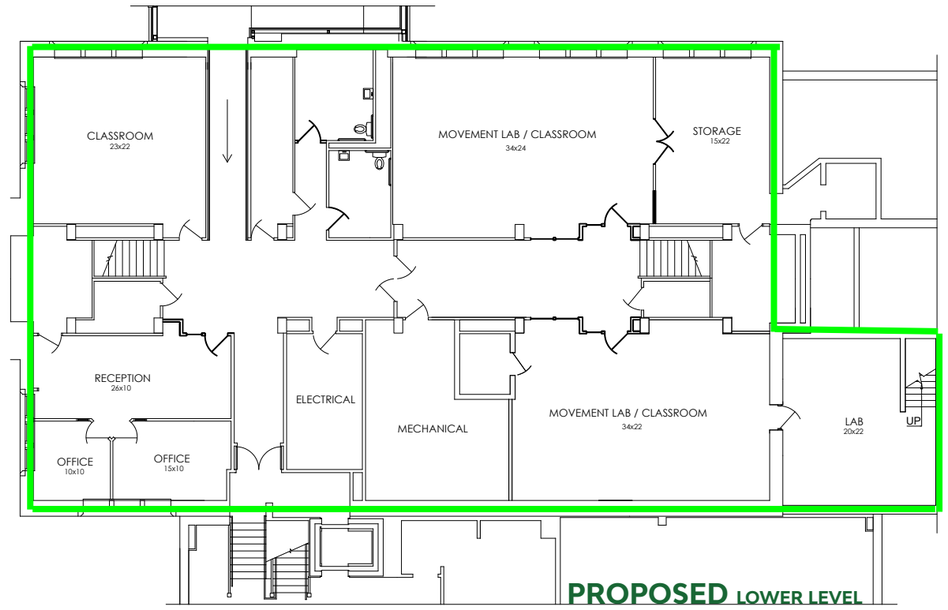
Reprogramming the layout of the building creates two proposed vacant levels, the lower level and the first floor, in which we are assessing the use of this space for the Kinesiology department staff and student spaces. You will see three plans per floor, including the existing layout, a minimal alterations option and large scale alteration option with the exception of the lower level, with only one proposed floor plan. The minimal remodel plan is provided for lower budget purposes. Opting for a more extensive remodel rather than fixing a few deficiencies can offer several advantages including workspaces that optimize current needs of the staff, improved natural lighting, and improved overall functionality and flow of the workspace. Flexible designs offer a better long-term investment and increased lifespan of the building. The large scale remodel will improve the work environment to help attract and retain better hires.

The bold lines differentiate the new walls from the existing walls on the proposed layouts. The following plans are only in the schematic phases and were created as a guide for the University to see which departments can benefit from the using the building more efficiently. The different departments' expected needs are listed on the next pages as they pertain to each level.

LOWER LEVEL

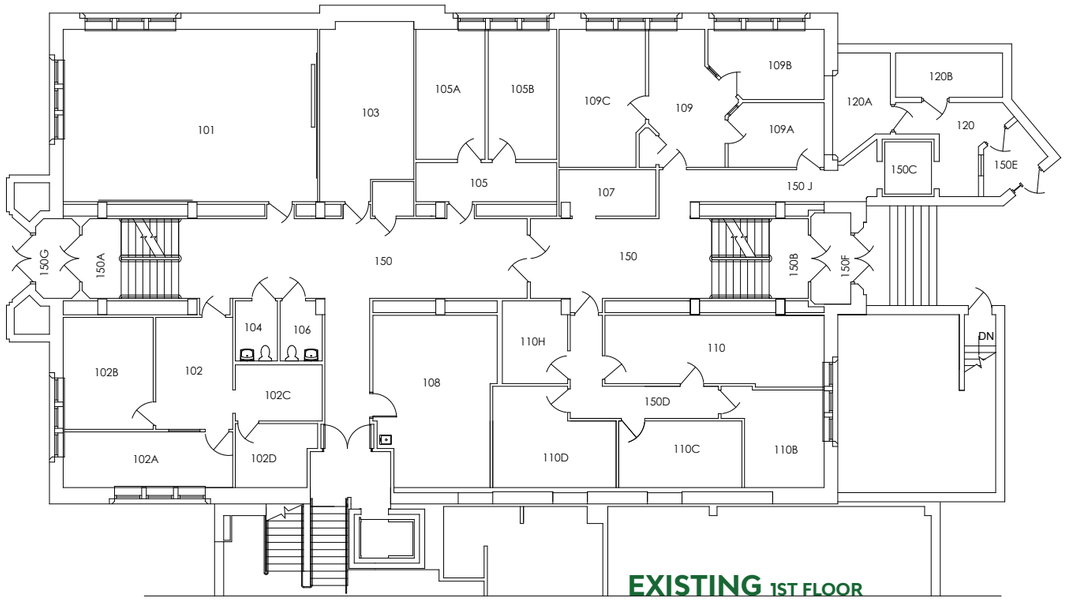
The lower level has one plan option with minimal alterations designed for Kinesiology included in this report. Being that the lower level is not as desirable as some of the upper levels, keeping the rooms large and maximizing what natural light is available is preferable. There is one room labeled *Lab* on the floor plan that has higher ceilings and could be utilized as such for Kinesiology. With the addition of a sprinkler system to the building, additional windows into the hallway will be approved by the governing code official on all floors since the corridor would not be required to be fire rated.





FIRST FLOOR

Proposing the first floor as Kinesiology space we have two floor plan options for alterations. The large scale alterations plan shows the classroom moved to another area in an effort to maximize natural light in the offices while keeping some natural light in the classroom. This layout can serve other tenants well into the future because we maximized the flow and number of offices.

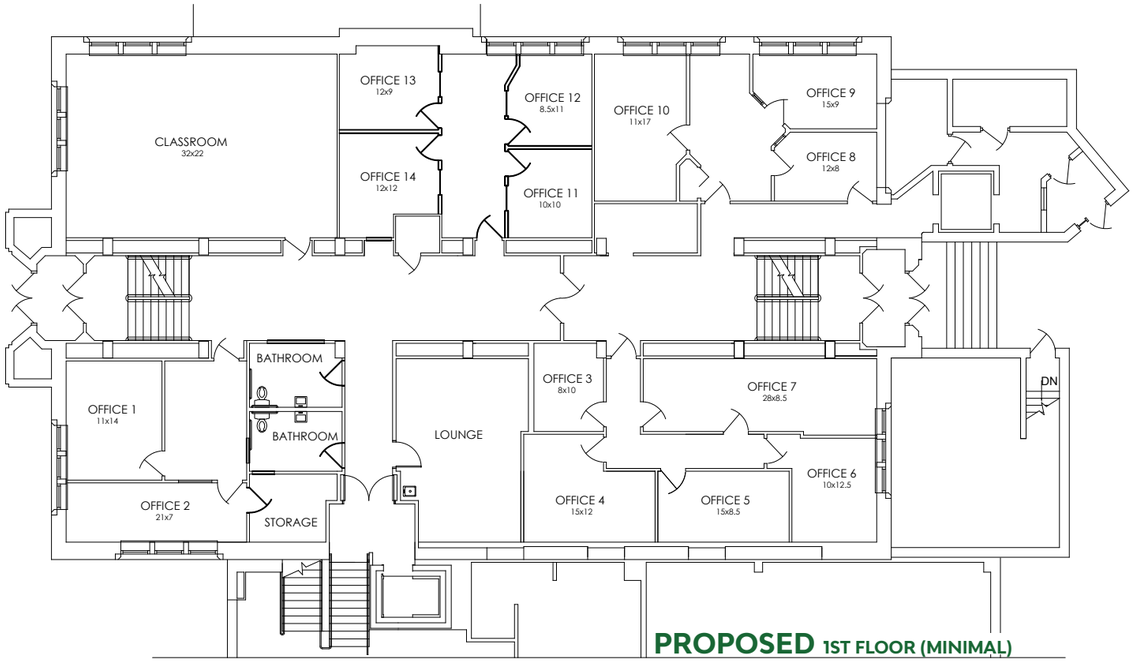


EXISTING 1ST FLOOR

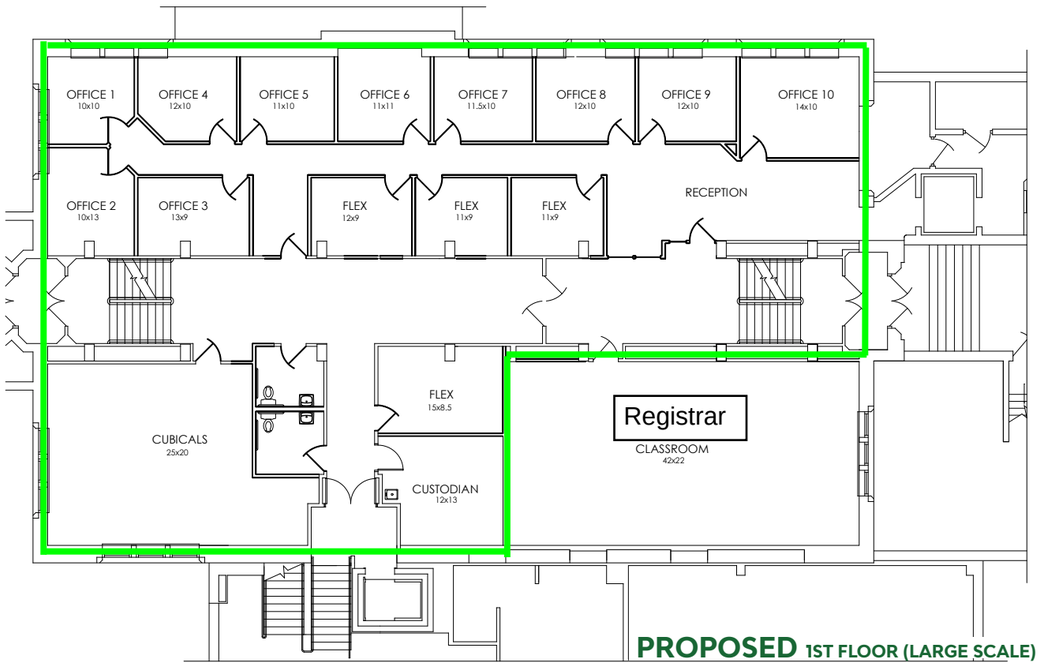
DEPARTMENT SPACIAL REQUIREMENTS

Kinesiology (proposed lower level and 1st Floor):*
Keep classroom #101
10-12 Staff members
Eight offices
One shared office
One private meeting room
Main program receptionist
50'x50'room (half basketball court)
Additional large space
Teaching lab
Weight room
Classroom space for 50, 40, 30 and 20 student classes

**Not all required spaces can be accommodated for in the Gillette building and are expected to be utilized in other campus building not incorporated in this study.*



PROPOSED 1ST FLOOR (MINIMAL)

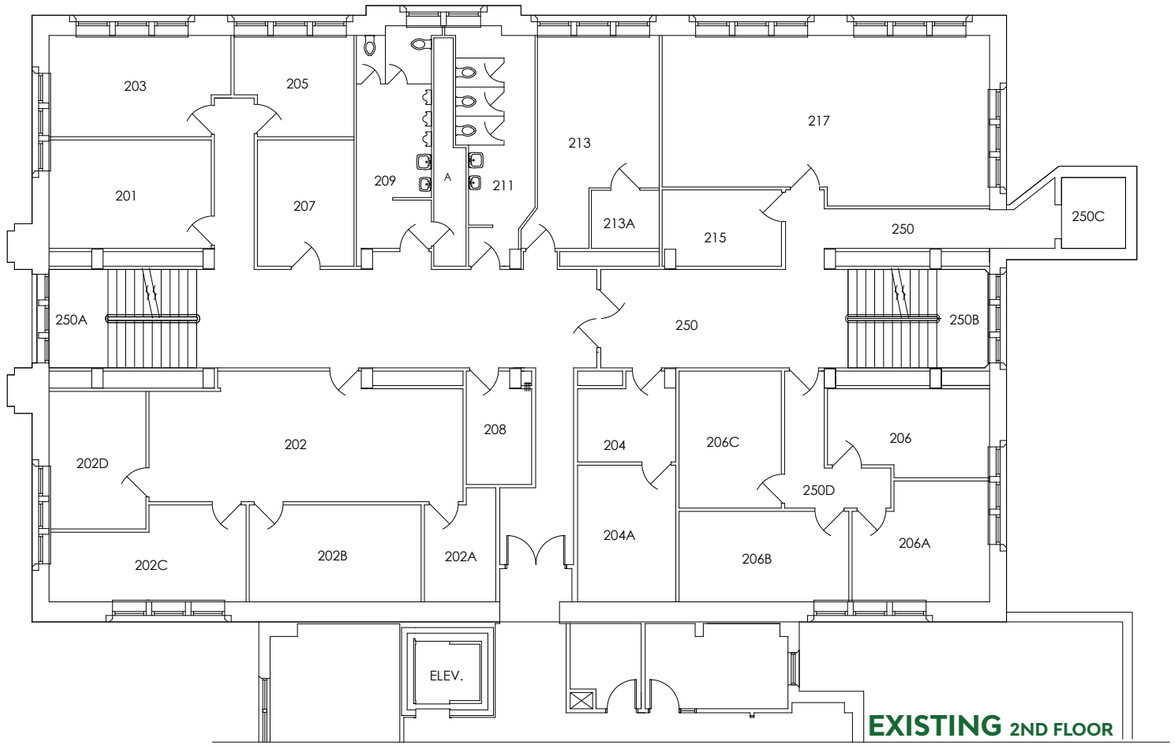


PROPOSED 1ST FLOOR (LARGE SCALE)

Kinesiology

SECOND FLOOR

Sociology is currently located on the second floor and would prefer to stay on this level. For the large-scale alteration plan we modified the bathrooms and created office groups to house more staff in a way that is functional as a modern office building. There are open areas for cubicles along with a large conference room that can be shared with other building departments.

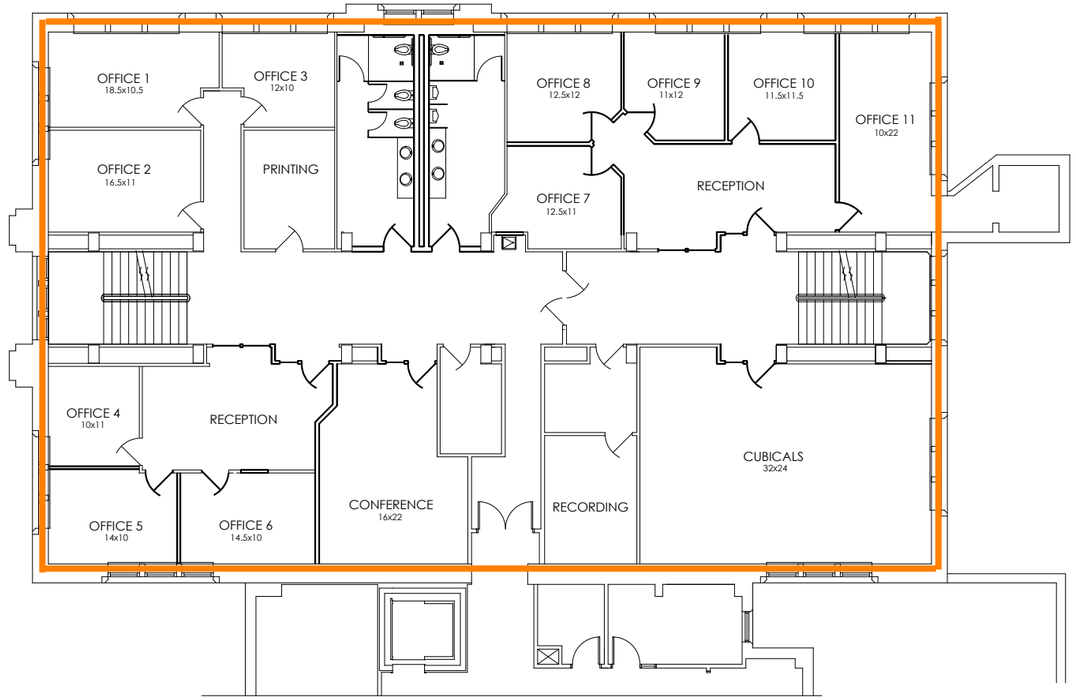


EXISTING 2ND FLOOR

DEPARTMENT SPACIAL REQUIREMENTS

Sociology (proposed 2nd floor):
Issue of maintenance staff access the roof through office #205
10 full time staff plus office administration assistant
Nicer + welcoming department entry locations
More windows in offices
Prefer to stay on second floor
Would like room to grow

PROPOSED 2ND FLOOR (MINIMAL)

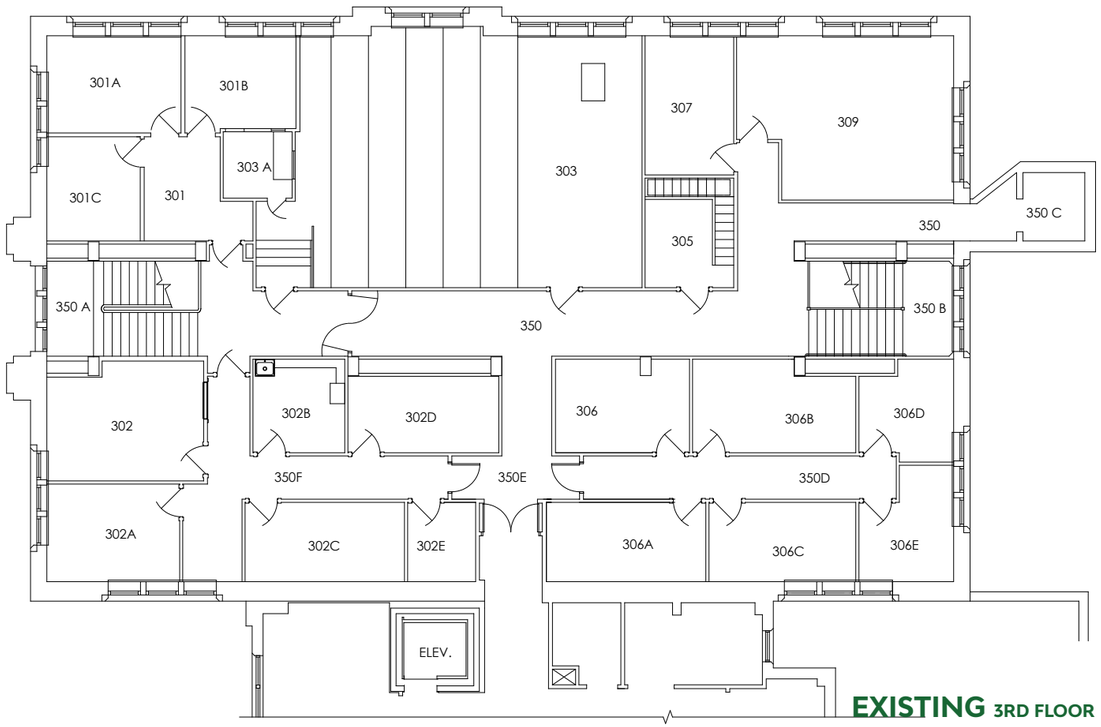


PROPOSED 2ND FLOOR (LARGE SCALE)

Sociology

THIRD FLOOR

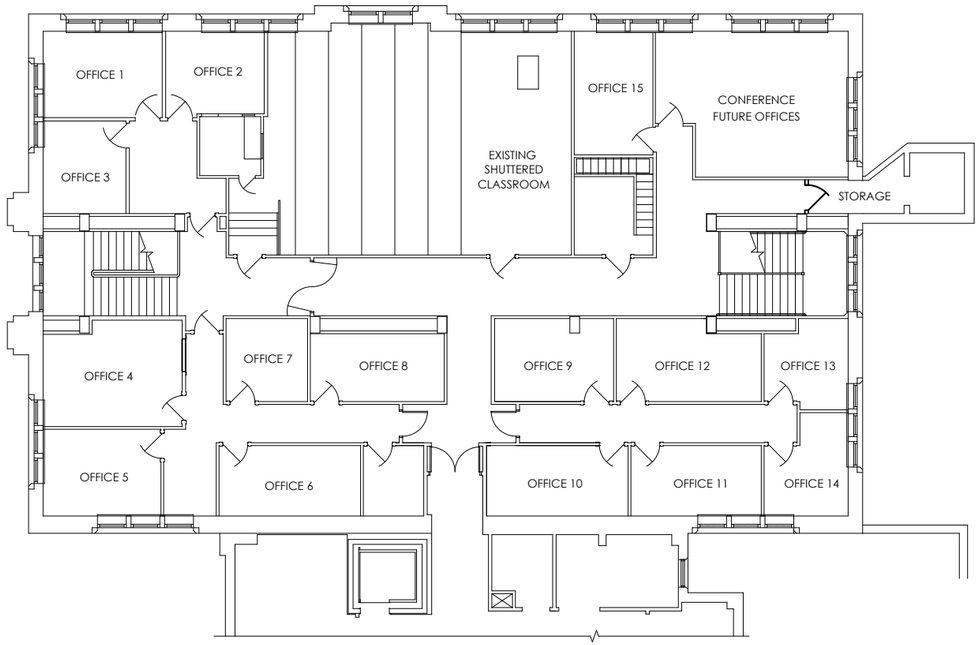
Third Floor large scale remodel is showing the removal of an existing classroom and replaced with modern functional office space. This plan is showing added bathrooms and a mothers room along with a shared conference room, student lounge and large office suite for cubicles.



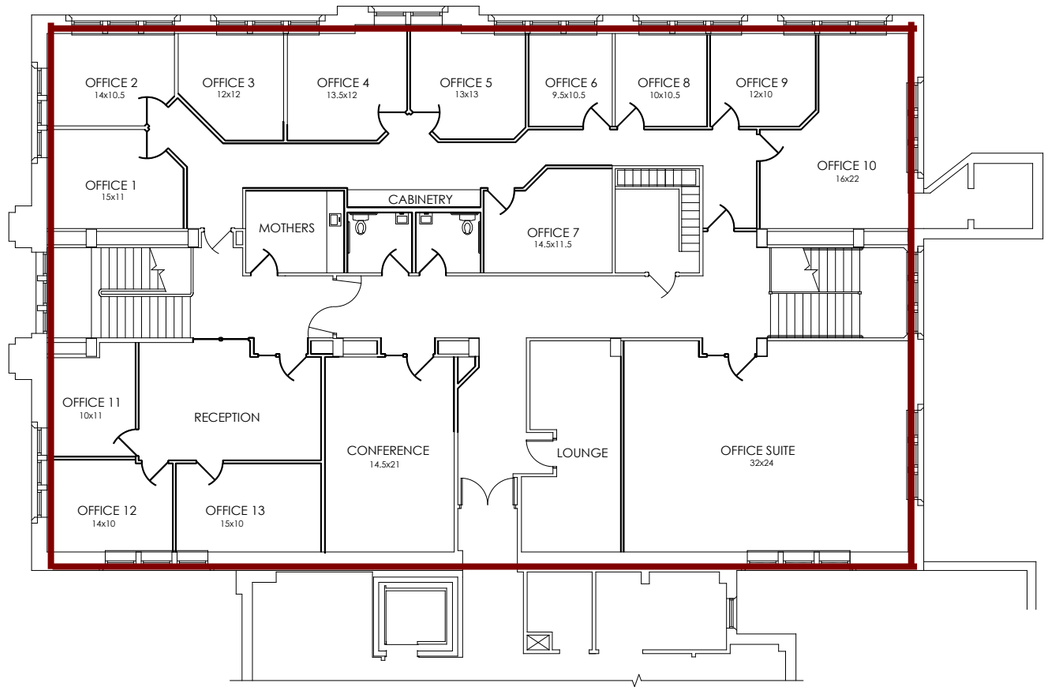
EXISTING 3RD FLOOR

DEPARTMENT SPACIAL REQUIREMENTS

Social Work (proposed 3rd floor):
15 full time staff – need private offices
Four person conference room with potential to be future offices
Possible student workers
Consolidation of offices to one floor of the building, located on multiple levels currently
Simulation lab space (potentially)



PROPOSED 3RD FLOOR (MINIMAL)



PROPOSED 3RD FLOOR (LARGE SCALE)

Social Work

APPENDIX A
FACILITIES MANAGEMENT ESTIMATE

ver 2.0 7/15 : Gillette Options Worksheet

UNIVERSITY OF NORTH DAKOTA
FACILITIES MANAGEMENT ESTIMATE

Budget Year:

Project Schedule		Duration
Project Started	@	
Schematics Approval	@	0
DD Completed.....	@	0
Construction Drawings Completed..	@	0
Construction Started (NTP).....	@	0
Construction Completed (NOC).....	@	0
Total Project Duration (Calendar Days)		0

Project: Gillette Hall Renovations Study
Arch/Engr: Prairie Design Studio
Contractor:
Delivery Type: CMaR
Phase: Pre Design

Remodeling
Gross Area 28,000

BUDGET ESTIMATE

			Option 1	Gross SF	$/sq.ft.
1		**Design Bid Build**			
	A	Gillette Basement - Light touch - paint, carpet, minor demo, some new ceilings, lights, lab floor work	$ 300,000	7,000	$42.86
	B	Gillette First Floor - Comprehensive large scale reno of 3/4 of floor space, light touch remaining	$ 1,000,000	7,000	$142.86
	C	Gillette Second Floor - Miniamal reno entire floor	$ 200,000	7,000	$28.57
		Gillette Third Floor - Comprehensive large scal reno of 3/4 of floor space, light touch remaining	$ 1,000,000	7,000	$142.86
	E	Gillette Hall Mechanical System upgrade & extensions - included for all floors in numbers above	$ 0	100	$0.00
	E	Gillette Hall Fire Suppression - Possible Fire Pump	$ 300,000	28,000	$10.71
		Total Construction Manager Guaranteed Maximum Price	$ 2,800,000	28,000	**$100.00**
2		**CONSTRUCTION PROJECT ALLOWANCES**			
	A	Hazardous Material Abatement	$ 200,000	28,000	$7.14
	B	NDUS Telecomm and Wireless Equipment	$ 10,000	28,000	$0.36
	C	Institutional Work and Moving	$ 10,000	28,000	$0.36
		Total Construction Project Allowances	$ 220,000		**$7.86**
3		**DESIGN AND CONSULTING COSTS**			
	A	Master Planning and Space Programming	$ 0		$0.00
	B	Architectural and Engineering Services	$ 200,000		$7.14
	C	Geotechnical Services	$ 0		$0.00
	D	Design and Construction Survey Services	$ 0		$0.00
	E	Hazardous Material Survey	$ 5,000		$0.18
	F	Branding Consultant	$ 0		$0.00
	G	Building Commissioning Services	$ 0		$0.00
	H	3rd Party Materials Testing Services	$ 5,000		$0.18
		Total Design and Consulting Costs	$ 210,000		**$7.50**
4		**OWNER PURCHASED FURNITURE, FIXTURES, and EQUIPMENT**			Included in PDC Fee
	A	Furniture as per option ($20/SF)	$ 224,328	28,000	$8.01
	D	Interior Signage, Donor Recognition, and Branding	$ 10,000		$0.36
	E	Exterior Building Signage	$ 0		$0.00
		Total Owner Purchased FFE Costs	$ 234,328		**$8.37**
		PROJECT MANAGEMENT AND OWNERS CONTINGENCY COSTS			
	A	UND Project Management Costs (3%)	$ 108,087		$3.86
5	B	Owners Contingency (4%)	$ 138,573		$4.95
		Total PM and Owners Contingency Costs	$ 246,660		**$8.81**
		GRAND TOTAL COST			
6		**Grand Total Cost to Construct Project (does not include financing or fundraising costs)**	$ 3,710,988	57,533	#REF!

APPENDIX B
FACILITY CONDITION ASSESSMENT

REPORT COMPILED BY ISES ON THE FOLLOWING PAGES

UNIVERSITY OF NORTH DAKOTA

Facility Condition Assessment

Gillette Hall

0004

November 2, 2015

ISES CORPORATION

TABLE OF CONTENTS

FACILITY CONDITION ASSESSMENT

SECTION 1

ASSET OVERVIEW

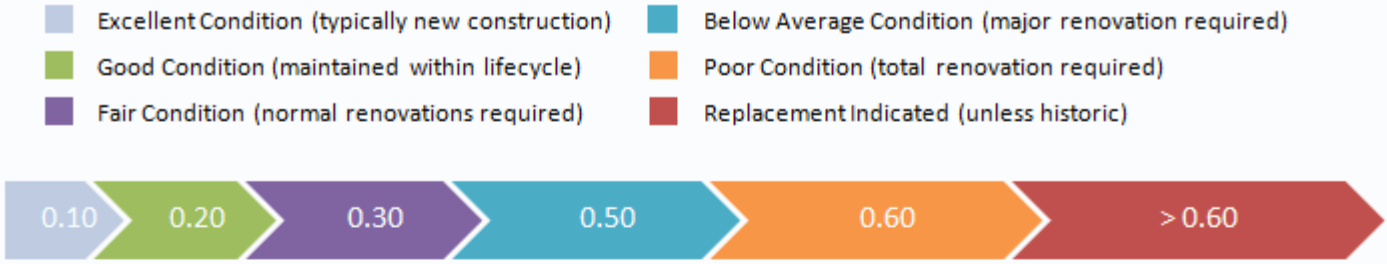
ASSET EXECUTIVE SUMMARY

All costs shown as Present Value

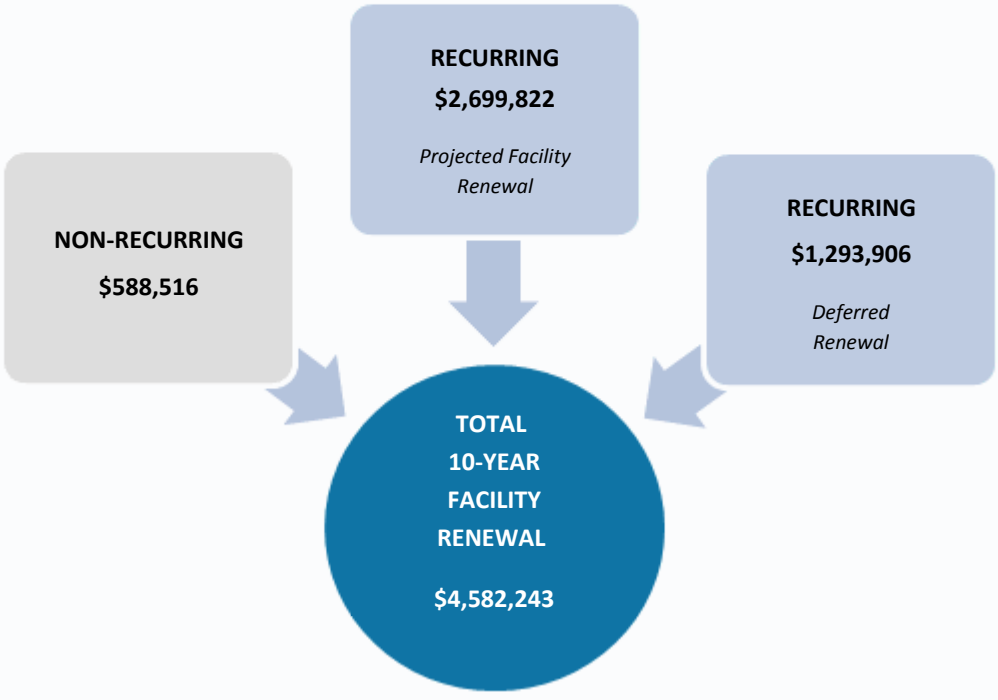
ASSET CODE	0004		
ASSET NAME	GILLETTE HALL	**CURRENT REPLACEMENT VALUE**	$8,468,000
ASSET USE	Office / Administrative	**FACILITY CONDITION NEEDS INDEX**	0.54
YEAR BUILT	1918	**FACILITY CONDITION INDEX**	0.15
GSF	27,871	**10-YEAR $/SF**	164.41
INSPECTION DATE	11/03/2015		

FCNI Scale

The FCNI for this asset is **0.54**



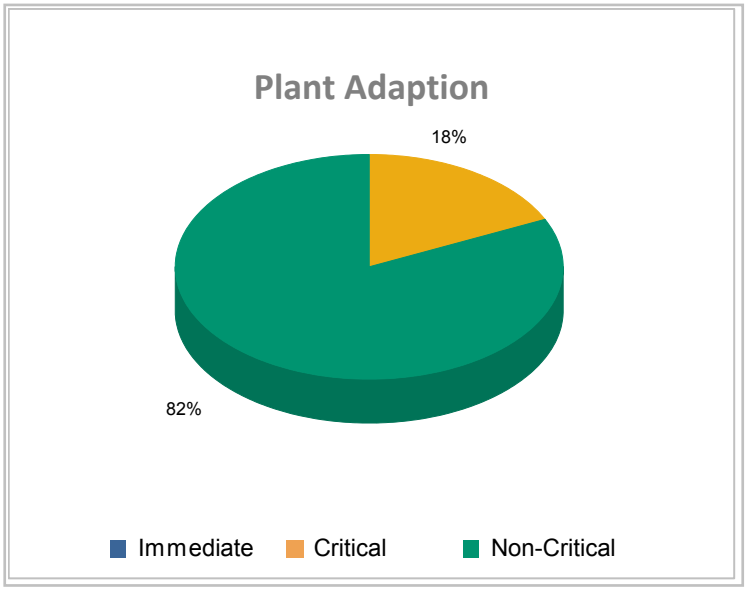
Total Facility Renewal Costs



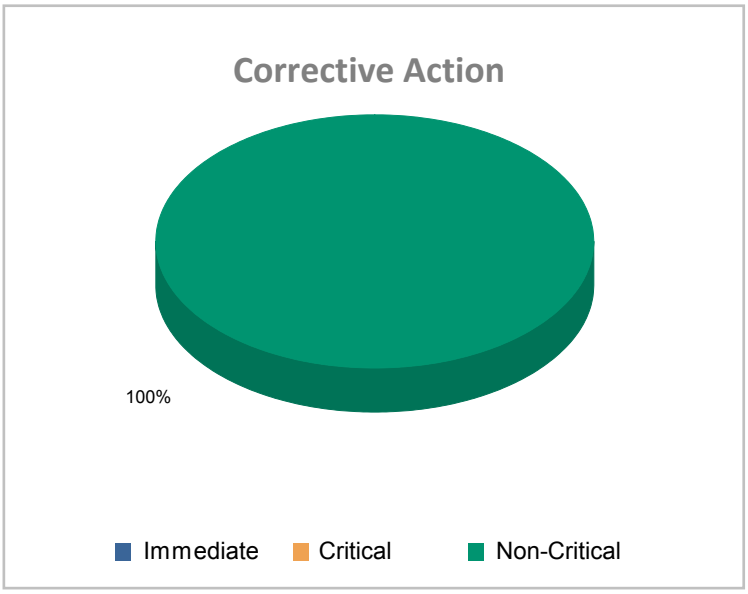
Non-Recurring Costs

Project Cost by Priority

PLANT ADAPTION	
1 - Immediate	**$0**
2 - Critical	**$104,786**
3 - Non-Critical	**$474,073**

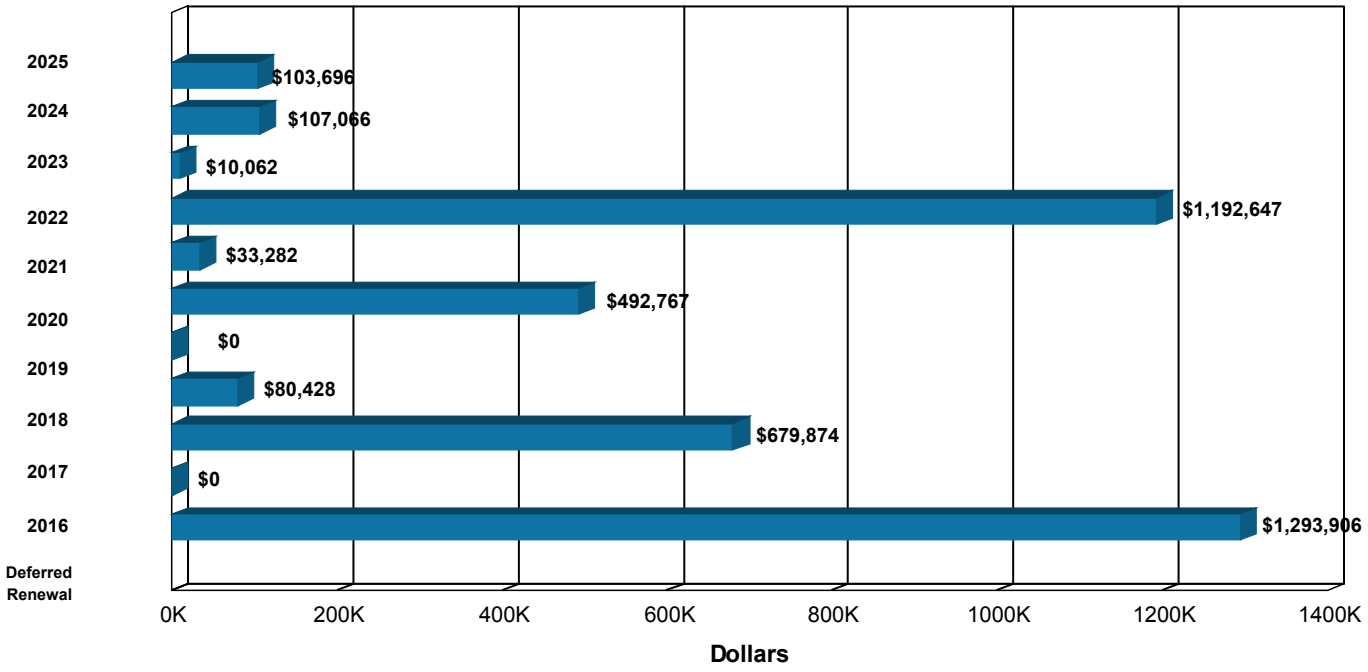


CORRECTIVE ACTION	
1 - Immediate	**$0**
2 - Critical	**$0**
3 - Non-Critical	**$9,657**

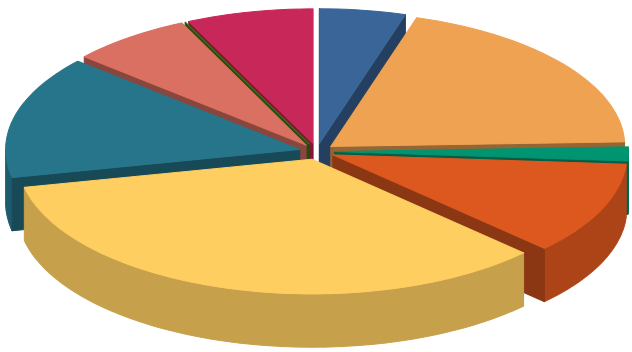


Recurring Costs

Component Replacement Cost by Year



Facilities Renewal Cost by System



Accessibility	$215,921	5%
Electrical	$898,361	20%
Exterior	$88,126	2%
Fire/Life Safety	$505,784	11%
Health	$0	0%
HVAC	$1,569,638	34%
Interiors	$677,697	15%
Plumbing	$305,044	7%
Site	$9,657	0%
Vert. Trans.	$312,017	7%
TOTAL	**$4,582,243**	

INSPECTION TEAM DATA

Report Development

ISES Corporation
3100 Breckinridge Boulevard, Suite 400
Duluth, GA 30096

Project Manager

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Date of Inspection

November 2, 2015

Inspection Team Personnel

NAME	POSITION	SPECIALTY
Jerry Watkins	Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health
Denise Gadd	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Ric Gibbs	Facility Assessor	Interior Finishes, Exterior Structure, ADA Compliance, Site, Fire/Life Safety, Health
Imelda Jordan, LEED® AP O+M	Senior Project Engineer	Mechanical, Electrical, Plumbing, Energy, Fire/Life Safety, Health

Client Contact

NAME	POSITION
Nancy Bauer	Mechanical Operations Coordinator

DEFINITIONS

The following information is a clarification of the Facility Condition Assessment report using example definitions.

Overview

Recurring and Non-Recurring Facility Renewal Costs

Facility renewal costs are divided into two main categories – recurring and non-recurring. Recurring costs are cyclical and consist primarily of major repairs to or replacement/rebuilding of facility systems and components (e.g., roof or HVAC system replacement at or past the end of its normal useful life). The tool for projecting the recurring renewal costs is the Lifecycle Component Inventory, which is explained in detail below. Non-recurring costs typically consist of modifications or repairs necessary to comply with fire/life safety or accessibility code requirements or to address isolated, non-recurring deficiencies that could negatively affect the structure of the facility or the systems and components within. For these non-recurring costs, projects have been developed and include estimated material and labor costs.

Facility Condition Needs Index (FCNI)

The FCNI provides a lifecycle cost comparison. It is a ratio of the sum of the recurring and non-recurring facilities renewal costs over ten years to the current replacement value of the asset. The current replacement value is based on replacement with current construction standards for the facility use type, and not original design parameters. This index gives the university a comparison within all buildings for identifying worst case/best case building conditions.

$$\text{FCNI} = \frac{\text{Non-Recurring Projects + 10-Year Recurring Component Renewal}}{\text{Current Replacement Value}}$$

Facility Condition Index (FCI)

The FCI is a ratio of the Deferred Renewal facilities renewal costs to the current replacement value.

$$\text{FCI} = \frac{\text{Deferred Renewal}}{\text{Current Replacement Value}}$$

Material and Labor Cost Factors and Additional Markups

The project costs are adjusted from the national averages to reflect conditions in Grand Forks using the R. S. Means City Cost Index for material and labor cost factors. The percentage adjustment of the national average is shown in the table below. Typical general contractor fees (which could include profit, overhead, bonds, and insurance) and professional fees (architect or engineer design fees and in-house design costs) are also included in the project costs.

GLOBAL MARKUP	%
Local Labor Index	71.6
Local Materials Index	102.7
General Contractor Markup	20.0
Professional Fees	16.0

Recurring Costs

Asset Component Inventory and Cost Projections

The Asset Component Inventory (starting on page 4.1.1) is based on industry standard lifecycle expectancies applied to an inventory of major building systems and major components within a facility. This is a list of all major systems and components within the facility. Each indicated component has the following associated information:

CATEGORY	DEFINITION
Uniformat Code	The standard Uniformat Code that applies to the component
Component Description	This line item describes the individual component
Identifier	Unique identifying information entered for a component as necessary
Quantity	The quantity of the listed component
Units	The unit of measure associated with the quantity
Unit Cost	The cost to replace each individual component unit (this cost is in today's dollars)
Complexity Adjustment	A factor utilize to adjust component replacement costs accordingly when it is anticipated that the actual cost will deviate from the average for that component
Total Cost	Unit cost multiplied by quantity, in today's dollars. Note that this is a one-time renewal/replacement cost
Install Date	Year that the component was or is estimated to have been installed. When this data is not available, it defaults to the year the asset was constructed
Life Expectancy	Average life expectancy for each individual component
Life Expectancy Adjustment	Utilized to adjust the first lifecycle of the component and to express when the next replacement should occur

The component listing forms the basis of the Recurring Component Renewal Schedule, which provides a year-by-year list of projected recurring renewal costs over the next ten years. Each individual component is assigned a replacement year based on lifecycles, and the costs for each item are in future year dollars. For items that are already past the end of their lifecycle, the replacement year is shown as Deferred Renewal.

For a longer term perspective, the Recurring Component Expenditure Projections Graph presents recurring renewal cost projections over a 50-year period (starting from the date the report is run) based on each individual item's renewal cost and life span. Some components might require renewal several times within the 50-year model, while others might not occur at all. The vertical bars on the graph represent the accumulated total costs for each individual year. The average annual cost per gross square foot ($/GSF) is shown at the bottom of the graph. In this calculation, costs are not escalated. This figure can be utilized to assess the adequacy of existing capital renewal and repair budgets.

Recurring Cost Classifications

- Deferred Renewal
  Recurring repairs, generated by the Lifecycle Component Inventory, that are past due for completion but have not yet been accomplished as part of normal maintenance or capital repair efforts. Further deferral of such renewal could impair the proper functioning of the facility. Costs estimated for Deferred Renewal projects should include compliance with applicable codes, even if such compliance requires expenditures beyond those essential to effect the needed repairs.

- Recurring Component Replacement
  Recurring renewal efforts, generated by the Lifecycle Component Inventory, that will be due within the scope of the assessment. These projects represent regular or normal facility maintenance, repair, or renovation that should be planned in the near future.

Non-Recurring Costs

As previously mentioned, modifications or repairs necessary to comply with fire/life safety or accessibility code requirements and those that address isolated, non-recurring deficiencies that could negatively affect the structure of the facility or the systems and components within are not included in the Lifecycle Component Inventory. For each such deficiency identified during the facility inspection, a project with an estimated cost to rectify said deficiency is recommended. These projects each have a unique identifier and are categorized by system type, priority, and classification, which are defined below. The costs in these projects are also indexed to local conditions and markups applied as the situation dictates.

Project Number

Each project has a unique number consisting of three elements, the asset identification number, system code, and a sequential number assigned by the FCA software. For example, the third fire/life safety project identified for asset 0001 would have a project number of 0001FS03 (0001 for the asset number, FS for fire/life safety, and 03 being the next sequential number for a fire/life safety project).

Project Classifications

- Plant/Program Adaption
  Non-recurring expenditures, stored in the Projects module, required to adapt the physical plant to the evolving needs of the institution and to changing codes or standards. These are expenditures beyond normal maintenance. Examples include compliance with changing codes (e.g., accessibility), facility alterations required by changed teaching or research methods, and improvements occasioned by the adoption of modern technology (e.g., the use of personal computer networks).

- Corrective Action
  Non-recurring expenditures, stored in the Projects module, for repairs needed to correct random and unpredictable deficiencies. Such projects are not related to aligning a building with codes or standards. Deficiencies classified as Corrective Action could have an effect on building aesthetics, safety, or usability.

Priority Classes

Recurring renewal needs do not receive individual prioritization, as the entire data set of needs in this category is year-based. Each separate component has a distinct need year, rendering further prioritization unnecessary. Each non-recurring renewal project, however, has a priority assigned to indicate the criticality of the recommended work. The prioritization utilized for this subset of the data is as follows.

- Priority 1 – Immediate

  Projects in this category require immediate action to:

  a. correct a cited safety hazard
  b. stop accelerated deterioration
  c. and/or return a facility to normal operation

- Priority 2 – Critical

  Projects in this category include actions that must be addressed in the short-term:

  a. repairs to prevent further deterioration

  b. improvements to facilities associated with critical accessibility needs

  c. potential safety hazards

- Priority 3 – Non-Critical

  Projects in this category include:

  a. improvements to facilities associated with non-critical accessibility needs

  b. actions to bring a facility into compliance with current building codes as grandfather clauses expire

  c. actions to improve the usability of a facility following an occupancy or use change

Category Codes

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

Refer to the Category Code Report starting on page 1.4.1.

Example: **Category Code = EL5A**	
EL	System Description
5	Component Description
A	Element Description

Priority Sequence

A Priority Sequence number is automatically assigned to each project to rank the projects in order of relative criticality and show the recommended execution order. This number is calculated based on the Priority Class and identified system of each project.

Example:

Priority Class	Category Code	Project Number	Priority Sequence
1	HV2C	0001HV04	01
1	PL1D	0001PL02	02
2	IS1E	0001IS06	03
2	EL4C	0001EL03	04

Project Subclass Type

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

Drawings/Project Locations

The drawings for this facility are marked with icons (see legend on plans) denoting the specific location(s) for each project. Within each icon are the last four characters of the respective project number (e.g., 0001IS01 is marked on the plan as IS01).

Photographs

A code shown on the Photo Log identifies the asset number, photo sequence, and a letter designation for architect (a) or engineer (e).

Example: **Photo Number: 0001006e**	
0001	Asset Number
006	Photo Sequence
e	Engineering Photo

CATEGORY CODE REPORT

ACCESSIBILITY

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
AC1A	Site	Stair and Railings	Includes exterior stairs and railings which are not part of the building entrance points.
AC1B	Site	Ramps and Walks	Includes sidewalks, grade change ramps (except for a building entrance), curb ramps, etc.
AC1C	Site	Parking	Designated parking spaces, including striping, signage, access aisles and ramps, etc.
AC1D	Site	Tactile Warnings	Raised tactile warnings located at traffic crossing and elevation changes.
AC2A	Building Entry	General	Covers all aspects of entry into the building itself, including ramps, lifts, doors and hardware, power operators, etc.
AC3A	Interior Path of Travel	Lifts/Ramps/ Elevators	Interior lifts, ramps and elevators designed to accommodate level changes inside a building. Includes both installation and retrofitting.
AC3B	Interior Path of Travel	Stairs and Railings	Upgrades to interior stairs and handrails for accessibility reasons.
AC3C	Interior Path of Travel	Doors and Hardware	Accessibility upgrades to the interior doors including widening, replacing hardware power, assisted operators, etc.
AC3D	Interior Path of Travel	Signage	Interior building signage upgrades for compliance with the ADA.
AC3E	Interior Path of Travel	Restrooms/ Bathrooms	Modifications to and installation of accessible public restrooms and bathrooms. Bathrooms that are an integral part of residential suites are catalogued under HC4A.
AC3F	Interior Path of Travel	Drinking Fountains	Upgrading/replacing drinking fountains for reasons of accessibility.
AC3G	Interior Path of Travel	Phones	Replacement/modification of public access telephones.
AC4A	General	Functional Space Modifications	This category covers all necessary interior modifications necessary to make the services and functions of a building accessible. It includes installation of assistive listening systems, modification of living quarters, modifications to laboratory workstations, etc. Bathrooms that are integral to efficiency suites are catalogued here.
AC4B	General	Other	All accessibility issues not catalogued elsewhere.

ELECTRICAL

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
EL1A	Incoming Service	Transformer	Main building service transformer.
EL1B	Incoming Service	Disconnects	Main building disconnect and switchgear.
EL1C	Incoming Service	Feeders	Incoming service feeders. Complete incoming service upgrades, including transformers, feeders, and main distribution panels are catalogued here.
EL1D	Incoming Service	Metering	Installation of meters to record consumption and/or demand.
EL2A	Main Distribution Panels	Condition Upgrade	Main distribution upgrade due to deficiencies in condition.
EL2B	Main Distribution Panels	Capacity Upgrade	Main distribution upgrades due to inadequate capacity.
EL3A	Secondary Distribution	Step-Down Transformers	Secondary distribution step-down and isolation transformers.
EL3B	Secondary Distribution	Distribution Network	Includes conduit, conductors, sub-distribution panels, switches, outlets, etc. Complete interior rewiring of a facility is catalogued here.

EL3C	Secondary Distribution	Motor Controllers	Mechanical equipment motor starters and control centers.
EL4A	Devices and Fixtures	Exterior Lighting	Exterior building lighting fixtures, including supply conductors and conduit.
EL4B	Devices and Fixtures	Interior Lighting	Interior lighting fixtures (also system wide emergency lighting), including supply conductors and conduits.
EL4C	Devices and Fixtures	Lighting Controllers	Motion sensors, photocell controllers, lighting contactors, etc.
EL4D	Devices and Fixtures	GFCI Protection	Ground fault protection, including GFCI receptacles and breakers.
EL4E	Devices and Fixtures	Lightning Protection	Lightning arrestation systems including air terminals and grounding conductors.
EL5A	Emergency Power System	Generation/ Distribution	Includes generators, central battery banks, transfer switches, emergency power grid, etc.
EL6A	Systems	UPS/DC Power Supply	Uninterruptible power supply systems and DC motor-generator sets and distribution systems.
EL7A	Infrastructure	Above Ground Transmission	Includes poles, towers, conductors, insulators, fuses, disconnects, etc.
EL7B	Infrastructure	Underground Transmission	Includes direct buried feeders, ductbanks, conduit, manholes, feeders, switches, disconnects, etc.
EL7C	Infrastructure	Substations	Includes incoming feeders, breakers, buses, switchgear, meters, CTs, PTs, battery systems, capacitor banks, and all associated auxiliary equipment.
EL7D	Infrastructure	Distribution Switchgear	Stand-alone sectionalizing switches, distribution switchboards, etc.
EL7F	Infrastructure	Area and Street Lighting	Area and street lighting systems, including stanchions, fixtures, feeders, etc.
EL8A	General	Other	Electrical system components not catalogued elsewhere.

EXTERIOR STRUCTURE

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
ES1A	Foundation/ Footing	Structure	Structural foundation improvements involving structural work on foundation wall/footing, piers, caissons, and piles, including crack repairs, shoring, and pointing
ES1B	Foundation/ Footing	Dampproofing/ Dewatering	Foundation/footing waterproofing work, including, damp-proofing, dewatering, insulation, etc.
ES2A	Columns/Beams/ Walls	Structure	Structural work to primary load-bearing structural components aside from floors, including columns, beams, bearing walls, lintels, arches, etc.
ES2B	Columns/Beams/ Walls	Finish	Work involving restoration of the appearance and weatherproof integrity of exterior wall/structural envelope components, including masonry/pointing, expansion joints, efflorescence and stain removal, grouting, surfacing, chimney repairs, etc.
ES3A	Floor	Structure	Work concerning the structural integrity of the load supporting floors, both exposed and unexposed, including deformation, delamination, spalling, shoring, crack repair, etc.
ES4A	Roof	Repair	Work on waterproof horizontal finish (roof) involving repair and/or limited replacement (<40% total), including membrane patching, flashing repair, coping caulk/resetting, PPT wall parging/coating, walkpad installation, skylight and roof hatch R&R, etc.
ES4B	Roof	Replacement	Work involving total refurbishment of roofing system, including related component rehab.
ES5A	Fenestrations	Doors	Work on exterior exit/access door, including storefronts, airlocks, air curtains, vinyl slat doors, all power/manual operating hardware (except handicapped), etc.
ES5B	Fenestrations	Windows	Work on exterior fenestration closure and related components, including glass/metal/wood curtain walls, fixed or operable window sashes, glazing, frames, sills, casings, stools, seats, coatings, treatments, screens, storm windows, etc.

ES6A	General	Attached Structure	Work on attached exterior structure components not normally considered in above categories, including porches, stoops, decks, monumental entrance stairs, cupolas, tower, etc.
ES6B	General	Areaways	Work on attached grade level or below structural features, including subterranean lightwells, areaways, basement access stairs, etc.
ES6C	General	Trim	Work on ornamental exterior (generally non-structural) elements, including beltlines, quoins, porticos, soffits, cornices, moldings, trim, etc.
ES6D	General	Superstructure	Finish and structural work on non-standard structures with exposed load-bearing elements, such as stadiums, bag houses, bleachers, freestanding towers, etc.
ES6E	General	Other	Any exterior work not specifically categorized elsewhere, including finish and structural work on freestanding boiler stacks.

FIRE/LIFE SAFETY

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
FS1A	Lighting	Egress Lighting/Exit Signage	R&R work on exit signage and packaged AC/DC emergency lighting.
FS2A	Detection/Alarm	General	Repair or replacement of fire alarm/detection system/components, including alarms, pull boxes, smoke/heat detectors, annunciator panels, central fire control stations, remote dialers, fire station communications, etc.
FS3A	Suppression	Sprinklers	Repair or installation of water sprinkler type automatic fire suppressions, including wet-pipe and dry-pipe systems, heads, piping, deflectors, valves, monitors, associated fire pump, etc.
FS3B	Suppression	Standpipe/Hose	Repair or installation of standpipe system or components, including hardware, hoses, cabinets, nozzles, necessary fire pumping system, etc.
FS3C	Suppression	Extinguishers	Repairs or upgrades to F.E. cabinets/wall fastenings and handheld extinguisher testing/replacement.
FS3D	Suppression	Other	Other fire suppression items not specifically categorized elsewhere, including fire blankets, carbon dioxide automatic systems, Halon systems, dry chemical systems, etc.
FS4A	Hazardous Materials	Storage Environment	Installation or repair of special storage environment for the safe holding of flammable or otherwise dangerous materials/supplies, including vented flammables storage cabinets, holding pens/rooms, cages, fire safe chemical storage rooms, etc.
FS4B	Hazardous Materials	User Safety	Improvements, repairs, installation, or testing of user safety equipment, including emergency eyewashes, safety showers, emergency panic/shut-down system, etc.
FS5A	Egress Path	Designation	Installation, relocation or repair of posted diagrammatic emergency evacuation routes.
FS5B	Egress Path	Distance/ Geometry	Work involving remediation of egress routing problems, including elimination of dead end corridors, excessive egress distance modifications, and egress routing inadequacies.
FS5C	Egress Path	Separation Rating	Restoration of required fire protective barriers, including wall rating compromises, fire-rated construction, structural fire proofing, wind/safety glazing, transom retrofitting, etc.
FS5D	Egress Path	Obstruction	Clearance of items restricting the required egress routes.
FS5E	Egress Path	Stairs Railing	Retrofit of stair/landing configurations/structure, railing heights/geometries, etc.
FS5F	Egress Path	Fire Doors/ Hardware	Installation/replacement/repair of fire doors and hardware, including labeled fire doors, fire shutters, closers, magnetic holders, panic hardware, etc.
FS5G	Egress Path	Finish/Furniture Ratings	Remediation of improper fire/smoke ratings of finishes and furniture along egress routes.
FS6A	General	Other	Life/fire safety items not specifically categorized elsewhere.

HEALTH

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
HE1A	Environmental Control	Equipment and Enclosures	Temperature control chambers (both hot and cold) for non-food storage. Includes both chamber and all associated mechanical equipment.
HE1B	Environmental Control	Other	General environmental control problems not catalogued elsewhere.
HE2A	Pest Control	General	Includes all measures necessary to control and destroy insects, rodents, and other pests.
HE3A	Refuse	General	Issues related to the collection, handling, and disposal of refuse.
HE4A	Sanitation Equipment	Laboratory and Process	Includes autoclaves, cage washers, steam cleaners, etc.
HE5A	Food Service	Kitchen Equipment	Includes ranges, grilles, cookers, sculleries, etc.
HE5B	Food Service	Cold Storage	Includes the cold storage room and all associated refrigeration equipment.
HE6A	Hazardous Material	Structural Asbestos	Testing, abatement, and disposal of structural and building finish materials containing asbestos.
HE6B	Hazardous Material	Mechanical Asbestos	Testing, abatement, and disposal of mechanical insulation materials containing asbestos.
HE6C	Hazardous Material	PCBs	Includes testing, demolition, disposal, and cleanup of PCB contaminated substances.
HE6D	Hazardous Material	Fuel Storage	Includes monitoring, removal, and replacement of above and below ground fuel storage and distribution systems. Also includes testing and disposal of contaminated soils.
HE6E	Hazardous Material	Lead Paint	Testing, removal, and disposal of lead-based paint systems.
HE6F	Hazardous Material	Other	Handling, storage, and disposal of other hazardous materials.
HE7A	General	Other	Health related issues not catalogued elsewhere.

HVAC

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
HV1A	Heating	Boilers/Stacks/ Controls	Boilers for heating purposes, including their related stacks, flues, and controls.
HV1B	Heating	Radiators/ Convectors	Including cast-iron radiators, fin tube radiators, baseboard radiators, etc.
HV1C	Heating	Furnace	Furnaces and their related controls, flues, etc.
HV1D	Heating	Fuel Supply/Storage	Storage and/or distribution of fuel for heating purposes, including tanks and piping networks and related leak detection/monitoring.
HV2A	Cooling	Chillers/ Controls	Chiller units for production of chilled water for cooling purposes, related controls (not including mods for CFC compliance).
HV2B	Cooling	Heat Rejection	Repair/replacement of cooling towers, dry coolers, air-cooling, and heat rejection. Includes connection of once-through system to cooling tower.
HV3A	Heating/Cooling	System Retrofit/ Replace	Replacement or major retrofit of HVAC systems.
HV3B	Heating/Cooling	Water Treatment	Treatment of hot water, chilled water, steam, condenser water, etc.
HV3C	Heating/Cooling	Package/Self-Contained Units	Repair/replacement of self-contained/package type units, including stand-up units, rooftop units, window units, etc; both air conditioners and heat pumps.
HV3D	Heating/Cooling	Conventional Split Systems	Repair, installation, or replacement of conventional split systems, both air conditioners and heat pumps, including independent component replacements of compressors and condensers.

HV4A	Air Moving/ Ventilation	Air Handlers/ Fan Units	Includes air handlers and coils, fan coil units, unit ventilators, filtration upgrades, etc., not including package/self-contained units, split systems, or other specifically categorized systems.
HV4B	Air Moving/ Ventilation	Exhaust Fans	Exhaust fan systems, including fans, range and fume hoods, controls, and related ductwork.
HV4C	Air Moving/ Ventilation	Other Fans	Supply, return, or any other fans not incorporated into a component categorized elsewhere.
HV4D	Air Moving/ Ventilation	Air Distribution Network	Repair, replacement, or cleaning of air distribution network, including ductwork, terminal reheat/cool, VAV units, induction units, power induction units, insulation, dampers, linkages, etc.
HV5A	Steam/Hydronic Distribution	Piping Network	Repair/replacement of piping networks for heating and cooling systems, including pipe, fittings, insulation, related components, etc.
HV5B	Steam/Hydronic Distribution	Pumps	Repair or replacement of pumps used in heating and cooling systems, related control components, etc.
HV5C	Steam/Hydronic Distribution	Heat Exchangers	Including shell-and-tube heat exchangers and plate heat exchangers for heating and cooling.
HV6A	Controls	Complete System Upgrade	Replacement of HVAC control systems.
HV6B	Controls	Modifications/ Repairs	Repair or modification of HVAC control system.
HV6C	Controls	Air Compressors/ Dryers	Repair or modification of control air compressors and dryers.
HV7A	Infrastructure	Steam/Hot Water Generation	Generation of central steam and/or hot water, including boilers and related components.
HV7B	Infrastructure	Steam/Hot Water Distribution	Distribution system for central hot water and/or steam.
HV7C	Infrastructure	Chilled Water Generation	Generation of central chilled water, including chillers and related components.
HV7D	Infrastructure	Chilled Water Distribution	Distribution system for central chilled water.
HV7E	Infrastructure	Tunnels/ Manholes/ Trenches	Repairs, installation, or replacement of utility system access chambers.
HV7F	Infrastructure	Other	HVAC infrastructure issues not specifically categorized elsewhere.
HV8A	General	CFC Compliance	Chiller conversions/replacements for CFC regulatory compliance, monitoring, etc.
HV8B	General	Other	HVAC issues not catalogued elsewhere.

INTERIOR FINISHES/SYSTEMS

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
IS1A	Floor	Finishes-Dry	R&R of carpet, hardwood strip flooring, concrete coating, vinyl linoleum and tile, marble, terrazzo, rubber flooring, and underlayment in predominantly dry areas ("dry" includes non-commercial kitchens)
IS1B	Floor	Finishes-Wet	Flooring finish/underlayment work in predominantly "wet" areas, including work with linoleum, rubber, terrazzo, concrete coating, quarry tile, ceramic tile, epoxy aggregate, etc.
IS2A	Partitions	Structure	Structural work on full height permanent interior partitions, including wood/metal stud and drywall systems, CMU systems, structural brick, tile, glass block, etc.
IS2B	Partitions	Finishes	Work on full height permanent interior partitions, including R&R, to gypsum board, plaster, lath, wood paneling, acoustical panels, wall coverings, column coverings, tile, paint, etc.
IS3A	Ceilings	Repair	Repair of interior ceilings (<40% of total), including tiles, gypsum board, plaster, paint, etc.
IS3B	Ceilings	Replacement	Major refurbishments (>40% of total) to interior ceiling systems, including grid system replacements, structural framing, new suspended systems, paint, plastering, etc.

IS4A	Doors	General	Any work on interior non-fire-rated doors, roll-up counter doors, mechanical/plumbing access doors, and all door hardware (except for reasons of access improvement).
IS5A	Stairs	Finish	Any finish restorative work to stair tower walking surfaces, including replacement of rubber treads, safety grips, nosings, etc. (except as required to accommodate disabled persons).
IS6A	General	Molding	R&R to interior trim/molding systems, including rubber/vinyl/wood base, crown/chair/ornamental moldings, cased openings, etc.
IS6B	General	Cabinetry	R&R work to interior casework systems, including cabinets, countertops, wardrobes, lockers, mail boxes, built-in bookcases, lab/work benches, reagent shelving, etc. (except as required for access by the disabled).
IS6C	General	Screening	Work on temporary or partial height partitioning systems, including toilet partitions, urinal/vanity screens, etc.
IS6D	General	Other	Any work on interior elements not logically or specifically categorized elsewhere, including light coves, phone booths, interior lightwells, etc.

PLUMBING

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
PL1A	Domestic Water	Piping Network	Repair or replacement of domestic water supply piping network, insulation, hangers, etc.
PL1B	Domestic Water	Pumps	Domestic water booster pumps, circulating pumps, related controls, etc.
PL1C	Domestic Water	Storage/ Treatment	Equipment or vessels for storage or treatment of domestic water.
PL1D	Domestic Water	Metering	Installation, repair, or replacement of water meters.
PL1E	Domestic Water	Heating	Domestic water heaters, including gas, oil, and electric water heaters, shell-and-tube heat exchangers, tank type, and instantaneous.
PL1F	Domestic Water	Cooling	Central systems for cooling and distributing drinking water.
PL1G	Domestic Water	Fixtures	Plumbing fixtures, including sinks, drinking fountains, water closets, urinals, etc.
PL1H	Domestic Water	Conservation	Alternations made to the water distribution system to conserve water.
PL1I	Domestic Water	Backflow Protection	Backflow protection devices, including backflow preventers, vacuum breakers, etc.
PL2A	Wastewater	Piping Network	Repair or replacement of building wastewater piping network.
PL2B	Wastewater	Pumps	Pump systems used to lift wastewater, including sewage ejectors and other sump systems.
PL3A	Special Systems	Process Gas/Fluids	Generation and/or distribution of process steam, compressed air, natural and LP gas, process water, vacuum, etc.
PL4A	Infrastructure	Potable Water Storage/ Treatment	Storage and treatment of potable water for distribution.
PL4B	Infrastructure	Industrial Water Distribution/ Treatment	Storage and treatment of industrial water for distribution.
PL4C	Infrastructure	Sanitary Water Collection	Sanitary water collection systems and sanitary sewer systems, including combined systems.
PL4D	Infrastructure	Stormwater Collection	Stormwater collection systems and storm sewer systems; storm water only.
PL4E	Infrastructure	Potable Water Distribution	Potable water distribution network.
PL4F	Infrastructure	Wastewater Treatment	Wastewater treatment plants, associated equipment, etc.
PL5A	General	Other	Plumbing issues not categorized elsewhere.

SITE

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
SI1A	Access	Pedestrian	Paved pedestrian surfaces, including walks, site stairs, step ramps, paths, pedestrian signage, sidewalk bridges/canopies, pedestrian plaza/mall areas, etc.
SI1B	Access	Vehicular	Paved vehicular surfaces, including roads, paths, curbs, guards, bollards, bridges, skyways, joints, shoulder work, culverts, ditches, vehicular signage, etc.
SI2A	Landscape	Grade/Flora	Landscape related work, including new grass/turf refurbishment, grade improvements, catch basins, swales, berms, pruning, new ornamental flora, etc.
SI3A	Hardscape	Structure	Permanent hard site features, predominantly ornamental, including terraces, fences, statues, freestanding signage, fountains, benches, etc.
SI4A	General	Other	Other site work not specifically categorized elsewhere.

SECURITY SYSTEMS

CODE	COMPONENT DESCRIPTION	ELEMENT DESCRIPTION	DEFINITION
SS1A	Lighting	Exterior	Fixtures, stanchions, foliage interference, cleanliness, locations, etc.
SS2A	Site	Fencing	Perimeter campus fencing, individual building fencing, includes both pedestrian and vehicular control fences.
SS2B	Site	General	Hidden areas due to foliage, fencing, parking, walls, etc.
SS3A	Communications	Emergency Phones	Access, locations, visibility, function, reliability, etc.
SS4A	Access Control	Doors	Access, locks, keys, two-way speakers, reliability, redundancy, etc.
SS4B	Access Control	Windows	Locks, screens, access, reliability, etc.
SS4C	Access Control	Systems	Card key, proximity devices, data control, data use, reliability, system design, etc.
SS5A	Monitoring	Systems	Cameras, audio communication, monitoring stations, locations, system design, etc.
SS6A	Circulation	Pedestrian	On campus as well as to and from off-campus housing and class locations, etc.
SS6B	Circulation	Vehicular	Guard gates, access, systems, data control and use, identification, etc.
SS7A	General	Other	General information/projects pertaining to security issues.

VERTICAL TRANSPORTATION

CODE	Component Description	Element Description	DEFINITION
VT1A	Machine Room	General	Machine, worm gear, thrust bearing, brake, motors, sheaves, generator, controller, selector, governor, pump(s), valves, oil, access, lighting, ventilation, and floor.
VT2A	Car	General	Position indicator, lighting, floor, gate-doors, operation devices, safeties, safety shoe, light ray/detection, emergency light, fire fighter service, car top, door operator, stop switch, car frame, car guides, sheaves, phone, and ventilation.
VT3A	Hoistway	General	Enclosure, fascia, interlock, doors, hangers, closers, sheaves, rails, hoistway switches, ropes, traveling cables, selector tape, weights, and compensation.
VT4A	Hall Fixtures	General	Operating panel, position indicator, hall buttons, lobby panel, hall lanterns, fire fighter service, audible signals, and card/key access.
VT5A	Pit	General	Buffer(s), guards, sheaves, hydro packing, floor, lighting, and safety controls.
VT6A	Operating Conditions	General	Door open time, door close time, door thrust, acceleration, deceleration, leveling, dwell time, speed, OFR time, and nudging.
VT7A	General	Other	General information/projects relating to vertical transportation system components.

FACILITY CONDITION ASSESSMENT

SECTION 2

COST SUMMARIES AND TOTALS

FACILITIES RENEWAL PLAN

All dollars shown as Present Value

CATEGORY	NON-RECURRING PROJECT NEEDS			RECURRING COMPONENT REPLACEMENT NEEDS											
	Immediate	Critical	Non-Critical	Deferred Renewal	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	TOTAL
ACCESSIBILITY	0	98,151	117,770	0	0	0	0	0	0	0	0	0	0	0	$215,921
EXTERIOR	0	0	0	0	0	0	80,428	0	7,698	0	0	0	0	0	$88,126
INTERIOR	0	0	0	184,888	0	0	0	0	459,813	0	32,995	0	0	0	$677,697
PLUMBING	0	6,635	0	229,964	0	68,444	0	0	0	0	0	0	0	0	$305,044
HVAC	0	0	0	864,845	0	0	0	0	25,256	0	679,537	0	0	0	$1,569,638
FIRE/LIFE SAFETY	0	0	351,227	14,209	0	0	0	0	0	33,282	0	0	107,066	0	$505,784
ELECTRICAL	0	0	5,076	0	0	299,413	0	0	0	0	480,114	10,062	0	103,696	$898,361
SITE	0	0	9,657	0	0	0	0	0	0	0	0	0	0	0	$9,657
VERT. TRANS.	0	0	0	0	0	312,017	0	0	0	0	0	0	0	0	$312,017
HEALTH/EQUIP.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	$0
SUBTOTAL	$0	$104,786	$483,730	$1,293,906	$0	$679,874	$80,428	$0	$492,767	$33,282	$1,192,647	$10,062	$107,066	$103,696	$4,582,243
TOTAL NON-RECURRING PROJECT NEED			$588,516	TOTAL RECURRING COMPONENT REPLACEMENT NEEDS										$3,993,728	

CURRENT REPLACEMENT VALUE	$8,468,000
FACILITY CONDITION NEEDS INDEX	0.54
FACILITY CONDITION INDEX	0.15

GSF	TOTAL 10-YEAR FACILITY RENEWAL NEEDS	10-YEAR NEEDS/SF
27,871	$4,582,243	$164.41

FACILITIES RENEWAL NEEDS BY SYSTEM

All costs shown as Present Value

CATEGORY	NON-RECURRING ASSESSMENT RECOMENDATON	RECURRING COMPONENT REPLACEMENT COSTS	TOTAL 10-YEAR FACILITY RENEWAL COSTS
ACCESSIBILITY	$215,921	$0	$215,921
EXTERIOR	$0	$88,126	$88,126
INTERIOR	$0	$677,697	$677,697
PLUMBING	$6,635	$298,408	$305,044
HVAC	$0	$1,569,638	$1,569,638
FIRE/LIFE SAFETY	$351,227	$154,557	$505,784
ELECTRICAL	$5,076	$893,285	$898,361
SITE	$9,657	$0	$9,657
VERT. TRANS	$0	$312,017	$312,017
HEALTH	$0	$0	$0
TOTALS	**$588,516**	**$3,993,728**	**$4,582,243**

FACILITIES RENEWAL PLAN

NON-RECURRING PROJECT COST

All costs shown as Present Value

PROJECT NUMBER	PROJECT TITLE	UNI-FORMAT	PRIORITY CLASS	PROJECT CLASSIFICATION	PROJECT COST
0004AC04	AUDITORIUM ACCESSIBILITY UPGRADES	C1010	2	Plant Adaption	25,131
0004AC07	UNISEX RESTROOM INSTALLATION	D2010	2	Plant Adaption	17,028
0004AC06	RESTROOM ACCESSIBILITY UPGRADES	D2010	2	Plant Adaption	55,992
0004PL01	BACKFLOW PREVENTER INSTALLATION	D2020	2	Plant Adaption	6,635
0004FS02	FIRE-RATED DOOR INSTALLATION		3	Plant Adaption	30,524
0004AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	B2030	3	Plant Adaption	7,127
0004AC03	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	26,490
0004AC05	INTERIOR DOOR ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	44,736
0004AC02	ELEVATOR ACCESSIBILITY UPGRADES	C1010	3	Plant Adaption	2,396
0004AC08	STAIR SAFETY UPGRADES	C2020	3	Plant Adaption	37,021
0004FS01	FIRE SPRINKLER SYSTEM INSTALLATION	D4010	3	Plant Adaption	320,703
0004EL01	ADD EXTERIOR LIGHTING	D5020	3	Plant Adaption	5,076
0004SI01	CONCRETE SIDEWALK RENEWAL	G2030	3	Corrective Action	9,657
				TOTAL	**$588,516**

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
0004	DR26	DOOR PANIC HARDWARE	PANIC HDWR	C1020	Deferred Renewal	24,736
0004	DR26	DOOR PANIC HARDWARE		C1020	Deferred Renewal	8,604
0004	DR26	DOOR PANIC HARDWARE		C1020	Deferred Renewal	1,075
0004	IW01	WALL FINISH - APPLIED, STANDARD		C3010	Deferred Renewal	144,385
0004	IF03	FLOORING - VINYL COMPOSITION TILE, STANDARD		C3020	Deferred Renewal	5,241
0004	IF04	FLOORING - VINYL SHEET, STANDARD		C3020	Deferred Renewal	846
0004	PS14	SUPPLY PIPING SYSTEM - OFFICE	MAIN	D2020	Deferred Renewal	91,807
0004	PD14	DRAIN PIPING SYSTEM - OFFICE	MAIN	D2030	Deferred Renewal	138,157
0004	HU09	EVAPORATOR UNIT, NO HEAT (>3 TON)	AHU-1	D3030	Deferred Renewal	64,324
0004	AH01	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)		D3040	Deferred Renewal	79,486
0004	AH20	AIR HANDLING UNIT - OUTDOOR PACKAGE (12-17 HP)	AHU-1	D3040	Deferred Renewal	204,392
0004	HX04	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (20-85 GPM)	MAINT. 8 - AIR HANDLER	D3040	Deferred Renewal	7,492
0004	HX04	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (20-85 GPM)	MAINT. 8 - RADIANT	D3040	Deferred Renewal	7,492
0004	PH01	PUMP - ELECTRIC (<=10 HP)	MAINT. 8 - AHU	D3040	Deferred Renewal	4,348
0004	PH01	PUMP - ELECTRIC (<=10 HP)	MAINT. 8 - RADIANT	D3040	Deferred Renewal	8,696
0004	PH14	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	MAINTENANCE 8	D3040	Deferred Renewal	26,281
0004	RH01	HEATING SYSTEM, STEAM OR HYDRONIC	MAIN	D3040	Deferred Renewal	353,175
0004	AC01	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	MAINT. 6	D3060	Deferred Renewal	3,165
0004	BA14	HVAC CONTROLS SYSTEM - OFFICE	MAIN	D3060	Deferred Renewal	105,995
0004	EL02	EXIT SIGN - WITH BATTERY BACK-UP	MAIN	D4030	Deferred Renewal	7,924
0004	EL04	EMERGENCY LIGHT - UNITARY WITH BATTERY BACK-UP	MAIN	D4030	Deferred Renewal	6,285
0004	VT03	ELEVATOR MODERNIZATION - HYDRAULIC	120A	D1010	2017	265,337
0004	VT04	ELEVATOR CAB RENOVATION - PASSENGER	120A	D1010	2017	46,680
0004	FX02	PLUMBING FIXTURE - LAVATORY, WALL HUNG	MAIN	D2010	2017	10,552
0004	FX04	PLUMBING FIXTURE - SINK, KITCHEN	MAIN	D2010	2017	3,810
0004	FX06	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	MAIN	D2010	2017	6,323

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
0004	FX10	PLUMBING FIXTURE - URINAL	MAIN	D2010	2017	9,335
0004	FX12	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	MAIN	D2010	2017	15,469
0004	WH12	WATER HEATER - COMMERCIAL, ELECTRIC (30-70 GAL)	MAINT. 8	D2020	2017	22,356
0004	PP04	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	MAINT. 8	D2030	2017	598
0004	MC03	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (600-800A) W/STARTERS	MCC-1	D5010	2017	164,117
0004	MC03	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (600-800A) W/STARTERS	MCC-2	D5010	2017	82,059
0004	SG03	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)		D5010	2017	50,631
0004	LE07	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)		D5020	2017	2,607
0004	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	03	B3010	2018	3,674
0004	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	04	B3010	2018	1,460
0004	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	08	B3010	2018	594
0004	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	06	B3010	2018	8,115
0004	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	07	B3010	2018	11,479
0004	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	05	B3010	2018	28,166
0004	RR08	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	09	B3010	2018	26,941
0004	DR28	DOOR OPERATOR, POWER-ASSIST		B2030	2020	7,698
0004	DR25	DOOR LOCK, RESIDENTIAL-GRADE	HIGH USE	C1020	2020	2,015
0004	DR25	DOOR LOCK, RESIDENTIAL-GRADE	LEVER	C1020	2020	2,821
0004	DR26	DOOR PANIC HARDWARE		C1020	2020	1,075
0004	IF01	FLOORING - CARPET, TILE OR ROLL, STANDARD		C3020	2020	246,472
0004	IC01	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD		C3030	2020	207,430
0004	FN19	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	ROOF	D3040	2020	11,265
0004	FN20	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	ROOF	D3040	2020	13,991
0004	FA01	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	MAINTENANCE 6	D4030	2021	33,282
0004	DR02	DOOR AND FRAME, INTERIOR, FIRE-RATED	HIGH USE	C1020	2022	32,995
0004	HV14	HVAC DISTRIBUTION NETWORKS - OFFICE	MAIN	D3040	2022	679,537

FACILITIES RENEWAL PLAN

RECURRING COMPONENT REPLACEMENT COSTS

All costs shown as Present Value

ASSET CODE COMP CODE		COMPONENT	IDENTIFIER	UNI-FORMAT	REPLACEMENT YEAR	REPLACEMENT COST
0004	SE14	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	MAIN	D5010	2022	480,114
0004	VF03	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RETURN	D5010	2023	4,664
0004	VF04	VARIABLE FREQUENCY DRIVE (10-15 HP)	SUPPLY	D5010	2023	5,398
0004	FA02	FIRE ALARM SYSTEM - DEVICES	MAIN	D4030	2024	107,066
0004	TX20	TRANSFORMER - OIL-FILLED, 3PH, 5-15KV PRIMARY (1000-1500 KVA)		D5010	2025	103,696
					TOTAL	**$3,993,728**

NON-RECURRING NEEDS BY PROJECT CLASSIFICATION

All costs shown as Present Value

CORRECTIVE ACTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
13	0004SI01	CONCRETE SIDEWALK RENEWAL	3	9,657
		TOTAL FOR CORRECTIVE ACTION		**9,657**

PLANT ADAPTION				
PRI SEQ	PROJECT NUMBER	PROJECT TITLE	PRI CLS	TOTAL COST
1	0004AC06	RESTROOM ACCESSIBILITY UPGRADES	2	55,992
2	0004AC07	UNISEX RESTROOM INSTALLATION	2	17,028
3	0004AC04	AUDITORIUM ACCESSIBILITY UPGRADES	2	25,131
4	0004PL01	BACKFLOW PREVENTER INSTALLATION	2	6,635
5	0004FS01	FIRE SPRINKLER SYSTEM INSTALLATION	3	320,703
6	0004FS02	FIRE-RATED DOOR INSTALLATION	3	30,524
7	0004AC01	BUILDING ENTRY ACCESSIBILITY UPGRADES	3	7,127
8	0004AC02	ELEVATOR ACCESSIBILITY UPGRADES	3	2,396
9	0004AC03	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	3	26,490
10	0004AC05	INTERIOR DOOR ACCESSIBILITY UPGRADES	3	44,736
11	0004AC08	STAIR SAFETY UPGRADES	3	37,021
12	0004EL01	ADD EXTERIOR LIGHTING	3	5,076

NON-RECURRING NEEDS BY PROJECT CLASSIFICATION

All costs shown as Present Value

TOTAL FOR PLANT ADAPTION	**578,859**
GRAND TOTAL:	**588,516**

NON-RECURRING NEEDS BY SYSTEM CODE

All costs shown as Present Value

PRI SEQ	PROJECT NUMBER	PRI CLS	PROJECT CLASSIFICATION	PROJECT TITLE	TOTAL COST
1	0004AC06	2	Plant Adaption	RESTROOM ACCESSIBILITY UPGRADES	55,992
2	0004AC07	2	Plant Adaption	UNISEX RESTROOM INSTALLATION	17,028
3	0004AC04	2	Plant Adaption	AUDITORIUM ACCESSIBILITY UPGRADES	25,131
7	0004AC01	3	Plant Adaption	BUILDING ENTRY ACCESSIBILITY UPGRADES	7,127
8	0004AC02	3	Plant Adaption	ELEVATOR ACCESSIBILITY UPGRADES	2,396
9	0004AC03	3	Plant Adaption	DRINKING FOUNTAIN ACCESSIBILITY UPGRADES	26,490
10	0004AC05	3	Plant Adaption	INTERIOR DOOR ACCESSIBILITY UPGRADES	44,736
11	0004AC08	3	Plant Adaption	STAIR SAFETY UPGRADES	37,021
				TOTAL FOR ACCESSIBILITY	**215,921**
12	0004EL01	3	Plant Adaption	ADD EXTERIOR LIGHTING	5,076
				TOTAL FOR ELECTRICAL	**5,076**
5	0004FS01	3	Plant Adaption	FIRE SPRINKLER SYSTEM INSTALLATION	320,703
6	0004FS02	3	Plant Adaption	FIRE-RATED DOOR INSTALLATION	30,524
				TOTAL FOR FIRE/LIFE SAFETY	**351,227**
4	0004PL01	2	Plant Adaption	BACKFLOW PREVENTER INSTALLATION	6,635
				TOTAL FOR PLUMBING	**6,635**
13	0004SI01	3	Corrective Action	CONCRETE SIDEWALK RENEWAL	9,657
				TOTAL FOR SITE	**9,657**
				GRAND TOTAL:	**588,516**

FACILITY CONDITION ASSESSMENT

SECTION 3

PROJECT DETAILS

All costs shown as Present Value

RESTROOM ACCESSIBILITY UPGRADES

Project Number:	0004AC06	**Category Code:** AC3E	
Priority Sequence:	1		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/2/2015	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309, 604, 605, 606, 607, 608	Not Applicable	Room Only: Floor(s) 1,2,G

Description

The restrooms on the lower floors have been partially modified to meet current ADA standards, but these outmoded facilities should now be renovated to provide fully accessible fixtures, accessories, and clearances. Since first floor restroom doors are difficult to operate, they have also been recommended for power assisted door operators.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Door operator, signage, and controls	EA	2	$4,224	$8,448	$1,461	$2,922	$11,370
Grab bars (per stall)	SYS	4	$163	$652	$383	$1,533	$2,185
Mirror	EA	6	$335	$2,012	$258	$1,545	$3,558
ADA-compliant lavatory	EA	6	$707	$4,243	$263	$1,580	$5,823
ADA-compliant toilet	EA	6	$1,111	$6,665	$294	$1,761	$8,426
High density polymer toilet partition modification	EA	4	$1,857	$7,427	$1,150	$4,600	$12,027
			Base Material/Labor Costs	**$29,447**		**$13,941**	
			Indexed Material/Labor Costs	**$30,242**		**$9,982**	**$40,224**
						General Contractor Mark Up at 20.0%	**$8,045**
						Original Construction Cost	**$48,269**
Date of Original Estimate:	11/2/2015					**Inflation**	**$0**
						Current Year Construction Cost	**$48,269**
						Professional Fees at 16.0%	**$7,723**
						TOTAL PROJECT COST	**$55,992**

All costs shown as Present Value

UNISEX RESTROOM INSTALLATION

Project Number:	0004AC07	**Category Code:** AC3E	
Priority Sequence:	2		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/2/2015	**Element:**	RESTROOMS/BATHROOMS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	604, 605, 606	Not Applicable	Undefined: Floor(s) 3

Description

The third floor lacks any restroom facilities. To improve fixture count, create at least one fully accessible unisex restroom on this level.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Installation of an accessible unisex restroom, including toilet, lavatory, piping, and rough-in (60 square feet in area)	EA	1	$6,031	$6,031	$8,434	$8,434	$14,466
				Base Material/Labor Costs		**$8,434**	
				$6,194		**$6,039**	**$12,233**
						General Contractor Mark Up at 20.0%	**$2,447**
						Original Construction Cost	**$14,680**
Date of Original Estimate: 11/2/2015						**Inflation**	**$0**
						Current Year Construction Cost	**$14,680**
						Professional Fees at 16.0%	**$2,349**
						TOTAL PROJECT COST	**$17,028**

All costs shown as Present Value

AUDITORIUM ACCESSIBILITY UPGRADES

Project Number:	0004AC04	**Category Code:** AC4B	
Priority Sequence:	3		
Priority Class:	Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	11/2/2015	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
ADAAG	806	Not Applicable	Item Only: Floor(s) 3

Description

Current accessibility legislation requires that places of assembly be accessible to the handicapped. Room 303 has multiple barriers to accessibility. There are no table seating spaces designated for wheelchair use. It is recommended that at least four seating areas be modified to accommodate persons in wheelchairs. The installation of a wheelchair ramp or lift at the rear stepped egress from this space is also recommended.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Table and seating modifications	LOT	4	$1,018	$4,073	$638	$2,554	$6,627
Wheelchair lift	SYS	1	$8,385	$8,385	$4,792	$4,792	$13,177
			Base Material/Labor Costs	**$12,458**		**$7,345**	
			Indexed Material/Labor Costs	**$12,794**		**$5,259**	**$18,054**
						General Contractor Mark Up at 20.0%	**$3,611**
						Original Construction Cost	**$21,664**
Date of Original Estimate:	11/2/2015					**Inflation**	**$0**
						Current Year Construction Cost	**$21,664**
						Professional Fees at 16.0%	**$3,466**
						TOTAL PROJECT COST	**$25,131**

All costs shown as Present Value

BACKFLOW PREVENTER INSTALLATION

Project Number:	0004PL01	**Category Code:** PL1I	
Priority Sequence:	4		
Priority Class:	Critical	**System:**	PLUMBING
Project Class:	Plant Adaption	**Component:**	DOMESTIC WATER
Date Basis:	11/3/2015	**Element:**	BACKFLOW PREVENTION

Code Application:		Subclass/Savings:	Project Location:
IPC	608	Not Applicable	Item Only: Floor(s) G

Description

There is no backflow preventer on the domestic water supply. Current codes require that public water systems be protected from accidental contamination. In order to comply with that standard, it is recommended that a backflow preventer assembly be installed at the water main, including backflow preventer, isolation valves, and related piping. This will prevent cross-contamination between the building and the potable water supply.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Backflow preventer, isolation valves, piping, and miscellaneous materials (2-3 inches)	EA	1	$4,326	$4,326	$452	$452	$4,778
			Base Material/Labor Costs	**$4,326**		**$452**	
			Indexed Material/Labor Costs	**$4,443**		**$324**	**$4,767**
						General Contractor Mark Up at 20.0%	**$953**
						Original Construction Cost	**$5,720**
Date of Original Estimate: 11/3/2015						**Inflation**	**$0**
						Current Year Construction Cost	**$5,720**
						Professional Fees at 16.0%	**$915**
						TOTAL PROJECT COST	**$6,635**

All costs shown as Present Value

FIRE SPRINKLER SYSTEM INSTALLATION

Project Number:	0004FS01	**Category Code:** FS3A	
Priority Sequence:	5		
Priority Class:	Non-Critical	**System:**	FIRE/LIFE SAFETY
Project Class:	Plant Adaption	**Component:**	SUPPRESSION
Date Basis:	11/3/2015	**Element:**	SPRINKLERS

Code Application:		Subclass/Savings:	Project Location:
NFPA	1, 13, 13R, 101	Not Applicable	Floor-wide: Floor(s) 1,2,3,G

Description

This building is not protected by a fire suppression system. As part of future renovation efforts, it is recommended that this facility be fully protected by an automatic, wet-pipe sprinkler system.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Install wet-pipe sprinkler system, including valves, piping, sprinkler heads, piping supports, etc.	SF	27,871	$4.34	$120,960	$5.32	$148,274	$269,234
			Base Material/Labor Costs	**$120,960**		**$148,274**	
			Indexed Material/Labor Costs	**$124,226**		**$106,164**	**$230,390**
					General Contractor Mark Up at 20.0%		**$46,078**
					Original Construction Cost		**$276,468**
Date of Original Estimate: 11/3/2015					**Inflation**		**$0**
					Current Year Construction Cost		**$276,468**
					Professional Fees at 16.0%		**$44,235**
					TOTAL PROJECT COST		**$320,703**

All costs shown as Present Value

FIRE-RATED DOOR INSTALLATION

Project Number:	0004FS02
Priority Sequence:	6
Priority Class:	Non-Critical
Project Class:	Plant Adaption
Date Basis:	11/2/2015

Category Code: FS5F

System:	FIRE/LIFE SAFETY
Component:	EGRESS PATH
Element:	FIRE DOORS/HARDWARE

Code Application:		Subclass/Savings:	Project Location:
IBC	713	Not Applicable	Floor-wide: Floor(s) 1,2,3,G

Description

A percentage of more heavily used interior doors have deteriorated over time and should be replaced with new doors and frames that are fire rated where required by modern building codes. University officials should also determine if occupancy loads, etc. justify the installation of modern panic hardware for the secondary egress pathway from office suite 10 (ground floor). The elevator tower should also be fitted with fire-rated doors. If the recommended fire sprinkler system is installed, the installation of fire-rated doors would no longer be necessary.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Door and frame, fire rated, including hardware and installation	EA	10	$1,827	$18,270	$442	$4,420	$22,690
Base Material/Labor Costs				**$18,270**		**$4,420**	
Indexed Material/Labor Costs				**$18,763**		**$3,165**	**$21,928**
General Contractor Mark Up at 20.0%							**$4,386**
Original Construction Cost							**$26,314**
Date of Original Estimate: 11/2/2015						**Inflation**	**$0**
Current Year Construction Cost							**$26,314**
Professional Fees at 16.0%							**$4,210**
TOTAL PROJECT COST							**$30,524**

All costs shown as Present Value

BUILDING ENTRY ACCESSIBILITY UPGRADES

Project Number:	0004AC01	**Category Code:** AC2A	
Priority Sequence:	7		
Priority Class:	Non-Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	BUILDING ENTRY
Date Basis:	11/2/2015	**Element:**	GENERAL

Code Application:		Subclass/Savings:	Project Location:
ADAAG	403.6, 505	Not Applicable	Item Only: Floor(s) 1

Description

The east and west entry steps have center handrails but no side rails. To improve compliance and facilitate handicapped entry, install fully graspable handrails with adequate extensions at the sides of both stepped entries. It is assumed that the instant step down at the west egress doors is considered acceptable due to the historic nature of this 1918 structure.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Freestanding handrail system, painted (15 feet minimum)	LF	16	$105	$1,677	$173	$2,760	$4,437
Wall-mounted handrail system, painted (15 feet minimum)	LF	16	$58.10	$930	$40.72	$652	$1,581
			Base Material/Labor Costs	**$2,607**		**$3,412**	
			Indexed Material/Labor Costs	**$2,677**		**$2,443**	**$5,120**
					General Contractor Mark Up at 20.0%		**$1,024**
					Original Construction Cost		**$6,144**
Date of Original Estimate: 11/2/2015					**Inflation**		**$0**
					Current Year Construction Cost		**$6,144**
					Professional Fees at 16.0%		**$983**
					TOTAL PROJECT COST		**$7,127**

All costs shown as Present Value

ELEVATOR ACCESSIBILITY UPGRADES

Project Number:	0004AC02	**Category Code:** AC3A	
Priority Sequence:	8		
Priority Class:	Non-Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/2/2015	**Element:**	LIFTS/RAMPS/ELEVATORS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	407	Not Applicable	Item Only: Floor(s) 1

Description

Current legislation pertaining to handicapped access within buildings requires that goods and services offered in buildings be generally accessible to all persons. The elevator is partially compliant with current ADA legislation. It is recommended that a compliant, hands-free, two-way communication system be installed to meet current standards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, hands-free elevator emergency telephone	EA	1	$1,108	$1,108	$815	$815	$1,923
			Base Material/Labor Costs	**$1,108**		**$815**	
			Indexed Material/Labor Costs	**$1,138**		**$583**	**$1,721**
					General Contractor Mark Up at 20.0%		**$344**
					Original Construction Cost		**$2,065**
Date of Original Estimate:	11/2/2015				**Inflation**		**$0**
					Current Year Construction Cost		**$2,065**
					Professional Fees at 16.0%		**$330**
					TOTAL PROJECT COST		**$2,396**

All costs shown as Present Value

DRINKING FOUNTAIN ACCESSIBILITY UPGRADES

Project Number:	0004AC03	**Category Code:** AC3F	
Priority Sequence:	9		
Priority Class:	Non-Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/2/2015	**Element:**	DRINKING FOUNTAINS

Code Application:		Subclass/Savings:	Project Location:
ADAAG	211, 602	Not Applicable	Item Only: Floor(s) 1,2,3,G

Description

Current legislation requires that building amenities be generally accessible to all persons. The single level configuration of the drinking fountains is a barrier to accessibility. All single level drinking fountains should be replaced with dual level units.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Dual level drinking fountain	EA	4	$1,399	$5,596	$430	$1,720	$7,317
Construct recessed alcove to house drinking fountain to include all finishes and MEP updates	EA	4	$842	$3,368	$3,000	$11,999	$15,368
			Base Material/Labor Costs	**$8,965**		**$13,719**	
			Indexed Material/Labor Costs	**$9,207**		**$9,823**	**$19,030**
					General Contractor Mark Up at 20.0%		**$3,806**
					Original Construction Cost		**$22,836**
Date of Original Estimate: 11/2/2015					**Inflation**		**$0**
					Current Year Construction Cost		**$22,836**
					Professional Fees at 16.0%		**$3,654**
					TOTAL PROJECT COST		**$26,490**

All costs shown as Present Value

INTERIOR DOOR ACCESSIBILITY UPGRADES

Project Number:	0004AC05	**Category Code:** AC4B	
Priority Sequence:	10		
Priority Class:	Non-Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	GENERAL
Date Basis:	11/2/2015	**Element:**	OTHER

Code Application:		Subclass/Savings:	Project Location:
ADAAG	309.4	Not Applicable	Floor-wide: Floor(s) 1,2,3,G

Description

The remaining knob actuated door hardware presents a barrier to accessibility. Accessibility legislation requires that door hardware be designed for operation by people with little or no ability to grasp objects with their hands. To comply with the intent of this legislation, it is recommended that lever handle door hardware be installed on all doors that currently still have knobs.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
ADA-compliant, commercial-grade door hardware	EA	70	$349	$24,462	$140	$9,799	$34,261
Base Material/Labor Costs				**$24,462**		**$9,799**	
Indexed Material/Labor Costs				**$25,122**		**$7,016**	**$32,138**
General Contractor Mark Up at 20.0%							**$6,428**
Original Construction Cost							**$38,566**
Date of Original Estimate: 11/2/2015						**Inflation**	**$0**
Current Year Construction Cost							**$38,566**
Professional Fees at 16.0%							**$6,171**
TOTAL PROJECT COST							**$44,736**

All costs shown as Present Value

STAIR SAFETY UPGRADES

Project Number:	0004AC08	**Category Code:** AC3B	
Priority Sequence:	11		
Priority Class:	Non-Critical	**System:**	ACCESSIBILITY
Project Class:	Plant Adaption	**Component:**	INTERIOR PATH OF TRAVEL
Date Basis:	11/2/2015	**Element:**	STAIRS AND RAILINGS

Code Application:		Subclass/Savings:	Project Location:
IBC	1003.3	Not Applicable	Floor-wide: Floor(s) 1,2,3,G
ADAAG	505		

Description

Current legislation regarding building accessibility by the handicapped requires that stairs have graspable handrails on both sides, that the rails have a specific end geometry, and that the handrails continue horizontally at the landings. In addition, guardrails must prevent the passage of a 4 inch diameter sphere (6 inches in the triangle formed by the lower rail and tread/riser angle). Although the stairs are compliant with the code enforced at the time of construction until a major renovation occurs, they are deficient in handrail and guardrail design relative to current standards unless protected under historic preservation orders. Future renovation efforts should include comprehensive stair railing upgrades.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Wall-mounted handrail system per floor	FLR	8	$659	$5,271	$599	$4,792	$10,062
Switchback handrail/guardrail system per floor	FLR	8	$1,493	$11,940	$958	$7,666	$19,607
Base Material/Labor Costs				**$17,211**		**$12,458**	
Indexed Material/Labor Costs				**$17,676**		**$8,920**	**$26,596**
General Contractor Mark Up at 20.0%							**$5,319**
Original Construction Cost							**$31,915**
Date of Original Estimate: 11/2/2015						**Inflation**	**$0**
Current Year Construction Cost							**$31,915**
Professional Fees at 16.0%							**$5,106**
TOTAL PROJECT COST							**$37,021**

All costs shown as Present Value

ADD EXTERIOR LIGHTING

Project Number:	0004EL01	**Category Code:** EL4A	
Priority Sequence:	12		
Priority Class:	Non-Critical	**System:**	ELECTRICAL
Project Class:	Plant Adaption	**Component:**	DEVICES AND FIXTURES
Date Basis:	11/3/2015	**Element:**	EXTERIOR LIGHTING

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Building-wide: Floor(s) 1

Description

It is recommended that additional exterior lighting be installed to illuminate the areas surrounding this facility. During the inspection, a deficiency in the quantity of light fixtures was observed. Install new exterior lighting systems to ensure a safe environment for building users during dark hours of the day. Place all new exterior lighting systems on photocell activation.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Add LED wallpack exterior lighting	EA	6	$358	$2,151	$335	$2,008	$4,159
Base Material/Labor Costs				**$2,151**		**$2,008**	
Indexed Material/Labor Costs				**$2,209**		**$1,438**	**$3,647**
General Contractor Mark Up at 20.0%							**$729**
Original Construction Cost							**$4,376**
Date of Original Estimate: 11/3/2015						**Inflation**	**$0**
Current Year Construction Cost							**$4,376**
Professional Fees at 16.0%							**$700**
TOTAL PROJECT COST							**$5,076**

All costs shown as Present Value

CONCRETE SIDEWALK RENEWAL

Project Number:	0004SI01	**Category Code:** SI1A	
Priority Sequence:	13		
Priority Class:	Non-Critical	**System:**	SITE
Project Class:	Corrective Action	**Component:**	ACCESS
Date Basis:	11/2/2015	**Element:**	PEDESTRIAN

Code Application:	Subclass/Savings:	Project Location:
Not Applicable	Not Applicable	Floor-wide: Floor(s) 1

Description

The concrete sidewalks that serve this building have cracked and deteriorated over time, especially on the east and west elevations. Repair or replace damaged sections of sidewalk to minimize potential pedestrian tripping hazards.

All costs shown as Present Value

Project Cost Estimate

Task Description	Unit	Qnty	Material Unit Cost	Total Material Cost	Labor Unit Cost	Total Labor Cost	Total Cost
Replace pedestrian concrete walkways	SF	1,000	$3.82	$3,820	$4.21	$4,210	$8,030
			Base Material/Labor Costs	**$3,820**		**$4,210**	
			Indexed Material/Labor Costs	**$3,923**		**$3,014**	**$6,938**
					General Contractor Mark Up at 20.0%		**$1,388**
					Original Construction Cost		**$8,325**
Date of Original Estimate: 11/2/2015					**Inflation**		**$0**
					Current Year Construction Cost		**$8,325**
					Professional Fees at 16.0%		**$1,332**
					TOTAL PROJECT COST		**$9,657**

FACILITY CONDITION ASSESSMENT

SECTION 4

LIFECYCLE COMPONENT INVENTORY

ASSET COMPONENT INVENTORY

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	UNIT COST	CMPLX ADJ	TOTAL COST	INSTALL DATE	USEFUL LIFE	USEFUL LIFE ADJ
B2010	GLASS, WINDOW, ALUMINUM OR WOOD, STANDARD		1,170	SF	$134.70	1.12	$176,517	1982	40	4
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL		1	LEAF	$1,791.87		$1,792	1982	40	4
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HOLLOW METAL		1	LEAF	$1,791.87		$1,792	2000	40	
B2030	DOOR AND FRAME, EXTERIOR, SWINGING, HARDWOOD CUSTOM		8	LEAF	$5,228.24		$41,826	1918	35	73
B2030	DOOR OPERATOR, POWER-ASSIST		1	EA	$7,697.76		$7,698	2000	20	
B3010	ROOF - 1-PLY, BALLASTED	01	440	SF	$9.11		$4,008	2010	20	1
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	03	297	SF	$12.37		$3,674	1985	30	3
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	04	118	SF	$12.37		$1,460	1985	30	3
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	05	2,277	SF	$12.37		$28,166	1985	30	3
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	06	656	SF	$12.37		$8,115	1985	30	3
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	07	928	SF	$12.37		$11,479	1985	30	3
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	08	48	SF	$12.37		$594	1985	30	3
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	09	2,178	SF	$12.37		$26,941	1985	30	3
B3010	ROOF - SHINGLE ASPHALT COMPOSITE, STANDARD	02	40	SF	$4.35		$174	2005	18	10
C1020	DOOR AND FRAME, INTERIOR, NON-RATED		36	LEAF	$1,907.41		$68,667	1982	40	4
C1020	DOOR AND FRAME, INTERIOR, FIRE-RATED	HIGH USE	10	LEAF	$3,299.54		$32,995	1982	40	
C1020	DOOR AND FRAME, INTERIOR, FIRE-RATED	PANIC HDWR	23	LEAF	$3,299.54		$75,889	1982	40	4

ASSET COMPONENT INVENTORY

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	UNIT COST	CMPLX ADJ	TOTAL COST	INSTALL DATE	USEFUL LIFE	USEFUL LIFE ADJ
C1020	DOOR AND FRAME, INTERIOR, FIRE-RATED	LEVER	14	LEAF	$3,299.54		$46,194	1982	40	4
C1020	DOOR AND FRAME, INTERIOR, FIRE-RATED		34	LEAF	$3,299.54		$112,184	1982	40	4
C1020	DOOR LOCK, RESIDENTIAL-GRADE	HIGH USE	10	EA	$201.52		$2,015	2000	20	
C1020	DOOR LOCK, RESIDENTIAL-GRADE	LEVER	14	EA	$201.52		$2,821	2000	20	
C1020	DOOR PANIC HARDWARE	PANIC HDWR	23	EA	$1,075.48		$24,736	1982	20	12
C1020	DOOR PANIC HARDWARE		8	EA	$1,075.48		$8,604	1982	20	12
C1020	DOOR PANIC HARDWARE		1	EA	$1,075.48		$1,075	1982	20	12
C1020	DOOR PANIC HARDWARE		1	EA	$1,075.48		$1,075	2000	20	
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		12	LF	$474.84		$5,698	1982	20	24
C1030	CASEWORK - WOOD BASE AND WALL, TOP, STANDARD		4	LF	$474.84		$1,899	2000	20	6
C1030	SEATING, FIXED, FOLDING, PREMIUM		98	EA	$745.76		$73,084	1982	60	
C3010	WALL FINISH - APPLIED, STANDARD		73,860	SF	$1.95		$144,385	2002	12	
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		22,800	SF	$10.81		$246,472	2002	12	6
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		930	SF	$5.64		$5,241	1982	20	12
C3020	FLOORING - VINYL SHEET, STANDARD		90	SF	$9.40		$846	1982	15	17
C3020	FLOORING - TERRAZZO RESURFACE		2,200	SF	$8.87		$19,517	1918	50	58
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD		23,400	SF	$8.86		$207,430	1982	30	8

ASSET COMPONENT INVENTORY

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	UNIT COST	CMPLX ADJ	TOTAL COST	INSTALL DATE	USEFUL LIFE	USEFUL LIFE ADJ
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	120A	1	EA	$265,337.28		$265,337	1982	25	10
D1010	ELEVATOR CAB RENOVATION - PASSENGER	120A	1	EA	$46,679.52		$46,680	1982	12	23
D2010	PLUMBING FIXTURE - LAVATORY, WALL HUNG	MAIN	9	EA	$1,172.41		$10,552	1982	35	
D2010	PLUMBING FIXTURE - SINK, KITCHEN	MAIN	2	EA	$1,905.04		$3,810	1982	35	
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	MAIN	4	EA	$1,580.78		$6,323	1982	35	
D2010	PLUMBING FIXTURE - URINAL	MAIN	5	EA	$1,866.97		$9,335	1982	35	
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	MAIN	9	EA	$1,718.82		$15,469	1982	35	
D2020	SUPPLY PIPING SYSTEM - OFFICE	MAIN	27,871	SF	$3.08	1.07	$91,807	1962	35	17
D2020	WATER HEATER - COMMERCIAL, ELECTRIC (30-70 GAL)	MAINT. 8	104	GAL	$214.97		$22,356	1981	20	16
D2030	DRAIN PIPING SYSTEM - OFFICE	MAIN	27,871	SF	$4.63	1.07	$138,157	1962	40	12
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	MAINT. 8	1	EA	$598.31		$598	1990	20	7
D3030	EVAPORATOR UNIT, NO HEAT (>3 TON)	AHU-1	50	TON	$1,286.48		$64,324	1982	20	12
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)		10	HP	$7,948.63		$79,486	1982	25	7
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (12-17 HP)	AHU-1	15	HP	$13,626.12		$204,392	1982	25	7
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	ROOF	2	EA	$5,632.43		$11,265	2000	20	
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	ROOF	2	EA	$6,995.37		$13,991	2000	20	

ASSET COMPONENT INVENTORY

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	UNIT COST	CMPLX ADJ	TOTAL COST	INSTALL DATE	USEFUL LIFE	USEFUL LIFE ADJ
D3040	HVAC DISTRIBUTION NETWORKS - OFFICE	MAIN	27,871	SF	$22.79	1.07	$679,537	1982	40	
D3040	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (20-85 GPM)	MAINT. 8 - RADIANT	50	GPM	$149.83		$7,492	1982	18	14
D3040	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (20-85 GPM)	MAINT. 8 - AIR HANDLER	50	GPM	$149.83		$7,492	1982	18	14
D3040	PUMP - ELECTRIC (<=10 HP)	MAINT. 8 - RADIANT	6	HP	$1,449.32		$8,696	1982	25	7
D3040	PUMP - ELECTRIC (<=10 HP)	MAINT. 8 - AHU	3	HP	$1,449.32		$4,348	1982	25	7
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	MAINTENANCE 8	4	HP	$6,570.33		$26,281	1982	20	12
D3040	HEATING SYSTEM, STEAM OR HYDRONIC	MAIN	27,871	SF	$11.84	1.07	$353,175	1982	25	7
D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	MAINT. 6	2	HP	$1,582.26		$3,165	1982	20	12
D3060	HVAC CONTROLS SYSTEM - OFFICE	MAIN	27,871	SF	$3.55	1.07	$105,995	1982	18	14
D4030	EXIT SIGN - WITH BATTERY BACK-UP	MAIN	14	EA	$565.99		$7,924	1982	20	12
D4030	EMERGENCY LIGHT - UNITARY WITH BATTERY BACK-UP	MAIN	12	EA	$523.76		$6,285	1982	20	12
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	MAINTENANCE 6	1	EA	$33,282.28		$33,282	2006	15	
D4030	FIRE ALARM SYSTEM - DEVICES	MAIN	27,871	SF	$3.59	1.07	$107,066	2006	18	
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (600-800A) W/STARTERS	MCC-1	2	EA	$82,058.59		$164,117	1962	25	30
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (600-800A) W/STARTERS	MCC-2	1	EA	$82,058.59		$82,059	1982	25	10
D5010	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	MAIN	27,871	SF	$17.23		$480,114	1982	40	

ASSET COMPONENT INVENTORY

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	UNIT COST	CMPLX ADJ	TOTAL COST	INSTALL DATE	USEFUL LIFE	USEFUL LIFE ADJ
D5010	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)		800	AMP	$63.29		$50,631	1962	20	35
D5010	TRANSFORMER - OIL-FILLED, 3PH, 5-15KV PRIMARY (1000-1500 KVA)		1,250	KVA	$82.96		$103,696	1985	40	
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RETURN	10	HP	$466.35		$4,664	2011	12	
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	SUPPLY	15	HP	$359.89		$5,398	2011	12	
D5020	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)		3	EA	$868.94		$2,607	1982	15	20
D5020	LIGHTING SYSTEM, INTERIOR - OFFICE	MAIN	27,871	SF	$10.38		$289,401	2010	20	
						Grand Total:	**$4,912,370**			

RENEWAL COMPONENT REPLACEMENT COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

DEFERRED RENEWAL						
UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
C1020	DOOR PANIC HARDWARE		8	EA	$8,604	DR
C1020	DOOR PANIC HARDWARE		1	EA	$1,075	DR
C1020	DOOR PANIC HARDWARE	PANIC HDWR	23	EA	$24,736	DR
C3010	WALL FINISH - APPLIED, STANDARD		73,860	SF	$144,385	DR
C3020	FLOORING - VINYL COMPOSITION TILE, STANDARD		930	SF	$5,241	DR
C3020	FLOORING - VINYL SHEET, STANDARD		90	SF	$846	DR
D2020	SUPPLY PIPING SYSTEM - OFFICE	MAIN	27,871	SF	$91,807	DR
D2030	DRAIN PIPING SYSTEM - OFFICE	MAIN	27,871	SF	$138,157	DR
D3030	EVAPORATOR UNIT, NO HEAT (>3 TON)	AHU-1	50	TON	$64,324	DR
D3040	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (20-85 GPM)	MAINT. 8 - RADIANT	50	GPM	$7,492	DR
D3040	HEAT EXCHANGER - SHELL & TUBE STEAM TO WATER (20-85 GPM)	MAINT. 8 - AIR HANDLER	50	GPM	$7,492	DR
D3040	PUMP - ELECTRIC (<=10 HP)	MAINT. 8 - RADIANT	6	HP	$8,696	DR
D3040	PUMP - ELECTRIC (<=10 HP)	MAINT. 8 - AHU	3	HP	$4,348	DR
D3040	CONDENSATE RECEIVER, ELECTRIC, 2 PUMPS	MAINTENANCE 8	4	HP	$26,281	DR
D3040	HEATING SYSTEM, STEAM OR HYDRONIC	MAIN	27,871	SF	$353,175	DR
D3040	AIR HANDLING UNIT - OUTDOOR PACKAGE (12-17 HP)	AHU-1	15	HP	$204,392	DR
D3040	AIR HANDLING UNIT - INDOOR (.5-1.25 HP)		10	HP	$79,486	DR
D3060	HVAC CONTROLS SYSTEM - OFFICE	MAIN	27,871	SF	$105,995	DR

RENEWAL COMPONENT REPLACEMENT COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3060	AIR COMPRESSOR SYSTEM - HVAC CONTROLS (<=6 TOTAL HP)	MAINT. 6	2	HP	$3,165	DR
D4030	EXIT SIGN - WITH BATTERY BACK-UP	MAIN	14	EA	$7,924	DR
D4030	EMERGENCY LIGHT - UNITARY WITH BATTERY BACK-UP	MAIN	12	EA	$6,285	DR
			TOTAL DEFERRED RENEWAL COST		**$1,293,906**	

No Projected Component Replacement Cost for Asset No. 0004 for 2016

2017

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5020	LIGHTING - EXTERIOR, WALL FLOOD (SV, MH, ID, LED)		3	EA	$2,685	2017
D5010	MAIN SWITCHBOARD W/BREAKERS (600-800 AMP)		800	AMP	$52,150	2017
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (600-800A) W/STARTERS	MCC-1	2	EA	$169,041	2017
D5010	MOTOR CONTROL CENTER VERTICAL SECTION, 600V (600-800A) W/STARTERS	MCC-2	1	EA	$84,520	2017
D2010	PLUMBING FIXTURE - LAVATORY, WALL HUNG	MAIN	9	EA	$10,868	2017
D2010	PLUMBING FIXTURE - SINK, KITCHEN	MAIN	2	EA	$3,924	2017
D2010	PLUMBING FIXTURE - SINK, SERVICE/LAUNDRY/UTILITY	MAIN	4	EA	$6,513	2017
D2010	PLUMBING FIXTURE - URINAL	MAIN	5	EA	$9,615	2017
D2010	PLUMBING FIXTURE - WATER CLOSET, TANKLESS	MAIN	9	EA	$15,933	2017
D2030	GREYWATER SUMP PUMP -SUBMERSIBLE PUMP (<0.5HP)	MAINT. 8	1	EA	$616	2017

RENEWAL COMPONENT REPLACEMENT COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D2020	WATER HEATER - COMMERCIAL, ELECTRIC (30-70 GAL)	MAINT. 8	104	GAL	$23,027	2017
D1010	ELEVATOR MODERNIZATION - HYDRAULIC	120A	1	EA	$273,297	2017
D1010	ELEVATOR CAB RENOVATION - PASSENGER	120A	1	EA	$48,080	2017
	2017	**PROJECTED COMPONENT REPLACEMENT COST**			**$700,270**	

2018

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	03	297	SF	$3,898	2018
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	04	118	SF	$1,549	2018
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	05	2,277	SF	$29,881	2018
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	06	656	SF	$8,609	2018
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	07	928	SF	$12,178	2018
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	08	48	SF	$630	2018
B3010	ROOF - BITUMINOUS, 4-PLY, COAL TAR PITCH	09	2,178	SF	$28,582	2018
	2018	**PROJECTED COMPONENT REPLACEMENT COST**			**$85,326**	

No Projected Component Replacement Cost for Asset No. 0004 for 2019

2020

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR

RENEWAL COMPONENT REPLACEMENT COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (25"-30" DIAMETER)	ROOF	2	EA	$15,747	2020
D3040	FAN - CENTRIFUGAL ROOF EXHAUST, 1/4" SP (20"-22" DIAMETER)	ROOF	2	EA	$12,679	2020
C3020	FLOORING - CARPET, TILE OR ROLL, STANDARD		22,800	SF	$277,406	2020
C3030	CEILING FINISH - SUSPENDED ACOUSTICAL TILE, STANDARD		23,400	SF	$233,464	2020
C1020	DOOR LOCK, RESIDENTIAL-GRADE	HIGH USE	10	EA	$2,268	2020
C1020	DOOR LOCK, RESIDENTIAL-GRADE	LEVER	14	EA	$3,175	2020
C1020	DOOR PANIC HARDWARE		1	EA	$1,210	2020
B2030	DOOR OPERATOR, POWER-ASSIST		1	EA	$8,664	2020
	2020	**PROJECTED COMPONENT REPLACEMENT COST**			**$554,613**	

2021

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM PANEL, DIALER, BATTERY, & CHARGER	MAINTENANCE 6	1	EA	$38,583	2021
	2021	**PROJECTED COMPONENT REPLACEMENT COST**			**$38,583**	

2022

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	ELECTRICAL DISTRIBUTION NETWORK - OFFICE	MAIN	27,871	SF	$573,281	2022
D3040	HVAC DISTRIBUTION NETWORKS - OFFICE	MAIN	27,871	SF	$811,403	2022
C1020	DOOR AND FRAME, INTERIOR, FIRE-RATED	HIGH USE	10	LEAF	$39,398	2022

RENEWAL COMPONENT REPLACEMENT COST BY YEAR

All costs shown as Future Value using a 3% average inflation rate

2022	PROJECTED COMPONENT REPLACEMENT COST		$1,424,082	

2023

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	VARIABLE FREQUENCY DRIVE (10-15 HP)	SUPPLY	15	HP	$6,639	2023
D5010	VARIABLE FREQUENCY DRIVE (7.5-10 HP)	RETURN	10	HP	$5,736	2023
2023	PROJECTED COMPONENT REPLACEMENT COST				$12,375	

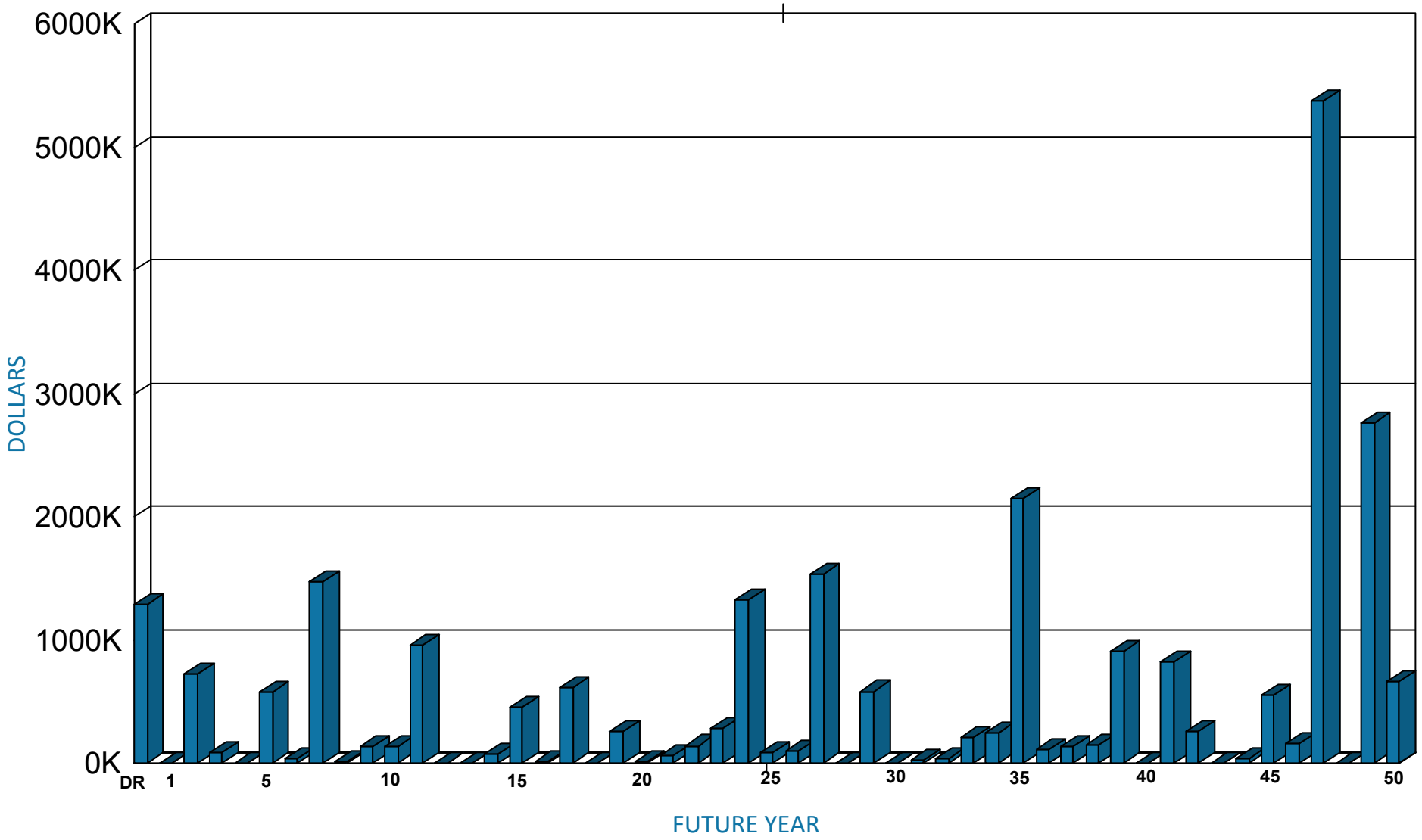
2024

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D4030	FIRE ALARM SYSTEM - DEVICES	MAIN	27,871	SF	$135,628	2024
2024	PROJECTED COMPONENT REPLACEMENT COST				$135,628	

2025

UNI-FORMAT	COMPONENT DESCRIPTION	IDENTIFIER	QTY	UNITS	REPLACEMENT COST	YEAR
D5010	TRANSFORMER - OIL-FILLED, 3PH, 5-15KV PRIMARY (1000-1500 KVA)		1,250	KVA	$135,300	2025
2025	PROJECTED COMPONENT REPLACEMENT COST				$135,300	

RECURRING COMPONENT EXPENDITURE PROJECTIONS

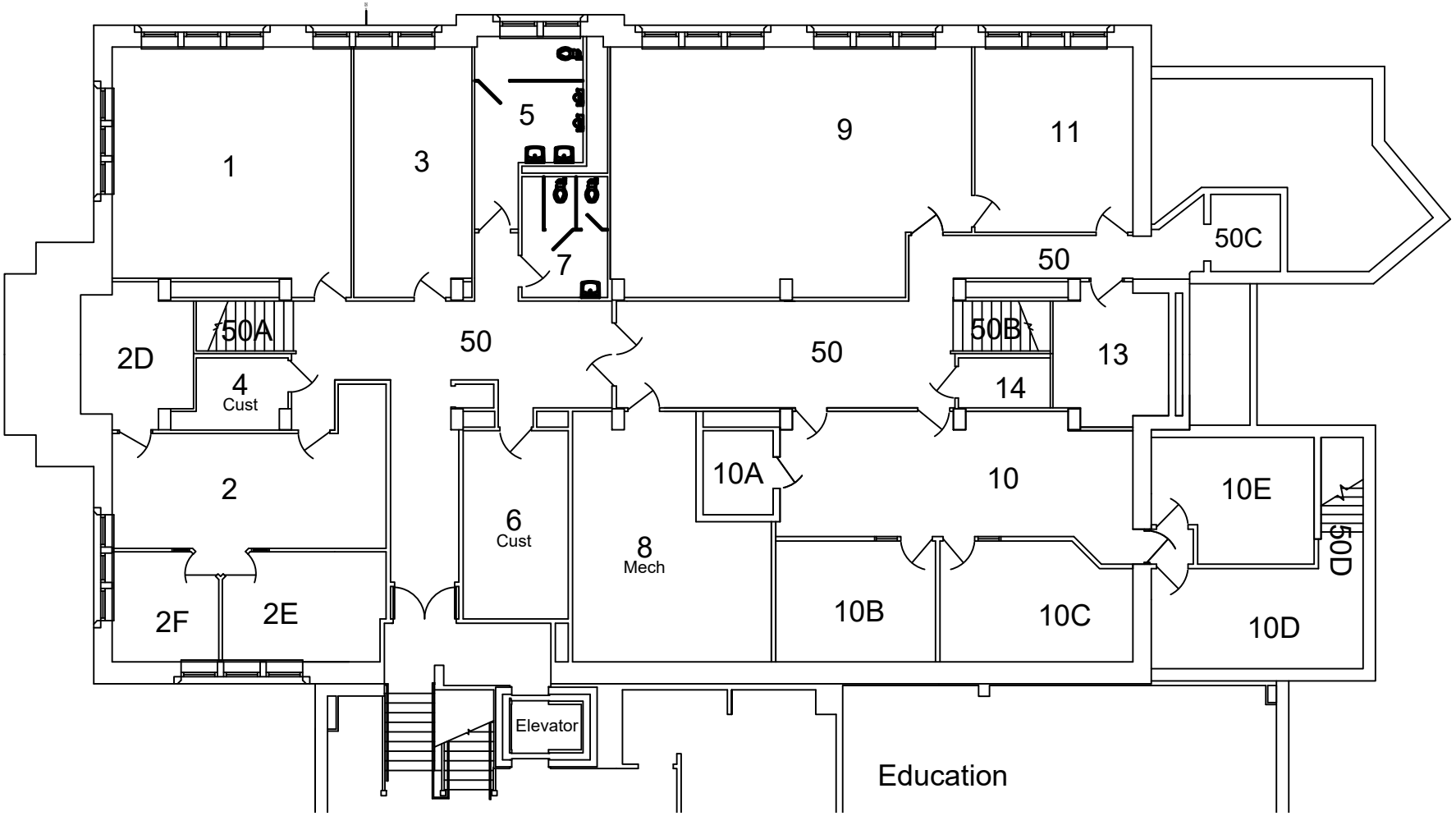


Average Annual Renewal Cost per SF $8.10

FACILITY CONDITION ASSESSMENT

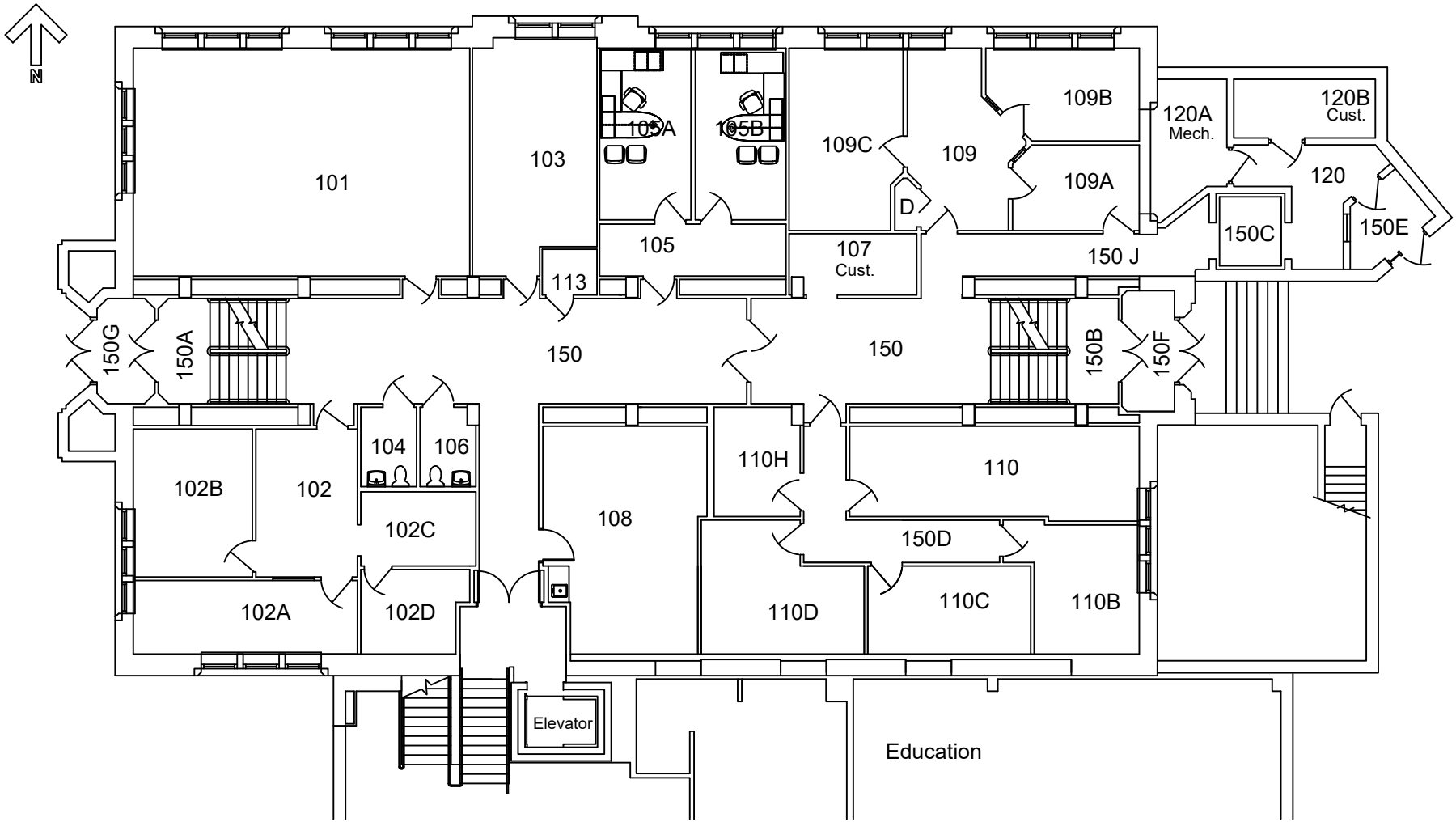
SECTION 5

DRAWINGS/ PROJECT LOCATIONS



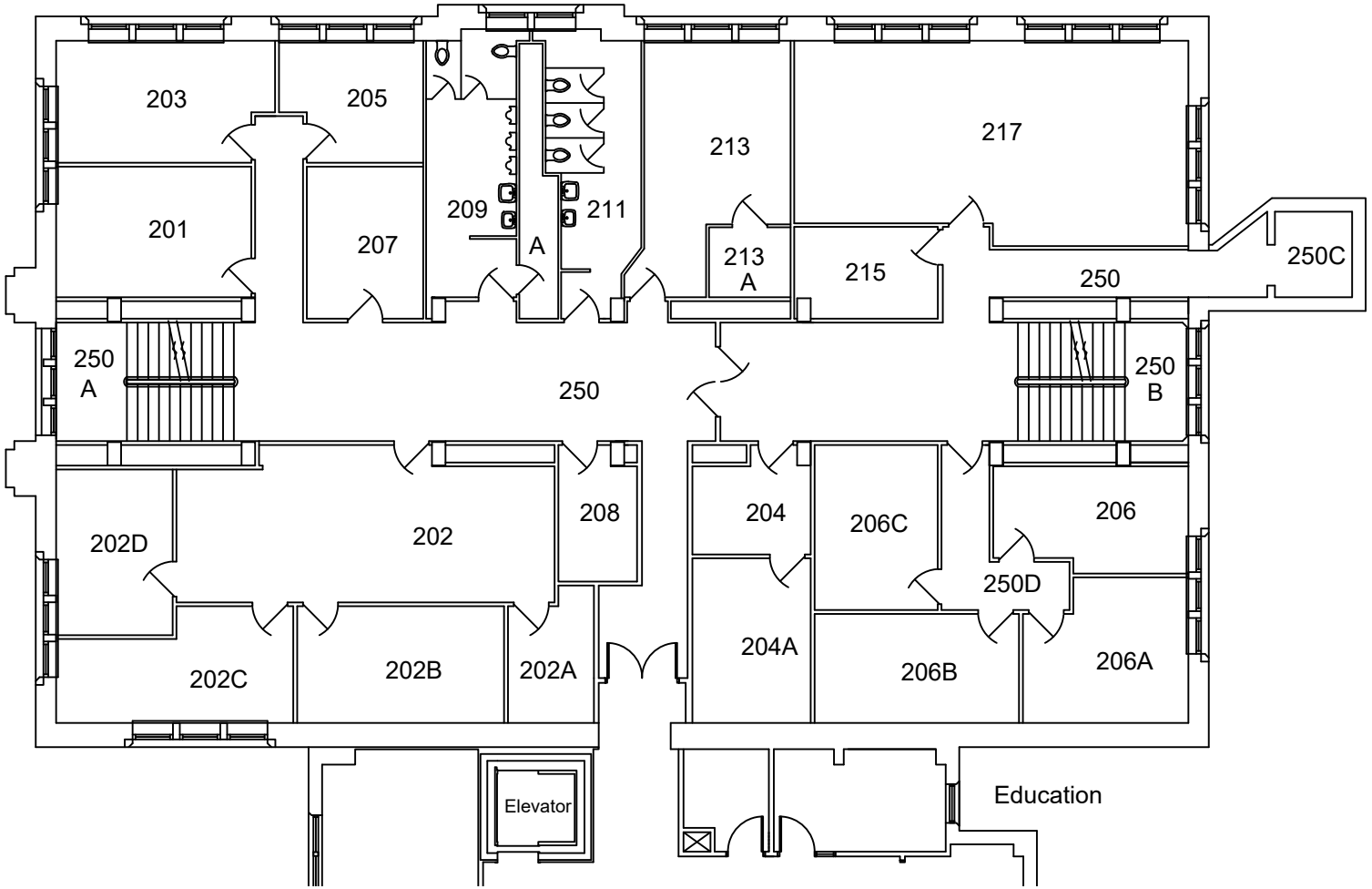
Gillette Hall
Ground Floor Plan
Scale - 1"=15'

UND
University of North Dakota
Building #4



Gillette Hall
First Floor Plan
Scale - 1"=15'

University of North Dakota
Building #4



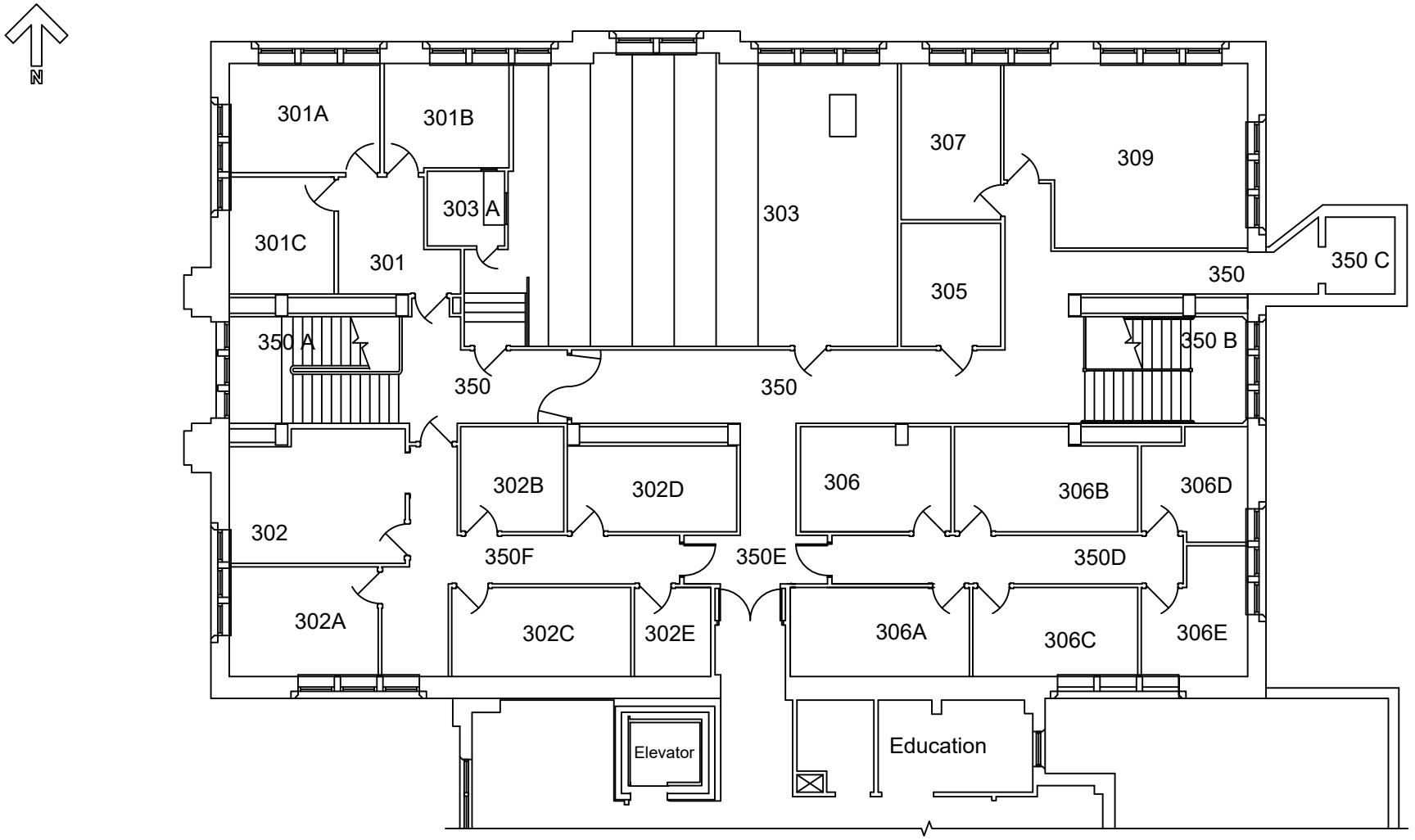
Gillette Hall

Second Floor Plan

Scale - 1"=15'

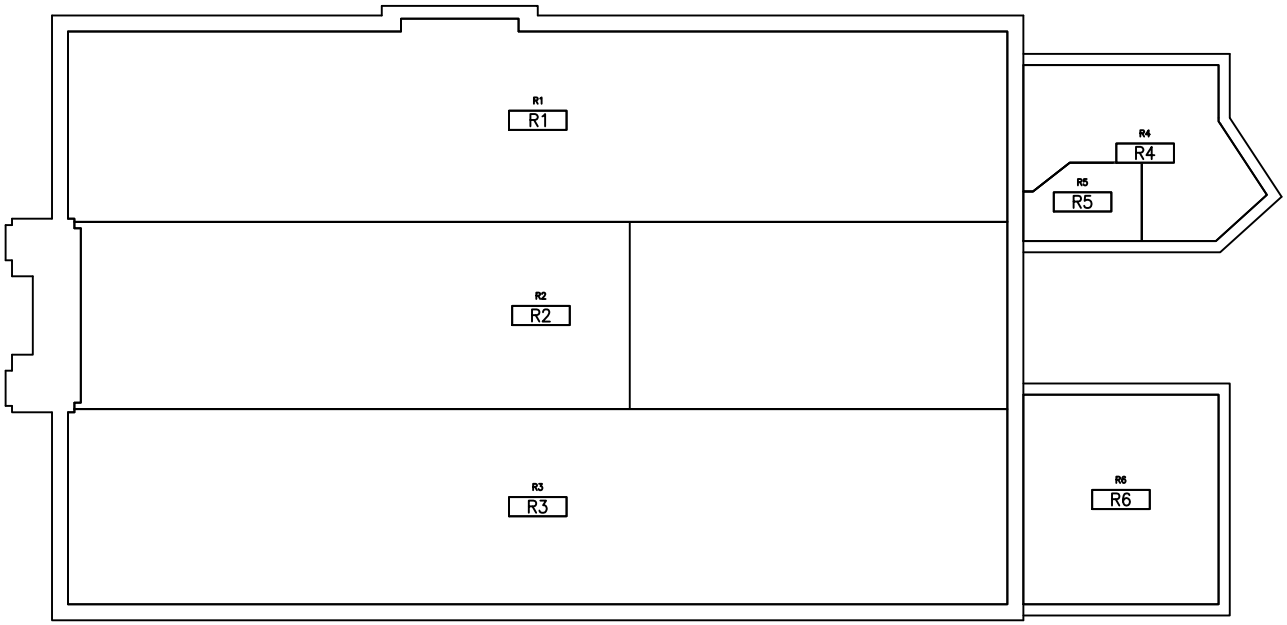
University of North Dakota

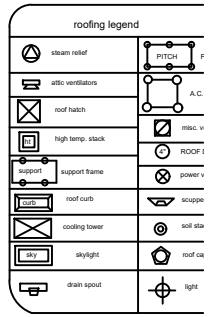
Building #4



Gillette Hall
Third Floor Plan
Scale - 1"=15'

University of North Dakota
Building #4





Gillette Hall

Roof Plan

Scale - 1"=15'

University of North Dako

Building #4