

MACOMB COMMUNITY COLLEGE
CENTER CAMPUS

FACILITIES ASSESSMENT AND DEFERRED MAINTENANCE CAPITAL PLANNING REPORT

IDS Project No. 21195-4000

November 2023

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TAB 1

Integrated Design Solutions, LLC (IDS) was commissioned by Macomb Community College to conduct a Facility Condition Assessment (FCA) of all buildings located at Center Campus. This assessment will serve as a means to update the existing FCA and Deferred Maintenance Capital Plan. The survey was conducted between September 2022 and March 2023. Each building was thoroughly surveyed with the assistance of Macomb Community College personnel.

The following report compiles a list of all deficient building, mechanical, electrical and code related items that, in our professional opinion, will require replacement, enhancement and/or repair in order to meet the goals of preserving the assets of each building.

The IDS survey team consisted of senior level individuals with extensive knowledge in each of the building categories surveyed.

TAB 2

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

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

Estimated costs are itemized by architectural, mechanical, and electrical trades and are totaled under Construction Costs and include any material and labor costs without additional mark-ups. The Project Cost total includes a 45 percent mark-up on construction costs to include such items as A/E design fees, construction contingencies, reimbursable expenses and commissioning. All costs have been expressed in 2023 dollars. Therefore, any work implemented later than 2023 will require an adjustment. In some cases, due to the nature of the work, quantities were estimated and assumptions made in order to establish the course of action. Further development and investigation during future implementation phases will be necessary to determine a more accurate scope of work and a more precise budget estimate.

All deficiencies identified in this report total $38,740,667. Category deficiencies breakdown in the following manner: architectural items $4,382,595 (includes code related items), mechanical items $11,623,145 and electrical items $22,734928. All costs include a 45% mark-up to include "soft" costs associated with, and incremental to, actual construction costs.

Facility Condition Assessment team consisted of the following individuals:

Administrative Team

Macomb Community College Executive Director of Facilities & Operations.....William Simonson
Macomb Community College Director of Administrative Services .....Bernard Jacobs
IDS Project Manager.....Matthew Beck
IDS Principal-in-Charge .....Michael Nowicki

Facility Assessment Team

Architectural .....Todd Nemecek
Mechanical .....Frank Lesner
Electrical.....Scott Batzold

TAB 3

GLOSSARY OF TERMS

Building Components

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

Category	Component Name
Envelope	Roof
	Glazing
	Cladding
Mechanical	HVAC Equipment
	Plumbing
	Fire Protection
Electrical	Power
	Lighting
Code/ADA	

Building Use Types

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

Use Type	Cost/SF
Administration	$420
Auditorium	$585
Student Services	$410
Classroom	$400
Lab	$630
Library	$370

Building Replacement Value (CRV)

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

Facilities Condition Index (FCI)

The Association of Higher Education Facilities Officers (APPA) recommends that the FCI for any given building should not exceed 5% for the building to be considered in "Good" condition. The rating of "Fail" indicates that the building requires some attention to bring it up to standard, with some problem areas potentially requiring immediate attention. The rating of "Poor" indicates that the building needs urgent attention to prevent the existing problems from affecting other building systems and compounding future repair costs.

Deferred Maintenance Budget (DMB)

This is the cost of upkeep of buildings and equipment postponed from the normal operating budget cycle.

DMB Equilibrium (Annual Cost to Maintain Current DMB)

This is the dollar amount to be invested annually to keep the FCI (and DMB) from deteriorating - regardless of the current condition of the building.

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

To restate - this actual investment will only maintain the existing FCI and do little or nothing to reduce any existing backlog.

Five Year Cumulative Deferred Maintenance Budget (5 Year DMB)

Similar to the One Year DMB, the Five Year DMB represents the total value of projects that will require attention within the next five years, including those that fall under the One Year DMB. This value is included to help determine the investment required over the next five years to repair and/or replace problem items before they become critical.

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

Five Year DMB Excess

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

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

Observation Highlights

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

Vital Statistics

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

Code and Barrier Free Requirements

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

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

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

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

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

Building	2015 Michigan Rehabilitation code, Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2015 Michigan Building Code, incorporating the 2015 Edition of the International Building Code.
	Michigan Department of Licensing and Regulatory Affairs, Bureau of Fire Services, Rules for Schools, Colleges and Universities, 2016, incorporating the 2015 Edition of the NFPA 101 Life Safety Code.
Barrier Free:	Michigan Department of Licensing and Regulatory Affairs, 2015 Michigan Building Code, incorporating the 2015 Edition of the International Building Code.
	Americans with Disabilities Act (ADA), 2010, Standards for Accessible Design
Elevator:	Michigan Department of Energy, Labor and Economic Growth, Elevator Safety Division, Elevator Rules, 2005, Incorporating ASME Al 7.1-2004.
Structural:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2015 Michigan Building Code, incorporating the 2015 Edition of the International Building Code.
Mechanical:	Michigan Department of Energy, Labor and Economic Growth; Bureau of Construction Codes, 2015 Michigan Mechanical Code Incorporating the 2015 Edition of the International Mechanical Code.
	ANSI/ASHRAE/IESNA 90.1-2013 Energy Standard for Buildings Except Low-Rise Residential Buildings.
	NFPA 13 — Installation of Sprinkler Systems — 2013 Edition.
Plumbing:	Michigan Department of Energy, Labor and Economic Growth; Bureau of Construction Codes, 2018 Michigan Plumbing Code Incorporating the 2018 Edition of the International Plumbing Code.
Electrical:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, Electrical Division, 2017 Michigan Electrical Code, incorporating the 2017 Edition of the National Electrical Code.
Fire Alarm:	2013 Edition of NFPA 72 - National Fire Alarm and Signaling Code.

Minimum Code Requirements

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

Building Fire and Occupancy Separations

2-hour fire rated separation between different users.

Means of Egress and Fire Ratings

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

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

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

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

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

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

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

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

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

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

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

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

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

Signage is required of the following:

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

Exit Signage

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

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

Emergency Egress Lighting

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

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

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

Lighting Control

Michigan Energy Code requires that all buildings be equipped with automatic control devices capable of shutting off light in all spaces without occupant intervention. All building spaces must comply with maximum allowable power densities as defined in ASHRAE 90.1-2013. Daylighting controls must also be utilized for applicable areas.

Fire Alarm Systems

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

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

Fire Suppression Systems

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

Barrier Free Requirements

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

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

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

Changes in floor level between 1/4” minimum to 1/2” maximum is to be beveled with a slope no steeper than 1:2.

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

Swinging doors must have maneuvering clearances in compliance with ICC/ANSI Al 17.1.

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

Code compliant signage shall be provided at the following locations:

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

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

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

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

Existing Building Code Application

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

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

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

Deferred Maintenance Budgets

The total 5 year DMB building are as follows (refer to the building data sheets for detailed information).

Building	5 Year DMB
Building CA (Business and Public Services)	$ 76,633
Building CB (General Classrooms)	$ 23,200
Building CC (Library)	$ 1,734,257
Building CD (Meter)	$ 706,144
Building CE (Health and Human Services)	$ 232,943
Building CF (General Classrooms)	$ 27,550
Building CG (Student Services)	$ 1,204,209
Building CH (Student Services/classrooms)	$ 1,736,288
Building CI (Campus Police/Plant Operations)	$ 1,450,209
Building CK (Cultural Center)	$ 3,434,136
Building CL (Fine Arts)	$ 777,454
Building CM (Performing Arts)	$ 4,310,157
Building CN (General Classrooms)	$ 1,535,920
Building CP (Student Center/Bookstore)	$ 2,160,874
Building CR (Health Science Technology)	$ 1,978,133
Building CS (Administrative Center)	$ 2,571,506
Building UC-1 (Professional Development Center)	$ 5,134,806
Building UC-2 (Engineeering and Technical Center)	$ 6,745,226
Building UC-3 (Classroom and Lab Building)	$ 1,777,048
Building UC-4 (Osteopathic Medicine)	$ 1,123,976

Current Replacement Values

The CRV per building are as follows:

Building CA (Business and Public Services)	37,533	SF	x	$426	SF	=	$15,989,058
Building CB (General Classrooms)	18,716	SF	x	$403	SF	=	$7,542,548
Building CC (Library)	57,502	SF	x	$370	SF	=	$21,275,740
Building CD (Meter)	1,562	SF	x	$420	SF	=	$656,040
Building CE (Health and Human Services)	63,737	SF	x	$480	SF	=	$30,593,760
Building CF (General Classrooms)	19,629	SF	x	$453	SF	=	$8,891,937
Building CG (Student Services)	19,708	SF	x	$410	SF	=	$8,080,280
Building CH (Student Services/Classrooms)	34,430	SF	x	$405	SF	=	$13,944,150
Building CI (Campus Police/Plant Operations)	16,523	SF	x	$420	SF	=	$6,939,660
Building CK (Cultural Center)	51,880	SF	x	$420	SF	=	$21,789,600
Building CL (Fine Arts)	30,400	SF	x	$542	SF	=	$16,476,800
Building CM (Performing Arts)	71,954	SF	x	$585	SF	=	$42,093,090
Building CN (General Classrooms)	65,357	SF	x	$401	SF	=	$26,208,157
Building CP (Student Center/Bookstore)	34,496	SF	x	$414	SF	=	$14,281,344
Building CR (Health Science Technology)	36,478	SF	x	$450	SF	=	$16,415,100
Building CS (Administrative Center)	42,055	SF	x	$420	SF	=	$17,663,100
Building UC-1 (Professional Development Center)	88,768	SF	x	$417	SF	=	$37,016,256
Building UC-2 (Engineeering and Technical Center)	53,290	SF	x	$439	SF	=	$23,394,310
Building UC-3 (Classroom and Lab Building)	36,718	SF	x	$458	SF	=	$16,816,844
Building UC-4 (Osteopathic Medicine)	25,444	SF	x	$515	SF	=	$13,103,660

TAB 4

FCI Index Table

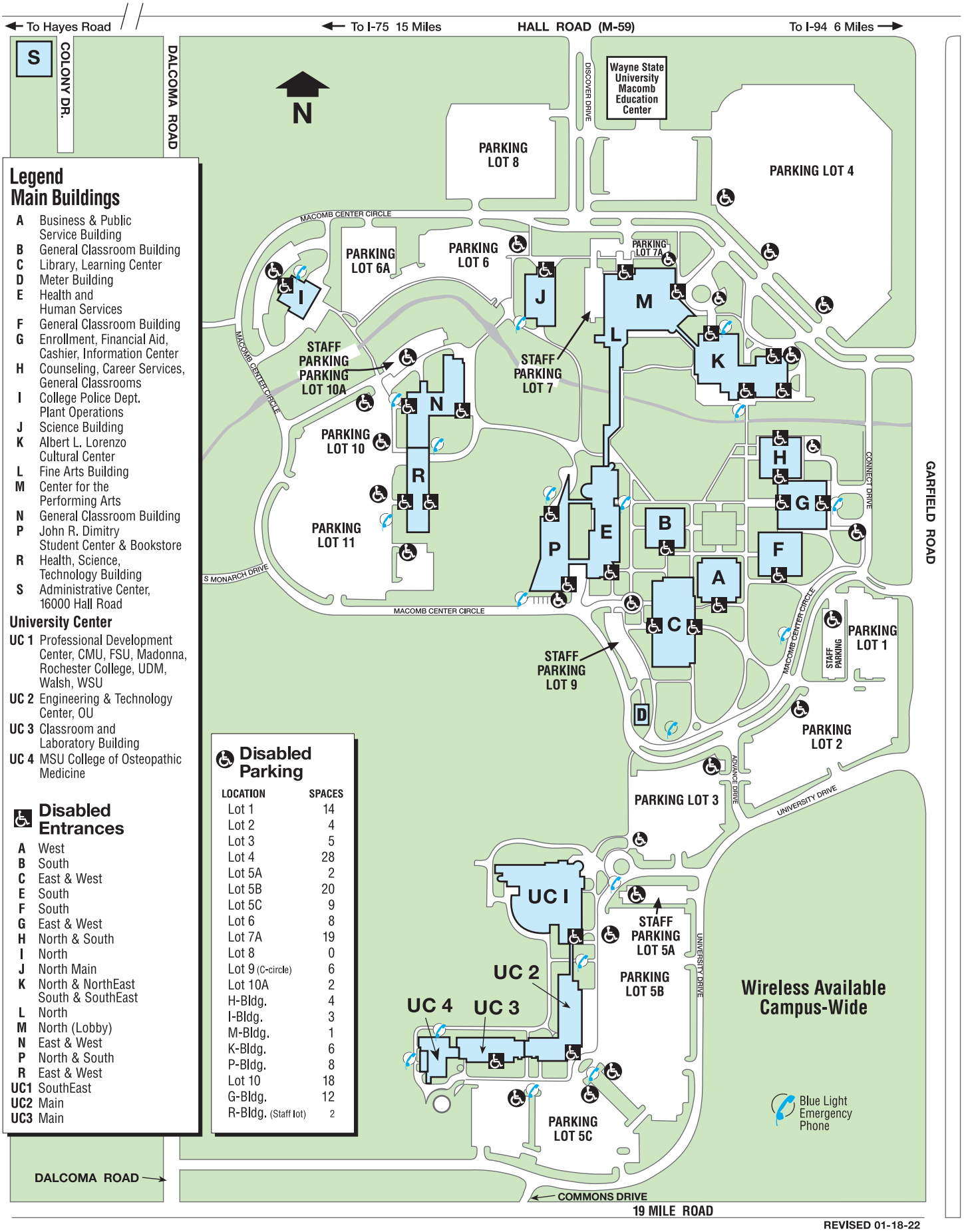
Building	Square Feet	Replacement Cost (CRV)	Total Deficiencies Construction Cost	Total Deficiencies Project Cost (5 Year DMB)	FCI
Building CA (Business and Public Services)	37,533	$ 15,989,058	$ 52,850	$ 76,633	0.48%
Building CB (General Classrooms)	18,716	$ 7,542,548	$ 16,000	$ 23,200	0.31%
Building CC (Library)	57,502	$ 21,275,740	$ 1,196,039	$ 1,734,257	8.15%
Building CD (Meter)	1,562	$ 656,040	$ 486,996	$ 706,144	107.64%
Building CE (Health and Human Services)	63,737	$ 30,593,760	$ 160,650	$ 232,943	0.76%
Building CF (General Classrooms)	19,629	$ 8,891,937	$ 19,000	$ 27,550	0.31%
Building CG (Student Services)	19,708	$ 8,080,280	$ 830,489	$ 1,204,209	14.90%
Building CH (Student Services/Classrooms)	34,430	$ 13,944,150	$ 1,197,440	$ 1,736,288	12.45%
Building CI (Campus Police/Plant Operations)	16,523	$ 6,939,660	$ 1,000,144	$ 1,450,209	20.90%
Building CK (Cultural Center)	51,880	$ 21,789,600	$ 2,368,369	$ 3,434,136	15.76%
Building CL (Fine Arts)	30,400	$ 16,476,800	$ 536,175	$ 777,454	4.72%
Building CM (Performing Arts)	71,954	$ 42,093,090	$ 2,972,522	$ 4,310,157	10.24%
Building CN (General Classrooms)	65,357	$ 26,208,157	$ 1,059,255	$ 1,535,920	5.86%
Building CP (Student Center/Bookstore)	34,496	$ 14,281,344	$ 1,490,258	$ 2,160,874	15.13%
Building CR (Health Science Technology)	36,478	$ 16,415,100	$ 1,364,230	$ 1,978,133	12.05%
Building CS (Administrative Center)	42,055	$ 17,663,100	$ 1,773,453	$ 2,571,506	14.56%
Building UC-1 (Professional Development Center)	88,768	$ 37,016,256	$ 3,541,245	$ 5,134,806	13.87%
Building UC-2 (Engineeering and Technical Center)	53,290	$ 23,394,310	$ 4,651,880	$ 6,745,226	28.83%
Building UC-3 (Classroom and Lab Building)	36,718	$ 16,816,844	$ 1,225,550	$ 1,777,048	10.57%
Building UC-4 (Osteopathic Medicine)	25,444	$ 13,103,660	$ 775,156	$ 1,123,976	8.58%

- FCI is a simple measure of the relative condition of a building to its approximate replacement cost (i.e., the higher the FCI, the poorer the condition of the existing building).

TAB 5

MACOMB COMMUNITY COLLEGE
CENTER CAMPUS

44575 Garfield Road • Clinton Twp., MI 48038-1139 • 1.866.Macomb1 • www.macomb.edu



Legend
Main Buildings

- **A** Business & Public Service Building
- **B** General Classroom Building
- **C** Library, Learning Center
- **D** Meter Building
- **E** Health and Human Services
- **F** General Classroom Building
- **G** Enrollment, Financial Aid, Cashier, Information Center
- **H** Counseling, Career Services, General Classrooms
- **I** College Police Dept. Plant Operations
- **J** Science Building
- **K** Albert L. Lorenzo Cultural Center
- **L** Fine Arts Building
- **M** Center for the Performing Arts
- **N** General Classroom Building
- **P** John R. Dimitry Student Center & Bookstore
- **R** Health, Science, Technology Building
- **S** Administrative Center, 16000 Hall Road

University Center

- **UC 1** Professional Development Center, CMU, FSU, Madonna, Rochester College, UDM, Walsh, WSU
- **UC 2** Engineering & Technology Center, OU
- **UC 3** Classroom and Laboratory Building
- **UC 4** MSU College of Osteopathic Medicine

Disabled Entrances

- **A** West
- **B** South
- **C** East & West
- **E** South
- **F** South
- **G** East & West
- **H** North & South
- **I** North
- **J** North Main
- **K** North & NorthEast South & SouthEast
- **L** North
- **M** North (Lobby)
- **N** East & West
- **P** North & South
- **R** East & West
- **UC1** SouthEast
- **UC2** Main
- **UC3** Main

Disabled Parking

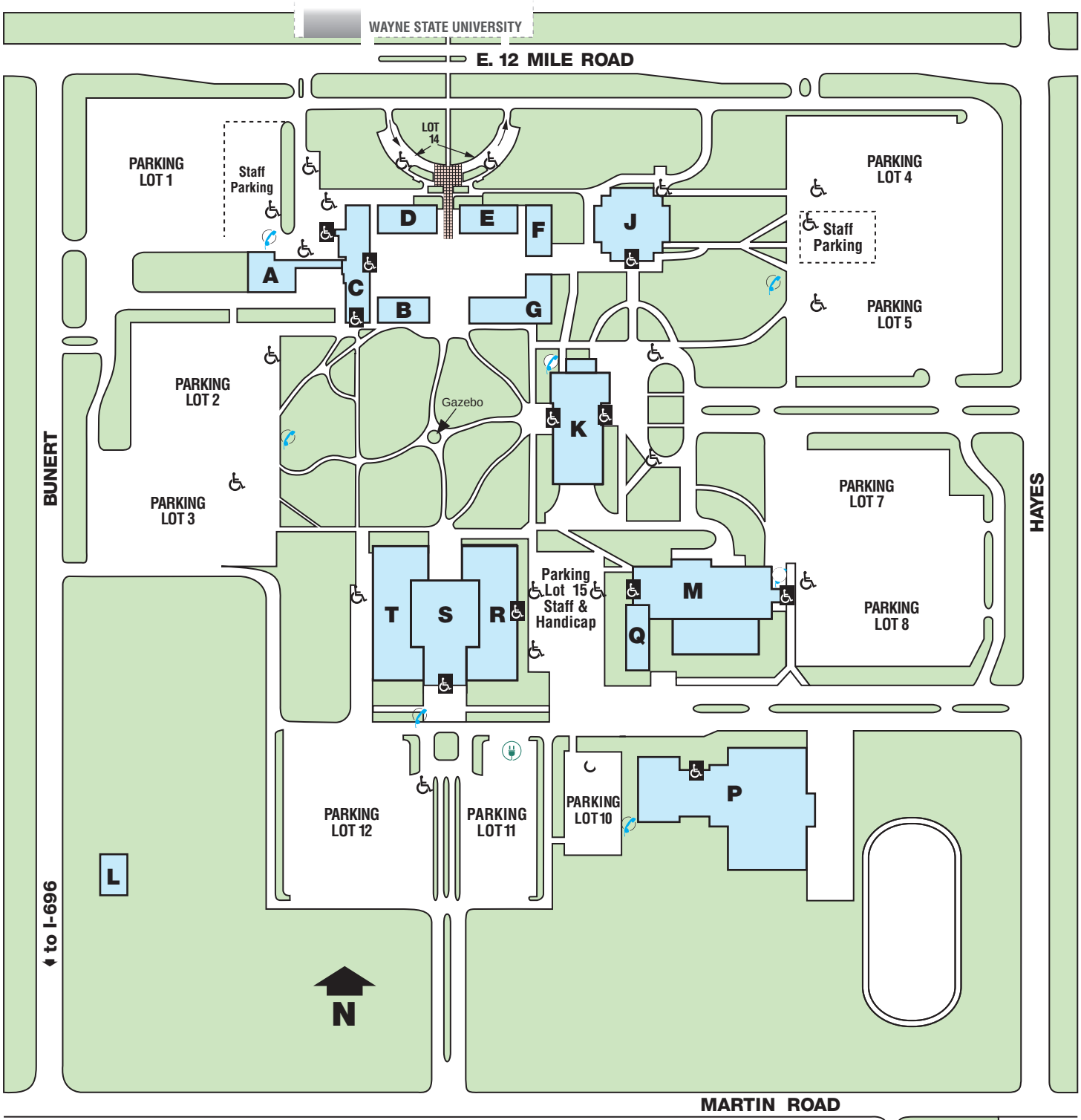
LOCATION	SPACES
Lot 1	14
Lot 2	4
Lot 3	5
Lot 4	28
Lot 5A	2
Lot 5B	20
Lot 5C	9
Lot 6	8
Lot 7A	19
Lot 8	0
Lot 9 (C-circle)	6
Lot 10A	2
H-Bldg.	4
I-Bldg.	3
M-Bldg.	1
K-Bldg.	6
P-Bldg.	8
Lot 10	18
G-Bldg.	12
R-Bldg. (Staff lot)	2

REVISED 01-18-22

MACOMB COMMUNITY COLLEGE

SOUTH CAMPUS

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



REVISED 5/11/17

LEGEND—MAIN BUILDINGS

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

Robert E. Turner Complex

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

Disabled Parking

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

Blue Light Emergency Phone

Elec.Vehicle Outlet

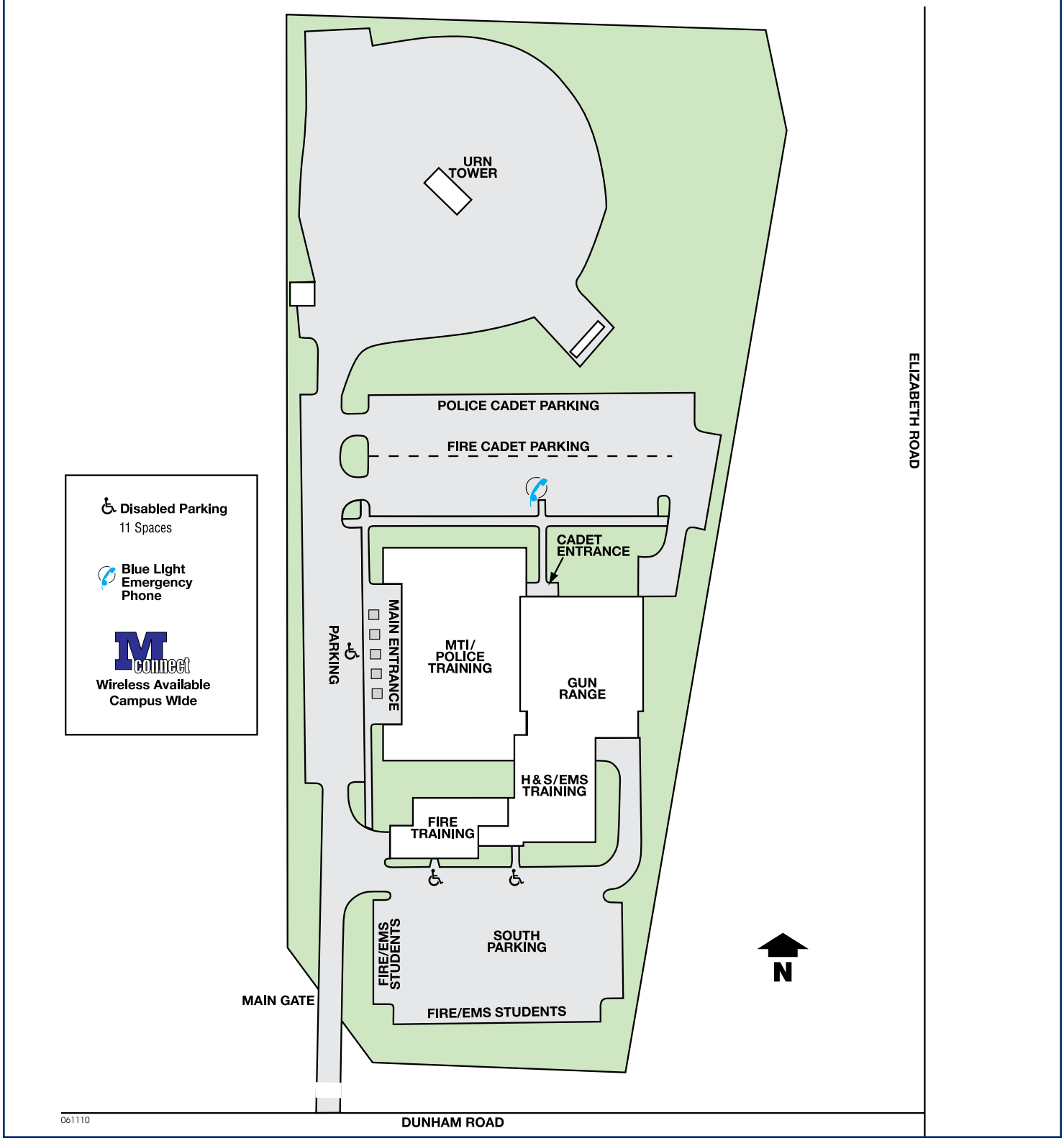
Disabled Entrances

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

Wireless Available Campus-Wide

East Campus

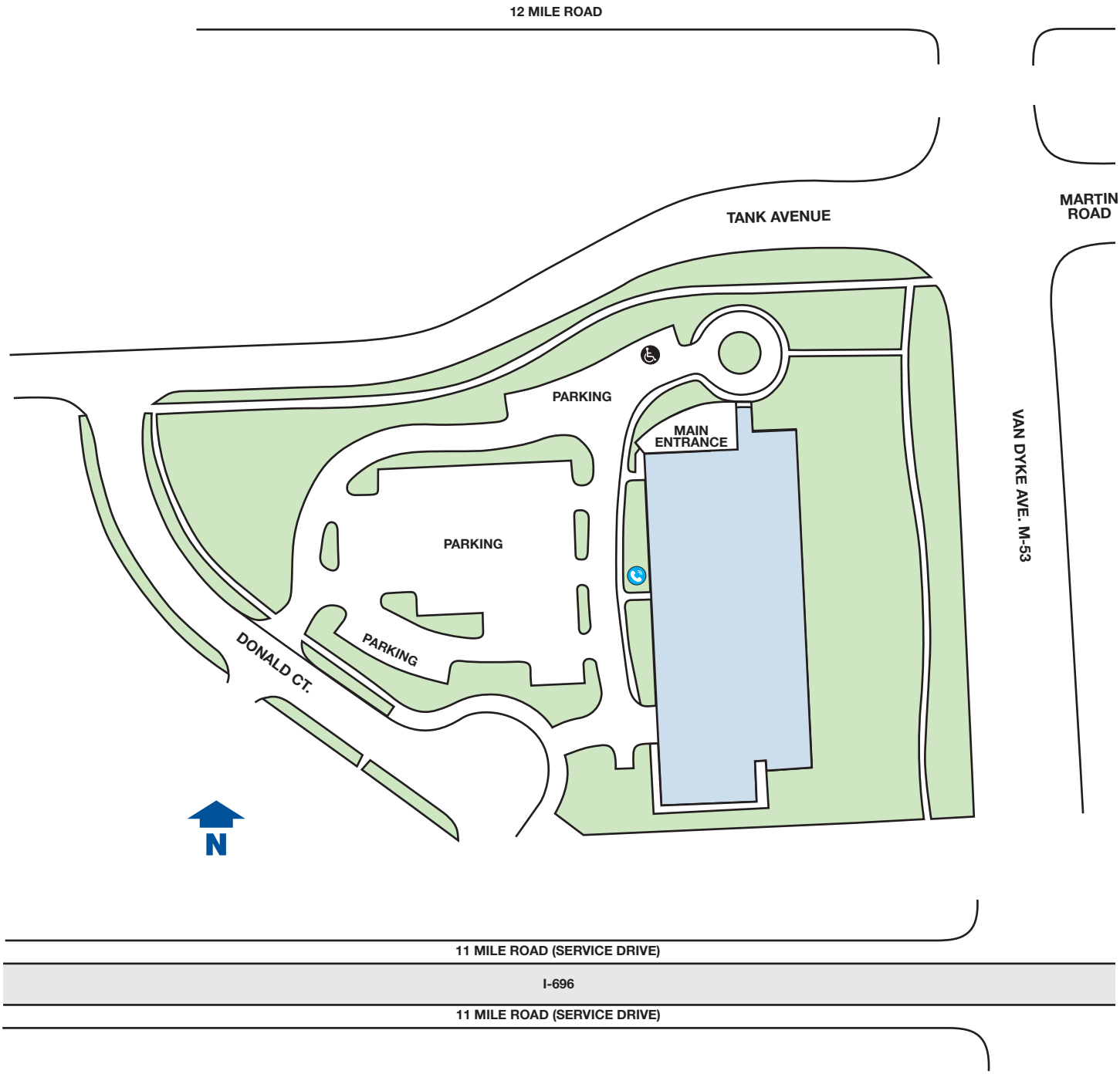
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MACOMB COMMUNITY COLLEGE

M-TEC℠

7900 Tank Avenue, Warren, MI 48092 • 1.866.Macomb1



Disabled Parking
4 Spaces

Blue Light Emergency Phone

Wireless Available Campus Wide

REVISED 10/22/20

TAB 6

BUILDING CA



GENERAL OVERVIEW

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

Year Built: 1969

Total Area: 37,533 SF

Floors: 2

5 Year DMB: $76,633

CRV: $15,989,058

FCI: 0.48%

COMMENTS

Roof System

- Firestone EPDM roof installed in 2016.
- Roof warranty expires in 2031.

HVAC System

- HVAC system was replaced in Summer 2016.

Plumbing System

- Plumbing system was replaced in Summer 2016.

Fire Protection

- Full fire suppression system was added in Summer 2016.

Temperature Controls

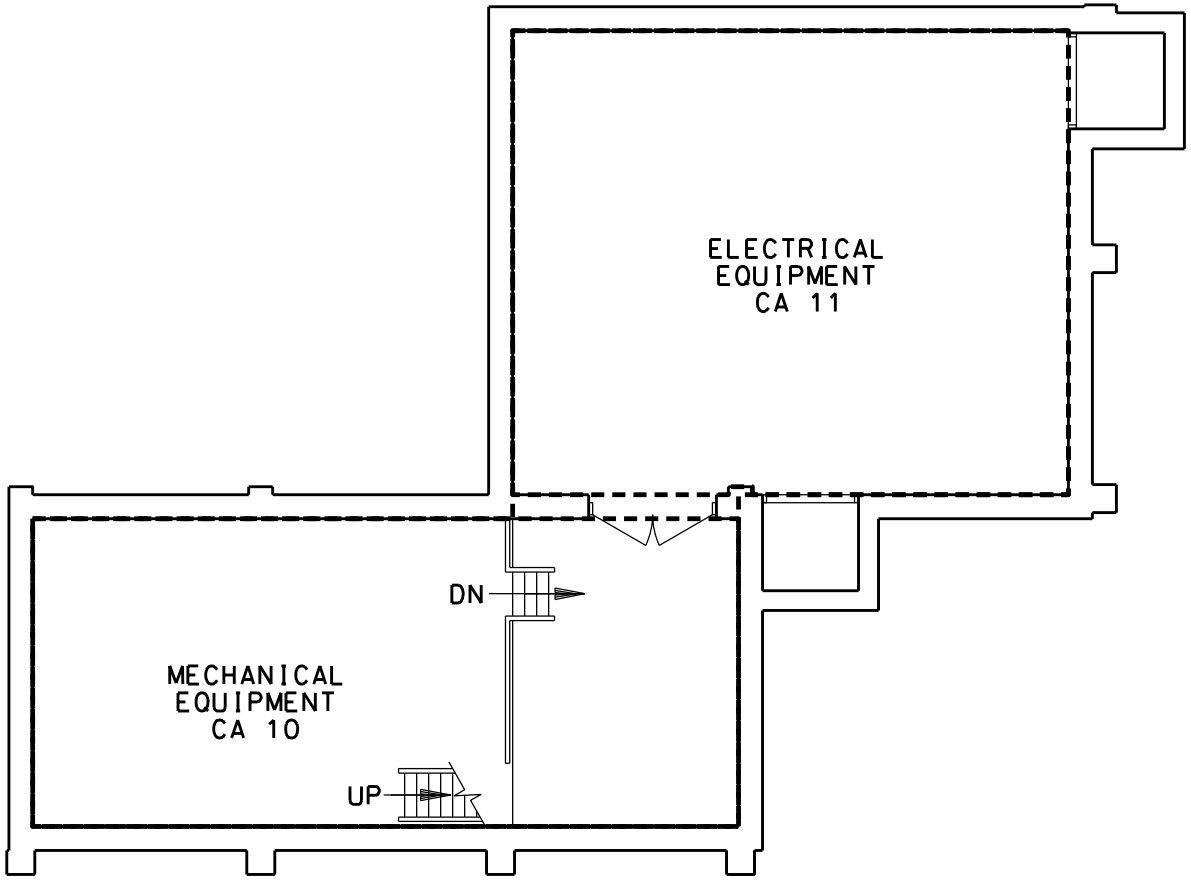
- Temperature controls were replaced in Summer 2016.

Power Systems

- Electrical equipment was upgraded in Summer 2016.

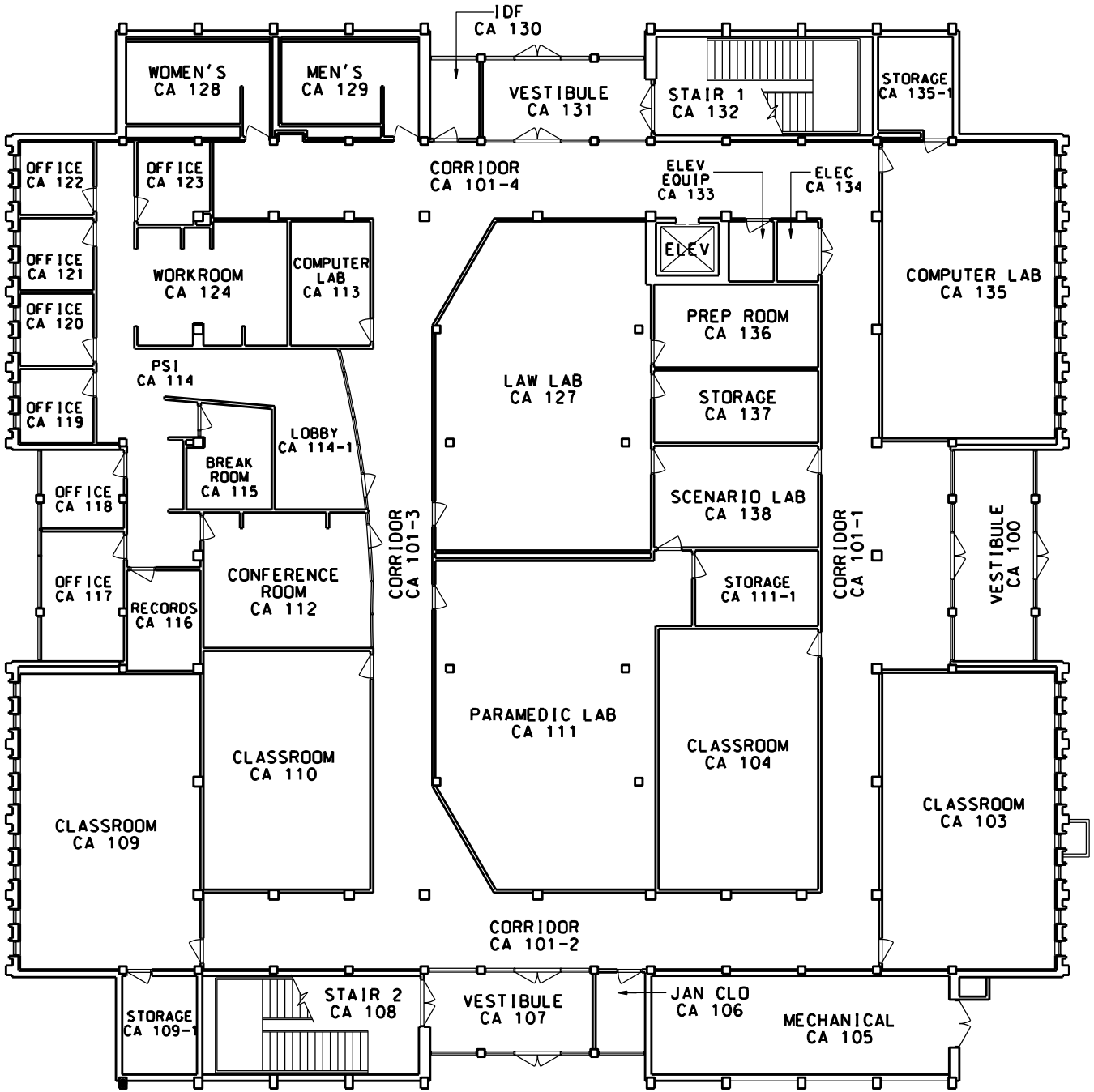
Lighting System

- Lighting was replaced with LED fixtures and controls were added in Summer 2016.

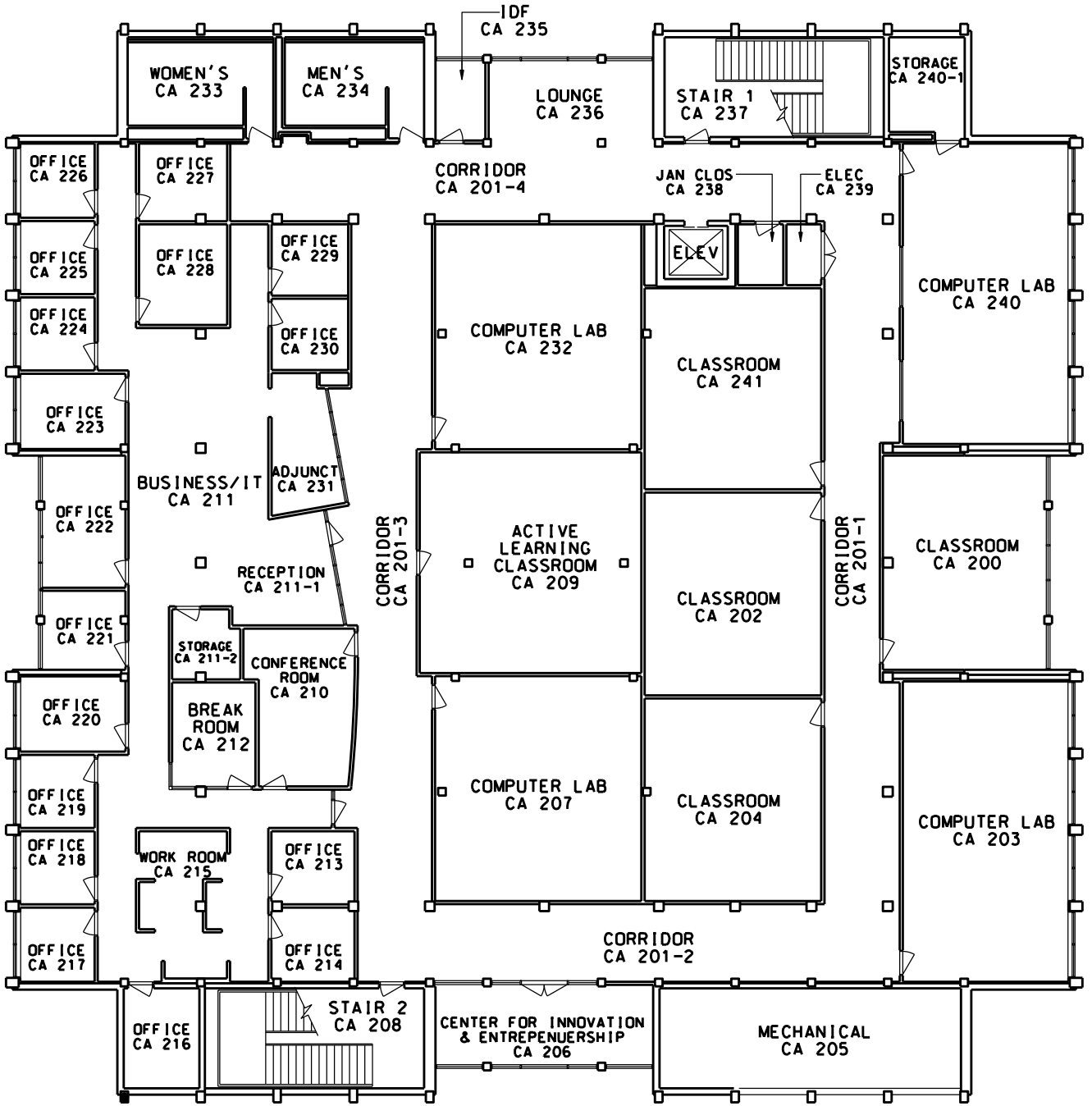


BUILDING "CA" BASEMENT

NORTH



BUILDING "CA" 100 LEVEL



BUILDING "CA" 200 LEVEL

Building CA

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Enclosure System													
1	Enclosure System	General	Louvers on east side of building not caulked.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
2	Enclosure System	General	Patch concrete soffit with exposed rebar at north entry.	1	LS	$ 4,000.00	$ 4,000					$ 4,000	$ 5,800
3	Enclosure System	General	Repair backside of concrete parapet wall where spalling in northwest corner.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
4	Enclosure System	General	Repair/seal crack in backside of north concrete parapet wall.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
Finish System													
1	Finish System	General	Caulk door from mechanical room to exterior.	1	LS	$ 500.00	$ 500					$ 500	$ 725
2	Finish System	General	Caulk door from lower mechanical room to electrical room.	1	LS	$ 500.00	$ 500					$ 500	$ 725
3	Finish System	General	Refinish epoxy floor in lower level electrical room.	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
4	Finish System	General	Repair cast concrete stair treads at Stair #1.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
5	Finish System	General	Repair cast concrete stair treads at Stair #2.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
HVAC System													
1	Jacketing/Insulation	Roof	Repair/replace portion of damaged CHW piping insulation and jacketing.	1	LS			$ 750.00	$ 750			$ 750	$ 1,088
Power System													
1	Electrical Equipment	General	Electrical equipment had no indication of maintenance or testing since original installation in 2016. Testing / maintenance is recommended at regular intervals.	1	LS					$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
2	Electrical Equipment	General	One of the two meters at the main switchboard is inoperable. The remaining meter displayed maximum values that exceeded expected ranges by a significant amount. Further testing & investigation is recommended.	1	LS					$ 12,000.00	$ 12,000	$ 12,000	$ 17,400
3	Electrical Equipment	General	NFPA 70E requires updating arc flash studies at an interval not to exceed 5 years. The existing labeling is not dated however appears to be original. It is recommended to update the building-wide power systems study.	1	LS					$ 7,000.00	$ 7,000	$ 7,000	$ 10,150
4	Utility Spaces	Mechanical/Electrical Rooms	Various j-boxes were observed with missing coverplates and exposed wiring. This is a code violation. It is recommended this be corrected.	1	LS					$ 500.00	$ 500	$ 500	$ 725
Lighting System													
1	Lighting System	General	Various areas with damaged or inoperable fixtures were observed. (stairwell fixture lens, conf rm 210 fixtures, classroom 202 fixtures) Replace/repair damaged lighting fixtures	4	EA					$ 400.00	$ 1,600	$ 1,600	$ 2,320
Codes Systems and Barrier Free													
1	Code Systems and Barrier Free	General	Stoop at door from mechanical room to exterior is too low; needs to be at floor elevation.	1	LS	$ 7,000.00	$ 7,000					$ 7,000	$ 10,150
						$ 23,500		**$ 750**		**$ 28,600**		**$ 52,850**	**$ 76,633**

BUILDING CB



GENERAL OVERVIEW

Use: Classrooms and Offices

Year Built: 1968

Total Area: 18,716 SF

Floors: 1

5 Year DMB: $23,200

CRV: $7,542,548

FCI: 0.31%

COMMENTS

Roof System

- Firestone EPDM roof installed in 2017.
- Roof warranty expires in 2032.

HVAC System

- HVAC systems were replaced in 2019.

Plumbing System

- Plumbing systems were replaced in 2019.

Temperature Controls

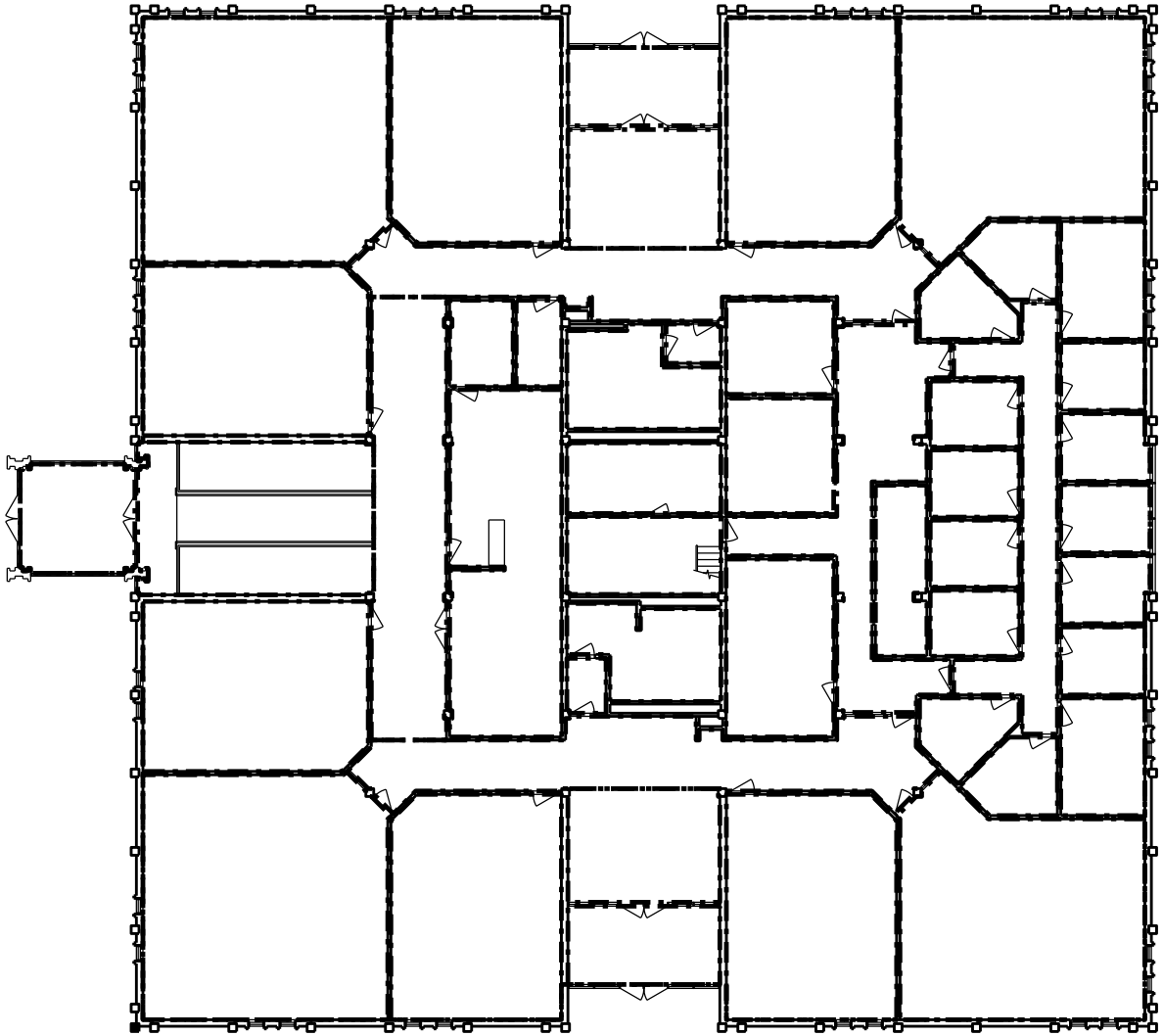
- Temperature controls were replaced in 2019.

Power Systems

- Electrical equipment was upgraded in 2019 and is good condition.

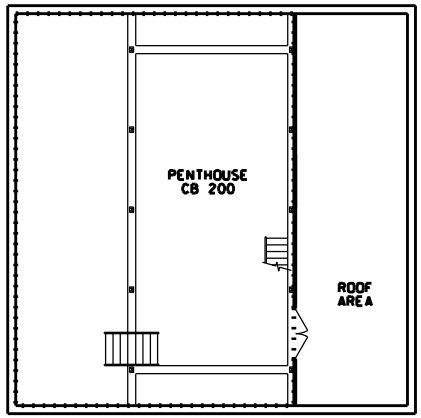
Lighting System

- Lighting and controls were upgraded in 2019 and are in good condition.



BUILDING "CB" 100 LEVEL

NORTH



BUILDING "CB" 200 LEVEL

NORTH

Building CB

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Enclosure System													
1	Enclosure System	General	Precast concrete soffit have rusted exposed rebar.	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
2	Enclosure System	General	Sealants dried and cracking at control joints.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
3	Enclosure System	General	Patch hole in brick where conduit removed.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
4	Enclosure System	General	Precast concrete piers have rusting exposed rebar.	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
Power Systems													
1	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of building CA (Note: CB is sub-fed from CA)	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
							$ 12,000		**$ -**		**$ 4,000**	**$ 16,000**	**$ 23,200**

BUILDING CC



GENERAL OVERVIEW

Use: Library

Year Built: 1969

Total Area: 57,502 SF

Floors: 2

5 Year DMB: $1,734,257

CRV: $21,275,740

FCI: 8.15%

COMMENTS

Roof System

- Trocal single-ply roof installed in 1994.
- Roof warranty expired in 2002.
- Entire roof should be scheduled for replacement.

HVAC System

- Mechanical system was renovated Summer 2017 (reconditioned air handling units and replaced equipment).

Temperature Controls

- Temperature controls were replaced in 2017.

Lighting System

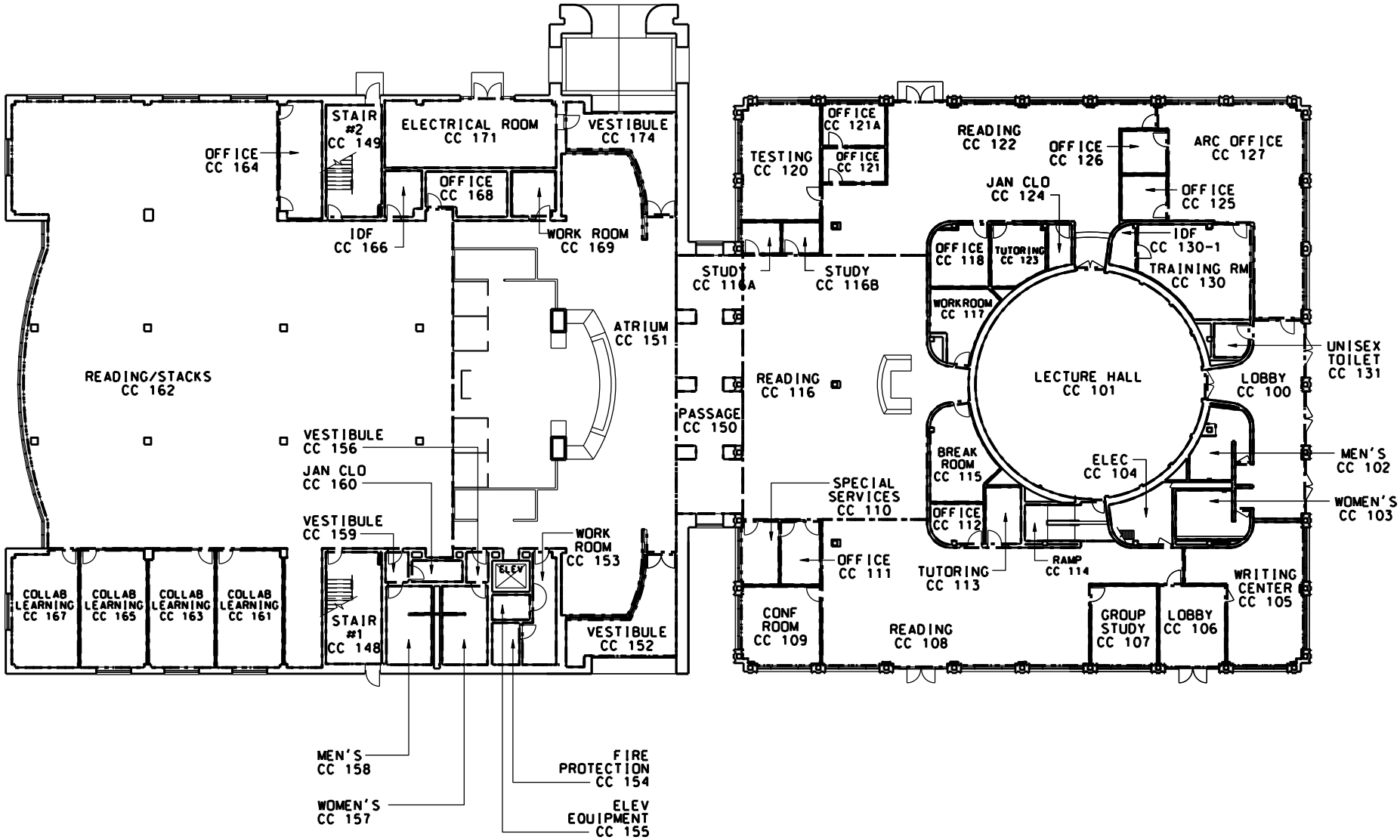
- Lighting and controls were upgraded in 2017 and are in good condition.



Existing Substation

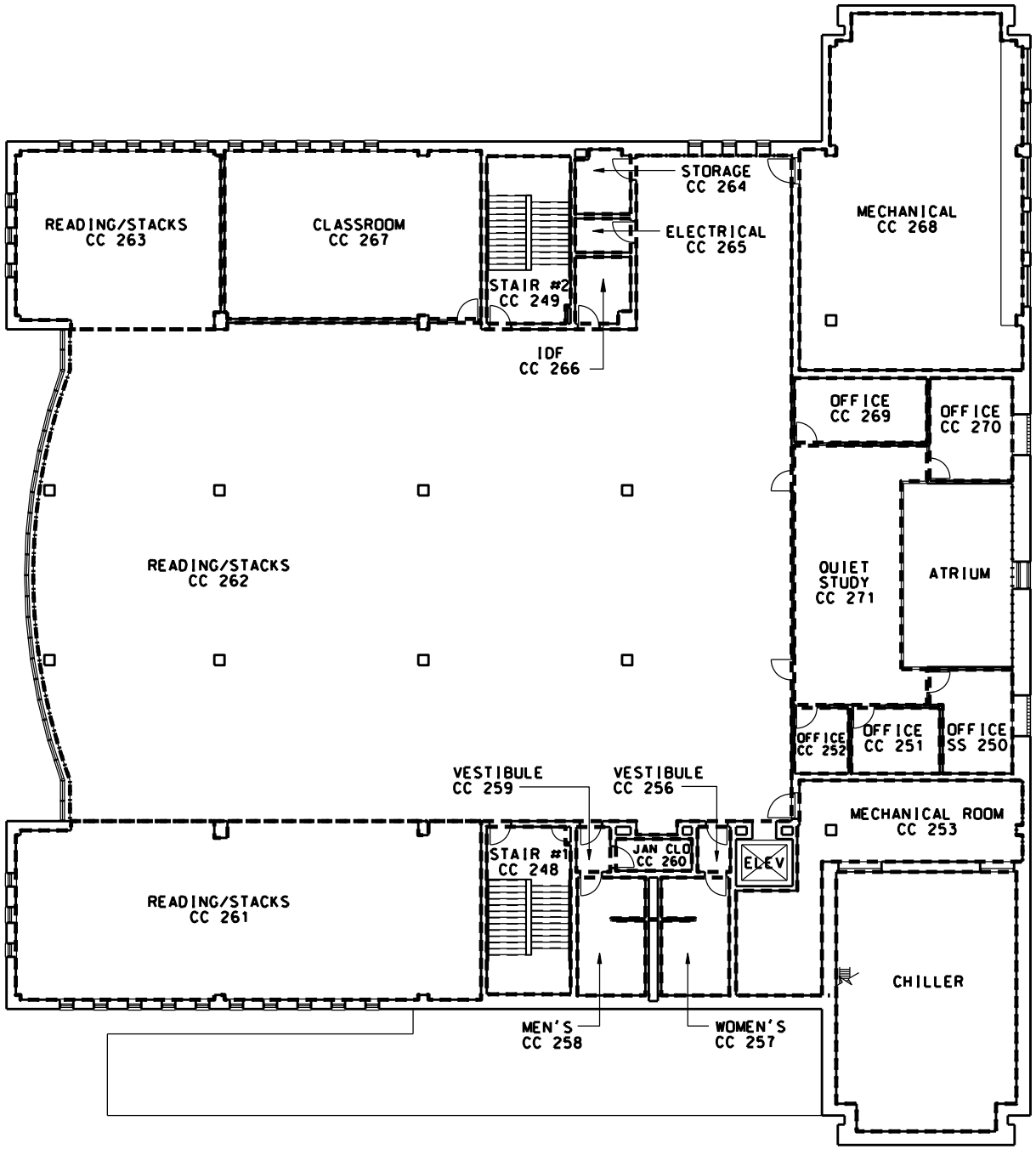


Existing Distribution Equipment



BUILDING "CC" 100 Level

NORTH



BUILDING "CC" 200 LEVEL

NORTH

Building CC

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Roof	Replace membrane roof.	38,500	SF	$ 15.00	$ 577,500					$ 577,500	$ 837,375
Enclosure System													
1	Enclosure System	General	Glass block windows are leaking in two (2) locations.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
2	Enclosure System	General	Sealants dried and cracking at control joints.	1	LS	$ 10,000.00	$ 10,000					$ 10,000	$ 14,500
3	Enclosure System	General	Tuckpoint facebrick and precast concrete.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
4	Enclosure System	General	Cast concrete below arched window sills are cracking.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
5	Enclosure System	General	Replace door seals at mechanical/electrical room exterior doors.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
Finish System													
1	Finish System	General	Replace epoxy flooring in mechanical rooms.	1	LS	$ 10,000.00	$ 10,000					$ 10,000	$ 14,500
2	Finish System	General	Repair gypsum board sofffits.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
3	Finish System	General	Repair vinyl wall covering.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
Plumbing System													
1	Plumbing System	Building	Portion of the domestic cold water distribution piping system is galvanized steel. Due to its age the piping is showing signs of deterioration and should be replaced.	60	LF			$ 55.00	$ 3,300			$ 3,300	$ 4,785
2	Plumbing System	Building	Portion of the cold and hot water piping has missing and damaged insulation. The insulation should be replaced .	19,791	SF			$ 0.77	$ 15,239			$ 15,239	$ 22,097
Power Systems													
1	Power Systems	Electrical Room C171	Main electrical equipment from 1993 addition. This equipment is nearing the end of its life expectancy and should be considered for replacement in the next renovation (MV switches, Transformer, main switchboard, distribution panels and branch panelboards).	1	LS					$415,000.00	$ 415,000	$ 415,000	$ 601,750
2	Power Systems	Electrical Room C104	Legacy equipment from the original 1968 building is passed it's life expectancy and should be replaced with the next renovation.	1	LS					$121,000.00	$ 121,000	$ 121,000	$ 175,450
3	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of building CA.	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
4	Power Systems	General	Most of the electrical equipment had no indication of maintenance or testing since original installation, while the main electrical equipment was last tested in 2013. Testing / maintenance is recommended at regular intervals.	1	LS					$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	Stairs	Guard rails are not compliant with current code. Balluster spacing greater than 4". No cane rail where below 80".	2	EA	$ 7,500.00	$ 15,000					$ 15,000	$ 21,750
2	Code Systems and Barrier Free	Stairs	No handrail at steps to Lecture Hall CC101.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
							$ 630,000		**$ 18,539**		**$ 547,500**	**$ 1,196,039**	**$ 1,734,257**

BUILDING CD



GENERAL OVERVIEW

Use: Meter

Year Built:

Total Area: 1,562 SF

Floors: 1

5 Year DMB: $706,144

CRV: $656,040

FCI: 107.64%

COMMENTS

Roof System

- Roof replaced in 1998.

HVAC System

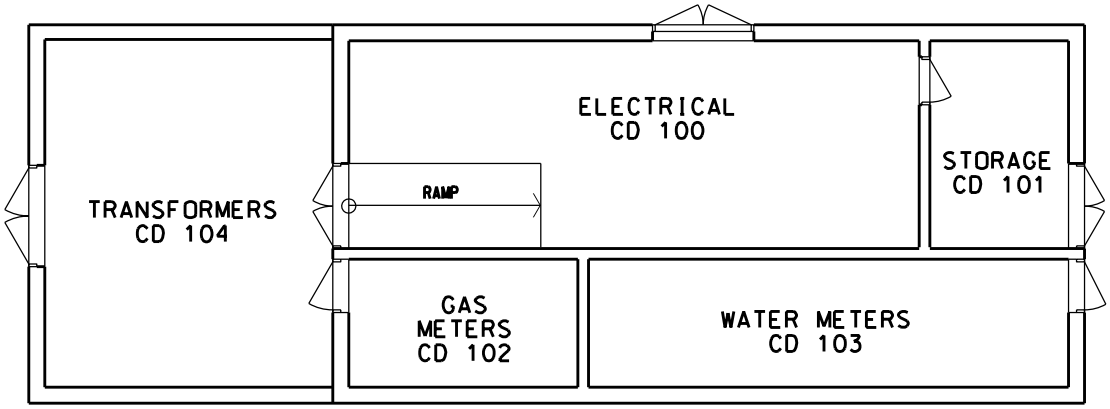
- Ventilation added for the transformer room in Summer 2013.
- Electrical unit heaters were replaced in approximately 2019.

Temperature Controls

- Controls added to the transformer room ventilation in Summer 2013.



Existing Switchgear



BUILDING "CD" 100 LEVEL

NORTH

Building CD

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Power Systems													
1	Power Systems	Main Electrical Room	MV Switch lineup appears to have been installed at different intervals of time, ranging from 2004, 1993 and 1969. Switches from 1993 and earlier are nearing or past life expectancy and should be considered for replacement within the next renovation.	7	EA					$ 60,000.00	$ 420,000	$ 420,000	$ 609,000
2	Power Systems	Main Electrical Room	Secondary power panels, transformers and disconnects serving the receptacles, lighting, heating, ventilation of building CD appears original from 1968. This equipment is passed it's life expectancy and should be replaced with the next renovation.	1	LS					$ 40,000.00	$ 40,000	$ 40,000	$ 58,000
3	Power Systems	Main Electrical Room	Pullbox was observed with partially open cover and exposed wiring. This is a code violation. It is recommended this be corrected.	1	LS					$ 500.00	$ 500	$ 500	$ 725
4	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of Building CA.	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
5	Power Systems	General	The electrical equipment had no indication of recent maintenance or testing. The labels indicate the latest testing was done in 2013 on the equipment. Testing / maintenance is recommended at regular intervals.	1	LS					$ 10,000.00	$ 10,000	$ 10,000	$ 14,500
Lighting System													
1	Lighting System	General	Lighting consists of fluorescent fixtures containing T12 lamps. Lighting should be replaced throughout with LED.	1,562	SF					$ 8.00	$ 12,496	$ 12,496	$ 18,119
											$ 486,996	**$ 486,996**	**$ 706,144**

BUILDING CE



GENERAL OVERVIEW

Use: Classrooms, Labs and Offices

Year Built: 1981

Total Area: 63,737 SF

Floors: 2

5 Year DMB: $232,943

CRV: $30,593,760

FCI: 0.76%

COMMENTS

Roof System

- Johns Manville EPDM room installed in 2013.
- Roof warranty expires in 2028.

Finish System

- All finishes have been updated.

HVAC System

- HVAC systems were replaced in 2018.

Plumbing System

- Plumbing and medical gas systems were replaced in 2018.

Temperature Controls

- Temperature controls were replaced in 2018.

Power Systems

- Medium voltage switches and pad mounted transformer were upgraded in 2018 and appear in good condition.

Lighting System

- Lighting and controls were upgraded in 2018 and are in good condition.

Code Systems and Barrier Free

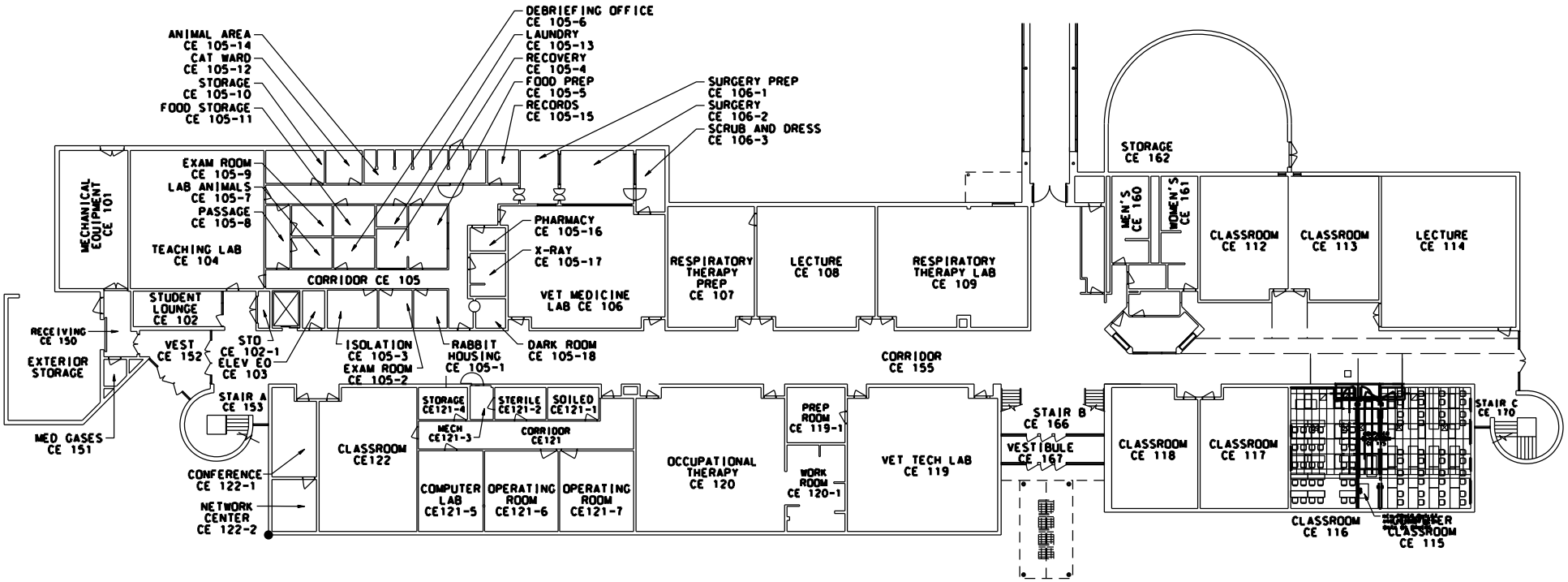
- Tiered lecture hall seating does not have barrier free space allocated throughout the space. No action required.



Existing Generator

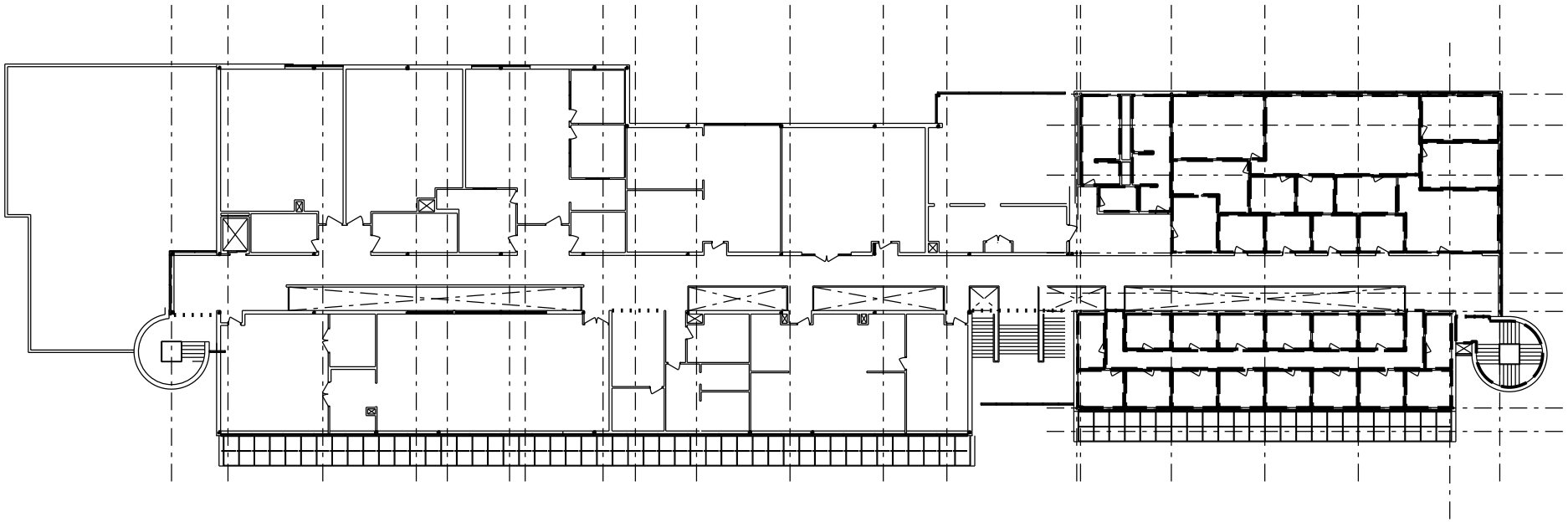


Existing Distribution Equipment



BUILDING "CE" 100 LEVEL

NORTH



BUILDING "CE" 200 LEVEL

NORTH

Building CE

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Enclosure System													
1	Enclosure System	West Side	Soffits on west side of building have water damage.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
HVAC System													
1	HVAC System	Building	Replace roof mounted exhaust fan (no fan identification) with Greenheck model GB-071.	1	EA			$ 750.00	$ 750			$ 750	$ 1,088
Power Systems													
1	Power Systems	Electrical Room E213	Main switchboard and electrical distribution equipment appear to have been installed in 1981. This equipment is past it's life expectancy and should be considered for replacement within the next renovation.	1	LS					$130,000.00	$ 130,000	$ 130,000	$ 188,500
2	Power Systems	Courtyard	60kW Natural Gas Generator manufactured date: 2003, with 955 running hours. Generators purpose is to back up MDF equipment and doesn't appear to serve life safety loads. Last indication of maintenance on the generator was noted to be in 2016. Battery date code indicates it was manufactured in 2007. Testing / maintenance is recommended at regular intervals.	1	LS					$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
3	Power Systems	Mechanical E101	ATS appears to have been installed in 2004. The latest testing date is not legible. The cover of the Generator Annunciator Panel is not secure and should be corrected. Testing / maintenance is recommended at regular intervals.	1	LS					$ 1,000.00	$ 1,000	$ 1,000	$ 1,450
4	Power Systems	Connector	ADA pushbutton covers (interior and exterior) are loose, and conductors are visible. These were possibly undergoing maintenance during the site visit.	4	EA					$ 250.00	$ 1,000	$ 1,000	$ 1,450
5	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of Building CA.	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
6	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 1981. Testing / maintenance is recommended at regular intervals.	1	LS					$ 10,000.00	$ 10,000	$ 10,000	$ 14,500
Lighting System													
1	Lighting System	IDF Closet E213-2	Lighting consists of fluorescent fixtures containing T8 lamps. Lighting should be replaced with LED.	1	LS					$ 400.00	$ 400	$ 400	$ 580
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	Stairwells - First Floor	No guard rail protection for stringers below 80".	4	EA	$ 1,000.00	$ 4,000					$ 4,000	$ 5,800
						$ 6,000		**$ 750**		**$ 153,900**		**$ 160,650**	**$ 232,943**

BUILDING CF



GENERAL OVERVIEW

Use: Classrooms and Labs

Year Built: 1970

Total Area: 19,629 SF

Floors: 1

5 Year DMB: $27,550

CRV: $8,891,937

FCI: 0.31%

COMMENTS

Roof System

- Firestone EPDM roof installed in 2015.
- Roof warranty expires in 2030.

Finish System

- Finishes updated in 2015.

HVAC System

- All new HVAC equipment provided including ductwork in Summer 2015.

Plumbing System

- Plumbing replaced in Summer 2015.

Fire Protection

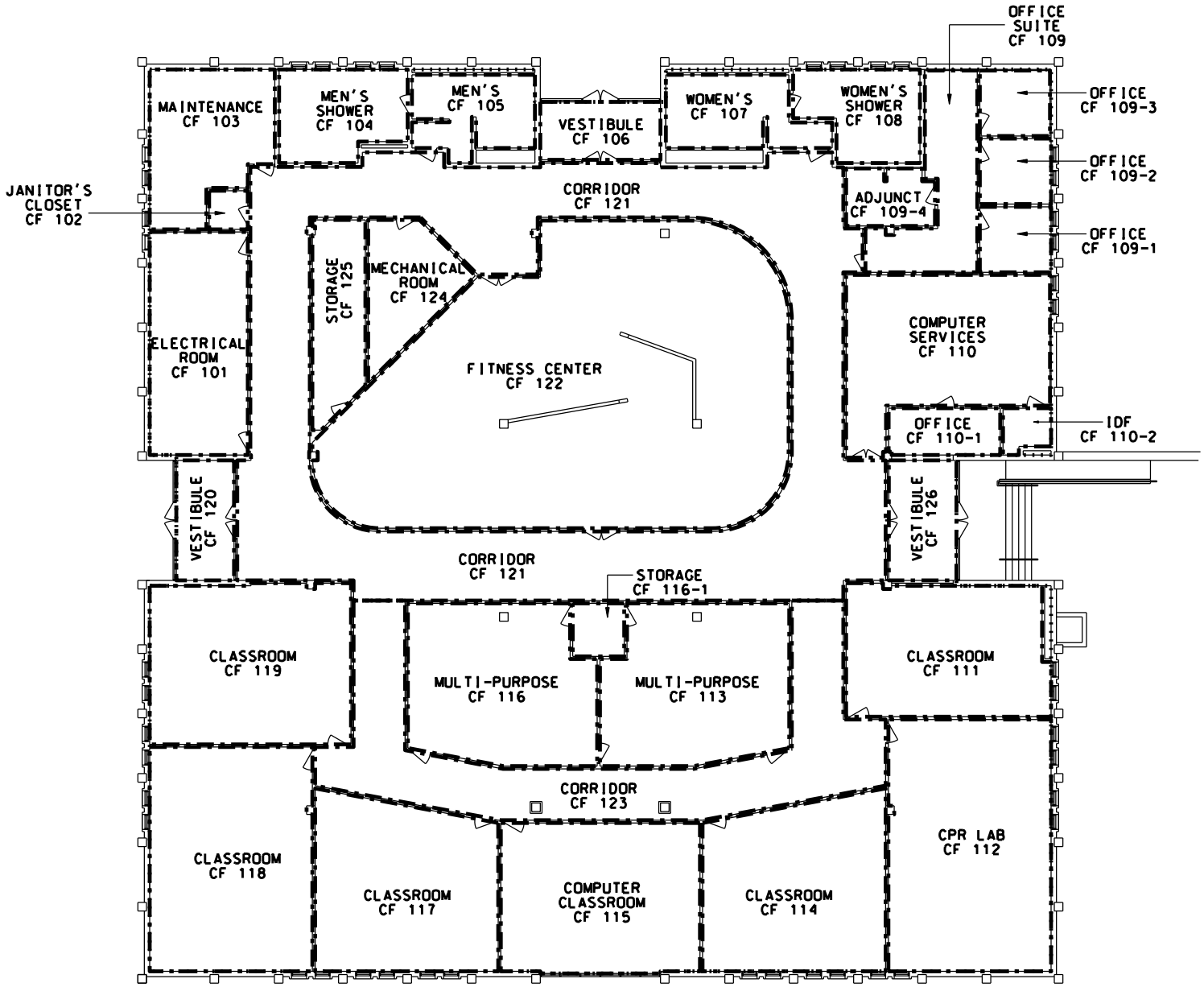
- Fire rated walls in lieu of automatic fire suppression system were added in 2015.

Temperature Controls

- Temperature controls replaced in Summer 2015.

Power Systems

- Electrical equipment was upgraded in 2015 and is in good condition.



BUILDING "CF" 100 LEVEL

Building CF

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Enclosure System													
1	Enclosure System	General	Patch holes in wall on north, east and west elevations.	3	EA	$ 1,000.00	$ 3,000					$ 3,000	$ 4,350
2	Enclosure System	General	Concrete soffit on west elevation is cracked.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
HVAC System													
1	HVAC System	General	Corrosion at seals of CF CP-1 and CP-2 was observed. Plan for replacement I near future.	2	EA			$ 1,500.00	$ 3,000			$ 3,000	$ 4,350
Power Systems													
1	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of Building CA.	1	LS				$ -	$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
2	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 2015. Testing / maintenance is recommended at regular intervals.	1	LS				$ -	$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
							$ 4,500		**$ 3,000**		**$ 11,500**	**$ 19,000**	**$ 27,550**

BUILDING CG



GENERAL OVERVIEW

Use: Student Services

Year Built: 1969, 2012 Renovation

Total Area: 19,708 SF

Floors: 1

5 Year DMB: $1,204,209

CRV: $8,080,280

FCI: 14.90%

COMMENTS

Roof System

- Firestone EPDM roof installed in 2018.
- Roof warranty expires in 2033.

HVAC System

- All new HVAC system installed in 2012.
- Existing rooftop units were refurbished. RTU G-1 and RTU G-2, Seasons-4, DX cooling with gas heat (multi-zone). Originally installed in 2005, 18 years old. Median useful life expectancy

Plumbing System

- Toilets renovated and piping replaced in 2012.

Fire Protection

- Corridors were fire rated in lieu of adding fire suppression.

Temperature Controls

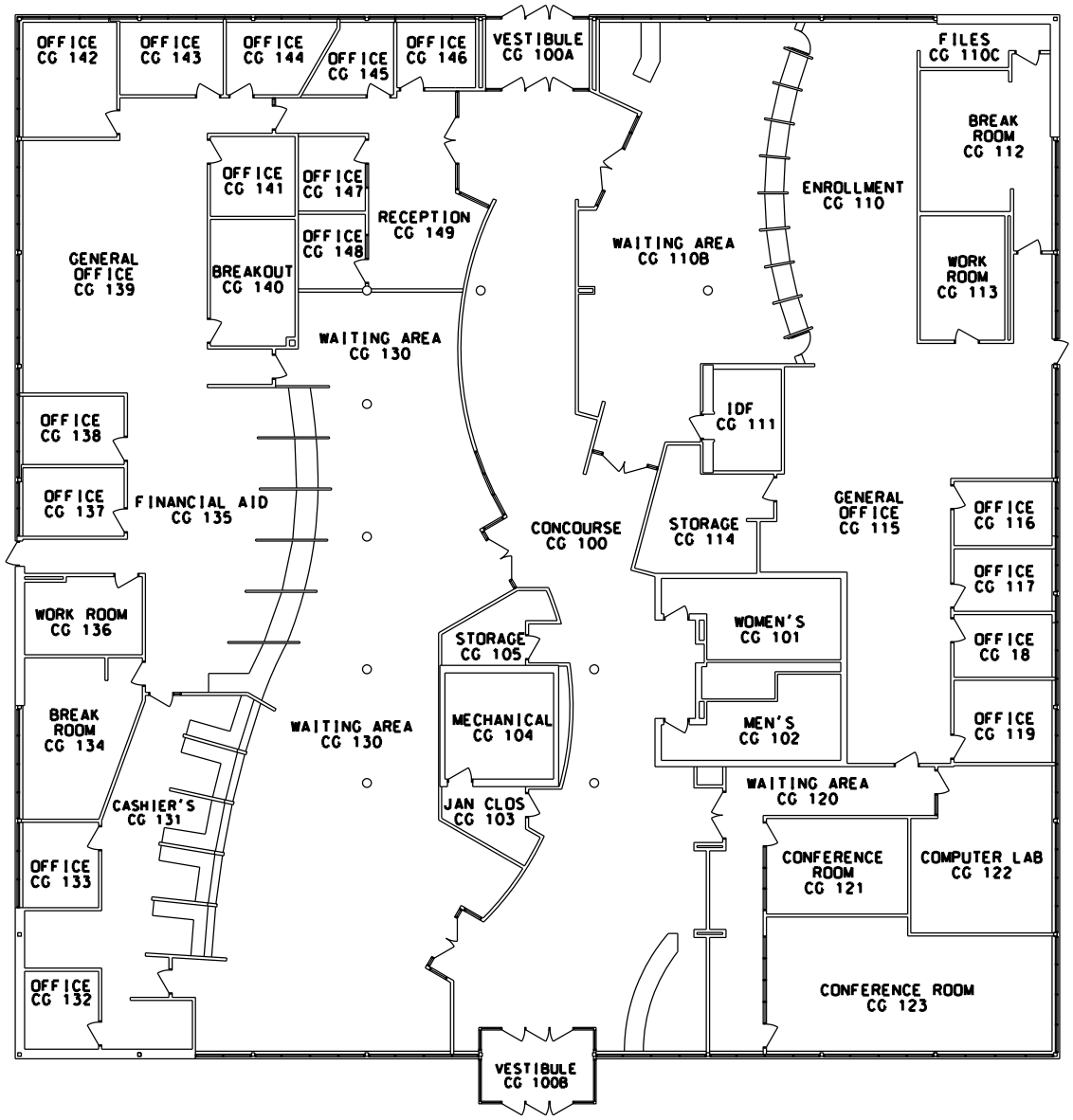
- Replace existing Continuum (Andover) BAS controls with new Tridium (Honeywell) system.

Power Systems

- Electrical equipment was upgraded in 2012 and is good condition.
- The existing generator serves a single automatic transfer switch which already serves optional standby loads. The generator will not be permitted to also serve future life safety loads without distribution system modifications.

Lighting System

- Lighting and controls were upgraded in 2012 and are in good condition. The majority of the existing light fixtures utilize T8 fluorescent lamps. Emergency lighting is provided via batteries. Within the next renovation, new LED lighting and controls should be included to meet current ASHRAE standards, and emergency lighting should be provided for all exterior egress landings and for exterior egress paths.
- Exit signs are LED.



BUILDING "CG" 100 LEVEL

NORTH

Building CG

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	General	Review roof at covered walkway; signs of water infiltration in piers.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
BAS System													
1	BAS System	General	Replace existing Continuum (Andover) BAS controls with new Tridium (Honeywell).	19,708	SF			$ 10.00	$ 197,080		$ -	$ 197,080	$ 285,766
HVAC System													
1	Multizone Rooftop Air Handling Unit	Roof	Replace nominal 40 ton DX/gas rooftop unit.	1	EA			$ 265,000.00	$ 265,000		$ -	$ 265,000	$ 384,250
Power Systems													
1	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 2012. Testing / maintenance is recommended at regular intervals.	1	LS					$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
2	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to provide power system study and labeling to match that of building CA.	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
3	Power Systems	General	A convenience receptacle on the roof is missing a cover.	1	LS					$ 165.00	$ 165	$ 165	$ 239
Lighting System													
1	Lighting System	General	Lighting consists of fluorescent fixtures. Lighting should be replaced with LED.	19,708	SF		$ -		$ -	$ 18.00	$ 354,744	$ 354,744	$ 514,379
							$ 2,000		**$ 462,080**		**$ 366,409**	**$ 830,489**	**$ 1,204,209**

BUILDING CH



GENERAL OVERVIEW

Use: Classrooms and Student Services

Year Built: 1968

Total Area: 34,430 SF

Floors: 2

5 Year DMB: $1,486,671

CRV: $13,944,150

FCI: 10.66%

COMMENTS

Roof System

- Trocal single-ply roof installed in 1998. Roof warranty expired in 2010. Upper roof was recently replaced. Lower roof should be scheduled for replacement.

Elevator

- Elevator, including machine and cab, should be replaced.

HVAC System

- All new HVAC system installed in 2011. HVAC systems should be retro-commissioned.

Plumbing System

- Toilets renovated and piping replaced in 2011.

Fire Protection

- Fire suppression added in 2011.

Temperature Controls

- Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system.

Power Systems

- Electrical equipment was upgraded in 2011 and is good condition.

Lighting System

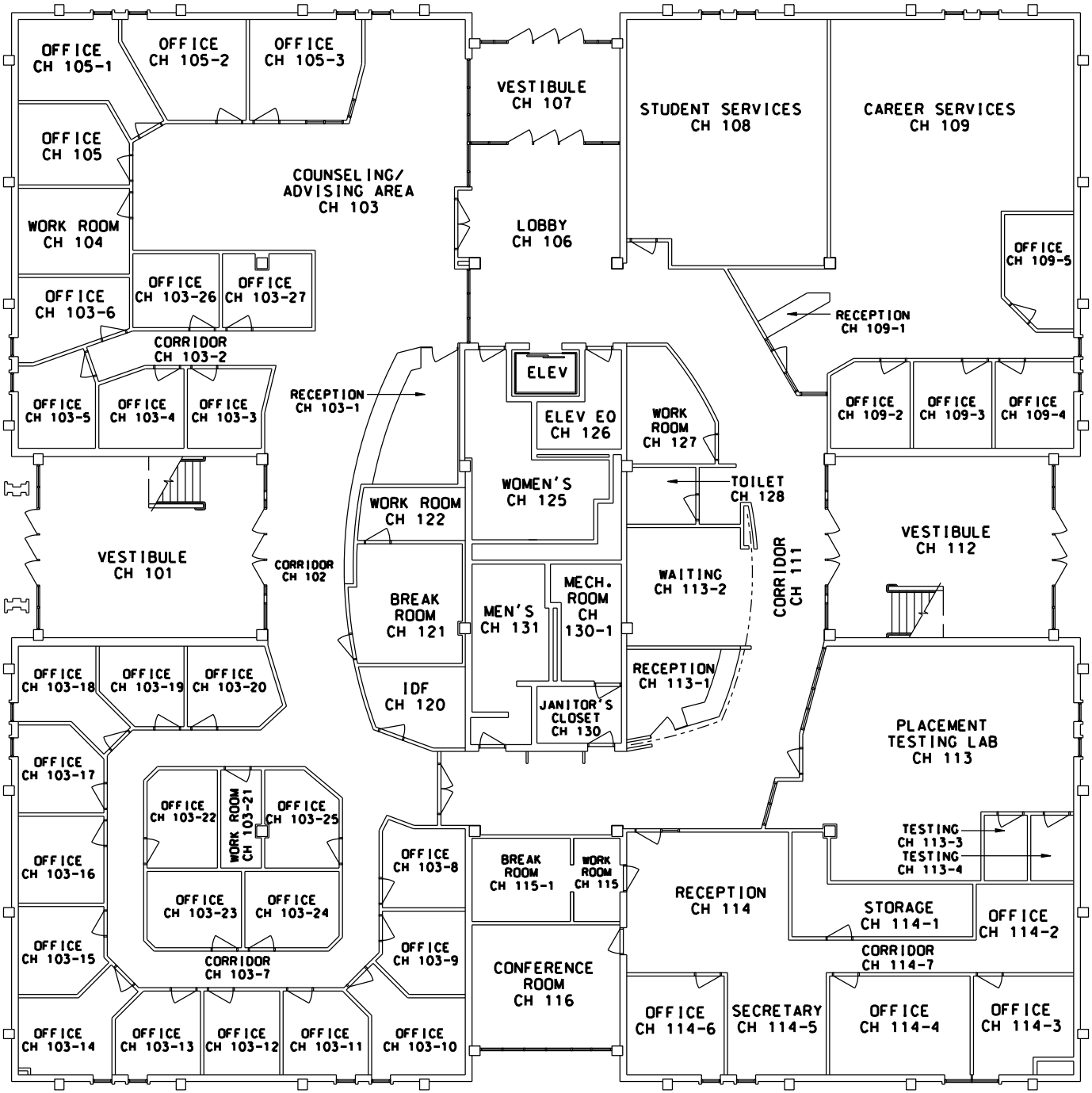
- Lighting and controls were upgraded in 2011 and are generally in good condition. The majority of the existing light fixtures utilize fluorescent lamps. Emergency lighting is provided via batteries. Within the next renovation, new LED lighting and controls should be included to meet current ASHRAE standards, and emergency lighting should be provided for all exterior egress landings.

- Exit signs are LED.

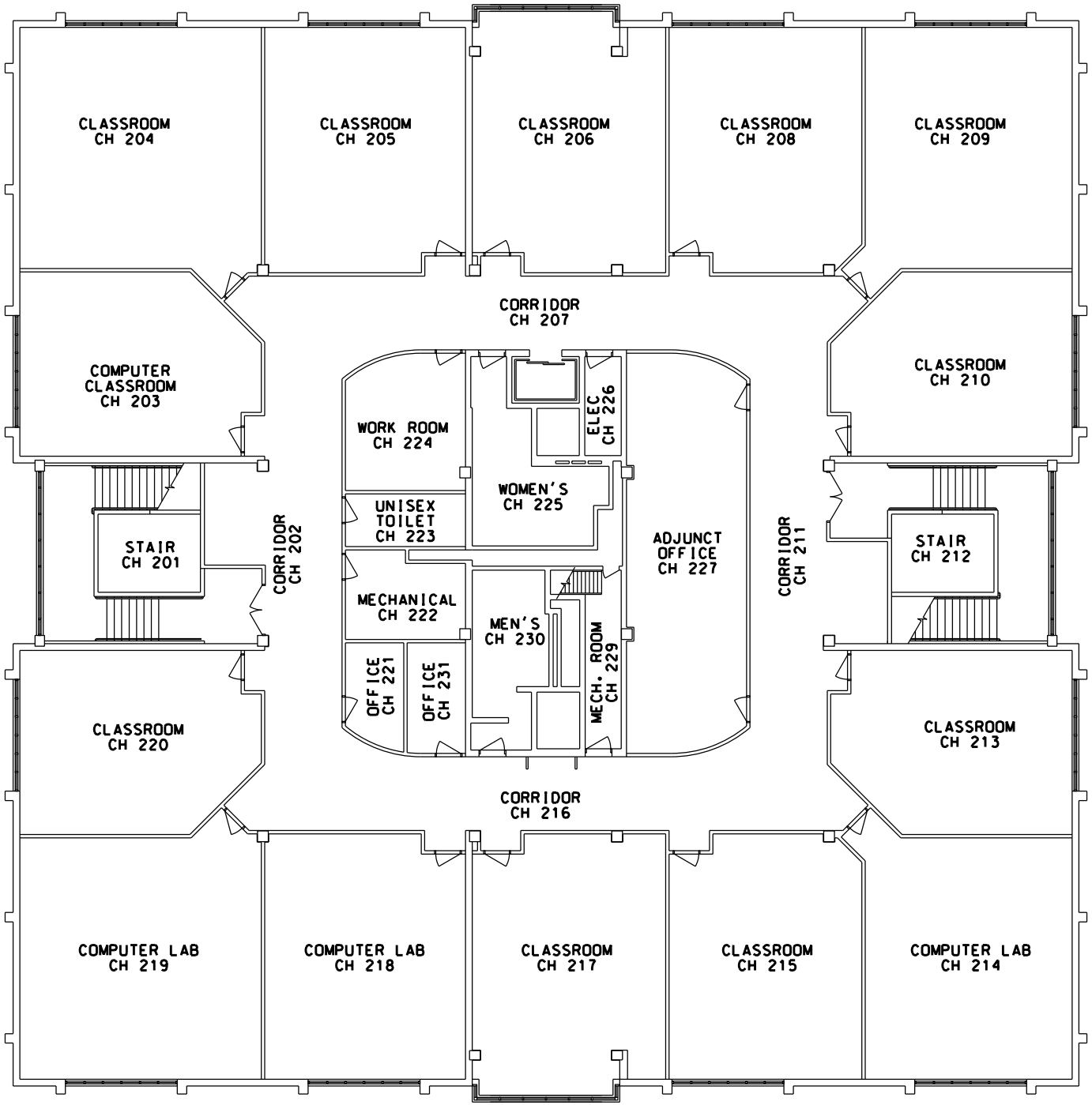
- North Lobby: Emergency lighting levels in this area are likely below code minimum. Revision costs are included in Lighting item 1, above.

- South Lobby: Emergency lighting levels in this area are likely below code minimum. Revision costs are included in Lighting item 1, above.

- Building Entrances: Lights at building entrances generally need to be cleaned.



BUILDING "CH" 100 LEVEL



BUILDING "CH" 200 LEVEL

Building CH

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Architectural System													
1	Elevator	General	Replace elevator equipment and cab.	1	LS	$140,000.00	$ 140,000					$ 140,000	$ 203,000
2	Roof	Roof	Replace roof on lower section	30,730	SF	$ 14.00	$ 430,220					$ 430,220	$ 623,819
HVAC System													
1	HVAC System	General	Recommend adding supplemental split system A/C unit to serve IDF Closet H120.	1	LS			$ 2,500.00	$ 2,500			$ 2,500	$ 3,625
2	HVAC System	General	Repair/replace boiler stack on roof; currently plastic wrapped.	1	LS			$ 750.00	$ 750			$ 750	$ 1,088
3	HVAC System	Building	Perform a mechanical systems retro commissioning to restore the building mechanical systems back to the orginal desing intent and complete air and water system balance	34,430	SF			$ 5.00	$ 172,150			$ 172,150	$ 249,618
BAS System													
1	Building Controls Systems	General	Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell).	34,430	SF			$ 10.00	$ 344,300			$ 344,300	$ 499,235
Power Systems													
1	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 2011. Testing / maintenance is recommended at regular intervals.	1	LS					$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
2	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to provide power system study and labeling to match that of building CA.	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
3	Power Systems	General	Several clocks in the building are not master system clocks. Quantity is approximate.	12	EA					$ 1,000.00	$ 12,000	$ 12,000	$ 17,400
4	Power Systems	Roof	A junction box on the roof near a mechanical unit is connected to a long length of flexible conduit that is not properly supported and not suitable for the exterior, wet location.	1	LS					$ 3,000.00	$ 3,000	$ 3,000	$ 4,350
5	Power Systems	Elevator	Re-work power and controls as required to support elevator replacement	1	LS					$ 25,000.00	$ 25,000	$ 25,000	$ 36,250
Lighting System													
1	Lighting System	General	Lighting consists of fluorescent fixtures. Lighting should be replaced with LED.	34,430	SF					$ 18.00	$ 619,740	$ 619,740	$ 898,623
2	Lighting System	Dean of Students H114	Lighting in the Dean of Students office is LED, however there is a mix of color temperatures, making the light from approximately (3) light fixtures appear to be more blue.	1	LS					$ 3,500.00	$ 3,500	$ 3,500	$ 5,075
3	Lighting System	West Lobby (Exterior)	An exterior light fixture outside the West Lobby was on during the day. The photocell that is attached to the fixture may have failed.	1	EA					$ 1,000.00	$ 1,000	$ 1,000	$ 1,450
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	Stairwells - First Floor	No cane rail protection for stringers below 80".	2	EA	$ 1,000.00	$ 2,000					$ 2,000	$ 2,900
							$ 2,000		$ 519,700		$ 675,740	$ 1,197,440	$ 1,736,288

BUILDING CI



GENERAL OVERVIEW

Use: Offices, Storage, Shops

Year Built: 1970

Total Area: 16,523 SF

Floors: 1.5

5 Year DMB: $1,450,209

CRV: $6,939,660

FCI: 20.90%

COMMENTS

Roof System

- Johns Manville roof installed in 2003. Roof warranty expired in 2018. Roof should be scheduled for replacement.

HVAC System

- Furnace F-3 was recently replaced (2022). All other major equipment appears to be original from 2003. Consider adding air conditioning to Level 1 shop areas; occupants noted uncomfortable heat during summer months.

Plumbing System

- Domestic water heaters replaced in 2019. All other plumbing systems appear to be original from 2003.

Temperature Controls System

- Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system.

Power Systems

- Electrical equipment was installed in 2003 and is in good condition.

Lighting System

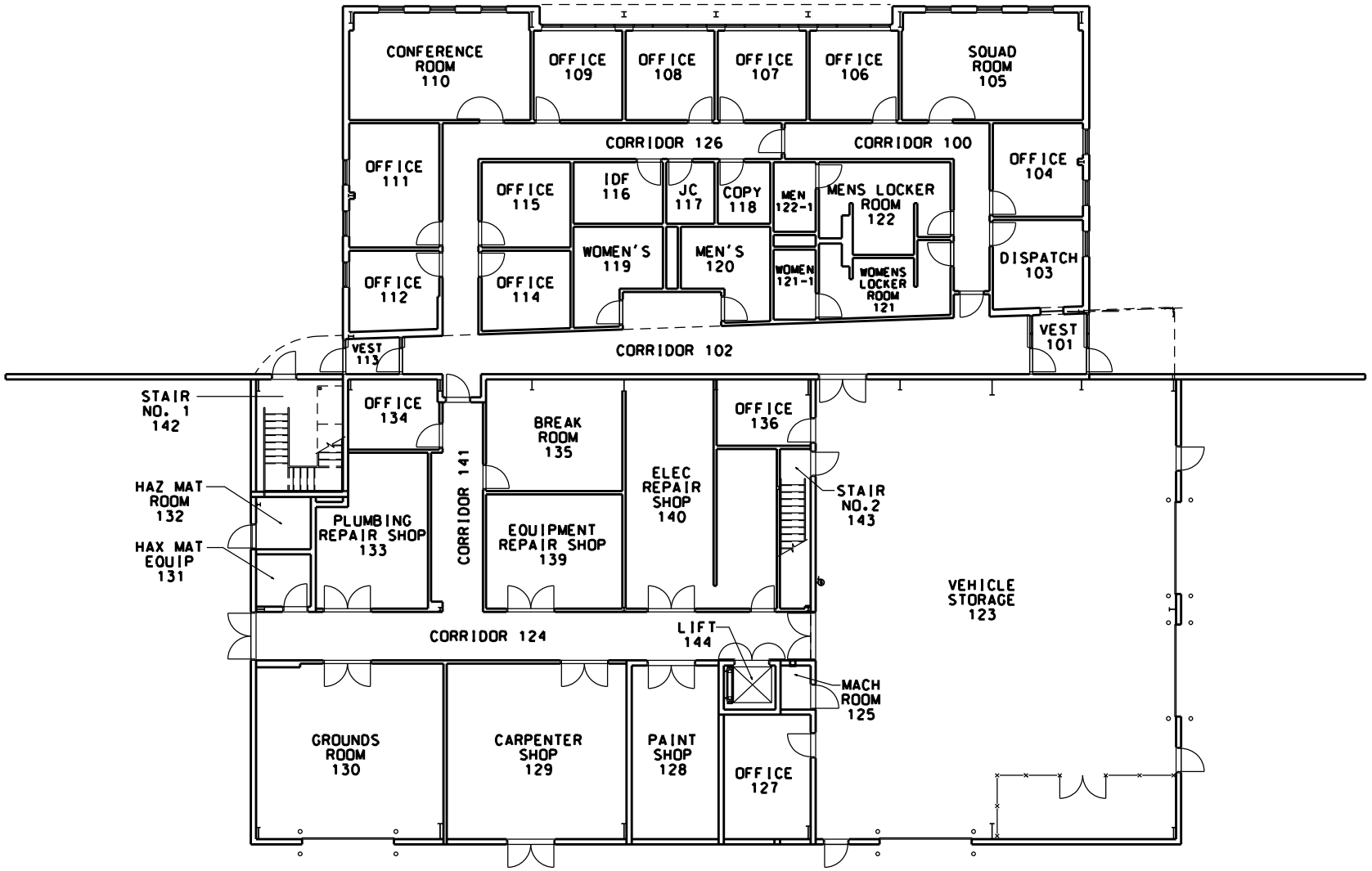
- Exit signs are LED.
- Stair 142/204: All lights were off in Stair 142/204 with no apparent local means of control. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.
- Emergency lighting levels and emergency lighting controls are not compliant with current codes. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.
- Paint Shop 128: LED lighting is installed in the Paint Shop, but the light level is too low. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.
- Electrical Storage 140: LED panels have been installed in Elec Storage 140, however, light levels are too low. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.

- Office 134: LED light fixtures have been installed in Office 134, however, light levels are too low and the color temperature is inconsistent with the rest of the building. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.

- Toilet Rooms: Normal lighting levels in some Toilet Room stalls are low. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.

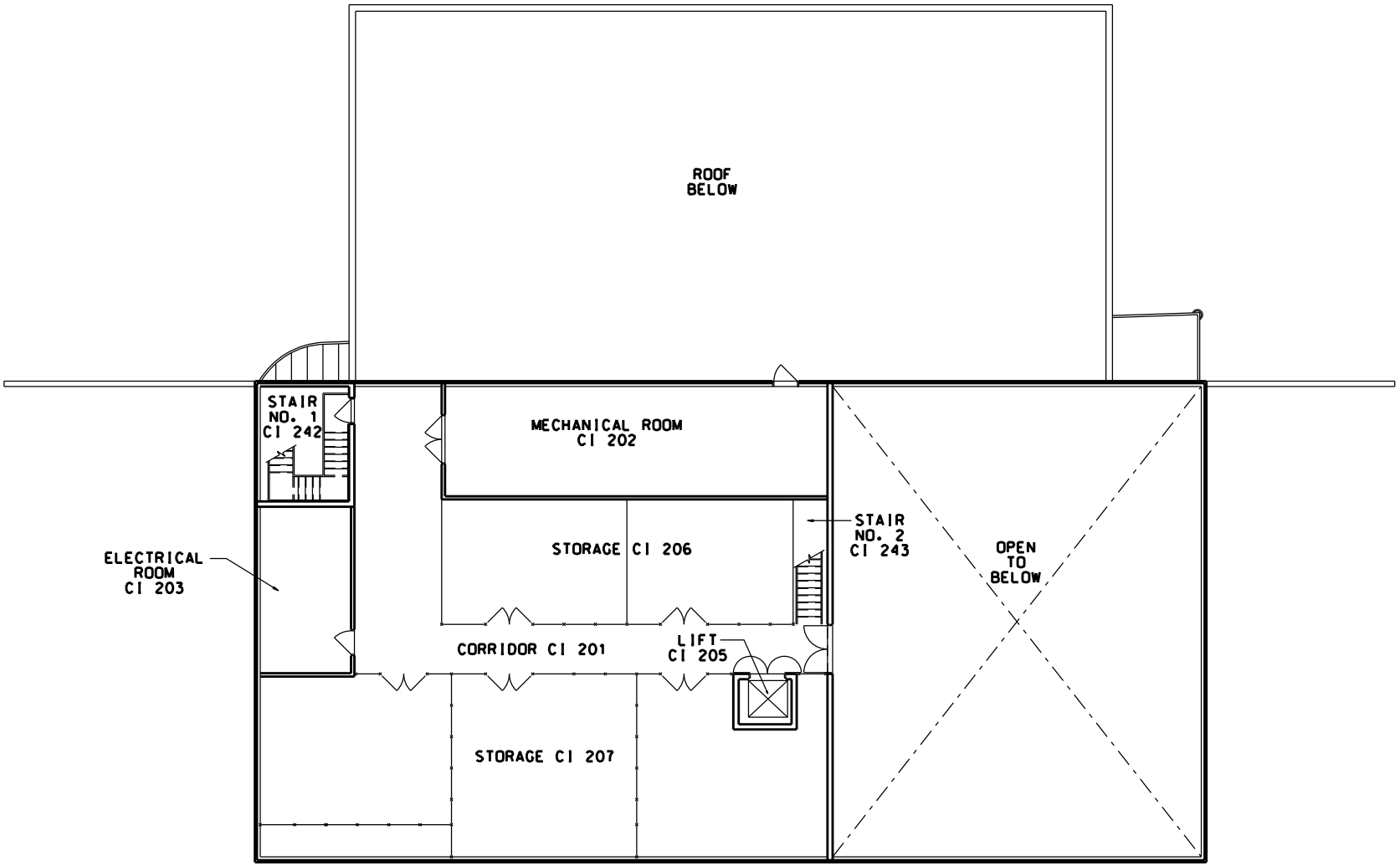
- Squad Room 105: Downlights are not operational. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.

- Corridor 102: A number of light fixtures in this main corridor are not functional. Revision costs are included in Lighting Item 1 on attached cost spreadsheet.



BUILDING "CI" 100 LEVEL

NORTH



BUILDING "CI" 200 LEVEL

Building CI

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Roof	Clean and seal translucent panels at entries.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
1	Roof System	Roof	Repalce roof	16,523	LS	$ 14.00	$ 231,322					$ 231,322	$ 335,417
Finish System													
1	Finish System	Mezzanine	Numerous cracks in mezzanine floor should be repaired and control joints added.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
HVAC System													
1	HVAC System	Building	Perform mechanical system retro-commissioning to restore the building mechanical system back to the original design intent and complete an air and water system balance report to identify potential operational issues.	1	LS			$ 47,300.00	$ 47,300			$ 47,300	$ 68,585
2	HVAC System	Building	Implementation of the recommendations that come out of retro-commissioning activities.	16,523	SF			$ 1.38	$ 22,802			$ 22,802	$ 33,063
Temperature Controls													
1	Temperature Controls	Building	Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system. Commission controls, replace pneumatic operators with electric, calibrate devices, review sequences of operation, etc.	16,523	SF			$ 4.83	$ 79,806			$ 79,806	$ 115,719
Power Systems													
1	Power Systems	General	Life Safety and Optional Standby emergency loads are served from the single 100A automatic transfer switch in the building. This is no longer compliant with the National Electrical Code. A second ATS dedicated to Optional Standby Loads should be added and loads should be redistributed.	1	LS					$ 75,000.00	$ 75,000	$ 75,000	$ 108,750
2	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 2003. Testing / maintenance is recommended at regular intervals.	1	LS					$ 12,500.00	$ 12,500	$ 12,500	$ 18,125
3	Power Systems	General	Arc flash hazard warning labels are generally not installed on distribution equipment. Generic labels are required by code (at minimum). While not required by code, it is recommended to update provide system study and labeling to match that of building CA.	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
4	Power Systems	Outdoor Generator	The 30 kW natural gas generator is approaching 20 years old. The useful life of a generator is 20-40 years. Replace generator with a new 100 kW generator with sufficient capacity to serve all code-required emergency lighting and additional optional standby loads.	1	LS					$ 90,000.00	$ 90,000	$ 90,000	$ 130,500
5	Power Systems	Mechanical Room 202	Panelboard RP-MECH has insufficient clearance from side to side	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
Lighting System													
1	Lighting System	General	In general, lighting consists of fluorescent fixtures containing T8 lamps. Lighting should be replaced throughout with LED with new controls meeting current ASHRAE requirements. Some areas have already been retrofitted to LED, such as the Garage (2950 sqft) and Conference Room 110 (350 sqft).	16,523	SF					$ 18.00	$ 297,414	$ 297,414	$ 431,250
2	Lighting System	Exterior	Paint is peeling from HID parking lot lighting fixtures. Provide new LED light fixtures and new poles.	16	EA					$ 8,000.00	$ 128,000	$ 128,000	$ 185,600
							$ 235,322		**$ 149,908**		**$ 614,914**	**$ 1,000,144**	**$ 1,450,209**

BUILDING CK



GENERAL OVERVIEW

Use: Food Service and Conference

Year Built: 1976

Total Area: 51,880 SF

Floors: 1

5 Year DMB: $3,434,136

CRV: $21,789,600

FCI: 15.76%

COMMENTS

Roof System (High)

- Firestone EPDM roof installed in 2016.
- Roof warranty expires in 2031.

Roof System (East)

- Duro-Last single-ply roof installed in 2005.
- Roof warranty expired in 2020.

Roof System (West)

- Johns Manville single-ply roof installed in 2010.
- Roof warranty expires in 2025.

HVAC Systems

- Existing rooftop HVAC units (3) have exceeded their useful life and should be replaced.
- Steam heating system serving connector, including steam boiler, should be removed and replaced with electric heat.

Temperature Controls

- Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system.

Power Systems

- Most electrical equipment was upgraded in 2005 and that equipment is generally in good condition. The 25 kW Kohler natural gas generator located on the roof was also installed at that time to serve emergency lighting in 80% of the building area.
- Roof: Roof disconnect switches for mechanical equipment are extremely rusty and should be replaced. Revision cost is included in Power Systems Item 8 on attached cost spreadsheet.

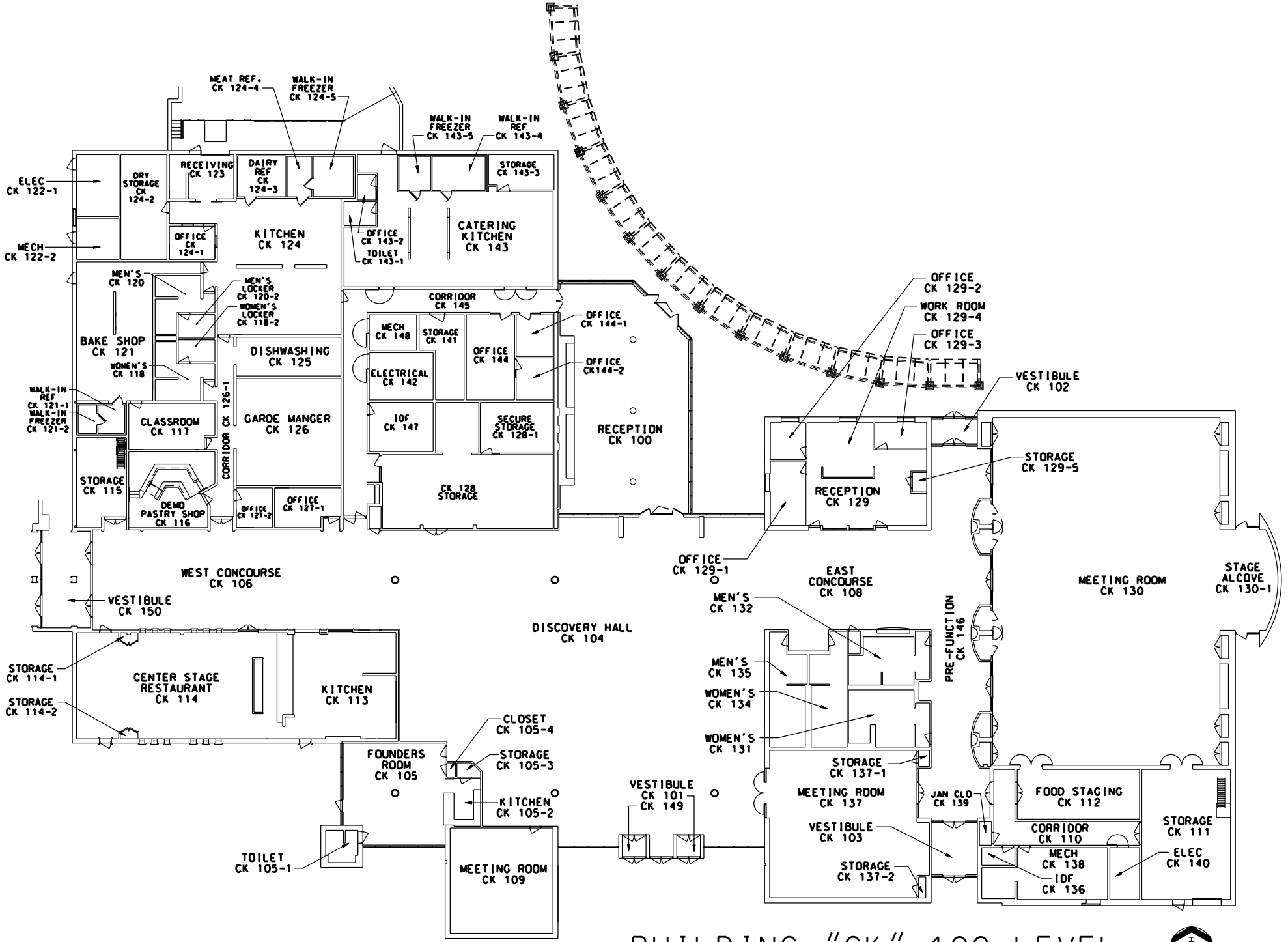
Lighting System

- Lighting and controls were upgraded in 2005 in about 80% of the building area and are generally in good condition. The majority of the existing light fixtures utilize T8 and compact fluorescent lamps. Emergency lighting is provided via the emergency generator in these areas. Within the next renovation, new LED lighting and controls should be included to meet current ASHRAE standards.

- Exit signs are LED.



Existing Outdoor Primary Switch and Transformer



BUILDING "CK" 100 LEVEL

Building CK

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	North Entrance	Check for roof leaks around translucent roof panels at north entrance.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
Enclosure System													
1	Enclosure System	General	Sealants dried and cracking at control joints	1	LS	$ 4,000.00	$ 4,000					$ 4,000	$ 5,800
2	Enclosure System	Southeast Corner	Repair cracked brick at overhead door (Storage CK111) - possible bearing issue	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
3	Enclosure System	Connector to Building CM	Tuck point and repair brick	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
4	Enclosure System	Southwest Corner	Clean brick at SW corner of building - possible roof leak	1	LS	$ 500.00	$ 500					$ 500	$ 725
5	Enclosure System	Kitchen	Replace rusted door & frames to loading dock	1	LS	$ 2,500.00	$ 2,500					$ 2,500	$ 3,625
6	Enclosure System	Southwest Corner	Check for leaks in sloping curtain wall in SW corner of building	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
7	Enclosure System	Connector to Building CM	Add sill flashing to direct water away from brick	1	LS	$110,000.00	$ 110,000					$ 110,000	$ 159,500
Finish System													
1	Finish System	General	Repair water damage to interior soffits	1	LS	$ 2,500.00	$ 2,500					$ 2,500	$ 3,625
HVAC System													
1	HVAC System	Building	Perform mechanical system retro-commissioning to restore the building mechanical system back to the original design intent and complete an air and water system balance report to identify potential operation issues.	1	LS			$ 91,850.00	$ 91,850			$ 91,850	$ 133,183
2	HVAC System	Roof	Replace HV/MUA units 1,2,&3	3	EA			$ 9,075.00	$ 27,225			$ 27,225	$ 39,476
3	HVAC System	Roof	Replace exhaust fans EF-2 and EF-3.	2	EA			$ 6,050.00	$ 12,100			$ 12,100	$ 17,545
4	HVAC System	Roof	Replace damaged powered unit.	1	EA			$ 6,650.00	$ 6,650			$ 6,650	$ 9,643
5	HVAC System	Building	Implementation of the recommendations that come out of the retro-commissioning activates.	51,880	SF			$ 1.38	$ 71,594			$ 71,594	$ 103,812
6	HVAC System	Roof	Replace RTU 1, 2, and 3 with new RTU's with DX cooling and hot water heat	3	EA	$ 3,000.00		$ 70,000.00	$ 210,000	$ 3,000.00		$ 210,000	$ 304,500
7	HVAC System	Mechanical Room and connector	Remove steam boiler and install electric heat in connector	1	LS			$ 25,000.00	$ 25,000			$ 25,000	$ 36,250
Plumbing System													
1	Plumbing System	Mechanical CK-148	Water heaters continue to have issues/problems and are always being fixed. Replace the two water heaters with high efficiency units.	1	LS			$ 18,150.00	$ 18,150			$ 18,150	$ 26,318
Temperature Controls													
1	Temperature Controls	Building	Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system. Replace pneumatic operation with electric. Calibrate devices, review sequences of operation, etc.including terminal box controlers	51,880	SF			$ 10.00	$ 518,800			$ 518,800	$ 752,260
Power Systems													
1	Power Systems	General	Several panels serving kitchen areas in the northwest part of the building were not replaced in 2005 and are due for replacement.	5	EA					$ 5,000.00	$ 25,000	$ 25,000	$ 36,250
2	Power Systems	Exterior	The medium-voltage S&C "PMH" pad-mount switch and 1000 kVA transformer are rusty and appear to be due for replacement. There are insect nests under the top cover of the transformer.	1	LS					$ 54,400.00	$ 54,400	$ 54,400	$ 78,880
3	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 2005. Testing / maintenance is recommended at regular intervals.	1	LS					$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
4	Power Systems	General	Existing arc flash labels (where installed) are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to provide power system study and labeling to match that of building CA.	1	LS					$ 4,000.00	$ 4,000	$ 4,000	$ 5,800
5	Power Systems	Kitchens	In the Main Kitchen and the Demo Pastry Shop (CK-116), there are no apparent means for automatic shutoff for electrical devices under the hoods. These devices must be de-energized upon hood fire suppression activation.	3	EA					$ 5,000.00	$ 15,000	$ 15,000	$ 21,750
6	Power Systems	Men's Toilet CK-132 Women's Toilet CK-131	Two branch panels are located in Toilet Rooms, which is not permitted by the NEC. These panels should be moved. Includes $20,000 for architectural repairs.	2	EA					$ 32,000.00	$ 64,000	$ 64,000	$ 92,800
7	Power Systems	General	Electrical revisions needed in support of HVAC equipment replacement.	51,880	SF					$ 2.00	$ 103,760	$ 103,760	$ 150,452
Lighting System													
1	Lighting System	General	Lighting consists of fluorescent fixtures. Lighting should be replaced with LED.	51,880	SF					$ 18.00	$ 933,840	$ 933,840	$ 1,354,068
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	Northwest Kitchen	Toilet rooms are not accessible, including toilet stalls, lavatories and entry doors. They will require complete remodel. Accessible lockers and bench should also be provided.	1	LS	$ 50,000.00	$ 50,000					$ 50,000	$ 72,500
							$ 179,500		**$ 981,369**		**$ 1,207,500**	**$ 2,368,369**	**$ 3,434,136**

BUILDING CL


MACOMB CENTER
FOR THE PERFORMING ARTS
L BUILDING
FINE AND PERFORMING ARTS
L

GENERAL OVERVIEW

Use: Classrooms, Office and Labs

Year Built: 1982

Total Area: 30,400 SF

Floors: 1

5 Year DMB: $777,545

CRV: $16,476,800

FCI: 4.72%

COMMENTS

Roof System

- JD Chandler roof installed in 2018.

Exterior

- Exterior brick needs to be tuck pointed and coping replaced with full copings.

Finish System

- Finishes updated.

HVAC Systems

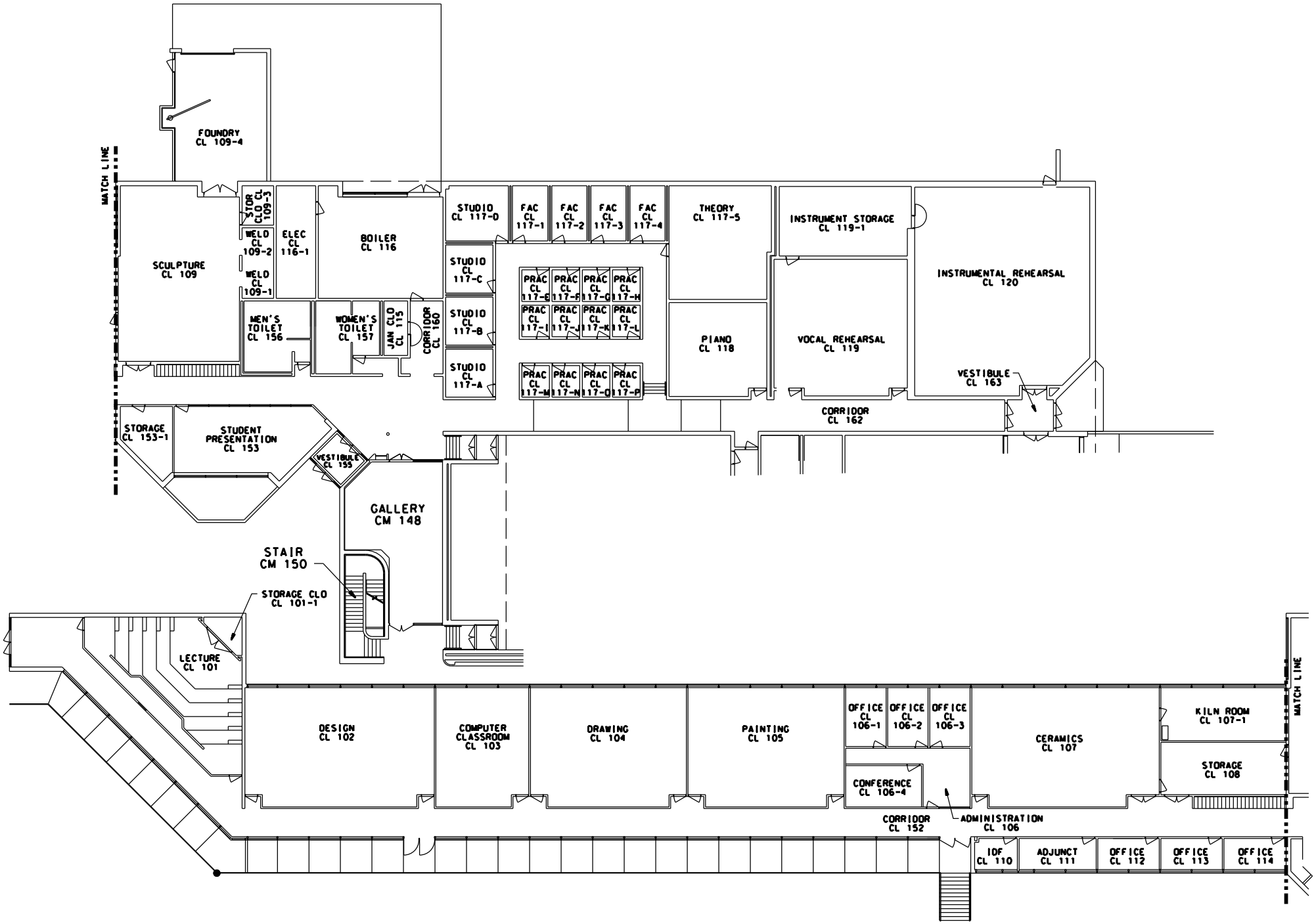
- HVAC equipment, including controls, was replaced in 2018.

Lighting System

- Lighting and controls were upgraded in 2018 and are in good condition.



Existing Switchboard



BUILDING "CL" 100 LEVEL

NORTH

Building CL

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Copings	Replace all copings with full width copings.	1	LS	$ 15,000.00	$ 15,000					$ 15,000	$ 21,750
Enclosure System													
1	Finish System	All Elevations	Clean and tuck point brick.	1	LS	$ 12,000.00	$ 12,000		$ -		$ -	$ 12,000	$ 17,400
2	Finish System	All Windows	Caulk windows.	1	LS	$ 3,000.00	$ 3,000		$ -		$ -	$ 3,000	$ 4,350
3	Finish System	East Elevation	Repair/ replace window mullions.	1	LS	$ 3,000.00	$ 3,000		$ -		$ -	$ 3,000	$ 4,350
4	Finish System	Foundry	Replace lintel over foundry opening.	1	LS	$ 3,000.00	$ 3,000		$ -		$ -	$ 3,000	$ 4,350
5	Finish System	East Elevation	Replace expansion joint in walkway.	1	LS	$ 1,500.00	$ 1,500		$ -		$ -	$ 1,500	$ 2,175
Plumbing System													
1	Plumbing System	Boiler Room CL-116	Water heater and flue damaged from water and need to be replaced.	1	LS			$ 4,275.00	$ 4,275			$ 4,275	$ 6,199
Power Systems													
1	Power Systems	General	A majority of electrical distribution equipment is 41 years of age and is nearing end of expected useful life. Replacement is recommended in next major renovation.	30,400	SF					$ 16.00	$ 486,400	$ 486,400	$ 705,280
2	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of building CA.	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
							$ 37,500		**$ 4,275**		**$ 494,400**	**$ 536,175**	**$ 777,454**

BUILDING CM



GENERAL OVERVIEW

Use: Theater

Year Built: 1982

Total Area: 71,954 SF

Floors: 2

5 Year DMB: $4,310,157

CRV: $42,093,090

FCI: 10.24%

COMMENTS

Roof System

- JD Chandler roof installed in 2012.

Finish System

- Finishes updated in 2018.

HVAC Systems

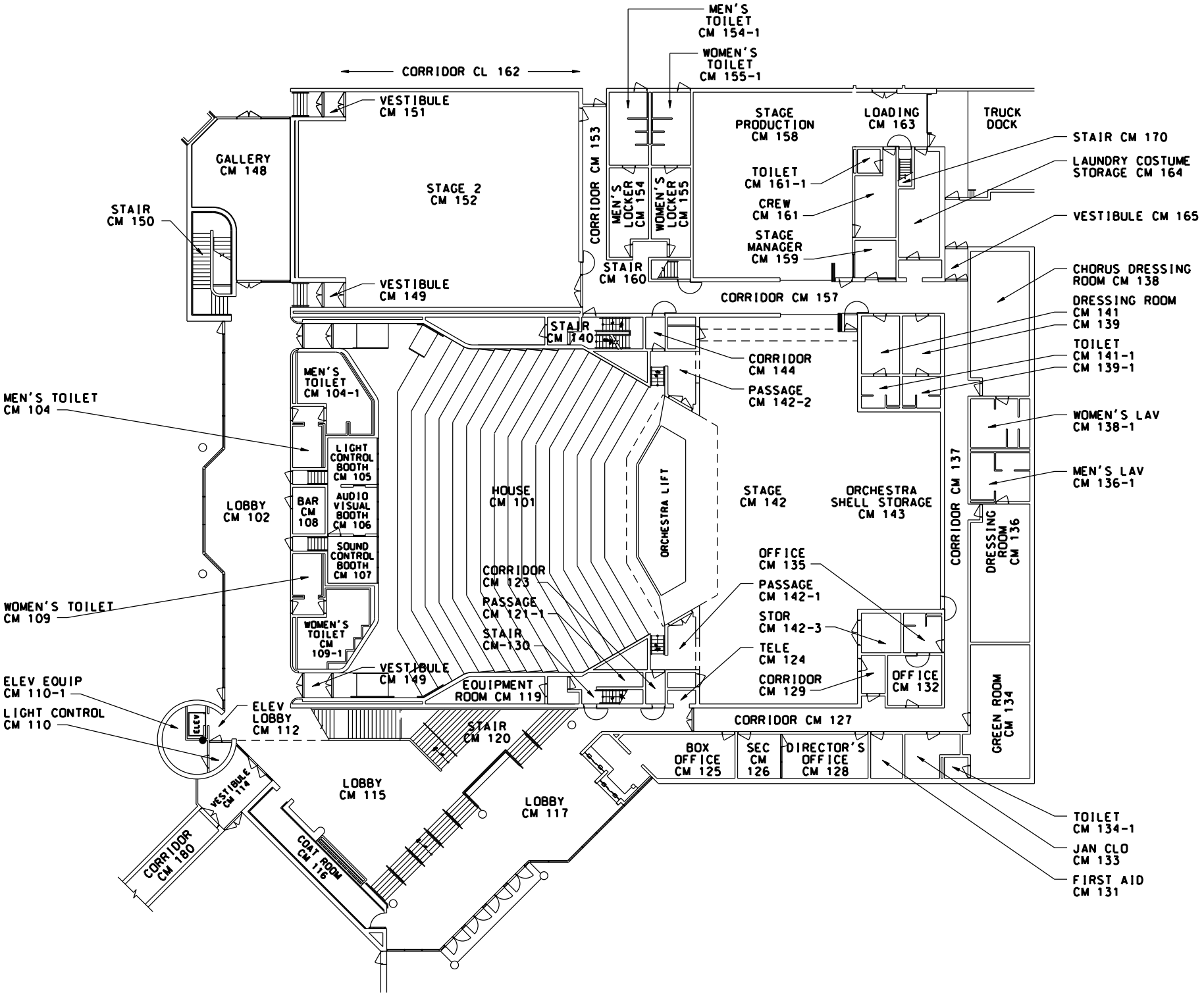
- HVAC systems, including controls, was replaced in 2018.

Lighting System

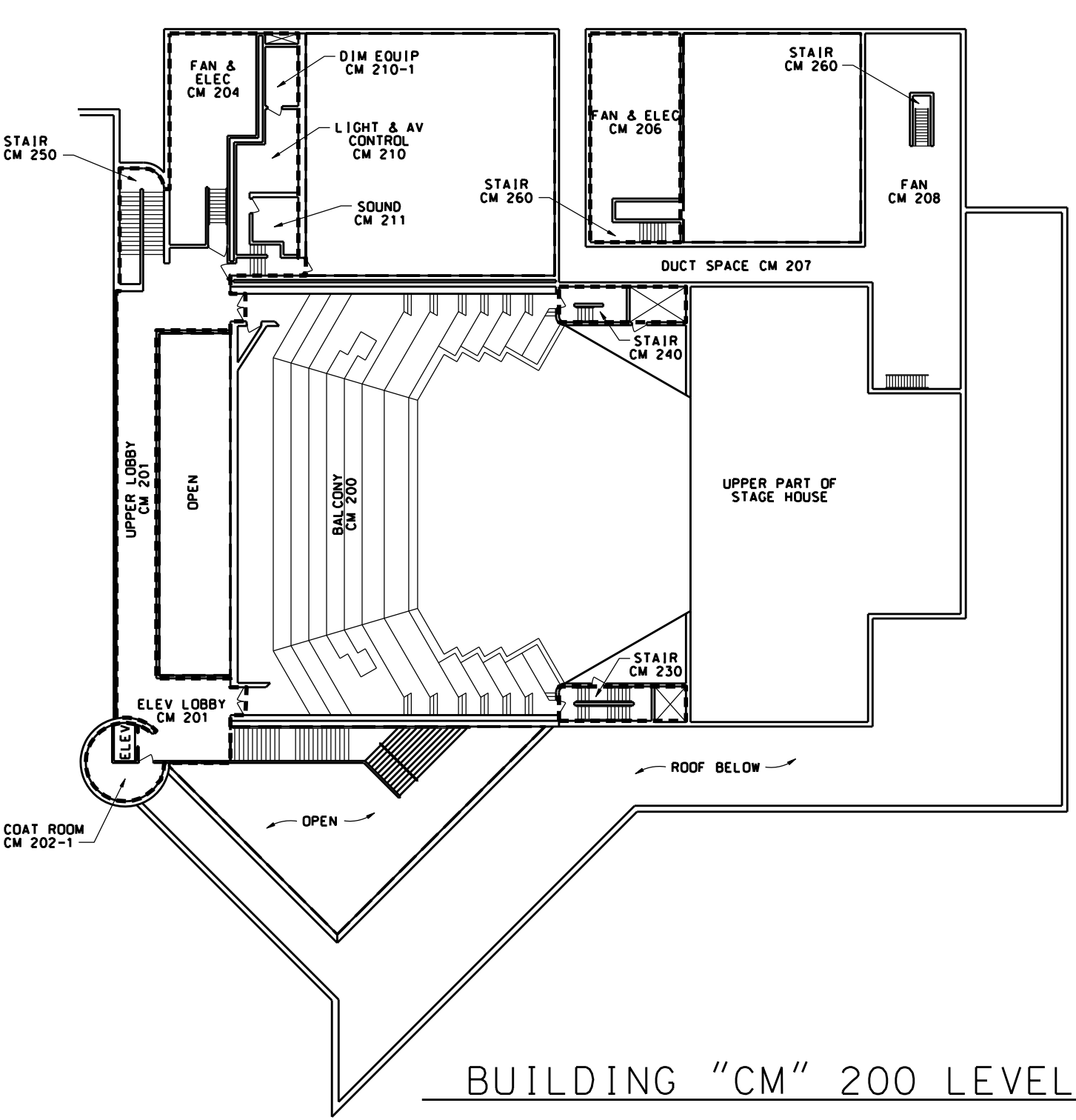
- Lighting and controls for theater and lobby areas should be replaced with new light fixtures and controls.

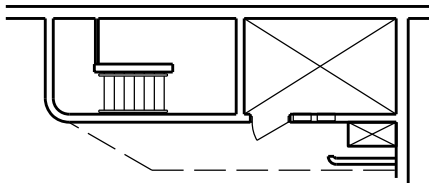


Existing Distribution Equipment

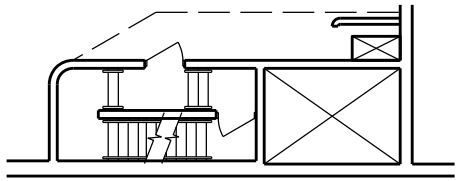


BUILDING "CM" 100 LEVEL

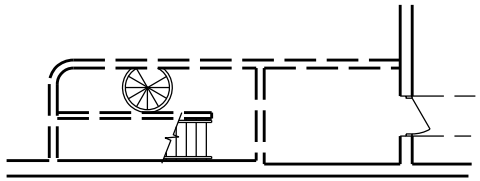




STAIR TO SUB ATTIC LEVEL
CM 240-A



STAIR TO SUB ATTIC LEVEL
CM 230-A



STAIR TO SUB ATTIC LEVEL
CM 330

BUILDING "CM" 200 LEVEL

NORTH

Building CM

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
2	Roof System	Roof	Replace coping with a coping that goes down over the face of the brick.	1	LS	$ 15,000.00	$ 15,000					$ 15,000	$ 21,750
3	Roof System	Roof	Inspect and repair roof at upper lobby.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
Enclosure System													
2	Enclosure System	Windows	Add sill flashing at windows.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
3	Enclosure System	Throughout	Clean and tuck point brick where sill flashing added.	1	LS	$150,000.00	$ 150,000					$ 150,000	$ 217,500
Finish System													
1	Finish System	Lobby	Repair soffit on second level at south windows.	1	LS	$ 2,500.00	$ 2,500					$ 2,500	$ 3,625
2	Finish System	Lobby	Repair soffit on second level at west entrance to seating.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
3	Finish System	Back of House	All finishes need to be updated in back of house.	1	LS		$ -					$ -	$ -
4	Finish System	Lobby	All finishes need to be updated in lobby.	1	LS		$ -					$ -	$ -
5	Finish System	Seating	All finishes need to be updated in seating area.	1	LS		$ -					$ -	$ -
Fixed Equipment													
1	Fixed Equipment	Auditorium	Orchestra platform lift equiopment is at the end of it's expected life.	1	LS	$ 50,000.00	$ 50,000					$ 50,000	$ 72,500
2	Fixed Equipment	Scene Shop	Review mezzanine framing and supports for proper sizing - framing member size and spacing appears inadequate.	1	LS	$ 20,000.00	$ 20,000					$ 20,000	$ 29,000
Plumbing System													
1	Plumbing System	Building	Portion of the domestic cold water distribution piping system are galvanized steel. Due to it's age the piping is showing signs of deterioration and should be replaced.	600	LF			$ 55.00	$ 33,000			$ 33,000	$ 47,850
2	Plumbing System	Building	Portion of the cold and hot water piping have missing and damaged insulation. The insulation should be replaced.	71,954	SF			$ 0.77	$ 55,405			$ 55,405	$ 80,337
Temperature Controls													
1	Temperature Controls	Building	Replace and upgrade controllers and control components for added efficiency and enhanced maintenance functions.	71,954	SF			$ 4.83	$ 347,538			$ 347,538	$ 503,930
Power Systems													
1	Power Systems	General	A majority of electrical distribution equipment is 41 years of age and is nearing end of expected useful life. Replacement is recommended in next major renovation.	71,954	SF					$ 20.00	$ 1,439,080	$ 1,439,080	$ 2,086,666
2	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of building CA.	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
3	Power Systems	Roof	Extention cords are being used on the roof for holiday lighting. The extension cords are plugged into a receptacle (not equipped with an in-use cover) installed in the exterior wall at grade. It is recommended to add GFCI receptacles provided with weatherproof, in-use covers on the roof.	4	EA					$ 1,500.00	$ 6,000	$ 6,000	$ 8,700
4	Power Systems	Exterior (East Facing Wall)	Cored openings (approximately 24" above grade) where conduits/LB fittings are leaving the building are not sealed. A draft was noticed through these openings in the brick exterior. These openings should be properly sealed.	2	EA					$ 500.00	$ 1,000	$ 1,000	$ 1,450
5	Power Systems	Catwalk Above Theater (Stage Left)	Cable routed through catwalk access door opening (appears to be a coax cable for theatrical use) is severely damaged from the door/frame. Providing conduit sleeves, based on theatrical needs, is recommended (cost assumes (1) 2" sleeve at each catwalk door above theatre).	4	EA					$ 500.00	$ 2,000	$ 2,000	$ 2,900

Building CM

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Lighting System													
1	Lighting System	Theater and Lobby	The lighting within the Theater and Lobby consists of multiple types of non-LED fixtures. Lighting within the Lobby (approximately 12,500sqft) should be replaced with LED and new controls to meet the current ASHRAE requirements. Back of house corridors, restrooms, green room, and offices areas have already been updated to LED as part of a 2018 renovation to buildings CL and CM.	12,500	SF					$ 65.00	$ 812,500	$ 812,500	$ 1,178,125
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	General	Lobby railings are not graspable	1	LS	$ 8,500.00	$ 8,500					$ 8,500	$ 12,325
2	Code Systems and Barrier Free	General	Seating railings are not graspable and landings are not adequate	1	LS	$ 2,500.00	$ 2,500					$ 2,500	$ 3,625
3	Code Systems and Barrier Free	General	Barrier free seating not dispersed	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
4	Code Systems and Barrier Free	General	Barrier free stalls are not up to date	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
							$ 268,000		**$ 435,942**		**$ 2,268,580**	**$ 2,972,522**	**$ 4,310,157**

BUILDING CN



GENERAL OVERVIEW

Use: Classrooms and Offices

Year Built: 1996, 2017 Renovation

Total Area: 65,357 SF

Floors: 2

5 Year DMB: $1,535,920

CRV: $26,208,157

FCI: 5.86%

COMMENTS

Roof System

- JD Chandler roof installed in 2017.
- Roof warranty expired in 2021.

HVAC System

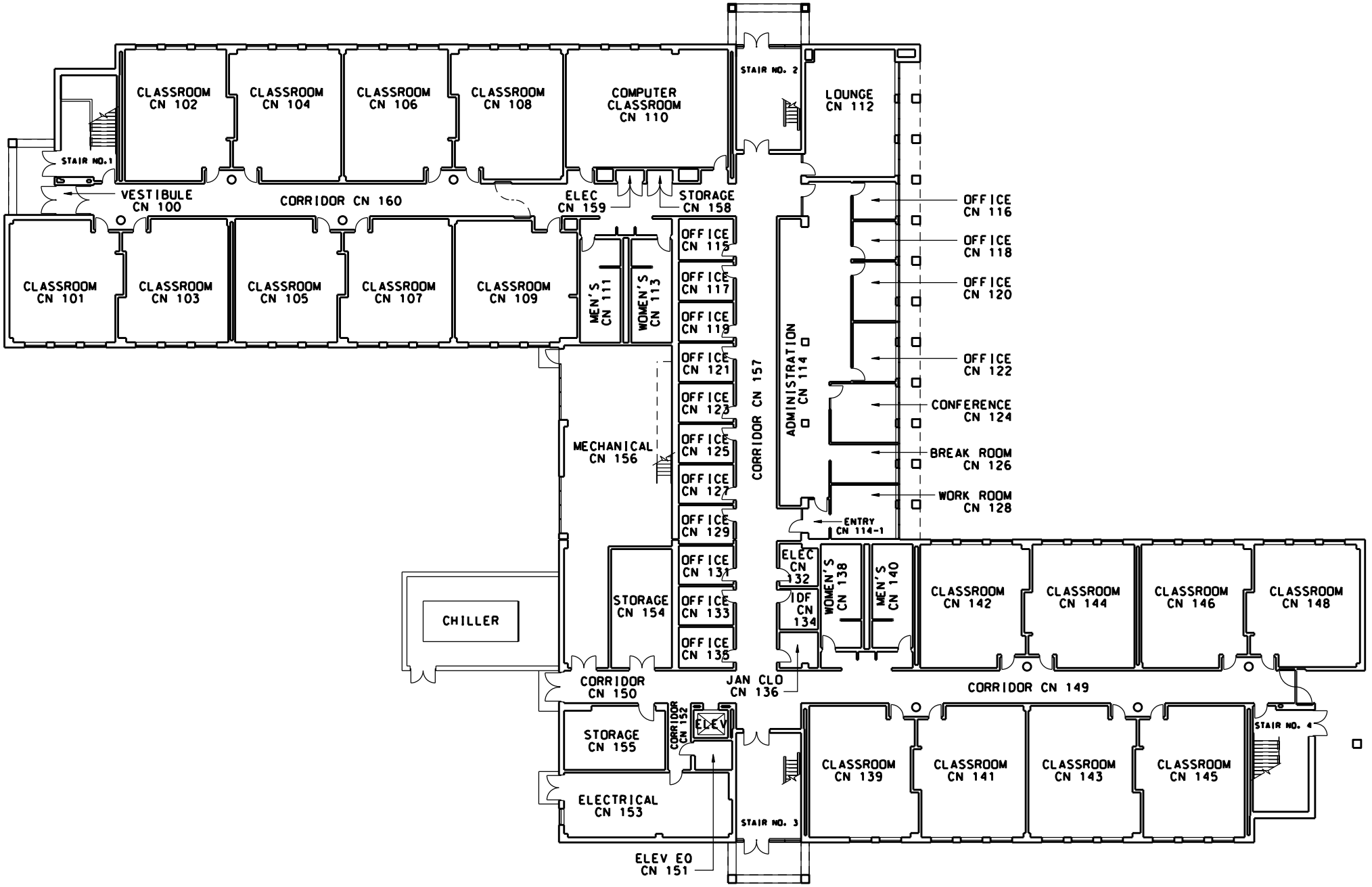
- New chiller buffer tank provided to reduce cycling of chiller in Summer 2017.
- Air handling units, boilers and pumps were replaced in Summer 2017.

Temperature Controls

- Temperature controls were upgraded in Summer 2017.

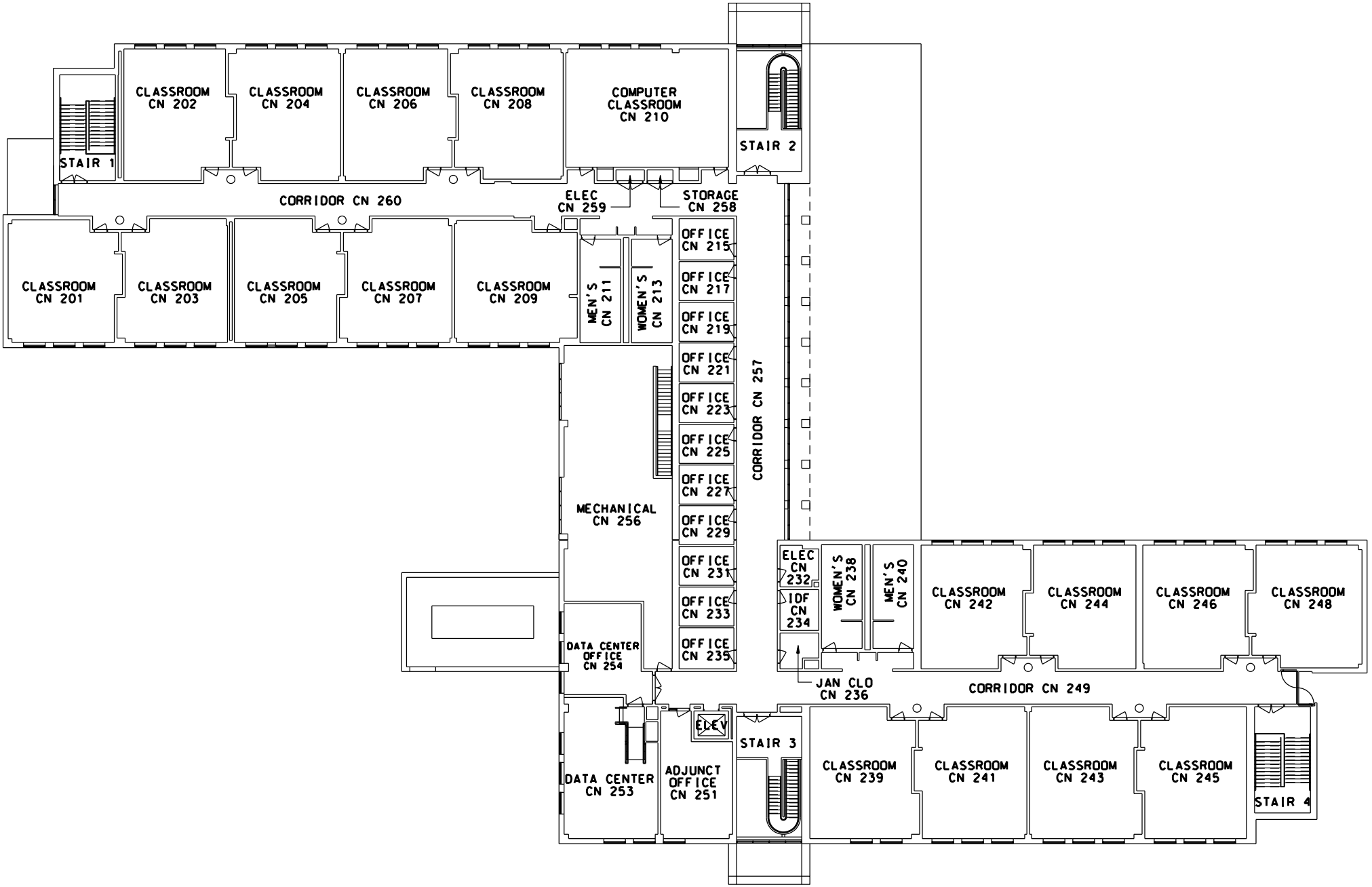
Lighting System

- Lighting and controls were upgraded in 2017 and are in good condition.



BUILDING "CN" 100 LEVEL

NORTH



BUILDING "CN" 200 LEVEL

Building CN

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Enclosure System													
1	Enclosure System	Substation	Install sweep at substation doors to exterior.	1	LS	$ 500.00	$ 500					$ 500	$ 725
2	Enclosure System	Exterior	Re-caulk windows - exterior.	1	LS	$ 10,000.00	$ 10,000					$ 10,000	$ 14,500
3	Enclosure System	Substation	Repair or replace exterior door frame to substation room.	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
Finish System													
1	Finish System	Interior	Re-caulk windows.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
Power Systems													
1	Power Systems	Main Electrical Room	A majority of electrical distribution equipment is 26 years of age and is nearing end of expected useful life. Replacement is recommended in next major renovation.	65,357	SF					$ 15.00	$ 980,355	$ 980,355	$ 1,421,515
2	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of building CA.	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
3	Power Systems	Roof	It appears the existing lightning protection system was removed from the roof as part of a previous renovation. Air terminals were noticed to be remaining on some mechanical HVAC equipment. The lightning protection should be removed in its entireity. A partially installed lightning protection system can negatively impact the possible damage caused by a lightning strike.	5	EA					$ 200.00	$ 1,000	$ 1,000	$ 1,450
4	Power Systems	IDF Closet N234	Ceiling smoke detector is not secure to its box and is hanging by wires. This smoke detector should be inspected for damage and properly fastened to the box.	1	LS					$ 100.00	$ 100	$ 100	$ 145
5	Power Systems	Electrical N132	RP-1B is installed behind the door swing, which is not permitted by the NEC. The door should be revised to swing out of the room.	1	LS					$ 20,000.00	$ 20,000	$ 20,000	$ 29,000
6	Power Systems	Electrical N232	RP-2B is installed behind the door swing, which is not permitted by the NEC. The door should be revised to swing out of the room.	1	LS					$ 20,000.00	$ 20,000	$ 20,000	$ 29,000
7	Power Systems	Data Center Office N254	Coverplate is missing from the light switch, exposing the wiring behind the device. A cover plate should be installed.	1	LS					$ 100.00	$ 100	$ 100	$ 145
8	Power Systems	General	It was noticed in IDF closets that the floor/ceiling cores were not sealed around the passing cables. These should be sealed to maintain fire rating.	8	EA					$ 300.00	$ 2,400	$ 2,400	$ 3,480
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	Stairs	Provide cane rail under stairs in lobby.	2	EA	$ 1,500.00	$ 3,000					$ 3,000	$ 4,350
2	Code Systems and Barrier Free	Toilet Rooms	provide pipe protection at toilet room sinks.	24	EA	$ 200.00	$ 4,800					$ 4,800	$ 6,960
3	Code Systems and Barrier Free	Technology Closets	Seal penetrations in floor in tech closets.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
							$ 27,300		**$ -**		**$ 1,031,955**	**$ 1,059,255**	**$ 1,535,920**

BUILDING CP



GENERAL OVERVIEW

Use: Food Service, Conference and Bookstore

Year Built: 2004

Total Area: 34,496 SF

Floors: 1

5 Year DMB: $2,160,874

CRV: $14,281,344

FCI: 15.13%

COMMENTS

Roof System

- Single-ply roof installed in 2004.
- Roof warranty expired in 2019.

HVAC Systems

- Existing air-cooled chiller and pumps have exceeded their useful life and should be replaced.
- Existing boilers and pumps have exceeded their useful life and should be replaced.

Temperature Controls

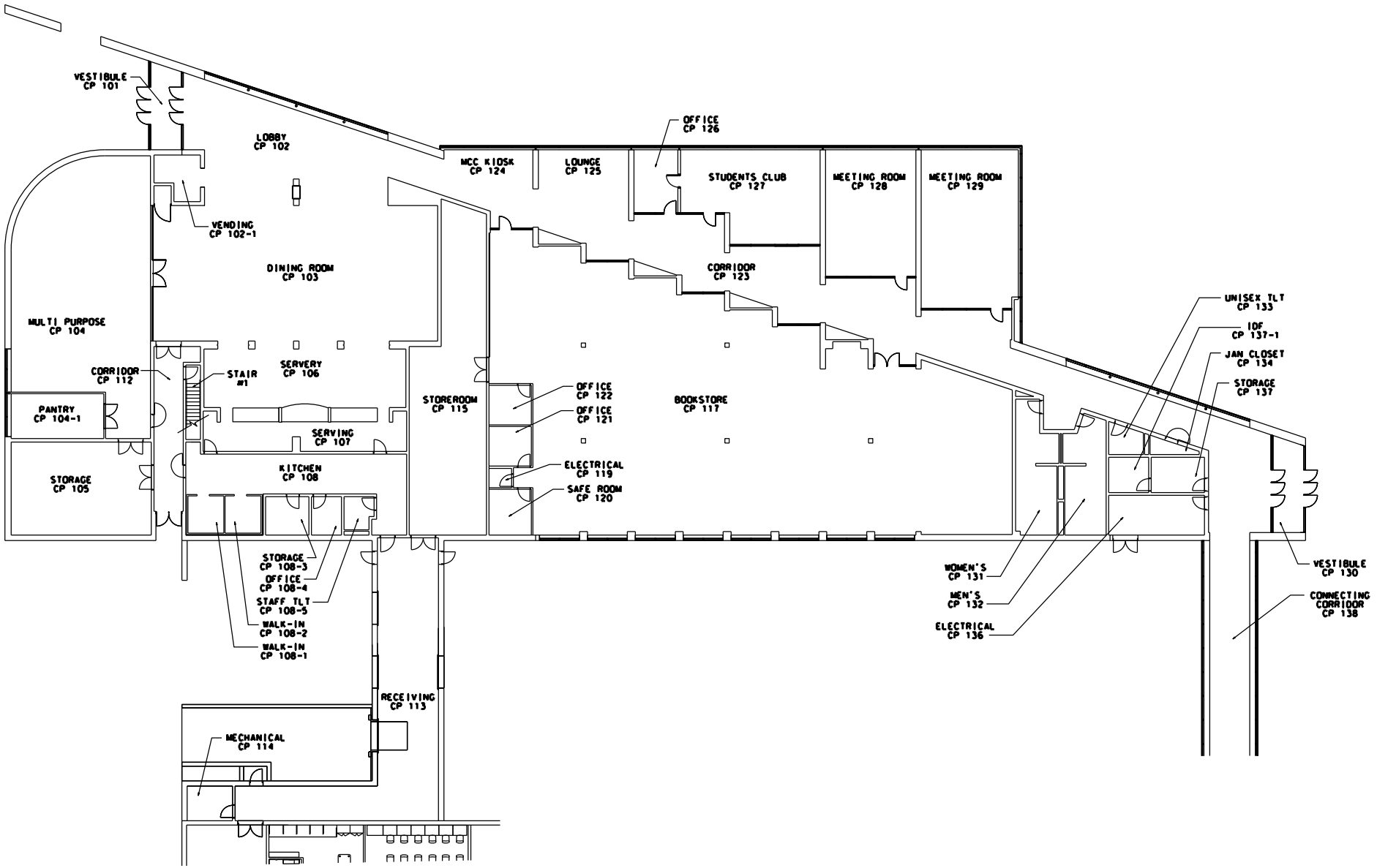
- Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system.

Power Systems

- Most electrical equipment was upgraded in 2004 and that equipment is generally in good condition.

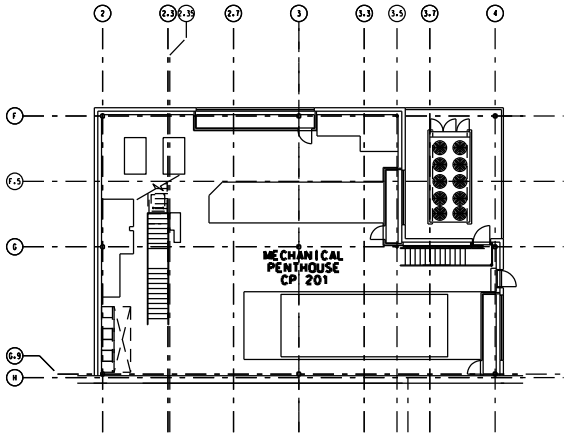
Lighting System

- Exit signs are LED.



BUILDING "CP" 100 LEVEL

NORTH



BUILDING "CP" 200 LEVEL

NORTH

Building CP

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Roof	Tapered insulation around drains holds water.	1	LS	$ 8,000.00	$ 8,000					$ 8,000	$ 11,600
Enclosure System													
1	Enclosure System	Exterior	Recaulk control joints in brick.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
2	Enclosure System	South Entrance	Replace damaged metal wall panels at south entrance.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
3	Enclosure System	South Elevation	Recaulk windows on south elevation.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
4	Enclosure System	North Entrance	Clean transleucent panels at north entrance.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
5	Enclosure System	Throughout	Add sill flashing at curtainwall.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
Finish System													
1	Finish System	South Entrance	Repair gypsum board soffit at south entrance.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
HVAC System													
1	HVAC System	Building	Perform mechanical system retro-commissioning to restore the building mechanical system back to the original design intent and complete an air and water system balance report to identify potential operation issues.	1	LS			$ 71,610.00	$ 71,610			$ 71,610	$ 103,835
2	HVAC System	Building	Implementation of the recommendations that come out of retro commissioning activities	34,496	SF			$ 1.38	$ 47,604			$ 47,604	$ 69,026
2	HVAC System	Mechanical Room	Replace air cooled chiller and pumps	1	LS			$ 300,000.00	$ 300,000			$ 300,000	$ 435,000
2	HVAC System	Chiller Yard	Replace gas fired boilers and pumps	1	LS			$ 210,000.00	$ 210,000			$ 210,000	$ 304,500
Temperature Controls													
1	Temperature Controls	Building	Replace existing Desigo (Siemens) BAS controls with new Tridiuum (Honeywell) system. Commission controls, replace pneumatic operation with electric. Calibrate devices, review sequences of operation, etc.	34,496	SF			$ 4.83	$ 166,616			$ 166,616	$ 241,593
Power Systems													
1	Power Systems	Kitchen Servery	RP-5 is installed behind the door swing, which is not permitted by the NEC. This panel should be moved. Includes $20,000 for architectural repairs.	1	LS					$ 32,000.00	$ 32,000	$ 32,000	$ 46,400
2	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of building CA.	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
3	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 2004. Testing / maintenance is recommended at regular intervals.	1	LS					$ 10,000.00	$ 10,000	$ 10,000	$ 14,500
Lighting System													
1	Lighting System	General	Existing lighting is fluorescent & current controls are not fully code compliant with latest energy codes. Recommended to replace with LED and controls as a part of the next major building renovation.	34,496	SF					$ 18.00	$ 620,928	$ 620,928	$ 900,346
							$ 23,500		**$ 795,830**		**$ 670,928**	**$ 1,490,258**	**$ 2,160,874**

BUILDING CR



GENERAL OVERVIEW

Use: Classrooms, Offices and Labs

Year Built: 2007

Total Area: 36,478 SF

Floors: 2

5 Year DMB: $1,978,133

CRV: $16,415,100

FCI: 12.05%

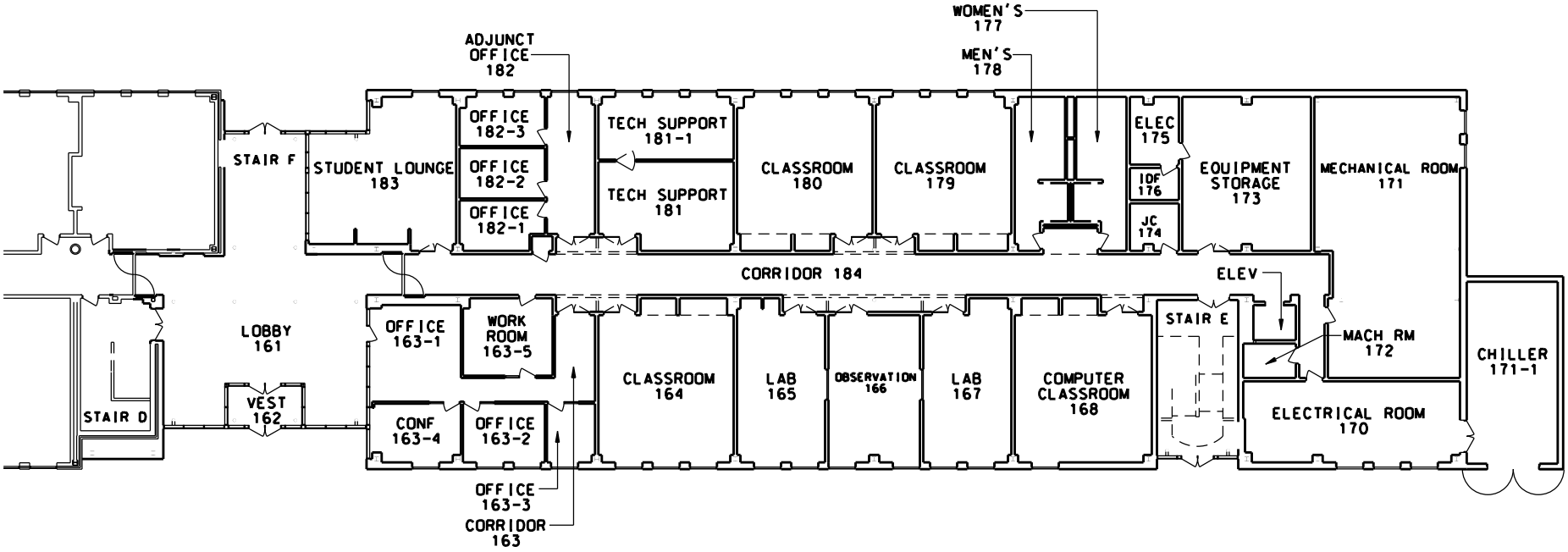
COMMENTS

Roof System

- Bondcote single-ply roof installed in 2008. Roof should be scheduled for replacement.

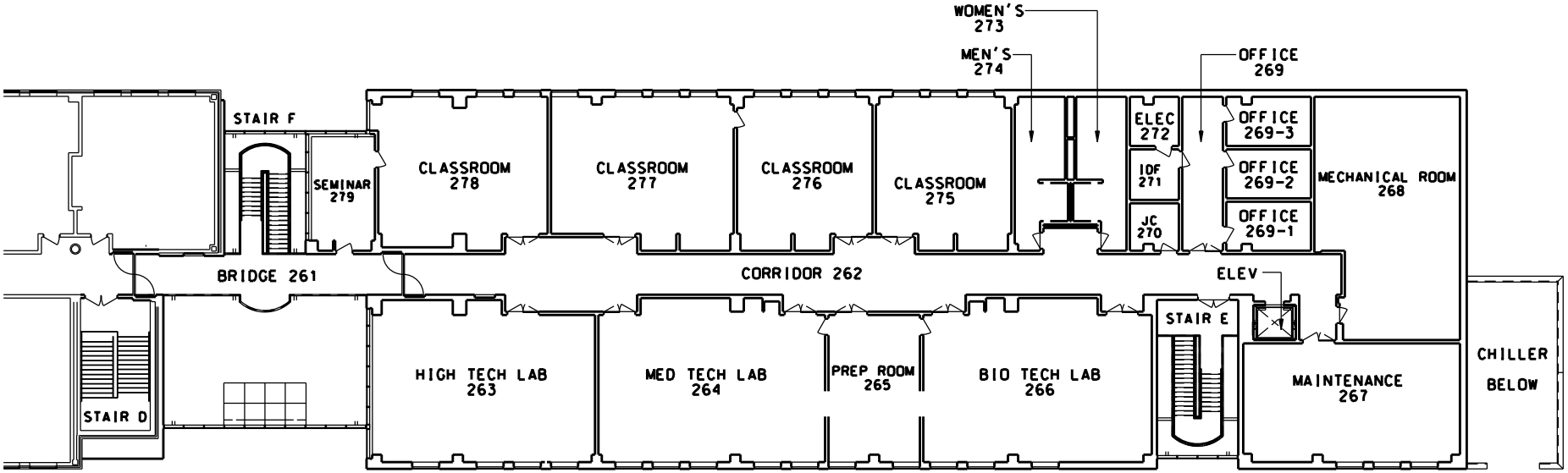
Temperature Controls

- Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system.



BUILDING "R" 100 LEVEL

NORTH



BUILDING "R" 200 LEVEL

NORTH

Building CR

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Enclosure System													
1	Enclosure System	General	Recaulk control joints in brick.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
2	Enclosure System	General	Recaulk louvers.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
2	Enclosure System	Roof	Replace roof	18,240	SF	$ 14.00	$ 255,360					$ 255,360	$ 370,272
Finish System													
1	Finish System	Main Entrance Lobby	Repair gypsum ceiling at main entry.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
HVAC System													
1	HVAC System	Building	Perform mechanical system retro-commissioning to restore the building mechanical system back to the original design intent and complete an air and water system balance report to identify potential operation issues.	1	LS			$ 76,780.00	$ 76,780			$ 76,780	$ 111,331
2	HVAC System	Building	Implementation of the recommendations that come out of retro commissioning activities	36,478	SF			$ 1.38	$ 50,340			$ 50,340	$ 72,992
Temperature Controls													
1	Temperature Controls	Building	Replace existing Desigo (Siemens) BAS controls with new Tridium (Honeywell) system. Commission controls, replace pneumatic operation with electric. Calibrate devices, review sequences of operation, etc. including terminal box controlers	36,478	SF			$ 10.00	$ 364,780			$ 364,780	$ 528,931
Power Systems													
1	Power Systems	General	A majority of electrical equipment was missing arc flash labels. It is recommended to provide a power system study and labeling.	1	LS					$ 15,000.00	$ 15,000	$ 15,000	$ 21,750
2	Power Systems	General	Per existing labels, testing and maintenance has not been performed on electrical equipment since 2013.	1	LS					$ 20,000.00	$ 20,000	$ 20,000	$ 29,000
3	Power Systems	General	Outdoor receptacles do not have in-use covers	1	LS					$ 3,000.00	$ 3,000	$ 3,000	$ 4,350
Lighting System													
1	Lighting System	General	Lighting in elec / mech spaces cannot incorporate auto-off controls. Replace local controls	1	LS					$ 300.00	$ 300	$ 300	$ 435
2	Lighting System	General	Existing lighting is fluorescent & current controls are not code compliant. Recommended to replace with LED and controls as a part of the next major building renovation.	36,478	SF					$ 15.00	$ 547,170	$ 547,170	$ 793,397
3	Lighting System	General	Central inverter unit for emergency lighting did not have operable indicator lights. It is unclear if unit is working properly. Recommend repair or replacement of inverter unit. Cost shown represents replacement.	1	LS					$ 20,000.00	$ 20,000	$ 20,000	$ 29,000
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	General	Install can rail under stairs.	2	EA	$ 1,500.00	$ 3,000					$ 3,000	$ 4,350
							$ 266,860		**$ 491,900**		**$ 605,470**	**$ 1,364,230**	**$ 1,978,133**

BUILDING CS



GENERAL OVERVIEW

Use: Offices and Unassigned

Year Built: 1988

Total Area: 42,055

Floors: 4

5 Year DMB: $2,571,506

CRV: $17,663,100

FCI: 14.56%

COMMENTS

Roof System

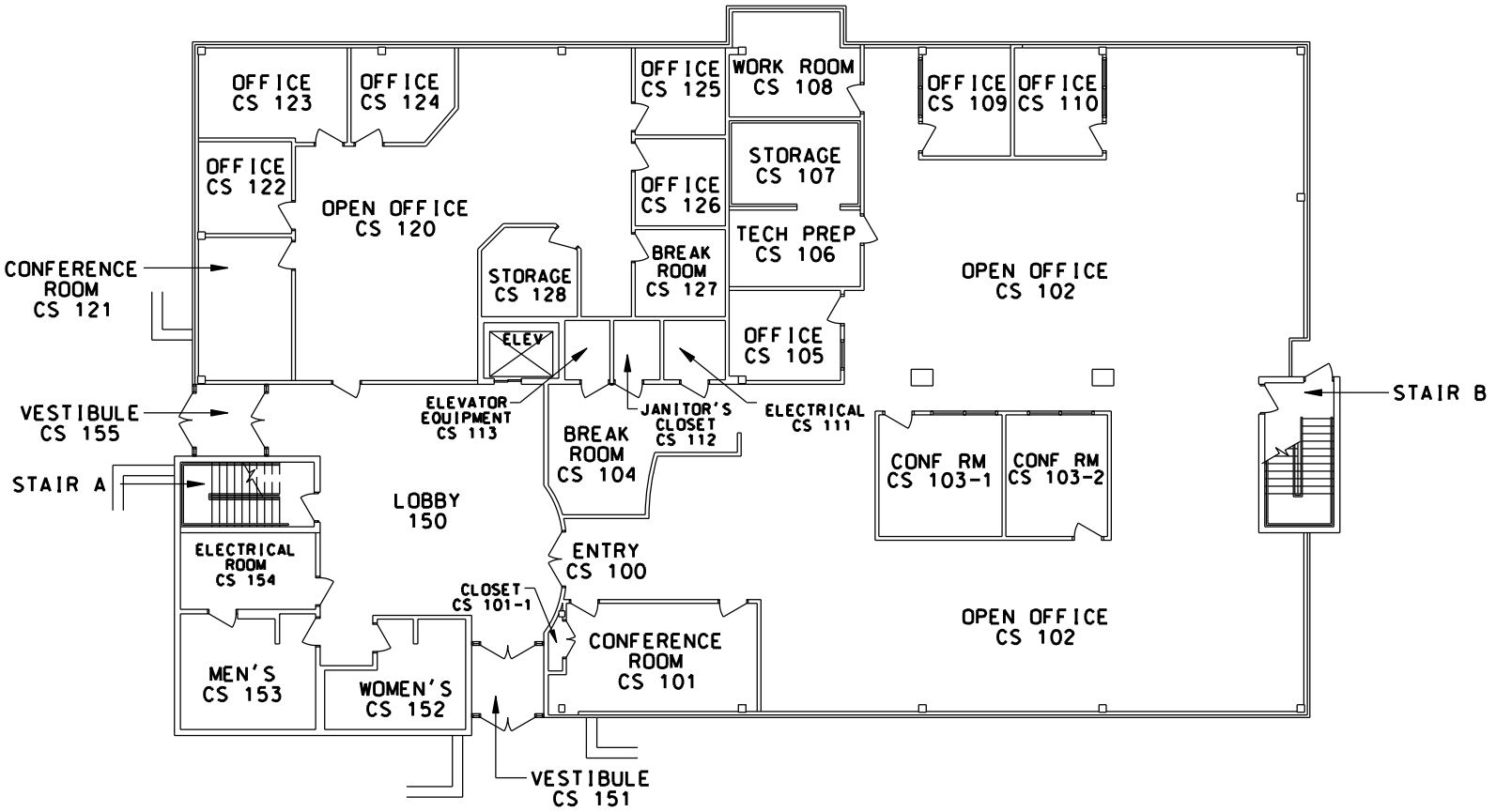
- Roof installed in 2005. Roof should be scheduled for replacement.

HVAC Systems

- Existing rooftop HVAC units (2) serving building have exceeded their useful life and should be replaced.

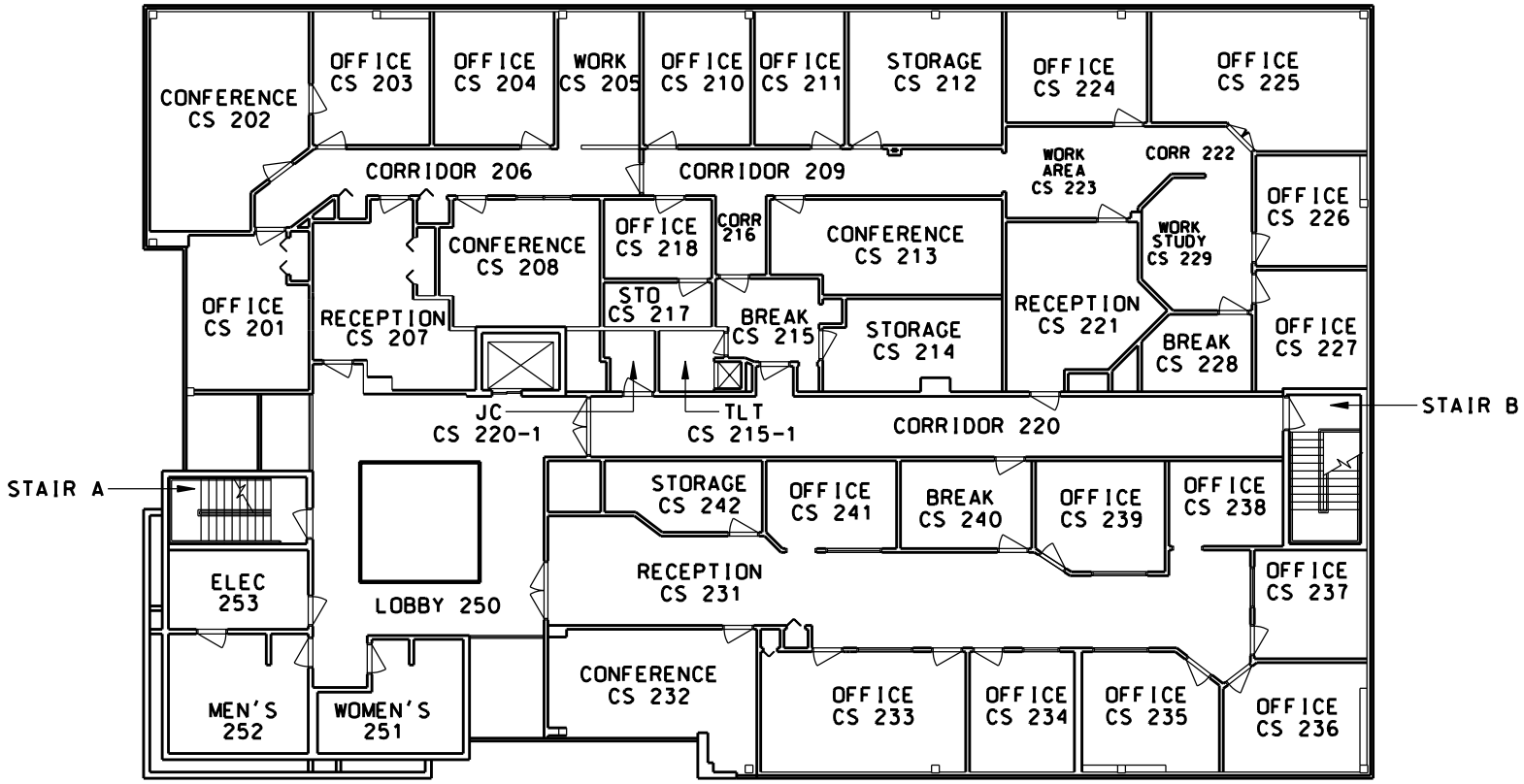
Lighting System

- Insufficient lighting (normal and emergency) at upper level. Included in lighting replacement cost in item 1 above.

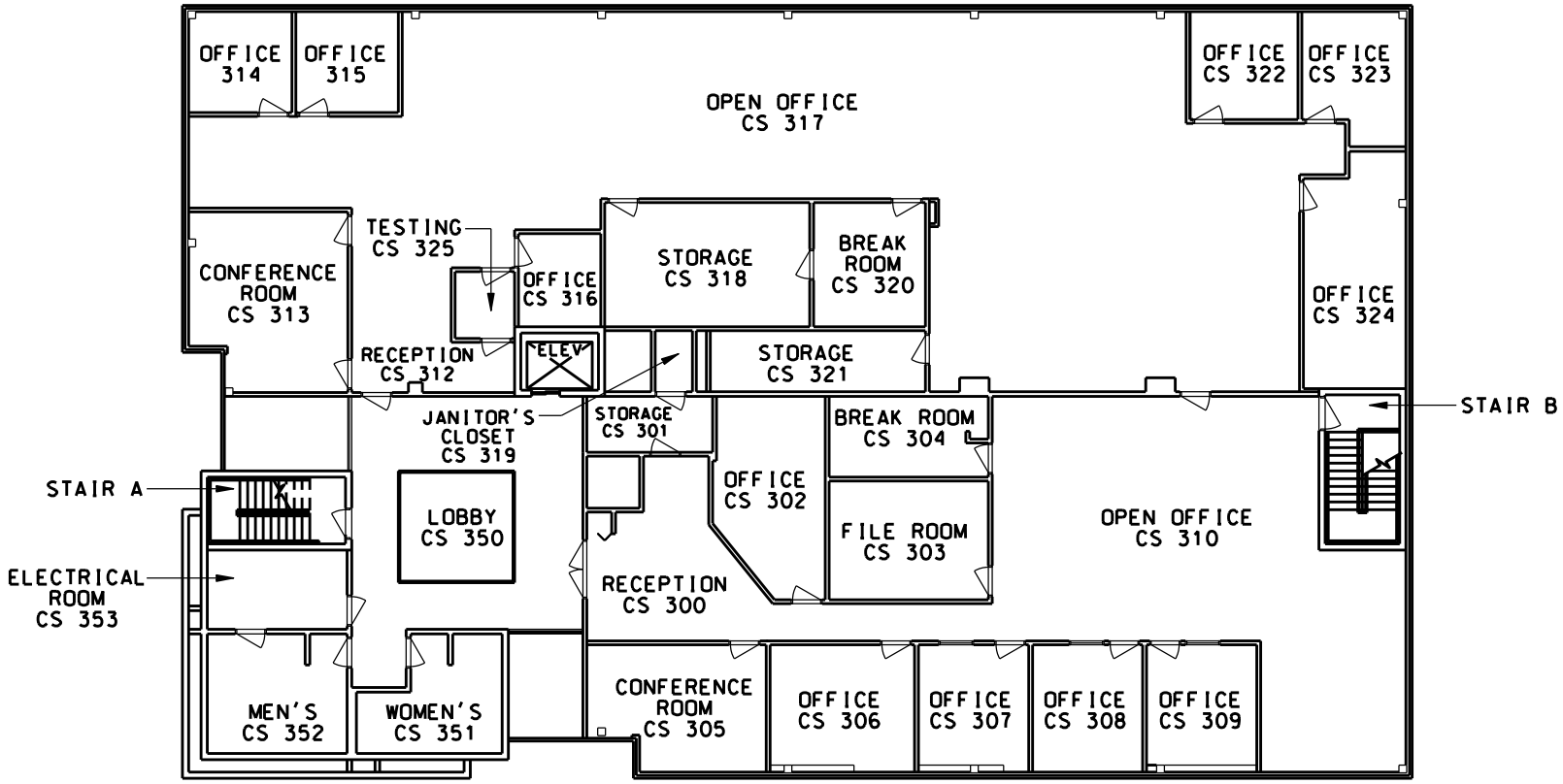


"CS" BUILDING 100 LEVEL

NORTH

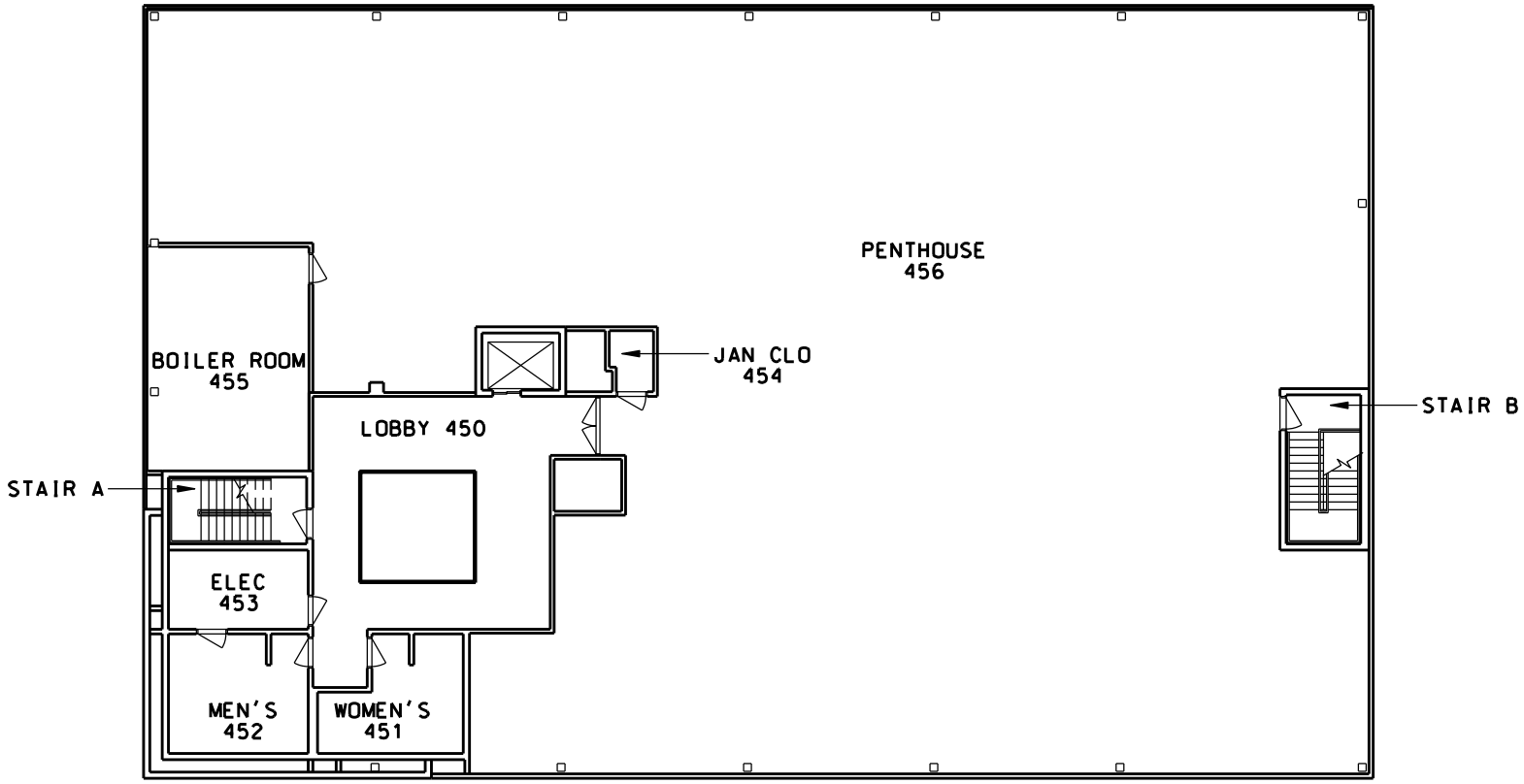


"CS" BUILDING 200 LEVEL



"CS" BUILDING 300 LEVEL

NORTH



"CS" BUILDING 400 LEVEL

Building CS

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Building	Provide overflow drains/ scuppers.	3	EA	$ 2,000.00	$ 6,000					$ 6,000	$ 8,700
2	Roof System	Canopies	Rework downspouts to not drain onto sidewalk.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
3	Roof System	Roof	Replace roof	10514	SF	$ 14.00	$ 147,196					$ 147,196	$ 213,434
Enclosure System													
1	Enclosure System	North and West Elevations	Repair wall at grade below windows on north and west elevations.	1	LS	$ 8,000.00	$ 8,000					$ 8,000	$ 11,600
2	Enclosure System	Throughout	Clean metal panels.	1	LS	$ 10,000.00	$ 10,000					$ 10,000	$ 14,500
Finish System													
1	Finish System	Lobby	Repair vinyl wall finish in lobby - all levels.	1	LS	$ 2,500.00	$ 2,500					$ 2,500	$ 3,625
HVAC System													
1	HVAC System	Boiler Room 445	The boiler room is not ventilated to remove the heat generated by the boilers.	1	LS			$ 18,150.00	$ 18,150			$ 18,150	$ 26,318
2	HVAC System	Building	The piping system is not completely labels. Label the piping.	42,055	SF			$ 0.15	$ 6,308			$ 6,308	$ 9,147
3	HVAC System	Roof	Repalce two RTU's with new.	2	EA	$ 3,000.00	$ 6,000	$ 190,000.00	$ 380,000	$ 3,000.00	$ 6,000	$ 392,000	$ 568,400
Plumbing System													
1	Plumbing System	Building	Portion of the domestic cold water distribution piping are galvanized steel. Due to it's age the piping is showing signs of deterioration and should be replaced.	100	LF			$ 55.00	$ 5,500			$ 5,500	$ 7,975
2	Plumbing System	Building	Portion of the cold and hot water piping have missing and damages insulation. The insulation should be replaced.	42,055	SF			$ 0.06	$ 2,523			$ 2,523	$ 3,659
Temperature Controls													
1	Temperature Controls	Building	Update and commission controls, replace pneumatic operation with electric. Calibrate devices, review sequences of operation, etc. Provide battery backup on central temperature controls panel.	42,055	SF			$ 10.00	$ 420,550			$ 420,550	$ 609,798
Power Systems													
1	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to provide power system study and labeling.	1	LS					$ 15,000.00	$ 15,000	$ 15,000	$ 21,750
2	Power Systems	General	No signs of electrical equipment maintenance or testing. Given the age of the existing equipment, electrical testing is recommended.	1	LS					$ 20,000.00	$ 20,000	$ 20,000	$ 29,000
3	Power Systems	Roof	Existing natural gas generator is 18 years old and is approaching end of useful expected life. Recommend replacement within next 2-5 years.	1	EA					$ 70,000.00	$ 70,000	$ 70,000	$ 101,500
Lighting System													
1	Lighting System	General	Majority of existing lighting is fluorescent & current controls are not code compliant. Recommended to replace with LED and controls as a part of the next major building renovation.	42,055	SF					$ 15.00	$ 630,825	$ 630,825	$ 914,696
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	Toilet Rooms	Barrier Free water closets are not current code complient.	1	LS	$ 15,000.00	$ 15,000					$ 15,000	$ 21,750
2	Code Systems and Barrier Free	Toilet Rooms	Install pipe protection below lavatories and sinks.	12	EA	$ 200.00	$ 2,400					$ 2,400	$ 3,480
							$ 198,596		**$ 833,032**		**$ 741,825**	**$ 1,773,453**	**$ 2,571,506**

BUILDING UC-1



GENERAL OVERVIEW

Use: Classrooms, Conference and Offices

Year Built: 1991

Total Area: 88,768 SF

Floors: 2

5 Year DMB: $5,134,806

CRV: $37,016,256

FCI: 13.87%

COMMENTS

Roof System

- Firestone EPDM roof installed in 2014.
- Roof warranty expires in 2029.

Roof System (Addition)

- Firestone EPDM roof installed in 2019.
- Roof warranty expires in 2034.

HVAC System

- Air handling units, boilers and pumps replaced summer 2014.
- Two original Mammoth rooftop air handling units (DX cooling with gas heat) are currently in design stage of replacement. Associated replacement costs are not included within this report but called out for informational purposes ($750,800).
- Cooling towers replacement is currently in design phase. Estimated replacement cost is indicated for informational purposes ($194,000).

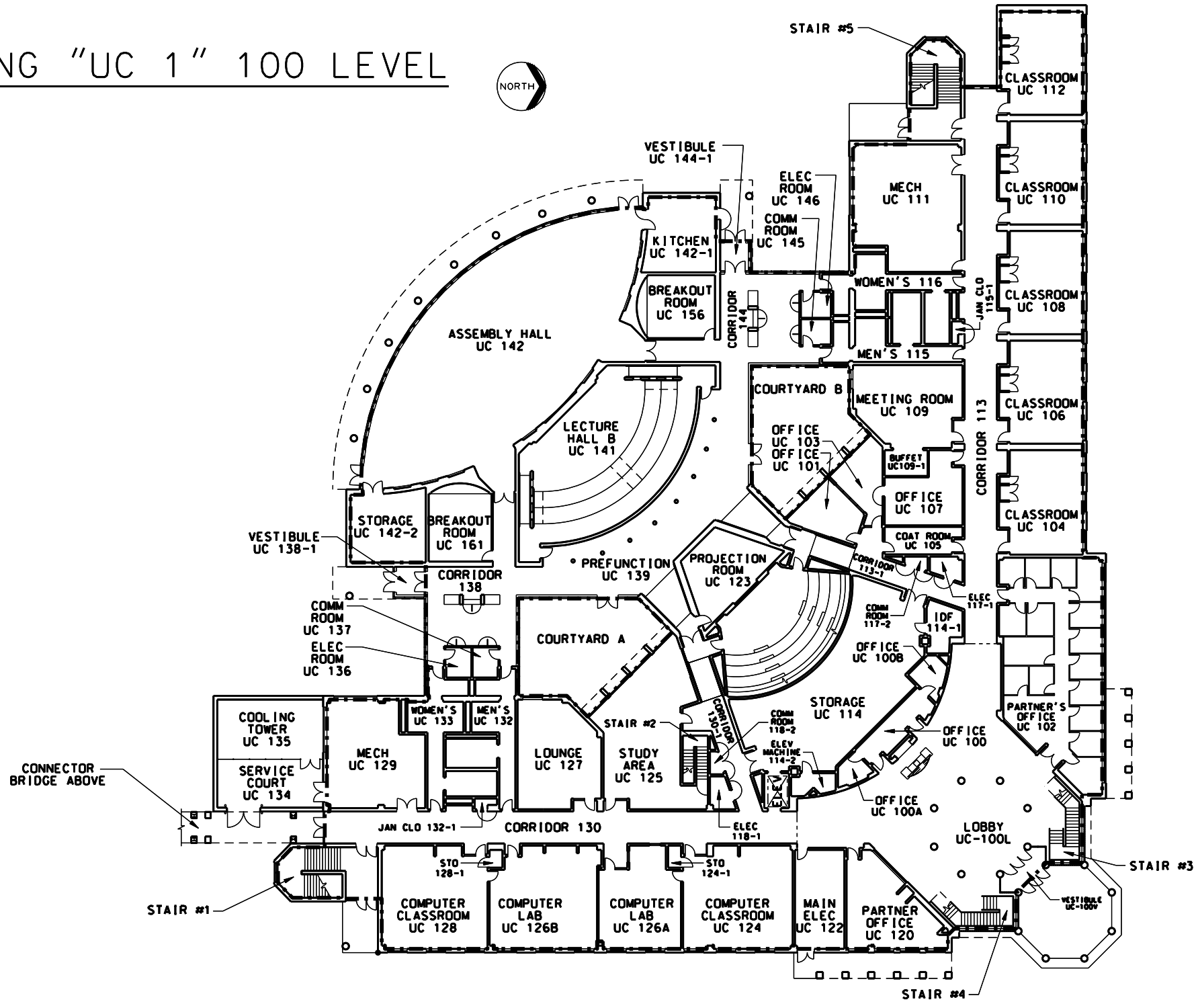
Temperature Controls

- Building is served by both Tridium (Honeywell) and Continuum (Andover) controls. Remove the Andover portion and replace with Tridium.

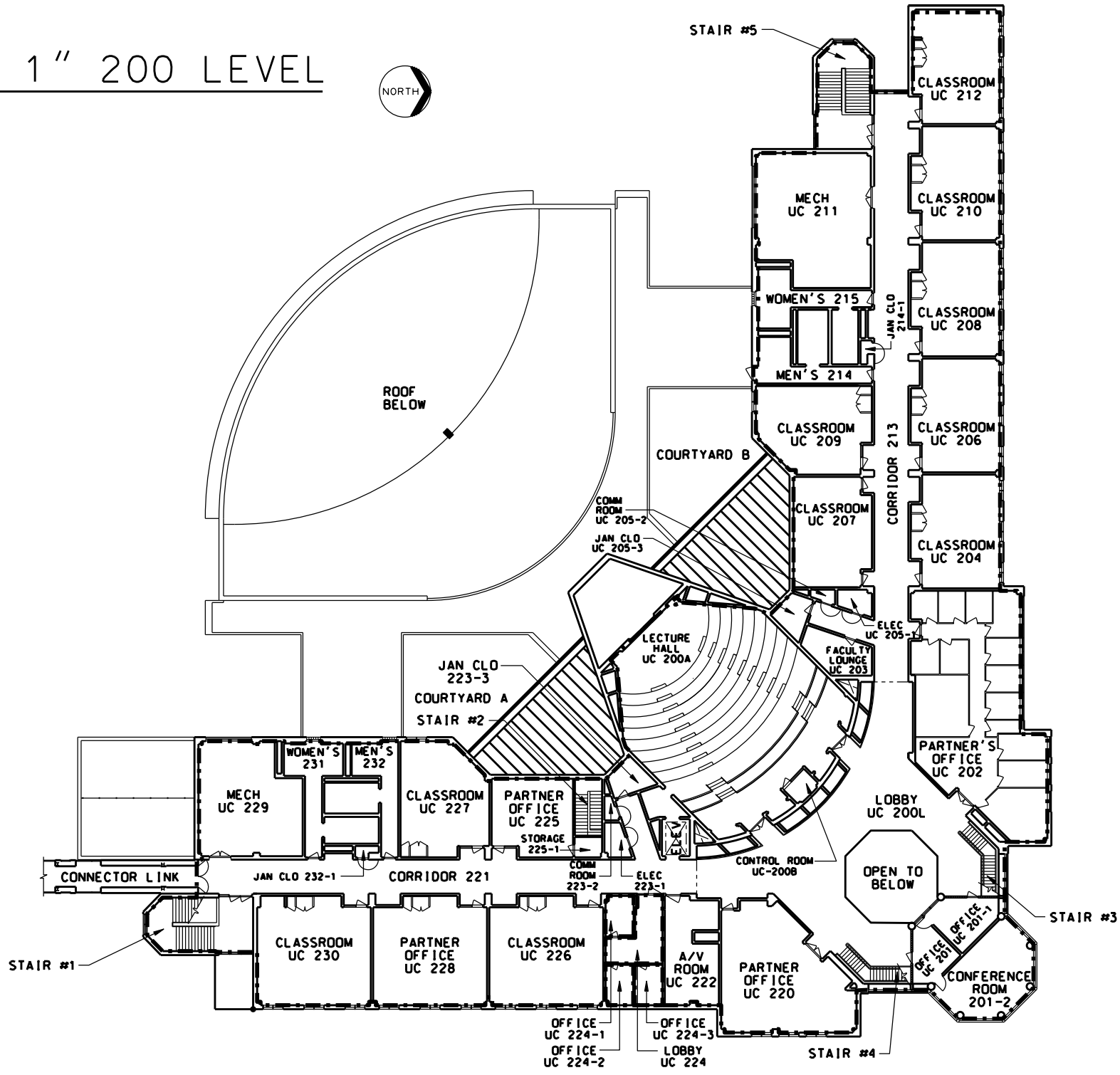


Existing Substation

BUILDING "UC 1" 100 LEVEL



BUILDING "UC 1" 200 LEVEL



University Center 1

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Enclosure System													
1	Enclosure System	Southwest Elevation	Recaulk control joints in granite base at Hall/ Dining.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
2	Enclosure System	Southwest Elevation	Seal gaps in soffit at Hall/ Dining.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
3	Enclosure System	East Elevation	Repair soffit at South entrance - east elevation.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
4	Enclosure System	Throughout	Recaulk control joints in brick.	1	LS	$ 7,000.00	$ 7,000					$ 7,000	$ 10,150
5	Enclosure System	Throughout	Clean limestone.	1	LS		$ -					$ -	$ -
Finish System													
1	Finish System	General	Refinish soffit at entry vestibule in Lobby.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
2	Finish System	General	Refinish floor in Mechanical Room UC 129.	1	LS	$ 5,000.00	$ 5,000					$ 5,000	$ 7,250
3	Finish System	General	Refinish perimeter soffit at Hall/ Dining UC 142.	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
4	Finish System	General	Recaulk windows in East facing offices on second floor.	9	EA	$ 150.00	$ 1,350					$ 1,350	$ 1,958
Plumbing System													
1	Plumbing System	Building	Portion of the domestic cold water distribution piping are galvanized steel. Due to it's age the piping is showing signs of deterioration and should be replaced.	600	SF			$ 55.00	$ 33,000			$ 33,000	$ 47,850
2	Plumbing System	Building	Portion of the cold and hot water piping have missing and damages insulation. The insulation should be replaced.	88,768	SF			$ 0.77	$ 68,351			$ 68,351	$ 99,109
3	Plumbing System	Building	Replace domestic gas fired water heaters.	3	EA			$ 2,000.00	$ 6,000			$ 6,000	$ 8,700
Temperature Controls													
1	Temperature Controls	Building	Building is served by both Tridium (Honeywell) and Continuum (Andover) controls. Remove the Andover portion and replace with Tridium (50% assumed).	44,000	SF			$ 10.00	$ 440,000			$ 440,000	$ 638,000
Power Systems													
1	Power Systems	General	A majority of electrical distribution equipment is 30 years of age and is nearing end of expected useful life. Replacement is recommended in next major renovation.	88,768	SF					$ 18.00	$ 1,597,824	$ 1,597,824	$ 2,316,845
2	Power Systems	General	As an alternative to item 1 above, building-wide electrical testing and maintenance is recommended to identify potential issues with any older equipment. Labeling indicates testing and maintenance has not been performed since 2013.	1	LS					$ 28,000.00	$ 28,000	$ 28,000	$ 40,600
3	Power Systems	UC1-123 Projection Room	Emergency lighting inverter for lecture hall lighting appears operational, but is indicating 1 alarm status at time of site visit. Testing / maintenance is recommended at regular intervals.	1	LS					$ 1,000.00	$ 1,000	$ 1,000	$ 1,450
4	Power Systems	General	Existing arc flash labels are generic type and do not indicate incident energy boundaries, available fault current, etc.. While not required by code, it is recommended to update power system study and labeling to match that of Building CA.	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
5	Power Systems	Roof	It appears the existing lightning protection system was removed from the roof as part of a previous renovation. Air terminals were noticed to be remaining on some portions of the roof and HVAC equipment. The lightning protection should be removed in its entireity. A partially installed lightning protection system can negatively impact the possible damage caused by a lightning strike.	5	EA					$ 200.00	$ 1,000	$ 1,000	$ 1,450
Lighting System													
1	Lighting System	General	Lighting and controls were upgraded in 2014 with LED downlights and new fluorescent lamps in general lighting fixtures. Within the next renovation, new LED lighting and controls should be included to meet current Ashrae standards.	88,768	SF					$ 15.00	$ 1,331,520	$ 1,331,520	$ 1,930,704
2	Lighting System	UC1-125 Study Area	Light switch in this space was audibly arcing when operated. Light switches indicating this level of deterioration should be replaced as soon as possible.	1	LS					$ 200.00	$ 200	$ 200	$ 290
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	Lobby	Install cane rail at underside of stairs in Lobby	2	EA	$ 1,500.00	$ 3,000					$ 3,000	$ 4,350
2	Code Systems and Barrier Free	Second Floor	Seal floor penetrations in IDF/ IT closets	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
							$ 26,350		**$ 547,351**		**$ 2,967,544**	**$ 3,541,245**	**$ 5,134,806**

BUILDING UC-2



GENERAL OVERVIEW

Use: Classrooms, Labs and Offices

Year Built: 1999

Total Area: 52,290 SF

Floors: 2

5 Year DMB: $6,745,226

CRV: $23,394,310

FCI: 28.83%

COMMENTS

Roof System

- Single-ply roof installed in 1999. Roof warranty expired in 2014. Roof should be scheduled for replacement.

Connector Bridge

- Bridge enclosure system, including roof, windows and panels, leaks and should be replaced.

HVAC Systems

- Building HVAC systems should be retro-commissioned.

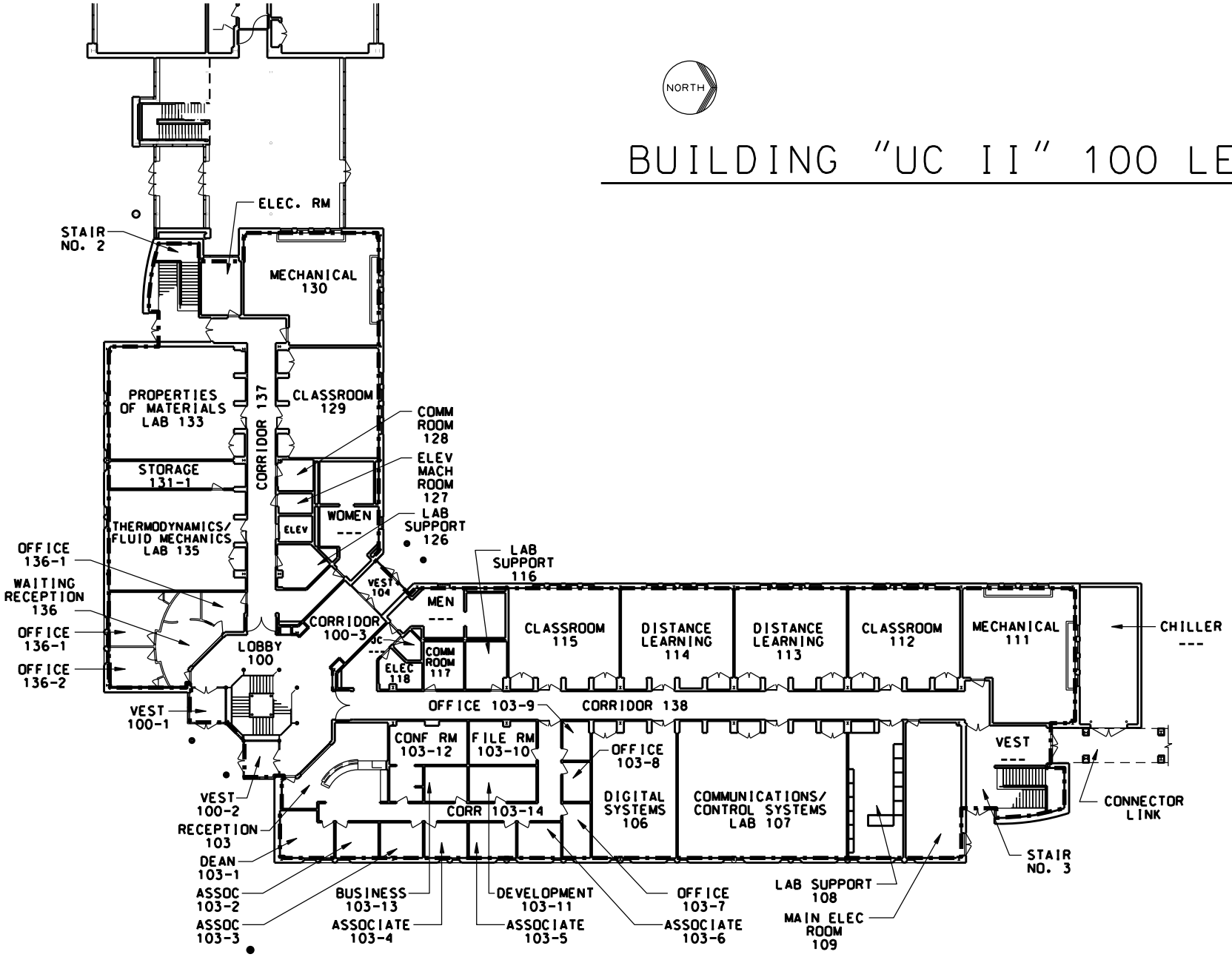
Temperature Controls

- Building is served by both Tridium (Honeywell) and Desigo (Siemens) controls. Remove the Desigo portion and replace with Tridium.

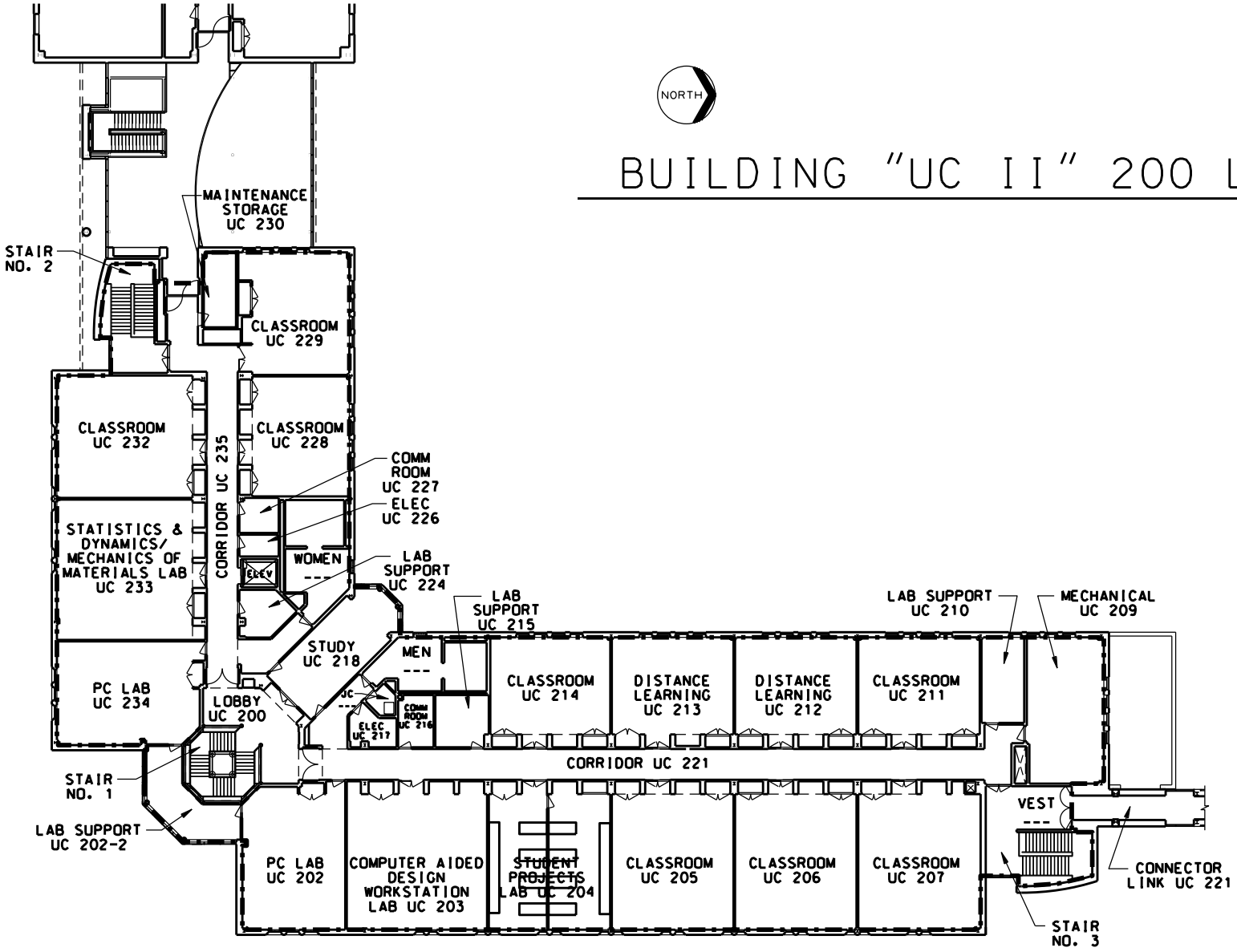


Existing Substation

BUILDING "UC II" 100 LEVEL



BUILDING "UC II" 200 LEVEL



University Center 2

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Above Lobby	Re-seal Kal wall system.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
2	Roof System	Roof	Re-paint gas piping.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
2	Roof System	Roof	Repalce roof	26645	SF	$ 14.00	$ 373,030					$ 373,030	$ 540,894
Enclosure System													
1	Enclosure System	Electrical Room	Replace door frame at electrical room.	1	LS	$ 2,500.00	$ 2,500					$ 2,500	$ 3,625
2	Enclosure System	Bridge	Replace exterior finishes including roof and windows.	1	LS	$240,000.00	$ 240,000					$ 240,000	$ 348,000
3	Enclosure System	Mechanical Louvers	Clean stained limestone at mechancial louvers.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
Finish System													
1	Finish System	Office Suite 136	Repair vinyl wall covering.	1	LS	$ 500.00	$ 500					$ 500	$ 725
HVAC System													
1	HVAC System	Building	Perform mechanical system retro-commissioning to restore the building mechanical system back to the original design intent and complete an air and water system balance report to identify potential operation issues.	1	LS			$ 89,980.00	$ 89,980			$ 89,980	$ 130,471
2	HVAC System	Building	Implementation of the recommendations that come out of retro-commissioning activities.	53,290	SF			$ 30.00	$ 1,598,700			$ 1,598,700	$ 2,318,115
Temperature Controls													
1	Temperature Controls	Building	Building is served by both Tridium (Honeywell) and Desigo (Siemens) controls. Remove the Desigo portion and replace with Tridium. Commission conrols, replace pneumatic operation with electric, calibrate devices, review sequences of operation, etc.	53,290	SF			$ 10.00	$ 532,900			$ 532,900	$ 772,705
Power Systems													
1	Power Systems	General	A majority of electrical distribution equipment is 23 years of age and is nearing end of expected useful life. Replacement is recommended in next major renovation.	53,290	SF					$ 18.00	$ 959,220	$ 959,220	$ 1,390,869
2	Power Systems	General	As an alternative to item 1 above, building-wide electrical testing and maintenance is recommended to identify potential issues with any older equipment. Labeling indicates testing and maintenance has not been performed since 2013.	1	LS					$ 28,000.00	$ 28,000	$ 28,000	$ 40,600
3	Power Systems	General	A majority of electrical equipment was missing arc flash labels. It is recommended to provide a power system study and labeling.	1	LS					$ 21,000.00	$ 21,000	$ 21,000	$ 30,450
Lighting System													
1	Lighting System	General	Existing lighting is fluorescent and current controls are not fully code compliant with latest energy codes. Recommended to replace with LED and controls as a part of the next major building renovation. Includes 'UC connector' square footage.	53,290	SF					$ 15.00	$ 799,350	$ 799,350	$ 1,159,058
Code Systems and Barrier Free													
1	Code Systems and Barrier Free	General	Install pipe protection below lavatories and sinks.	16	EA	$ 200.00	$ 3,200		$ -		$ -	$ 3,200	$ 4,640
							$ 622,730		**$ 2,221,580**		**$ 1,807,570**	**$ 4,651,880**	**$ 6,745,226**

BUILDING UC-3



GENERAL OVERVIEW

Use: Classrooms and Lab

Year Built: 2007

Total Area: 36,718

Floors: 2

5 Year DMB: $1,777,048

CRV: $16,816,844

FCI: 10.57%

COMMENTS

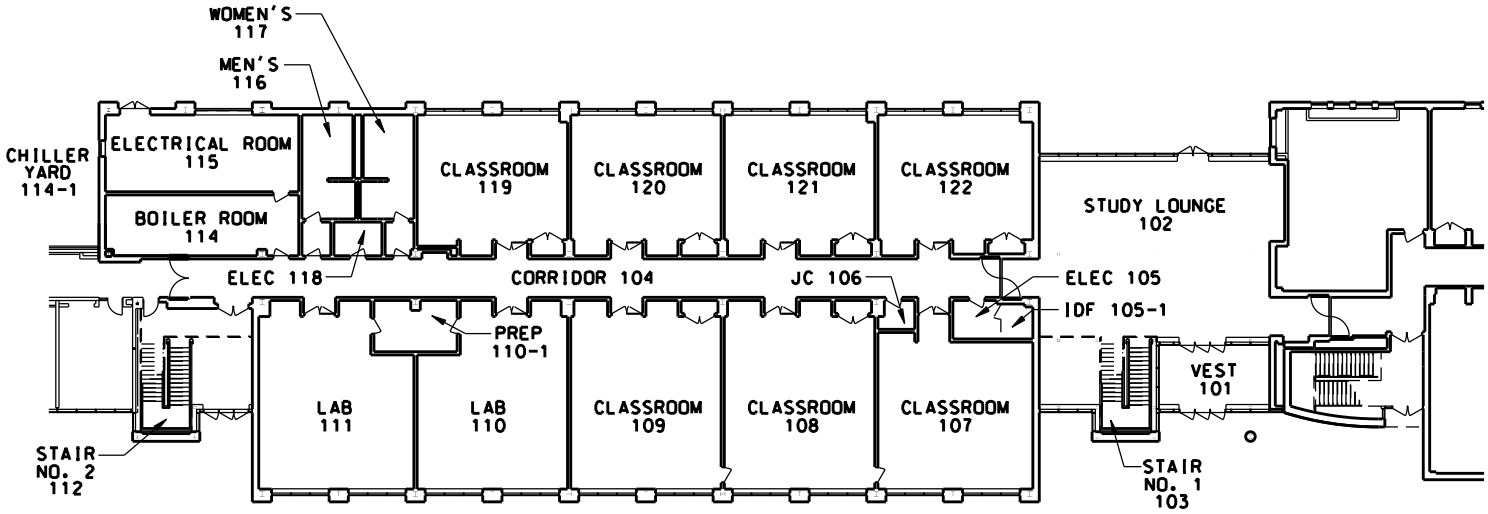
Roof System

- Duro-Last single-ply roof installed in 2007. Roof warranty expired in 2022. Roof should be scheduled for replacement.

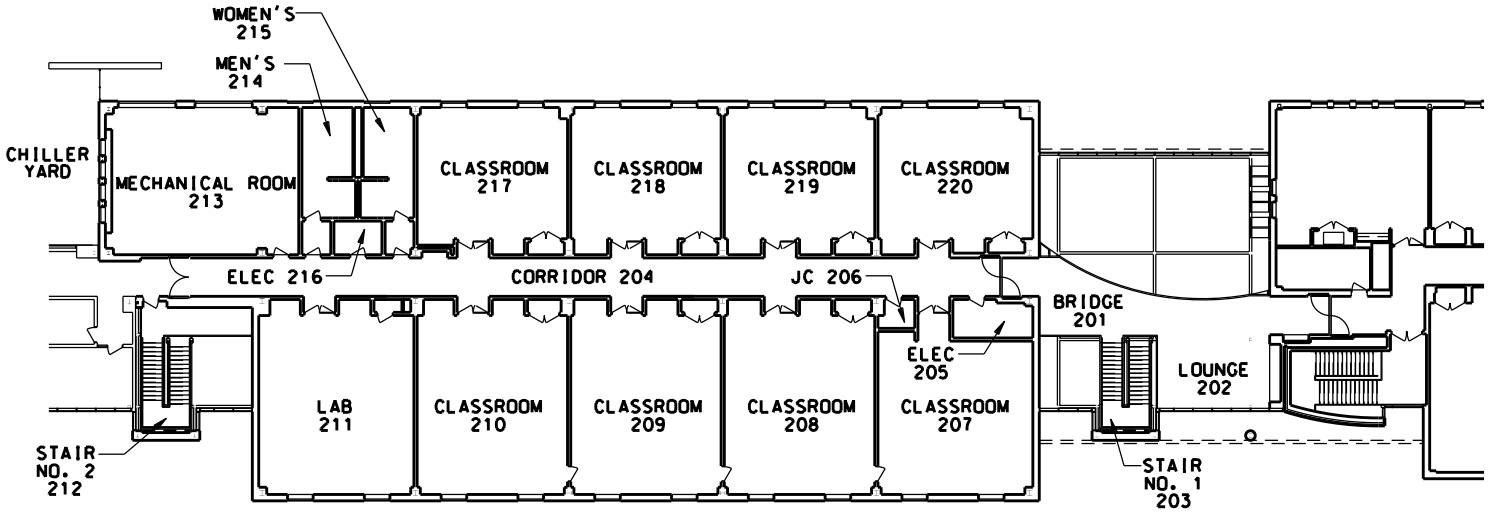
Temperature Controls

- Building Siemens Desigo controls should be upgraded to Tridium.

BUILDING "UC III" 100 LEVEL



BUILDING "UC III" 200 LEVEL



University Center 3

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Roof	Repair roof leak at main entry.	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
2	Roof System	Roof	Re-paint gas piping.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
3	Roof System	Roof	Repalce roof	18400	SF	$ 14.00	$ 257,600					$ 257,600	$ 373,520
Enclosure System													
1	Enclosure System	Several Locations	Missing or loose mullion caps.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
2	Enclosure System	Throughout	Reseal joints in limestone base.	1	LS	$ 2,000.00	$ 2,000					$ 2,000	$ 2,900
3	Enclosure System	Throughout	Reseal control joints in brick.	1	LS	$ 3,000.00	$ 3,000					$ 3,000	$ 4,350
Finish System													
1	Finish System	Second Level	Repair gypsum soffit at main entry.	1	LS	$ 1,500.00	$ 1,500					$ 1,500	$ 2,175
2	Finish System	Second Level	Replace damaged ceiling tiles at main entry.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
3	Finish System	Second Level	Repair wall damage at fire doors to UC-2 - second level.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
Fixed Equipment													
1	Fixed Equipment	General	Install cane rail under stairs.	2	EA	$ 1,500.00	$ 3,000					$ 3,000	$ 4,350
Temperature Controls													
1	Temperature Controls	Building	Repalce existing Siemens Desigo control system with Tridium	36718	SF			$ 10.00	$ 367,180			$ 367,180	$ 532,411
Power Systems													
1	Power Systems	General	NFPA 70E requires updating arc flash studies at an interval not to exceed 5 years. The existing labeling is not dated however appears to be original. It is recommended to update the building-wide power systems study.	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
2	Power Systems	General	No signs of electrical equipment maintenance or testing since original installation in ~2007. Electrical testing and maintenance is recommended.	1	LS					$ 20,000.00	$ 20,000	$ 20,000	$ 29,000
Lighting System													
1	Lighting System	General	Existing lighting is fluorescent & current controls are not fully code compliant with latest energy codes. Recommended to replace with LED and controls as a part of the next major building renovation.	36,718	SF					$ 15.00	$ 550,770	$ 550,770	$ 798,617
2	Lighting System	Various	Multiple utility spaces contained emergency battery unit light fixtures that were broken or had battery error lights on. Immediate replacement of damaged and inoperable emergency lights is recommended.	1	LS					$ 5,000.00	$ 5,000	$ 5,000	$ 7,250
						$ 274,600		$ 367,180		$ 583,770		$ 1,225,550	$ 1,777,048

BUILDING UC-4



GENERAL OVERVIEW

Use: Classrooms and Lab

Year Built: 2008

Total Area: 25,444 SF

Floors: 2

5 Year DMB: $1,123,976

CRV: $13,103,660

FCI: 8.58%

COMMENTS

Roof System

- Duro-Last single-ply roof installed in 2009. Roof should be scheduled for replacement.

HVAC Systems

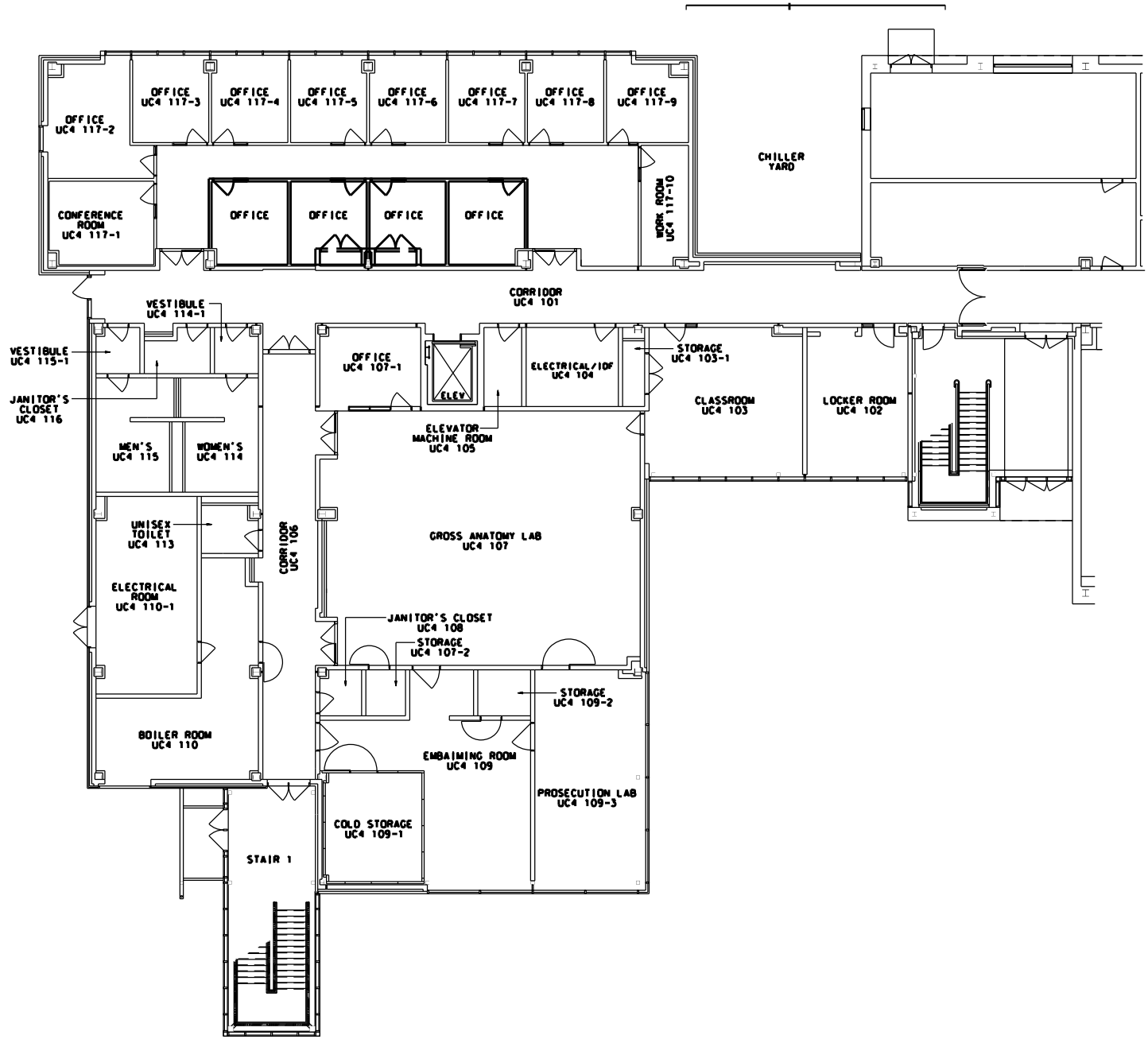
- Existing rooftop HVAC unit should be scheduled for replacement.

Temperature Controls

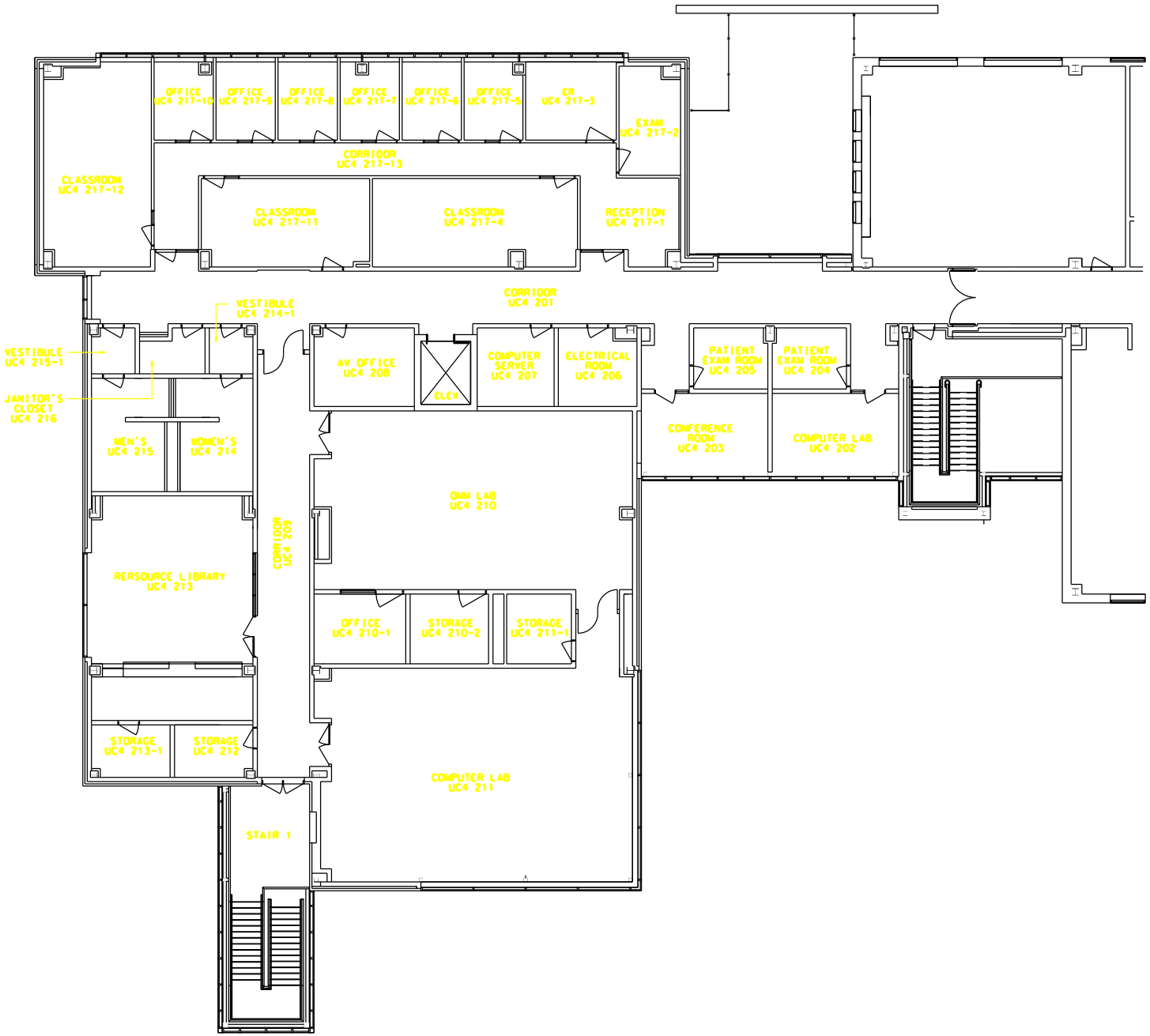
- Building is served by both Tridium (Honeywell) and Desigo (Siemens) controls. Remove the Desigo portion and replace with Tridium.

Power Systems

- Electrical equipment was upgraded in 2009 and is good condition.



BUILDING "UC 4" 100 LEVEL



BUILDING "UC 4" 200 LEVEL

University Center 4

No.	Item/Description	Location	Notes	Qty.	Unit	Architectural		Mechanical		Electrical		Construction Cost	Project Cost
						Unit Cost	Subtotal	Unit Cost	Subtotal	Unit Cost	Subtotal		
Roof System													
1	Roof System	Roof	Repaint gas piping.	1	LS	$ 1,000.00	$ 1,000					$ 1,000	$ 1,450
2	Roof System	Roof	Replace roof	12730	SF	$ 14.00	$ 178,220					$ 178,220	$ 258,419
HVAC Systems													
1	HVAC System	Building	Building is served by both Tridium (Honeywell) and Desigo (Siemens) controls. Remove the Desigo portion and replace with Tridium.	1	LS	$ 3,000.00	$ 3,000	$ 80,000.00	$ 80,000	$ 3,000.00	$ 3,000	$ 86,000	$ 124,700
Plumbing System													
1	Plumbing System	Building	Investigate source of water leak near domestic water heater DWH-4and repair.	1	LS			$ 500.00	$ 500			$ 500	$ 725
2	Plumbing System	Building	Investigate cause of excessive natural gas order at building exterior service entrance gas pressure regulators and repair.	1	LS			$ 500.00	$ 500			$ 500	$ 725
Temperature Controls													
1	Temperature Controls	Building	Building is served by both Tridium (Honeywell) and Desigo (Siemens) controls. Remove the Desigo portion and replace with Tridium.	25,444	SF			$ 4.00	$ 101,776			$ 101,776	$ 147,575
Power Systems													
1	Power Systems	General	A majority of electrical equipment was missing arc flash labels. It is recommended to provide a power system study and labeling.	1	LS					$ 8,000.00	$ 8,000	$ 8,000	$ 11,600
2	Power Systems	General	Electrical equipment had no indication of maintenance or testing since original installation in 2009. Testing / maintenance is recommended at regular intervals.	1	LS					$ 10,000.00	$ 10,000	$ 10,000	$ 14,500
3	Power Systems	Generator Yard	300kW Natural Gas Generator installed in 2015. Testing / maintenance is recommended at regular intervals. Note: The existing generator provides back up power to substation UC-4, via 800A automatic transfer switch. The generator will not be permitted to also serve future life safety loads without distribution system modifications.	1	LS					$ 7,500.00	$ 7,500	$ 7,500	$ 10,875
Lighting System													
1	Lighting System	General	Existing lighting is fluorescent and current controls are not fully code compliant with latest energy codes. Recommended to replace with LED and controls as a part of the next major building renovation.	25,444	SF					$ 15.00	$ 381,660	$ 381,660	$ 553,407
							$ 182,220		**$ 182,776**		**$ 410,160**	**$ 775,156**	**$ 1,123,976**