

BOARD OF REGENTS

EASTERN MICHIGAN UNIVERSITY

SECTION: 17
DATE:
February 24, 2009

RECOMMENDATION

PROGRAM STATEMENT – PRAY-HARROLD MODERNIZATION

ACTION REQUESTED

It is recommended that the Board approve the Program Statement and Schematic Planning documents for the Pray-Harrold Modernization project for subsequent submittal to the State Budget Office (SBO) for their review and approval.

STAFF SUMMARY

The modernization of Pray-Harrold has been identified on the University's capital outlay request since 1999. On September 29, 2008, approval was granted by the State, as signed by the governor, to fund the majority of this project from the State of Michigan Capital Outlay Budget (S.B. 511).

The University is submitting the attached Program Statement and Schematic Planning documents to the (SBO) where if approved, the SBO, along with the Department of Management and Budget (DMB) will submit Program Statement and Schematic Planning documents to the Legislature's Joint Capital Outlay Subcommittee (JCOS) for review and approval. Any state funded project is required to be submitted under the guidelines as stated in the State of Michigan DMB Major Project Design Manual for Professional Service Contractors, State Universities, Community Colleges, and State Agencies.

FISCAL IMPLICATIONS

The projected cost for the modernization is \$42 million. The project will be funded through State Capital Outlay Appropriations (\$31.5 million) and the matching University funds (\$10.5 million), previously designated from tuition revenues for capital improvements.

ADMINISTRATIVE RECOMMENDATION

The proposed Board action has been reviewed and is recommended for Board approval.

University Executive Officer

Date



SHWGROUP

Phase 200 / 300 Program
Statement/Schematic Design

Pray-Harrold Modernization

**Eastern Michigan University
Ypsilanti, Michigan**

Authorized by P.A. No. 278 of 2008
DMB file No. 332/09019.JAN

Approved by:
Eastern Michigan Board of Regents
Eastern Michigan University

On: February 24, 2009

**Draft Submission:
February 17, 2009**

SHW Project No. 7109.001.00

Prepared by:

Architect/ Structural Engineer

SHW Group
2338 Coolidge Suite 100
Berkley, Michigan 48072
Phone: (248) 291-0595

Mechanical/Electrical Engineer

SHW Group
2338 Coolidge Suite 100
Berkley, Michigan 48072

Phase 200/300 Program Statement and Schematic Design

Table of Contents

1. Introduction
2. Approval Letters
3. Building Program Areas & Space Classification
4. Net and Gross Areas
5. Furnishings & Equipment List
6. Site & Exterior Space Relationships
7. Building Space Diagram
8. Building and Construction Systems
9. Project / Program Cost
10. Design and Construction Schedule
11. Annual Operating Budget
12. Drawings

1.0 Introduction

Project Description:

Pray-Harrod is a seven-story structure, with a mechanical penthouse consisting of 235,791 gross square feet. (includes penthouse) It is the largest and most heavily utilized instructional facility on the Eastern Michigan University (EMU) campus. Aside from some construction work done in 2000 (due to fire damage) the major building infrastructure and the overall environment is much the same today as it was the day the building opened in the late 1960's. The increased level of usage, many years of wear-and-tear, and the rise of computer technology has severely taxed the existing systems of the facility, many of which are at or beyond their expected service life. The first priority of this modernization project is to replace and upgrade the mechanical, electrical, plumbing (MEP) systems, and technology infrastructure, to support continued use well into the 21st century. Since the building was constructed, building codes have evolved, and certain aspects of the building will be addressed per contemporary building code standards. Life Safety improvements include a fire suppression system, exit stair handrails and fire doors, along with barrier-free design accessibility (ADA compliance) will also be addressed.

Beyond the infrastructure and building code requirements, this project will improve the appearance and functionality of the building. Some of the shortcomings of the current configuration are the relatively small standard classrooms, lack of student commons and waiting areas, and outdated faculty offices. The interior finishes, while very durable, are also very institutional and unwelcoming. The challenge will be to find ways to enhance these aspects of the building within the current envelope without affecting capacity of instructional spaces or offices.

The project will strengthen EMU's agenda for sustainability in its modernization by following the US Green Buildings Council's standards for LEED Silver rating. Since this is a detailed MEP infrastructure modernization, most of the sustainable design features will to be found within the new engineering systems.

The work will be phased so that Pray-Harrod can remain as fully functional as possible during construction. It is a highly utilized facility and is critical to the mission of the University as a whole. The DoIT (Department of Information Technology) Data Center, located on the first floor, will not be shut down at all during construction. Also, construction phasing will take advantage of breaks in the academic year, capitalizing on periods of relatively low occupancy.

The following scope of work is currently planned to modernize, improve and enhance Pray-Harrod:

DoIT Data Center:

The renovation to the DoIT Data Center will accommodate critical MEP infrastructure needs. This work is to include: a new generator and UPS (uninterruptable power source) a new HVAC system (independent and redundant cooling), a new electrical distribution system, and updating the existing Halon fire-suppression system to current building code compliance.

Note: DiClemente Siegel Design Inc., Engineers – Architects – Planners, is the designer of record for the scope of work at the DoIT Data Center upgrade.

Mechanical Systems:

The mechanical systems include the plumbing, heating, ventilating, and air conditioning systems in the building. The intent is to modernize the equipment, increase efficiency, reduce the energy use, and significantly increase the comfort within the building. To do so, we currently plan to:

- Replace old/outdated Air Handling Units
- Replace undersized, outdated, or inefficient ductwork
- Replace old/outdated Chiller
- Replace plumbing fixtures (toilets, lavatories, drinking fountains, etc.) with ADA compliant and low water-use fixtures

Electrical Systems:

The electrical systems have been heavily taxed as technology use has increased during the past 40 years, and they are deficient by today's standards. In order to meet the needs of current technology and future building use, the following electrical upgrades are planned:

- New primary 13.2 KV power will be brought to the building, replacing the existing 4.8 KV service
- New service entrance, switchgear, and power distribution system
- New floor by floor transformers and power distribution
- Improved lighting and service power, with priority given to locations with the most impact

Life Safety / Security:

- Install a fire-suppression system throughout the building
- New emergency lighting systems will be integrated into the light fixtures to comply with the latest life safety codes
- New Fire Alarm system compliant with strobes and a voice evacuation speaker system for Campus Mass Notification
- A security camera and card-access reader will be installed at the main entry to the facility

Architectural Systems:

Architecturally, the building is worn and somewhat inadequate by decades of heavy use. This is reflected not only in the "fit and finish" of the spaces, but also in complying with significant changes to the building code which have occurred over the past 40 years. To address these issues, we currently plan to:

- Replace the roofs at the auditorium levels (both west and east sides)
- Replace the windows, curtain wall systems and exterior entry doors throughout the building, to improve occupant comfort and increase energy efficiency
- Improve the egress stairwells with improved fire rated doors and building code compliant hand-railings and guards
- Improve handicap accessibility by installing new door hardware, improving restroom layouts, and removing the raised instructor platforms within the classrooms
- Abate asbestos-containing materials within the building
- Architecture modifications to floors, walls, and ceilings which are affected by the MEP system improvements (i.e. cutting open a wall to access piping or to re-route ductwork)
 - Ceiling removal and replacement
 - Enlarging duct shafts
 - Selective demolition and reconstruction for plumbing modifications
 - New enclosures for transformers
- Finish improvements in classrooms, corridors, and offices including:
 - Selective painting and wall finishes
 - Selective flooring (tile, carpet, etc.)
 - Selective ceiling systems (acoustic tile)
 - Selective furnishings (seating and work surfaces)

Statement of Justification for the Modernization and Instructional Goals

Pray-Harrold is a heavily utilized facility. Nearly every student at the university will have classes in the building at some point in their career. With such a far-reaching influence on the educational experience of so many students, it is imperative that the learning environment be as beneficial as possible. Improvements to the comfort of the occupants and capacity of the infrastructure is fundamental to achieving this goal. Qualitative improvements to the visual environment also will enhance the experience of all building occupants.

Selection of Architect

Eastern Michigan University enacted a very concise and deliberate process for selecting SHW Group as the design professional for the Pray-Harrold Modernization Project. EMU solicited Requests for Qualifications from design professionals, and shortlisted several qualified design teams. Those teams were required to submit written proposals and interview. The teams presented to a selection committee consisting of campus administrators, Physical Plant staff, and the College of Arts & Sciences Advisory Committee.

SHW Group was selected on the merits of the team and value of professional fee. Determining factors in selecting SHW Group included:

- Individual team members with prior experience in the building and with the College of Arts & Sciences
- Extensive college and university experience
- Extensive Department of Management and Budget experience
- Renovation experience
- Professional Fee Proposal

2.0 Approval Letters

cc: John Lumm
John Wozniak



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
OFFICE OF THE STATE BUDGET
LANSING

ROBERT L. EMERSON
DIRECTOR

October 17, 2008

RECEIVED

OCT 31 2008

Office of the President
Eastern Michigan University

Dr. Susan W. Martin, President
Eastern Michigan University
202 Welch Hall
Ypsilanti, Michigan 48197

Dear President Martin:

Governor Granholm recently signed Public Act 278 of 2008, a fiscal year 2008 appropriations bill that authorizes planning for a number of university and community college capital outlay projects. Eastern Michigan University's request to develop plans for its Pray-Harrold Expansion and Renovations project was approved at that time.

Projects approved for planning in Public Act 278 will follow the capital outlay process outlined in the Department of Management and Budget (DMB) Act (M.C.L. 18.1101 to 18.1594). The DMB Act requires a community college or university to competitively select a design professional and first develop project program statements and schematic plans from its own resources. The State Budget Office (SBO) and DMB will review the plans once submitted, and then determine whether to recommend approval to the Legislature for construction cost authorization. There is no guarantee that a project authorized for planning will advance to construction. A thorough review of all planning documents will be performed and the project scope and cost estimates carefully evaluated.

If the planning documents are recommended for approval, a request for construction authorization will be transmitted to the Legislature's Joint Capital Outlay Subcommittee (JCOS). The Legislature must authorize the project for final design and construction by including a line-item for construction costs in a subsequent appropriation bill before a project may commence.

Colleges and universities electing to self-manage construction of a project must then enter into a Project Management Agreement with DMB before proceeding with final design and construction. The DMB Act requires oversight of projects to ensure they are constructed consistent with the approved scope outlined in preliminary plans and program statements, and within authorized costs. Preference for Michigan-based goods and services in the delivery and construction of the project is required. Failure to follow project requirements outlined in the

President Martin
October 17, 2008
Page 2

DMB Act and Project Management Agreement may jeopardize the state's ability to provide matching funds for capital outlay projects. Any alterations in project scope or cost once a project has been authorized for construction also requires the approval of the Legislature.

The state share of project financing is provided through the issuance of long-term notes via the State Building Authority (SBA). Such financing requires that the project land and facility be conveyed by the university or community college to the SBA, with the state then entering into a lease with the SBA for the institution's use. Rental income paid by the state to the SBA is used to retire the long-term notes. Once the SBA's debt obligation for a project is retired, the land and facility are conveyed back to the institution.

It is the intent of Governor Granholm that the projects authorized for planning be accelerated to the extent possible to spur economic activity and construction jobs. However, as noted above, the state share of project financing is contingent upon the issuance of long-term notes by the SBA. The current financial crisis has severely impacted credit markets, and impeded the ability of governmental entities across the country to bond for capital projects. While we are optimistic this situation will stabilize in the coming months, we will be closely monitoring the financial markets and evaluating the viability of SBA financing prior to the transmittal of project plans and requests for construction authorization to JCOS.

Summary documents with more detailed information regarding the capital outlay process and State Building Authority financing are attached. To assist with your planning efforts, the following provides a link to the DMB website and the Major Project Design Manual: <http://www.michigan.gov/dmb> (search: Major Project Design Manual).

Please feel free to contact our staff with questions as you move forward in the development of your project. We look forward to a successful partnership.

Sincerely,

Robert L. Emerson
State Budget Director

Lisa Webb Sharpe, Director
Department of Management and Budget

President Martin
October 17, 2008
Page 3

Attachments

cc: Rep. Morris Hood III, Chairman, Joint Capital Outlay Subcommittee
Sen. Michelle McManus, Vice-Chairman, Joint Capital Outlay Subcommittee
Senate Fiscal Agency
House Fiscal Agency
Facilities Administration
State Building Authority
Office of Education and Infrastructure

State of Michigan Primary Contact Information:

Lisa Shoemaker
Capital Outlay Coordinator
Office of the State Budget
111 South Capitol Avenue
P.O. Box 30026
Lansing, Michigan 48909
(517) 335-7192 phone
(517) 241-5485 fax
shoemakerl@michigan.gov

Questions Relating to: Appropriations Process, Capital Outlay Process, Program Statement & Schematic Plan Reviews, JCOS, Project Management Agreement, etc.

Robert Hall, Director
Design & Construction Division
Facilities Administration
Department of Management & Budget
530 West Allegan Street
P.O. Box 30026
Lansing, Michigan 48909
(517) 373-6311 phone
(517) 373-3562 fax
hallr5@michigan.gov

Questions Relating to: Major Project Design Manual, Project Management, Competitive Bidding, Procurement Policies, Prevailing Wage, Construction Documents, Change Orders, Monthly Reporting, etc.

Deborah Roberts, Executive Director
State Building Authority
Department of Management & Budget
320 South Walnut Street
P.O. Box 30026
Lansing, Michigan 48909
(517) 373-3806 phone
(517) 335-1638 fax
robertsd1@michigan.gov

Questions Relating to: State Building Authority financing, project cash flow, conveyances, lease, property titles, surveys, etc.

**SUMMARY OF
UNIVERSITY (U) and COMMUNITY COLLEGE (CC)
CAPITAL OUTLAY PROCESS**

I. Program and Planning Phase (for projects authorized for planning only):

- A. Legislature authorizes planning for a U/CC project in an appropriation bill. U/CC competitively selects a design professional. Planning is done by U/CC at U/CC expense.
- B. U/CC submits draft Program Statement and Schematic Planning documents to the State Budget Office (SBO) consistent with the Department of Management and Budget's (DMB) *Major Project Design Manual*.
- C. If approved, the SBO, along with DMB, will submit Program Statement and Schematic Planning documents to the Legislature's Joint Capital Outlay Subcommittee (JCOS), for review and approval.
- D. If approved, the Legislature will authorize the project for final design and construction as a line-item in an appropriation bill.

II. Design and Construction Phase (for projects authorized for final design and construction):

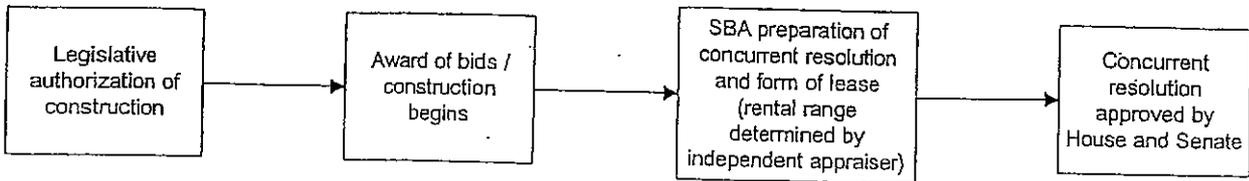
- A. U/CC notifies SBO/DMB how they propose to manage the project, either: 1) through DMB; or 2) self-managed by the U/CC.
- B. If self-managed by U/CC, SBO will forward a Project Management Agreement for signature outlining various oversight responsibilities, reviews, monthly reporting, etc. The Project Management Agreement must be executed in order to proceed with final design and construction.

IF MANAGED IS TO BE MANAGED BY DMB, NO FURTHER ACTION OR SUBMITTALS ARE REQUIRED BY THE U/CC, OTHERWISE PROCEED TO STEP C.

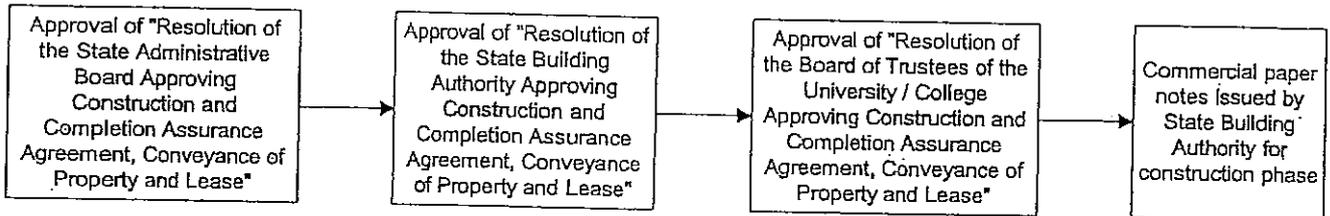
- C. U/CC signs and returns Project Management Agreement to SBO prior to submission of preliminary and final construction documents to DMB and prior to construction.
- D. U/CC submits Preliminary Plans and updated budget sheet to DMB for document review and approval.
- E. U/CC submits the final construction documents to DMB for review. DMB notifies U/CC of approval and authorizes bidding of the project. **If an accelerated/phased delivery of the project is anticipated, DMB must be notified, and complete construction documents and bid results submitted for each phase, unless otherwise agreed to by DMB.**
- F. U/CC submits bid results to DMB for review and submission to JCOS. DMB authorizes U/CC to award contract(s).
- G. U/CC starts construction and submits the following:
 - 1. Monthly Status Reports, including Change Orders, to DMB as outlined in the Project Management Agreement.
 - 2. All project expenditures are submitted to DMB on behalf of the State Building Authority (SBA), for review and approval. Please note that reimbursement by the SBA will not start until the U/CC share has been expended and all items above, as well as the requirements of the Project Management Agreement, have been completed, submitted and approved.
- H. Contact Lisa Shoemaker, SBO, at (517) 335-7192 regarding approvals of Program Statements and execution of Project Management Agreements.
- I. Contact Robert Hall, DMB, at (517) 373-6311 regarding the format, review and approval of program/schematic plans, preliminary plans, bid results, final construction plans and monthly status reports. The formats for these documents are detailed in the *Major Project Design Manual*, available through DMB and online at www.michigan.gov/dmb

State Building Authority Process Flowchart

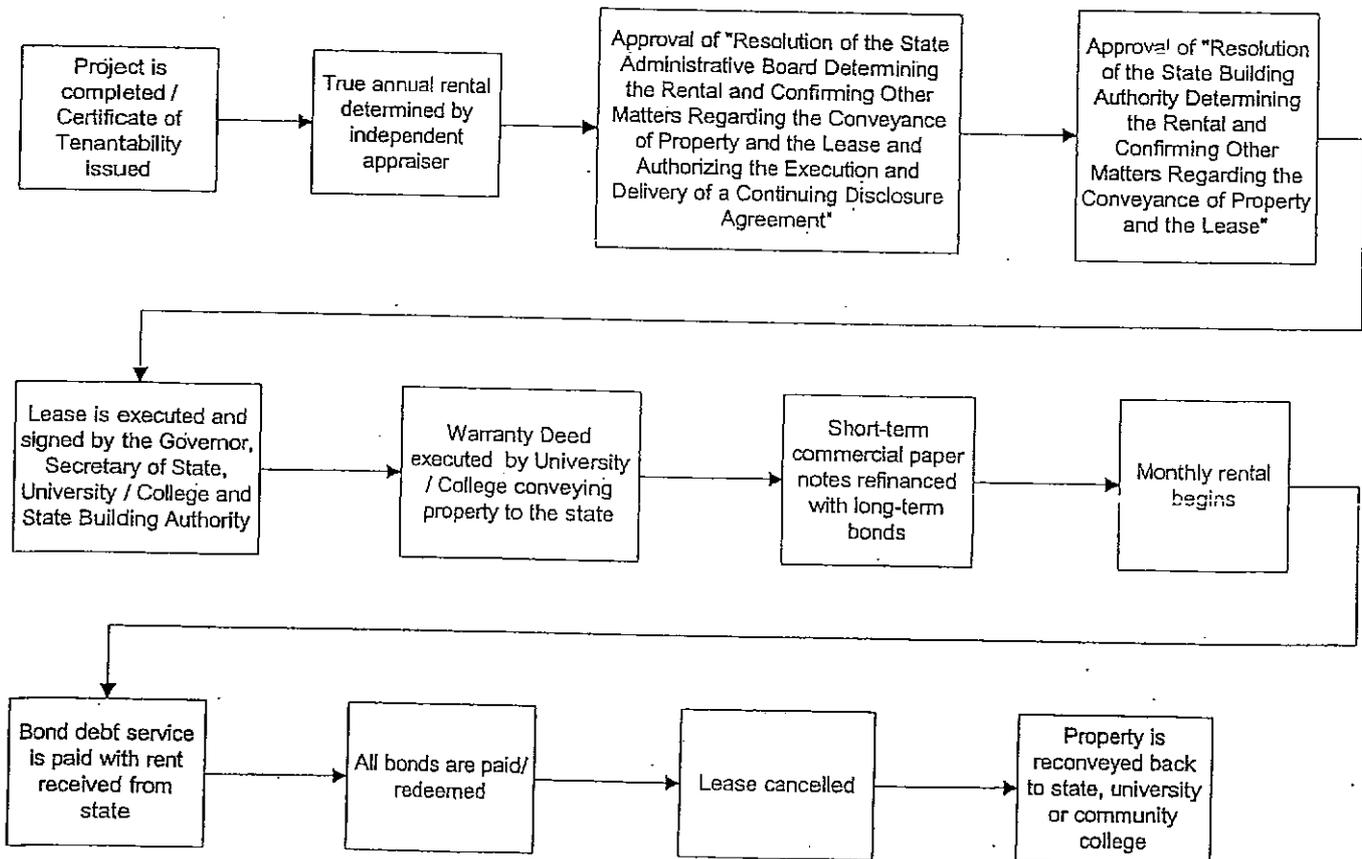
Project Authorization



Short-term Financing



Long-term Financing



3.0 Building Program Areas & Space Classification

The following Final Program spreadsheets for the Pray-Harrold Modernization contain all of the requirements of both the Building Program Areas and Space Classification. Therefore, these two sections have been combined. Room occupancies as well as square footages are listed individually and totaled.

No spaces on campus have been vacated in the creation of this project.

Pray-Harrold Existing

	Quantity per Program	Number of Occupants	Total Occupants	Net Unit Area	Total Agency Area	Total Building Area
Department Spaces						
African American Studies						
Offices						
Department Head	1	1	1	245	245	
Large Office	1	2	2	191	191	
Medium Office	3	1	3	131	393	
Small Office	3	1	3	89	267	
Support						
Conference Room	1	14	14	387	387	
Reception	1	1	1	232	232	
Storage	1	0	0	55	55	
Internal Circulation						104
						1,874
Communications & Theatre Arts						
Offices						
Large Office	2	2	4	240	480	37
Medium Office	5	2	10	140	700	
Small Office	8	2	16	92	736	
Graduate Assistant Office	1	7	7	545	545	
Support						
Internal Circulation						164
						2,625
Computer Science						
Offices						
Department Head	1	1	1	184	184	173
Media Lab Office	1	2	2	183	183	
Medium Office	8	1	8	120	960	
Small Office	10	1	10	84	840	
Graduate Assistant Office	1	2	2	184	184	
Support						
Conference Room	1	22	22	365	365	
Reception	1	1	1	212	212	
Mail Room	1	0	0	65	65	
Work Room	1	0	0	235	235	
Storage	3	0	0	55	165	
Internal Circulation						432
Classrooms/Labs						
Large Computer Lab	1	33	33	1,200	1,200	
Small Computer Lab	4	23	92	680	2,720	
Server Lab	1	2	2	556	556	
						8,301
Dean's Suite						
Offices						
Dean's Office	1	1	1	362	362	55
Large Office	1	1	1	268	268	
Medium Office	2	1	2	180	360	
CAS Large Office	2	2	4	180	360	
CAS Medium Office	3	2	6	126	378	
Support						
Large Conference Room	1	22	22	636	636	
Tech Support Room	1	16	16	367	367	
Reception	1	3	3	586	586	
Work Room	1	0	0	97	97	
Waiting	1	0	0	88	88	
						3,502

	Quantity per Program	Number of Occupants	Total Occupants	Net Unit Area	Total Agency Area	Total Building Area
Economics						
Offices						79
Department Head	1	1	1	230	230	
Large Office	8	2	16	139	1,112	
Small Office	6	1	6	90	540	
Support						
Reception	1	1	1	237	238	
Work Room	1	0	0	169	169	
Storage	3	0	0	132	396	
Internal Circulation					544	
Classrooms/Labs						
Small Classroom	2	17	34	377	754	
Small Computer Lab	1	21	21	750	750	
						4,733
English						
Offices						319
Department Head	1	1	1	230	230	
Large Office	34	2	68	141	4,794	
Small Office	36	1	36	89	3,204	
Support						
Conference Room	1	4	4	135	135	
Reception	1	2	2	238	238	
Faculty Lounge	1	16	16	361	361	
Mail Room	1	0	0	141	141	
Work Room	2	0	0	132	264	
Journal NT	1	0	0	80	80	
Storage	1	0	0	89	89	
Internal Circulation					2,015	
Lit. Center	1	1	1	143	143	
Classrooms/Labs						
Small Classroom	4	17	68	382	1,528	
Children's Lit. Center	1	37	37	776	776	
Writing Center	1	30	30	775	775	
Writing Project	1	10	10	756	756	
Small Computer Lab	2	23	46	676	1,352	
						16,881
History & Philosophy						
Offices						68
Department Head	1	1	1	231	231	
Large Office	13	2	26	141	1,833	
Small Office	14	1	14	89	1,246	
Graduate Assistant Office	1	5	5	446	446	
Support						
Reception	1	2	2	240	240	
Faculty Lounge	1	16	16	360	360	
Work Room	1	0	0	170	170	
Exam Room	1	4	4	140	140	
Storage	1	0	0	140	140	
Internal Circulation					888	
						5,694
Mathematics						
Offices						292
Department Head	1	1	1	184	184	
Large Office	4	2	8	162	648	
Medium Office	19	1	19	121	2,299	
Small Office	12	1	12	90	1,080	
Lecturers' Office	1	10	10	480	480	
Support						
Conference Room	2	12	24	272	544	
Reception	2	1	2	237	474	
Work Room	1	0	0	97	97	
Storage	4	0	0	66	264	
Internal Circulation					1,039	
Classrooms/Labs						
Math Den	1	20	20	763	763	
Math Development Center	2	31	62	768	1,536	
Math Testing Center	2	15	30	571	1,142	

	Quantity per Program	Number of Occupants	Total Occupants	Net Unit Area	Total Agency Area	Total Building Area
Math Tutoring	2	25	50	365	730	
Small Computer Lab	2	27	54	765	1,530	
						12,810
Political Science						
Offices						53
Department Head	1	1	1	231	231	
Large Office	12	2	24	141	1,692	
Small Office	10	1	10	90	900	
Support						
Reception	1	2	2	240	240	
Faculty Lounge	1	16	16	361	361	
Work Room	1	0	0	171	171	
Internal Circulation					888	
						4,483
Sociology, Anthropology, & Criminology						
Offices						110
Department Head	1	1	1	230	230	
Large Office	12	2	24	141	1,692	
Medium Office	1	2	2	117	117	
Small Office	14	1	14	90	1,260	
Support						
Reception	1	2	2	237	237	
Faculty Lounge	1	16	16	358	358	
Work Room	1	0	0	170	170	
Storage	2	0	0	85	170	
Internal Circulation					888	
Classrooms/Labs						
Small Classroom	1	20	20	372	372	
Anthropology Lab	1	31	31	559	559	
						6,053
Women's & Gender Studies						
Offices						14
Department Head	1	1	1	230	230	
Large Office	1	3	3	140	140	
Small Office	3	3	9	90	270	
Support						
Reception	1	1	1	237	237	
Work Room	1	0	0	169	169	
Internal Circulation					379	
						1,425
Information Technology						
Offices						62
Front Office	1	3	3	792	792	
Open Office	2	9	18	1,681	3,362	
Extra Large Office	1	2	2	500	500	
Large Office	2	2	4	233	466	
Medium Office	5	1	5	184	920	
Small Office	13	1	13	104	1,352	
Support						
Large Conference Room	1	6	6	529	529	
Conference Room	2	4	8	307	614	
Data Base Team	1	2	2	590	590	
North Computer Room	1	4	4	2,331	2,331	
UPS Room	3	0	0	180	540	
Kitchen	1	0	0	105	105	
Break Room	1	8	8	272	272	
Telecommunications Closet	1	0	0	103	103	
Large Storage	1	0	0	568	568	
Storage	2	0	0	69	138	
						13,182
Sub-total Department Space	344		1,224		81,563	

Pray-Harrold Modernization

	Quantity per Program	Number of Occupants	Total Occupants	Net Unit Area	Total Agency Area	Total Building Area
Department Spaces						
African American Studies						
Offices						
Department Head	1	1	1	245	245	
Large Office	1	2	2	191	191	
Medium Office	3	1	3	131	393	
Small Office	3	1	3	89	267	
Support						
Conference Room	1	14	14	387	387	
Reception	1	1	1	232	232	
Storage	1	0	0	55	55	
Internal Circulation						104
						1,874
Communications & Theatre Arts						
Offices						
Large Office	2	2	4	240	480	37
Medium Office	5	2	10	140	700	
Small Office	8	2	16	92	736	
Graduate Assistant Office	1	7	7	545	545	
Support						
Internal Circulation						164
						2,625
Computer Science						
Offices						
Department Head	1	1	1	184	184	173
Media Lab Office	1	2	2	183	183	
Medium Office	8	1	8	120	960	
Small Office	10	1	10	84	840	
Graduate Assistant Office	1	2	2	184	184	
Support						
Conference Room	1	22	22	365	365	
Reception	1	1	1	212	212	
Mail Room	1	0	0	65	65	
Work Room	1	0	0	235	235	
Storage	3	0	0	55	165	
Internal Circulation						432
Classrooms/Labs						
Large Computer Lab	1	33	33	1,200	1,200	
Small Computer Lab	4	23	92	680	2,720	
Server Lab	1	2	2	556	556	
						8,301
Dean's Suite						
Offices						
Dean's Office	1	1	1	362	362	55
Large Office	1	1	1	268	268	
Medium Office	2	1	2	180	360	
CAS Large Office	2	2	4	180	360	
CAS Medium Office	3	2	6	126	378	
Support						
Large Conference Room	1	22	22	636	636	
Tech Support Room	1	16	16	367	367	
Reception	1	3	3	586	586	
Work Room	1	0	0	97	97	
Waiting	1	0	0	88	88	
						3,502

	Quantity per Program	Number of Occupants	Total Occupants	Net Unit Area	Total Agency Area	Total Building Area
Economics						
Offices						79
Department Head	1	1	1	230	230	
Large Office	8	2	16	132	1,056	
Small Office	6	1	6	90	540	
Support						
Reception	1	1	1	236	236	
Work Room	1	0	0	169	169	
Storage	3	0	0	132	396	
Internal Circulation					544	
Classrooms/Labs						
Small Classroom	2	17	34	377	754	
Small Computer Lab	1	21	21	750	750	
						4,675
English						
Offices						319
Department Head	1	1	1	230	230	
Large Office	34	2	68	140	4,743	
Small Office	36	1	36	89	3,204	
Support						
Conference Room	1	4	4	134	134	
Reception	1	2	2	237	237	
Faculty Lounge	1	16	16	361	361	
Mail Room	1	0	0	140	140	
Work Room	2	0	0	131	262	
Journal NT	1	0	0	80	80	
Storage	1	0	0	88	88	
Internal Circulation					2,015	
Lit. Center	1	1	1	122	122	
Classrooms/Labs						
Small Classroom	4	17	68	382	1,528	
Children's Lit. Center	1	37	37	776	776	
Writing Center	1	30	30	775	775	
Writing Project	1	10	10	756	756	
Small Computer Lab	2	23	46	676	1,352	
						16,803
History & Philosophy						
Offices						68
Department Head	1	1	1	231	231	
Large Office	13	2	26	140	1,820	
Small Office	14	1	14	89	1,239	
Graduate Assistant Office	1	5	5	446	446	
Support						
Reception	1	2	2	240	240	
Faculty Lounge	1	16	16	360	360	
Work Room	1	0	0	170	170	
Exam Room	1	4	4	140	140	
Storage	1	0	0	140	140	
Internal Circulation					888	
						5,674
Mathematics						
Offices						292
Department Head	1	1	1	184	184	
Large Office	4	2	8	162	648	
Medium Office	19	1	19	117	2,223	
Small Office	12	1	12	90	1,080	
Lecturers' Office	1	10	10	480	480	
Support						
Conference Room	2	12	24	271	542	
Reception	2	1	2	237	474	
Work Room	1	0	0	97	97	
Storage	4	0	0	66	264	
Internal Circulation					1,039	
Classrooms/Labs						
Math Den	1	20	20	763	763	
Math Development Center	2	31	62	770	1,540	
Math Testing Center	2	15	30	570	1,140	

	Quantity per Program	Number of Occupants	Total Occupants	Net Unit Area	Total Agency Area	Total Building Area
Math Tutoring	2	25	50	365	730	
Small Computer Lab	2	27	54	765	1,530	
						12,734
Political Science						
Offices						53
Department Head	1	1	1	231	231	
Large Office	12	2	24	141	1,692	
Small Office	10	1	10	90	900	
Support						
Reception	1	2	2	240	240	
Faculty Lounge	1	16	16	361	361	
Work Room	1	0	0	171	171	
Internal Circulation					888	
						4,483
Sociology, Anthropology, & Criminology						
Offices						110
Department Head	1	1	1	230	230	
Large Office	12	2	24	141	1,692	
Medium Office	1	2	2	117	117	
Small Office	14	1	14	90	1,260	
Support						
Reception	1	2	2	237	237	
Faculty Lounge	1	16	16	358	358	
Work Room	1	0	0	170	170	
Storage	2	0	0	85	170	
Internal Circulation					888	
Classrooms/Labs						
Small Classroom	1	20	20	372	372	
Anthropology Lab	1	31	31	559	559	
						6,053
Women's & Gender Studies						
Offices						14
Department Head	1	1	1	230	230	
Large Office	1	3	3	140	140	
Small Office	3	3	9	90	270	
Support						
Reception	1	1	1	237	237	
Work Room	1	0	0	169	169	
Internal Circulation					379	
						1,425
Information Technology						
Offices						62
Front Office	1	3	3	792	792	
Open Office	2	9	18	1,681	3,362	
Extra Large Office	1	2	2	500	500	
Large Office	2	2	4	233	466	
Medium Office	5	1	5	184	920	
Small Office	13	1	13	104	1,352	
Support						
Large Conference Room	1	6	6	529	529	
Conference Room	2	4	8	307	614	
Data Base Team	1	2	2	590	590	
North Computer Room	1	4	4	2,331	2,331	
UPS Room	3	0	0	180	540	
Kitchen	1	0	0	105	105	
Break Room	1	8	8	272	272	
Telecommunications Closet	1	0	0	103	103	
Large Storage	1	0	0	568	568	
Storage	2	0	0	69	138	
						13,182
Sub-total Department Space	344		1,224		81,331	

4.0 Net & Gross Areas

Net and Gross Area / Volume

Subject: DMB File No.: 332/09019.JAN
Eastern Michigan University
Pray-Harrold Modernization
Ypsilanti, Michigan

Total Project

1.	Gross Area	235,791 square feet
2.	Net Assignable Area	129,824 square feet
3.	Custodial Area	992 square feet
4.	Circulation Area	58,781 square feet
5.	Mechanical Area	26,548 square feet
6.	Construction Area	19,646 square feet

Ratio of net assignable area in 2. above to gross area in 1. is 55 percent.

Volume: 2,843,411 cubic feet

This project is a modernization of an existing building. The net to gross ratios are established by the geometry of the original construction.

5.0 Furnishings & Equipment List

Some of the instructional furniture and equipment in Pray-Harrold will be re-used in the renovated building. This furniture is noted as such on the following Furnishings and Equipment List.

In general, new furniture is planned for the Classroom and Student Spaces. New furniture in Faculty Offices is limited to task seating. In the Department of I.T. on the first floor, no new furniture is planned.

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
Classrooms						
Second Level						
202 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
203 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
207 Classroom	1				\$7,770	\$7,770
	20	Student table armed chairs		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
209 Writing Center	1					\$0
		Student chair	x			
		Student table	x			
		Instructors chair	x			
		Instructors desk	x			
210 Classroom	1				\$7,770	\$7,770
	20	Student chair		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
217 Math Testing Center	1				\$7,770	\$7,770
	20	Student chair		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
218/ 220 Math Tutoring	2					\$0
		Student chair	x			
		Student table	x			
		Instructors chair	x			
		Instructors desk	x			
219 Classroom	1				\$6,000	\$6,000
	50	Student chair		\$95	\$4,750	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
221 Math Testing Center	1				\$7,770	\$7,770
	20	Student chair		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
Third Level						
301 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
302 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
303 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
304 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
305 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
306 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
307 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
308 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
311 Server Lab	1					\$0
		Student chair	x			
		Computer table	x			
313 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
314 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
315 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
316 Childrens Literature Center	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
317 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
318 Classroom	1				\$11,682	\$11,682
	32	Student chairs		\$95	\$3,040	
	16	Student table		\$462	\$7,392	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
321 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
322 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
323 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
324 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
325 Classroom	1				\$7,770	\$7,770
	20	Student chairs		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
326 Classroom	1				\$6,466	\$6,466
	16	Student chairs		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
327 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
328 Classroom	1				\$6,466	\$6,466
	16	Student chairs		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
329 Classroom	1				\$7,770	\$7,770
	20	Student chairs		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
Fourth Level						
401 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
402 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
403 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
404 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
405 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
406 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
407 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
408 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
414 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
415 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
416 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
417 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
418 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
419 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
420 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
421 Classroom	1				\$12,986	\$12,986
	36	Student chair		\$95	\$3,420	
	18	Student table		\$462	\$8,316	

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
422 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
424 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
425 Large Classroom	1				\$17,550	\$17,550
	50	Student chair		\$95	\$4,750	
	25	Student table		\$462	\$11,550	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
426 Cas Tech Support	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
Fifth Level						
501 Math Den	1					\$0
		Student chair	x			
		Student table	x			
		lounge chairs	x			
502 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
503 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
509 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
513 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
514 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
520 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			
		Instructors chair	x			
		Instructors desk	x			
521 Computer Lab	1					\$0
		Student chair	x			
		Computer table	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
		Instructors chair	x			
		Instructors desk	x			
Sixth Level						
608 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
609 Classroom	1				\$6,567	\$6,567
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$351	\$351	
	1	Instructors desk		\$1,000	\$1,000	
618 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
619 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
Seventh Level						
708 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
709 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
715 Classroom	1				\$6,466	\$6,466
	16	Student chair		\$95	\$1,520	
	8	Student table		\$462	\$3,696	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
717 Lab	1				\$0	\$0
		Student chair	x			
		Student table	x			
		Instructors chair	x			
		Instructors desk	x			
718 Classroom	1				\$7,770	\$7,770
	20	Student chair		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
719 Classroom	1				\$7,770	\$7,770
	20	Student chair		\$95	\$1,900	
	10	Student table		\$462	\$4,620	
	1	Instructors chair		\$250	\$250	
	1	Instructors desk		\$1,000	\$1,000	
Student Commons						
Second Floor						
225 Student Commons	1				\$17,114	\$17,114
	12	Student stool		\$147	\$1,764	
	10	Student chair		\$95	\$950	

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	16	Lounge chair		\$600	\$9,600	
	6	Work table		\$800	\$4,800	
	6	Café Table		\$500	\$3,000	
	4	Occasional table		\$300		
Third Floor						
300 Corridor	1				\$14,478	\$14,478
	6	Lounge Sofa - 72"		\$2,413	\$14,478	
Fourth Floor						
400 Corridor	1				\$14,478	\$14,478
	6	Lounge Sofa - 72"		\$2,413	\$14,478	
Deans Office						
411 Reception	1				\$1,740	\$1,740
	4	Task chair		\$435	\$1,740	
	4	Workstations	x			
411A Associate Deans Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstations	x			
	1	Work table	x			
	4	Side chairs	x			
411B Workroom	1		x			\$0
411C Deans Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstations	x			
	1	Work table	x			
	4	Side chairs	x			
411D Conference room	1					\$0
	12	Tables	x			
	22	Chairs	x			
427A Waiting	1					\$0
		Waiting Chairs	x			
427B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstations	x			
	1	Work table	x			
	4	Side chairs	x			
427C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstations	x			
	1	Work table	x			
	4	Side chairs	x			
Math Department						
504B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
504C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
504D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
504E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
504F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
504H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
504J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
504K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
504L Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
504M Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
504N Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
508 D,E,F Dev. Math Offices	3				\$870	\$2,610
	2	Task chair		\$435	\$870	
	1	Workstation	x			
	1	Storage	x			
508A Office	1				\$1,740	\$1,740
	4	Task chair		\$435	\$1,740	
	4	Workstation	x			
	1	Storage	x			
508B Workroom	1		x			\$0
508C Conference room	1		x			\$0
515 Reception	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
515C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
515D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
515E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
515J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
515K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
515L Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
515M Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
515N Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
515P Conference Room	1		x			\$0
516 Reception	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
516A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
516B Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
516C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
516D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
516E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
516F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
516G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
516J Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
516K Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
516L Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
516M Storage	1		x			\$0
516N Computer room	1		x			\$0
516P Storage	1		x			\$0
713B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
713M Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
713N Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
713P Lecturers Office	1				\$1,740	\$1,740
	4	Task chair		\$435	\$1,740	
	4	Workstation	x			
	4	Storage	x			
Computer Science						
504 Reception	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
504A Mail/ Storage	1		x			\$0
504P Grad Assistant	1				\$870	\$870
	2	Task chair		\$435	\$870	
	1	Workstation	x			
511 Reception	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
511A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
511B Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
511C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
511D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
511E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
511F Office	1				\$870	\$870

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
511G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
511H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
511J Storage Room	1		x			\$0
512A Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
512B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
512C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
512D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
512E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
512F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
512G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
512H Mail/ Storage	1		x			\$0
512J Media Lab	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
515F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
515H Office	1				\$2,610	\$2,610
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
515K Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
515L Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
519 Conference Room	1		x			
Cas Tech Support						
517 Storage	1		x			
517A Office	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
	3	Workstation	x			
	3	Storage	x			
517B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
517C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	2	Storage	x			
517D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
Political Science						
601 Reception	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
601A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601B Workroom	1		x			\$0
601C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
601D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
601E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
601F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
601G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
601H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
601J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
601K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
601M Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601N Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601P Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601Q Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601R Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601S Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601T Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
601U Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
602E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
602F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
602G Faculty lounge	1		x			\$0
602H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
602J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
602K Office	1				\$870	\$870

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
602L Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
English						
602A Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
602B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
602C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
602D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
602M Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
602N Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
603A Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
603B Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
603C Office	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
	3	Workstation	x			
	1	Storage	x			
603D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
603F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
603G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	2	Workstation	x			
	1	Storage	x			
603H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
603J Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603K Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603L Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603M Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603N Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603P Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603Q Faculty	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
603R Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
607A Storage	1		x			\$0
607B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
607C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
607D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
607E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
607F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	1	Storage	x			
607G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
607H Literature Center	1		x			\$0
612 Reception	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
612A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
612B Workroom	1		x			\$0
612C Mailroom	1		x			\$0
612D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612M Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
612N Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
612P Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
612Q Office	1				\$435	\$435

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
612R Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
612S Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
612T Workroom	1		x			\$0
612U Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
613A Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
613B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
613C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
613D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
613E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
613F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
613G Faculty Lounge	1		x			\$0
613H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
613J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
613K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
613L Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
613M Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
613N Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
613P Writing Project	1				\$3,480	\$3,480
	8	Task chair		\$435	\$3,480	
	8	Workstation	x			
	8	Storage	x			
614A Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614G Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614H Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
614K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
614L Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
614M Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	1	Storage	x			
614N Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
614P Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
614Q Office	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
	3	Workstation	x			
	1	Storage	x			
614R Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Storage	x			
616 Journal NT	1		x			\$0
617D Conference Room	1		x			\$0
African American Studies						
615 Workroom	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	1	Conference Table	x			
		Conference chairs	x			
617A Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	2	Storage	x			
617B Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	2	Storage	x			
620A Reception	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
620B Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
620C Storage	1		x			\$0
707A Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
707D Faculty	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
720B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
720C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	1	Workstation	x			
	1	Storage	x			
History						
701 Reception	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		waiting chair	x			
701A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
		side table 42"	x			
701B Workroom	1		x			\$0
701C Exam Room	1		x			\$0
701D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
701E Office	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
		Workstation	x			
		Storage	x			
701F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
701G Office	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
		Workstation	x			
		Storage	x			
701H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
701J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
701K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
701M Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
701N Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
701P Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
701Q Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
701R Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
701S Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
701T Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
701U Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
702A Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
702B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
702C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
702D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
702E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
702F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
702G Faculty Lounge	1					\$0
		side chair	x			
		lounge seats	x			
		table	x			
		occasional table	x			
702H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
702J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
702K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
702L Office	1				\$870	\$870

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
702M Office	1				\$1,740	\$1,740
	4	Task chair		\$435	\$1,740	
		Workstation	x			
		Storage	x			
702N Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
702P GA Office	5				\$435	\$2,175
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
707H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
Economics						
703 Reception	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
		Workstation	x			
		Waiting chair	x			
703A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
		side table 42"	x			
		side chairs	x			
703B Workroom	1		x			\$0
703C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
703D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
703E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
703F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
703G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
703H Storage	1		x			\$0
703J Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
703K Office	1				\$435	\$435

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
703L Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
703M Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
703N Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
703O Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
703P Storage	1		x			\$0
703Q Storage	1		x			\$0
707E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
707F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
707G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
Sociology, Anthropology, Criminology						
707B Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
707C Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
712 Reception	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Waiting chair	x			
712A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
		side table 42"	x			
		side chairs	x			
712B Workroom	1		x			\$0
712C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
712D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
712E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
712F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
712G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
712H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
712J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
712K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
712M Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
712N Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
712P Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
712Q Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
712R Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
712S Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
712T Storage	1		x			\$0
712U Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			

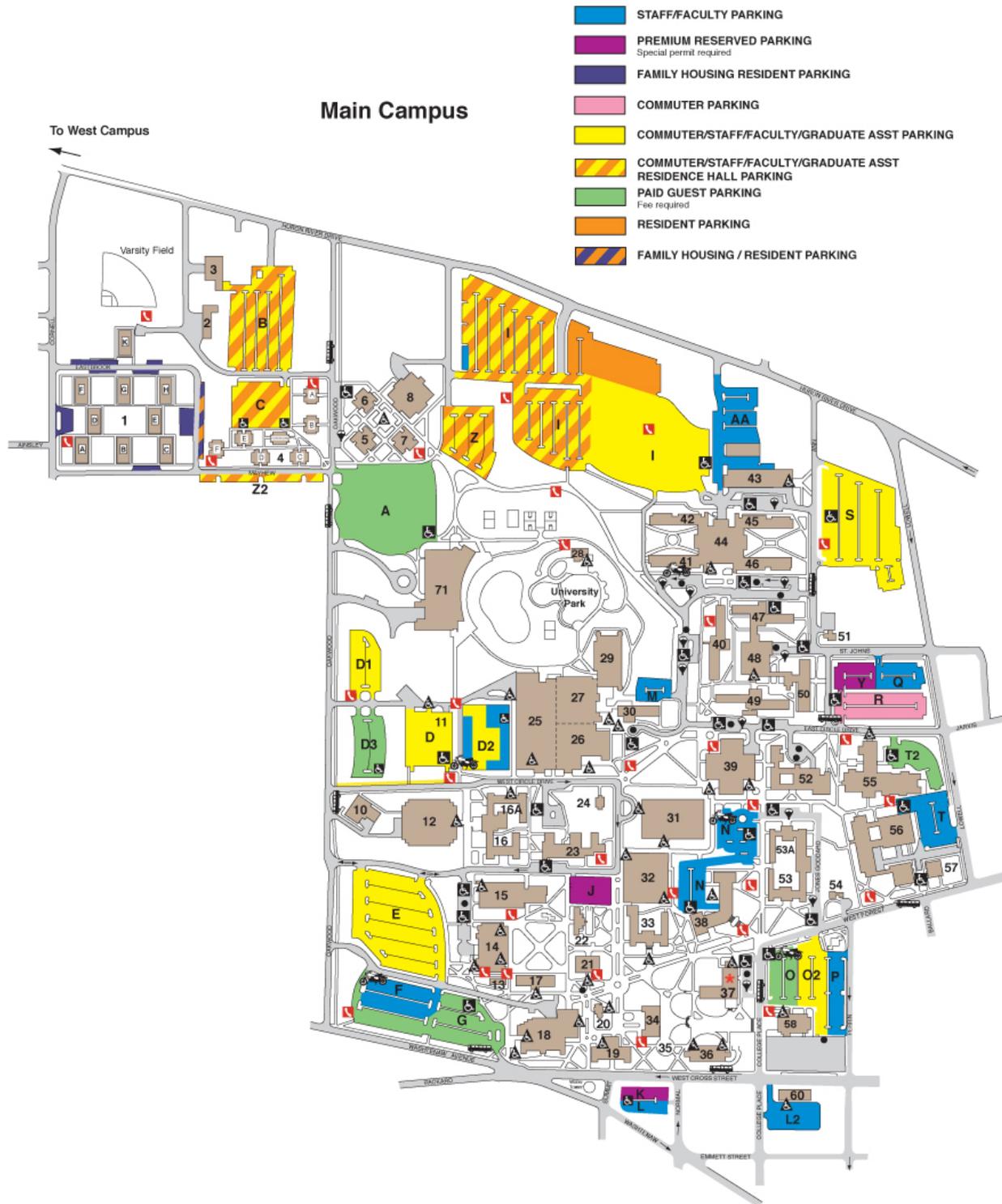
FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
713A Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
713C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
713D Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
713E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
713F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
713G Faculty Lounge	1		x			\$0
713H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
713J Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
713K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
713L Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
716 Storage	1		x			\$0
720A Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
Womens Studies						
714 Reception	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Waiting chair	x			
714A Department Head	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
		side table 42"	x			
		side chairs	x			
714B Workroom	1		x			\$0
714C Office	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
		Workstation	x			
		Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
714N Office	1				\$1,305	\$1,305
	3	Task chair		\$435	\$1,305	
		Workstation	x			
		Storage	x			
714P Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
714Q Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
Communications, Theatre Art						
617C Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
	2	Workstation	x			
	2	Storage	x			
617E Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
617F Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
617G Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
617H Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
	1	Workstation	x			
	1	Storage	x			
714D Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
714E Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
714F Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
714G Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
714H Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
714J Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			

FURNITURE AND EQUIPMENT LIST BY DEPARTMENT						
ITEM	QTY.	DESCRIPTION	EXISTING TO REMAIN	FFE UNIT COST	FFE EXTEND. COST	SUBTOTAL
714K Office	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
714L Office	1				\$435	\$435
	1	Task chair		\$435	\$435	
		Workstation	x			
		Storage	x			
714M Faculty	1				\$870	\$870
	2	Task chair		\$435	\$870	
		Workstation	x			
		Storage	x			
SUMMARY SHEET						
SUB-TOTAL - FF & E Estimate						\$842,398
8.5%- Design/ Escalation						\$71,604
10%- Delivery & Installation						\$84,240
TOTAL - FF & E ESTIMATE						\$998,242

6.0 Site & Exterior Space Relationships

Main Campus Map (see also the [Campus Buildings Map](#) and other maps and directions [below](#))



Numerical Index to Campus Buildings:

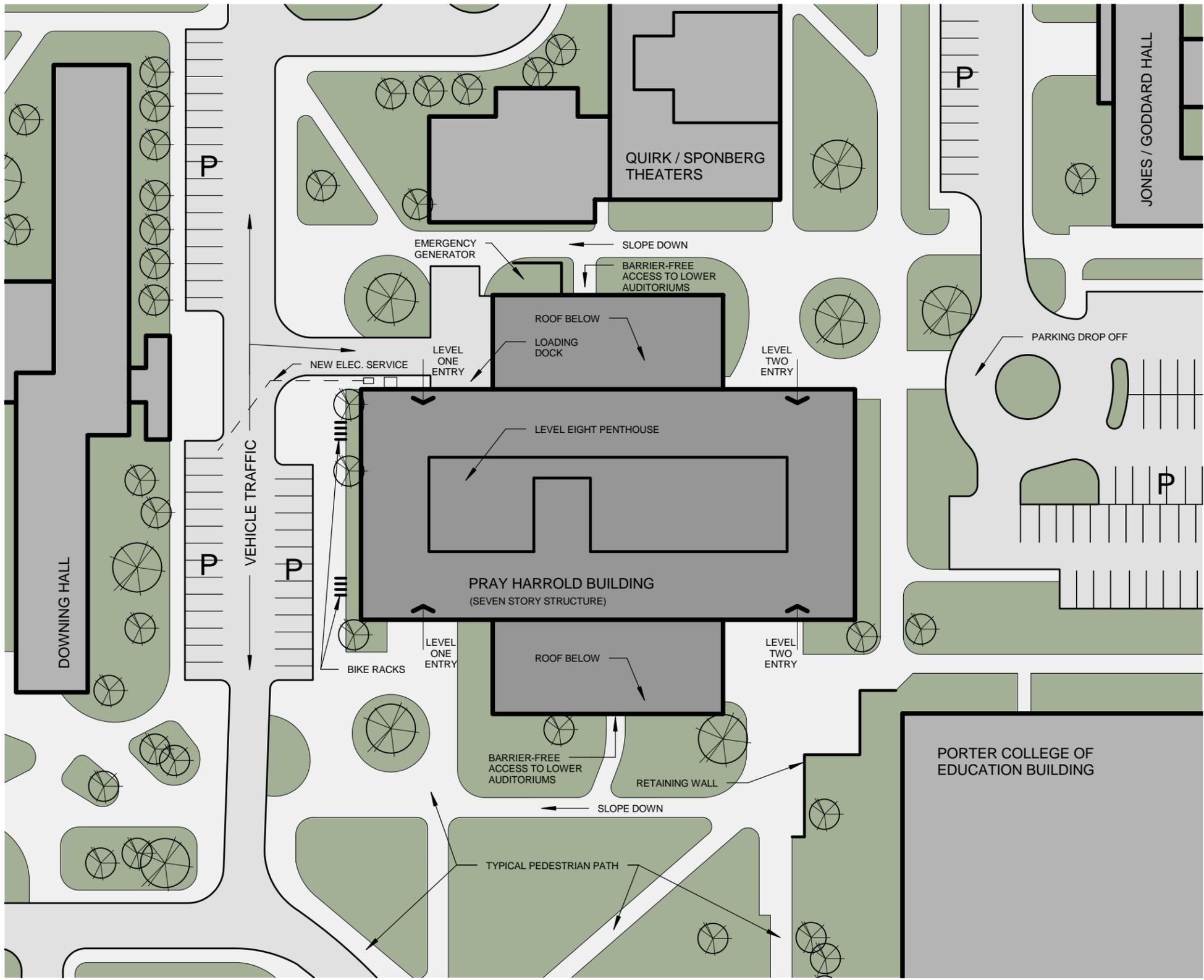
- 1. Cornell Courts Apartments
- 2. Sculpture Studio
- 5. Hill Residence Hall
- 6. Hoyt Residence Hall
- 7. Pittman Residence Hall
- 8. Hoyt Hall
- 11. Parking Structure
- 12. Bruce T. Halle Library
- 13. Terrestrial and Aquatics research

Alphabetical Index to Campus Buildings

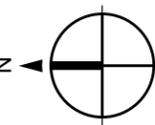
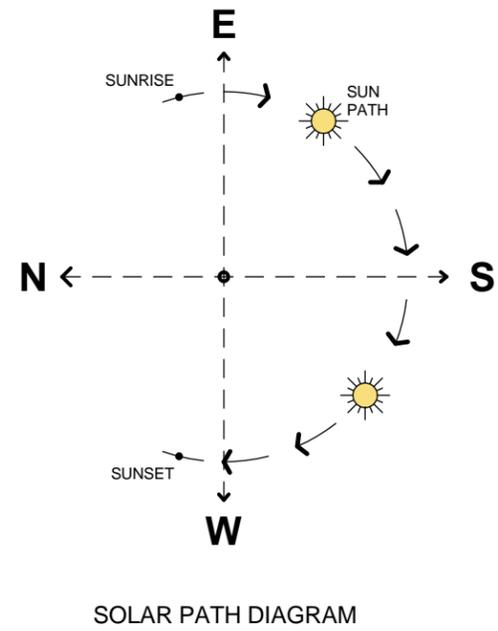
- 55. Alexander Music Building
- 50. Best Residence Hall
- 36. Boone Hall
- 25. Bowen Field House
- 17. Briggs Hall
- 40. Buell Residence Hall
- 57. Coatings Research Institute
- 64. College of Business
- 1. Cornell Courts Apts.
- 48. Dining Commons 1 (DC-1)

- | | |
|--------------------------------------------|------------------------------------------|
| 14. Mark Jefferson | 49. Downing Residence Hall |
| 15. Strong Science Building | 44. Eastern Eateries / First Year Center |
| 17. Briggs Hall | 34. Ford Hall |
| 18. McKenny Union | 53. Goddard Residence Hall |
| 19. Welch Hall | 12. Halle Library |
| 20. Starkweather Hall | 5. Hill Residence Hall |
| 21. Sherzer Hall | 22. Hover Building |
| 22. Hover Building | 8. Hoyt Conference Center |
| 23. Rackham Building | 6. Hoyt Residence Hall |
| 24. One-Room Schoolhouse | 53. Jones Residence Hall |
| 25. Bowen Field House | 33. King Hall |
| 26. Warner Gym | 28. Lake House |
| 27. Rec/IM | 14. Mark Jefferson |
| 28. Lake House | 32. Marshall Building |
| 29. Jones Pool | 18. McKenny Union |
| 30. Snow Health Center | 16. Munson Residence Hall/Apts. |
| 31. Porter College of Education | 27. Rec/IM Building |
| 32. Marshall Building | 11. Parking Structure |
| 33. King Hall | 58. Pease Auditorium |
| 34. Ford Hall | 42. Phelps Residence Hall |
| 36. Boone Hall | 37. Pierce Hall |
| 37. Pierce hall | 7. Pittman Residence Hall |
| 38. Roosevelt Hall | 31. Porter College of Education Building |
| 39. Pray-Harold | 39. Pray-Harold |
| 40. Buell Residence Hall | 45. Putnam Residence Hall |
| 41. Sellers Residence Hall | 52. Quirk Sponberg Theatres |
| 42. Phelps Residence Hall | 23. Rackham Building |
| 43. Physical Plant | 38. Roosevelt Hall |
| 44. First-Year Center and Eastern Eateries | 21. Scherzer Hall |
| 45. Putnam Residence Hall | 2. Sculpture Studio |
| 46. Walton Residence Hall | 41. Sellers Residence Hall |
| 47. Wise Residence Hall | 56. Sill Hall |
| 48. DC 1 Dining Commons | 30. Snow Health Center |
| 49. Downing Residence Hall | 20. Starkweather Hall |
| 50. Best Residence Hall | 15. Strong Building |
| 51. 526 St. John's Building | 71. Student Center |
| 52. Quirk/Sponberg Theatres | 13. Terrestrial and Aquatics Research |
| 53. Jones/Goddard Residence Hall | 4. Village Residence Halls |
| 55. Alexander Music Building | 46. Walton Residence Hall |
| 56. Sill Hall | 19. Welch Hall |
| 57. Coatings Research Institute | 47. Wise Residence Hall |
| 58. Pease Auditorium | |
| 71. Student Center | |

Other Campus Maps and Directions:[Campus Area Overview Map](#)[West Campus / Convocation Center / Ryneerson area](#)[College of Business / Downtown](#)[Marriott / Corporate Education Center / Golf Course](#)[Directions to Campus](#)[EMU HOME](#)



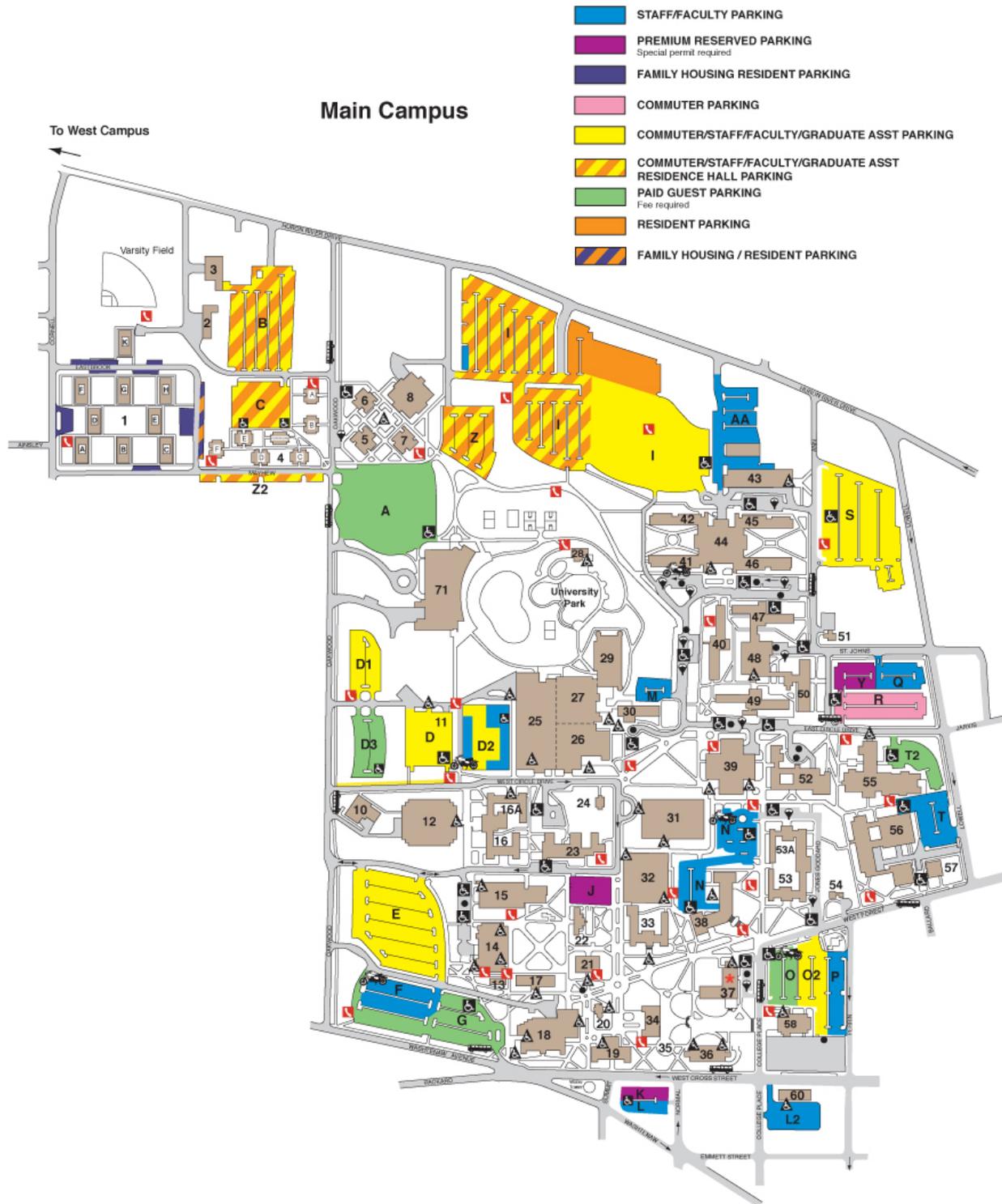
SITE PLAN



7.0 Building Space Diagrams

- Location Map / Campus Map
- Existing Conditions Site Plan
- Floor Plans:
 - First Floor
 - Second Floor
 - Third Floor
 - Fourth Floor
 - Fifth Floor
 - Sixth Floor
 - Seventh Floor
 - Penthouse

Main Campus Map (see also the [Campus Buildings Map](#) and other maps and directions [below](#))



Numerical Index to Campus Buildings:

- 1. Cornell Courts Apartments
- 2. Sculpture Studio
- 5. Hill Residence Hall
- 6. Hoyt Residence Hall
- 7. Pittman Residence Hall
- 8. Hoyt Hall
- 11. Parking Structure
- 12. Bruce T. Halle Library
- 13. Terrestrial and Aquatics research

Alphabetical Index to Campus Buildings

- 55. Alexander Music Building
- 50. Best Residence Hall
- 36. Boone Hall
- 25. Bowen Field House
- 17. Briggs Hall
- 40. Buell Residence Hall
- 57. Coatings Research Institute
- 64. College of Business
- 1. Cornell Courts Apts.
- 48. Dining Commons 1 (DC-1)

- | | |
|--------------------------------------------|------------------------------------------|
| 14. Mark Jefferson | 49. Downing Residence Hall |
| 15. Strong Science Building | 44. Eastern Eateries / First Year Center |
| 17. Briggs Hall | 34. Ford Hall |
| 18. McKenny Union | 53. Goddard Residence Hall |
| 19. Welch Hall | 12. Halle Library |
| 20. Starkweather Hall | 5. Hill Residence Hall |
| 21. Sherzer Hall | 22. Hover Building |
| 22. Hover Building | 8. Hoyt Conference Center |
| 23. Rackham Building | 6. Hoyt Residence Hall |
| 24. One-Room Schoolhouse | 53. Jones Residence Hall |
| 25. Bowen Field House | 33. King Hall |
| 26. Warner Gym | 28. Lake House |
| 27. Rec/IM | 14. Mark Jefferson |
| 28. Lake House | 32. Marshall Building |
| 29. Jones Pool | 18. McKenny Union |
| 30. Snow Health Center | 16. Munson Residence Hall/Apts. |
| 31. Porter College of Education | 27. Rec/IM Building |
| 32. Marshall Building | 11. Parking Structure |
| 33. King Hall | 58. Pease Auditorium |
| 34. Ford Hall | 42. Phelps Residence Hall |
| 36. Boone Hall | 37. Pierce Hall |
| 37. Pierce hall | 7. Pittman Residence Hall |
| 38. Roosevelt Hall | 31. Porter College of Education Building |
| 39. Pray-Harold | 39. Pray-Harold |
| 40. Buell Residence Hall | 45. Putnam Residence Hall |
| 41. Sellers Residence Hall | 52. Quirk Sponberg Theatres |
| 42. Phelps Residence Hall | 23. Rackham Building |
| 43. Physical Plant | 38. Roosevelt Hall |
| 44. First-Year Center and Eastern Eateries | 21. Scherzer Hall |
| 45. Putnam Residence Hall | 2. Sculpture Studio |
| 46. Walton Residence Hall | 41. Sellers Residence Hall |
| 47. Wise Residence Hall | 56. Sill Hall |
| 48. DC 1 Dining Commons | 30. Snow Health Center |
| 49. Downing Residence Hall | 20. Starkweather Hall |
| 50. Best Residence Hall | 15. Strong Building |
| 51. 526 St. John's Building | 71. Student Center |
| 52. Quirk/Sponberg Theatres | 13. Terrestrial and Aquatics Research |
| 53. Jones/Goddard Residence Hall | 4. Village Residence Halls |
| 55. Alexander Music Building | 46. Walton Residence Hall |
| 56. Sill Hall | 19. Welch Hall |
| 57. Coatings Research Institute | 47. Wise Residence Hall |
| 58. Pease Auditorium | |
| 71. Student Center | |

Other Campus Maps and Directions:

[Campus Area Overview Map](#)

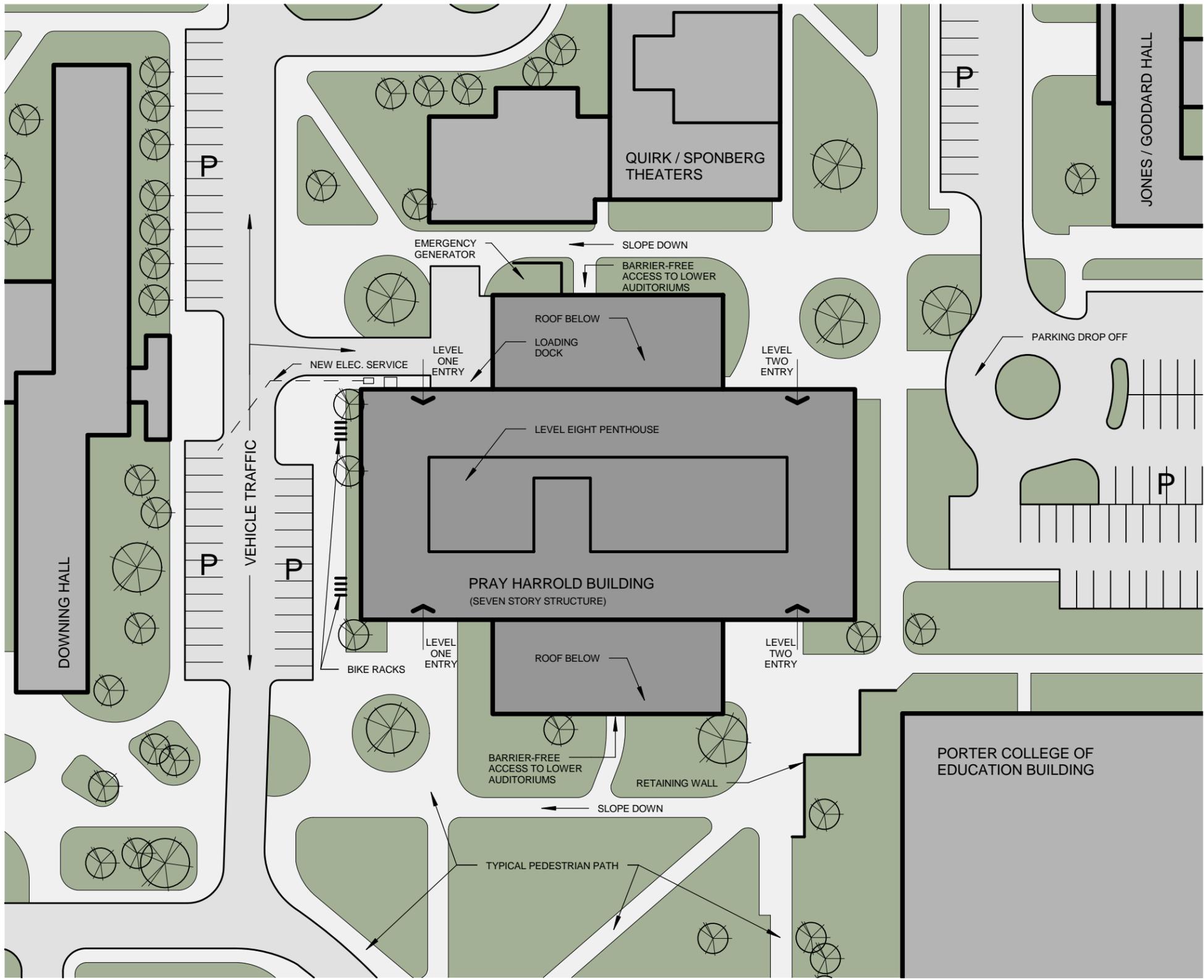
[West Campus / Convocation Center / Ryneerson area](#)

[College of Business / Downtown](#)

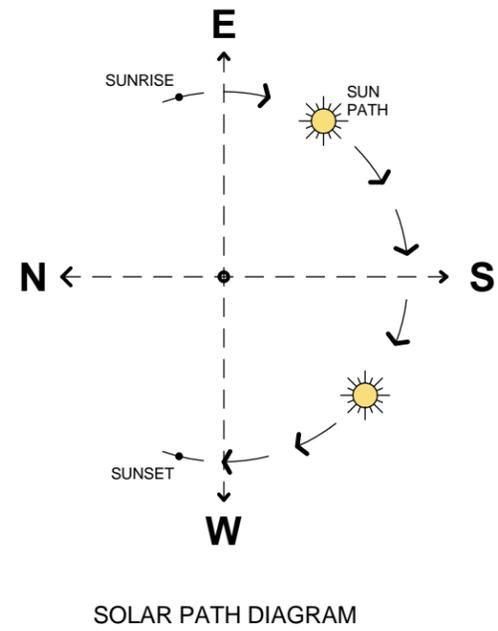
[Marriott / Corporate Education Center / Golf Course](#)

[Directions to Campus](#)

[EMU HOME](#)



SITE PLAN

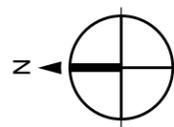


SHWGROUP

EMU Pray Harrold Modernization

SCHEMATIC DESIGN

02-17-09

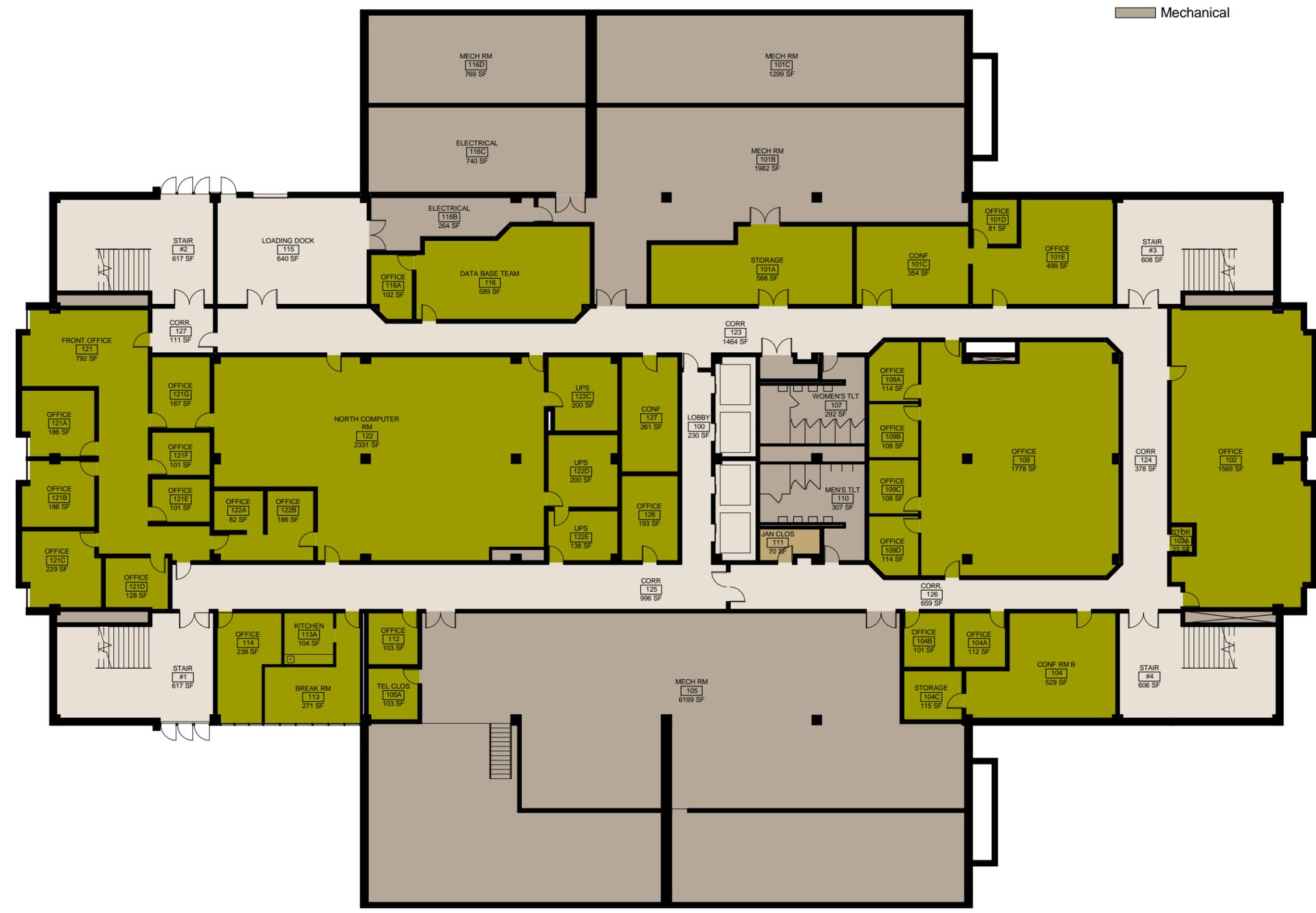




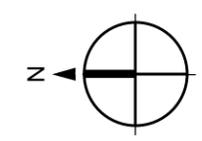
SHWGROUP

DEPARTMENT LEGEND

- Circulation
- Custodial
- IT
- Mechanical



FIRST LEVEL FLOOR PLAN

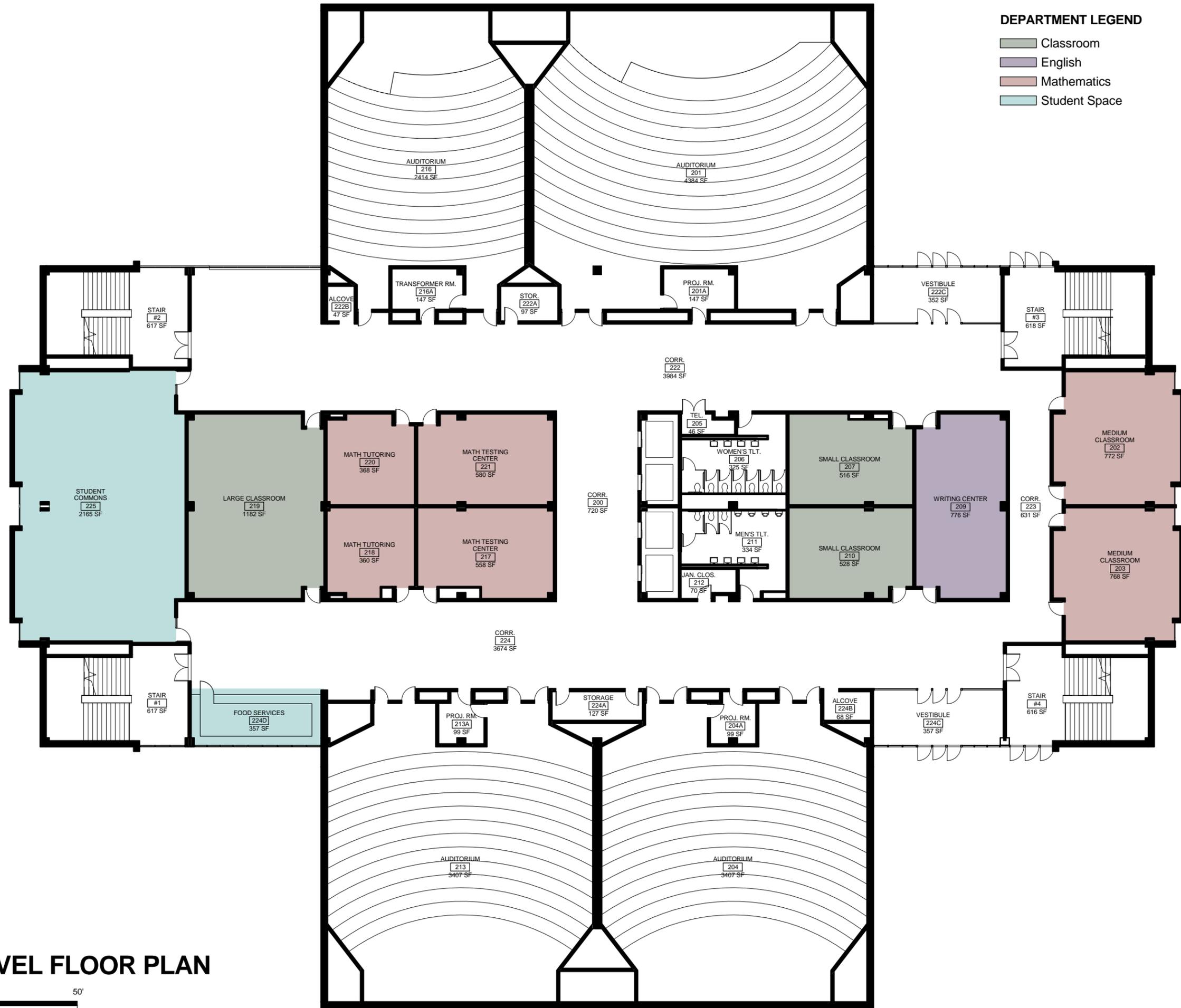


EMU Pray Harrold Modernization
 SCHEMATIC DESIGN 02-17-09

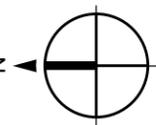
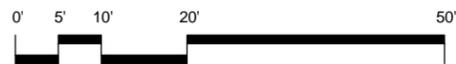


DEPARTMENT LEGEND

- Classroom
- English
- Mathematics
- Student Space



SECOND LEVEL FLOOR PLAN



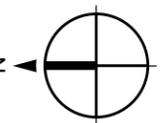
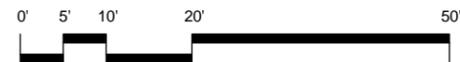


DEPARTMENT LEGEND

- Classroom
- Computer Science
- English
- Student Space

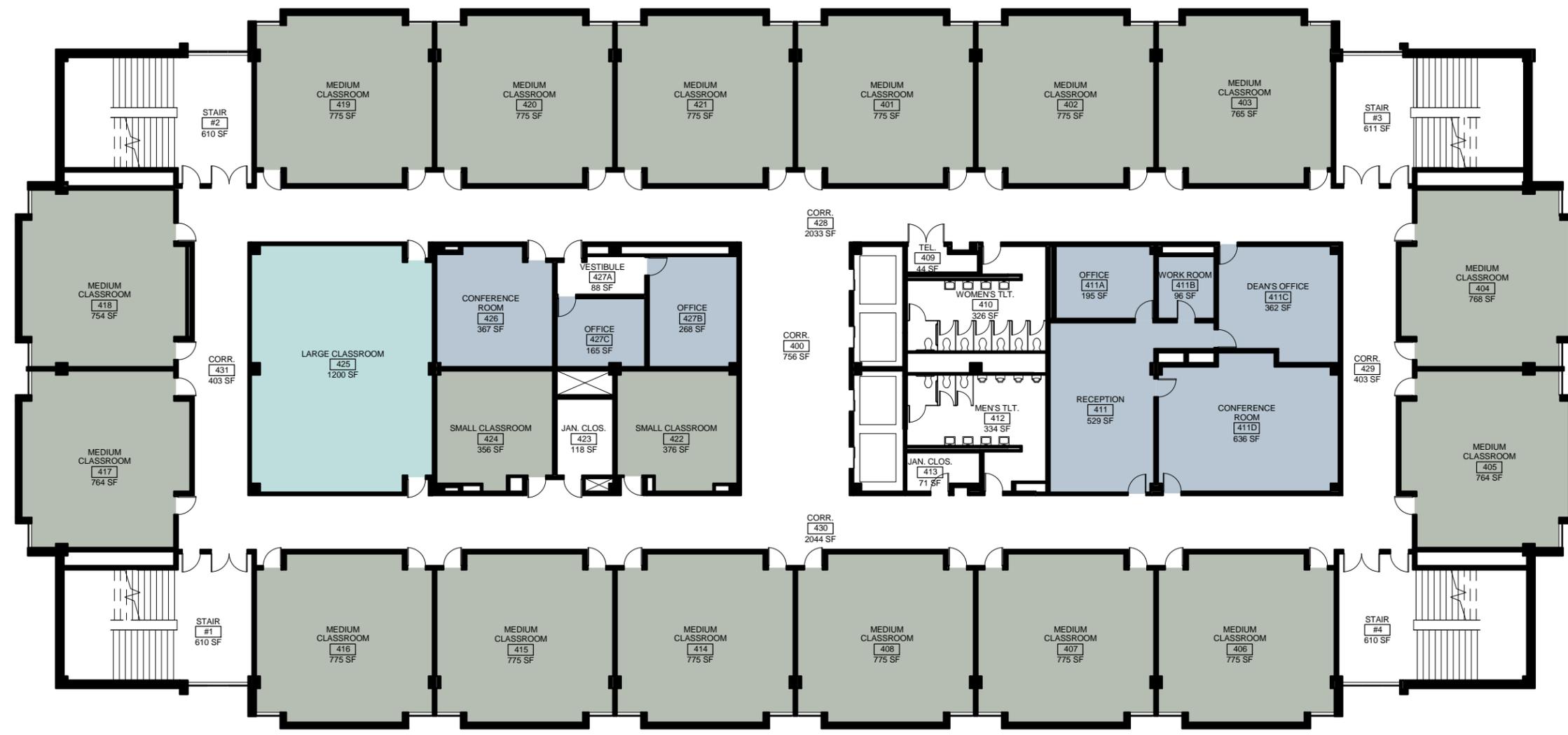


THIRD LEVEL FLOOR PLAN



DEPARTMENT LEGEND

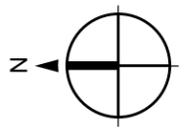
- Classroom
- Dean's Suite
- Student Space



SHWGROUP

EMU Pray Harrold Modernization
 SCHEMATIC DESIGN 02-17-09

FOURTH LEVEL FLOOR PLAN

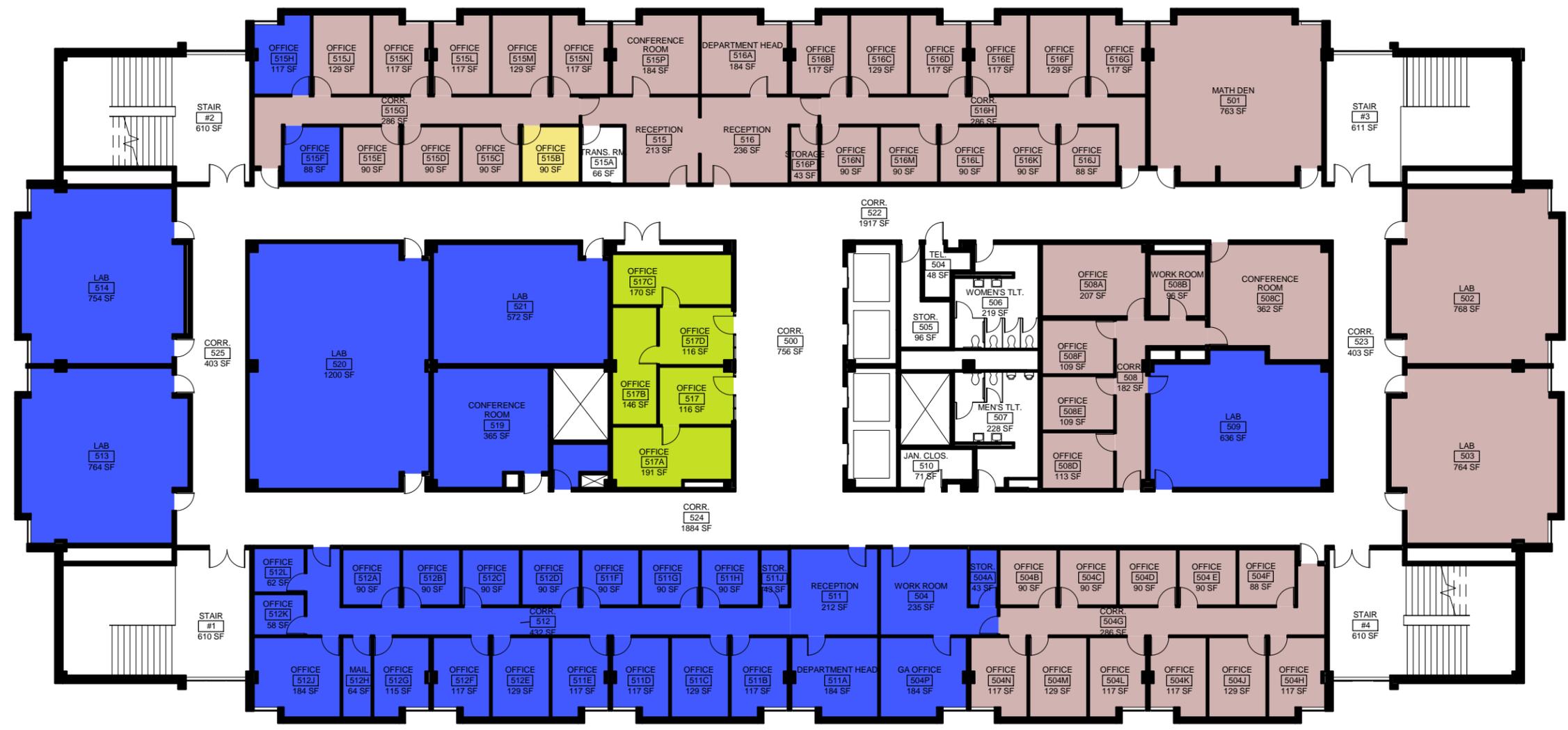


DEPARTMENT LEGEND

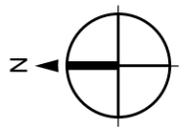
- African American Studies
- CAS Tech
- Computer Science
- Mathematics



SHW GROUP



FIFTH LEVEL FLOOR PLAN



EMU Pray Harrold Modernization
SCHEMATIC DESIGN 02-17-09

DEPARTMENT LEGEND

- African American Studies
- Communications & Theatre Arts
- English
- Political Science



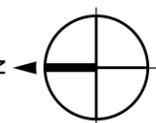
SIXTH LEVEL FLOOR PLAN



SHWGROUP

EMU Pray Harrold Modernization
SCHEMATIC DESIGN

02-17-09

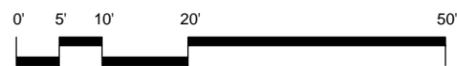


DEPARTMENT LEGEND

- African American Studies
- Classroom
- Communications & Theatre Arts
- Economics
- History & Philosophy
- Mathematics
- Sociology, Anthropology, & Criminology
- Women's & Gender Studies



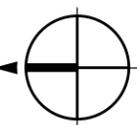
SEVENTH LEVEL FLOOR PLAN



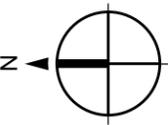
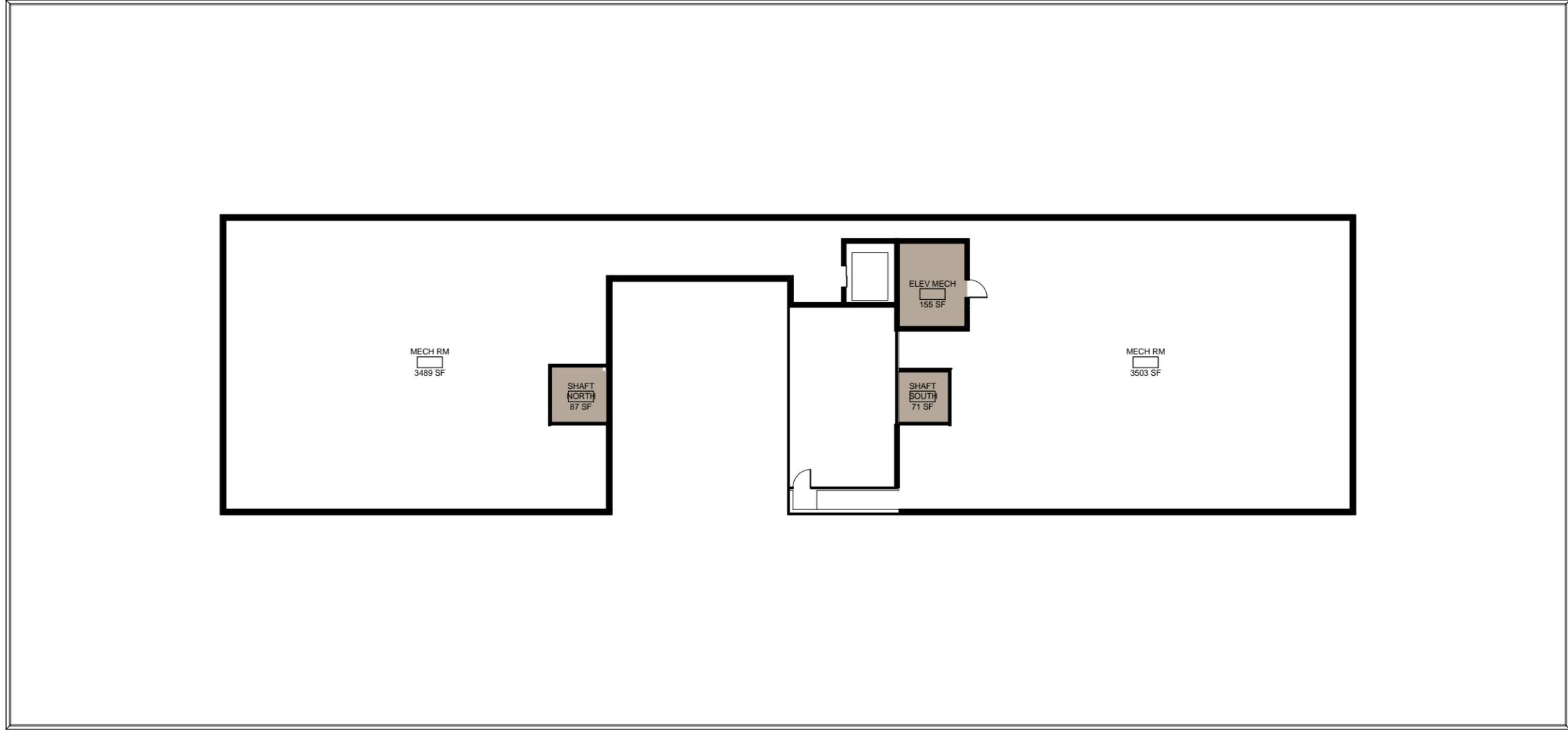
SHWGROUP

EMU Pray Harrold Modernization
SCHEMATIC DESIGN

02-17-09



PENTHOUSE FLOOR PLAN



8.0 Building & Construction Systems

Pray-Harrold Modernization

APPLICABLE CODES AND STANDARDS

- 2006 ed. Michigan Rehabilitation Code for Existing Buildings (EBC)
- 2006 ed. Michigan Building Code (MBC)
- 1999 ed. The Administration Rules for New and Existing School, College and University Fire Safety (SCU)
- 1998 ed. Accessible and Usable Buildings and Facilities by the International Code Council (HAC)
- 1990 ed. Americans with Disabilities Act and Guidelines (ADA)
- Current ed. LEED for Commercial Interiors v2.0

- 2006 ed. Michigan Mechanical Code (MMC)
- 2006 ed. Michigan Plumbing Code (MPC)
- 2004 ed. Michigan Energy Code (ASHRAE 90.1–2004 adopted by reference)
- 2004 ed. ASHRAE Standard 62.1-2004
- 1999 ed. Michigan Uniform Energy Code (MEC)

- 2005 ed. National Electric Code (NEC)
- 2004 ed. Michigan Elevator Code
- Ninth ed. Illuminating Engineering Society of North America (IESNA)

- 2006 ed. International Fire Code (IFC)
- 1997 ed. NFPA 101 Life Safety Code
- 1997 ed. Life Safety Code by the National Fire Protection Association Protection Association (LSC)
- Current ed. National Fire Codes including, but not limited to:
 - NFPA-10 – 1998; Portable Fire Extinguishers
 - NFPA-13 – 1999; Installation of Sprinkler Systems
 - NFPA-14 – 2000; Standpipes, Private Hydrants and Hose Systems
 - NFPA 72 – 1999; National Fire Alarm Code

EMU Design and Construction Standards (dated November 11, 2008)

Project Description:

Pray-Harrold is a seven-story structure, with a mechanical penthouse consisting of 235,791 gross square feet. (includes penthouse) It is the largest and most heavily utilized instructional facility on the Eastern Michigan University (EMU) campus. Aside from some construction work done in 2000 (due to fire damage) the major building infrastructure and the overall environment is much the same today as it was the day the building opened in the late 1960's. The increased level of usage, many years of wear-and-tear, and the rise of computer technology has severely taxed the existing systems of the facility, many of which are at or beyond their expected service life. The first priority of this modernization project is to replace and upgrade the mechanical, electrical, plumbing (MEP) systems, and technology infrastructure, to support continued use well into the 21st century. Since the building was constructed, building codes have evolved, and certain aspects of the building will be addressed per contemporary building code standards. Life Safety improvements include a fire suppression system, exit stair handrails and fire doors, along with barrier-free design accessibility (ADA compliance) will also be addressed.

Beyond the infrastructure and building code requirements, this project will improve the appearance and functionality of the building. Some of the shortcomings of the current configuration are the relatively small standard classrooms, lack of student commons and waiting areas, and outdated faculty offices. The interior finishes, while very durable, are also very institutional and unwelcoming. The challenge will be to find ways to enhance these aspects of the building within the current envelope without affecting capacity of instructional spaces or offices.

The project will strengthen EMU's agenda for sustainability in its modernization by following the US Green Buildings Council's standards for LEED Silver rating. Since this is a detailed MEP infrastructure modernization, most of the sustainable design features will be found within the new engineering systems.

The work will be phased so that Pray-Harrod can remain as fully functional as possible during construction. It is a highly utilized facility and is critical to the mission of the University as a whole. The DoIT (Department of Information Technology) Data Center, located on the first floor, will not be shut down at all during construction. Also, construction phasing will take advantage of breaks in the academic year, capitalizing on periods of relatively low occupancy.

Architectural Design

Sitework & Improvements

- Remove and replace areas of existing deteriorated and/or frost-heaved portions of concrete walkways adjacent to the building.
- Construction of a new brick masonry screen-wall to enclose the new emergency generator at the northeast corner of the building.
- Barrier-free access route to the existing elevator core will be accommodated through the northwest, first floor entrance, traveling south down Corridor #125, to the Elevator Lobby #100 and access to floors 2-7.

Exterior Envelope

- The exterior wall system consists of brick and concrete masonry unit, composite wall construction (un-insulated) with pre-cast concrete accent panels. The masonry is generally in good repair. However, Minor areas of mortar tuck-pointing within the brick masonry veneer have been identified, but will not be included within this scope of modernization work. The soffits at the building overhangs are a cementitious plaster system. Aside from some minor damage at the north elevation, due to a previous plumbing leak, the soffit condition is generally in good repair. The minor damage, will not be included within this scope of modernization work.
- The existing window system is original to the building and consists of single glazing within a metal frame system. Thermal storm-window units have been added (on the building interior) subsequently in some areas of the building. The existing window system, curtain-wall system and entry doors, have exceeded their useful service life and will be removed in their entirety. Replacement systems of windows, curtain-wall and entry doors shall be with 1-inch insulated glazing within pre-finished aluminum framing.

Interior Construction:

- Office Improvements. In general improvements will include, retaining the existing ceiling system (removing and replacing as necessary), a new flooring finish and new wall finishes and new lever-type door handles on the existing wood doors.
- Office Modifications. In general improvements will include, retaining the existing ceiling system (removing and replacing as necessary), a new flooring finish and wall finishes and new lever-type door handles on the existing wood doors. The modification will be in those areas where offices will be reduced in size due to a Toilet Room expansion. The re-constructed common wall will be constructed of concrete masonry units and receive a new wall finish.
- Office Suite Circulation Improvements. In general improvements will include, retaining the existing ceiling system (removing and replacing as necessary), a new flooring finish and new wall finishes and new lever-type door handles on the existing wood doors.
- Classroom Improvements. In general will include, removing the existing raised-platforms at the front of the room, retain the existing ceiling system (remove and replace as necessary), a new flooring finish and new wall finishes and new lever-type door handles on the existing wood doors.
- Circulation Improvements. In general improvements will include, retaining the existing ceiling system (removing and replacing as necessary), new wall finishes and new lever-type door handles on the existing wood doors.
- Public Corridor Improvements. In general improvements will include, a new ceiling system, new wall finishes and new lever-type door handles on new doors.
- Stair Improvements. In general improvements will include up-grading existing conditions to comply with current building code requirements. Existing handrails and guards will be modified to meet allowable maximum open-spaces and minimum handrail end-extensions. Existing egress doors will be removed and replaced with new fire-rated doors and hardware. New wall finishes will also be included.
- Toilet Room Renovation. In general improvements will include, new ceiling and lighting systems, new floor, wall and ceiling finishes, new toilet partitions and new doors.
- Mechanical Shaft / Electrical Transformer. In general modifications will include, enlarging and modifying existing space to create fire-rated assemblies.
- Auditorium Improvements. In general improvements will include, improve seats, new a ceiling system, new floor finish at aisles and front and rear platforms, new wall finishes, and new acoustical wall panels
- Student Renovation. In general improvements will include, new ceiling system, new flooring finish and new wall finishes and new lever-type door handles on doors.
- Data Center Improvements. In general improvements will include, retaining the existing ceiling system (removing and replacing as necessary).
- Abatement of asbestos-containing materials within the building.

Structural Narrative

The existing foundation system is comprised of steel reinforced cast-in-place column footings and wall footings. A membrane water-proofing is present at the perimeter wall footings. The superstructure of the building is structural steel, consisting of wide-flange beams and columns. The structural steel is protected with spray-on fire proofing material.

The roof structural system is comprised of 1-1/2" steel roof deck carried supported by steel beams, which are supported by structural steel columns. The supported floor structural system is comprised of 3" concrete on 1-1/2" composite steel form deck (4-1/2" total) carried by composite steel beams, which are supported by structural steel columns. First floor construction consists of a 4-inch concrete slab-on-grade on a continuous vapor barrier.

The existing structure is to remain and will be modified only as necessary for mechanical and electrical revisions.

Mechanical Project Description:

GENERAL

This Basis of Design is written to provide an overview of proposed mechanical systems, equipment, materials and associated design criteria.

DEMOLITION

Much of the Pray-Harold mechanical system is forty years old and in need of replacement. Replacement of the existing equipment components which have exceeded their expected life will increase reliability, lower energy consumption, increase the comfort of building occupants and sustain operation of the building to reduce the consumption of resources, and the need for a replacement structure.

Most of the existing mechanical system will be removed. Removal shall include all ducts, piping and all associated hangers and supports along with the coils located in the air handling units.

The existing mechanical systems will be examined to utilize existing components where appropriate. This includes portions of the chilled water and hydronic piping, ductwork and domestic water and waste systems. The work will be coordinated with mechanical systems renovations planned for the Computer Center located on the first floor.

CODES AND STANDARDS

The renovated portions of the mechanical system shall comply with the following Codes and Standards:

Eastern Michigan University Campus Standards
Michigan Building Code 2006
Michigan Mechanical Code 2006

Michigan Plumbing Code 2006
Michigan Energy Code (ASHRAE 90.1-2004 adopted by reference)
ASHRAE Standard 62.1-2004
ASHRAE Standard 55-2004
NFPA 13, 90A & Life Safety 101
LEED Rating System - CI

OUTDOOR DESIGN CONDITIONS

The following outdoor design conditions will be used in sizing the mechanical heating, ventilation and air conditioning systems. The design temperatures are based on 2005 ASHRAE Fundamentals Handbook, using 1% cooling design and 99.6% heating design for Detroit Willow Run Air Port, Michigan (Latitude: 42.23N Longitude: 83.53W Elevation: 715ft ASL).

Summer Cooling	87.8 ⁰ F DB / 72.6 ⁰ F WB
Winter Heating	0.8 ⁰ F DB
Summer ambient temperature for air-cooled equipment located on roof	95 ⁰ F DB

INDOOR DESIGN CONDITIONS

The following indoor design conditions will be used in sizing the mechanical heating, ventilation and air conditioning systems. Relative humidity will be not directly controlled in summer cooling mode. Mechanical and electrical rooms will use outside air for ventilation with no mechanical cooling or humidification. Humidification will not be provided in this building due to lack of adequate vapor barrier in the exterior envelope.

Room or Area	Summer		Winter	
	Db °F	%RH	Db °F	%RH
Offices, Conference & Classrooms	75	50	72	--
Computer Room(s)	70	40(+5)	70	40(+5)
Electrical Equipment/xformer Rooms	104 Maximum	-	50	-
Elevator Machine Rooms	104 Maximum	-	50	-
Telephone Equipment Rooms	65 - 75	40-60	65 - 75	40-60
Toilets	78	--	70	--
Auditoriums	76	60	72	--
Computer Labs	75	50	72	--
Dining Rooms	78	50	72	--
Dry Labs	78	50	72	--
Emergency Generator	110	--	40	--
Lounges	78	50	72	--
Mechanical Equipment Rooms	Ventilation Only		50	--

BUILDING INTERNAL HEAT GAIN ALLOWANCES

The following values will be used in sizing the mechanical heating, ventilation and air conditioning systems. Internal heat gain diversity at the room level will be 100% for lighting, people and equipment. Internal heat gain diversity at the air handling unit level will be 80% for lighting, 100% for people and 70% for equipment.

For preliminary design purposes, the load densities outlined below shall be used. Note that listed lighting densities are the maximum allowable per ASHRAE 90.1-2004 under the Space-by-Space Method.

Lighting:

Office Open & Enclosed	1.1 watts per square foot
Classroom / Lecture / Training / Labs	1.4 watts per square foot
Conference Room	1.3 watts per square foot
Lounge / Recreation	1.2 watts per square foot
Restrooms	0.9 watts per square foot
Corridor	0.5 watts per square foot
Active Storage	0.8 watts per square foot
Stairs	0.6 watts per square foot

People:

Meeting / Conference Rooms	20 CFM per person
Classrooms / Lecture / Training	15 CFM per person
Offices / Support	20 CFM per person
Reception / Common Areas	15 CFM per person
Corridors	0.10 CFM per square foot

Sensible load	250 BTU/HR per person
Latent Load	200 BTU/HR per person

Equipment:

Offices/Support/Classroom	150 watts per computer per person
Common Circulation areas	1.0 watts per square foot
Mechanical/Electrical/IT Rooms	Actual Equipment Loads

AIR CHANGE RATES

Minimum air change rates will be as follows, unless heating and cooling load or applicable codes necessitate a higher value:

Occupied Spaces:	Minimum air changes per ASHRAE 90.1-2004
Toilet Rooms:	75 CFM per water closet or urinal
Mechanical/Electrical Rooms:	4 air changes per hour

OUTSIDE AIR VENTILATION RATES

Outside air ventilation rates will be in accordance with the Michigan Mechanical Code. Ventilation rates provide required outdoor ventilation air and make up for exhaust air. Due to requirements of the 2006 Michigan Mechanical Code, ventilation rates 30% above levels described in ASHRAE 62 will result.

All air handling unit outdoor air intakes are to be a minimum of 10 feet from any exhaust fan discharge, plumbing vent or pollutant source.

A demand control ventilation scheme will be utilized to monitor CO₂ concentrations in all densely occupied areas, to reduce the amount of outside air during partially occupied periods and maintain occupant comfort. Additionally, mechanical ventilation systems will monitor outdoor airflow rates to keep system operating at design outdoor air conditions.

INDOOR NOISE CRITERIA

Design sound levels listed below are based on 2007 ASHRAE Applications Handbook, Design Guidelines for HVAC Related Background Sound in Rooms.

Occupied Spaces

Area	Maximum NC
Auditorium, Theaters	35
Offices, Small Private	40
Offices, Large Open	35
Lobbies, Waiting Areas	35
Corridors	40
Bathrooms, Toilets	40
Laboratories	45
Dining, Food Service/Serving	45
Gymnasiums, Recreation Rooms	50
General Work Rooms	40
All Other Occupied Areas	35 – 40*

* discuss with EMU any specific area requiring NC levels outside this range.

DUCT SIZING CRITERIA

Supply Air Ductwork (upstream of VAV box)	1,500 fpm maximum velocity 0.25"/100 ft. maximum air pressure drop
Supply Air Ductwork (downstream of VAV box)	1,000 fpm maximum velocity 0.10"/100 ft. maximum air pressure drop
Return Air Ductwork -	1,000 fpm maximum velocity 0.10"/100 ft. maximum air pressure drop
General Exhaust Air Ductwork	1,000 fpm maximum velocity 0.10"/100 ft. maximum air pressure drop
Supply air outlets	425 fpm maximum
Return air openings	500 fpm maximum

PIPE SIZING CRITERIA

HVAC piping 2-1/2" size and smaller
Maximum velocity: 4 fps
Maximum water pressure drop: 4.0 ft.hd./100 ft.equivalent length

HVAC piping 3" thru 10" size
Maximum velocity: 8 fps
Maximum water pressure drop: 4.0 ft.hd./100 ft.equivalent length

Domestic water piping 4" size and smaller
Maximum velocity: 5 fps
Maximum water pressure drop: 3.0 ft.hd./100 ft.equivalent length

Steam and condensate piping
Velocity: 4000-6000 fpm
Pressure drop for 15 psig: 1 psig/100ft equiv. length
Pressure drop for 40 psig: 2-5 psig/100 equiv. length

AIR HANDLERS

The existing air handlers in the first floor mechanical rooms are original equipment to the building. These units are used to heat cool and ventilate the offices, classrooms and auditoriums for the first and second floor. Eight multi-zone constant volume units that serve offices, classrooms and lecture halls on the first and second floors will be replaced with new variable air volume units with chilled water and heating hot water coils. Multi-zone units are not used in current building designs because of excessive energy consumption. The quantity of air handling units and order of replacement will be evaluated to minimize cost and accommodate phasing in order to minimize the disruption to the occupied spaces. Existing outside air intakes will be evaluated and relocated to avoid entraining fumes at the locating lock. The existing electrical room ventilation air louvers will be reworked to avoid infiltration of outside air and to provide better room temperature control. The first floor data center will be served by dedicated air handling units, separate from the other floors. No humidification will be provided. Freeze protection pumps will be provided on the hot water heating coils.

Two large air handling units are located in the penthouse to serve the third through seventh floors. One unit serves the north half of the building and the other unit serves the south half. The south unit was recently replaced with a variable air volume unit and will remain, although some modifications will be made. Modifications to this unit will include outside air intake, mixing section and addition of a heating hot water preheat coil. Freeze protection pumps will be provided on the hot water heating coils.

The north unit is original to the building and in need of replacement with leaking drain pans, panels and a deteriorated inefficient fan. The north unit will be replaced with a new variable air volume unit with chilled water and heating hot water coils. The outside air intake louver for this unit will be modified to address infiltration of snow during winter operation. No humidification will be provided. Freeze protection pumps will be provided on the hot water heating coils.

The north and south penthouse units are arranged in a manner that would allow phasing of the construction and infrastructure upgrade with minimal disruption to the occupied spaces. Possible strategies of replacing the north unit include, either installing a temporary by-pass ducts from the south unit or installing a temporary air handling unit.

The existing risers, branch ductwork and VAV boxes will be evaluated during the design phase to determine the extent of demolition and replacement. A retrofit VAV boxes to DDC controls with pneumatic controls will be included in the design where appropriate. The original ductwork was designed to the ventilation codes of the era, which were significantly less than current ventilation standards. The increased building utilization has added population loading to the building for an increase in the ventilation requirements. Duct sizes will be evaluated and modified as required to maintain reasonable duct velocities in order to minimize pressure drop, energy consumption and radiated noise levels to the occupied spaces. All VAV boxes will be equipped with hot water tempering coils. The opportunity for energy conservation from heat wheels on exhaust/make-up air systems will be investigated.

AIR FILTRATION

Filtration to occupied areas of the building will be minimum MERV 13 (80-90% dust spot and 98% arrestance per ASHRAE 52.1). Filtration shall be applied to process both return and outside air that is being delivered to the building. If air handlers are used during construction, MERV 8 (25-30% dust spot and 95% arrestance per ASHRAE 52.1) filtration media will be used on each return air grille.

COOLING TOWER

The existing cooling tower with approximately 800 equivalent tons of heat rejection capacity was recently replaced and will remain. The tower capacity will be evaluated to confirm capability to serve the renovated building cooling loads. The existing circulating pumps and piping will be replaced with new equipment and piping.

CHILLED WATER SYSTEMS

The original steam adsorption chiller was replaced with an electric centrifugal chiller in the last decade. The 560 ton capacity of the existing chiller is insufficient for the increased load of the current building usage. The replacement chiller operates on R-11 refrigerant which has not been produced since 1995 and is therefore escalating in replacement cost. R-11 has the highest ozone depletion potential of any refrigerant. The existing chiller has been refurbished to operate using an alternate replacement refrigerant (R-123) with less ozone depletion potential. Conversion of the existing chiller to an environmentally acceptable refrigerant, and the addition of a second, CFC free high efficiency chiller, to the limit of the cooling tower capacity, would maximize the total chiller plant to meet current building loads as well as the needs of the future. The second chiller would also provide a limited amount of redundancy.

The chilled water loop will be converted to a primary-secondary flow system for the most efficient and cost effective operation.

This project will plan for the Pray-Harrold chiller system to support future connection to the campus chilled water loop. The completion of this new campus loop is not part of this project, but will be addressed by Eastern Michigan University in the future. The loop will be configured to allow future connection to three additional buildings as a regional chiller plant.

HEATING HOT WATER SYSTEMS

The existing campus steam loop is utilized to serve the heating requirements of the facility, including air handling unit heating coils and heating hot water converter. The heating hot water system including two existing steam-to-hot water converters, distribution pumps, expansion tank, air separator and chemical feeder will be replaced. The heating hot water system will be split into two separate heating loops, one loop will serve the perimeter heating radiation and the second loop will serve variable air volume terminal unit reheat coils. Zoning of the perimeter heating devices will be coordinated with Variable Air Volume box for the same zones. Each loop will incorporate energy saving strategies, such as temperature reset, pressure reset and variable flow.

Two-way modulating control valves will control heating hot water to each reheat coil to maintain space temperature set point. Reheat coils serving perimeter rooms will be sized to offset the transmission heat losses. Pump speed will be adjusted to maintain set point differential pressure between supply and return. Safety relief valves will be provided in the hot water piping system to protect the piping system from over-pressurization.

New hydronic piping will be routed up mechanical shafts and in hallway to the greatest extent possible. Heating piping shall be a piped in a primary-secondary arrangement. Each secondary pump will be sized for 100% of the building load with variable flow controlled by a variable frequency drive.

All VAV boxes will be provided with reheat coils that are to be fed off the building heating hot water piping independent of the fin tube radiation. New North AHU will be fitted with new hot water preheat coils. Existing South AHU will remain with new hot water preheat coils added.

New hot water cabinet unit heaters will be provided in all entry vestibules and stairwells. New finned tube radiation and covers will be provided in the perimeter classrooms and offices.

All heating hot water piping runs that exceed 75 feet will be provided with expansion loops, anchors and guides.

Electric powered condensate pump will be fed from the building power and standby power supply.

EXHAUST SYSTEM

Constant volume exhaust fans will ventilate toilet rooms and janitors closet as required by current mechanical codes for the toilet room renovations. The fans will be controlled by the building DDC control system and operate based on building occupancy.

MDF/IDF DATA ROOMS

Dedicated air conditioning units will be provided for spaces within the building that have special use and require dedicated 24/7 cooling. These units will utilize CFC free refrigerants. Heat recovery for additional energy savings will be evaluated in the design phase.

BUILDING AUTOMATION AND CONTROLS

The building energy management system will be upgraded to control the infrastructure upgrades and meet university standards. The building will be supplied with a complete standalone DDC building energy management system (BEMS). The BEMS will be connected to all of the mechanical equipment and will allow for set point monitoring and adjustment at the operators station to allow remote operator to monitor, determine alarm status and reset set points to the DDC system. The BEMS will be fully integrated into the campus wide DDC system.

Temperature control strategies, such as duct pressure reset, temperature reset, hydronic pressure reset, occupied/unoccupied scheduling, CO2 monitoring in high occupancy rooms, demand control ventilation, will be evaluated to provide comfort to the occupants of the building and reduce the total energy usage. Temperature and humidity conditions, chilled water, steam and main electrical service will be monitored by the BEMS. Additional control strategies and monitoring points will be reviewed with the University during the construction document phase. Additional measurement and verification program at all electrical equipment and panels for LEED EA Credit 5 will not be pursued.

Pneumatic type valve and damper actuators will be used on the central HVAC equipment automatic valve and dampers. A temperature control air compressor with refrigerated air dryer, pressure regulators and filters will be provided in the building. New pneumatic control air tubing will be routed to the pneumatic control devices. Actuators for individual room

controls will be electronic type for supply air terminal boxes and terminal unit hot water coils, finned tube and radiant ceiling panels, with DDC room temperature sensors.

All VFD's will be networked to the DDC system through their network interface card and will have manual bypass control. Lighting controls, data center HVAC equipment, main electrical service, domestic water heater and elevator control will be controlled and monitored by the building energy management system. Load shedding strategy will be utilized for demand limiting.

DOMESTIC HOT AND COLD WATER PIPING

The existing copper domestic hot and cold water piping will remain. Existing piping in the toilet room shafts will be reworked to accommodate toilet room plumbing fixture modifications.

Domestic hot water will be generated by an electric water heater with a storage tank. The hot water will be generated and distributed at 110 degrees F using a thermostatic mixing valve. System sizing will comply with ASHRAE handbook, HVAC applications, chapter 45, service water heating. The domestic hot water recirculating pump will be controlled through the DDC system and circulate water during the occupied times of the building. The pump will be off during unoccupied times.

A new duplex domestic water booster pump shall be sized on incoming city water pressure (approximately 45 psig and to be confirmed in the construction document phase). The booster system will be located on the fifth floor and will maintain the residual flow and pressure needed to serve the plumbing fixtures at the top of the building and the existing cooling tower.

PLUMBING FIXTURES

The existing plumbing fixtures will be upgraded to minimum ADA requirements. Existing piping will be extended to serve new fixtures. Plumbing fixtures that minimize the building water consumption will be specified.

Dual-Flush water closets will be specified to flush solids, the user pushes one button for a full 1.6 gallon flush. To flush liquids, the user pushes the other button for a partial flush (0.8 gallon or less) to clear the trap. These fixtures can reduce the amount of water used by a facility without compromising the ability to flush solids.

Low flow urinals using 0.125 gallon water per flush with sensor operated flush valves, will be specified. These fixtures reduce maintenance and do not compromise hygiene.

Lavatories will be equipped with 0.5 GPM faucets with automatic sensor.

An ASSE 1016 individual-fixture thermostatic mixing valve will be provided at each accessible hand washing fixture.

SANITARY WASTE AND VENT PIPING

The existing aboveground sanitary waste and vent piping is schedule 40 galvanized piping with threaded joints is of questionable integrity. New waste piping installed shall be no hub schedule 40 steel pipe. Below grade sanitary piping shall be schedule 40 PVC. All below grade sanitary waste piping shall be a minimum of 3" in diameter and sloped at 1/8" per foot. Individual ASSE automatic trap primers will be provided on every new floor drain; as required by the 2006 Michigan Plumbing Code.

STORM PIPING

Existing storm piping and roof drains would remain. New roof drains would be provided on areas where the existing roof would be replaced.

FIRE PROTECTION

A new wet pipe fire protection system with a hydraulically calculated wet pipe sprinkler system installed throughout the building to complying with NFPA 13 requirements. The new system will include all required isolation valves, fire department connection, flow and tamper switches, inspector test connections, drain valves, sprinkler heads, and all associated piping.

Existing standpipes will be evaluated to determine if modifications are required to meet current NFPA 14 requirements.

The existing fire pump was recently replaced and will remain. The fire pump room will be isolated from the loading dock and heat will be provided to this room.

SUSTAINABLE DESIGN

The Pray-Harrold Renovation project has been designed with sustainable features in all categories of the Leadership in Energy and Environmental Design (LEED) rating system for Commercial Interiors.

Electrical Systems

Codes and Standards

The new and renovated portions of the electrical system shall comply with the following Codes and Standards:

- National Electrical Code 2005 (NEC)
- NFPA 101 Life Safety Code 1997
- Michigan Building Code 2006
- Michigan Rehabilitation Code for Existing Buildings 2006
- Michigan Elevator Code 2004
- NFPA 72 1999
- Michigan Uniform Energy Code (ASHRAE 90.1-1999 adopted by reference)
- LEED for Commercial Interiors v2.0
- Illuminating Engineering Society of North America (IESNA) – Ninth Edition
- EMU Design and Construction Standards (dated November 11, 2008)

Electrical History

The original electrical service entrance for Pray-Harrold was based on design documents dated February 21, 1967. These documents show the installation of a 4,800V, 3-phase, 3-wire primary service from manhole #28 located due north across East Circle Drive. Two separate 5kV primary feeders within ducts pass under East Circle Drive and then onward to a looped primary switch arrangement at the main substation lineup at the northeast corner of the Pray-Harrold first floor. One 5kV primary feed is believed to loop westward to the Snow Health Center, while the other primary feed eastward to the Alexander Music Building.

The Pray-Harrold substation consists of the aforementioned looped primary switch arrangement, a 1,500 kVA dry-type transformer with 4,800V delta primary and 480Y/277V wye secondary, a 2,500 amp main fusible switch, and a 480Y/277V secondary distribution section with fusible switches. The secondary distribution section primarily feeds the majority of the loads throughout the facility, including lighting panels, receptacle panels, and most motor loads. Tapped within the looped primary switches is a feeder to an outdoor 1,000 kVA pad-mount transformer located at the northwest corner of the building. This pad-mount transformer solely feeds the main building chiller; documentation has not yet been identified which details when or how this chiller and transformer combination was installed.

A penthouse fire in 2000 led to some renovation work to alleviate fire, smoke, and water damage. This renovation resulted in new power and receptacle panels in the penthouse, as well as new lighting fixtures on floors 3 through 7.

Existing Building Loads

In order to establish a baseline electrical design load and to comply with NEC 220.87, it is requested that electrical utility demand loads be provided for the previous 12 months of operation. The State of Michigan requires this existing meter information to establish a starting maximum demand load for the renovation.

Typical Building Load Densities

For preliminary design purposes, the load densities outlined below shall be used. Note that listed lighting densities are per Eastern Michigan University Design Standards, which are 21% below the maximum allowable densities of ASHRAE 90.1-2004 under the Space-by-Space Method (ASHRAE values listed in parenthesis for comparison).

- | | |
|------------------------------|----------------------------------|
| • Classroom/Lecture Lighting | 1.11 (1.4) watts per square foot |
| • Office Lighting | 0.87 (1.1) watts per square foot |
| • Conference Room Lighting | 1.03 (1.3) watts per square foot |
| • Restroom Lighting | 0.71 (0.9) watts per square foot |
| • Corridor Lighting | 0.40 (0.5) watts per square foot |

- Active Storage Lighting 0.63 (0.8) watts per square foot
- General Power 2.0 to 3.0 watts per square foot
- Mechanical Equipment 4.0 to 5.0 watts per square foot
- Future Loads 1.0 watts per square foot

Service Entrance

The existing substation is mostly original equipment and nearing the end of its expected life span. The southern-most distribution section of this substation is likely tapped into the substation bus, which is in violation of Eastern Michigan University Design Standards. The existing wall-mounted “cut-out” switches that feed the existing chiller transformer create a hazardous situation with a lack of an enclosure as well as a lack of working clearance. The existing substation and cut-out switch will be removed.

To service the existing facility’s needs as well as future growth, it is estimated that a new 2,500 kVA single-ended substation will be required. After existing demand load information is reviewed, the kVA may be adjusted. Auxiliary fan cooling may be required on the transformer. This substation will consist of a new looped primary switch arrangement (with incoming switches from Snow Health Center and Alexander Music Building, and a fused switch for the transformer), a single 2,500 kVA dry-type transformer, and 480Y/277V distribution switchgear with metering, transient voltage surge suppression, and drawout circuit breakers. To take advantage of the existing primary manhole and underground feeder locations, the new substation will be located at the existing northeast corner of the facility.

New underground 15 kV primary feeder work will be required from one of the new primary switches (Snow Health side) to the existing 13.2 kV feeder network at the Mark Jefferson Building. At this time, it is anticipated that an existing duct bank and manhole network between Mark Jefferson and Pray-Harrold will provide a suitable spare pathway for the new feeder. Where required on the Pray-Harrold site, new underground raceways for primary feeders will consist of four 4” conduits within a concrete duct bank. Additional cabling and equipment for the remainder of the campus 15 kV primary loop network shall be completed by a latter deferred maintenance project; Pray-Harrold will essentially be on a simple radial node until the loop can be completed.

Power Distribution

In the existing facility, with the exception of the penthouse and some other minor spot locations, the existing secondary distribution system (i.e. step-down transformers, panelboards, and motor control centers) is mostly original equipment and nearing the end of its expected life span. With some minor exceptions, the existing secondary distribution system will be removed and replaced with new. At this time, new panelboards, motor control centers, and associated wiring are anticipated to be similarly sized and located as the removed equipment, while in-wall 480V-208Y/120V transformers will be removed and subsequently consolidated. New transformer closets will be provided at each floor with room for a new 150 kVA dry-type transformer, 600 amp floor distribution panel, and miscellaneous lighting controls or fire alarm NAC panels. Each floor distribution panel will feed its corresponding floor panelboards. Approximately forty-five panelboards and two motor control centers will be replaced. As equipment layouts and loads continue to be developed, variations of the replacement secondary distribution system and associated transformer closet locations can be expected.

The project team will potentially pursue LEED CI Credit 3 “Energy Use”. As such, electrical metering will be placed on the secondary switchgear and lighting panels. In addition, major mechanical motor loads will also require metering. All electrical metering will report load data to the Building Management System for monthly and yearly load comparison.

In general, receptacles shall be 20 ampere, 125 volt, NEMA 5-20R configuration, specification-grade type with stainless steel cover plates. Ground Fault Circuit Interrupter

(GFCI) receptacles shall be used in custodial rooms, toilet rooms, and other locations as required by the NEC. In existing classrooms, lecture halls, and corridors, it is anticipated that existing general receptacle circuit wiring and devices will remain as is. The upper floors of Pray-Harrod have existing in-floor cellular raceway systems. Due to the penthouse fire in 2000, these aged raceways have experienced water and related corrosion damage. These in-floor systems will be abandoned in place to avoid damage to new circuiting. New general receptacle circuit wiring and devices will be provided to replace old pedestal-style receptacles that stem from the in-floor raceway systems.

Provide conduit and electrical conductors to all mechanical loads and Owner equipment requiring power.

Transient voltage surge suppressors shall be included at the new substation distribution section as well as 208Y/120V distribution panels downstream.

Branch and feeder conductors shall be Type THHN/THWN or XHHW stranded copper in conduit with a minimum size of #12 AWG for power and lighting. Threaded plastic or nylon insulated wire nuts shall be used for conductors #10 AWG or smaller. Pre-insulated mechanical lugs shall be used for conductors larger than #10 AWG. The minimum conduit size for power circuits shall be 3/4". Rigid, galvanized, threaded conduit shall be used in exterior walls, outdoors, seal penetrations, hazardous locations, or where subject to physical damage. Electrical Metallic Tubing may be used in interior partitions and above suspended ceilings.

All equipment and non-current carrying metal parts of the electrical system shall be grounded in accordance with the NEC. Equipment grounds and neutral conductors shall not be electrically interconnected on the load side of the service ground.

Emergency/Standby Distribution

The existing building does not have an emergency or standby generator. The existing fire alarm system and existing emergency egress lighting are powered by battery back-up. During field verification, much of the emergency egress lighting system was found to be inoperable, likely due to dead batteries.

A new 600kW, 480Y/277V emergency diesel generator will be provided for emergency and standby loads, including the campus data center, the existing fire pump, an existing elevator, egress lighting loads, and fire alarm loads. The generator will feed automatic transfer switches sized for their respective standby and emergency distribution systems. The generator will be located to the east exterior of the existing substation room.

The campus data center power infrastructure will be upgraded. This upgrade includes a new 600 amp power distribution panel, a new automatic transfer switch and associated feed to the new diesel generator, and a 150 kVA uninterruptable power supply (UPS) with thirty minutes of battery back-up.

Lighting Systems

It is anticipated that all existing lighting systems in classrooms and lecture halls will be removed and replaced with new, while existing lighting in offices and main corridors (floors three through seven) will generally remain as is. Lighting on the second floor main corridor will be upgraded to improve aesthetics. Lighting in office suite corridors will be upgraded to improve light levels.

Lighting levels shall comply with the Eastern Michigan University Design Standards. Where interior light levels are not defined by EMU, the latest recommendations of the Illuminating Engineering Society of North America (IESNA) will be utilized as a guideline. Work plane illumination for typical spaces is outlined below:

- Classrooms and Lecture Halls 40 to 60 footcandles

- Conference/Meeting Rooms 30 footcandles (IESNA)
- Private Office 40 to 50 footcandles
- Open Office with VDT Use 30 to 50 footcandles
- Toilets and Washrooms 20 to 30 footcandles
- Stairways and Corridors 10 to 20 footcandles
- Storage Areas 10 to 20 footcandles
- Mechanical/Electrical Rooms 30 footcandles (IESNA)
- Building Perimeter, Outside Walkways 1 to 3 footcandles

With the pursuit of EMU-modified wattage densities on this project, the illumination levels will be specifically targeted for defined task surfaces.

Typical lighting in classrooms may consist of recessed, linear wall wash fluorescent fixtures at the front teaching wall and recessed, direct/indirect fluorescent fixtures throughout the rest of the room. The wall wash fixtures will be switched separately to aid with visual contrast during video presentations. The rear fixtures will switch inboard and outboard lamps independently. Three total switching zones are anticipated.

In the lecture halls, lighting may consist of pendant-mounted, linear rows of direct/indirect fluorescent fixtures; the locations of these fixtures will be coordinated with projector systems. Recessed, linear wall wash fluorescent fixtures will be utilized at the front teaching white board. Fixtures in the front of these rooms will be switched separately from those in the rear to aid with visual contrast during video presentations. The wall wash lighting will also be switched separately. Five total switching zones are anticipated.

Typical private office lighting may consist of two components. Low-level ambient lighting will be provided by recessed direct/indirect fluorescent fixtures. Task specific lighting will be provided by table-top or furniture-mounted task lighting, possibly with long-life, low-wattage L.E.D. lamping. Task lights shall have an integral power switch.

Conference room lighting may consist of pendant-mounted direct/indirect fluorescent fixtures. The locations of these fixtures will be coordinated with any ceiling-mounted LCD projectors. Two to four switching zones are anticipated.

Storage and utility room lighting shall consist of recessed lensed fluorescent fixtures. Stairs shall have vandal-resistant, lensed fluorescent fixtures.

For toilet rooms, corridors, stairs, and open public spaces, lighting control relay panels will be provided and tied into the Building Management System to schedule lighting for occupied hours; these spaces will be provided with temporary override switches for after-hour occupants. In classrooms, offices, conference rooms, and storage rooms, occupancy sensors shall be used to automatically turn off lighting. Occupancy sensors or other automated lighting control systems shall not be used in potentially hazardous spaces, such as electrical or mechanical rooms. Local manual switches shall be provided in all spaces in accordance with ASHRAE 90.1-1999 and LEED CI Credit 6.1 "Controllability of Systems".

Night lighting systems, defined as 24-hour and 7-day unswitched operation, shall be minimally utilized. Night lighting may be used at vestibule areas and areas that require security cameras.

New exterior lighting will be provided for canopies and exterior egress doors. Canopy lighting may consist of downlight fixtures, while exterior egress doors may consist of wall-mounted fixtures. Primary goals of exterior lighting systems will be to enhance campus security and to illuminate life-safety egress paths away from the facility.

Fire Alarm System

The existing fire alarm control panel is a Faraday panel ("MPC-1500 Plus" series) and is located in the first floor substation room. This fire alarm control panel will be removed and replaced with a new Edwards "EST-3" panel that is compatible with campus design standards and the Campus Mass Notification system.

Throughout the building, new addressable pull stations, detectors, strobes, and speakers will be provided to comply with the latest version of NFPA 72. Speakers will allow voice evacuation and emergency paging functions. Duct smoke detectors will be installed in mechanical air handling units and in all ducts with smoke dampers. All fire alarm wiring shall be routed in dedicated conduit.

The existing fire alarm system will be removed as the new system is brought into service. Multiple testing and inspection periods will be required to coordinate with the construction phasing.

Lightning Protection System

A lightning protection system will not be included with this project.

Auxiliary Systems

The upper floors have existing in-floor cellular raceway systems. Due to the penthouse fire in 2000, these aged raceways have experienced water and related corrosion damage. These in-floor systems will be abandoned in place to avoid damage to new cabling. Conduit raceways shall be provided for new voice, data, audio/visual, surveillance camera, and access control systems as necessary. As the design of the facility continues, the requirements and locations of these raceway systems shall be coordinated with the voice/data consultant and Eastern Michigan University. New cable trays will be designed as an add alternate and provided in corridor plenums if budgets permit.

New or existing clock systems will not be addressed with this project.

Surveillance camera systems will be designed by a technology consultant. It is anticipated that new surveillance cameras will cover all exterior perimeter doors. Existing aged surveillance cameras around the first floor data center shall be replaced with new.

Card access systems will be designed by a technology consultant. It is anticipated that new card access readers will be provided at 2 main building entrances as well as office suite doors.

Sustainable Design

The Pray-Harrod Modernization project has been designed with sustainable features in all categories of the Leadership in Energy and Environment Design (LEED) rating system for Commercial Interiors. The modernization work is designed to the highest LEED certification level possible within the established construction budget. The team understands that Executive Directive 2007-22 requires State-supported Major Capital Outlay projects such as this to strive to obtain a score for the building of Platinum on the LEED for New Construction Scorecard or the Commercial Interiors Scorecard as applicable. The current scorecards show that the project has the potential to achieve LEED Silver, far exceeding the minimum requirement of Certified.



2/17/2009

LEED-CI Version 2.0 Registered Project Checklist
Pray-Harrold Modernization
Ypsilanti, Michigan

Yes ? No

4 0 6			Sustainable Sites		Responsible	Comments	
		0.5	D	Credit 1	Site Selection Select a LEED Certified Building	n/a	Not attempted.
		0.5	D	Credit 1A	Brownfield Redevelopment	n/a	Not attempted.
		0.5	D	Credit 1B	Stormwater Management, Rate and Quantity	n/a	Not attempted.
		0.5	D	Credit 1C	Stormwater Management, Treatment	n/a	Not attempted.
		0.5	D	Credit 1D	Heat Island Reduction, Non-Roof	n/a	Not attempted.
0.5			D	Credit 1E	Heat Island Reduction, Roof	A/EMU	Specify roof with SRI greater than or equal to 78.
0.5			D	Credit 1F	Light Pollution Reduction	MEP	Campus standard currently meet requirement
		0.5	D	Credit 1G	Water Efficient Irrigation, Reduce by 50%	n/a	Not attempted.
		0.5	D	Credit 1H	Water Efficient Irrigation, No Potable Use or No Irrigation	n/a	Not attempted.
		0.5	D	Credit 1I	Innovative Wastewater Technologies	n/a	Not attempted.
0.5			D	Credit 1J	Water Use Reduction, 20% Reduction	MEP	Fixture replacement is included in scope of work.
		0.5	D	Credit 1K	On-site Renewable Energy	n/a	Not attempted.
		0.5	D	Credit 1L	Other Quantifiable Environmental Performance	n/a	Not attempted.
1			D	Credit 2	Development Density and Community Connectivity	n/a	Building is in a densely populated campus and city.
1			D	Credit 3.1	Alternative Transportation, Public Transportation	A/EMU	Confirm 2 bus lines.
1			D	Credit 3.2	Alternative Transportation, Bicycle Storage & Changing Rooms	A/EMU	Use shower facilities in adjacent building.
		1	D	Credit 3.3	Alternative Transportation, Parking Availability	n/a	Not attempted.

Yes ? No

2 0 0			Water Efficiency		2 Points	Comments	
1			D	Credit 1.1	Water Use Reduction, 20% Reduction	MEP	Fixture replacement is included in scope of work.
1			D	Credit 1.2	Water Use Reduction, 30% Reduction	MEP	Fixture replacement is included in scope of work.

Yes ? No

2 2 8			Energy & Atmosphere		12 Points	Comments	
Y			C	Prereq 1	Fundamental Commissioning	MEP	Required.
Y			D	Prereq 2	Minimum Energy Performance	MEP	Required.
Y			D	Prereq 3	CFC Reduction in HVAC&R Equipment	MEP	Required.
1		2	D	Credit 1.1	Optimize Energy Performance, Lighting Power	MEP	
		1	D	Credit 1.2	Optimize Energy Performance, Lighting Controls	MEP	
1	1		D	Credit 1.3	Optimize Energy Performance, HVAC	MEP	
	1	1	D	Credit 1.4	Optimize Energy Performance, Equipment & Appliances	MEP	
		1	D	Credit 2	Enhanced Commissioning	MEP	Not attempted.
		2	C	Credit 3	Energy Use, Measurement & Payment Accountability	MEP	Not attempted.
		1	C	Credit 4	Green Power	A/JCC	Not attempted.

Yes ? No

6 3 5			Materials & Resources		14 Points	Comments	
Y			D	Prereq 1	Storage & Collection of Recyclables	A	Required.
1			C	Credit 1.1	Tenant Space, Long Term Commitment	A	
1			C	Credit 1.2	Building Reuse, Maintain 40% of Interior Non-structural Components	A	Non structural walls, partitions, and corridor flooring to remain.
1			C	Credit 1.3	Building Reuse, Maintain 60% of Interior Non-Structural Components	A	Non structural walls, partitions, and corridor flooring to remain.
1			C	Credit 2.1	Construction Waste Management, Divert 50% from Landfill	CM	
		1	C	Credit 2.2	Construction Waste Management, Divert 75% from Landfill	n/a	

		1	C	Credit 3.2	Resource Reuse, 10%	n/a	Not attempted.
1			C	Credit 3.3	Resource Reuse, 30% Furniture and Furnishings	A	Min of 30% of furniture to be resued.
1			C	Credit 4.1	Recycled Content, 10% (post-consumer + ½ pre-consumer)	CM	
	1		C	Credit 4.2	Recycled Content, 20% (post-consumer + ½ pre-consumer)	CM	
	1		C	Credit 5.1	Regional Materials, 20% Manufactured Regionally	CM	
		1	C	Credit 5.2	Regional Materials, 10% Extracted and Manufactured Regionally	n/a	Not attempted.
		1	C	Credit 6	Rapidly Renewable Materials	n/a	Not attempted.
	1		C	Credit 7	Certified Wood, 50% Wood-based Material to be FSC Certified	CM	

Yes ? No

11	0	6	Indoor Environmental Quality	17 Points	Comments
----	---	---	-------------------------------------	-----------	----------

Y			D	Prereq 1	Minimum IAQ Performance	MEP	Required.
Y			D	Prereq 2	Environmental Tobacco Smoke (ETS) Control	A	Required.
1			D	Credit 1	Outdoor Air Delivery Monitoring	MEP	
1			D	Credit 2	Increased Ventilation	MEP	
1			C	Credit 3.1	Construction IAQ Management Plan, During Construction	CM	
1			C	Credit 3.2	Construction IAQ Management Plan, Before Occupancy	CM	+/- 2 week flush-out period or flush during occupancy - Mercer to confirm
1			C	Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	A	
1			C	Credit 4.2	Low-Emitting Materials, Paints & Coatings	A	
1			C	Credit 4.3	Low-Emitting Materials, Carpet Systems	A	
1			C	Credit 4.4	Low-Emitting Materials, Composite Wood and Laminate Adhesives	A	
1			C	Credit 4.5	Low-Emitting Materials, Systems Furniture and Seating	A	For new systems furniture and seating only
1			D	Credit 5	Indoor Chemical & Pollutant Source Control	A	Add recessed entry grilles/grates.
1			D	Credit 6.1	Controllability of Systems, Lighting	MEP	
		1	D	Credit 6.2	Controllability of Systems, Temperature and Ventilation	n/a	Not attempted.
		1	D	Credit 7.1	Thermal Comfort, Compliance	n/a	Not attempted.
		1	D	Credit 7.2	Thermal Comfort, Monitoring	n/a	Not attempted.
		1	D	Credit 8.1	Daylight & Views, Daylight 75% of Spaces	n/a	Not attempted.
		1	D	Credit 8.2	Daylight & Views, Views for 90% of Spaces	n/a	Not attempted.
		1	D	Credit 8.3	Daylight & Views, Views for 90% of Seated Spaces	n/a	Not attempted.

Yes ? No

2	0	3	Innovation & Design Process	5 Points
---	---	---	----------------------------------------	----------

1			D	Credit 1.1	Innovation in Design: 40% Water Use Reduction	A	
		1	D	Credit 1.2	Innovation in Design: Green Cleaning Products	n/a	Not attempted.
		1	D	Credit 1.3	Innovation in Design	n/a	Not attempted.
		1	D	Credit 1.4	Innovation in Design: TBD	n/a	Not attempted.
1			C	Credit 2	LEED® Accredited Professional	A	

Yes ? No

27	5	28	Project Totals (pre-certification estimates)	57 Points
----	---	----	-----------------------------------------------------	-----------

Certified 21-26 points Silver 27-31 points Gold 32-41 points Platinum 47-57 points

9.0 Project / Program Cost

PROJECT DATA SHEET

SUBJECT: DMB File No.: 332/09019.JAN
 Eastern Michigan University
 Pray-Harrold Modernization
 Ypsilanti, Michigan

Schematics Prepared by: SHW Group

Project Total

Estimated Cost of:

1.	The structure (general, mechanical, electrical fixed equipment, and contingencies)	\$33,848,000
	1-a. Telecommunications (incl. above)	\$412,000
2.	Services from five feet outside of the structure(Sewer, water supply, etc.)	\$97,000
3.	Site Improvements (Roads, walks, grading, etc.)	\$15,000
4.	Architectural/Engineering fees, surveys, commisioning, site investigations, state	\$2,900,000
5.	DMB Fee	\$500,000
	Design and Construction cost per gross sq.ft. (1 thru 4/gross sq.ft.)	\$156
6.	Furnishings (Furniture, moveable equipment, etc., not considered a part of the structure nor requiring fixed mechanical and/or electrical service)	\$1,000,000
7.	Other - Technology Equipment	\$1,000,000
	Asbestos Abatement	\$1,140,000
	Moving Cost	\$750,000
	Other Administrative Costs	\$750,000
8.	Total estimated project cost, November 2009	\$42,000,000
	Total project cost per gross sq.ft. (8/gross sq.ft.)	\$178.12

Total net square feet	129824 sq.ft.
Total gross square feet	235791 sq.ft.
Building design efficiency (ratio of net to gross)	55%
Building occupancy design capacity	4071
Parking spaces provided	0*

*The facilities will utilize the existing parking lot

10.0 Design and Construction Schedule

Design and Construction Schedule

Subject: DMB File No.: 332/09019.JAN
Eastern Michigan University
Pray-Harrold Modernization
Ypsilanti, Michigan

Programming	January 2009
Schematic Design Phase	February 2009
Review and Joint Capital Outlay Subcommittee/Department of Management and Budget Approval	March 2009
Preliminary Design Phase	April 2009 – May 2009
Review and Department of Management and Budget Approval and Legislative Review	June 2009
Final Design and Construction Documents	June 2009 – October 2009
Review and Department of Management and Budget Approval and Legislative Review	October 2009
Bidding and Negotiation	November 2009
Award Construction	December 2009
Phased Construction	December 2009 – December 2012
Final Phase Move-In	December 2012

11.0 Annual Operating Cost

Annual Operating Cost

Subject: DMB File No.: 332/09019.JAN
Eastern Michigan University
Pray-Harrold Modernization
Ypsilanti, Michigan

Following is a summary of the projected annual operating budget based on \$/year and 235,791 gross square feet for the **Pray-Harrold Building**

Custodial, Buildings and Grounds	\$2.13 per gsf	\$	503,093
Plant Maintenance	\$2.27 per gsf	\$	534,207
Energy Cost	\$1.72 per year	\$	405,809
Security	\$0.26 per year	\$	60,625
Insurance	\$0.08 per year	\$	17,690
Communications	\$0.34 per year	\$	79,068

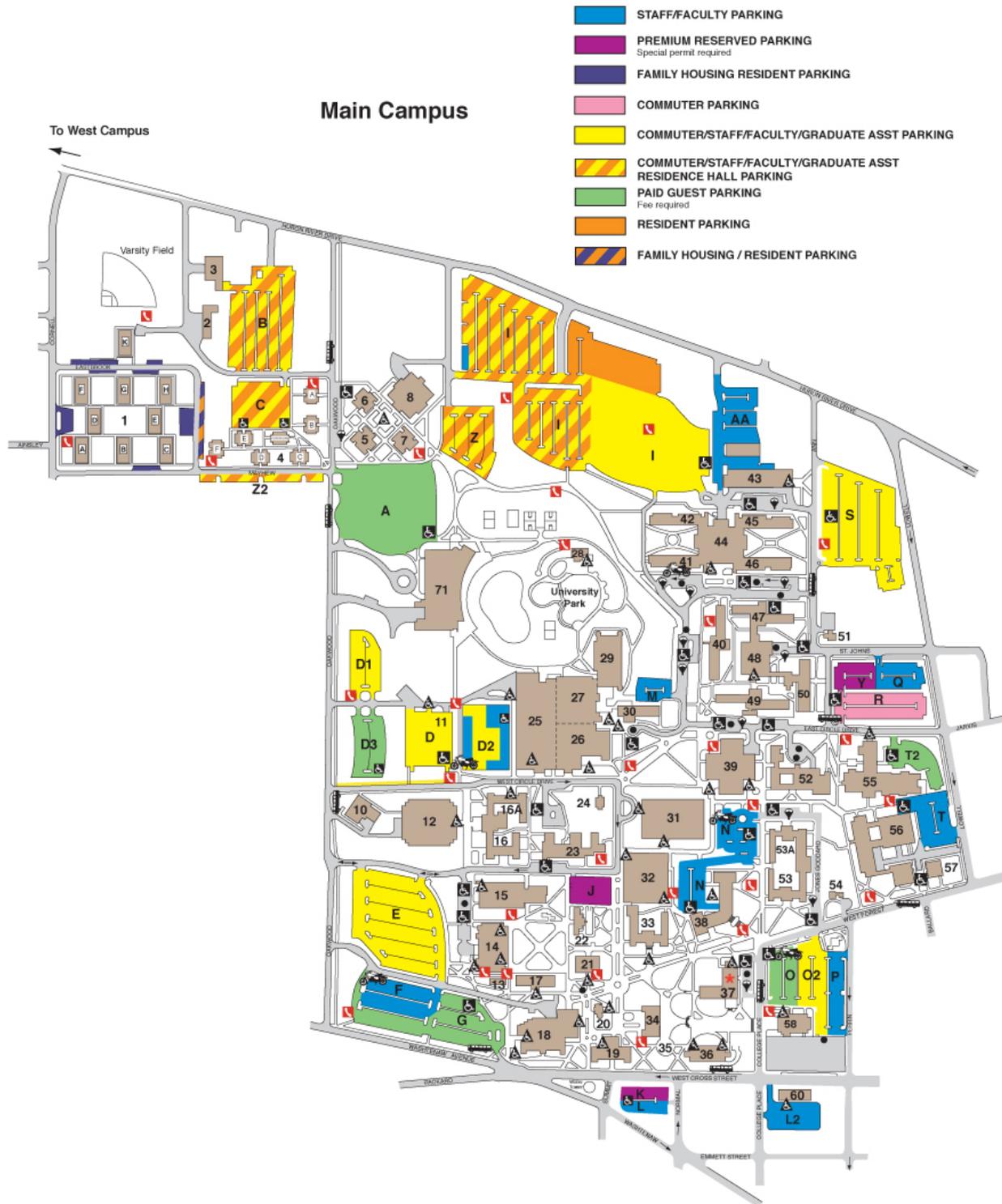
Projected Operating Budget (\$/year): **\$1,600,492**

12.0 Drawings

- Location Map / Campus Map
- Existing Conditions Site Plan
- Scope of Work Legend
- Floor Plans:
 - First Floor
 - Second Floor
 - Third Floor
 - Fourth Floor
 - Fifth Floor
 - Sixth Floor
 - Seventh Floor
 - Penthouse
- Exterior Elevations:
 - East Elevation
 - West Elevation
 - North Elevation
 - South Elevation

* LEED Checklist – See Tab 8 Building and Construction Systems

Main Campus Map (see also the [Campus Buildings Map](#) and other maps and directions [below](#))



Numerical Index to Campus Buildings:

- 1. Cornell Courts Apartments
- 2. Sculpture Studio
- 5. Hill Residence Hall
- 6. Hoyt Residence Hall
- 7. Pittman Residence Hall
- 8. Hoyt Hall
- 11. Parking Structure
- 12. Bruce T. Halle Library
- 13. Terrestrial and Aquatics research

Alphabetical Index to Campus Buildings

- 55. Alexander Music Building
- 50. Best Residence Hall
- 36. Boone Hall
- 25. Bowen Field House
- 17. Briggs Hall
- 40. Buell Residence Hall
- 57. Coatings Research Institute
- 64. College of Business
- 1. Cornell Courts Apts.
- 48. Dining Commons 1 (DC-1)

- | | |
|--------------------------------------------|------------------------------------------|
| 14. Mark Jefferson | 49. Downing Residence Hall |
| 15. Strong Science Building | 44. Eastern Eateries / First Year Center |
| 17. Briggs Hall | 34. Ford Hall |
| 18. McKenny Union | 53. Goddard Residence Hall |
| 19. Welch Hall | 12. Halle Library |
| 20. Starkweather Hall | 5. Hill Residence Hall |
| 21. Sherzer Hall | 22. Hover Building |
| 22. Hover Building | 8. Hoyt Conference Center |
| 23. Rackham Building | 6. Hoyt Residence Hall |
| 24. One-Room Schoolhouse | 53. Jones Residence Hall |
| 25. Bowen Field House | 33. King Hall |
| 26. Warner Gym | 28. Lake House |
| 27. Rec/IM | 14. Mark Jefferson |
| 28. Lake House | 32. Marshall Building |
| 29. Jones Pool | 18. McKenny Union |
| 30. Snow Health Center | 16. Munson Residence Hall/Apts. |
| 31. Porter College of Education | 27. Rec/IM Building |
| 32. Marshall Building | 11. Parking Structure |
| 33. King Hall | 58. Pease Auditorium |
| 34. Ford Hall | 42. Phelps Residence Hall |
| 36. Boone Hall | 37. Pierce Hall |
| 37. Pierce hall | 7. Pittman Residence Hall |
| 38. Roosevelt Hall | 31. Porter College of Education Building |
| 39. Pray-Harold | 39. Pray-Harold |
| 40. Buell Residence Hall | 45. Putnam Residence Hall |
| 41. Sellers Residence Hall | 52. Quirk Sponberg Theatres |
| 42. Phelps Residence Hall | 23. Rackham Building |
| 43. Physical Plant | 38. Roosevelt Hall |
| 44. First-Year Center and Eastern Eateries | 21. Scherzer Hall |
| 45. Putnam Residence Hall | 2. Sculpture Studio |
| 46. Walton Residence Hall | 41. Sellers Residence Hall |
| 47. Wise Residence Hall | 56. Sill Hall |
| 48. DC 1 Dining Commons | 30. Snow Health Center |
| 49. Downing Residence Hall | 20. Starkweather Hall |
| 50. Best Residence Hall | 15. Strong Building |
| 51. 526 St. John's Building | 71. Student Center |
| 52. Quirk/Sponberg Theatres | 13. Terrestrial and Aquatics Research |
| 53. Jones/Goddard Residence Hall | 4. Village Residence Halls |
| 55. Alexander Music Building | 46. Walton Residence Hall |
| 56. Sill Hall | 19. Welch Hall |
| 57. Coatings Research Institute | 47. Wise Residence Hall |
| 58. Pease Auditorium | |
| 71. Student Center | |

Other Campus Maps and Directions:

[Campus Area Overview Map](#)

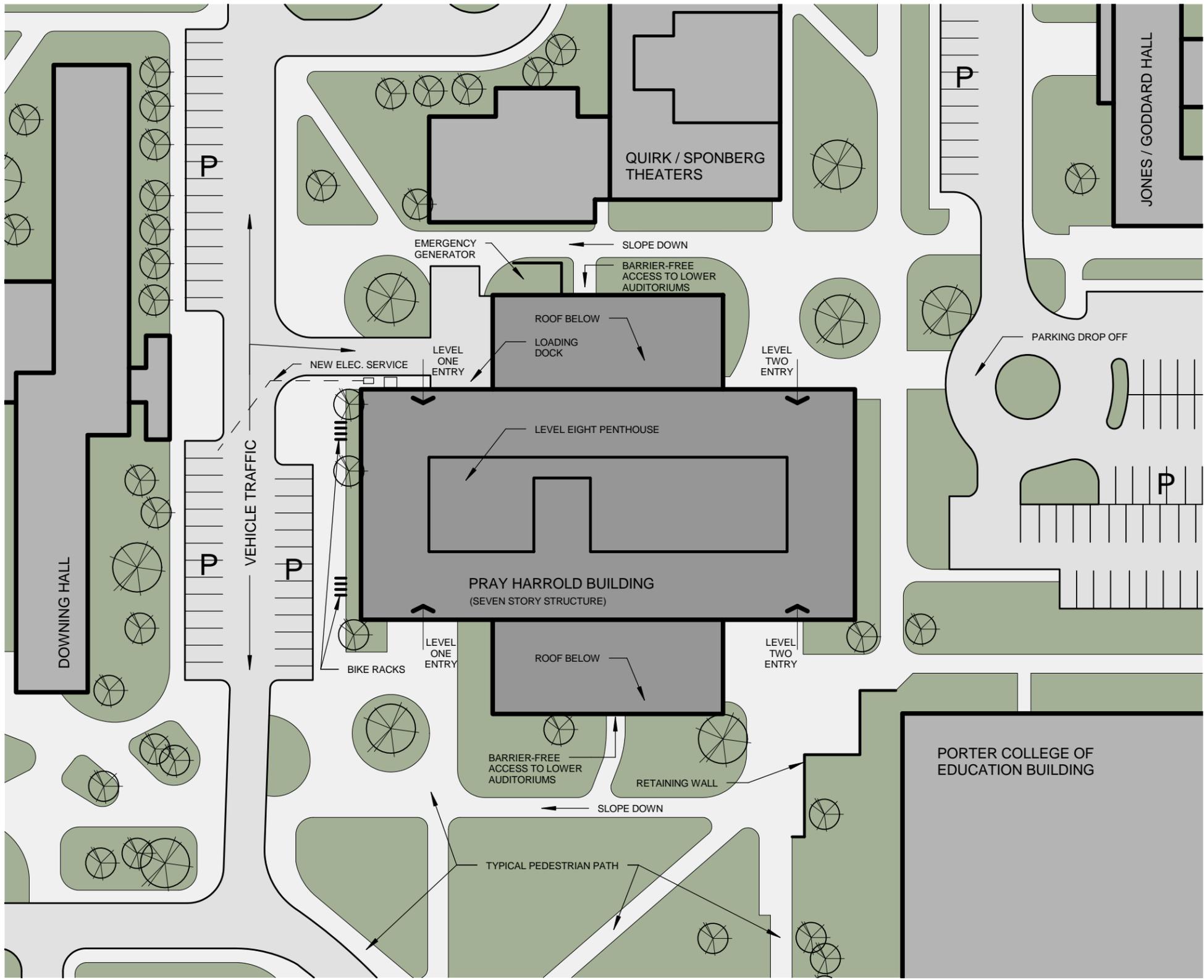
[West Campus / Convocation Center / Ryneerson area](#)

[College of Business / Downtown](#)

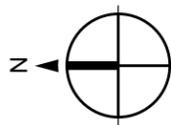
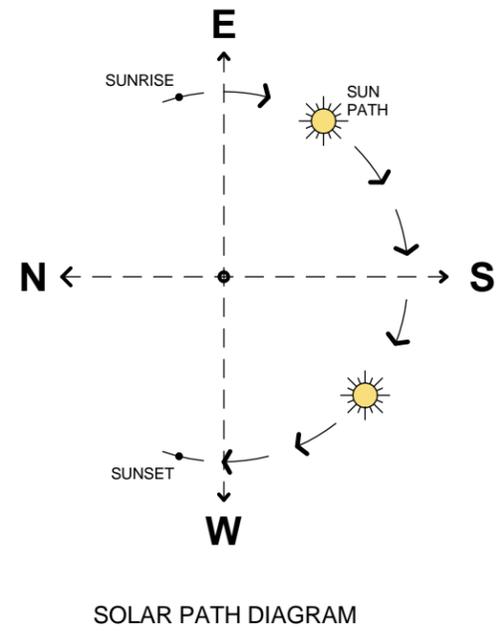
[Marriott / Corporate Education Center / Golf Course](#)

[Directions to Campus](#)

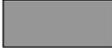
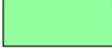
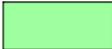
[EMU HOME](#)



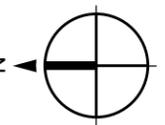
SITE PLAN



SCOPE OF WORK LEGEND:

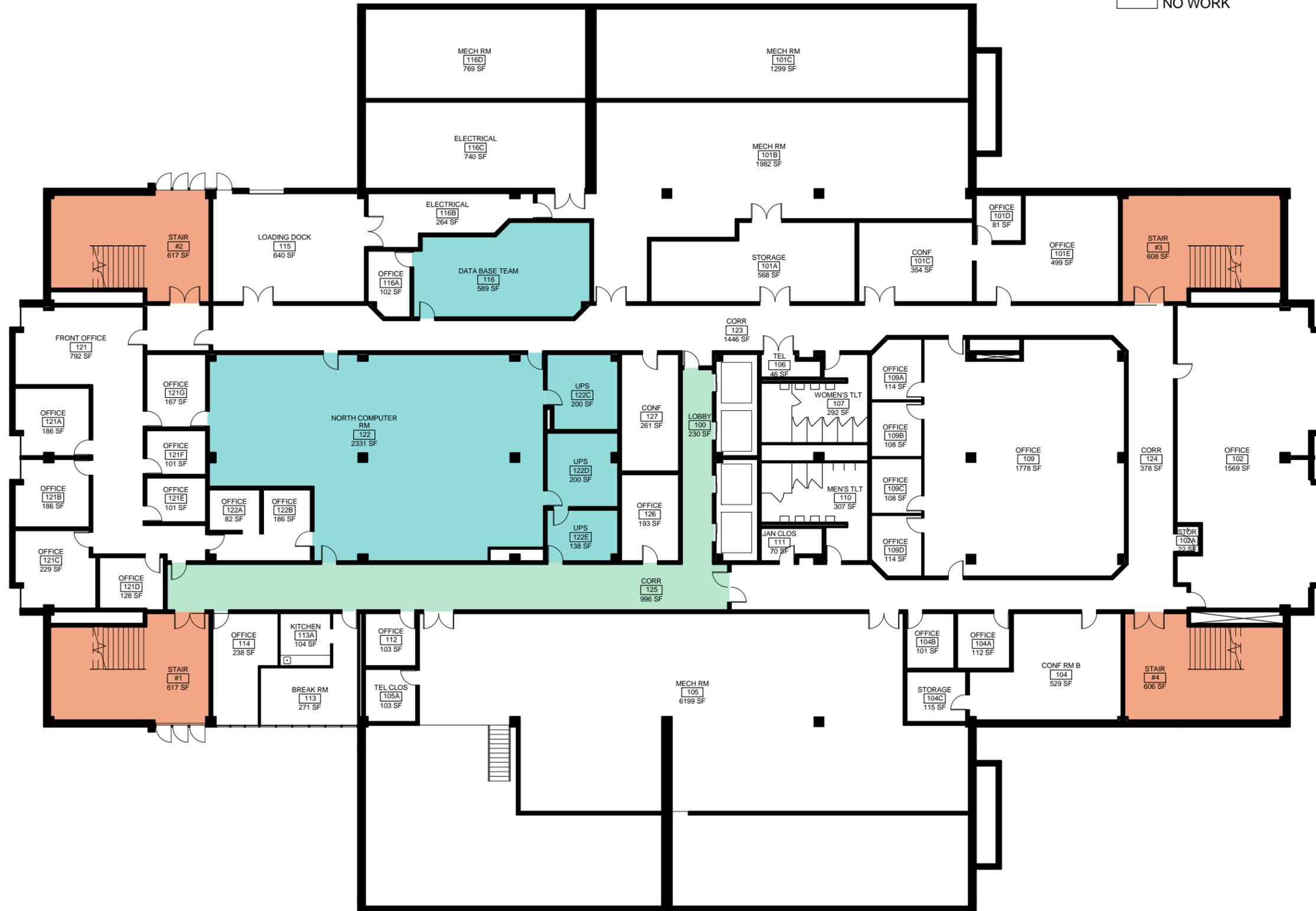
	OFFICE IMPROVEMENTS: Improve HVAC and electrical systems - existing ceiling and lighting systems - new fire protection system - new floor and wall finishes - new handle on existing doors.
	OFFICE MODIFICATIONS: Improve HVAC and electrical systems - existing ceiling and lighting systems - new fire protection system - new floor and wall finishes - new handle on existing door - re-construct common toilet room wall.
	OFFICE SUITE CIRCULATION IMPROVEMENTS: Improve HVAC and electrical, and lighting systems - existing ceiling system - new floor and wall finishes - new fire protection system.
	CLASSROOM IMPROVEMENTS: Improve HVAC and electrical systems - new lighting system - existing ceiling system - new fire protection system - new floor and wall finishes.
	CIRCULATION IMPROVEMENTS: Improve HVAC and electrical systems - existing lighting and ceiling systems - new fire protection - new wall finish - new handle on existing doors.
	PUBLIC CORRIDOR IMPROVEMENTS: Improve HVAC and electrical systems - new lighting and ceiling systems - new fire protection system, new wall finish - new doors and hardware.
	STAIR IMPROVEMENTS: (Building Code Compliance) Improve heating and lighting systems - improve railings and guardrails - new wall finishes - new fire protection - new fire-rated doors and hardware.
	TOILET ROOM RENOVATION: (ADA Compliance) Improve HVAC and electrical systems - new lighting and ceiling systems - new wall and floor finishes - new fire protection - new partitions and plumbing fixtures.
	MECHANICAL SHAFT / ELECTRICAL TRANSFORMER: Enlarge and modify existing space to create fire-rated assemblies.
	AUDITORIUM IMPROVEMENTS: Improve HVAC and electrical systems - new lighting and ceiling systems - new fire protection - improve seating and wall finishes - new floor finish at aisles - improve front and rear seating platforms - new acoustic wall panels.
	STUDENT STUDY RENOVATION: Improve HVAC and electrical systems - new lighting and ceiling systems - new fire protection - new floor and wall finishes.
	DATA CENTER IMPROVEMENTS: New lighting and ceiling systems - remove and replace adjacent corridor ceiling as required.
	MECHANICAL / ELECTRICAL IMPROVEMENTS: Improve mechanical, electrical, and plumbing systems.
	NO WORK



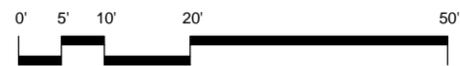


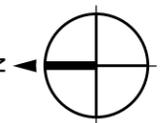
SCOPE OF WORK

- DATA CENTER IMPROVEMENTS
- STAIR IMPROVEMENTS
- CIRCULATION IMPROVEMENTS
- NO WORK



FIRST LEVEL FLOOR PLAN





SCOPE OF WORK

- AUDITORIUM IMPROVEMENTS
- MECHANICAL SHAFT / ELECTRICAL TRANSFORMER
- STAIR IMPROVEMENTS
- STUDENT STUDY RENOVATION
- TOILET ROOM RENOVATION
- PUBLIC CORRIDOR IMPROVEMENTS
- CIRCULATION IMPROVEMENTS
- CLASSROOM IMPROVEMENTS
- NO WORK



SECOND LEVEL FLOOR PLAN



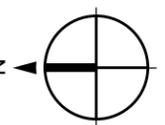
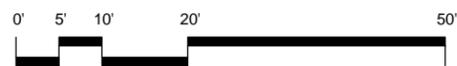


SCOPE OF WORK

- STAIR IMPROVEMENTS
- TOILET ROOM RENOVATION
- CIRCULATION IMPROVEMENTS
- CLASSROOM IMPROVEMENTS
- NO WORK



THIRD LEVEL FLOOR PLAN



SCOPE OF WORK

- STAIR IMPROVEMENTS
- TOILET ROOM RENOVATION
- CIRCULATION IMPROVEMENTS
- CLASSROOM IMPROVEMENTS
- OFFICE IMPROVEMENTS
- NO WORK



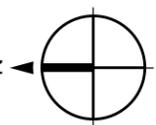
FOURTH LEVEL FLOOR PLAN



SHWGROUP

EMU Pray Harrold Modernization
SCHEMATIC DESIGN

02-17-09

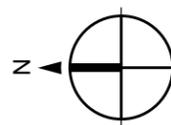


SCOPE OF WORK

- MECHANICAL SHAFT / ELECTRICAL TRANSFORMER
- STAIR IMPROVEMENTS
- TOILET ROOM RENOVATION
- CIRCULATION IMPROVEMENTS
- CLASSROOM IMPROVEMENTS
- OFFICE MODIFICATIONS
- OFFICE SUITE CIRCULATION IMPROVEMENTS
- OFFICE IMPROVEMENTS
- NO WORK



FIFTH LEVEL FLOOR PLAN



SHWGROUP

EMU Pray Harrold Modernization

SCHEMATIC DESIGN

02-17-09

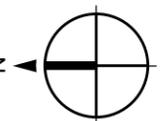
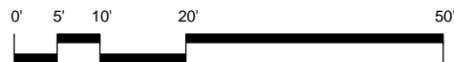


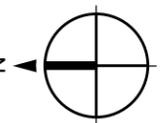
SCOPE OF WORK

- MECHANICAL SHAFT / ELECTRICAL TRANSFORMER
- STAIR IMPROVEMENTS
- TOILET ROOM RENOVATION
- CIRCULATION IMPROVEMENTS
- CLASSROOM IMPROVEMENTS
- OFFICE MODIFICATIONS
- OFFICE SUITE CIRCULATION IMPROVEMENTS
- OFFICE IMPROVEMENTS
- NO WORK



SIXTH LEVEL FLOOR PLAN



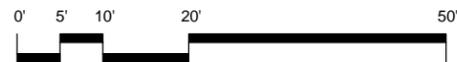


SCOPE OF WORK

- MECHANICAL SHAFT / ELECTRICAL TRANSFORMER
- STAIR IMPROVEMENTS
- TOILET ROOM RENOVATION
- CIRCULATION IMPROVEMENTS
- CLASSROOM IMPROVEMENTS
- OFFICE MODIFICATIONS
- OFFICE SUITE CIRCULATION IMPROVEMENTS
- OFFICE IMPROVEMENTS
- NO WORK



SEVENTH LEVEL FLOOR PLAN

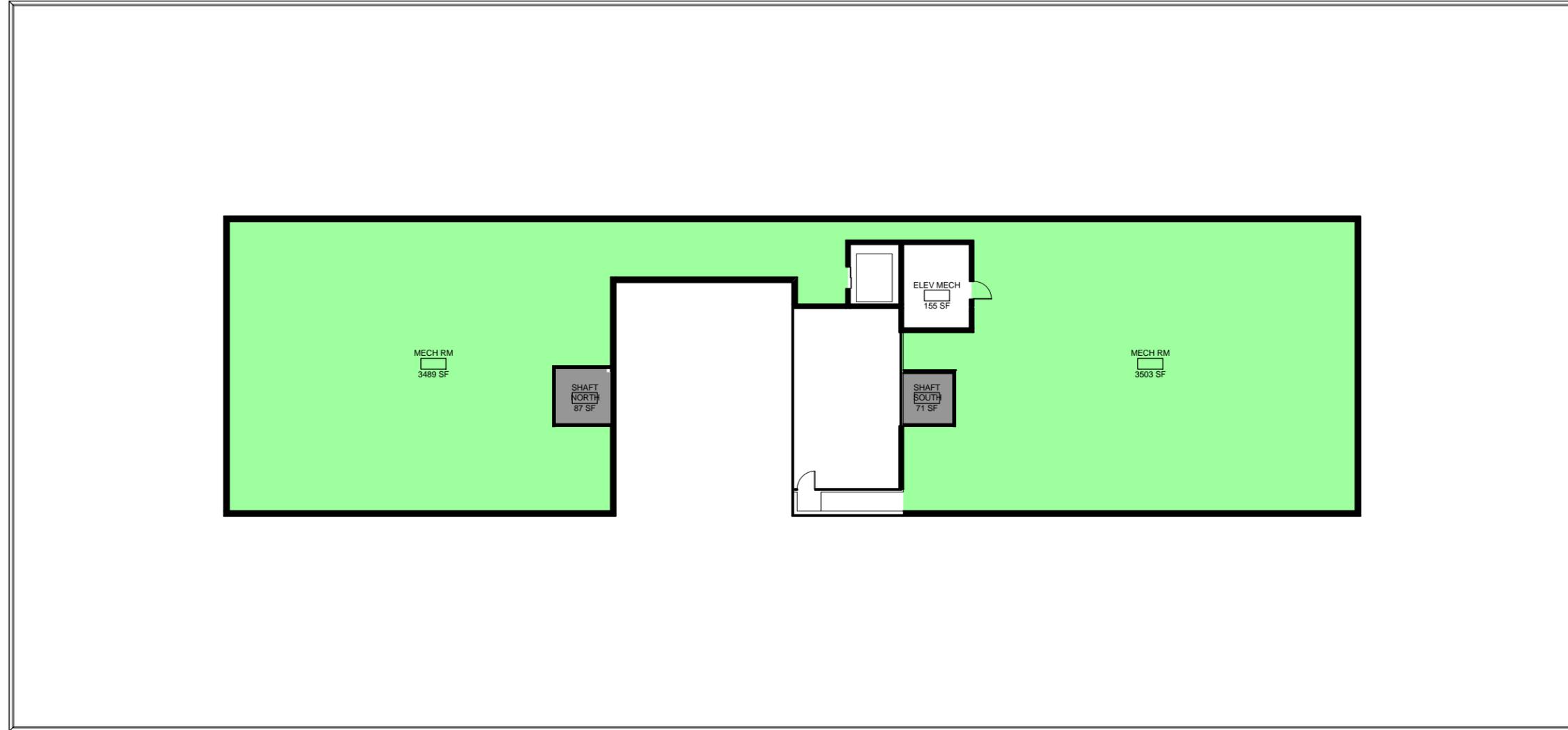


SCOPE OF WORK

 MECHANICAL / ELECTRICAL MODIFICATIONS

 MECHANICAL SHAFT / ELECTRICAL TRANSFORMER

 NO WORK



PENTHOUSE FLOOR PLAN

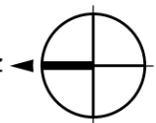


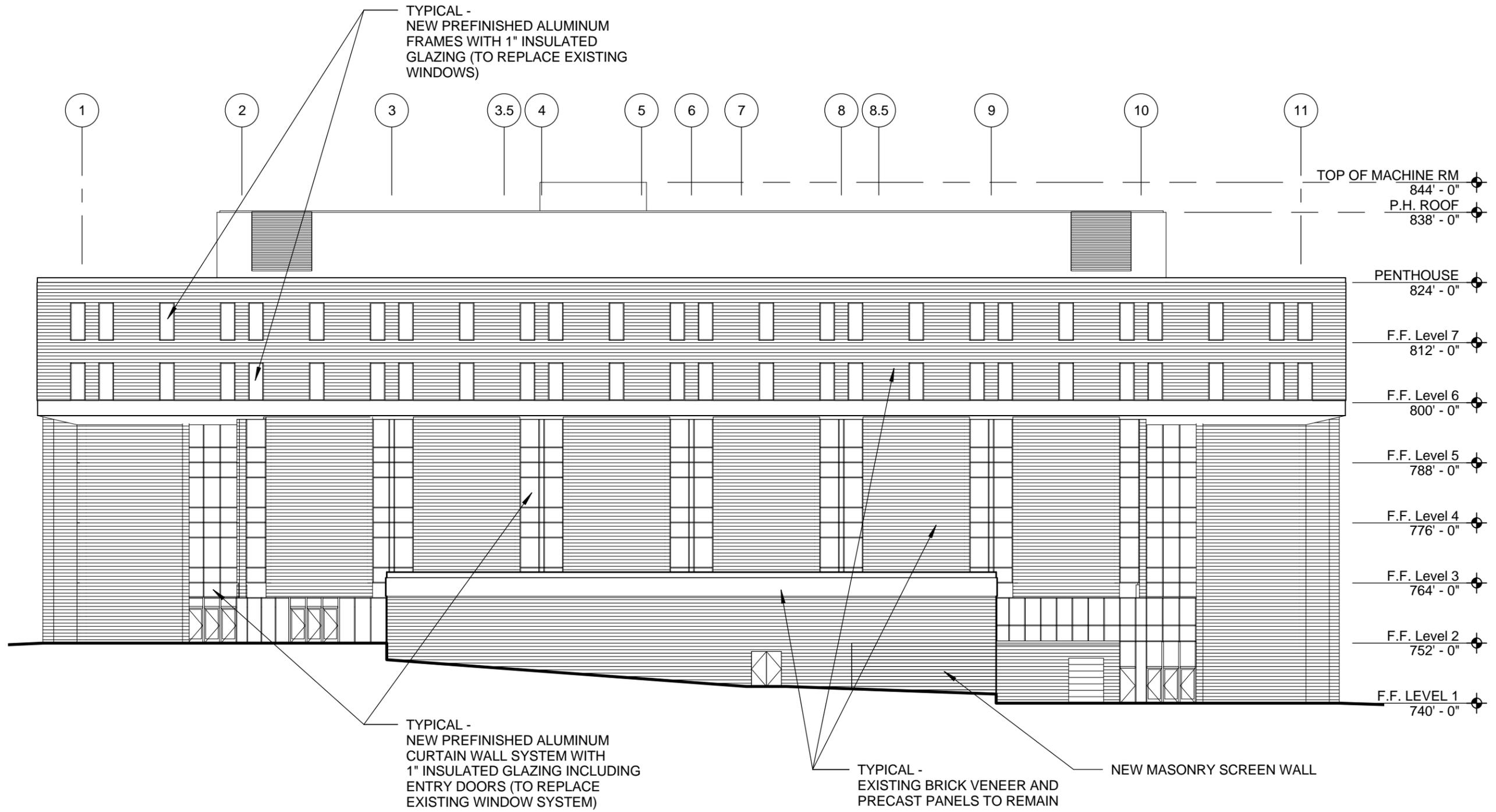
SHW GROUP

EMU Pray Harrold Modernization

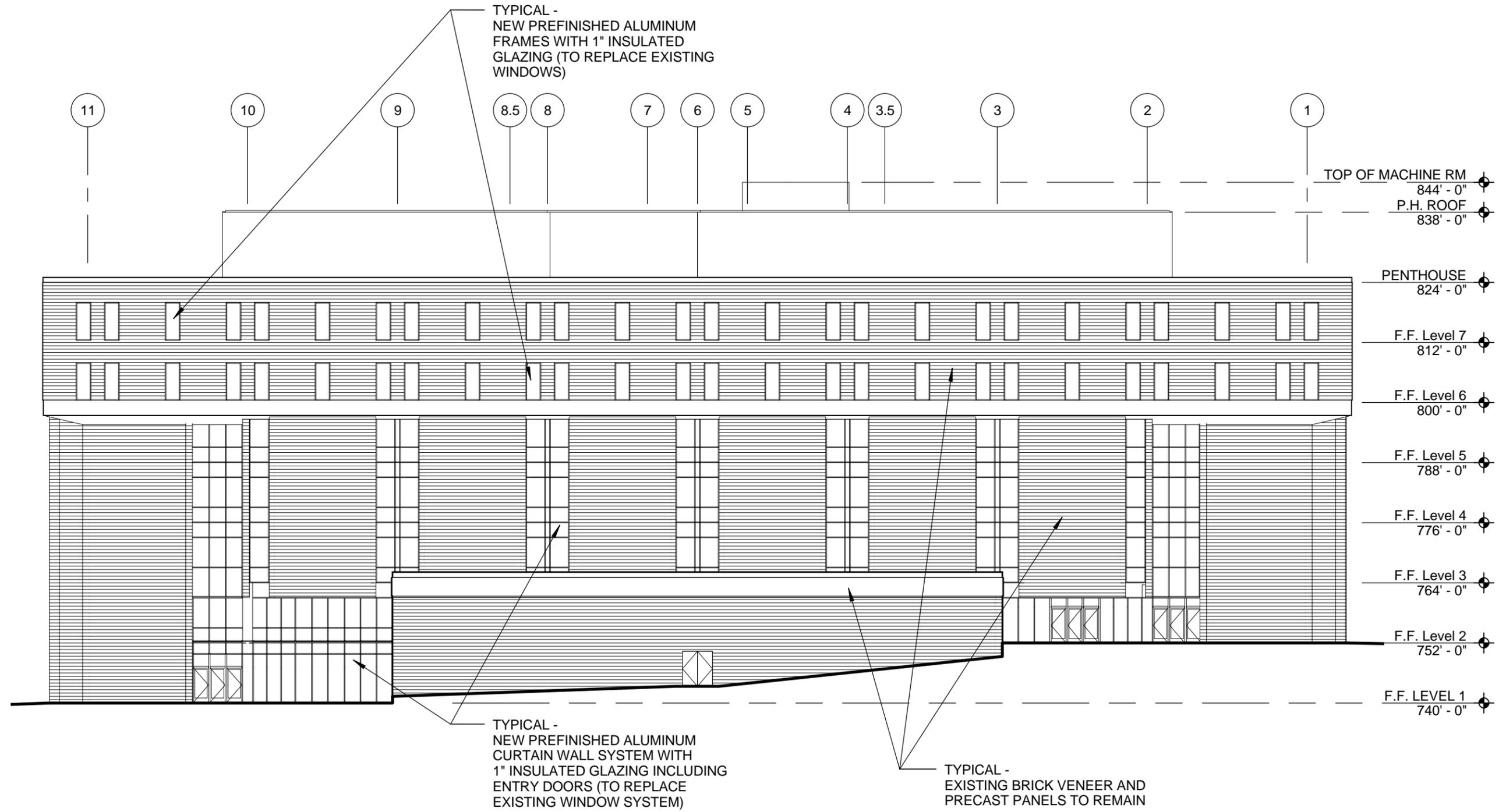
SCHEMATIC DESIGN

02-17-09

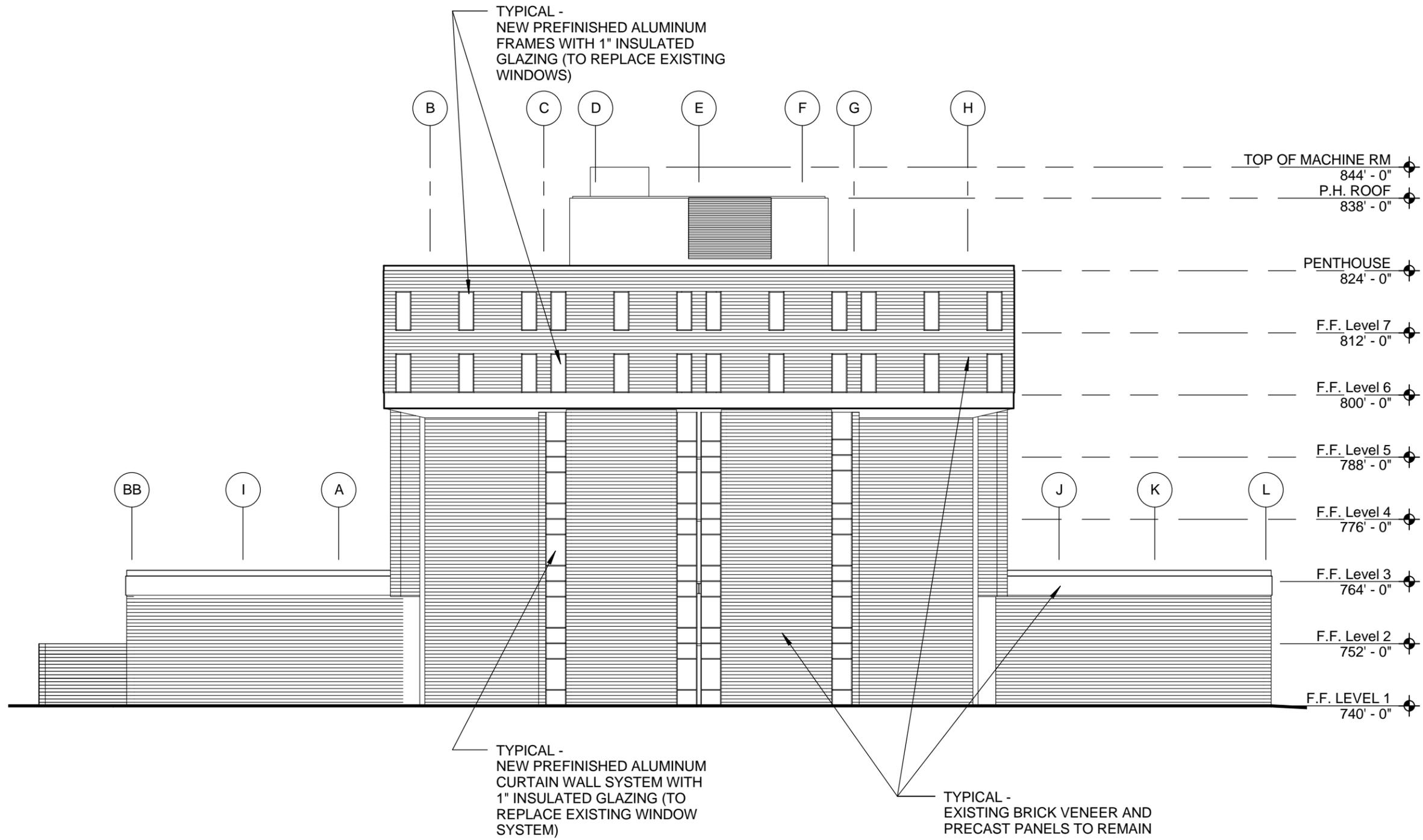




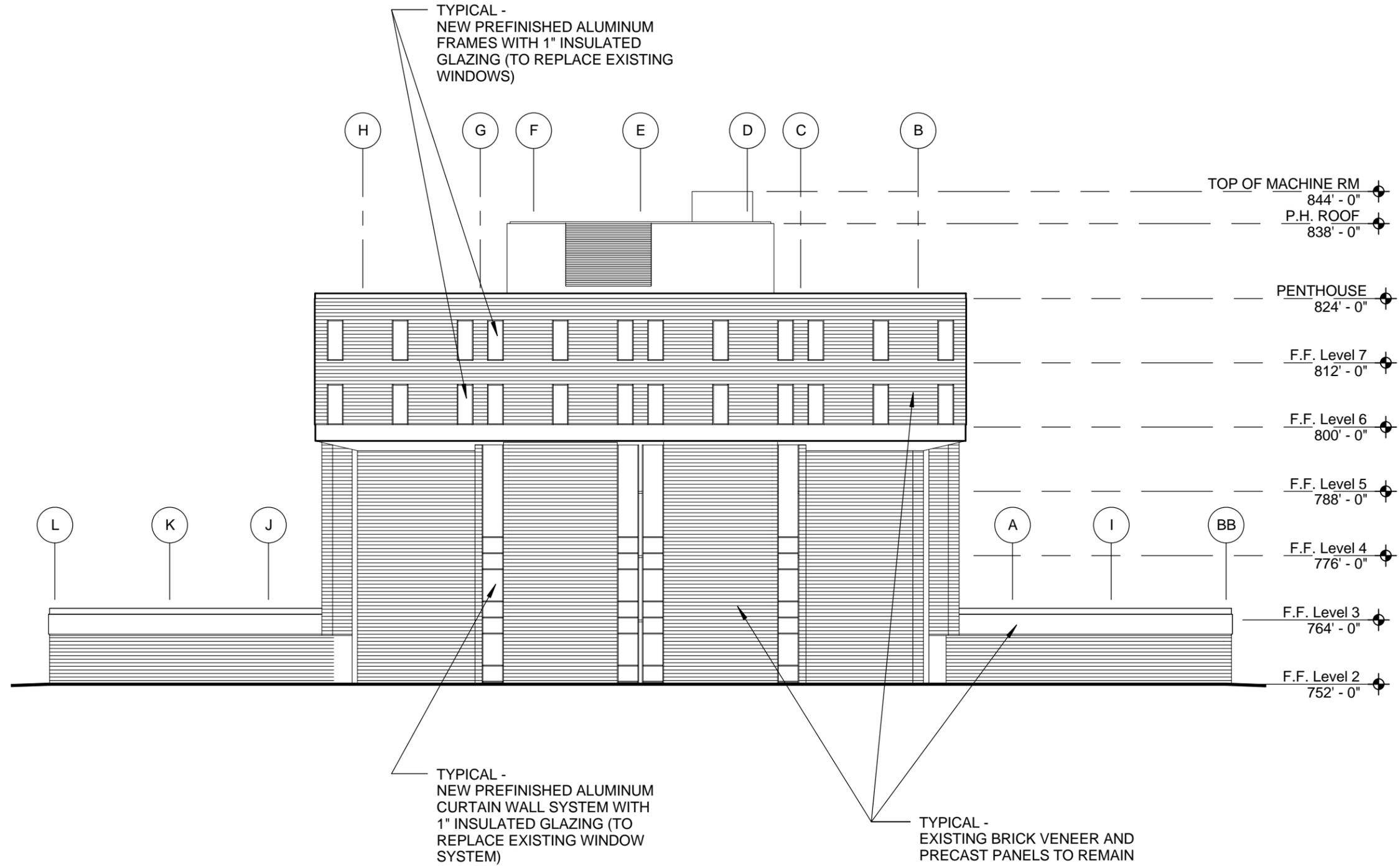
EAST ELEVATION



WEST ELEVATION



NORTH ELEVATION



SOUTH ELEVATION