UNIVERSITY OF OREGON

FRIENDLY HALL ASSESSMENT

FACILITIES ASSESSMENT & FEASIBILITY STUDY

MARCH 2022

Soderstrom Architects

1200 NW Naito Parkway Suite Number 410 | Portland, OR 97209 | **sdra.com**

Soderstrom Architects

Project Address

FRIENDLY HALL

1300 UNIVERSITY ST.
EUGENE, OR 97403

Project Team

OWNER
UNIVERSITY OF OREGON

CAMPUS PLANNING & FACILITIES MANAGEMENT
1295 FRANKLIN BLVD.
EUGENE, OR 97403

ARCHITECT
SODERSTROM ARCHITECTS

1200 NW NAITO PKWY, SUITE 410
PORTLAND, OR 97209

LANDSCAPE ARCHITECT
PLACE

735 NW 18TH AVE
PORTLAND, OR 97209

STRUCTURAL ENGINEER
KPFF

111 SW 5TH AVE, SUITE 2500
PORTLAND, OR 97204

CIVIL ENGINEER
KPFF

800 WILLAMETTE ST, SUITE 400
EUGENE, OR 97401

MEP ENGINEER
SAZAN GROUP

111 SW 5TH AVE, SUITE 3210
PORTLAND, OR 97204

CONSTRUCTION COSTS
FORTIS CONSTRUCTION

1705 SW TAYLOR ST, SUITE 200
PORTLAND, OR 97205

Cover: Friendly Hall, 2013 (Visitor7, *commons.wikimedia.org*)
Left: Friendly Hall, 1910 (*oregondigitial.org*)

TABLE OF CONTENTS

01

EXECUTIVE SUMMARY 4
1.1 INTRODUCTION 4
1.2 BUILDING OVERVIEW 4
1.3 DEFINING FEATURES 12
1.4 SUMMARY OF FINDINGS 14
1.5 SUMMARY OF RECOMMENDATIONS 16
1.6 HIGH LEVEL COST SUMMARY 18

02

APPROACH 19
2.1 VISION & GOALS 19
2.2 HISTORIC SIGNIFICANCE 20
2.3 UNIVERSITY OF OREGON CAMPUS PLAN 24
2.4 SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION 28

03

PROJECT CONTEXT 29
3.1 GENERAL 29
3.2 UTILITIES 29
3.3 LANDSCAPE 32

04

BUILDING CODE 37
4.1 CONSTRUCTION TYPE & OCCUPANCY 37
4.2 EGRESS 38
4.3 FIRE PROTECTION 39
4.4 PLUMBING FIXTURES 40
4.6 INSULATION & ENVELOPE PERFORMANCE 40
4.7 ACCESSIBILITY 42

05

BUILDING ENVELOPE 43
5.1 BRICK 43
5.2 WOOD TRIM & MOLDINGS 44
5.3 STONE 45
5.4 CONCRETE 45
5.5 EXTERIOR DOORS & WINDOWS 46
5.6 EXTERIOR LIGHTING 47
5.7 ROOF, DORMERS & SKYLIGHTS 47
5.8 HISTORIC FIRE ESCAPES 48
5.9 GUTTERS & DOWNSPOUTS 48
5.10 EXISTING ELEVATIONS 49
5.11 ROOF IMPROVEMENT DIAGRAM 51

06

PROGRAM & INTERIORS 53
6.1 PROGRAMMED USES 53
6.2 PROPOSED FLOOR PLANS 53
6.3 INTERIORS 62

07

STRUCTURAL & SEISMIC 66
7.1 OVERVIEW OF EXISTING STRUCTURE 66
7.2 STRUCTURAL ASSESSMENT 66
7.3 SEISMIC PROVISIONS 67
7.4 STRUCTURAL UPGRADES 67
7.5 STRUCTURAL DIAGRAMS 69

08

BUILDING SYSTEMS 75
8.1 MECHANICAL & HVAC 75
8.2 PLUMBING 78
8.3 ELECTRICAL 79
8.4 LIGHTING 79
8.5 I.T. & COMMUNICATIONS 80
8.6 MEP DIAGRAMS 81

APPENDIX

LANDSCAPE

STRUCTURAL

CIVIL

MEP

CONSTRUCTION COSTS

EXECUTIVE SUMMARY

Friendly Hall seen from 13th Avenue

1.1 Introduction

The University of Oregon Campus Planning and Facilities Management (CPFM) retained Soderstrom Architects in November 2021 to conduct a facilities assessment of Friendly Hall. This report documents existing conditions of the building and its immediate surroundings, including: the building facades and roofs; structure; mechanical, electrical, and plumbing systems; site utilities; interior finishes; and the current program and use. The goal of this report is to establish the present inadequacies of Friendly Hall, identify necessary ongoing maintenance priorities, and propose upgrades in seismic performance, energy efficiency, fire and life safety, and accessibility. The report describes improvements in building functionality, with upgrades to outdated facilities. All the improvements are balanced against preserving the historic character of Friendly Hall.

Recommendations for remediation of the identified issues are made in accordance with the University of Oregon *Campus Plan 2022*, the *Secretary of the Interior's Standards for Rehabilitation*, and the 2019 edition of the *Oregon Structural Specialty Code* (OSSC).

An estimate of direct construction costs has been developed by Fortis Construction in response to the scope of work stated in this assessment. The estimate presumes that the work on Friendly Hall will be undertaken as a single project, without multiple, multi-year phases. The estimate states costs per Spring of 2022, with a table of escalation to account for a future start of a construction contract. The full cost estimate, with breakdowns by CSI division, can be found in the Appendix.

This assessment will provide CPFM the basis to establish a comprehensive project budget for the proposed scope described herein for Friendly Hall.

1.2 Building Overview

Friendly Hall has been determined to have "primary historic significance" according to the *Campus Heritage Landscape Plan*. Originally known as the East Hall Dormitory, it was designed by the firm of *Whidden & Lewis*, prolific architects in the Pacific Northwest at the time. Before his partnership with Lewis, Whidden was an apprentice at the office of *McKim, Mead & White*, a firm responsible for many significant architectural works in the United States such as Portland City Hall (1895).

Construction of Friendly Hall was completed in 1893 making it the fourth oldest building on campus and the third oldest still standing today. It was the first residence building commissioned by the University of Oregon.

Since then, its use and footprint have evolved with the needs of the University. Two major additions to the east were constructed in the early twentieth century. The overall architectural style was maintained, but small differences are evident in the color of the brick and the foundation material. In the 1930s, Friendly Hall underwent a renovation which permanently removed the residential uses and introduced administrative and academic spaces. In 1961, the attic of the West Wing was made occupiable by creating a fourth floor. This resulted in the addition of dormers on the roof which are still present today.

Current Use

Friendly Hall is five stories, including a basement. The building houses six classrooms and offices for faculty, graduate students, and administrative staff. As part of the "Academic Core" outlined in the *Campus Plan* 2022, it serves as an academic building central to the instructional functions of the University.

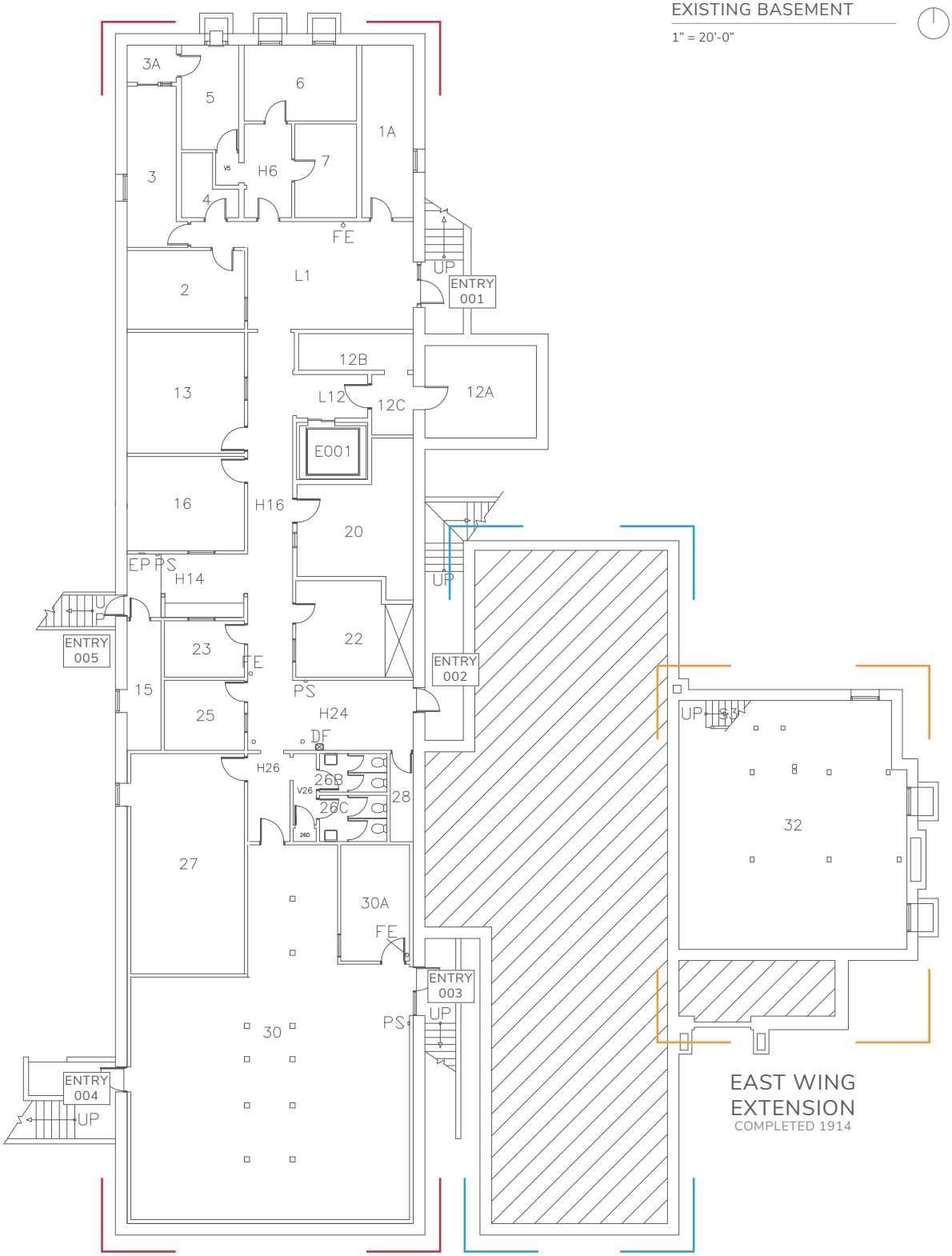
Currently the building houses the departmental offices of the Romance Languages, German, Scandinavian and East Asian Languages & Literature. There are small storage and mechanical spaces throughout. Many of the spaces are not sufficiently sized nor do they meet current University standards. There are multi-stall men's and women's restrooms on each floor, with the exception of the fourth floor which only has a women's restroom. The first floor also has a single occupant unisex restroom. The building also has a loading dock with dedicated maintenance parking on the east side of the site.

Net Total:	**33,689 sf**
Assignable:	**23,467 sf**
Classrooms:	2,610 sf
Offices & Conference Rooms:	18,411 sf
Common Space:	2,446 sf
Non-assignable:	**10,220 sf**
Circulation:	8,320 sf
Restrooms:	800 sf
Storage:	1,100 sf
Mechanical & Electrical:	1,172 sf

West Entry

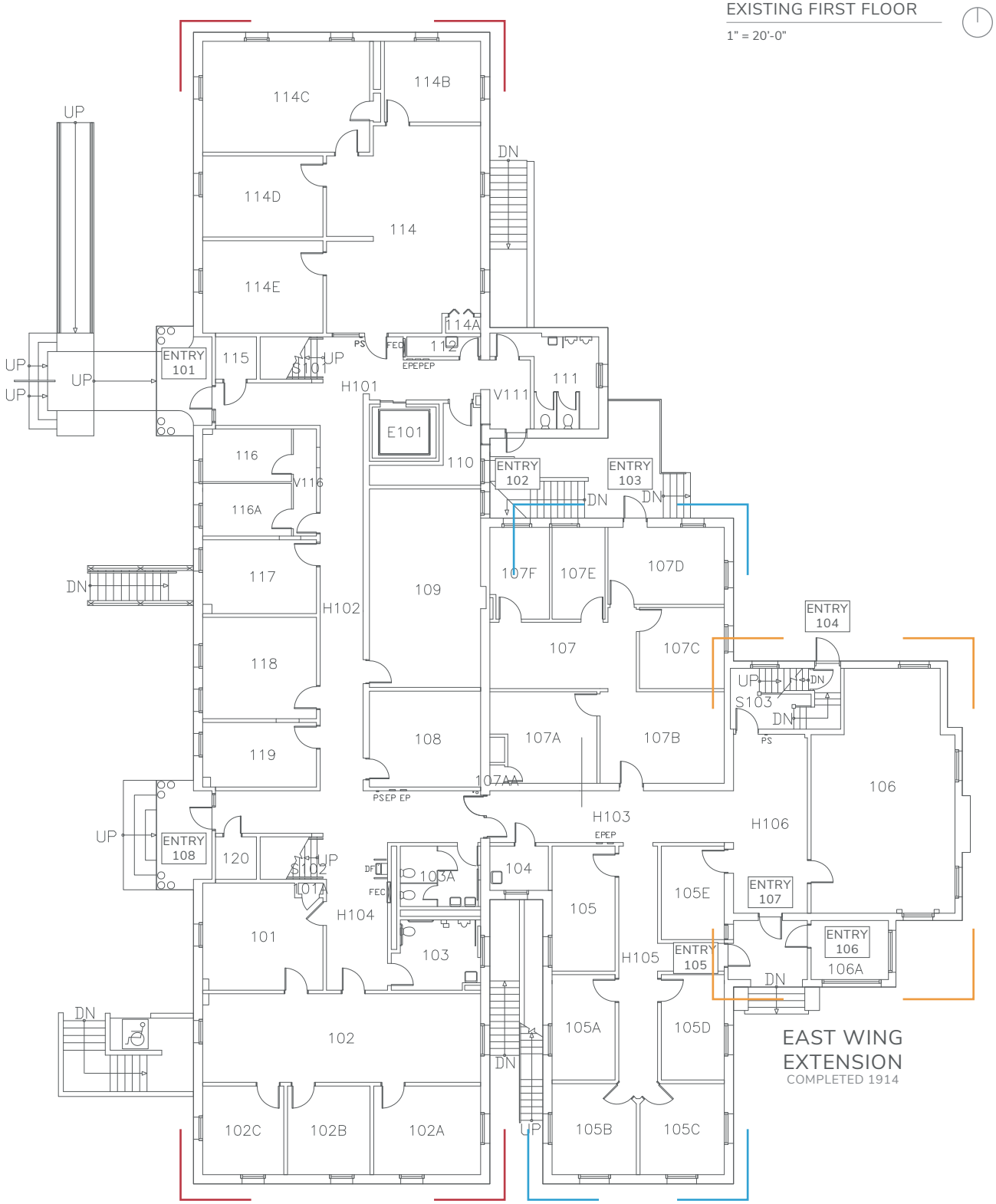
EXISTING BASEMENT

1" = 20'-0"



EXISTING FIRST FLOOR

1" = 20'-0"



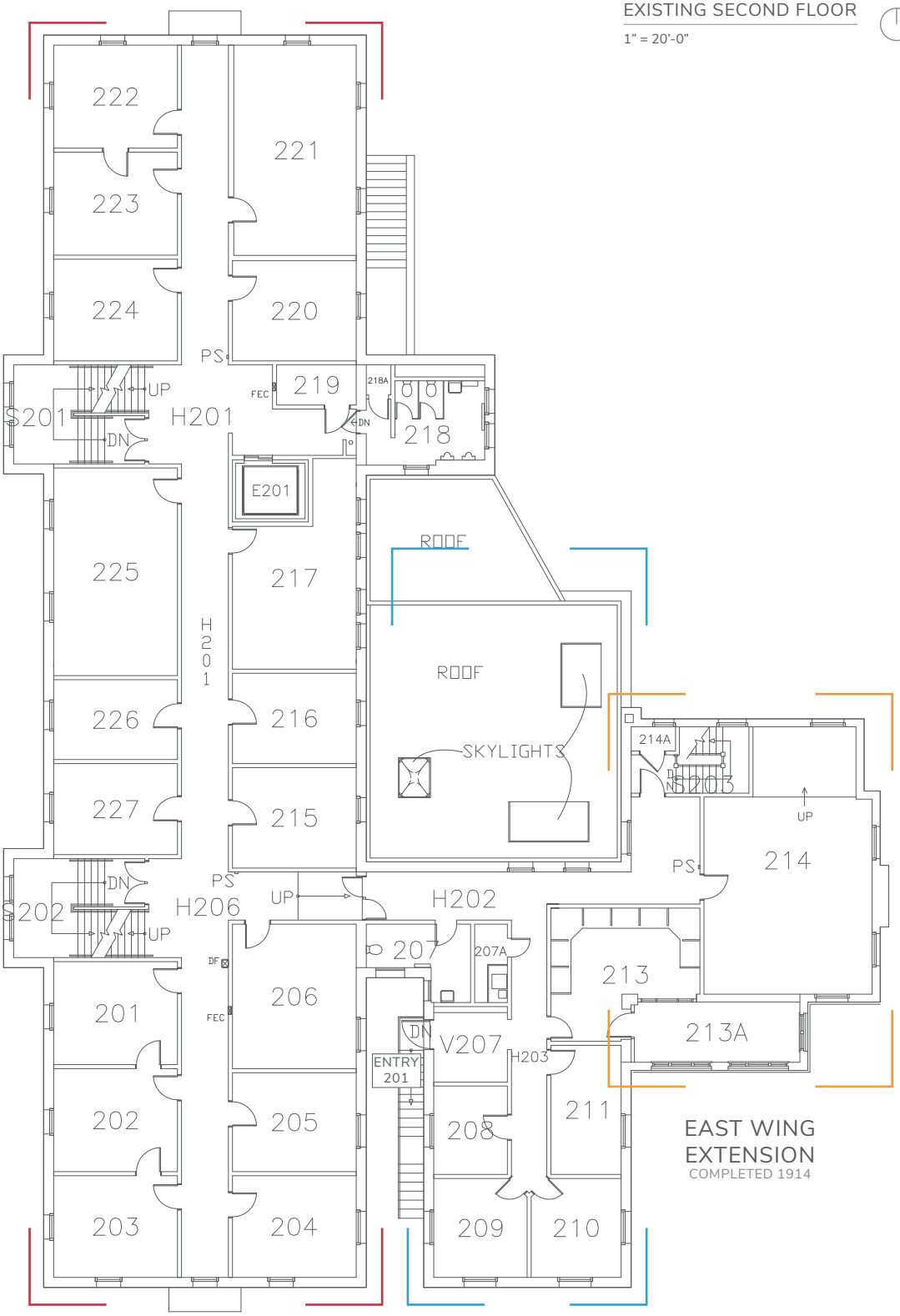
EAST WING EXTENSION
COMPLETED 1914

WEST WING
COMPLETED 1893
FOURTH FLOOR COMPLETED 1961

EAST WING
COMPLETED 1909

EXISTING SECOND FLOOR

1" = 20'-0"



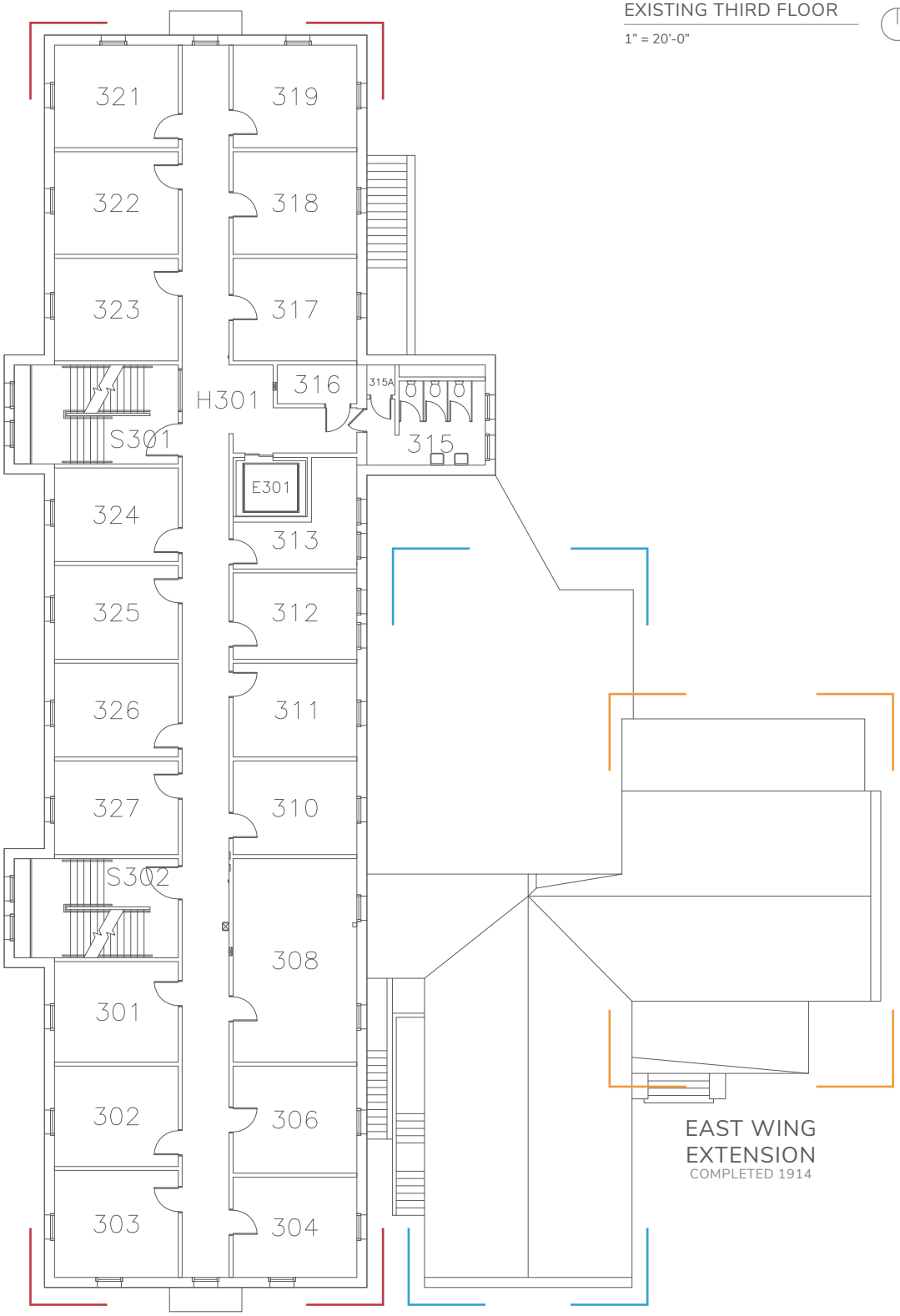
EAST WING EXTENSION
COMPLETED 1914

WEST WING
COMPLETED 1893
FOURTH FLOOR COMPLETED 1961

EAST WING
COMPLETED 1909

EXISTING THIRD FLOOR

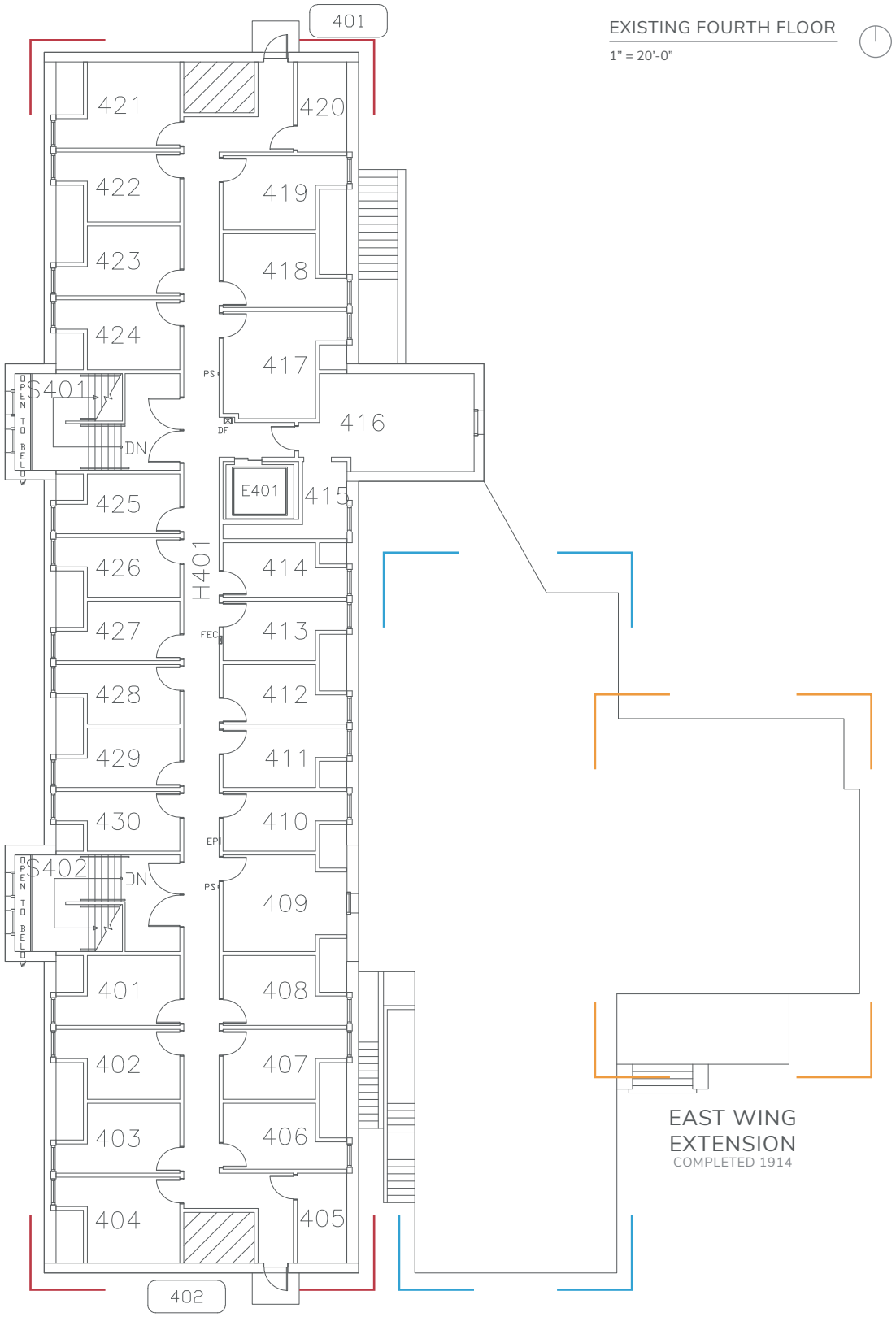
1" = 20'-0"



WEST WING
COMPLETED 1893
FOURTH FLOOR COMPLETED 1961

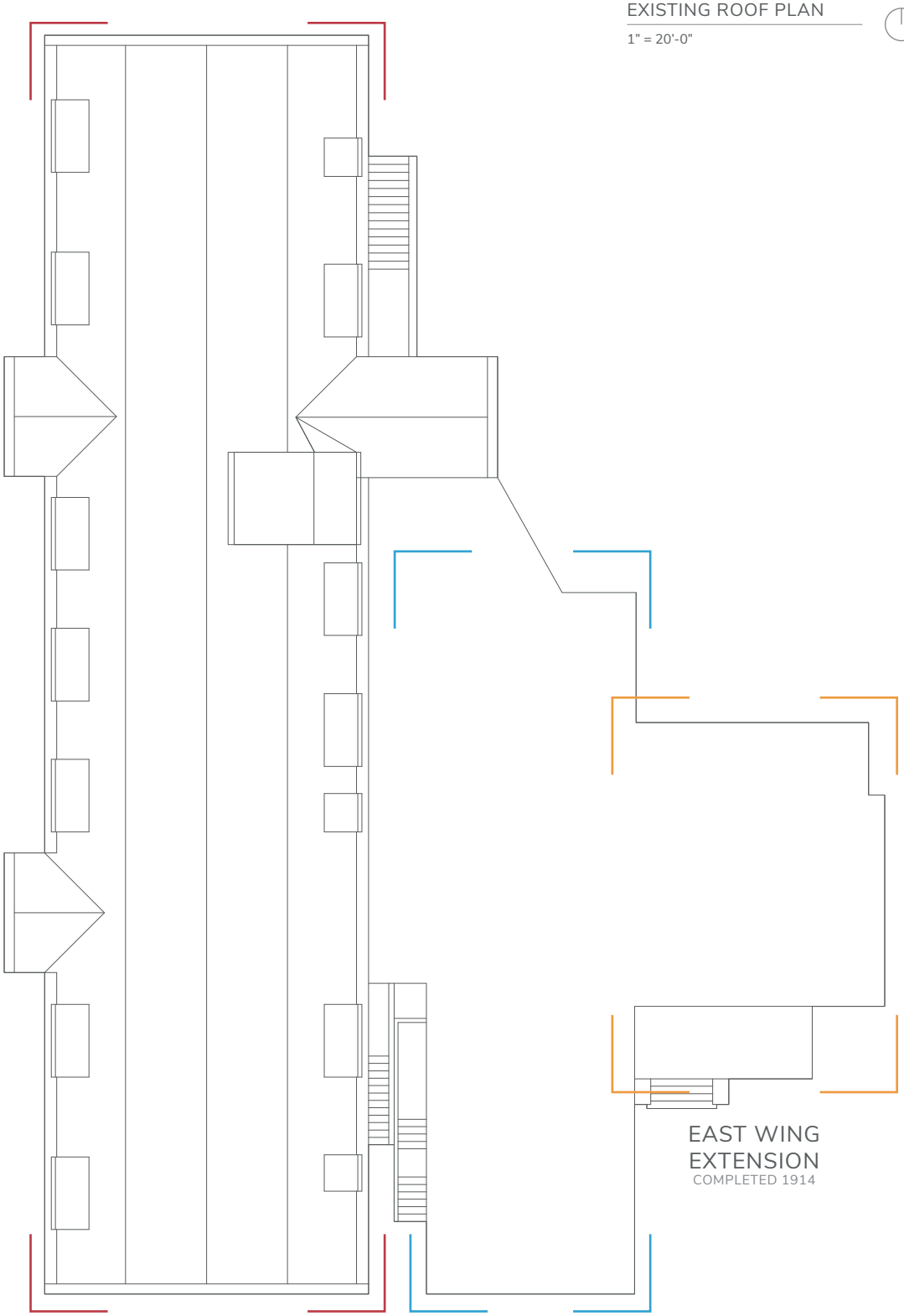
EAST WING
COMPLETED 1909

EAST WING EXTENSION
COMPLETED 1914


401
421
420
422
419
423
418
424
417
S401
PS
DF
416
DN
E401
415
425
H401
426
414
427
413
FEC
428
412
429
411
430
410
EP
S402
DN
PS
409
401
408
402
407
403
406
404
405
402
EXISTING FOURTH FLOOR
1" = 20'-0"
EAST WING
EXTENSION
COMPLETED 1914
WEST WING
COMPLETED 1893
FOURTH FLOOR COMPLETED 1961
EAST WING
COMPLETED 1909

EXISTING ROOF PLAN

1" = 20'-0"



EAST WING
EXTENSION
COMPLETED 1914

WEST WING
COMPLETED 1893
FOURTH FLOOR COMPLETED 1961

EAST WING
COMPLETED 1909


Figure 1.3.1


Figure 1.3.2


Figure 1.3.3


Figure 1.3.4

1.3 Defining Features

Exterior

Friendly Hall was designed in the Georgian architectural style common to the period. The exterior has remained largely unchanged over the past century. The last major change to the appearance of the building occurred in 1914 with the construction of the East Wing Extension. However, the conversion of the attic space to an occupiable fourth floor in 1961 did slightly alter the architecture with the addition of dormers on the mansard roof. The recent insertion of the elevator in the West Wing resulted in a slightly modified roof dormer which accommodates the elevator overrun.

Primary exterior character-defining features include:

- The symmetrical form and fenestration of the original 1893 building.
- The two prominent entries on the west facade with wood paneling and transom windows. The entries originally provided separate access to the north and south portions of the building. They now provide a historic reference to the original use as a dormitory.
- Rusticated brick with jack arches over the windows on the exterior of the first floor (figure 1.3.1).
- Double hung wooden windows (figure 1.3.1) that appear original (or historic replacements).
- Wood cornices at the top of the exterior masonry walls.
- Semi-circular gable ends at the top of the north and south facades and above the west entries (figure 1.3.2).
- Brick quoins that accentuate the corners of the building (figure 1.3.2).
- The red brick on the additions inidicating the historic evolution of the building (figure 1.3.3).
- The concrete water table around the entire base of the building.
- The oculus windows on the decorative brick gable ends of the 1893 building.
- The mansard roof over the original portion.
- The exposed stone foundations of the West Wing which can be seen from the exterior and interior.
- The building's siting and relationship to the historic Old Campus Quad.

Friendly Hall in the Early 20th Century (oregondigital.org)

The exterior facades have weathered well and have not been altered significantly, and the wood windows appear to remain in their original configuration. However, various functional improvements, including the addition of downspouts, egress stairs, mechanical units, louvers, and incompatible exterior light fixtures have been performed without careful consideration of the historic character of the building.

Interior

Little remains of the original interior. Exceptions include:

- Various original doors (figure 1.3.4).
- Historic mailboxes on the first floor (figure 1.3.4).
- The quarter-round reveal at the original windows and some existing wood window trim.

Throughout much of the building, successive alterations and reconfigurations have removed the original detail and spatial arrangements, and only intermittent historic materials remain intact.

1.4 Summary of Findings

Soderstrom Architects, the Portland and Eugene offices of KPFF Consulting Engineers, PLACE Landscape Architecture + Planning, and Sazan Group had access to documentation provided by the University of Oregon and conducted site visits during December of 2021 and January of 2022. The project team made visual observations of the roof, exterior facades, and interior conditions of the building.

The assessments and recommendations propose repairs and upgrades appropriate to the historic character and intended use of the building. The findings of this report can be summarized as follows:

Site Conditions

The existing site has numerous non-compliant code conditions, aesthetically undesirable conditions, and underutilized opportunities.

- Various locations lack code-compliant handrails and guardrails.
- The existing driveway is oversized for its limited use and detracts from the historic landscapes between the building and University Street.
- There is only one accessible entry and it is the farthest building entry from the busy right of way.
- Various invasive species exist in the landscape.
- Existing concrete retaining walls at the west facade basement entrances damage the historic character of the building and its context.
- An ADA lift was previously located at Entry 004, but has been removed. The concrete shaft still remains and is damaging to the appearance of the landscape.
- Multiple areas with damage to the concrete and pavers were observed.
- Existing site lighting is damaging to the historic character and is not sufficient to meet University standards.
- Existing mechanical units and a transformer located in the plantings do not conform to University standards for concealed MEP systems.

Code Compliance Issues

The original portion of the building and its later additions have shortcomings in code compliance.

- The east stairwell lacks a fire rated enclosure and has no fire doors.
- The east stairwell lacks code-compliant handrails and guardrails.
- Many doors lack ADA-compliant hardware.
- Many doors and openings do not adhere to width and height clearance requirements.
- The stairwells in the West Wing violate minimum head height requirements and lack code compliant handrails.
- ADA compliant signage is absent in much of the building.
- There is only one accessible restroom (Room 103).
- Most water fountains are not accessible.
- The fire protection systems were upgraded in 2009, but may require reconfiguration for new uses or layouts.
- The fire sprinkler upgrade has negated the need for exterior fire escapes.
- Plumbing fixtures, while code-compliant in quantity, are mostly non ADA compliant and are in poor condition in various locations.
- Insulation is absent from many spaces in the building which is inadequate to meet the State of Oregon Energy Code.

Structural Deficiencies

Friendly Hall requires extensive seismic upgrades to meet current OSSC standards.

- Friendly Hall relies on unreinforced masonry (URM) construction for structural support.
    - o URM construction does not meet Oregon *Structural Specialty Code* and could result in major damage, partial or total collapse during a seismic event.
- Undersized wooden floor diaphragms are not sufficient to transfer lateral loads.
- The existing foundation walls are not sufficiently reinforced.

Envelope Concerns

- The exterior brick is generally in good condition with the exception of a few areas of spalling and cracking.
- Areas where mortar has been repaired, replaced or

added do not match the color or texture of the historic building mortar.

- The wood trim and moldings are generally in good condition with the exception of a few areas which have experienced water damage.
- Concrete is displaying superficial cracking and has organic growth in various locations.
- User reports indicate water intrusion problems at the north side of the basement.
- The existing doors and windows were recently partially restored, but require some maintenance and added environmental performance measures.
- Exterior lighting is non-compatible with the historic character of the building in most locations.
- Gutters have accumulated organic debris and are not draining properly in multiple locations.
- Downspouts have been added and replaced over the building's lifespan resulting in a haphazard configuration that is at odds with the historic character.
- The fire escape is experiencing finish wear and has been deformed in various locations.
- The exterior stair from 13th Avenue which accesses the second floor of the central wing is damaging to the building character.
- Rooftop mechanical units are damaging to the appearance and do not conform to University standards.

Program & Interior Issues

- The building organization is not intuitive and causes wayfinding confusion.
- There is not sufficient space for mechanical, electrical or I.T. rooms.
- The basement has multiple non-compliant conditions for head height which result in cramped and underutilized space.
- There is no hearth or common space for students and faculty.
- The restrooms are gender exclusive, not distributed equally across the floors and are showing wear.
- The interior finishes (floors, ceilings, walls, etc.) are inconsistently applied and are displaying signs of wear in numerous instances creating unsightly conditions that disrupt the historic character.

Systems Shortcomings

- Many of the existing mechanical systems have aged past their useful lifespan and have numerous deficiencies.
    - o The existing steam system is original, obsolete and inadequate.
- The building lacks a centralized mechanical cooling system, though some rooms have been equipped with dedicated air conditioning units.
- Many of the systems have been added and replaced over the building's lifespan resulting in a haphazard configuration that is difficult to maintain and creates undesirable aesthetic conditions.
    - o Mechanical units on the lower roof are visible which does not conform to University standards.
    - o Dedicated units have been added in planted areas due to various renovations which has led to character disrupting conditions in the historic landscape.
- The current plumbing system uses materials that may incur high future maintenance costs.
- Many plumbing fixtures are aged and inefficient.
- The electrical systems are not code compliant and not sufficient to meet the needs of the upper floors.
- The lighting is inefficient and obsolete in many instances. Some areas have LED fixtures which have been installed during recent renovations.
- University standard I.T. and communications infrastructure is absent.

1.5 Summary of Recommendations

The following recommendations conform to the Secretary of the Interior's Standards for Rehabilitation while promoting universal access and inclusion, as well as environmental goals.

Site Enhancements

- Install new code-compliant handrails and guardrails throughout the site.
- Reconfigure the existing driveway to improve the historic landscape and the pedestrian experience according to the *13th Avenue Concept*.
  - o A new bollard-protected access driveway should allow limited maintenance and service access.
  - o ADA parking should be relocated nearby.
- The Entry 107 and 108 should be made accessible in a historically appropriate manner to improve inclusion and universal access goals set by the University.
- Replace invasive plants with non-invasive species throughout the site.
- The two basement entries on the historic west facade are redundant means of egress and can be removed to restore the building's historic appearance.
- Site walkways and stairs should be repaired and replaced as necessary.
- Site lighting should be replaced with historically appropriate fixtures.
- Site lighting should be added as necessary to improve student safety.
- Remove existing mechanical units in the landscape.
- The transformer on the west of the site interferes with the historic appearance of the building and its relationship to the Old Campus Quad. It should be moved to an interior location or underground vault in accordance with University standards.
- The loading dock is no longer in use and should be upgraded with seating to create a quiet outdoor space.

Code Compliance

- Rebuild the east stairwell with a fire rated enclosure and code-compliant handrails.
- All doors should be equipped with accessible hardware.
- All doors and openings should have code compliant width and height.
- Rebuild the stairwells in the West Wing to code compliant head heights and install code compliant handrails.
- The building should receive ADA compliant signage throughout.
- All restrooms should be equipped with accessible fixtures and reconfigured to accessible layouts.
- Water fountains will be added as necessary and will be made accessible throughout.
- The fire protection system should be reconfigured as necessary to accommodate the proposed plan layout.
- Add high performance insulation to the inside face of exterior walls to meet energy code requirements as well as University goals for energy consumption.
- Address ways to reduce heat transfer of the existing historic windows

Structural Reinforcements

- Add shear walls and structural footings on the interior face of masonry walls to improve lateral resistance in a seismic event.
- Augment wooden floor diaphragms to safely transfer lateral loads.
  - o This will necessitate the removal of all existing non-structural partitions and will allow for new plan layouts to better accommodate the building's uses.
- The existing foundation walls should receive strong-back steel supports for added reinforcement.
- The basement floor should be lowered by a minimum of 4'-0" to accommodate modern mechanical systems and address head height violations in the existing space.
  - o New concrete foundations will underpin the existing foundations where the floor is lowered. Additional micro helical piles will anchor the building to the bedrock below.
  - o This existing elevator shaft will be lowered to serve the new basement floor height.
  - o Existing basement access stairs will be extended to the new floor level.

Envelope Updates

- The exterior brick should be cleaned and repaired as necessary.
  - Areas which were repaired in the past with historically disruptive measures should be remediated to restore the character.
- The wood trim and moldings should be cleaned and repaired as necessary.
- Exterior concrete should be patched and repaired as necessary.
- New waterproofing should be added around the existing basement walls to address water intrusion issues and protect the new foundations.
- Existing doors and windows should be restored when possible. If restoration is not possible due to deterioration, code violations, or non-accessible construction, they should be replaced with historically appropriate products.
- Replace all exterior building lighting with high efficiency LED fixtures that complement the building character and are historically compatible.
- Gutters and downspouts should be cleaned and repaired.
  - Existing downspouts that were added or reconfigured due to past renovation work should be removed, replaced or reconfigured in a historically appropriate manner.
- The fire escapes on the north and south facades should be removed.
- The exterior stair on the south facade is a redundant means of egress and should be removed to restore the historic appearance of the building.
- The removal of rooftop mechanical units will necessitate replacement of the membrane roof at certain locations.

Program & Interior Improvements

- A new building layout should improve building organization and wayfinding while retaining the existing uses.
- Mechanical and electrical rooms should be consolidated and resized to accommodate modern systems.
- IDF rooms should be added on each floor to improve connectivity and create a more successful learning and working environment.
- New stairs in the West Wing should restore the historic intent and improve user experience with compliant head heights, handrails, and improved finishes.
- The lowered basement floor will create a more functional space for studying, learning and working.
- Common areas should be added at prominent locations to provide spaces for students and faculty to collaborate and study.
- The restrooms should be expanded and relocated to a central location allowing for a universally accessible and gender inclusive design which meet University goals and standards.
- Interior finishes (floors, ceilings, walls, etc.) should be updated throughout the building to create a more coherent, comfortable and inviting environment.

Systems Upgrades

- A new highly efficient hydronic mechanical system should be installed to improve user comfort and remove character disrupting HVAC elements from the building.
  - The centralized system will allow the removal of exterior mechanical units on the site and roof.
  - Because the original floor-to-floor heights are very low, a vertical distribution system originating from the centralized basement mechanical room will be used to carry ventilation air, steam and chilled water.
  - Presently, the building is not connected to the campus chilled water system. A new connection is required and may necessitate additional infrastructure improvements.
- The plumbing and electrical systems should be replaced with modern components.
- LED lighting with occupancy and daylight sensors should be installed to improve efficiency and comfort.
- The I.T. system should be upgraded and augmented to meet University standards.

1.6 High Level Cost Summary

Building Name: Condon Hall Building GSF: 39,895			Budget Range (Pricing Based on Spring 2022)		Cost per SF	
CSI Section	Budget Category	2021 Cost Model	Low	High	Low	High
DIV 02	Existing Conditions (Demolition)	$1,151,218	$1,036,096	$1,323,900	$26	$33
DIV 03	Concrete	$1,924,679	$1,732,166	$2,213,323	$43	$55
DIV 04	Masonry	$420,039	$378,035	$483,045	$9	$12
DIV 05	Metals	$1,227,113	$1,149,401	$1,468,679	$29	$37
DIV 06	Wood, Plastic, and Composites	$1,550,511	$1,395,460	$1,783,087	$35	$45
DIV 07	Thermal and Moisture Protection	$424,099	$381,689	$487,713	$10	$12
DIV 08	Doors and Windows	$1,740,520	$1,566,468	$2,001,598	$39	$50
DIV 09	Finishes	$3,281,107	$2,952,996	$3,773,273	$74	$95
DIV 10	Specialties	$287,033	$258,329	$330,088	$6	$8
DIV 11	Equipment	-	-	-	-	-
DIV 12	Furnishings	$52,675	$47,408	$60,576	$1	$2
DIV 13	Special Construction	$25,000	$22,500	$28,750	$1	$1
DIV 14	Conveying Equipment	$340,000	$306,000	$391,000	$8	$10
DIV 21	Fire Suppression	$255,328	$229,795	$293,627	$6	$7
DIV 22	Plumbing	$538,583	$484,724	$619,370	$12	$16
DIV 23	HVAC Systems	$3,022,335	$2,720,102	$3,475,685	$68	$87
DIV 25	Integrated Automation	$638,320	$574,488	$734,068	$14	$18
DIV 26	Electrical Systems	$1,605,774	$1,445,196	$1,847,640	$36	$46
DIV 27	Communications / IT	$ 119,685	$107,717	$137,638	$3	$3
DIV 28	Electronic Safety / Security	$353,071	$317,764	$406,031	$8	$10
DIV 31-33	Site Work	$1,155,521	$1,039,969	$1,328,849	$26	$33
Subtotal	Direct Costs	$20,162,558	$18,146,302	$23,186,942	$455	$581
	General Conditions	$1,870,000	$1,683,000	$2,150,500	$42	$54
	General Requirements	$604,877	$ 544,389	$695,608	$14	$17
	Design / Estimating Contingency	$2,263,743	$2,037,369	$2,603,305	$51	$65
	Construction Contingency	$756,096	$680,486	$869,510	$17	$22
	Builder's Risk Insurance	$359,202	$323,282	$413,082	$8	$10
	Subcontractor Default Insurance	$262,113	$235,902	$301,430	$6	$8
	GM / GC Performance & Payment Bond	$236,507	$212,857	$271,983	$5	$7
	GM / GC Fee	$1,007,574	$906,816	$1,158,710	$23	$29
	Preconstruction Services	$110,000	$99,000	$126,500	$2	$3
	Escalation (see table in appendix)	-	-	-	-	-
Total Direct Construction:		**$27,632,670**	**$24,869,403**	**$31,777,571**	**$623**	**$797**

APPROACH

1909 Football Team at Friendly Hall (oregondigital.org)

2.1 Vision & Goals

Addressing Deferred Maintenance

Friendly Hall lacks many standard technological, mechanical, and aesthetic upgrades making it incongruent with the learning and working environment of nearby buildings. This assessment proposes upgrades which will address these issues by integrating educational technology, installing high-efficiency mechanical systems to increase user comfort, and updating finishes to provide an appealing, contemporary space.

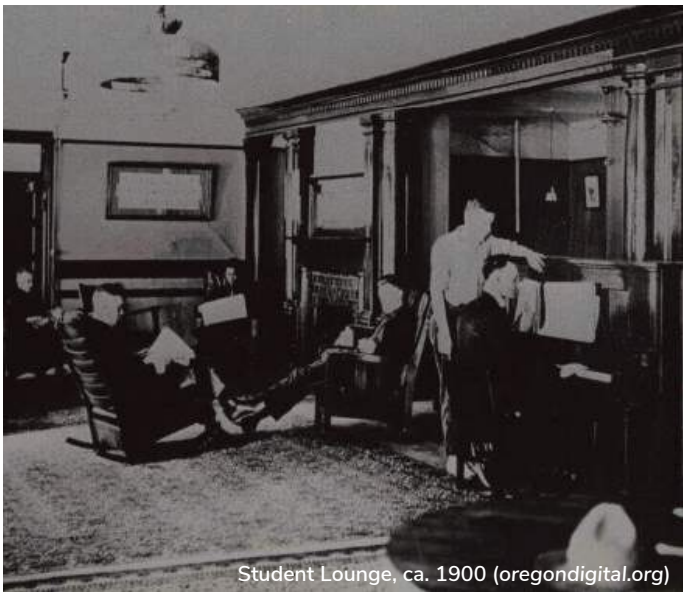
Improving the Relationship to Campus

Friendly Hall is part of the ensemble of historic buildings which define the Old Campus Quadrangle. The building occupies a prominent corner at the southeast edge of the quad, at the intersection of 13th Avenue and University Street. Its architectural themes can be observed in other buildings on campus and it helps to establish an architectural identity to the University of Oregon. The west facade was originally designed as the "front" of the building, but use patterns have evolved over time making the west facade less prominent in the daily lives of students. The south and, to a lesser extent, the east facades have a higher degree of interaction with the public due to their adjacency to the primary circulation corridors of 13th Avenue and University Street.

Presently, Friendly Hall has deteriorated substantially below University standards which has diminished the architectural relationship to the prominent campus open spaces. Its original configuration does not complement present spatial relationships of the campus and has therefore reduced its prominence. The renovation of the building will greatly improve the built environment and the experiential aspect of this important location.

Restoring the Historic Character

Numerous renovations, additions, and reconfigurations have created an environment which is not cohesive and rarely complements the historic character of the building. The proposed renovation will remediate many of these shortcomings with careful consideration of the original design intent. According to the *Secretary of the Interior's Standards for Rehabilitation*, restoration should be performed wherever possible. If restoration is not feasible, historically appropriate replacements are selected based on all available documentation. Using the principles outlined in the *Campus Plan 2022*, the building and site will be improved in a manner that is respectful of the original design.



Student Lounge, ca. 1900 (*oregondigital.org*)

The Old Campus Quad, ca. 1950 (*oregondigital.org*)

Students Near Friendly Hall, ca. 1970 (*oregondigital.org*)

A Sustainable Future

Renovations provide an opportunity to create a highly sustainable and efficient building. Proper execution of sustainable strategies will result in low future maintenance and upgrades. The proposed renovation conforms to requirements set by the *Oregon Model for Sustainable Development* (OMSD).

- Highly efficient mechanical systems will result in lower life cycle costs.
- Draft mitigation and the addition of high-performance insulation will further augment their efficacy.
- The restoration of existing windows will assess ways to reduce heat transfer between interior and exterior spaces. For example, with the application of low emissivity films.
- New LED lighting and occupancy sensors will reduce extraneous energy consumption.

The redesign of existing MEP systems, lighting, and insulation of Friendly Hall will exemplify a commitment to a sustainable future and encourage others to follow suit.

2.2 Historic Significance

Site & Context History

The Old Campus Quad dates to the inception era of the University. It was the first open space established and was defined over time by the construction of buildings around its perimeter, including University Hall (1876), Villard Hall (1886), Friendly Hall (1893), Fenton Hall (1906), Lawrence Hall (1914), Johnson Hall (1915) and Allen Hall (1923). The Quad is a primary-ranked historic resource and now retains a partial listing in the National Register.

In contrast to the symmetrical design of the Memorial Quad (1914), the Old Campus Quad (1876) has meandering paths and natural-looking plantings dominated by large conifers indicative of the picturesque gardens and landscape themes of the era. Friendly Hall was designed with its primary facade overlooking this greenspace. At the time, Franklin Boulevard was considered the primary entrance to campus. The configuration of the open space allows a view axis from the street to Johnson Hall.

The naturalistic lawn connects these significant buildings to produce a picturesque space. The architectural quality and diversity of each building is an imperative part of the overall experience of the quad and its continued status as a monument to academic achievement.


Friendly Hall ca. 1900 (oregondigital.org)


Dorm Room ca. 1900 (oregondigital.org)


1909-10 Oregon Football Team (oregondigital.org)


The Old Campus Quad ca. 1940 (oregondigital.org)


Exterior Restoration, 1986 (oregondigital.org)


Testing in Friendly Hall ca. 1990 (oregondigital.org)

1890

1900

1893: The East Hall Dormitory is completed by the architecture firm *Whidden & Lewis*. It is the third building to be completed on the Old Campus Quadrangle.

Date Unknown: An addition is constructed on the east side of the building which houses a new dining hall and kitchen.

1910

1914: A third addition extends the east wing to create an expanded dining hall.

1916: The building is dedicated to Samson H. Friendly, an immigrant, businessman, and mayor of Eugene.

1920

1924: A new east entry is completed on the previous addition.

1930

1928: Straub Hall construction is completed negating the need for Friendly Hall to be used as a dormitory. Renovations are scheduled for the coming years.

1933: Renovation work is completed and Friendly Hall is converted to office uses with limited academic functions.

1940

1950

1951: Friendly Hall undergoes a major renovation and modernization project.

1953: A forced air heating system is added to the basement.

1960

1960: The basement is renovated.

1961: The attic space in the original wing is converted to an occupiable fourth floor with office space. Dormers are cut into the existing mansard roof and the staircase is replaced and extended.

1970

1975: The main entries and stairwells are renovated.

1976: An automatic fire sprinkler system is installed.

1977: Various offices are renovated.

1980

1978: Various offices are renovated.

1981: Accessibility improvements are made throughout; basement support posts are improved.

1985: Various classrooms and offices are renovated.

1990

1986: An exterior restoration is completed.

2000

1999: The student lounge is converted to a computer lab.

2000: Various classrooms and offices are renovated.

2001: Exterior ADA ramp is added.

2007: Leaking foundation walls are repaired.

2010

2009: Fire sprinkler system is upgraded.

2010: Various classrooms and offices are renovated.

2020

2018: Asbestos abatement is performed in some locations.

2020: An elevator is added.

2022: Friendly Hall facilities assessment report is completed by Soderstrom Architects.

LEGEND

Construction

Renovation or Remodel

Historic Event

Friendly Hall History

Friendly Hall was the third building to be completed on the Old Campus Quad. The building was designed in the Georgian style and was originally called the East Hall Dormitory as it was the first residential building on the campus. The original structure housed two distinct dormitories with separate entrances, one for men and one for women. Though they no longer access separate spaces, the two historic entries are still present on the west facade today. In 1916, it was dedicated to Samson H. Friendly, an immigrant and mayor of Eugene.

The original building consisted only of the present-day West Wing. In 1896, the University purchased the Collier House where the women's residences would be relocated. This resulted in major changes to the building in 1899 when the first floor was retrofitted to house the main library, YMCA & YWCA offices, a large common area, and new dining services. The building was modified again in 1909 with the addition of the East Wing which providee a larger kitchen and dining room. In 1914, the East Wing Extension was added to increase the dining area. Though the two additions used the same architectural motifs, slight differences can be observed in the color of the brick, the coursing patterns, and the foundation materials.

Another temporary addition was completed in 1920, though there is minimal documentation of the work. The *Daily Emerald* describes the project as "a one-story frame annex 30x30 feet... at a cost of $1500, it will provide added dining room space." The only drawing that exists is a 1925 *Sanborn Map Company* fire insurance survey (figure 2.2.1). Reports indicate that this portion of the building was demolished in 1951.

In the 1930s, new residence halls were completed elsewhere on campus and the central location of Friendly Hall was better suited for other programming. The building underwent a complete renovation in 1932 which permanently converted the space to office uses with some instructional functions.

The attic space of the West Wing converted to a fourth story in 1961. Dormers were cut into the existing mansard roof to allow daylight and views into the new offices. The original stairs were removed and a new staircase was constructed to access the newly occupiable space.

Other small renovations and reconfigurations have occurred throughout the years resulting in an incohesive interior. Presently, most of the original interior elements are compromised. More recently, the insertion of the

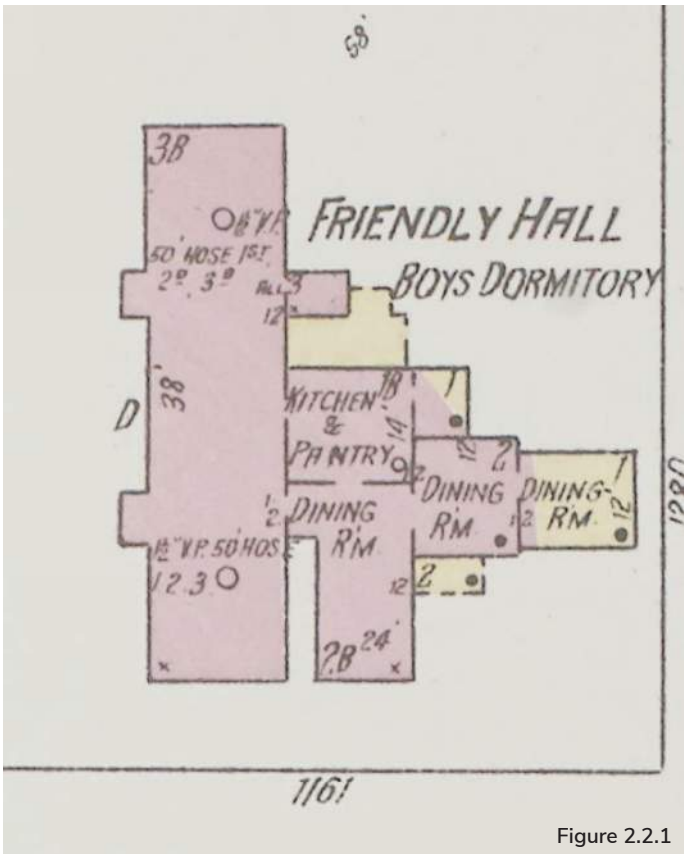
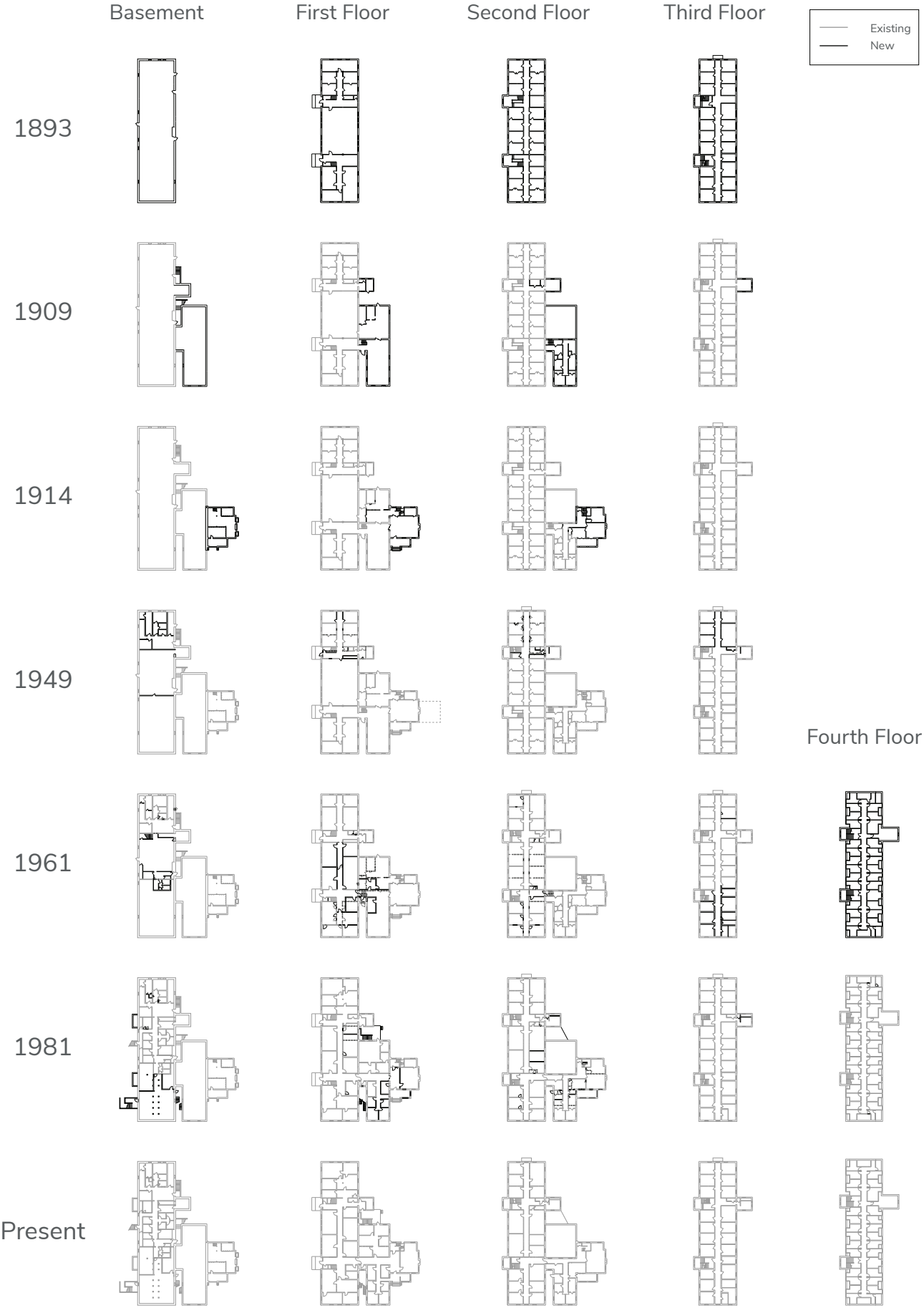


Figure 2.2.1

elevator is evidenced by the additional dormer on the east slope of the mansard roof.

ADA upgrades have been performed in various spaces throughout the building, but there are many areas which are still not accessible.

Friendly Hall has immense historic significance as an integral part of the University of Oregon. Its prominent location at the intersection of the 13th Avenue Axis and University Street signifies the importance of the academic core and the rich history of the campus.


Basement
First Floor
Second Floor
Third Floor
Existing
New
1893
1909
1914
1949
1961
1981
Present
Fourth Floor

2.3 University of Oregon Campus Plan

The *Campus Plan 2022* provides guidelines and standards for the construction and renovation of buildings in order to ensure that all work helps to achieve long-term University goals.

Principle 1: Process & Participation

The large-scale renovation required for Friendly Hall will fall under Track B of the *University Planning Process*. The project should follow the guidelines outlined in *Principle 1* of the *Campus Plan 2022*.

Principle 2: Open Space Framework

Friendly Hall's proximity to the Old Campus Quadrangle, the 13th Avenue Axis and the University Street Axis necessitate the enhancement of immediately adjacent landscaping and plantings in a manner that is complementary to the open spaces and conforms to the *Design Area Special Conditions* guidelines (see *Principle 12*). The east loading dock and service parking lot have been determined to be somewhat disruptive and unnecessarily prominent in the current configuration.

Principle 3: Densities

Friendly Hall is in the Academic Center and Historic Core Sub-Area 1 and conforms to current University density requirements.

Principle 4: Space Use & Organization

Friendly Hall is in the central walking circle of campus which means that it is a primary location for classrooms and offices within a seven minute walk of most other instructional spaces. As an integrated classroom and office building, its spatial organization will conform to campus goals and patterns outlined in *Principle 11*.

Principle 5: Replacement of Displaced Uses

The proposed renovation includes plans for the reconfiguration of interior spaces, new mechanical systems, and code-compliant upgrades throughout. The Reduced Scope Alternate in Section 6 results in a net loss of space totaling 1,330 square feet which includes a reduction of 2,860 square feet of assignable space and an increase of 1,530 square feet of non-assignable space. The Baseline option proposes an expansion of the occupiable space in the basement resulting in a net gain of 2,039 square feet including and increase of 71 square feet of assignable space and an increase of 1,968 square feet of non-assignable space.

Principle 6: Maintenance & Building Service

As part of the renovation, maintenance and service spaces of the building will be improved. This includes expanded mechanical areas and designated I.T. rooms which meet University standards.

The interior will also have durable and easily maintainable fixtures and finishes installed to ensure low maintenance requirements.

The east loading dock, service drive and parking lot have been determined to be somewhat disruptive and unnecessarily prominent in the current configuration. While the important service functions will be retained, physical impacts will be reduced.

Principle 7: Architectural Style & Historic Preservation

Friendly Hall has been determined to have primary historic significance making it eligible for listing in the *National Register of Historic Places*. According to the Campus Plan 2022, renovations of historic buildings must conform to the *Secretary of the Interior's Standards for Rehabilitation*. Great care should be taken to ensure that all new work is both cohesive and sympathetic to the historic character of the building. The relationships to the Old Campus Quad and other adjacent buildings, which are already listed in the *National Register*, are also highly important. All changes to the appearance of the building will follow the patterns outlined in *Principle 11*.

Principle 8: Universal Access

Since Friendly Hall's original wing and its later additions preceded the *Americans with Disabilities Act* (ADA), no part of the building was originally accessible. A sloped walkway was later added to provide an accessible west entrance (Entry 101) and an elevator was installed for vertical circulation. However, the building does not currently conform to the University's goals of universal accessibility, a principle which promotes the equitable use of space. Some of these deficiencies cannot be properly retrofitted without significantly altering the historic character of the building, therefore a selective approach is taken to achieve the highest level of accessibility possible without damaging the historic character of the building. Also, relocating existing ADA parking spaces will be explored.

Principle 9: Transportation

Bike storage should consider the *13th Avenue Concept*, which includes the relocation of bike racks to secure corrals off of the primary right-of-way. There should

be a mix of covered and open storage available in the vicinity. This will assist in achieving goals set out by the conceptual design as well as University goals of promoting multimodal transportation.

Principle 10: Sustainable Development

The renovation of Friendly Hall is required to meet the *Oregon Model for Sustainable Development* (OMSD) and LEED Gold. The project will vastly improve the sustainability of the building and its surrounding landscapes for decades to come. Improved mechanical efficiency and insulation will greatly reduce heating and cooling loads. Operable windows will allow occupants to use passive cooling during summer months. Occupancy sensors, new LED lighting, and improved daylighting will reduce unnecessary energy usage.

Improved room configurations and generalized spaces will ensure the building's flexibility and longevity which will greatly reduce the need for future construction work.

The landscape will be enhanced to better complement the historic spaces, increase native plant cover and improve user experience.

Principle 11: Patterns

Building patterns help to unify the campus and provide a sense of architectural continuity to students and faculty. The reinforcement of patterns is an imperative aspect of new construction and renovation work. Friendly Hall will implement each pattern to the fullest extent possible.

Campus

- **Open-Space Framework**
  All improvements to Friendly Hall will implement guidelines of the open-space framework of the University as outline in *Principle 2*.
- **Sustainable Development**
  The renovation of Friendly Hall will improve the sustainability and environmental responsibility of the building and its users as outlined in *Principle 10*.
- **Universal Access**
  This project will improve universal access as outlined in *Principle 8*.
- **Welcoming to All**
  This project aims to respond equitably to the diverse faculty and student body at the University. More accessible spaces will improve the lives of all users and gender barriers will be mitigated by the implementation of gender-neutral bathrooms.

Transportation

- **Local Transport Area**
  Bike and alternative mobility storage should be augmented as part of the landscape and site improvements.

Site Arrangement

- **Existing Uses & Replacement**
  The proposed renovation roughly replicates the existing uses of the building. Section 6 details the proposed plans and renovation scope options. The Reduced Scope Alternate option results in some assignable space reductions while the Baseline results in an increase.
- **Main Entrance**
  The historic main entries on the west facade will be retained and restored to maintain conformity to this pattern. The East Wing entry (Entry 107) is not accessible, but could be made accessible without damaging the historic character.
- **Positive Outdoor Space**
  The renovation could include site improvements, such as the reconfiguration or reduction of the parking lot, which would enhance the relationship to the adjacent spaces including the University Street Axis. Additionally, some of the planted areas require increased maintenance to match University standards.
- **Quiet Backs**
  There are no significant areas that serve as quiet places of respite near the building. It is possible to add more outdoor gathering areas on the southeast portion of the site as well as the unused loading dock near the parking lot.
- **Site Repair**
  No new building footprint is proposed, although improvements to the site will be included in the renovation. Areas for construction staging should be chosen so that enhancements can be performed to non conforming parts of the site once work is completed.
- **Sitting Walls**
  The site already contains some sitting walls. These should be cleaned and maintained to create a more inviting space.
- **South Facing Outdoors**
  The south facade of the building is adjacent to the 13th Avenue Axis, so outdoor space at this location is limited. An opportunity exists at the southeast corner of the site and there is potentially more space available

for south facing outdoor space if the existing driveway is reconfigured to the design proposed in the *13th Avenue Concept*.

- **Use Wisely What We Have**
  The existing configuration of Friendly Hall consists of the original wing and multiple additions. Though all are connected above ground, there is an opportunity to connect the occupiable basement below the West Wing with the crawlspace and basement of the eastern portions of the building. The renovation of Friendly Hall is inherently a sustainable solution for minimizing the carbon footprint of construction. Additionally, improved lighting, insulation, smart technology, and mechanical systems will result in a highly efficient building for decades to come.

Building Design

- **Architectural Style**
  The renovation of Friendly Hall should be complementary to the historic architecture of the building. Necessary improvements to the exterior should be done with careful consideration of the original appearance. Existing undesirable conditions, such as the added concrete site walls and incongruent downspouts in various locations, should be improved to better reflect the original design intent.
- **Building Hearth**
  The building does not currently have a hearth as defined by the *Campus Plan 2022*. A hearth is a social space to lounge, sip coffee or study. New plan layouts create a hearth by providing informal, inviting spaces to gather.
- **Enough Storage**
  Creating additional storage space is an important consideration for the proposed reconfiguration of Friendly Hall. Ample storage allows for a better education and work environment.
- **Flexibility and Longevity**
  The proposed renovation creates a more flexible space for potential future adaptations. The necessary seismic upgrade reduces the structure to its individual columns, floor slabs and exterior walls which leaves the interior of the building free to be arranged to the ideal configuration. Additionally, the generalized spatial usages such as classrooms, open suites and offices are adaptable in the short term and without extensive construction. Finally, the mechanical, electrical, I.T. and storage spaces are greatly expanded to provide areas for future development and intensified use.
- **Four-Story Limit**
  Friendly Hall has four above-ground stories and no additional stories are proposed. This satisfies the four-story limit for campus.
- **Future Expansion**
  According to *Principle 3: Campus Densities*, the subzone which encompasses the site of Friendly Hall has an available additional building footprint of 7,500 gross square feet. The only possible location for a new building or an addition is at the site of the existing parking lot east of Friendly Hall. Existing entries abutting the lot could be easily retrofitted to accommodate a new structure, if proposed.
- **Operable Windows**
  The restoration of the historic windows will retain their operability. If restoration is not feasible, an operable and complementary replacement should be chosen.
- **Organizational Clarity**
  To improve the organizational clarity of the building, the various programmable spaces should be arranged to create an intuitive consolidation of uses. This will improve wayfinding in the building.
- **Places to Wait**
  Friendly Hall currently lacks informal gathering spaces that are welcoming to all students. The proposed configuration consists of interspersed unprogrammed spaces that encourage a healthy working environment and an augmented public realm.
- **Quality of Light**
  Daylighting is abundant in nearly all programmed spaces in the building. The basement currently receives the least natural light, but this will be augmented with enhanced lightwells. Additionally, new LED lighting outfitted with occupancy and light sensors will improve artificial lighting conditions when necessary while avoiding unnecessary energy consumption.
- **Wings of Light**
  The existing building retains its quality of narrow masses allowing light to penetrate to the core. This means that all programmed spaces receive ample daylighting, but central corridors receive less. This can be improved through the use of translucent partitions and interior transoms where appropriate.

Principle 12: Design Area Special Conditions

13th Avenue Axis

The south facade of Friendly Hall faces 13th Avenue, a busy pedestrian and bike corridor which provides the primary axis of east-west movement in the campus. Though the building's main entrance faces the Old Campus Quad, special care is taken in the design of the south entrance to serve as a secondary, but equally welcoming point of entry for students and faculty. The new renovation will retain this relationship to 13th Avenue.

A secondary egress stair has been added between the two wings of the building and is visible from 13th Avenue. The stair was placed without regard to relationships with windows and doors and is somewhat damaging to the historic character. The renovation addresses this condition by removing the stair and improving the egress route on the north side.

In addition to a primary axis of movement, 13th Avenue provides places to rest and socialize. The edges of the street are lined with benches and low walls to sit on as well as large tree canopies to provide shade and picturesque plantings to create enjoyable spaces. The renovation of Friendly Hall should provide enhancements to these spaces according to *Principle 2*. Special care should be taken at this location as it helps to create a positive outdoor space at the academic core.

Old Campus Quadrangle

The interface with the Old Campus Quadrangle is of primary importance to Friendly Hall. The quad is bound on the east and west by historic buildings, 13th Avenue and Johnson Hall to the south, and Franklin Boulevard to the north. It is the oldest open space at the University and many of the adjacent buildings are listed in the *National Register of Historic Places*. Friendly Hall's interaction with the quad should be improved with increased seating and the removal of character damaging elements.

University Street Axis

Directly east of the addition is the University Street Axis, a busy north-south primarily pedestrian corridor which begins at the University Street gates and ends at Lawrence Hall. Landscape improvements should reinforce and better define the axis according to *Principle 2* and the *13th Avenue Concept*. This includes improvements of the driveway conditions at the east maintenance lot and loading dock.


View from 13th Avenue


View from the Old Campus Quad


View from the University Street Axis

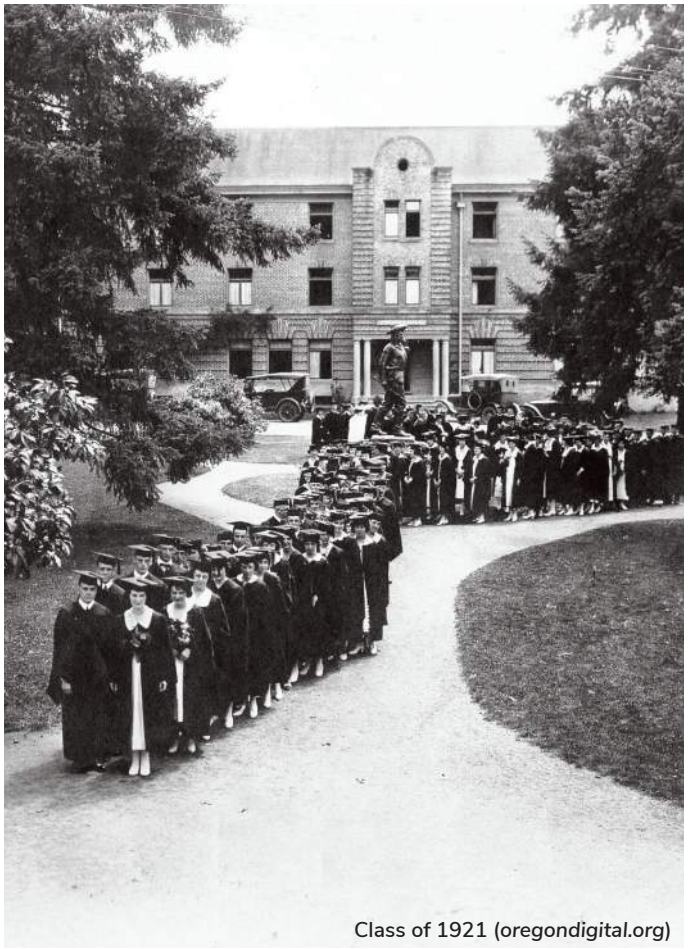
2.4 Secretary of the Interior's Standards for Rehabilitation

Friendly Hall has been determined to have "primary historic significance" by the *Campus Heritage Landscape Plan*. Therefore, great care should be taken to ensure its preservation using the *Secretary of the Interior's Standards for Rehabilitation*.

Restrictions & Regulations

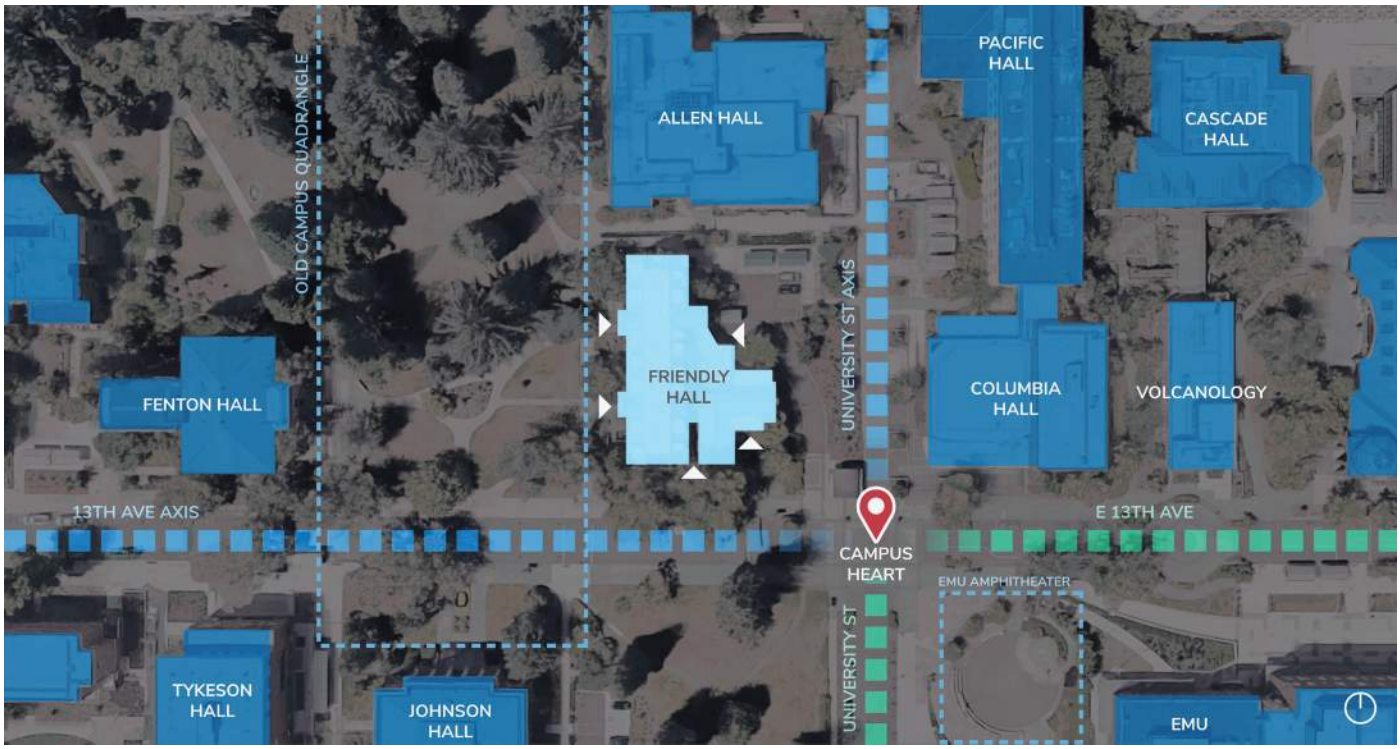
These standards pertain to historic buildings of all materials, construction types, sizes, and occupancy classifications. They address the preservation of historic character on the exterior, interior, and related landscape features. The standards also guide the treatment of related or new construction associated with the property. The standards are to be applied to rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.



Class of 1921 (*oregondigital.org*)

PROJECT CONTEXT



3.1 General

Building Access

The West Wing of Friendly Hall is accessed by two entries on the west facade (Entry 101, 108) looking towards the Old Campus Quad, Entry 108 has been made accessible by the addition of a ramp. The other primary entrance is on the south facade of the 1914 East Wing Extension (Entry 107). There are various secondary entries and egress routes including a stairway from the second floor and two fire escapes on the north and south sides of the West Wing. The basement has five entries from the exterior (Entry 001, 002, 003, 004, 005).

The parking lot is accessed by a driveway connecting to 13th Avenue. The lot has limited parking as well as access to the entry platform on the northeast of the building.

Adjacencies

At the north side of the building, plantings and a pedestrian walkway separate Friendly Hall from the Allen Hall addition. The west facade is adjacent to the Old Campus Quad and across from Fenton Hall. Friendly Hall helps to define the outdoor room of this historic greenspace. Various plantings exist between the building and the walkways of the quad. To the south, a planted area acts as a buffer to the bustling 13th Avenue. Across the street is the lawn of the Collier House and Johnson Hall. On the east side, a driveway and parking lot separate the site from the pedestrian portion of University Street. Across the way are Columbia Hall and Pacific Hall.

3.2 Utilities

Existing Conditions

Friendly Hall is currently served entirely by campus utilities and is not directly connected to the City of Eugene or any franchise utilities, with the exception of the fire protection water service that connects to an existing EWEB water main at 13th Avenue. In general, Friendly Hall has adequate existing utilities serving the building. The following utility information was informed by GIS map provided by the University of Oregon.

Domestic and Fire Protection Water

Friendly Hall is served by an existing 2-inch domestic water line entering the building on the west side. This service has backflow prevention. A 6-inch fire protection service with backflow prevention (figure 3.2.1) enters the building on the south side and connects to the an existing 8-inch EWEB main at 13th Avenue. There

Figure 3.2.1

Figure 3.2.2

Figure 3.2.3

is a wall mounted fire department connection (FDC) on the western wall in the south west corner of the building. The water supply piping is a mix of copper and galvanized steel pipes.

Chilled Water and Steam

The building does not currently have a chilled water service. There are chilled water mains in the utility tunnel that runs north/south on the west side of the building; however, the west side of the campus-wide chilled water service is reaching its capacity. The University is analyzing the existing distribution system in the area to determine if adequate capacity is available without significant cost impacts.

Sanitary Sewer

According to University GIS maps, there are two sanitary sewer laterals serving the building on the east side. The first is a 6-inch lateral that exits at the southeast corner and then wraps around the building flowing north to a manhole in the pedestrian area in between Friendly Hall and Allen Hall. The second lateral is 8-inch in diameter and exits the building at the far northeast corner and also discharges into the manhole described above. From this manhole the sewer flows north through an 8” line beneath Allen Hall. There have been no reported issues with condition or capacity of either lateral.

Storm Drainage

Stormwater runoff from the landscaped areas is collected by area drains (figure 3.2.2) around the site and brought south to 13th Street or north to an 8-inch main south of Allen Hall. The line running north is considered to be close to capacity and requires a pump station at the southeast corner of Allen Hall to send it north to campus storm lines that eventually outfall into the Millrace. Building roof drains are brought down to the ground floor where they connect to the same storm drain systems running both south and north. Existing storm drainage is not treated to current City of Eugene or University of Oregon stormwater management standards. Roof and site drainage are both piped directly into campus storm piping without water quality treatment or peak flow control.

Electrical Systems

Friendly Hall is served by a transformer on the west side of the building. The transformer is located on a concrete pad above ground (figure 3.2.3).

Recommendations

Domestic, Chilled and Fire Protection Water

- Replace the backflow preventers on the domestic water and fire protection lines as they have reached the end of their lifecycles.
- Replace any galvanized steel piping with copper piping.
- No additional load is expected on the fire protection system or domestic water system due to the interior building upgrades; therefore, no upgrades to the FDC will be required and the diameters of the fire protection and domestic water laterals can remain as they are.

Chilled Water and Steam

- The addition of a chilled water lateral is required to cool the building.
    - o It is recommended a chilled water lateral be added to the existing tunnel extension entering the building at the northwest corner.
    - o In order to accommodate both steam and chilled water laterals, the addition of a node at the connection to the main tunnel should be anticipated. This node will require a vault with an at grade access hatch.

The University is currently conducting a hydraulic study of the West Campus system to determine what improvements will be required to support the current and future chilled water needs on the west side of campus. At this time, the extent of the offsite improvements and their cost are unknown.

Sanitary Sewer

- Video scope existing sewer lateral to determine the condition of the pipe.
    - o If the existing pipe is in poor condition, replace it with PVC ASTM D3034 pipe of the same diameter.
    - o Cleanouts or manholes should be placed every 100 feet.
    - o Place the pipe in the trench with aggregate backfill and provide surface replacement to match existing conditions.
- The possible expansion of Allen Hall may affect the sewer laterals along the east side of the building because the proposed building footprint falls very close to these laterals. Coordinate with the Allen Hall Expansion and reroute sewer if required.

Storm Drainage

- There have been no reported issues with the storm drain system. However, two future improvements to the UO campus, the expansion of Allen Hall and the improvements to 13th Street, will affect the Friendly Hall storm system.
    - o The portion of the system that is conveyed to the south and discharges at 13th Street may need to be redesigned as a part of the 13th Street improvements.
    - o The portion that is conveyed to the north, quickly becomes part of the Allen Hall storm system and runs directly through the proposed footprint of the Allen Hall addition.
    - o Coordinate with the Allen Hall Expansion and reroute storm as required.

It is important to note that the redevelopment of over 5,000 square feet of impervious area will trigger City of Eugene stormwater management requirements and University should be prepared to work with the city to develop a stormwater management plan.

Electrical Systems

The existing above ground transformer was recently installed, however its capacity may not be adequate for proposed building upgrades.

- Confirm existing transformer has adequate capacity for the proposed building upgrades.
- Confirm existing transformer pad provides adequate clearances for maintenance activities.


Figure 3.3.1


Figure 3.3.2


Figure 3.3.3

3.3 Landscape

Existing Conditions

For the purposes of this assessment, the site area examined extends from the University Street Axis on the east to the Old Campus Quad walkway on the west of the building, and from the walkway on the north of the building to the sidewalk on 13th Avenue. The existing conditions were examined to determine safety concerns, code compliance and adherence to University goals and standards.

Walkways, Stairs & Ramps

The exterior circulation surrounding and accessing Friendly Hall is generally in good condition. Presently, Entry 101 (figure 3.3.1) is the only accessible means of ingress. An ADA ramp was previously added in a historically appropriate manner. Two entries to the basement were added on the west facade (figure 3.3.2 shows Entry 005). They are redundant means of egress and damaging to the historic character.

Handrails & Guardrails

Various locations around the building lack code compliant handrails and/or guardrails. Basement Entry 003, 004, and 005 have compliant handrails. Entry 001 and 002 have handrails, but also require guardrails, which are currently absent or non-compliant. On the first floor, Entry 101 has been outfitted with proper handrails, but Entry 107 and 108 lack them. No guardrails are required at these locations. Entry 102 and 103 are accessed from the platform near the parking lot. They currently have handrails, but also require code-compliant guardrails due to the height difference between the platform and the grade below. The stairway between the two wings serving Entry 201 is compliant.

Site Walls

Limited site walls exist. The most prominent is a brick sitting wall on the southeast corner facing the intersection of 13th Avenue and University Street. It is in good condition and is appropriate for the historic architecture. Various concrete walls were added at exterior stairways to the basement. These walls are not appropriate for the historic architectural.

Parking & Driveways

The parking lot to the northeast of the site (figure 3.3.3) and the driveway which provides vehicular access are in good condition, though underutilized. There are multiple reserved permit spots and one ADA parking spot. While provided, the current accessible parking space exceeds

code required cross slope maximum slopes and does not have a properly striped access aisle.

Planted Areas

Friendly Hall's landscape is a mixture of mature trees, foundation plantings which have been heavily pruned, small garden areas as highlights, and extensive groundcover or bare planting beds (figure 3.3.4). The majority of the landscape is congruent with University standards, but there are opportunities to improve the landscape making it more compatible with the surrounding campus. In addition to their aesthetic appeal, plantings should be selected to better fit the scale of their site to reduce pruning and overgrowing their space, they should be selected for low water use and resilience to increasingly hot summers and should be selected to support pollinators and bird populations. Plantings that are too large for their site obstruct views creating conditions that both feel unsafe and present security risks as well as create wayfinding challenges by obstructing signs. Additionally, these overgrown plantings require additional maintenance. It is assumed that new landscape areas will have irrigation installed.


Figure 3.3.4

Bicycle Parking

Presently, two locations exist for bicycle parking. The first is to the north and consists of multiple racks and two canopies. The second location is to the south where bike racks have been installed along 13th Avenue (figure 3.3.5). These racks are sometimes removed for events.


Figure 3.3.5

Site Lighting

A photometric study of site lighting was not conducted and should be if exact light levels are to be established and checked for compliance with campus safety standards. Most areas of the site were observed to have adequate lighting but there may be deficiencies at stairs and access to the basement level leading from East 13th Avenue. Additionally, most of the campus standard light poles need painting, and it appears these have been converted to be night sky compliant globes with LED fixtures, but that should be confirmed by the University.

Exterior Mechanical Systems

There are multiple dedicated mechanical units which have been placed on concrete pads outside of the building due to past renovations (figure 3.3.6). These systems do not conform to University standards. There also exist auxiliary enclosure towers for mechanical exhaust from the basement.


Figure 3.3.6

Recommendations

The following recommendations provide a hypothetical solution which increases conformity to the goals of the *Campus Plan 2022* and establishes a project budget.

Basement excavation will require the removal of all nearby existing trees, site flatwork and site walls within the work area. The excavation area extents are dependent on the basement options and will therefore affect the scope of landscape improvements.

- New plantings and trees, in compliance with University tree replacement requirements, should replace the excavated areas once basement work is completed.
- The main accessible building entry is located at the northwest corner of the building. The stair and ramp will need to be removed for the proposed basement work.
    - Both entries should recieve new accessible ramp-stair improvements to improve accessibility and meet University goals for universal access.
    - Replace plantings on either side of entry.
    - Provide access to new utility vaults.
- Remove the two access points to the basement on the historic west facade.
    - Appropriately seal building envelope, retain drainage, demolish upper portion of the stair and rail.
    - Remove pavement accessing the demolished basement stairs.
    - Fill void and plant to match site landscape.
- Historic Quad Walkways
    - Repair sections of walkways damaged by excavation work.
    - Minor cracked concrete in the walkway pavement should be repaired.
- Corner Garden
    - Replace landscape in-kind
    - Replace irrigation system.
    - Provide seating and or bench to replace rockery.
- Basement Entries
    - Confirm drainage efficacy and improve as necessary.
    - Provide compliant stairs, handrails, and guardrails where applicable.
    - Replace existing lighting with historically appropriate, high efficiency LED lighting at egress points.
- Service Driveway
    - Adjust layout per the *13th Avenue Concept* and possible extension to SOJC.
- *13th Avenue Concept* Improvements
    - Improve southeast corner of site with new green space according to the master plan document.
    - This includes expanded green space across the area of the removed service drive.
    - Improve the sidewalk along East 13th Avenue providing additional furnishings, bike parking and pavements as .
- East 13th Avenue Entry 107
    - Replace steps into the building with an accessible ramp and handrail to improve accessibility.
    - Minor cracked concrete in the East 13th Avenue sidewalk pavement needs to be repaired or replaced after excavation activities.
    - Planters at steps to be repaired to drain properly or be filled.
    - Signs of rodent activity at building vent should be addressed per University standards.
- Loading Dock Area
    - Retain building access, dock area, and connectivity to recycling and trash enclosure
    - Add exterior gatheirng space as part of the loading dock zone through campus benches and campus standard trash-recycle recepticals.
    - Add code compliant guardrails due to vertical drops of more than 30”.
- Northern Pedestrian Corridor
    - Retain building access and circulation.
    - Remove mechanical equipment due to the proposed centralized and expanded mechanical systems.


LEGEND
Area of Excavation
New Driveway
Improved Seating Area
New ADA Access
Demolished Site Wall/Stairway
Demolished Exterior Mech. Unit

This page intentionally blank
for double-sided printing

BUILDING CODE

4.1 Construction Type & Occupancy

Existing Conditions

Friendly Hall is four stories in height with a basement below the original 1893 portion, a crawlspace below a central addition constructed at an unknown date, and a full basement below the east addition constructed in 1914. The present fourth floor offices were inserted into the existing attic volume in 1961. Based on the review of available drawings, photographs, and knowledge of similar buildings from the period, the building exterior is non-combustible load bearing masonry with wood framed floors, load bearing wood columns along the central corridor, and wood framed partitions throughout.

Higher education facilities are classified as B occupancies per Section 304 of the 2019 edition of the Oregon Specialty Structural Code (OSSC). The construction type of Friendly Hall can be classified as Type III-B, which is a that type of construction in which the exterior walls are of non-combustible materials and the interior building elements are of any material permitted by the code.

Per OSSC Table 504.3, with a fully automatic fire sprinkler system installed in accordance with Section 903.3.1.1, four stories above the grade plane are allowable for a B occupancy and Type III-B construction. The building height is limited to 75 ft. Friendly Hall meets these requirements. The top of the roof is at 43'-0", the height of the tallest portion of the semi-circular brick gable ends is 45'-6", and the top of the enclosure for the elevator overrun is 46'-6".

Per OSSC Table 506.2, with a fully automatic fire sprinkler system installed in accordance with Section 903.3.1.1, the maximum gross area of each floor is limited to 57,000 square feet. The gross square footage of the above grade floors in Friendly Hall do not exceed this allowable area. The basement is not included total allowable floor area if the basement square footage does not exceed total allowable per floor area of 57,000. The present basement gross square footages as well as the gross square footage of the proposed floor plans, identified as the Reduced Scope Alternate option and the Baseline, do not exceed this allowable area.

Recommendations

The existing occupancy classification and construction type will not change resulting from the proposed renovation.

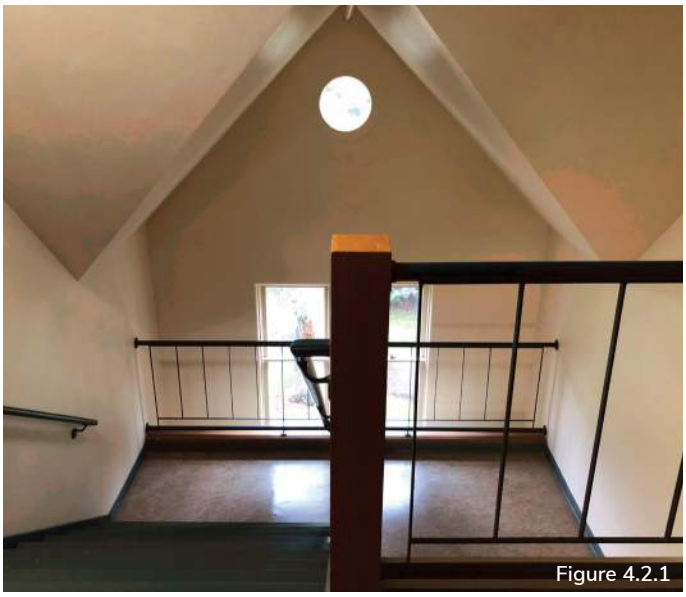


Figure 4.2.1


Figure 4.2.2


Figure 4.2.3

4.2 Egress

Existing Conditions

The building currently has three interior stairways: the two interior stairs in the 1893 West Wing (figure 4.2.1) and the interior stair in the 1914 east extension (figure 4.2.2). The West Wing stairways have fire rated enclosures with fire doors from the adjoining corridors, but non-compliant head height conditions exist and the handrails do not have compliant extensions at the landings. These stairs let out to Entry 101 and 108 which provide egress via an elevated concrete platform with stairs to the Old Campus Quad. Entry 101 has compliant exterior handrails while Entry 108 does not. The 1914 east extension stairway does not have a fire rated enclosure and lacks compliant handrails as well.

An exterior stair was added to the East Wing to allow compliant egress from the second floor. This stair is damaging to the historic architecture and results in many undesirable conditions.

Exterior fire escapes on the north and south facades of the 1893 West Wing were added between 1914 and 1949 for egress from the upper levels. However, the recent automatic sprinkler system upgrade has negated the need for dead end egress at these locations since the dead end corridor extension is only 30 feet from the egress stairs.

The basement has five points of entry. All are accessed by exterior stairs. Only two egress routes are required according to OSSC occupant load tables. However, the existing stairs do not have compliant handrails and some require guardrails which are not present.

Recommendations

- The existing West Wing stairs should be improved to conform to requirements for head heights, handrail configuration and fire rated enclosures.
- The interior stair of the 1914 East Wing Extension will require compliant handrails, egress doors to the exterior and an enclosure with a 1-hour rated assembly including conditions where doors open directly into the stairwell.
- The exterior stair which accesses Entry 201 can be removed once the interior stairs are made code compliant. Its removal will improve the historic appearance of the building.
- Exterior stairs including basement access stairs and stairs to the elevated entries on the first floor should be equipped with code compliant handrails and guardrails

where applicable.

- Existing fire escapes are not necessary and should be removed or reconfigured to prevent life safety concerns. The fire escapes are not original and their removal will also allow for the restoration of the historic appearance.
- Any rooms exceeding 1,000 square feet should have two exits to satisfy code requirements.

4.3 Fire Protection

Existing Conditions

All interior spaces are protected by a wet-pipe fire suppression system equipped with fusible link sprinklers for water dispersion. Plumbing serving the sprinklers exists below the plane of the ceiling (figure 4.3.1). The fire suppression system has flow and tamper switches tied to the fire alarm system. The current fire suppression system is satisfactory and no upgrade is required.

The existing fire system standpipe runs along the exterior in various locations, including the existing fire escapes (figure 4.3.2). This is damaging to the historic appearance of Friendly Hall.

Figure 4.3.1

Figure 4.3.2

Recommendations

- The removal and reconfiguration of all the interior partitions during the required structural upgrade will necessitate reconfiguration of the existing system.
- The renovation will allow exising ceiling mounted sprinkler lines to be concealed above the ceiling to create a more appealing and appropriate interior aesthetic.
- The renovation will afford an opportunity to move standpipes to the interior of the building thereby improving the appearance of the building and preserving its historic character.


Figure 4.4.1


Figure 4.4.2


Figure 4.4.3

4.4 Plumbing Fixtures

Existing Conditions

The building is classified as office and classroom occupancy with load factors of 150 sf/person and 50 sf/person respectively according to the OSSC. The required fixture quantities are determined by the area of each occupancy. The existing building houses 19,834 square feet of office space, and 2,610 square feet of classrooms resulting in an occupant load of 185. This requires a minimum of three toilets and three lavatories each for men and women as well as one drinking founatin per floor. This requirement is satisfied in the existing building.

Recommendations

The existing ficture quantities currently satisfy minimum count requirements, but the proposed renovation will necessitate the removal of all interior partitions, fixtures, and finishes. This will allow for the improvement of the appearance, efficiency and accessibility of the building's plumbing fixtures which do not currently meet University standards.

- Many finishes and fixtures have aged past their useful life (figure 4.4.1-3) and should be replaced.
- While the existing configuration and quantity of plumbing fixtures is sufficient for code requirements, the University goals of inclusion and universal access, outlined in Section 2, necessitate the redesign of restrooms to be gender neutral with at least one ADA stall and one accessible family restroom per floor.
- Existing non-accesible fixtures, like many drinking fountains (figure 4.4.3), should be replaced with ADA compliant fixtures.

For more information on the proposed bathroom layouts, refer to Section 6.

4.5 Insulation & Envelope Performance

Existing Conditions

Friendly Hall does not presently satisfy the 2021 Oregon *Efficiency Specialty Code* (OEESC) requirements nor does it meet energy efficiency goals of the University. Although the documentation is limited, based on familiarity with buildings of the period it is unlikely that the original 1893 building and the subsequent additions have insulation between the load-bearing brick walls and the lath and plaster interior wall finish. The wood double hung windows are single pane throughout (figure 4.5.1-2).

In the absence of interior insulation and vapor barriers, the brick and interior plaster of the load bearing masonry walls have been drying to both the inside and exterior. Adding insulation to the interior surfaces could potentially alter the manner in which moisture moves through the wall assembly. Reduced drying, particularly on the north face, could result in accelerated degradation of the brick.

Recommendations

- Per Table 5.5-4 of ANSI/ASHRAE/IES Standard 90.1 – 2019, insulation should be installed at the perimeter of the building to achieve a R9.5 value. New light gauge steel framed stud walls with mineral wool insulation should be used at the interior face of masonry walls.
    - o Notably, while this value is for a mass building such as load bearing masonry, the intent of the requirement is to achieve continuous insulation which would would require application to the exterior of the facade. Such an installation is incompatible with the historic architecture, and therefore it should be applied to the inside face of the masonry walls to meet University standards as well as the *Secretary of the Interior's Standards for Rehabilitation*.
    - o The brick walls have an overall R value that varies between 2.4 and 3.2 depending on the wall thickness in a given location. However, the intent of Table 5.5-4 was to require insulation with a value of R9.5 independent of the R-value of the mass wall material, and therefore the R-value of the brick should not be considered when calculating the necessary thickness of insulation.
    - o An energy model of the building should be developed to determine if higher insulation levels will be beneficial to energy consumption goals of the University.
    - o It should be noted that additional thickness of insulation will reduce the size of the rooms that are along the perimeter of the exterior walls, thereby reducing the assignable space of the building. The trade-off between increased energy performance and the loss of assignable area should be reviewed before any exterior wall insulation solution is adopted.
    - o Closed cell insulation is an alternate insulation which demonstrates a higher R-value per inch of thickness, which could reduce the depth of the stud framing.
- Additional testing should be performed when the interior finishes have been removed to assess moisture content of the interior brick wall faces, and differential moisture content on one facade versus another. Careful consideration should be given as to where to add insulation and vapor barriers as a part of the proposed renovation of Friendly Hall.
- With mineral wool insulation, SIGA Majrex or equal vapor control layer should be used. Standard 6mm polythylene will trap moisture and is not recommended.
- Installation of stud walls will require alternation to the jambs of the existing windows. Interior jamb extensions will be required to compensate for the increased wall thickness.
- Reroofed areas of the building will include the addition of R30 rigid insulation above the roof deck.
- The original wood double hung windows should have storm windows applied that improve energy performance with minimal impact to the appearance of the window. Recent projects at the University have utilized the SLIP system for applied storm windows.

Figure 4.5.1


Figure 4.5.2

Figure 4.6.1

Figure 4.6.2

Figure 4.6.3

4.6 Accessibility

Existing Conditions

There is one accessible building entry (Entry 101). From the first floor, accessible routes to the upper floors and the basement are provided by an ADA compliant elevator.

There is one accessible restroom on the first floor (Room 103). The rest are not accessible due to insufficient clearance, lack of grab bars (figure 4.7.1) or level changes at the thresholds (4.7.2).

Many doors throughout the building are not equipped with accessible hardware. Some have been upgraded due to previous renovations.

The existing interior stairs do not have ADA-compliant handrails. Exterior stairs are also lacking handrails and guardrails in most locations.

Most water fountains throughout the building are not accessible. An accessible paired fountain assembly does exist on the first floor near the accessible restroom.

There is a mix of code-compliant and non-compliant wayfinding and signage.

Recommendations

- The proposed renovation will remediate accessibility shortcomings with exterior entries as well as interior stairs. All stairs and ramps will be provided with compliant handrails and guardrails as necessary.
- Where non-compliant clearances exist, new plans should allow for accessible clearances.
- All new doors should be equipped with accessible hardware. Historic doors requiring restoration should receive historically appropriate accessible hardware as well.
- New restroom layouts will create increase the quantity of accessible water closets.
- All lavatories and water fountains should be replaced with universally accessible fixtures.
- Code compliant signage and wayfinding should be installed throughout the building.

BUILDING ENVELOPE

5.1 Brick

Existing Conditions

The exterior walls of Friendly Hall indicate the original structure and its two major additions. All three major constructs use an American or Common bond. A dark brick is used on the original portion (figure 5.1.1), while the additions are clad with a red brick (figure 5.1.2). The 1914 addition on the east also has a different coursing pattern than the other two constructs (figure 5.1.3). The face brick is embellished with quoins, jack arches, and rusticated reveals on the first floor.

The face brick appears intact and in good condition, with limited examples of damage or spalling. A visual inspection showed no indication of rising damp.

Mortar joints are generally intact and in good condition. There are some areas of previous repointing that are an inadequate match to the historic mortar color and texture (figure 5.1.3) which should be replaced.

A secondary egress stair was added to the exterior of the East Wing in a character damaging manner (figure 5.1.4). The new fire rated enclosure of the northeast stairwell will serve as the egress route for the East Wing of the building and the south stair will no longer be necessary.

Recommendations

- The exterior masonry should be maintained.
- During the proposed seismic upgrade, interior faces of the brick walls will be exposed and additional inspection and testing should be performed.
- All brick, mortar or concrete elements should be cleaned with hot water and brushed where required following best practices for maintenance of historic brick facades.
- Areas of mortar deterioration and cracking should be identified and repointed.
    - o All deteriorated mortar joints should be ground using the appropriate grinder profile back to sound material prior to repointing.
    - o New mortar shall match the existing in color, texture, composition, and tooling profile. It is recommended that several small test areas be reviewed for visual match prior to commencing with larger areas of repointing.


Figure 5.1.1


Figure 5.1.2


Figure 5.1.3

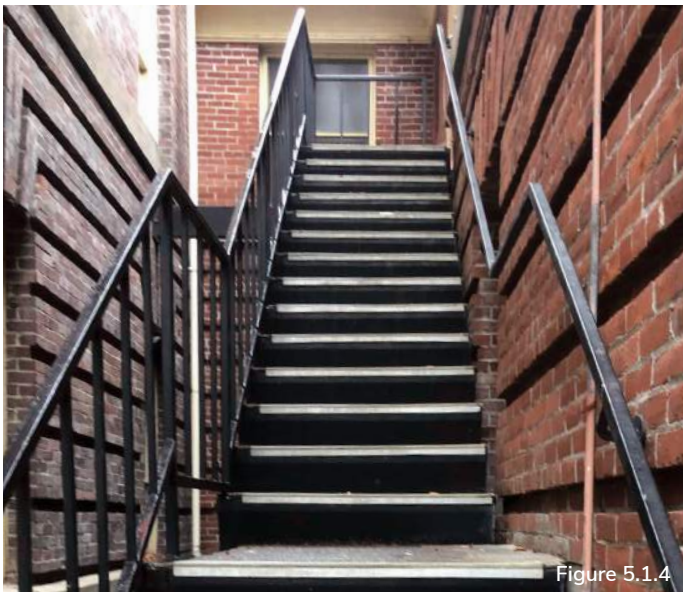


Figure 5.1.4


Figure 5.2.1


Figure 5.2.2

- Brick that is fractured, chipped, or spalling should be removed and replaced with brick that matches the original size, shape, color, and texture.
- The south exit stair should be removed and the underlying brick should be repaired to restore the historic appearance.

5.2 Wood Trim & Moldings

Existing Conditions

The wood trim is an important character defining feature around the exterior of the building. It is used as accents and detailed ornament. In some locations, it has experienced water damage, but no significant structural damage or rot was observed. Wood elements include

- Columns, capitals, and entablatures at the west facade entries (figure 5.2.1).
- Decorative wood paneling at exterior entries (figure 5.2.2)
- A decorative cornice at the underside of roof overhangs.

Recommendations

- At areas with visible wear or water damage, wood elements should be refinished and restored, if possible.
    - o If restoration is not possible, matching historic elements should be used as replacements.
- Paint analysis should be performed to determine the original color.

5.3 Stone

Existing Conditions

The West Wing of the building was constructed with a stone foundation that has been exposed in some locations (figure 5.3.1). It is generally in good condition, though the original design did not intend for any stone to be exposed.

Recommendations

- Existing areas of visible stone on the basement level should be refinished as necessary to improve the interior spaces.
- Exterior stone should be cleaned as necessary where exposed.

Figure 5.3.1

5.4 Concrete

Existing Conditions

Building occupants noted that there have been instances of water leakage in the basement floor of the West Wing. Such water intrusion is not unexpected given the age of the building and the limited options for below grade waterproofing available during its construction.

During a walkthrough, areas of organic growth and superficial cracking were observed (figure 5.4.1-2).

Recommendations

Water leakage through the basement or foundation walls can be remediated via two approaches, positive side and negative side remediation.

- Positive Side: A membrane system placed on the exterior face of the structural foundation system.
  - o The highest level of protection would be afforded by excavating the entire perimeter of the building to expose the foundation walls. The exterior wall surfaces would be cleaned, and a new waterproofing membrane would be installed along with new subgrade drainage.
  - o The lowering of the basement floor will necessitate perimeter excavation providing an opportunity for positive side waterproofing treatments.
- Negative Side: A treatment on the interior surfaces of the foundation system.
- Exposed concrete on other exterior areas should be cleaned as necessary.


Figure 5.4.1


Figure 5.4.2

Figure 5.5.1

Figure 5.5.2

Figure 5.5.3

5.5 Exterior Doors & Windows

Existing Conditions

Generally, the historic exterior doors on the building have been maintained and are functionally adequate (figure 5.5.1). Some have experienced slight aesthetic deterioration which is expected on elements of this age. At exterior basement entries, character compromising doors were installed at some point during previous renovations (figure 5.5.2).

The exterior windows on Friendly Hall are generally in good condition (figure 5.5.3). A restoration of all exterior windows was performed by Soderstrom Architects in 2009 so areas of paint or wood deterioration are limited. However, the existing single pane vision glass does not provide adequate environmental performance.

Various windows have been replaced with louvers for mechanical upgrades over the building's lifespan.

Two oculus windows on the West Wing, one on the north and one on the south, were replaced with emergency exit doors which access the fire escape.

Recommendations

- The exterior wood doors should be restored and refinished.
    - o Modern, accessible and historically complementary hardware should replace the existing brushed steel hardware.
- Existing basement doors should be replaced with historically complementary doors where they are to remain.
- Where basement doors are being removed, historically appropriate daylight windows should be installed with small wells, similar to the condition on the north facade of the West Wing.
- Exterior windows should be cleaned and repaired as necessary.
- Low emissivity film will be added to reduce heat transfer without compromising the appearance of the historic windows.
- Existing window openings that have been previously outfitted with mechanical louvers should have historically appropriate windows reinstalled.
- If removal of the fire escapes is deemed necessary, the oculus windows should be recreated to restore the historic appearance.

5.6 Exterior Lighting

Existing Conditions

The wall-mounted exterior lights are modern units, but most are demonstrating yellowing from UV exposure (figure 5.6.1). These fixtures are also incompatible with the historic character of the building.

Recommendations

- If possible, site lighting should be used in place of building mounted exterior lights according to the University's lighting plan and standards.
    - o If not feasible, the existing wall mounted sconces should be replaced with a discrete, period-appropriate sconces to restore the historic appearance.

Figure 5.6.1

5.7 Roof, Dormers & Skylights

Existing Conditions

The existing roofing consists of TPO membrane at low-slope conditions (figure 5.7.2) and wood shingle roofing at the remaining areas. Both types of roofing were fully replaced in 2009 and are generally in good condition with about half of their expected lifespan remaining.

The fourth floor dormers received new shingle siding during the 2009 re-roofing project and currently appear in good condition (figure 5.7.1).

The skylights over the first floor office suite (figure 5.7.2) were added during a 1999 renovation and generally appear in good condition with no reports of issues.

Recommendations

- The existing roof will remain, but should be cleaned and treated to preserve the appearance.
    - o Exceptions are at specific locations where rooftop mechanical units will be removed. Their removal will necessitate a new roofing membrane.

Figure 5.7.1

Figure 5.7.2

Figure 5.8.1

5.8 Historic Fire Escapes

Existing Conditions

The historic fire escapes at the north and south facades of the building have aged and deteriorated substantially (figure 5.8.1). There are also instances of deformation near the ground level.

Recommendations

- If possible, remove the existing fire escapes.
    - o If restoration is chosen, fire escapes should receive high performance, weather-resistant finishes to prevent future deterioration. They should also be modified to prevent ground level access from the exterior of the building.
    - o If they are removed, the existing downspouts and standpipe should be reconfigured to better complement the historic architecture. The egress doors from the fourth floor should be removed and be replaced with the original oculus windows.

Figure 5.9.1

5.9 Gutters & Downspouts

Existing Conditions

The existing gutters were replaced entirely in 2009 and appear to be in good condition with select instances of water intrusion and organic blockages (figure 5.9.1).

Over the building's history, many downspouts have been reconfigured to accommodate patchwork solutions resulting in a non-desirable appearance which compromises the historic integrity in some instances (figure 5.9.2).

Recommendations

- Existing gutters will remain but should be cleaned and repaired as necessary.
- Downspouts which are not complementary to the architecture should be reconfigured to a more desirable appearance

Figure 5.9.2

5.10 Existing Elevations

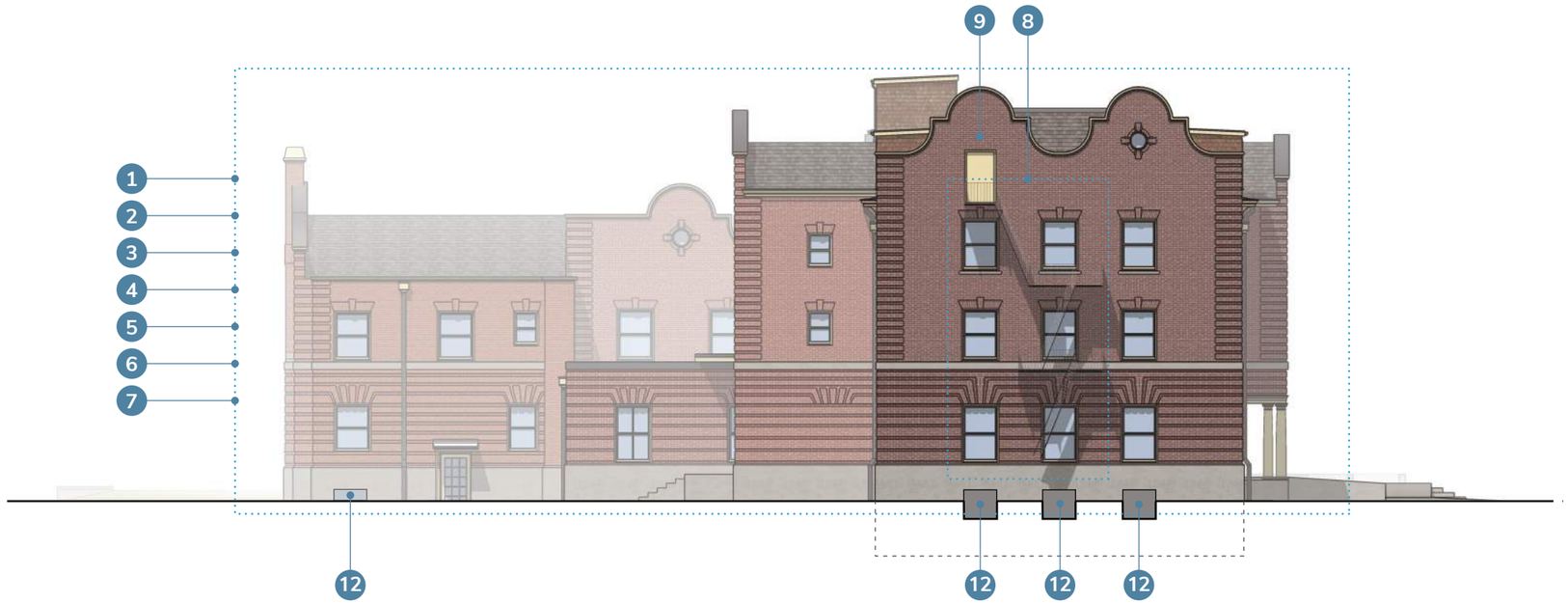
1. **Clean and repair brick/mortar as necessary.**
2. **Clean, patch, and repair wood trim/ moldings as necessary.**
3. **Clean exposed stone foundations where applicable.**
4. **Clean, patch, and repair concrete exterior elements as necessary.**
5. **Restore windows and doors as necessary.**
6. **Remove all existing exterior lighting and replace with contemporary, historically appropriate fixtures.**
7. **Clean existing gutters and inspect for damage.**
8. **Restore or remove fire escapes.** Reconfigure downspouts and standpipes to better complement the historic architecture.
9. **Reintroduce a matching oculus window where they were previously removed.** Only applicable if fire escape removal is deemed necessary.
10. **Remove character damaging exterior egress stair.** Reconfigure downspouts to better complement the historic architecture.
11. **Add lightwells and larger windows to improve daylighting.**
12. **Remove existing louvers, doors or windows. Add new lightwells larger windows to improve daylighting.**

WEST ELEVATION
1/16" = 1'-0"

SOUTH ELEVATION
1/16" = 1'-0"

1. **Clean and repair brick/mortar as necessary.**
2. **Clean, patch, and repair wood trim/ moldings as necessary.**
3. **Clean exposed stone foundations where applicable.**
4. **Clean, patch, and repair concrete exterior elements as necessary.**
5. **Restore windows and doors as necessary.**
6. **Remove all existing exterior lighting and replace with contemporary, historically appropriate fixtures.**
7. **Clean existing gutters and inspect for damage.**
8. **Restore or remove fire escapes.** Reconfigure downspouts and standpipes to better complement the historic architecture.
9. **Reintroduce a matching oculus window where they were previously removed.** Only applicable if fire escape removal is deemed necessary.
10. **Remove character damaging exterior egress stair.** Reconfigure downspouts to better complement the historic architecture.
11. **Add lightwells and larger windows to improve daylighting.**
12. **Remove existing louvers, doors or windows. Add new lightwells larger windows to improve daylighting.**

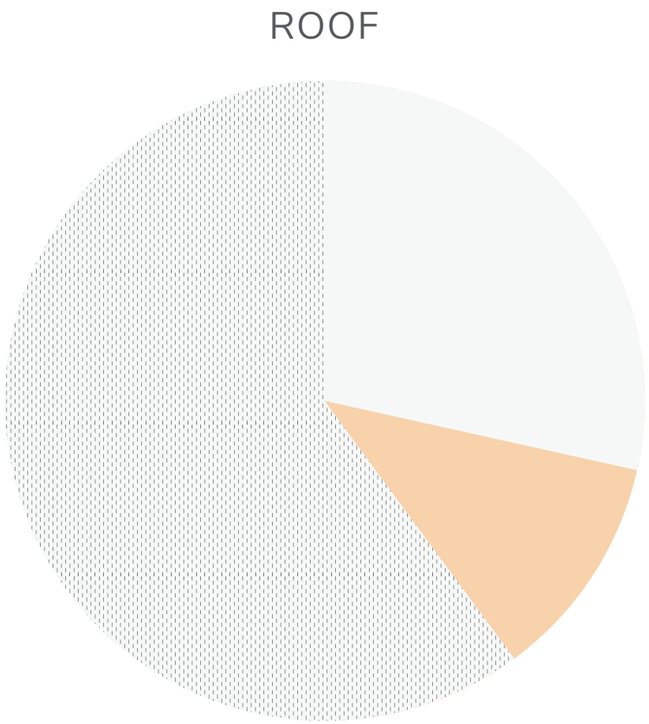
EAST ELEVATION
1/16" = 1'-0"



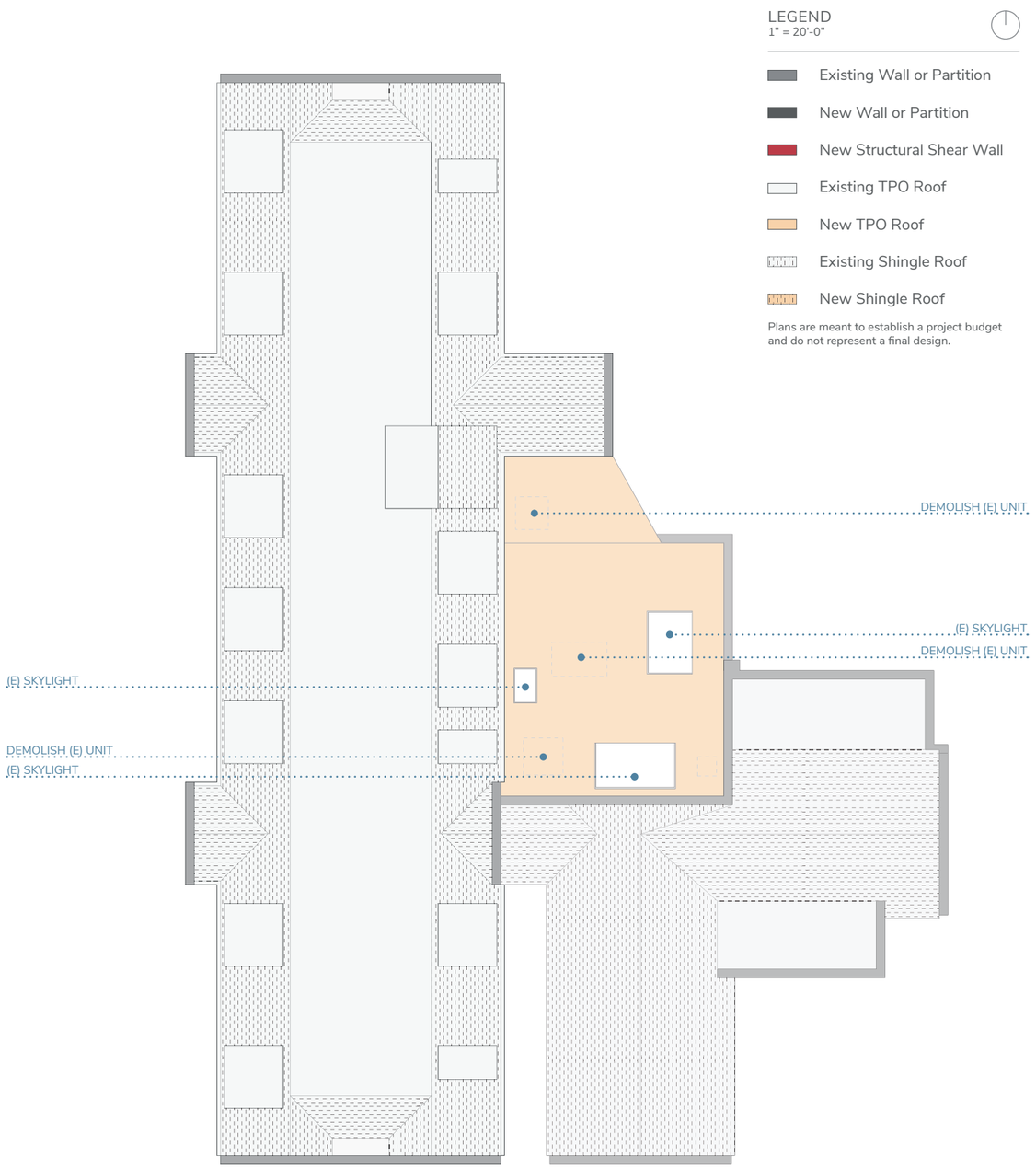
NORTH ELEVATION
1/16" = 1'-0"

5.11 Roof Improvement Diagram

The existing roof is in good condition and has no reported issues. It received a full replacement in 2009, so it currently has over half of its projected lifespan remaining. However, the removal of rooftop mechanical units will require the installation of new TPO roofing at the specified locations.



Total Roof Area:	14,221 sf
Existing TPO Roof	3,813 sf
New TPO Roof	1,283 sf
Existing Shingle Roof	8,585 sf
New Shingle Roof	0 sf



This page intentionally blank
for double-sided printing

PROGRAM & INTERIORS

6.1 Programmed Uses

Existing Uses

Friendly Hall is a multipurpose building in the "Academic Core" as defined by the *Campus Plan* 2022. It houses instructional areas, administrative suites, and offices. The existing classrooms have a variety of sizes and configurations, the suites are used as departmental offices for various programs in the College of Arts & Sciences, offices are used by faculty and graduate students. There also exists storage space, though it is not sufficiently sized, as well as mechanical space which has been carved out of extant program spaces throughout the building's history.

Existing Layout

The existing configuration has various deficiencies associated with its use. Building organization is not intuitive since classrooms and offices are scattered around the building and its five occupiable floors. Furthermore, the current configuration of restrooms is confusing for users: men's and women's restrooms are in different locations and levels throughout the building and a limited number are accessible. They do not conform to the University's goals of gender-inclusivity and universal accessibility.

Friendly Hall also lacks a "hearth" as described in Principle 11 of the *Campus Plan* 2022. This means the building does not have inviting space for students to wait for classes, socialize with peers, or meet with faculty.

Presently, Friendly Hall does not have properly sized mechanical space. The current mechanical areas have been appropriated from various classrooms and offices over the years which has resulted in disconnected and inefficient spatial allocations. The existing I.T. rooms are not built to University standard, may lack proper ventilation, and are not large enough for modern data technology centers.

Recommendations

The proposed reconfiguration of Friendly Hall accounts for the seismic upgrade, outlined in Section 7, which results in the removal of existing interior partitions. This allows for a new layout which will improve building organization and optimize the use of space. The replacement and centralization of building mechanical systems is also accounted for as outlined in Section 8.

Recommendations include:

- Replace all non-structural partitions after the seismic upgrade of the building.
- Establish common areas to create a hearth.
- Common areas will also serve as a place for students to meet and wait so that hallways do not become overcrowded in passing periods.
- Centralize and enlarge mechanical, electrical and I.T. rooms.
- Increase storage space throughout the building.
- Establish a clear and intuitive organization of programmed spaces.
- Replace existing stairs to create code-compliant egress and an improved user experience.

Additionally, two options for new layouts are proposed:

Baseline

This plan accounts for the building's central location in the Academic Core and proposes the reclamation of basement space in the east portion of the building. This will allow for additional instructional areas and common spaces for students.

Reduced Scope Alternate

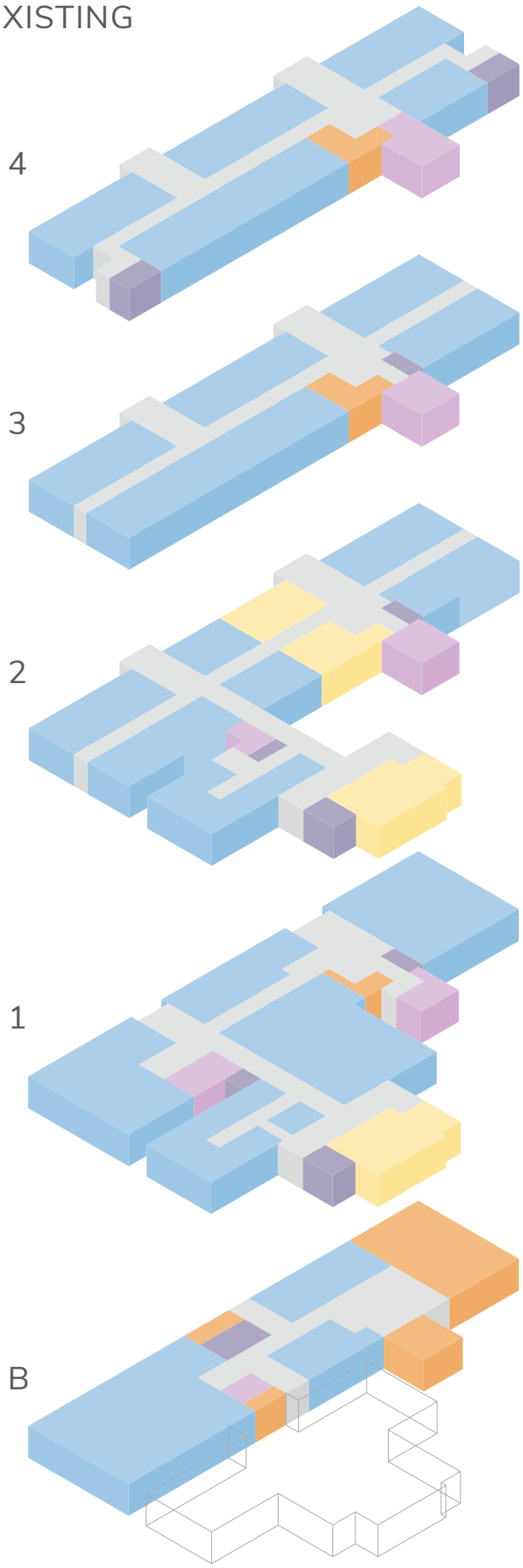
No change to the existing program or square footage totals except where necessary to accommodate modern mechanical, electrical or I.T. systems. This option establishes a cost for the replication of existing uses.

6.2 Proposed Floor Plans

New plan layouts should implement patterns from Principle 11 of the *Campus Plan* 2022 to the fullest extent possible. The following plans are meant to establish a project budget and do not represent a final design.

The lowering of the basement will allow mechanical chases to run laterally in the basement before turning vertically to serve the floors above. The repeated chases on either side of the corridors will carry either a supply or a return duct and will run vertically.

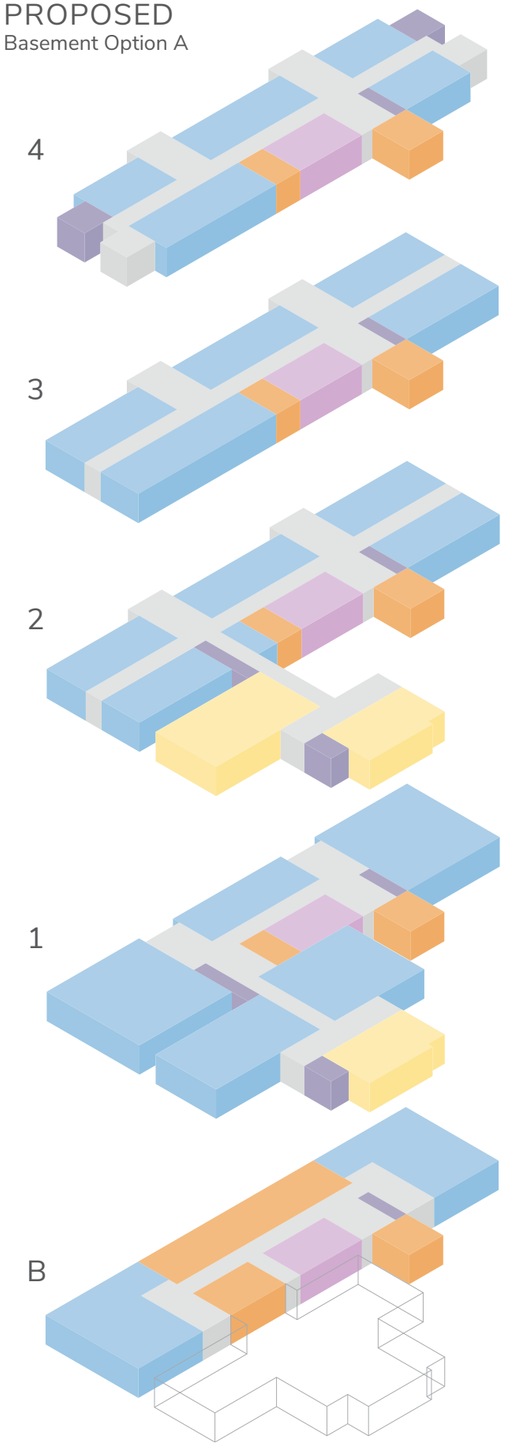
EXISTING



Existing Net Total:	**32,811 sf**
Assignable:	**23,260 sf**
Classrooms:	1,932 sf
Offices & Conference Rooms:	19,488 sf
Common Space:	840 sf
Non-assignable:	**10,444 sf**
Circulation:	7,388 sf
Restrooms:	802 sf
Storage	800 sf
Mechanical & Electrical:	1,454 sf

Shaft Space:	107 sf

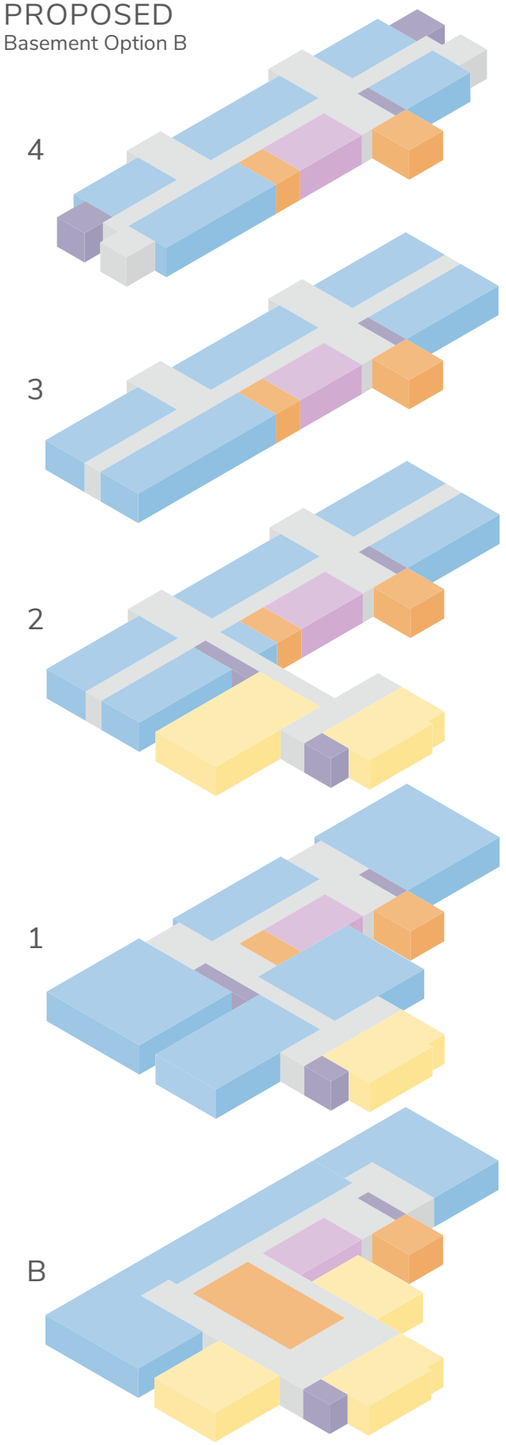
PROPOSED
Basement Option A



Option A Net Total:	**31,762 sf**
Assignable:	**19,321 sf**
Classrooms:	1,929 sf
Offices & Conference Rooms:	16,058 sf
Common Space:	1,334 sf
Non-assignable:	**11,707 sf**
Circulation:	7,248 sf
Restrooms:	1,416 sf
Storage	969 sf
Mechanical & Electrical:	2,074 sf
Shaft Space:	734 sf

Option A Net Change:	**-1,048 sf**
Assignable:	**-2,939 sf**
Classrooms:	-3 sf
Offices & Conference Rooms:	-3,430 sf
Common Space:	+494 sf
Non-assignable:	**+1,264 sf**
Circulation:	-140 sf
Restrooms:	+614 sf
Storage	+170 sf
Mechanical & Electrical:	+620 sf
Shaft Space:	+627 sf

PROPOSED
Basement Option B



Option B Net Total:	**35,020 sf**
Assignable:	**22,131 sf**
Classrooms:	3,538 sf
Offices & Conference Rooms:	16,758 sf
Common Space:	1,835 sf
Non-assignable:	**12,155 sf**
Circulation:	7,696 sf
Restrooms:	1,416 sf
Storage	1,138 sf
Mechanical & Electrical:	1,905 sf
Shaft Space:	734 sf

Option B Net Change:	**+2,210 sf**
Assignable:	**-129 sf**
Classrooms:	+1,606 sf
Offices & Conference Rooms:	-2,730 sf
Common Space:	+995 sf
Non-assignable:	**+1,712 sf**
Circulation:	+308 sf
Restrooms:	+614 sf
Storage	+339 sf
Mechanical & Electrical:	+451 sf
Shaft Space:	+627 sf

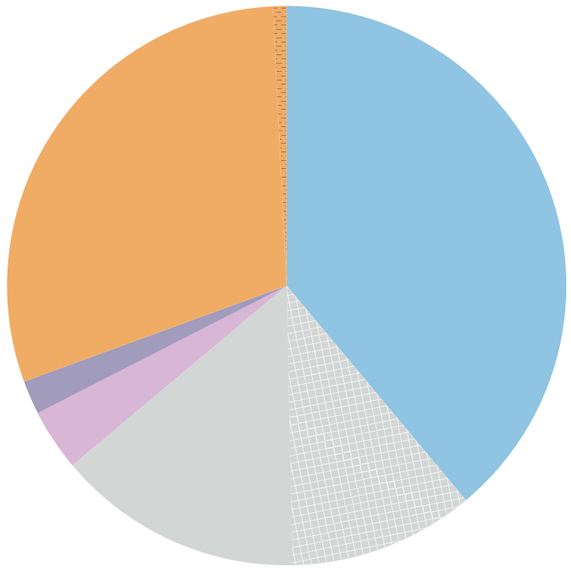
Proposed Basement Plan

Baseline

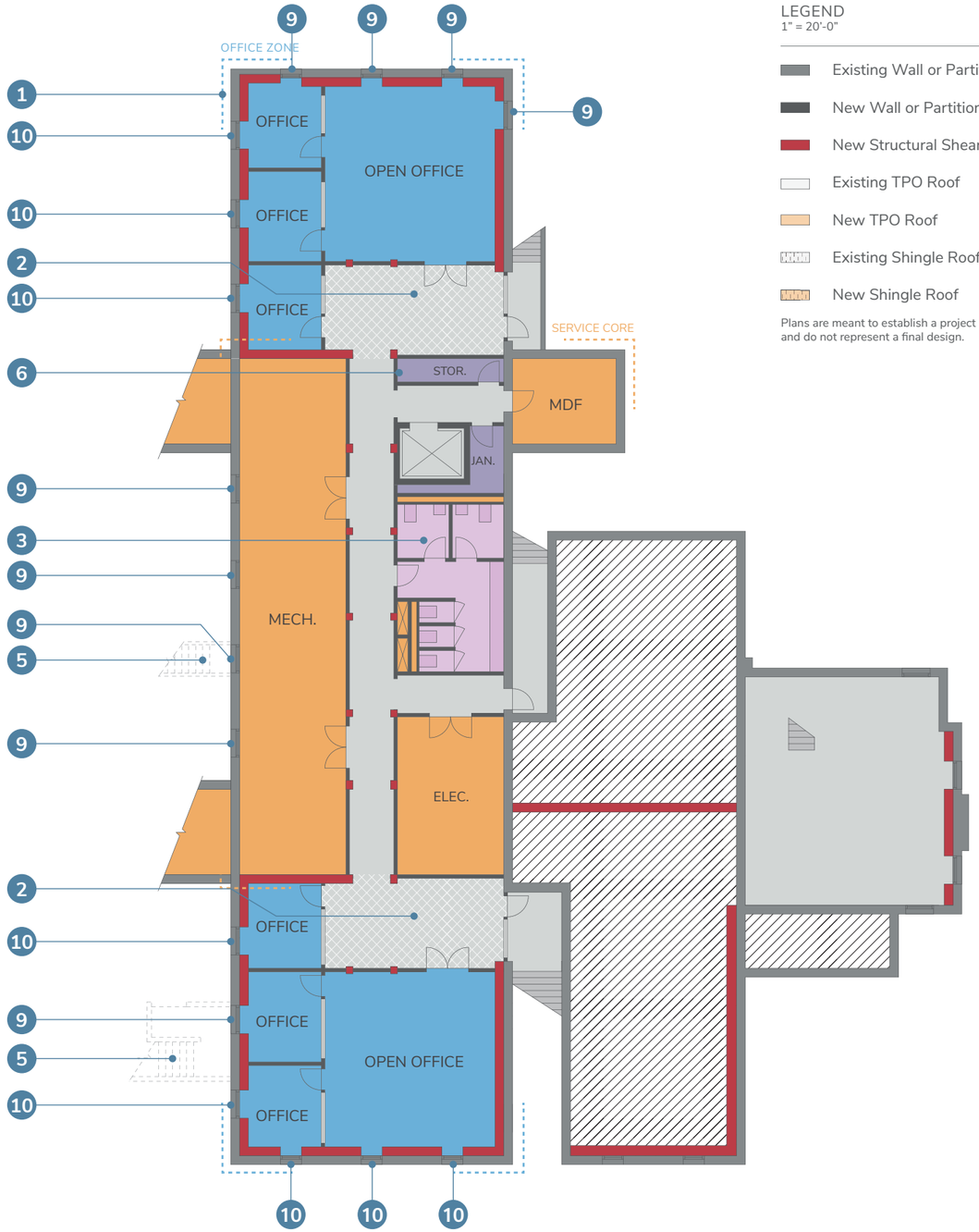
In this option, the basement is expanded to create three new classrooms, more office space and a centrally-located mechanical room. This will regain and add on to the square footage lost in other parts of the building due to mechanical and seismic upgrades.

1. **Organizational Clarity**
   Separation of programs makes wayfinding quick and intuitive.
2. **Building Hearth / Places to Wait**
   Larger common areas provide gathering space for students and faculty to socialize and study.
3. **Welcoming to All**
   Gender neutral restrooms accommodate all gender expressions.
4. **Universal Access**
   Larger and more prominent accessible lobby makes people of all abilities feel included.
5. **Historic Landscapes**
   The removal of character damaging exterior stairs, site walls, fencing and machanical units will restore the historic appearance.
6. **Enough Storage**
   Additional storage ensures that programmed spaces do not become cluttered and unusable.
7. **Faculty-Student Mix**
   Adjacent spaces for students and faculty create a collaborative and diverse learning environment
8. **Classroom Distribution**
   Varied classroom sizes provide flexible options for large or small classes.
9. **Quality of Light**
   Lightwells and enlarged windows will replace existing louvers, doors or windows to improve daylighting.
10. **Operable Windows**
    Lightwells and enlarged windows will be added to improve daylighting.

BASEMENT OPTION A



Assignable:	**3,042 sf**
Classrooms:	0 sf
Offices & Conference Rooms:	2,383 sf
Common Space:	659 sf
Non-assignable:	**2,324 sf**
Circulation:	657 sf
Restrooms:	313 sf
Storage	110 sf
Mechanical & Electrical:	1,244 sf
Shaft Space:	33 sf
Shear Walls:	387 sf
Interior Walls:	224 sf
Gross Interior Space	6,010 sf



LEGEND
1" = 20'-0"

- Existing Wall or Partition
- New Wall or Partition
- New Structural Shear Wall
- Existing TPO Roof
- New TPO Roof
- Existing Shingle Roof
- New Shingle Roof

Plans are meant to establish a project budget and do not represent a final design.

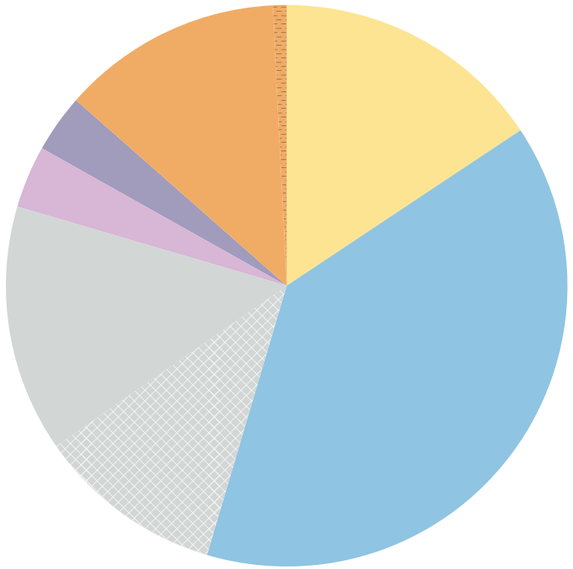
Proposed Basement Plan

Reduced Scope Alternate

The basement mechanical space will be expanded on the west side of the original building. Office space will be consolidated and improved in the remaining areas.

1. **Organizational Clarity**
   Separation of programs makes wayfinding quick and intuitive.
2. **Building Hearth / Places to Wait**
   Larger common areas provide gathering space for students and faculty to socialize and study.
3. **Welcoming to All**
   Gender neutral restrooms accommodate all gender expressions.
4. **Universal Access**
   Larger and more prominent accessible lobby makes people of all abilities feel included.
5. **Historic Landscapes**
   The removal of character damaging exterior stairs, site walls, fencing and machanical units will restore the historic appearance.
6. **Enough Storage**
   Additional storage ensures that programmed spaces do not become cluttered and unusable.
7. **Faculty-Student Mix**
   Adjacent spaces for students and faculty create a collaborative and diverse learning environment
8. **Classroom Distribution**
   Varied classroom sizes provide flexible options for large or small classes.
9. **Quality of Light**
   Lightwells and enlarged windows will replace existing louvers, doors or windows to improve daylighting.
10. **Operable Windows**
    Lightwells and enlarged windows will be added to improve daylighting.

BASEMENT OPTION B



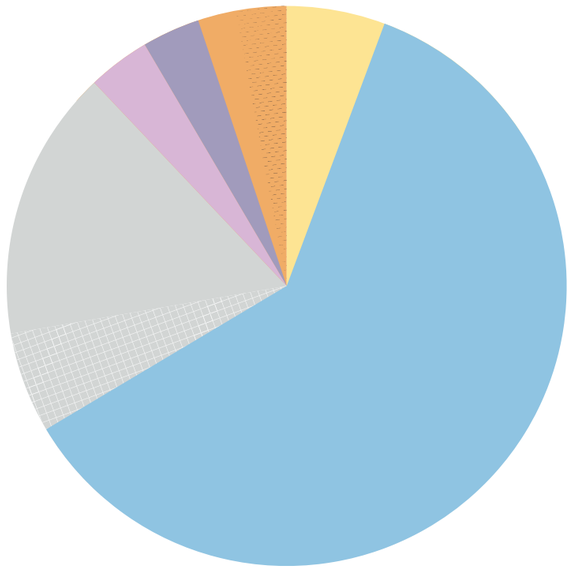
Assignable:	**5,852 sf**
Classrooms:	1,609 sf
Offices & Conference Rooms:	3,083 sf
Common Space:	1,160 sf
Non-assignable:	**2,772 sf**
Circulation:	1,105 sf
Restrooms:	313 sf
Storage	279 sf
Mechanical & Electrical:	1,075 sf
Shaft Space:	33 sf
Shear Walls:	387 sf
Interior Walls:	310 sf
Gross Interior Space	9,354 sf

Proposed First Floor Plan

The first floor retains its present uses, but the proposed plan addresses inefficiencies and undesirable conditions. Departmental offices will be located in office suites with an open office hybrid. The restroom configuration will be repeated on each floor to create an efficient and maintainable solution. They will be upgraded to be fully ADA accessible, gender-neutral spaces to promote University goals. An expanded lobby at the south entry creates a gathering space for students waiting to enter their classroom. An historically appropriate accessible entry will be added at the southwest entry.

1. **Organizational Clarity**
   Separation of programs makes wayfinding quick and intuitive.
2. **Building Hearth / Places to Wait**
   Larger common areas provide gathering space for students and faculty to socialize and study.
3. **Welcoming to All**
   Gender neutral restrooms accommodate all gender expressions.
4. **Universal Access**
   Larger and more prominent accessible lobby makes people of all abilities feel included.
5. **Historic Landscapes**
   The removal of character damaging exterior stairs, site walls, fencing and machanical units will restore the historic appearance.
6. **Enough Storage**
   Additional storage ensures that programmed spaces do not become cluttered and unusable.
7. **Faculty-Student Mix**
   Adjacent spaces for students and faculty create a collaborative and diverse learning environment
8. **Classroom Distribution**
   Varied classroom sizes provide flexible options for large or small classes.
9. **Quality of Light**
   Lightwells and enlarged windows will replace existing louvers, doors or windows to improve daylighting.
10. **Operable Windows**
    Lightwells and enlarged windows will be added to improve daylighting.

FIRST FLOOR



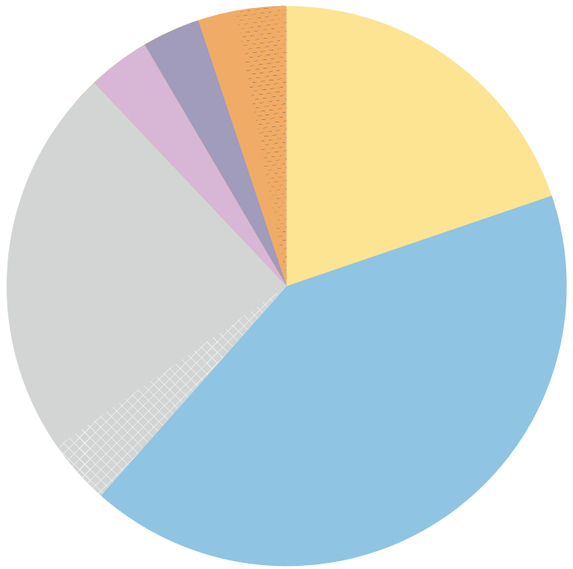
Assignable:	**6,388 sf**
Classrooms:	568 sf
Offices & Conference Rooms:	5,390 sf
Common Space:	430 sf
Non-assignable:	**1,898 sf**
Circulation:	1191 sf
Restrooms:	313 sf
Storage	244 sf
Mechanical & Electrical:	150 sf
Shaft Space:	216 sf
Shear Walls:	387 sf
Interior Walls:	441 sf
Gross Interior Space	9,330 sf

Proposed Second Floor Plan

The second floor retains its present uses, but the proposed plan addresses inefficiencies and undesirable conditions. The stairwells at the west facade will be reconfigured to achieve code compliance and improve user experience. The interior stairwell of the east addition will be made code compliant and will receive a fire rated enclosure allowing for the removal of the exterior stair on the south facade which is disruptive to the historic architecture. Classrooms will be consolidated and arranged around a gathering space in the East Wings of the building.

1. **Organizational Clarity**
   Separation of programs makes wayfinding quick and intuitive.
2. **Building Hearth / Places to Wait**
   Larger common areas provide gathering space for students and faculty to socialize and study.
3. **Welcoming to All**
   Gender neutral restrooms accommodate all gender expressions.
4. **Universal Access**
   Larger and more prominent accessible lobby makes people of all abilities feel included.
5. **Historic Landscapes**
   The removal of character damaging exterior stairs, site walls, fencing and machanical units will restore the historic appearance.
6. **Enough Storage**
   Additional storage ensures that programmed spaces do not become cluttered and unusable.
7. **Faculty-Student Mix**
   Adjacent spaces for students and faculty create a collaborative and diverse learning environment
8. **Classroom Distribution**
   Varied classroom sizes provide flexible options for large or small classes.
9. **Quality of Light**
   Lightwells and enlarged windows will replace existing louvers, doors or windows to improve daylighting.
10. **Operable Windows**
    Lightwells and enlarged windows will be added to improve daylighting.

SECOND FLOOR



Assignable:	**4,424 sf**
Classrooms:	1,361 sf
Offices & Conference Rooms:	2,818 sf
Common Space:	245 sf
Non-assignable:	**2,965 sf**
Circulation:	2,058 sf
Restrooms:	313 sf
Storage	329 sf
Mechanical & Electrical:	265 sf
Shaft Space:	199 sf
Shear Walls:	387 sf
Interior Walls:	433 sf
Gross Interior Space	8,408 sf

LEGEND
1" = 20'-0"

- Existing Wall or Partition
- New Wall or Partition
- New Structural Shear Wall
- Existing TPO Roof
- New TPO Roof
- Existing Shingle Roof
- New Shingle Roof

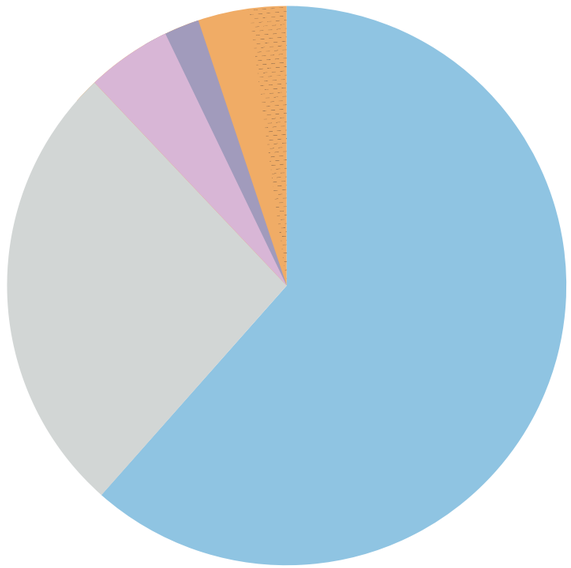
Plans are meant to establish a project budget and do not represent a final design.

Proposed Third Floor Plan

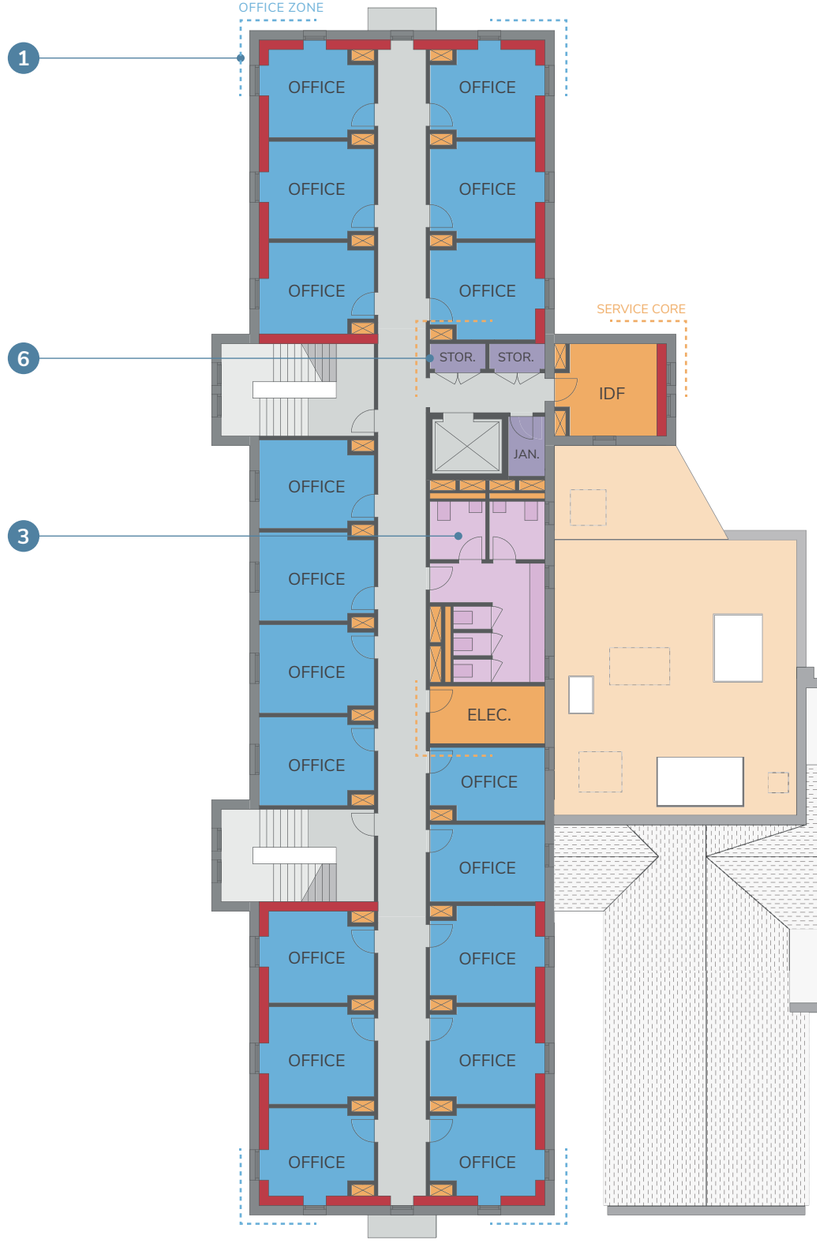
The third floor retains its present uses, but the proposed plan addresses inefficiencies and undesirable conditions. The third floor will remain a double-loaded corridor with office space and the central bathroom core similar to other levels.

1. **Organizational Clarity**
   Separation of programs makes wayfinding quick and intuitive.
2. **Building Hearth / Places to Wait**
   Larger common areas provide gathering space for students and faculty to socialize and study.
3. **Welcoming to All**
   Gender neutral restrooms accommodate all gender expressions.
4. **Universal Access**
   Larger and more prominent accessible lobby makes people of all abilities feel included.
5. **Historic Landscapes**
   The removal of character damaging exterior stairs, site walls, fencing and mechanical units will restore the historic appearance.
6. **Enough Storage**
   Additional storage ensures that programmed spaces do not become cluttered and unusable.
7. **Faculty-Student Mix**
   Adjacent spaces for students and faculty create a collaborative and diverse learning environment
8. **Classroom Distribution**
   Varied classroom sizes provide flexible options for large or small classes.
9. **Quality of Light**
   Lightwells and enlarged windows will replace existing louvers, doors or windows to improve daylighting.
10. **Operable Windows**
    Lightwells and enlarged windows will be added to improve daylighting.

THIRD FLOOR



Assignable:	**2,986 sf**
Classrooms:	0 sf
Offices & Conference Rooms:	2,986 sf
Common Space:	0 sf
Non-assignable:	**2,291 sf**
Circulation:	1,620 sf
Restrooms:	313 sf
Storage	93 sf
Mechanical & Electrical:	265 sf
Shaft Space:	161 sf
Shear Walls:	252 sf
Interior Walls:	355 sf
Gross Interior Space	6,045 sf



LEGEND
1" = 20'-0"

- Existing Wall or Partition
- New Wall or Partition
- New Structural Shear Wall
- Existing TPO Roof
- New TPO Roof
- Existing Shingle Roof
- New Shingle Roof

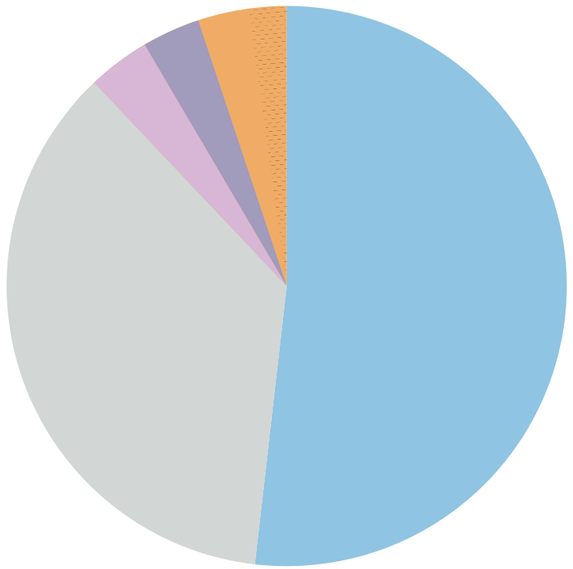
Plans are meant to establish a project budget and do not represent a final design.

Proposed Fourth Floor Plan

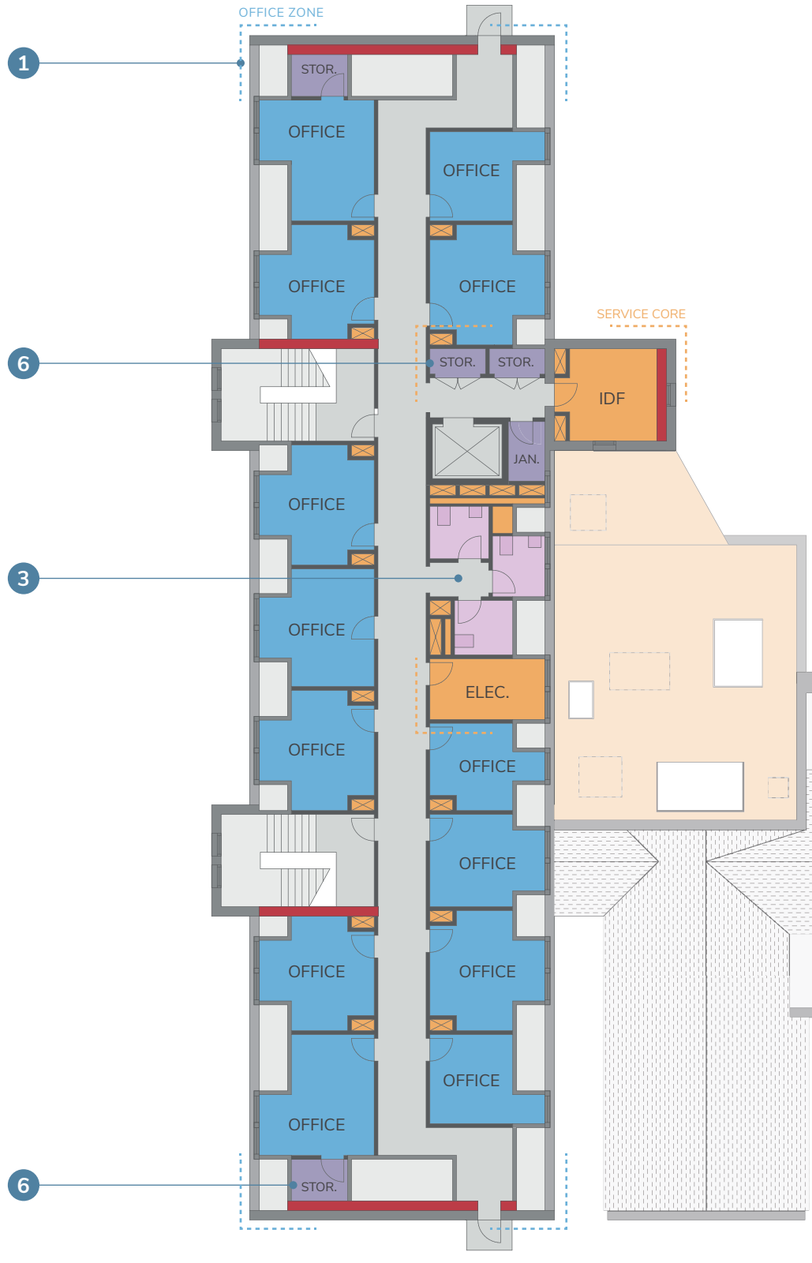
The fourth floor retains its present uses, but the proposed plan addresses inefficiencies and undesirable conditions. Because of the low clearances from the dormers and roof shape, the bathrooms on the fourth floor will consist of three single occupant accessible restrooms.

1. **Organizational Clarity**
   Separation of programs makes wayfinding quick and intuitive.
2. **Building Hearth / Places to Wait**
   Larger common areas provide gathering space for students and faculty to socialize and study.
3. **Welcoming to All**
   Gender neutral restrooms accommodate all gender expressions.
4. **Universal Access**
   Larger and more prominent accessible lobby makes people of all abilities feel included.
5. **Historic Landscapes**
   The removal of character damaging exterior stairs, site walls, fencing and mechanical units will restore the historic appearance.
6. **Enough Storage**
   Additional storage ensures that programmed spaces do not become cluttered and unusable.
7. **Faculty-Student Mix**
   Adjacent spaces for students and faculty create a collaborative and diverse learning environment
8. **Classroom Distribution**
   Varied classroom sizes provide flexible options for large or small classes.
9. **Quality of Light**
   Lightwells and enlarged windows will replace existing louvers, doors or windows to improve daylighting.
10. **Operable Windows**
    Lightwells and enlarged windows will be added to improve daylighting.

FOURTH FLOOR



Assignable:	**2,481 sf**
Classrooms:	0 sf
Offices & Conference Rooms:	2,481 sf
Common Space:	0 sf
Non-assignable:	**2,229 sf**
Circulation:	1,722 sf
Restrooms:	164 sf
Storage	193 sf
Mechanical & Electrical:	150 sf
Shaft Space:	125 sf
Shear Walls:	41 sf
Interior Walls:	267 sf
Gross Interior Space	5,143 sf



LEGEND
1" = 20'-0"

- Existing Wall or Partition
- New Wall or Partition
- New Structural Shear Wall
- Existing TPO Roof
- New TPO Roof
- Existing Shingle Roof
- New Shingle Roof

Plans are meant to establish a project budget and do not represent a final design.

Floor Finishes - Figure 6.3.1

Ceiling Finishes - Figure 6.3.2

Wall Finishes - Figure 6.3.3

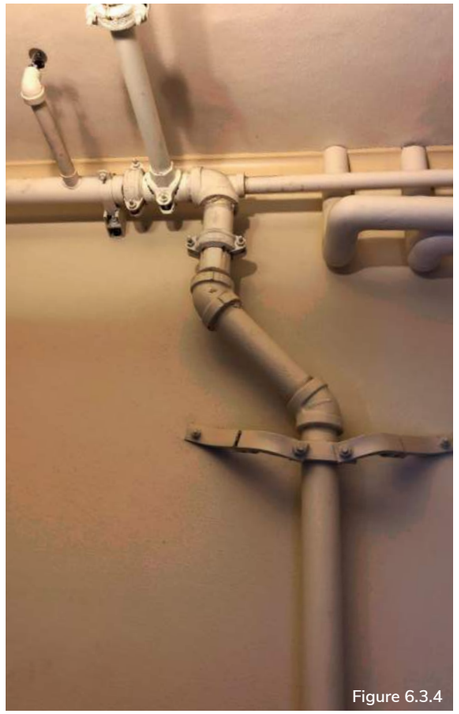


Figure 6.3.4

Figure 6.3.5

6.3 Interiors

Existing Conditions

Friendly Hall's long history on the University of Oregon campus has resulted in numerous renovations and patchwork solutions over its lifespan. The resulting interior spaces are not consistent and have been aged, worn, or dated in many instances.

- Many locations throughout the building have floor, ceiling or wall finishes that are showing considerable age.
  - o Aged and damaged finishes may detract from positive user experience and do not conform to current University standards.
- Finishes have been applied at different points in the building's history resulting in inconsistent and undesirable conditions. The varied conditions can also cause difficulty with wayfinding by reducing intuitive organizational cues.
  - o Flooring finishes are non-continuous and, in many instances, disruptive to the historic character (figure 6.3.1).
  - o Ceilings have been installed at different points in the building's history resulting in inconsistent appearances (figure 6.3.2).
  - o Wall finishes (including wall material, texture, color, bases, moldings, and wainscoting) have been applied haphazardly due to previous renovations (figure 6.3.3).
- The original design did not account for modern building systems such as fire sprinklers, ventilation air registers, electrical conduit, and plumbing components (figure 6.3.4).
- Historic detail has been mostly removed with the exception of select examples (some doors and historic mailboxes) referenced in Section 1.
- Many existing doors require accessible hardware and code-compliant clearances (figure 6.3.5).

Recommendations

The historic character of the building should be complemented by updated finishes throughout. The renovation of other historic buildings on campus provide useful precedents for the Friendly Hall project.

- The proposed seismic upgrade will remove all of the interior partitions as well as the interior wall finishes at the brick walls allowing for a consistent finish palette to be applied throughout.
  - o New interior finishes will be aesthetically complementary to the historic architecture.
  - o New interior finishes will aid in wayfinding and provide an intuitive sense of building organization through visual cues.
  - o New interior finishes will accommodate and enhance the proposed use of each room.
  - o New interior finishes will be contemporary and durable for improved maintenance and increased lifespan.
- Notable existing historic detail, like code-compliant original doors and the first floor mailboxes, should be restored when feasible.
- New classrooms and offices will meet current use requirements in lighting, acoustics, and IT connectivity.
- The construction of new partitions and ceilings will allow building systems (fire sprinklers, ventilation air registers, electrical conduit and plumbing components) to be properly concealed.

Existing Stairwell

Renovated Stairwell Precedent (Soderstrom Architects)

Existing Classroom

Renovated Classroom Precedent (Hennebery Eddy Architects)

Existing Restrooms

Gender Inclusive Restroom Precedent (Hacker Architects)

Existing Common Area

Renovated Common Area Precedent (Soderstrom Architects)

STRUCTURAL & SEISMIC

7.1 Overview of Existing Structure

The available architectural and structural drawings were provided by the University and were reviewed as part of this feasibility project. The available drawings provide very little to no information on the existing structure. Reasonable assumptions have been made regarding the type and configuration of structural elements. Photographs taken by Soderstrom Architects during their site visit on December 8, 2021, were also reviewed to assess the existing structural conditions where readily exposed to view. No destructive/exploratory testing and localized demolition was performed as part of this effort. Future upgrade work will require additional investigations to verity framing assumptions and confirm member sizes, URM wall thickness, columns sizes, etc. as indicated on the existing structural drawings. Additionally, as part of any seismic upgrade design, a material testing program (e.g. brick shear tests, epoxy anchor pull test, concrete compressive strength tests, etc.) will be required. Based on the review of existing documents and photographs, the structural system for each portion of the building are as follows:

Original West Wing (1893)

Based on review of the available drawings, photographs, and knowledge of similar buildings, the structure for the original buildings consists of wood framed floors with sawn lumber joists, beams and columns with tongue and groove decking. The joists span in multiple directions supported on a series of interior wood beams framed along the central corridor. The framing is also supported on the exterior walls which consist of unreinforced brick masonry (URM). The basement floor is concrete slab-on-grade, and the existing foundations are unreinforced mortared stone at both the interior columns and exterior URM walls. The building's mansard roof is wood framed with dormer windows at the occupiable fourth floor attic space.

East Wing Addition (Date Unknown) & Extension (1914)

The structure for the additions also consists of URM perimeter walls and wood framed floors and roofs over a crawl space. The foundations for this portion of the building appears to be parged concrete over mortared stone. The north portion of the addition has a flat roof currently supporting several mechanical units. The remaining portions of the roof are gabled.

Proposed Renovation And Program Alterations

The proposed renovations to Friendly Hall to mitigate deficiencies, enhance program, and address deferred maintenance items will include reconfiguring the floor plans and providing new HVAC, plumbing, and electrical systems. New partitions will be configured to better fit the program and classroom and office sizes. The existing stairs will be replaced with new stairs that provide code compliant egress while fitting in with the historical context of the remaining building.

The entire basement floor of the original western portion of the building will be lowered by up to 4 feet to increase the usability of the basement space. The basement work will require a new elevator shaft be constructed. An option to also lower the basement level in the east portion of the building and excavate out the crawl space and pour a new basement slab in the central portion of the building is being considered. This option would provide occupiable space throughout the entire building footprint.

7.2 Structural Assessment

Based on our limited review, we did not note any signs of significant distress or damage to the primary building frame or elements. We recommend that during the project, any large or noticeable cracking or other signs of distress that are discovered should be evaluated and that cracks be injected with epoxy grout to protect and preserve structural elements.

The existing basement level is proposed to be lowered to increase functionality and program space. The existing basement slab would be removed and excavated to lower the original basement floor slab approximately 4 feet. The existing URM basement walls would be underpinned by new grade beams, piles caps and micro or helical piles as indicated on the structural concept plans. Additional excavation on the exterior of the building would be required to install the new piles and build out the new grade beam and pile caps in short sections without fully undermining the load bearing support of the exterior URM walls. New spread footings would be needed at existing interior columns along with a new slab on grade and elevator pit.

The original building and major additions of the building were constructed before seismic demands were

considered as part of the structural design. Additionally, URM buildings have historically performed very poorly in seismic events. Therefore, it is highly likely that Friendly Hall in its current state would perform poorly in an earthquake and experience significant damage, and potential partial or total collapse. Extensive seismic upgrade work to all portions of the facility would be required to bring the building up to life safety standards of modern building codes (e.g. adding new concrete shear walls, strengthening floor diaphragms, adding connections between URM walls and floors/roofs, etc.).

7.3 Seismic Provisions

For new work requiring a building permit, structural impacts will be governed by the latest edition of the Oregon Structural Specialty Code (OSSC). If a seismic upgrade of the full building is not pursued as part of the project, applicable provisions for seismic upgrade work will be triggered as described below:

1. Change of Risk Category
   Certain changes of occupancy or use may trigger a change in the building's risk category as defined by OSSC Table 1604.5. It is assumed that proposed renovations and improvements will not change the current risk category of the building which is assumed to be III (Special Occupancy Structure – Adult Education Facility with 500 or more occupants).
2. Building Additions and Structural Alterations
   New building additions shall be seismically separated from the existing structures and alterations shall be configured so that they do not cumulatively add more than 10% seismic demand or decrease 10% of structural capacity of lateral resisting elements. The primary seismic force resisting elements for these buildings are wood and concrete floor and roof diaphragms (sheathing and slabs) and the URM and reinforced concrete perimeter shear walls.

7.4 Structural Upgrades

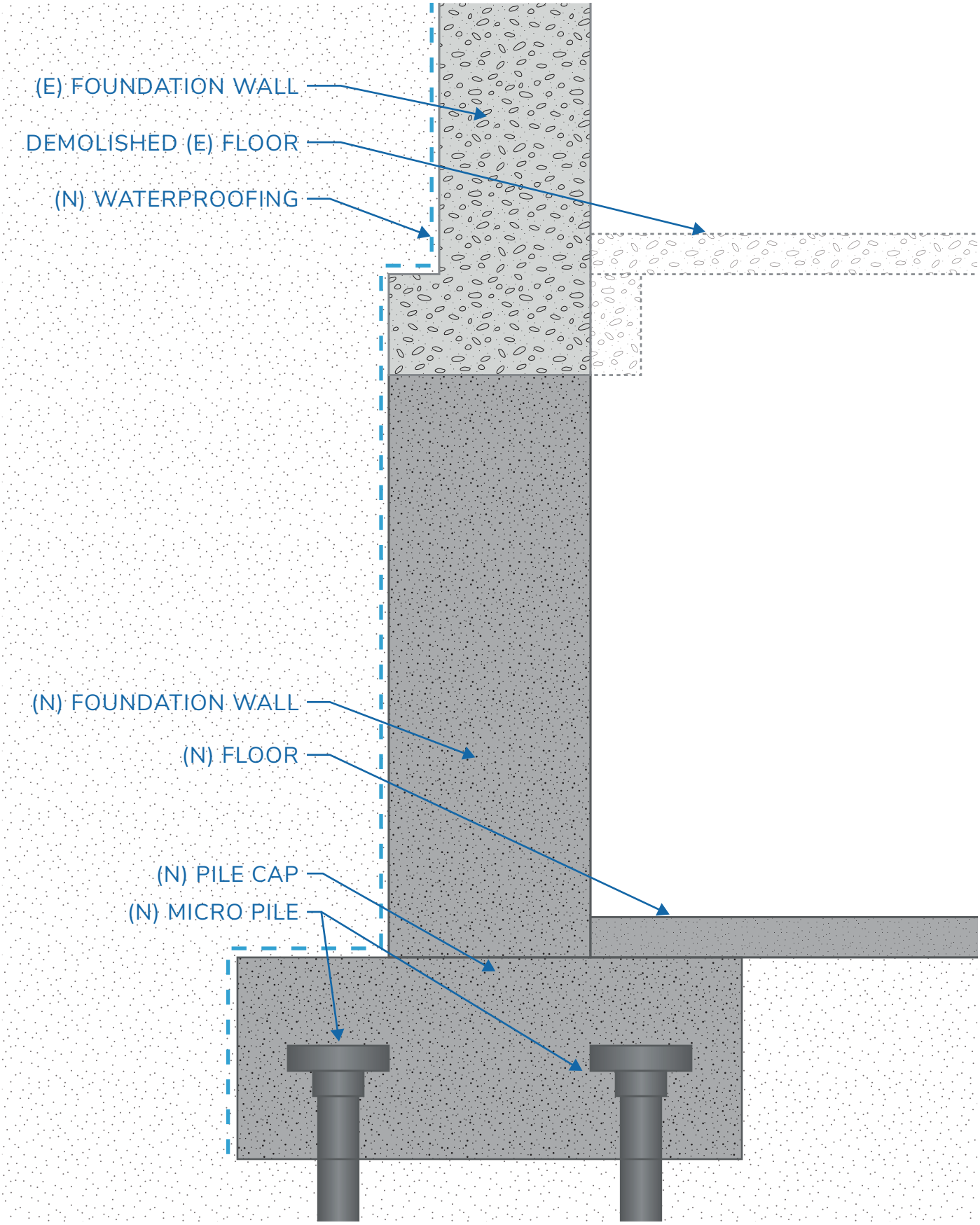
The following information is intended to provide general information for the seismic upgrade of Friendly Hall and to supplement the upgrade concept plans provided as part of this assessment. The performance objective anticipated for the building is the Life Safety Standard which would be in conformance with the current building code. Voluntary enhanced performance objectives, such as Immediate Occupancy can be reviewed as necessary and would require more significant upgrade work.

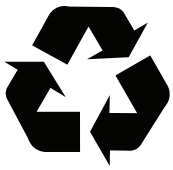
- Vertical Seismic Force Resisting System: Provide new, reinforced concrete shear walls in both directions on each side of the building perimeter. New walls are to be placed against and positively attached to existing URM walls. The new walls will extend from the foundation to the underside of the roof framing. The new walls may be cast-in-place concrete or shotcrete provided all necessary detailing and preconstruction testing is provided. Reference the structural concept diagrams for locations and additional information for the new shear walls.
- Foundations: Provide new concrete spread and strip footings below each new shear wall as indicated on the structural concept plans. Epoxy dowels to be provided between new and existing foundation elements. Coordination with existing underground utilities and slab-on-grade patching will be required at new footings. Depending on depth of existing foundations, some sequencing work may be required to install new footings to limit undermining of existing building components.
- Diaphragms: Each diaphragm level (first through fourth floors and roof) will receive new 5/8-inch plywood sheathing overlaying a ¾-inch plywood layer applied over the existing sheathing to avoid solid blocking below. Assume a nailing pattern of 12-inches in the field with 3-inches at all panel edges. Thresholds at stairs and elevator will need to be evaluated/adjusted for the slight increase in floor elevation from the new sheathing.
- Collectors: Collectors (drag struts) will be required at the shear walls and along the perimeter URM walls in each direction at all levels. Collectors will consist of steel angles and plates with extents and sizes as shown on the structural concept plans.
- URM Wall to Diaphragm Connections: Positive connections between each diaphragm level and the exterior URM walls will be required. Each connection will consist of threaded epoxy anchors installed at an angle into the URM wall with a Simpson hold-down connector. Assume some amount of additional blocking will be required to anchor the connector to the existing wood framing. Assume a 4-feet on center spacing along the entire perimeter of the building and along each interior URM wall. At new shear wall locations, anchors will also be required between the new concrete and existing wood floor/roof framing.
- Diaphragm Cross Ties: Provide light-gage straps that extend from the exterior URM walls toward the interior of the building at each diaphragm level. Assume

straps are approximately 15 feet long and spaced at approximately 4-feet on center (to align with the wall to diaphragm connections). Cross ties are also required at joists discontinuities over beams, columns and girders as shown in the structural concept plans.

- Secondary Gravity Posts: Provide new steel HSS posts to provide a secondary support where primary beams or girders are supported on the URM walls. Each post would extend from the roof down to the foundation. At this time, these conditions are not known to occur, however, it is assumed that they may be discovered during as-built framing review during more destructive investigations.
- Roof Parapet Bracing: Provide URM parapet bracing at the roof gables as indicated in the structural diagrams.
- Non-Structural: The proposed renovations and alterations of the building will require new interior framing and support for MEP equipment and distribution. These new elements will be braced and anchored as required by the current building code.
- Geotechnical Hazards: Any future project should have a geotechnical investigation performed to assess geological seismic hazards and allowable soil bearing pressure for new foundations. It should be noted that according to the hazard maps produced by Oregon's Department of Geology and Mineral Industries (DOGAMI), the building site is near an area that has a moderate risk of liquefaction. However, these hazard maps are very general and do not always accurately predict geological hazards at a particular site, which is why we recommend a site specific soils assessment as part of any design work.

7.5 Structural Diagrams





This page intentionally blank
for double-sided printing

Basement

- Excavated areas will receive exterior waterproofing.
- A new elevator pit and additional stairs will be installed as necessary to meet the new level.
- 14” concrete shear walls will be added on the interior face of existing URM walls to resist lateral loads.
- New column footings will be added
- Basement walls at the new lowered floor will be underpinned with new concrete foundations.
- New pile caps and micro helical piles will anchor the building at the underpinned concrete walls.
- Strong back steel supports will be added to the foundations walls that do not require underpinning.

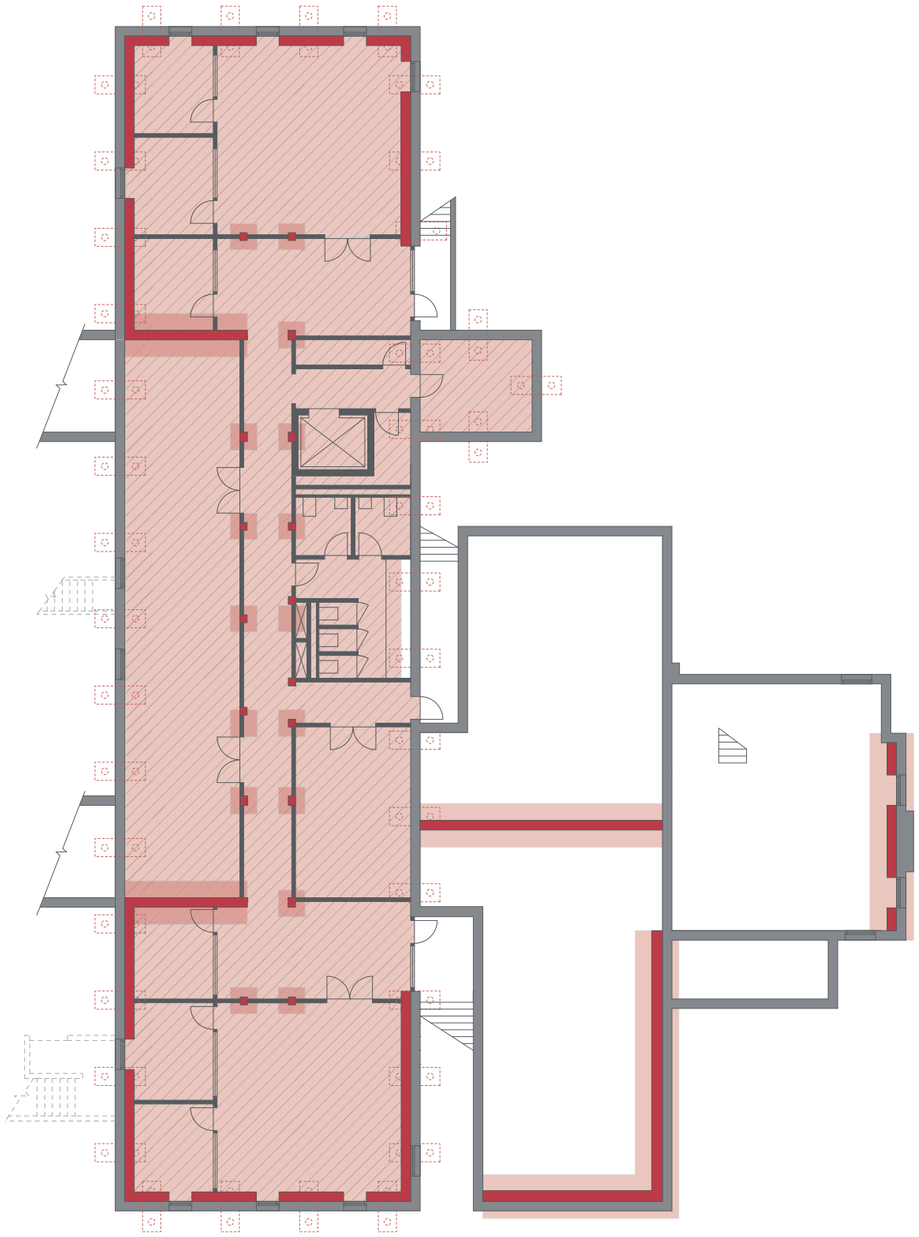
Baseline

- The entire footprint of the building will be made occupiable.
  - o The floor of the West Wing basement will be lowered a minimum of 4’-0”.
  - o The floor of the East Wing basement will be lowered to align to the same elevation.
  - o The central crawlspace will be excavated and will connect the two wings with a new occupiable floor and extended foundations

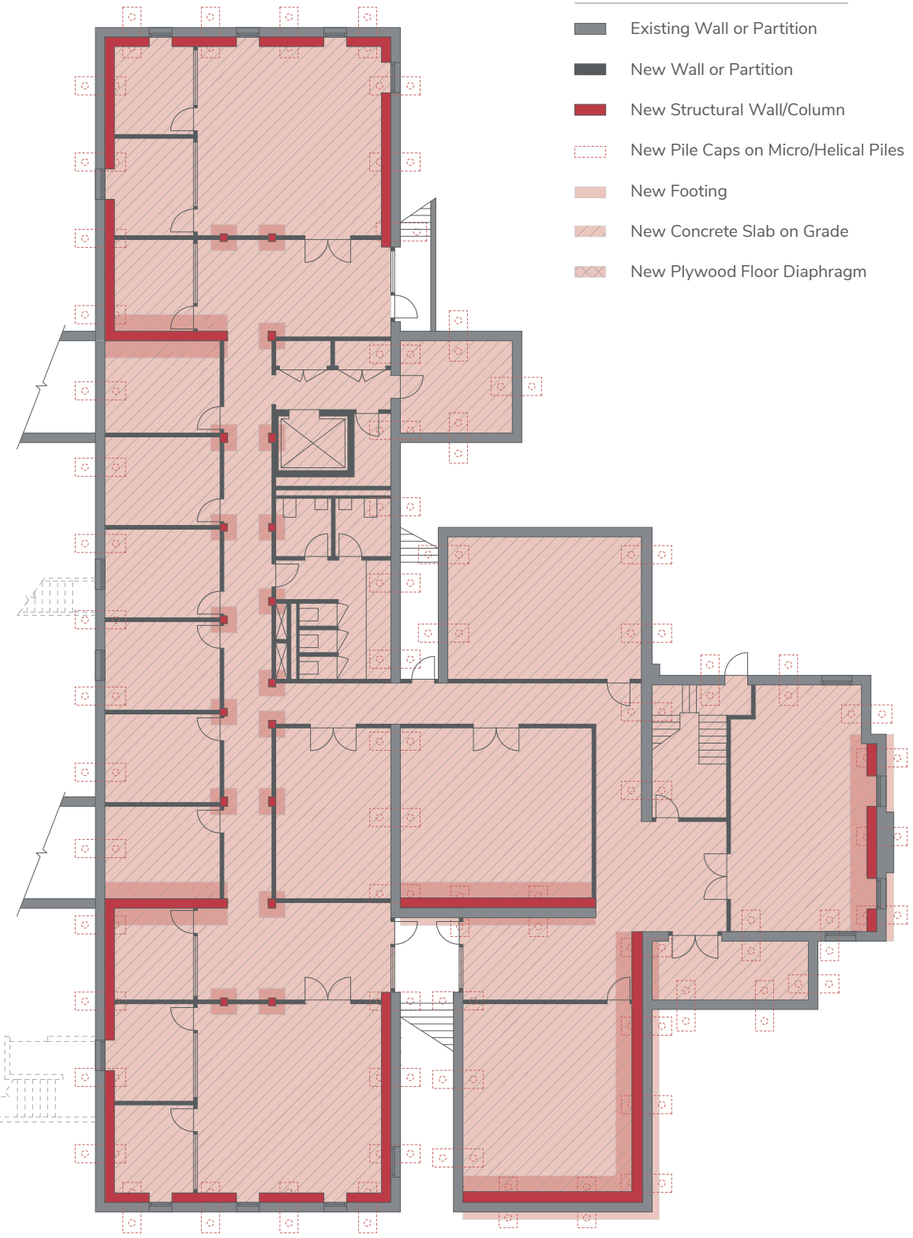
Reduced Scope Alternate

- The floor of the West Wing basement will be lowered a minimum of 4’-0”.

BASEMENT - BASELINE



BASEMENT - EAST BUILDOUT



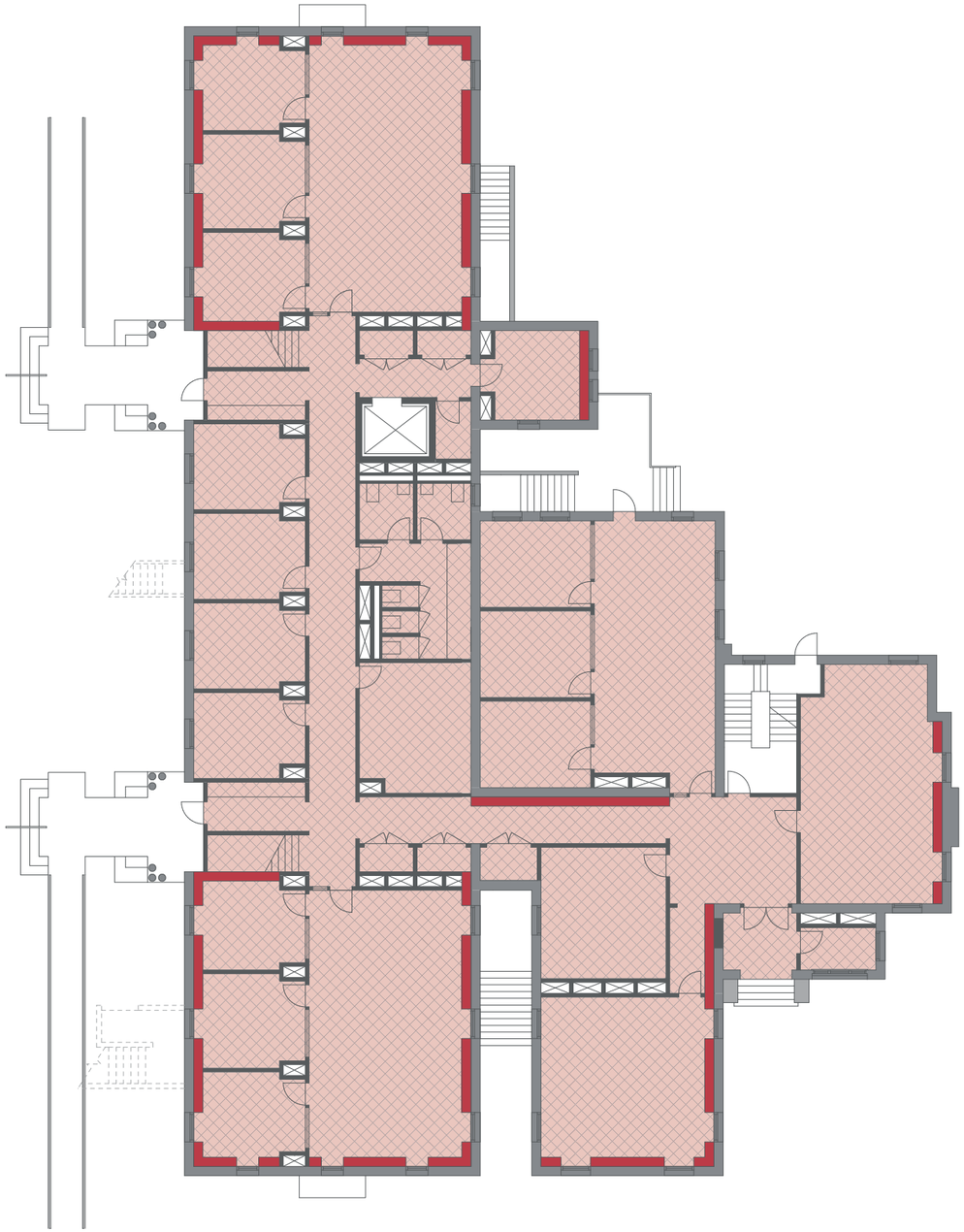
LEGEND
1” = 20’-0”

- Existing Wall or Partition
- New Wall or Partition
- New Structural Wall/Column
- New Pile Caps on Micro/Helical Piles
- New Footing
- New Concrete Slab on Grade
- New Plywood Floor Diaphragm

First & Second Floors

- 14” concrete shear walls will be added on the interior face of existing URM walls to resist lateral loads.
- Wall strap/anchors will be added on the interior face of all existing URM walls.
- A new plywood layer and metal straps will provide added reinforcement to the floor diaphragms allowing the safe transfer of lateral loads.
  - o This will require the removal of all existing non-structural partitions.
- Existing joists and columns will be reinforced as necessary

FIRST FLOOR



SECOND FLOOR

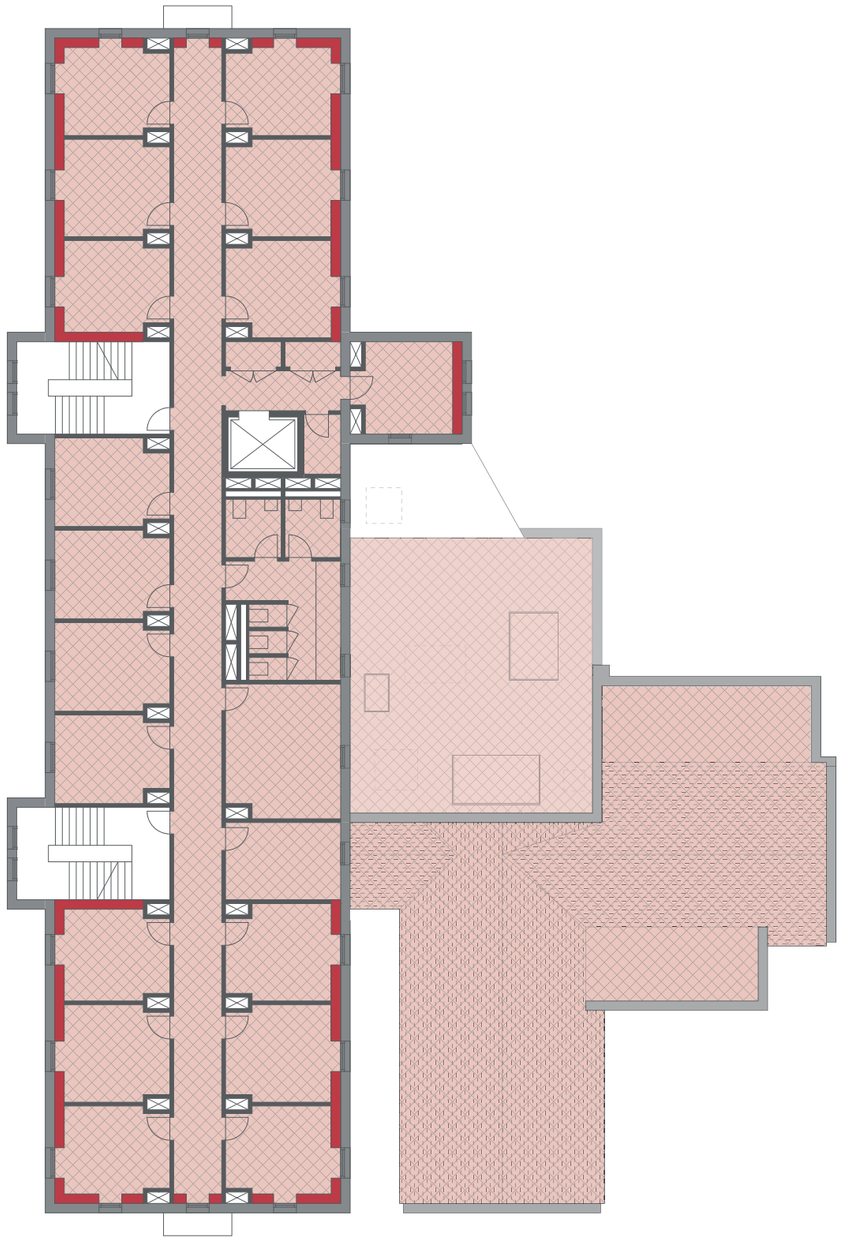
LEGEND
1” = 20’-0”

- Existing Wall or Partition
- New Wall or Partition
- New Structural Wall/Column
- New Pile Caps on Micro/Helical Piles
- New Footing
- New Concrete Slab on Grade
- New Plywood Floor Diaphragm

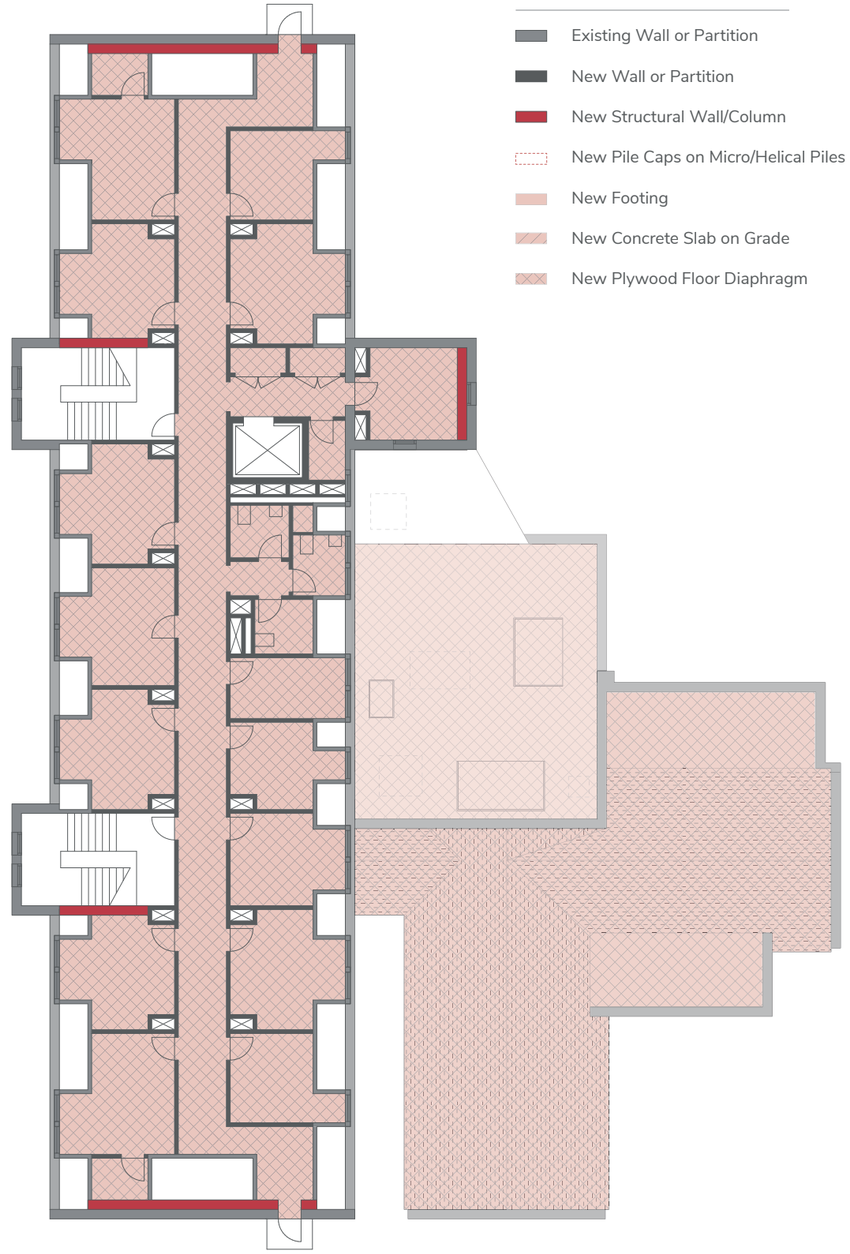
Third & Fourth Floors

- 14” concrete shear walls will be added on the interior face of existing URM walls to resist lateral loads.
- Wall strap/anchors will be added on the interior face of all existing URM walls.
- A new plywood layer and metal straps will provide added reinforcement to the floor diaphragms allowing the safe transfer of lateral loads.
  - o This will require the removal of all existing non-structural partitions.
- Existing joists and columns will be reinforced as necessary
- Parapets will be secured to the structure with new dowels and improved connections.

THIRD FLOOR



FOURTH FLOOR



LEGEND
1” = 20’-0”

- Existing Wall or Partition
- New Wall or Partition
- New Structural Wall/Column
- New Pile Caps on Micro/Helical Piles
- New Footing
- New Concrete Slab on Grade
- New Plywood Floor Diaphragm

This page intentionally blank
for double-sided printing

BUILDING SYSTEMS

8.1 Mechanical & HVAC

Existing System

The heating media is provided by a central steam loop. A heat-exchanger (figure 8.1.1) coverts the steam energy to heating hot water. An expansion tank and two condensate return systems (figure 8.1.2) support the heating system, and pump equipment distribute the heating hot water. Two indoor air handling units with hot water coils provided tempered air to the corridors. Distribution equipment consists of metal ductwork. Controls are a hybrid configuration with pneumatic and digital inputs, and a local compressor provided control air (figure 8.1.3). Permitter radiators support the system and utilize the heating hot water. Rooftop package units (figure 8.1.4), ductless split systems (figure 8.1.5), an indoor Trane split system, and window air conditioning units (figure 8.1.6) serve select rooms provide either heating, cooling, or both. An inline centrifugal fan, utility set fans and propeller fans (figure 8.1.7-9) serve smoke exhaust, restrooms, and general exhaust needs. The HVAC system varies in age and appears in adequate condition, but most of the equipment is at or near the end of its lifecycle and should be replaced to improve performance and energy efficiency and to reduce maintenance.


Figure 8.1.1


Figure 8.1.2


Figure 8.1.3

Recommendations

Hydronic distribution is much more energy efficient than air systems. In older buildings it improves interior architectural conditions since the original design did not accommodate large diameter ducts above the ceiling plane in each room. Retrofitting with forced air systems requires lowering the ceilings which will interfere with window heights and damage the visual character of the original spaces.

- All HVAC systems to be replaced with a single integrated hydronic system utilizing hot and chilled water throughout.
    - o Terminal devices will be a combination of hot water radiators and chilled beams.
    - o The system will be managed by all new DDC controls so that adjustments and reprogramming can be made remotely through the Building Automation System (BAS).
- Cooling will be added to the entire building to extend the habitability of the building in the swing seasons


Figure 8.1.4


Figure 8.1.5


Figure 8.1.6

and summer.

- Campus chilled water will be provided from the main loop.
- Due to routing and piping length concerns, include a dedicated chilled water pump to ensure proper chilled water flow is achieved for this building.
- New vault and upstream piping upgrades maybe required.

- Ventilation will be provided by a Dedicated Outdoor Air System (DOAS).
  - Ventilation ductwork shall be routed laterally at the basement ceiling with supply and return shall be routed vertically to serve each classroom.
  - Ventilation air can be provided at low velocities to reduce fan energy use. The ducts required are a fraction of the size of those used in VAV systems.
  - DOAS fan equipment is intended to be located in the basement.
  - An air-to-air heat exchanger in the DAOS unit, will minimize the energy used to precondition ventilation air. This system would expect a total energy recovery efficiency of around 78%.
  - DOAS systems do not require insulation of the ducts, since the air is desired to be at the same temperature as the interior of the building.

- The new layout, consisting of offices and support spaces, will be conditioned by an active chilled beam system.
  - Active chilled beams properly sized and located in each space will receive outdoor air brought into the building via the basement DOAS unit.
  - After passing through the DOAS unit, the air will be ducted through a hot water and chilled water coil in order to become neutral temperature air. That air will then be ducted to each room for distribution to the active chilled beams.
  - Each room will have its own variable air volume terminal box (VAV) in order to modulate airflow to the space on a room-by-room basis.
  - Return air will be ducted from each space via a single return grille.

- Spaces with extensive amounts of exterior glazing will have hot water fin tubes located along exterior walls.
  - Hot water supply and return piping to be enclosed in an architectural cover when exposed within the space.

- 4 pipe hot water and chilled water system to be

distributed to the active chilled beams.

- o Chilled water supply to be mixed with return water to produce an above ambient temperature to ensure no condensation forms on the active chilled beams.
- o 3 way mixing valve will be located in the basement mechanical room.
- o Circuit setter style valving to be utilized for each room to provide a secondary beam loop in order to properly control the active chilled beam system.

- Each room to have its own thermostat capable of fully controlling the room temperature.
- Each room to have sensors for locking out the active chilled beams upon the opening of any windows.

Figure 8.1.7

Figure 8.1.8

Figure 8.1.9

Figure 8.2.1

Figure 8.2.2

8.2 Plumbing

Existing System

Supply piping is copper and galvanized steel, and there is a backflow preventer to prevent cross-contamination of the water system. Drain piping is believed to be cast-iron, no-hub and some plastic. The piping systems are estimated to date to 1951 and have reached end of their lifecycles. The backflow preventer is near the end of its lifecycle.

Domestic hot water is provided by a 2017 Bradford White, residential-grade, electric water heater (figure 8.2.1). It has a tank capacity of 50 gallons.

There are two sump pumps (figure 8.2.2) – one in the basement and one on the site. One unit is believed to be new and appears in better condition.

Plumbing fixtures include drinking fountains, wall-hung lavatories, tankless toilets, urinals, utility sinks, and a kitchen sink.

Fire suppression is provided throughout by an automatic sprinkler system and wall-mounted fire extinguishers. This appears to be adequate for the occupancy of the building.

Recommendations

- All water supply piping to be replaced with copper.
    - o Galvanized steel corrodes and the diameter available for water flow steadily constricts over time.
- Existing cast iron drain piping will also be replaced.
- Backflow preventers will be installed at the potable and fire mains as required by code.
- The domestic hot water heater will be replaced.
- Both sump pumps will be replaced.
- All plumbing fixtures will be replaced to account for reconfigured restrooms that include accessibility and gender inclusive upgrades.
- New fire sprinkler configurations may be necessary in certain locations to accommodate reconfigured interior spaces.

8.3 Electrical

Existing Systems

The building is served by a 208Y/120V, 3-phase, 4-wire, 800A Main Distribution Panelboard (figure 8.3.1) and supplied by a medium voltage step-down, on-grade, pad-mount transformer (figure 8.3.2) located outside the lower floor electrical room. The main panelboard has a rated capacity of 800A originally installed around 1975 and has reached the end of service life. The electrical distribution system consists of several panelboards located on each floor that provide 208Y/120V for mechanical, lighting, and general-purpose loads. These other branch panelboards appear to have been installed in 1975 and are also approaching the end of service life. Additionally, these panelboards were observed to have limited room for future growth.


Figure 8.3.1

The facility is served by an addressable fire alarm system manufactured by Notifier. The main panel is in room 015 (figure 8.3.3). There are pull stations and smoke detectors for activation as well as strobes for notification. The system appears to be a combination of a newer panel and aged devices. Many devices have reached the end of their lifecycles and the main panel is approaching the end of service life.


Figure 8.3.2

Recommendations

- Replace the existing main distribution and branch panelboards.
- Where interior walls are being removed or rebuilt, degraded branch circuit conductors and wiring devices (receptacles, switches) should be replaced.
- Replace entire existing electrical distribution equipment and wiring.
- Replace existing building fire alarm system to meet AHJ requirements and/or match campus standard.

8.4 Lighting

Existing Systems

The interior lighting is showing significant signs of wear and age. It consists of mostly lay-in and surface-mounted fixtures with acrylic, parabolic, or no lenses and T8 fluorescent or compact fluorescent bulbs. The interior lighting varies in age; older fixtures can be found throughout (figure 8.4.1) while some contemporary fixtures exist in previously renovated spaces (figure 8.4.2). Additionally, decorative surface mounted fixtures have been installed in corridors (figure 8.4.3) though they are not original.

Figure 8.3.3

Figure 8.4.1

Figure 8.4.2

Figure 8.4.3

Occupancy sensors were observed in select rooms for energy conservation. Integral battery packs or stand-alone bug-eye fixtures were not observed for emergency egress illumination.

The exterior lighting consists of LED wall pack style at select exterior doors and HID, halogen style fixtures at covered entrance doors and poles. Integral battery packs for emergency egress illumination at exterior exits were not observed. The exterior lighting varies in age and either has reached the end of service life or is approaching the end of service life.

Recommendations

- A comprehensive upgrade of the lighting system will utilize LED lighting for energy efficiency and minimal maintenance.
    - o High quality lighting improves the learning environment and experience of users as shown by a substantial body of research on the subject.
- New occupancy and daylight sensors will be provided as specified in the energy code to reduce unnecessary energy consumption.
- Emergency lighting will be provided via battery integrated lights.

8.5 I.T. & Communications

Existing Systems

Friendly Hall does not currently have sufficient I.T. and data center space to meet University standards. The existing I.T. room is located on the third floor and doubles as roof access. It is undersized and lacks proper ventilation and cooling.

Recommendations

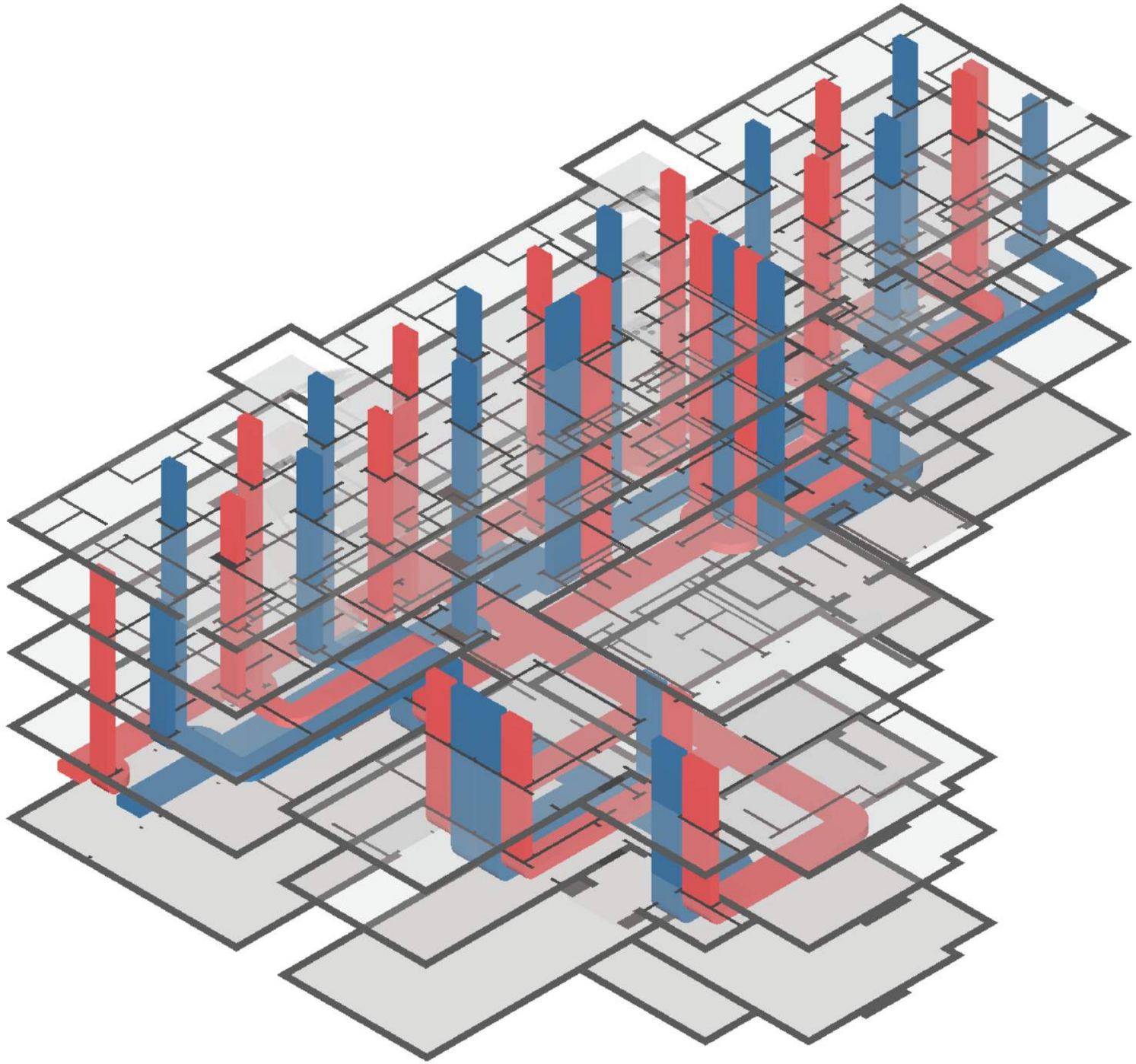
- New floor plans accommodate University standard I.T. rooms on each floor in centralized locations.
- The improvement of I.T. and communications technology throughout the building will provide a more connected, and better suited learning environment for students and faculty.

For more information on the proposed floor plans and configuration of I.T. rooms refer to the drawings in Section 6.

8.6 MEP Diagrams

Friendly Hall's original use as a dormitory resulted in low floor-to-floor heights in most of the spaces. To add modern mechanical systems, ducting and chases must first be run laterally in the basement. From there, steam, chilled water and ventilation air will be distributed to each room through vertical shafts as shown in the conceptual diagram.

Each separate space has two adjoining shafts, one for supply air and one for return air. The shafts are also shared with adjacent rooms which results in an alternating configuration of supply and return shafts.



This page intentionally blank
for double-sided printing

APPENDIX