



Pioneer Hall Expansion & Renovation

University of Minnesota



 **Speakers**



Project Manager/Design Team Lead, Sr. Architect
Brian Morse, AIA



**Project Engineering Manager, Education
Market Manager**
Brian Kelley



Design Team

TKDA

Architectural Firm- of-Record
Landscape Architecture
Sustainability and Energy Modeling
Structural
Mechanical, Plumbing & Fire Protection
Electrical, Security & Alarms

KWK Architects

Design Architects

Rippe & Associates

Food Service Design

Pie Consulting & Engineering

Forensic/Envelope Consultant

Elevator Consulting Services

Kvernstoen, Rönholm & Associates

Acoustical Consultant

Targeted Business Partners

Pierce-Pini

Civil Engineering and Storm water Management Design

Hess, Rosie, & Company

Historical Consultant

Elert & Associates

IT Design

Lighting Matters

Lighting Design

Studio Hive / DLR

Interior Design and FF&E



Owner and Construction Team

University of Minnesota

Over 15 separate Departments

Mortenson Construction

Predesign Construction Manager

McGough Construction

Design Phase Construction Manager

Amerect Inc

American Structural Metals Inc

Bartley Sales Company Inc

Building Material Supply Inc

CD Tile & Stone

CE Contract

Carl Bolander & Sons

Central Roofing Company

Custom Drywall Inc

Floors by Beckers

Gage Brothers Caulking Inc

Gardeneer Inc

Gresser Companies Inc

Hockenbergs

Infinity Access Inc

Kellington Construction Inc

Metro Manufacturing Inc

Metropolitan Mechanical Contractors Inc

O'Keefe Inc

Overhead Door Company

Parsons Electric LLC

Roy C Inc

Schumacher Elevator Company

Sonus Interiors

Superl Inc

Swanson and Youngdale

The Pinske Edge Inc

Veit & Company Inc

Viking Automatic Sprinkler Company

W L Hall Company

Wells Concrete

Project History



- UofM's First Dormitory for Men
- Original South Court Building Constructed in 1930
- North Court Building & Central Link Constructed in 1934
- Dining Addition in 1950's
- Modified in 1970's

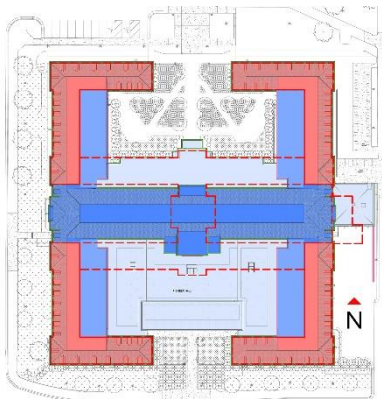
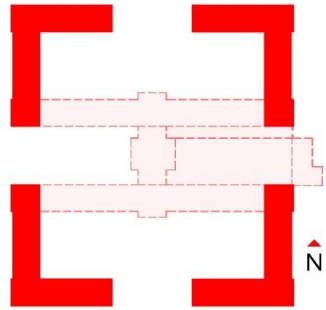
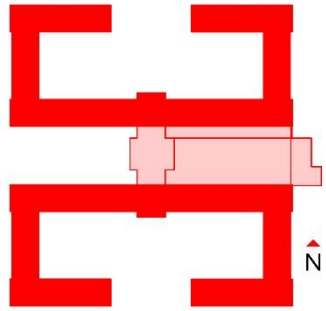


Project History



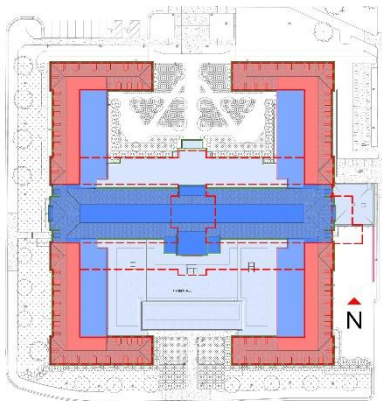
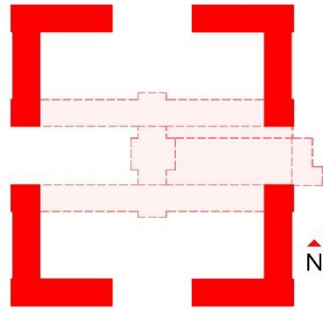
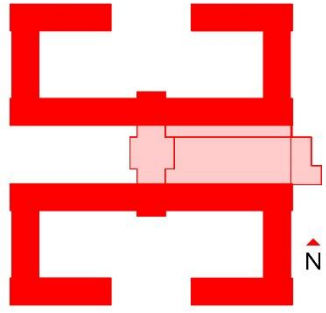


Project Scope



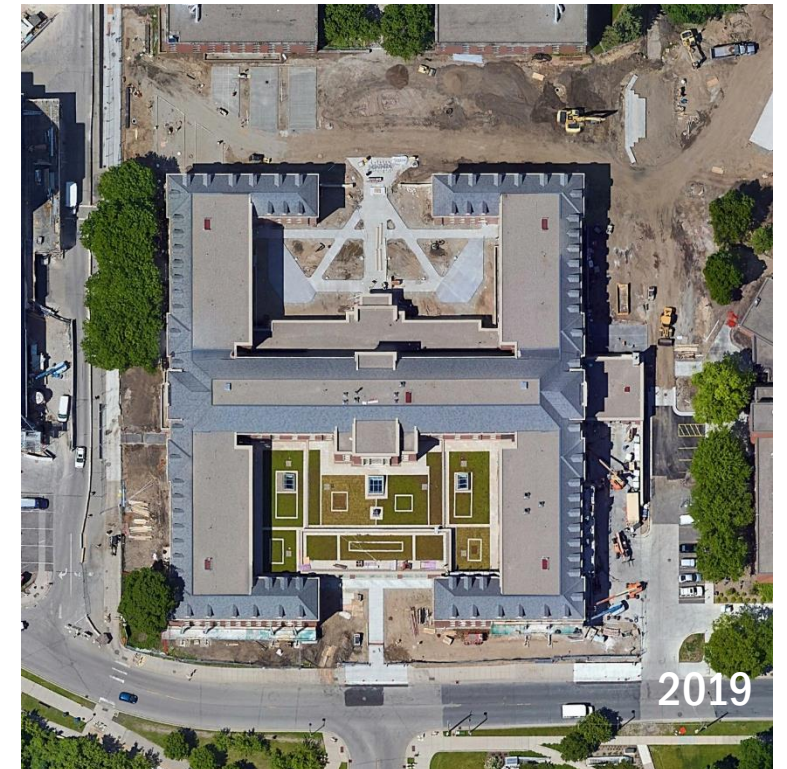


Project Scope



Aerial Time-lapse (Construction 2017-2019)

- Located in the UofM's "Superblock" Residential Housing District
- Residence Hall Increased from 177,000 sf to 257,000. 5-Stories + Basement
- 756 Total Beds
- New 42,000 sf Dining Facility. Accommodates 2800 Students in "Superblock" Housing District, Faculty and Guests
- Construction Cost \$86 Million; Total Project Cost \$104.5 Million



Expanded Floorplate

- **Historic and New Blended Together**
- **Post-Tensioned Slab Connected to Original Concrete Pan/Clay Tile Structure**





Expanded Floorplate



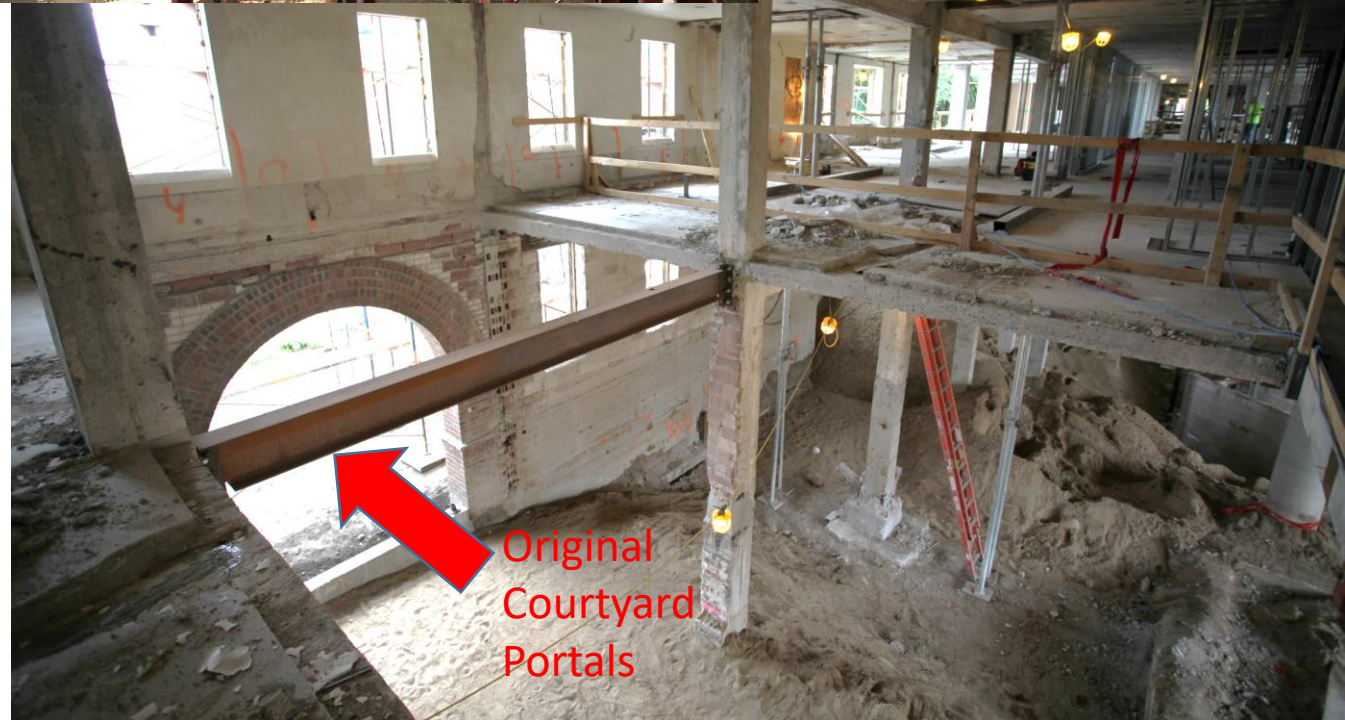


Construction



Concrete Pan/Clay
Tile Structure

PT Cabling, M & E Sleeves



Original
Courtyard
Portals

Construction



- **New Window Cut-ins;
Demolition and Shoring**





- Interior Excavation; Structural Remediation





Construction



- New Exterior Wall System
- 3D Print Form Technology
- Dormers; Roofing
- Brian Morse takes a ride



Construction



Construction

- Utility Shaft Refurbishment
- 70 Foot Shaft Liner to Deep Tunnel
- Fed from Central Plant



Construction

- Existing Deep Utility Tunnels
- 125# High Pressure Steam



Construction

Mr. Kelley



- 6" HDPE Campus Chilled Water Pipe Loop Extension



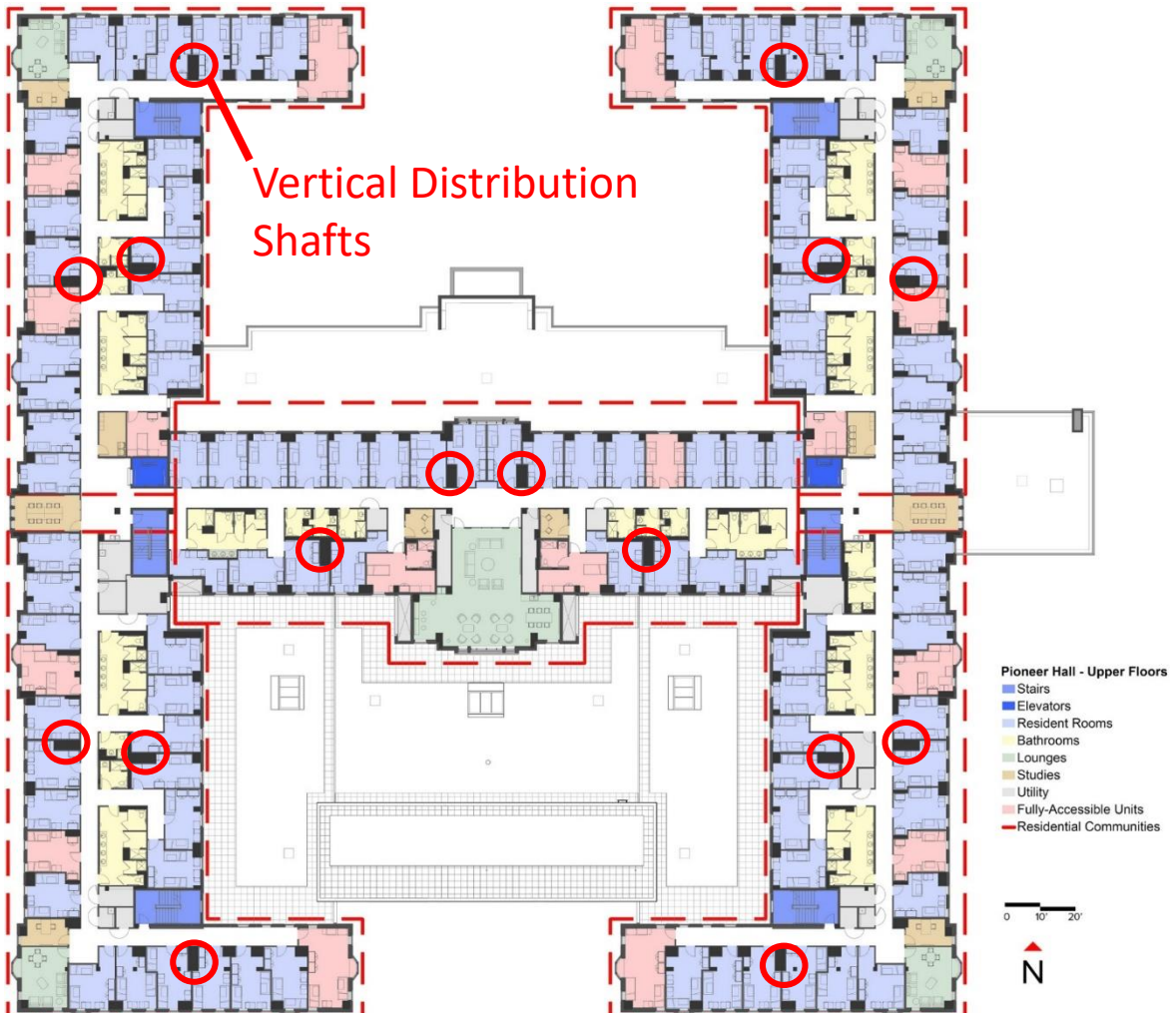
Construction

- 13.8Kv Electrical Duct Bank Service



Construction

- Existing 9 Ft. Floor to Floor; 7 Ft. Bottom of Beams
- Buried Main Duct Distribution at Ground Level
- Vertical Ventilation Duct Distribution to Upper Residents Rooms



Construction

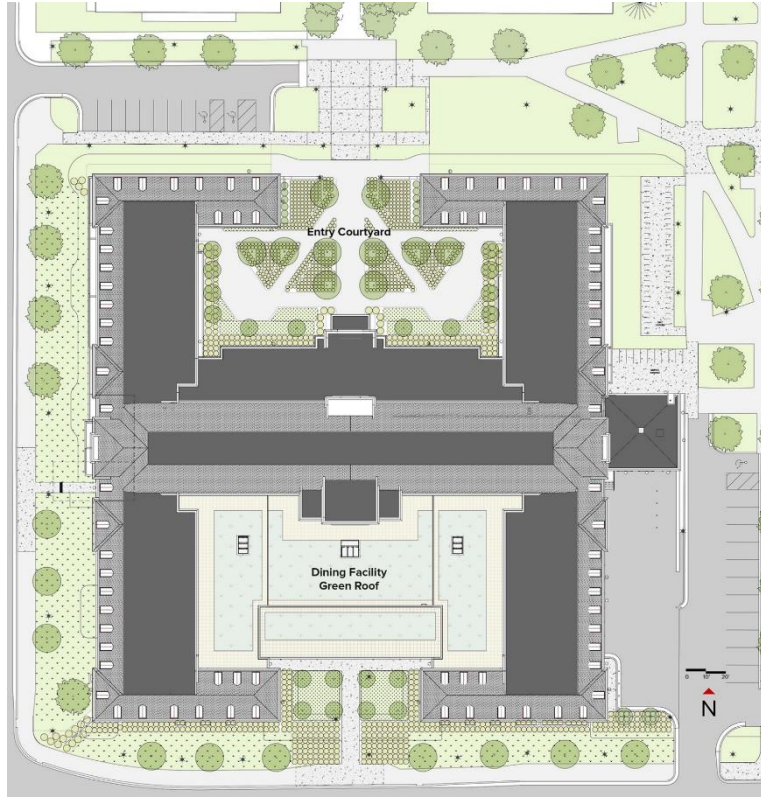
- On Site Storm Water Capture System for Pioneer & Adjacent Sites
- Long Term Districtwide Solution for Stormwater Collection & Future Campus Chilled Water System Re-use

(2) 10 Ft Sq. x 110 Ft. Long Cistern
Approx. 165,000 gal. Storage
Capacity

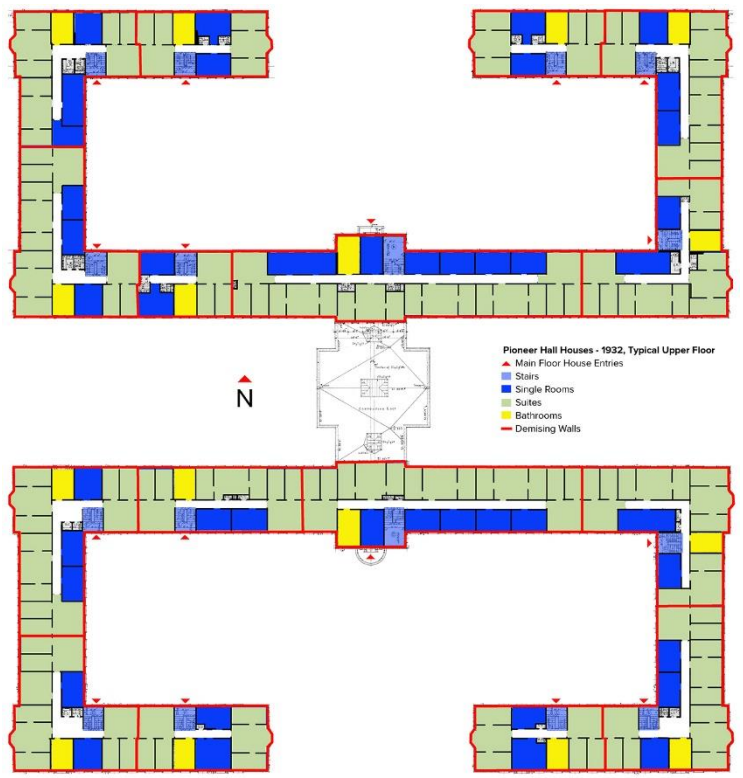




Entry Level



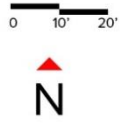
Upper Floors



1930 - 16 vertical houses

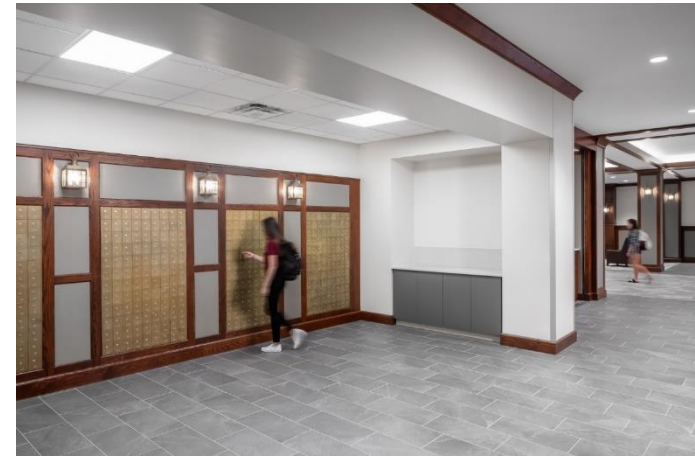


- Pioneer Hall - Upper Floors**
- Stairs
 - Elevators
 - Resident Rooms
 - Bathrooms
 - Lounges
 - Studies
 - Utility
 - Fully-Accessible Units
 - Residential Communities





Community Spaces





Dining Facility



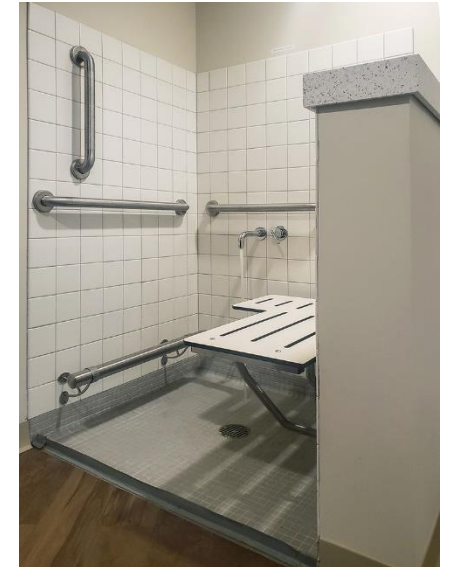
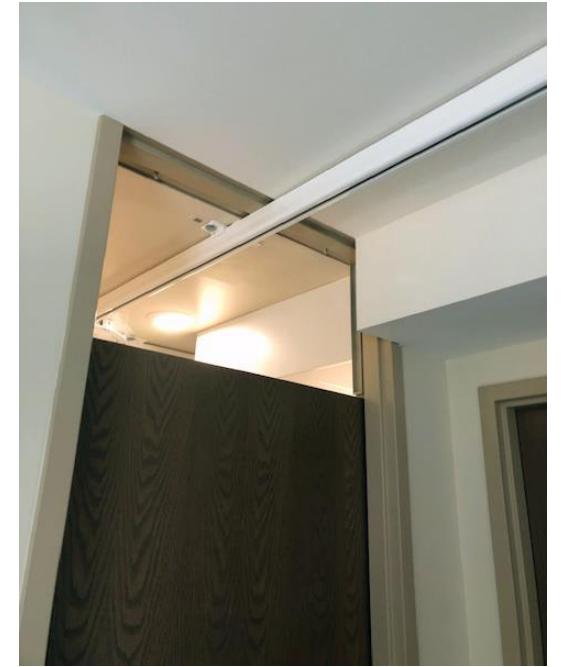
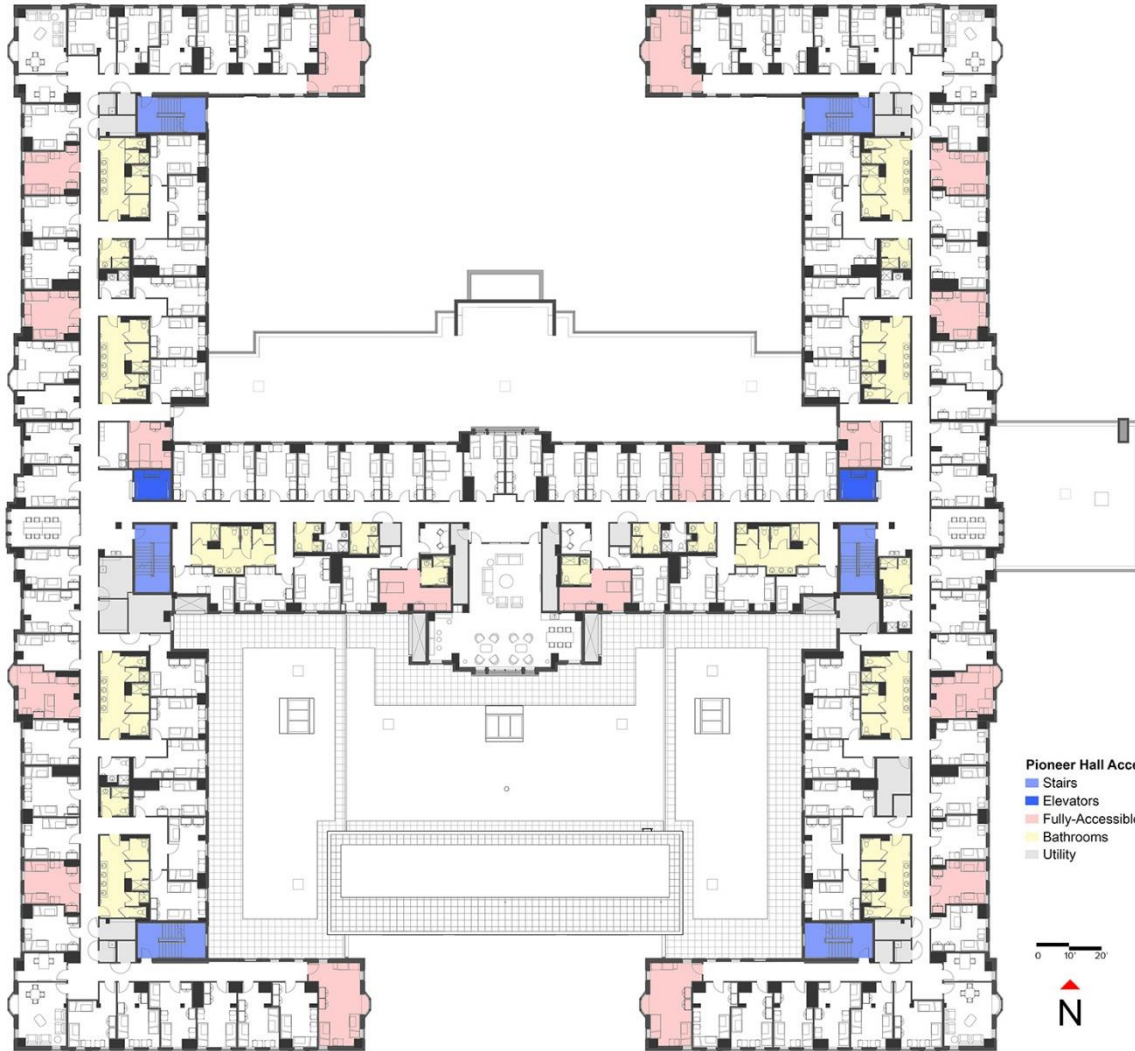


Resident Spaces





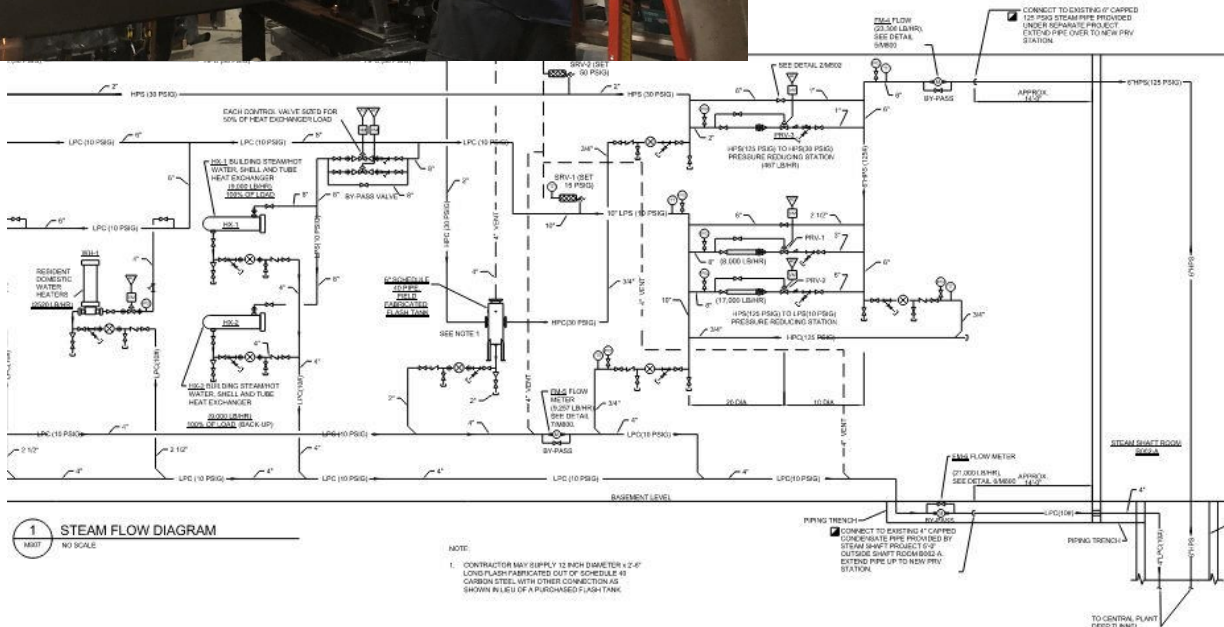
Accessibility & Diversity





High Pressure Steam Reducing/Valve Station

- 25,000 lb/hr Max. Capacity
- 125 PSI to 30 PSI (Kitchen Steam Kettles & Dishmachine)
- 125 PSI to 15 PSI (HVAC & Domestic Hot Water)
- Residence & Dining Metered Separately



☐☐ Cooler/Freezer Refrigerant Rack & Instantaneous Domestic Hot Water Heaters

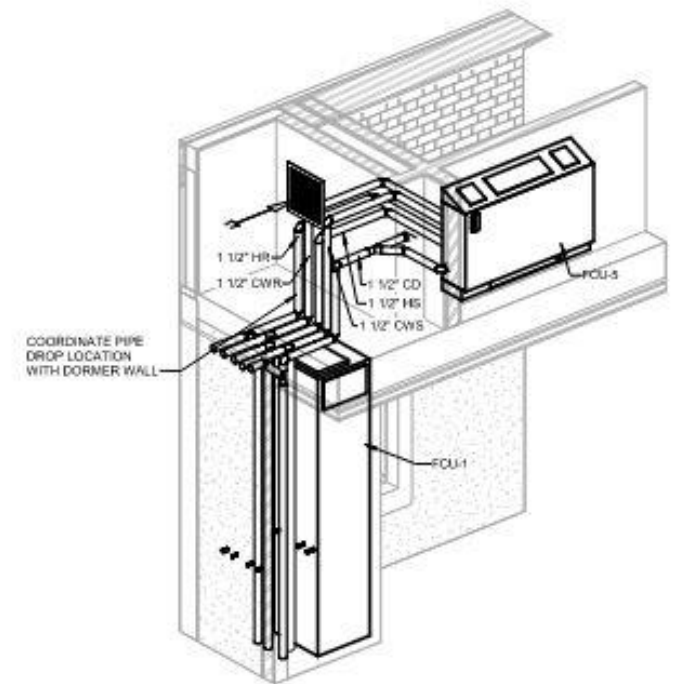
- Residence- (2) @ 115 Deg. F. (Full Redundancy)
- Kitchen/Dining- (3) Kitchen @ 140/115 Deg. F. (Full Redundancy)
- Residence & Dining Metered Separately



HVAC Systems



- Residence- (2) CV w/Heat Recovery, 16,000 cfm ea.
- Residence- Dedicated Fan Coil Units in each Room
- Dining- (2) w/VFDs, Heat Recovery, 19,000 cfm ea.
- Kitchen/Hoods- (2) MAU, VFDs, interlocked w/ (10) Utility Exhaust Fans



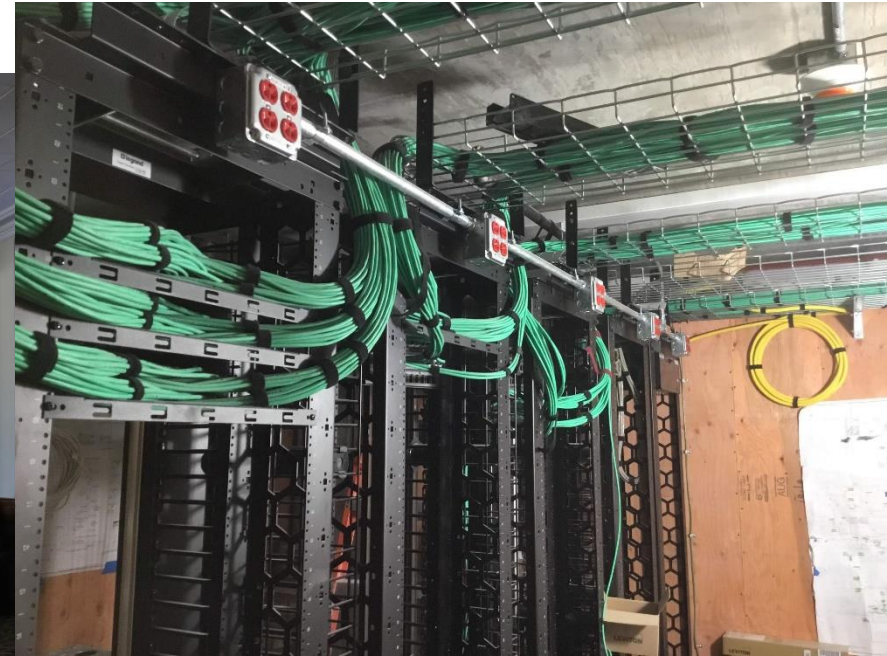
HVAC Systems





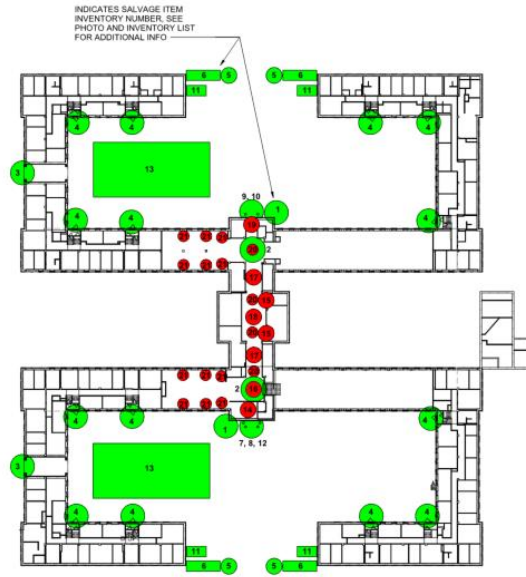
Electrical & Low Voltage Systems

- **13.8kv Transformer and Primary Switchgear Vault w/VESDA Detection System**
- **Separate 480v Main Switchgear Room**
- **250Kw Diesel Back-up Generator**
- **LED Lighting & Wifi Protected Access (WPA) Throughout**
- **Salvaged/Retrofitted/U.L.-Recertified Historic Light Fixtures**
- **Daylight Harvesting/Lighting Control in Dining**
- **Addressable Alarm, Security & Camera Systems Throughout**
- **Occupancy Sensor Control in Corridors**
- **Dedicated Fire Command/Control Room**

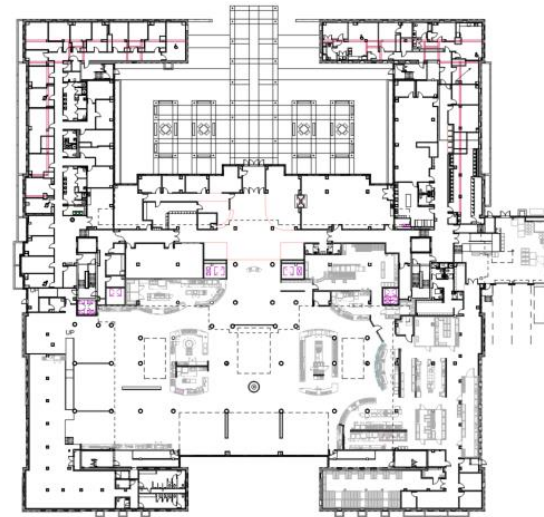




Sustainability & Historic Reuse

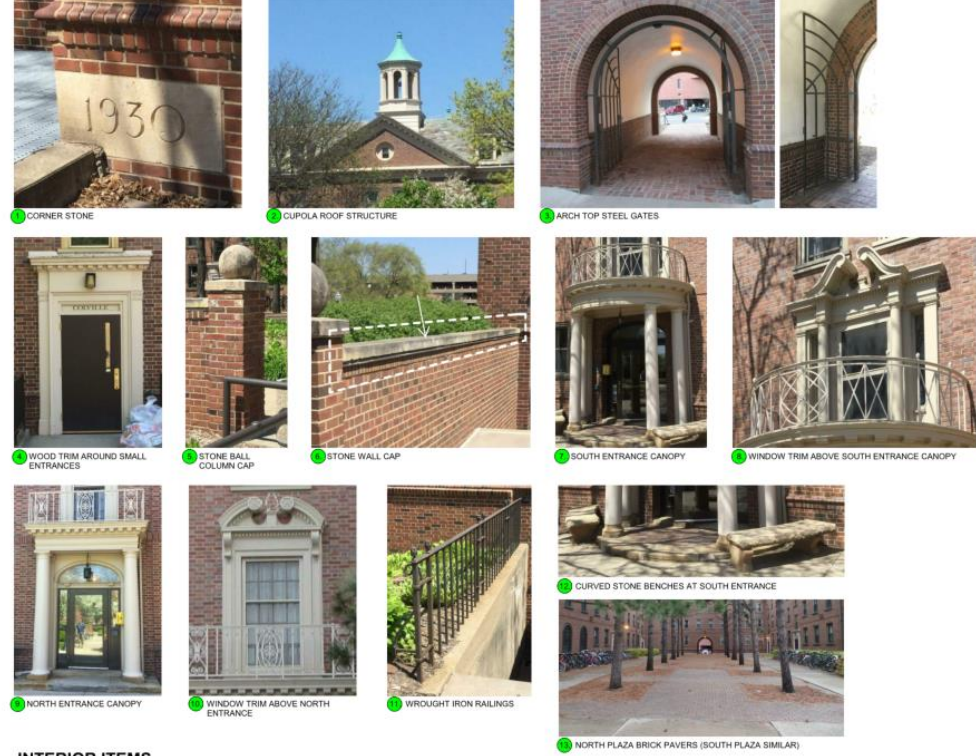


2 SALVAGED ITEMS SOURCE PLAN
1" = 30'-0"

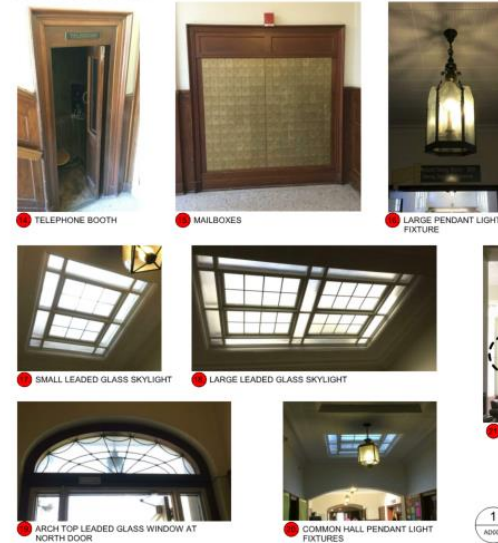


3 FIRST FLOOR SALVAGED ITEMS RELOCATION PLAN
1" = 30'-0"

EXTERIOR ITEMS



INTERIOR ITEMS



ITEM NUMBER / DESCRIPTION	QUANTITY	NOTES
1. CORNER STONE	2	RELOCATION TRIO
2. CUPOLA ROOF STRUCTURE	2	-
3. ARCH TOP STEEL GATES	2	-
4. WOOD TRIM AROUND SMALL ENTRANCES	14	-
5. STONE BALL COLUMN CAP	4	-
6. STONE WALL CAP	120 LF (4 SECTIONS AT 30' HI EACH)	-
7. SOUTH ENTRANCE CANOPY	1	-
8. WINDOW TRIM ABOVE SOUTH ENTRANCE CANOPY	1	-
9. NORTH ENTRANCE CANOPY	1	-
10. WINDOW TRIM ABOVE NORTH ENTRANCE CANOPY	1	-
11. WROUGHT IRON BALUSTRADE	50' LF (4 SECTIONS AT 14' HI EACH)	-
12. CURVED STONE BENCHES AT SOUTH ENTRANCE	2	-
13. NORTH PLAZA BRICK PAVERS (SOUTH PLAZA SIMILAR)	3,000 SF (APPROX. 1,000 SF EA. COURTYARD)	-

ITEM NUMBER / DESCRIPTION	QUANTITY	NOTES
14. TELEPHONE BOOTH	1	RELOCATION TRIO
15. MAILBOXES	2	-
16. LARGE PENDANT LIGHT FIXTURE IN COMMON HALL	1	-
17. SMALL LEADED GLASS SKYLIGHT	2	-
18. LARGE LEADED GLASS SKYLIGHT	1	-
19. ARCH TOP LEADED GLASS WINDOW AT NORTH DOOR	1	-
20. COMMON HALL PENDANT LIGHT FIXTURES	4	-
21. LOUNGE ROOM WALL SCULPTURE LIGHT FIXTURES	2 (6 PER ROOM)	-

1 SALVAGED ITEMS IMAGES AND INVENTORY LIST
1" = 30'-0"

PLAN NORTH
FIELD NORTH

**50% DESIGN DEVELOPMENT
DD PRICING SET
May 31, 2017**

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS DRAWING ADJUST SCALES ACCORDINGLY.

NO.	DATE	ISSUE RECORD

SIGNATURE: _____ DATE: _____
PRINTED NAME: _____
LICENSE NO: _____

444 Cedar Street, Suite 1500
Saint Paul, MN 55101
651.292.4400
tkda.com

DESIGNED: DWK/AVL
CHECKED: JLD/AVL
SALVAGE PLAN

PLOTTED: 5/31/2017 4:02 PM
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Sustainability & Historic Reuse



Time Capsule
Discovered
Behind Original
Cornerstones



Sustainability & Historic Reuse

Stormwater Capture



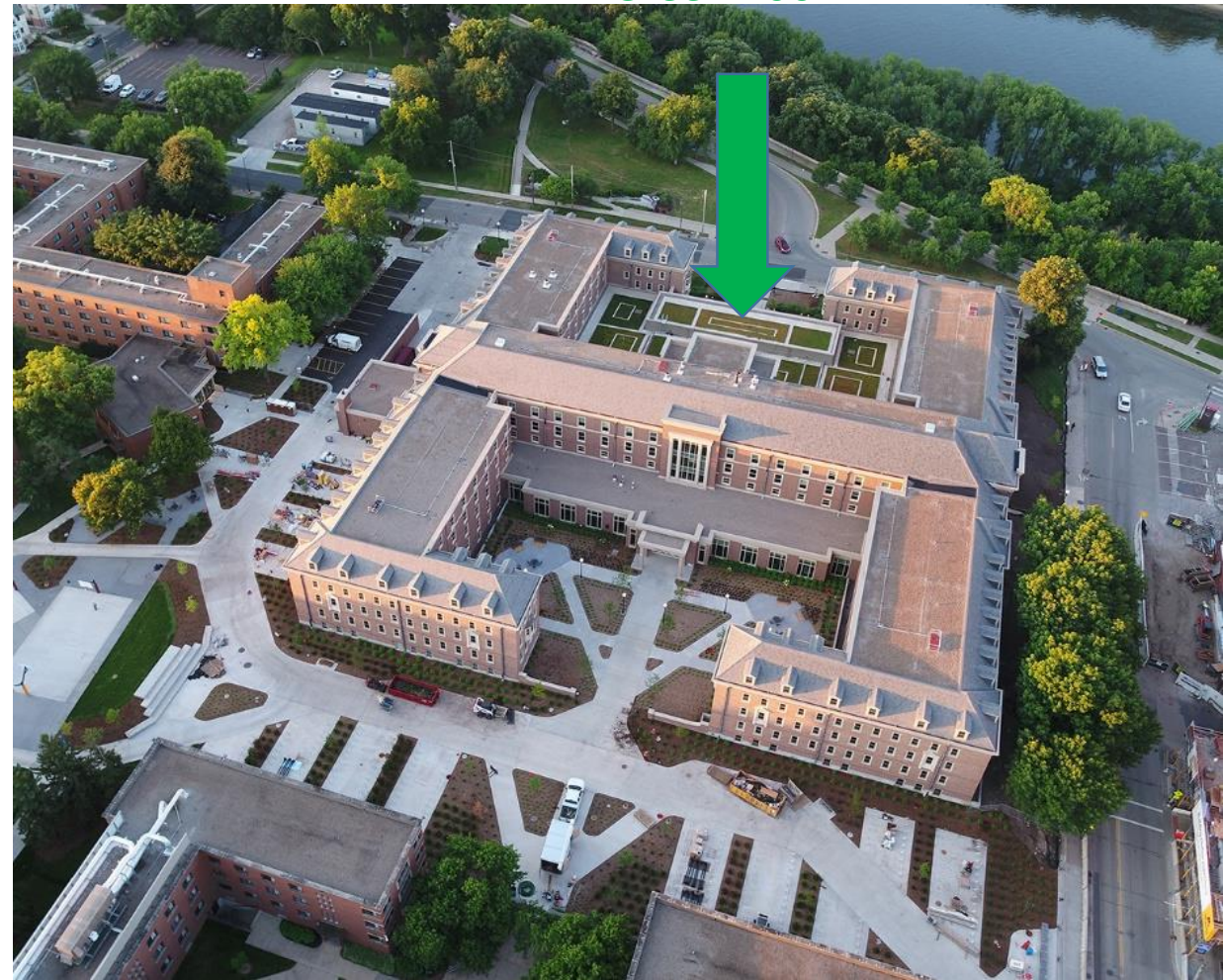
Oak Trees Removed Made into Tables

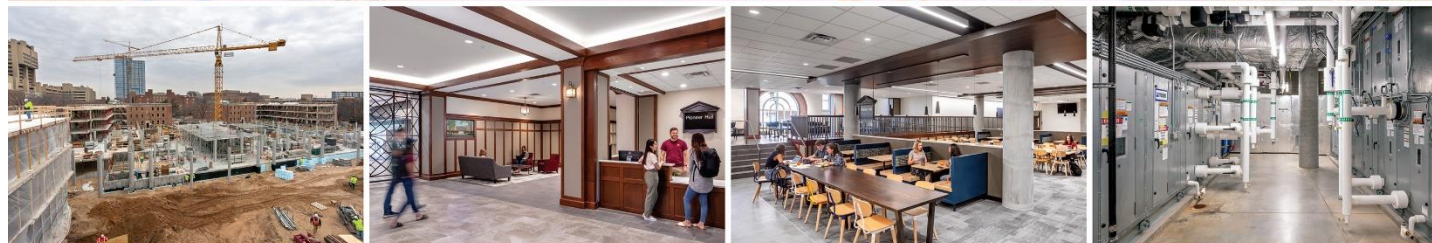


Energy Recovery Wheels



Green Roof





Pioneer Hall Expansion and Renovation
Minneapolis, Minnesota

University of Minnesota, Owner
TKDA, Engineering/Architecture

The \$104.5 million renovation of the University of Minnesota's 90-year-old Pioneer Hall posed complex challenges for the project design team. The residence hall's limited floor-to-ceiling heights restricted the space for new MEPFP systems, incomplete historical documentation necessitated extensive field testing, and preserved building sections required modification to meet current building codes. Innovative engineering solutions made it possible to preserve Pioneer Hall's sense of place in the University's history while creating a modern student community. The project increased the building size by more than 40 percent, and was completed ahead of schedule in August 2019.



THANK YOU!