



DURWARD HALL RENOVATION AND WINDOW REPLACEMENT

Oct 2023

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Executive Summary

Durward Hall is a 12-story residence hall with a full basement, constructed in 1967 and first occupied in 1968. It is located on the north side of campus and is home to 400 students, with community-style double and quad rooms (residents in each corridor share a community bathroom). The building remains mostly original, except for a fire suppression system installed in the mid 1980's, staff office and apartment renovations and resident floor shower upgrades in the early 2000's, elevator cab upgrades in the mid-2000's, a main floor lounge renovation in 2012, roof replacement in 2019, and various interior finish replacements over the years. The building is structurally sound, however some of the building envelope components, MEP components, and interior finishes have reached the end of their useful life.

This project will include replacement of all exterior windows, asbestos abatement, deferred maintenance and upgrades to resident rooms and public spaces on floors 2-12 of the existing approximate 104,000 gsf Durward Hall. It is similar in scope to the recently completed Westfall Hall window replacement project.

CSU anticipates a Design Build with GMP project delivery with an estimated total development cost budget of \$15M. Once approvals are in place the entire project is expected to take 15 months to complete. The project will be funded with Housing and Dining Services cash and a bond supported by Housing and Dining Services revenues. While Durward Hall is off-line Summer 2024 through Summer 2025, Housing & Dining Services will be able to accommodate all first-year students through full occupation of current spaces in other buildings, managing the number of transfer students living on campus, managing the number of returning students living on campus, and adding additional beds in current facilities, if needed.

Justification

Program Mission and History

HOUSING & DINING SERVICES

A member of the Division of Student Affairs, Housing & Dining Services (HDS) is a multifaceted auxiliary organization responsible for management, finance, administration, and program development of all on-campus housing facilities, including residence halls, university apartments, and residential dining. The HDS department also includes the Ram Card Office and Conference & Event Services providing support and services to guests and visitors to campus all year-round. HDS, with support from other campus partners, is also responsible for operations and maintenance of the CSU Mountain Campus.

Housing & Dining Services Mission: We create dynamic housing and dining experiences that enhance personal growth and global engagement.

Housing & Dining Services Vision: To create the best living and learning experience in higher education, support active learners, successful graduates, and engaged global citizens. Our priority is providing our residents and guests with safe living environments, quality dining, and exceptional out of classroom experiences. We accomplish this through sound fiscal and operational management strategies, and an emphasis on the development of programs and services that are designed to enhance personal growth and global engagement.

Program Needs/Trends

To support the University's goals around recruitment, retention and sustainability, HDS is focused on revitalizing existing housing inventory and alleviating our deferred maintenance backlog.

Physical Condition/functionality of Existing Space

Durward Hall remains mostly original, except for a fire suppression system installed in the mid 1980's, staff office and apartment renovations and resident floor shower upgrades in the early 2000's, elevator cab upgrades in the mid-2000's, a main floor lounge renovation in 2012, roof replacement in 2019, and various interior finish replacements over the years. The building is structurally sound, however some of the building envelope components, MEP components, and interior finishes have reached the end of their useful life.



Durward Hall Community Style Room

New Space Requirements

NA

Equipment List

NA

Alternative analysis `

Deferred maintenance of existing housing stock needs to be addressed in a systematic fashion that provides enough first year housing to meet demand. While Durward Hall is off-line Summer 2024 through Summer 2025, Housing & Dining Services will be able to accommodate all first-year students through full occupation of current spaces in other buildings, managing the number of transfer students living on campus, managing the number of returning students living on campus, and adding additional beds in current facilities, if needed.

Benefits of the Project

1. A significant amount of critical deferred maintenance backlog will be addressed. Without addressing critical deferred maintenance, HDS faces risk in failed building systems and resulting unoccupiable space.

2. The reuse and capital renewal of an existing structurally sound building is one of the most sustainable and environmentally sound project types and aligns with the University's approach to environmental sustainability.
3. More efficiently performing building equating to lower utility costs and energy consumption. The exterior walls are projected to average around R16 by including thermally separated aluminum window frames and multi-pane low-e glass. Energy use to heat and cool the building will be significantly reduced.

Design Criteria

Building Site

Not applicable to this project as no change in building footprint is planned.

Flood Mitigation Analysis

Not applicable to this project as no change in building footprint is planned.

LEED Goal

The project is waived due to being primarily maintenance. Revitalization of existing buildings is inherently sustainable as envelop and mechanical systems are brought to current standards.

Architectural

The project will replace exterior windows at floors 2-12, similar to the recently completed Westfall Hall project (shown below). In addition, there will be some revitalization of interior finishes in residential and corridor areas of all floors, to include removal of built-in wardrobes, wall repairs, paint and flooring.



Westfall Hall after Window Replacement

Mechanical, Electrical, Plumbing and Utility Narrative

The project will address maintenance items such as:

- Expansion joint and valve replacements for the building's hydronic heating system
- Smoke detector replacement
- Upgrade light fixtures to LED
- Electrical receptacle and switch replacements
- Addition of booster pumps or other solution to address low water pressure on upper floors
- Heating water pump replacements
- Sump pump replacement
- Replacement of one (1) single-zone heating-only air handler with integration into existing pneumatic control system.
- Replacement of one (1) dual-deck multi-zone air handler with integration into existing pneumatic control system.
- Drinking fountain replacement and relocation

The scope items above may trigger potential building code-required modifications such as repair and upgrades of fire dampers, fire caulking and firestopping, door hardware modifications, new interior building signage, and new bi-directional amplification system installation. These code-required scope items will be included in the scope of the project, if required.

CSU Standards

The CSU Building Construction Standards Manual is available at:

http://www.fm.colostate.edu/constr_standards

The CSU Standards are to be used as guidelines for design. They are divided into 3 parts for use by Architects and Engineers: the first part is administrative; the second part discusses requirements for design and deliverables at each stage of the design process; the third part consists of the technical standards arranged by CSI division. The Standards are a work in progress, and as such, any question about the applicability of a standard should be discussed with the project manager. The Standards should never be referenced or copied in Contract Documents – the design is expected to embody and conform to the Standards. Contractors are not to be directed to review the Standards as a contract requirement.

CSU INCLUSIVITY STANDARDS-not applicable to this project

LIST OF APPLICABLE CODES

List of applicable codes –

Approved building codes and standards have been adopted by the Office of the State Architect (herein referred to as State Buildings Program (SBP)) and other state authorities, and are identified below as the minimum requirements to be applied to all construction projects at state agencies and institutions of higher education owned facilities.

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The 2021 edition of the International Building Code (IBC)

(As adopted by the Colorado State Buildings Program as follows: Chapter 1 as amended, Chapters 2-35 and Appendices C and I).

The 2021 edition of the International Existing Building Code (IEBC)

(As adopted by the Colorado State Buildings Program as follows: Chapters 2-16, Appendices A-C and Resource A) Effective December 2020.

The 2021 edition of the International Residential Code (IRC)

(As applicable)

The 2021 edition of the International Mechanical Code (IMC)

(As adopted by the Colorado State Buildings Program as follows: Chapters 2-15 and Appendix A)

The 2021 edition of the International Energy Conservation Code (IECC)

(As adopted by the Colorado State Buildings Program and Colorado Energy Office)

Colorado Model Electric Ready and Solar Ready Code

(Published by the Colorado Energy Office) Effective July 1, 2023

The 2023 edition of the National Electrical Code (NEC) (NFPA 70®)

(As adopted by the Colorado State Electrical Board) Effective July 1, 2023

The 2021 edition of the International Plumbing Code (IPC), first printing (March 2020) (As adopted by the Colorado Examining Board of Plumbers)

The 2021 edition of the International Fuel Gas Code (IFGC) first printing (August 2020) (As adopted by the Colorado Examining Board of Plumbers)

The National Fire Protection Association Standards (NFPA)

(As adopted by the Department of Public Safety/Division of Fire Prevention and Control)

The 2021 edition of the International Fire Code (IFC)

(As adopted by the Department of Public Safety/Division of Fire Prevention and Control (DFPC). Projects requiring DFPC review should be designed with the most restrictive requirements)

The 2015 edition of the ASME Boiler and Pressure Vessel Code

(As adopted by the Department of Labor and Employment/Boiler Inspection Section) Effective July 1, 2017.

The 2017 edition of the National Boiler Inspection Code (NBIC)

(As adopted by the Department of Labor and Employment/Boiler Inspection Section) Effective July 1, 2017.

The 2015 edition of the Controls and Safety Devices for Automatically Fired Boilers CSD-1

(As adopted by the Department of Labor and Employment/Boiler Inspection Section) Effective July 1, 2017.

The 2015 edition of the Boiler and Combustion Systems Hazards Code, NFPA 85

(As adopted by the Department of Labor and Employment/Boiler Inspection Section) Effective July 1, 2017.

The 2019 edition of ASME A17.1 Safety Code for Elevators and Escalators

(As adopted by the Department of Labor and Employment/Conveyance Section) Effective January 1, 2021.

The 2005 edition of ASME A17.3 Safety Code for Existing Elevators and Escalators

(As adopted by the Department of Labor and Employment/Conveyance Section Effective January 1, 2021.

The 2017 edition of ASME A18.1 Safety Standard for Platform Lifts and Stairway Chairlifts

(As adopted by the Department of Labor and Employment/Conveyance

The current edition of the Retail Food Establishment Rules and Regulations

(As adopted by the Department of Public Health and Environment/Division of Environmental Health and Sustainability)

The Current edition of ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities

As referenced in the adopted edition of the International Building Code.

The Secretary of the Interior's Standards for Rehabilitation

(As required by the Colorado State Historic Preservation Office for designated historic properties)

Note: Additional codes, standards and appendices may be adopted by the state agencies and institutions in addition to the minimum codes and standards herein adopted by State Buildings Programs.

1. The 2021 edition of the IBC became effective on July 1, 2022. Consult the state electrical and plumbing boards and the state boiler inspector and conveyance administrator and the Division of Fire Prevention and Control for adoption of current editions and amendments to their codes.
2. Projects should be designed and plans and specifications should be reviewed based upon the approved codes at the time of A/E contract execution. If an agency prefers to design to a different code such as a newer edition of a code that State Buildings Programs has not yet adopted, the agency must contact SBP for approval and then amend the A/E contract with a revised Exhibit C, Approved State Building Codes. Please note that the state plumbing and electrical boards enforce the editions of their codes that are in effect at the time of permitting not design.
3. The state's code review agents, or the State Buildings Programs approved agency building official, shall review all documents for compliance with the codes stipulated herein. Note: The Department of Public Health and Environment, Division of Consumer Protection will review drawings for food service related projects.
4. This policy does not prohibit the application of various life safety codes as established by each agency for specific building types and funding requirements. NFPA 101 and other standards notwithstanding, approved codes will supersede where their minimum requirements are the most restrictive in specific situations. If a conflict arises, contact State Buildings Programs for resolution.
5. It is anticipated that compliance with the federal Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) and Colorado Revised Statutes Section 9-5-101 will be met by compliance with the 2015 International Building Code and ICC/ANSI A117.1. However,

each project may have unique aspects that may require individual attention to these legislated mandates.

6. The 2018 edition of the International Building Code (IBC) is to be applied to factory-built nonresidential structures as established by the Division of Housing within the Department of Local Affairs.

A. Appendices

Appendices are provided to supplement the basic provisions of the codes. Approved IBC Appendices are as follows:

1. Mandatory

IBC Appendix Chapter C - Agricultural
Buildings IBC Appendix Chapter I - Patio
Covers

2. Optional

Any non-mandatory appendix published in the International Building Code may be utilized at the discretion of the agency. Use of an appendix shall be indicated in the project code approach.

B. Amendments

1. International Building Code, Chapter 1 as amended
2. International Building Code Chapter 29 as amended

Project schedule, cost estimates and financing

Schedule/phasing

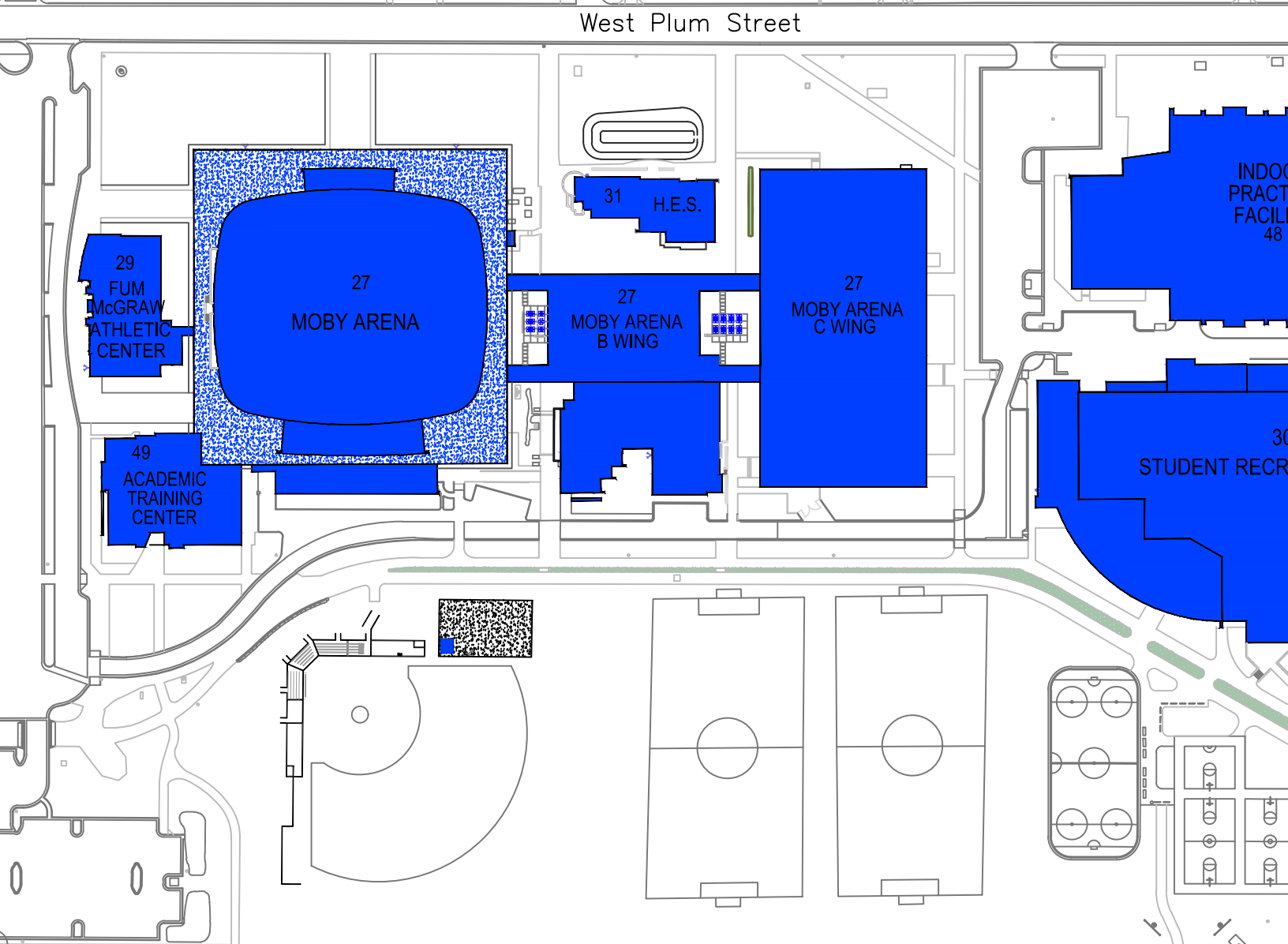
Once approvals are in place the entire project is expected to take 15 months to complete. CSU anticipates a Design Build with GMP delivery method.

Financing

The estimated budget is \$15.0M, to be funded with Housing and Dining Services cash and a bond supported by Housing and Dining Services revenues.

Cost estimate/methodology

Cost estimates were based on the recently completed Westfall Hall project, escalated for inflation. CSU standards specify that the A/E document 20% of the construction budget in bid alternates, to cover potential volatility in the construction market as the project progresses.



Durward Hall Renovation and Window Replacement

11.6.2023

Project Budget		Remarks
Professional Services		
	Site Survey, Geotechnical	0
	Consultants - Architects, Engineers, Vibration, Acoustics	900,000
	Commissioning and Advertisements	1,500
	Project development fee	354,250
	Independent Code Review, code insp, material tests	28,000
	PFA plan review	20,000
	Total Professional Services	1,303,750
Construction		
	New Space -	0
	Renovated space- 104,000gsf	10,355,000
	Site Work Service/Utilities	0
	Site Improvements/Landscaping	0
	Subtotal Construction Costs	10,355,000
Equipment & Furnishings		
	Fixed Equipment	0
	Moveable Equipment	1,900,000
	CSU Communications/AV	70,000
	CSU Notifier system	8,000
	Total Equipment and Furnishings Costs	1,978,000
Miscellaneous		
	Total Miscellaneous Costs	0
Subtotal Project Cost		13,636,750
Project Contingency		
	Project Contingency10%	1,363,675
	Total Contingency	1,363,675
Budget- Occupancy in Aug 2025		\$ 15,000,425

This opinion of probable cost is made on the basis of experience, qualifications and best judgement of a professional cost consultant familiar with the construction industry, combined with the professional experience of Facilities Management. FM cannot guarantee that proposals, bids or actual construction costs will not vary from this cost estimate due to market conditions at the time of the bid.

COLORADO STATE UNIVERSITY
Facilities Planning Design and Construction