



UW Roberts Hall HRA

November 29, 2012

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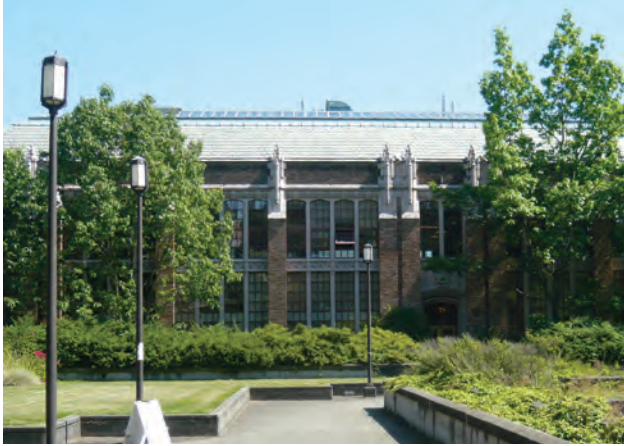
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1. Introduction



Background

The University of Washington is undertaking a series of projects to insure a safe working environment for ongoing maintenance and repairs, including the addition of safe access and fall anchors for roof work. Roberts Hall is currently lacking in these safety features.

Roberts Hall was constructed in 1921 as the College of Mines. This Historic Resource Addendum provides a description of the history and architectural character of Roberts Hall, as well as its historical significance as judged by the preservation policies and criteria outlined in the 2003 Seattle Campus Master Plan.

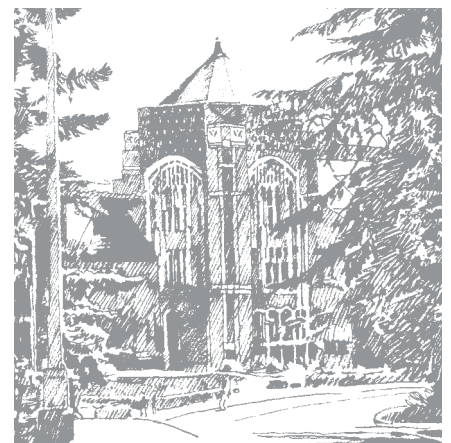
Research Methods

The research used in the preparation of this HRA for Roberts Hall included documentation of original plans and modifications from the University of Washington and its Facilities Records, research of historic photographs in the UW Libraries Special Collections, and on-site investigations and documentation of current conditions.

Project Goals

As part of the University's initiative to provide a safe working environment for all maintenance and repair work, safe access and fall anchors are needed on Roberts Hall in order to carry out future envelope repairs. The goal of this HRA is to analyze the proposed modifications and determine if they can be accomplished without negatively impacting the historic character of the building, and to suggest mitigation measures if needed.

UNIVERSITY OF WASHINGTON MASTER PLAN SEATTLE CAMPUS



2. Historic Preservation Framework

The University Stewardship and Historic Preservation Policies

The University of Washington Campus Master Plan approved in 2003 sets forth the project review process to insure historic context. Excerpted language from the Campus Master Plan:

“To further ensure that historic resources are considered, the University will prepare an Historic Resources Addendum (HRA) for any project that makes exterior alterations to a building of over 50 years old. The HRA will be an attachment to all project documentation and be considered by the appropriate decision maker.

The information and analysis provided in the HRA provides a framework and context to insure that important elements of the campus, its historic character and value, environmental considerations and landscape context are preserved, enhanced, and valued. The HRA further insures that improvements, changes and modifications to the physical environment may be clearly analyzed and documented.”

Guidelines for Evaluating Historic Resources

General guidelines are outlined in the Campus Master Plan for use in evaluating historic structures and proposed changes. The following is a summary of each guideline that applies to Roberts Hall. A more detailed description is provided in the Historic Context and the Architectural Description sections of this HRA.

- **Age of project building, adjacent buildings and open spaces.**

The first phase of Mines Hall (now Roberts Hall) was constructed in 1921 and consisted of the southeastern 5 bays of the structure. In 1927 the second phase completed the 4 northeastern bays.

- **Information regarding the architect of the original building.**

Carl F. Gould, a partner in the prominent Seattle architectural firm of Bebb and Gould, had an immense impact on the University of Washington. He founded the University degree program in architecture, developed the “Revised General Plan of the University of Washington” in 1915 which reinforced the quadrangle concept and unified upper and lower campus, and designed key academic buildings including Suzallo Library. In the 1920’s Gould began designing many of the buildings in the science and engineering complexes, including Roberts Hall.

- **Description of interior and exterior, and site surroundings of the building or campus feature, including the traditional views of the site, if any.**

The exterior of Roberts Hall is a composition of 9 bays defined by vertical buttresses in the Collegiate Gothic style. The brick walls, door and window treatments, and roof elements are all similar to other buildings by Carl F. Gould on campus.

The Mines Building (now Roberts Hall) and the Forestry Building (now Anderson Hall) were symmetrically located on each side of Rainer Vista fronting Stevens Way, with prominent front facades directly facing Frosh Pond and Drumheller Fountain.

- **Information regarding the distinctive visible characteristics of an architectural style, or period, or of a method of construction, if any.**

Collegiate Gothic was the architectural form favored in the “Revised General Plan of the University of Washington” due to associations of the Gothic style to English universities of Oxford and Cambridge. Characteristics of this style include arched window and door openings, buttresses, and masonry exterior walls to convey a sense of permanence. Roberts Hall exhibits all of these elements.

- **Potential mitigation measures, such as façade treatment, street treatment and design treatment sympathetic to the historic significance of the development site or adjacent campus feature, if any.**

Mitigation measures to reduce the impact of the proposed safe access and fall anchors are discussed in the Evaluation and Recommendations section.

3. Historical Context

Development of the University of Washington Campus

The city of Seattle was one of several settlements in the mid to late 19th century vying for primacy in the newly formed Washington Territory. In 1854, territorial governor Isaac Stevens recommended the establishment of a university in Washington.

In 1861, scouting began for an appropriate 10 acres (4 ha) site in Seattle to serve as the campus for a new university. Denny, along with fellow pioneers Edward Lander and Charlie Terry, donated a site on "Denny's Knoll" in downtown Seattle. This tract was bounded by 4th and 6th Avenues on the west and east and Union and Seneca Streets on the north and south.

UW opened officially on November 4, 1861, as the Territorial University of Washington. The following year, the legislature passed articles formally incorporating the University and establishing a Board of Regents. By the time Washington entered the Union in 1889, both Seattle and the University had grown substantially. Enrollment had increased from an initial 30 students to nearly 300, and the relative isolation of the campus had given way to encroaching development. A special legislative committee headed by

UW graduate Edmond Meany was created for the purpose of finding a new campus better able to serve the growing student population. The committee selected a site on Union Bay northeast of downtown, and the legislature appropriated funds for its purchase and subsequent construction. The University relocated from downtown to the new campus in 1895, moving into the newly built Denny Hall.

Organizers of the 1909 Alaska-Yukon-Pacific Exposition eyed the still largely undeveloped campus as a prime setting for their world's fair. They came to an agreement with the Board of Regents that allowed them to use the campus grounds for the exposition. In exchange, the University would be able to take advantage of the development of the campus for the fair after its conclusion. This included a detailed site plan and several buildings. The plan for the A-Y-P Exposition prepared by John Charles Olmsted was later incorporated into the overall campus master plan and permanently affected the layout of the campus.



The original University of Washington building on Denny's Knoll, c. 1870



Alaska-Yukon-Pacific Exposition on the UW campus toward Mount Rainier in 1909



Mines Building Completed, 1927

Historical Overview of Roberts Hall

The southeaster portion of the Central Campus was developed as a complex of specialized engineering facilities, including the prominent Roberts Hall. The following description by Norman Johnston summarizes the building:

“Well back from Stevens Way is Roberts Hall, part of the earlier generation of Bebb and Gould work on campus. Its design manages to give collegiate-Gothic dignity to a building devoted to the pragmatic teaching functions of the College of Mines, courses such as ceramic engineering and the treatment and use of coal.”

Mines Hall (Roberts Hall) was constructed in 1921 with the intention of a later addition. The original southeast portion consisted of 5 bays including the entrance at the end bay. In 1927 the 4 bay northeast portion was added, creating a symmetrical facade with the entrance in the center. Wilcox Hall was constructed directly behind Roberts Hall in 1963 and the two buildings were connected with an enclosed corridor.

New facilities were needed by 1986 and Mueller Hall was constructed below grade between Stevens Way and Roberts Hall with a sunken plaza. This design was intended to keep the visual prominence of Roberts Hall. At the same time Roberts Hall underwent a major renovation in 1987 which included seismic upgrades, refurbishment of the windows, replacement of the skylights, new membrane liners and flashing at the roof gutters, and additional mechanical equipment on the roof.

More recently, a roof hatch was installed on the north side of the roof to replace an access well, and a metal ladder was permanently attached to the roof to allow access to the upper gutter at the base of the skylight. Slate roof shingles that match the existing were used to patch the roof for this work. A makeshift cable was also strung around the base of the two pyramidal skylights at each end of the roof.

4. Architectural Description

Campus Setting and Site Features

The Bebb & Gould Revised General Plan for the University of Washington in 1915 depicted several subordinate quadrangles to accommodate future growth. One of these was an engineering quadrangle in the southeast portion of the central campus, anchored by the Mines Building (now Roberts Hall) and the Forestry Building (now Anderson Hall). These two major structures were symmetrically located on each side of Rainier Vista fronting Stevens Way, with their centerline axis directly aligned with Frosh Pond and Drumheller Fountain. Unfortunately, these relationships are currently obscured by recent buildings and now mature major trees.

Roberts Hall stood as an isolated structure in an open field in the 1930's, with the primary campus features being Rainier Vista to the west and the Sylvan Theater and Columns across Stevens Way to the northwest. Additional engineering facilities were constructed adjacent to Roberts Hall from the 1940's through the early 1960's. More Hall for the Department of Civil Engineering crowds the northeast side of the site and forms a visual barrier from the southbound approach on Stevens Way. Wilcox Hall, Roberts Annex, Wilson Ceramic Lab and Wilson Annex all cluster behind Roberts Hall.



Mines Building First Phase, 1923

The front elevation of Roberts Hall is prominent from Stevens Way, especially when approaching from the west (the view is blocked from the northeast approach by More Hall). The main pedestrian route is past the sunken plaza of Mueller Hall, or from the pathway along Mason Road. This route is likely to become much more heavily used when the pedestrian connection from the University Light Rail Station is completed. The upper portion and the roof of Roberts Hall are also visible from Montlake Boulevard NE near the intersection of NE Pacific Street, as well as partial views from the Sylvan Theater and Columns and from Mason Road between Wilcox Hall and Roberts Annex.



Approach from Stevens Way



View from Mason Road



View from Sylvan Theater and Columns

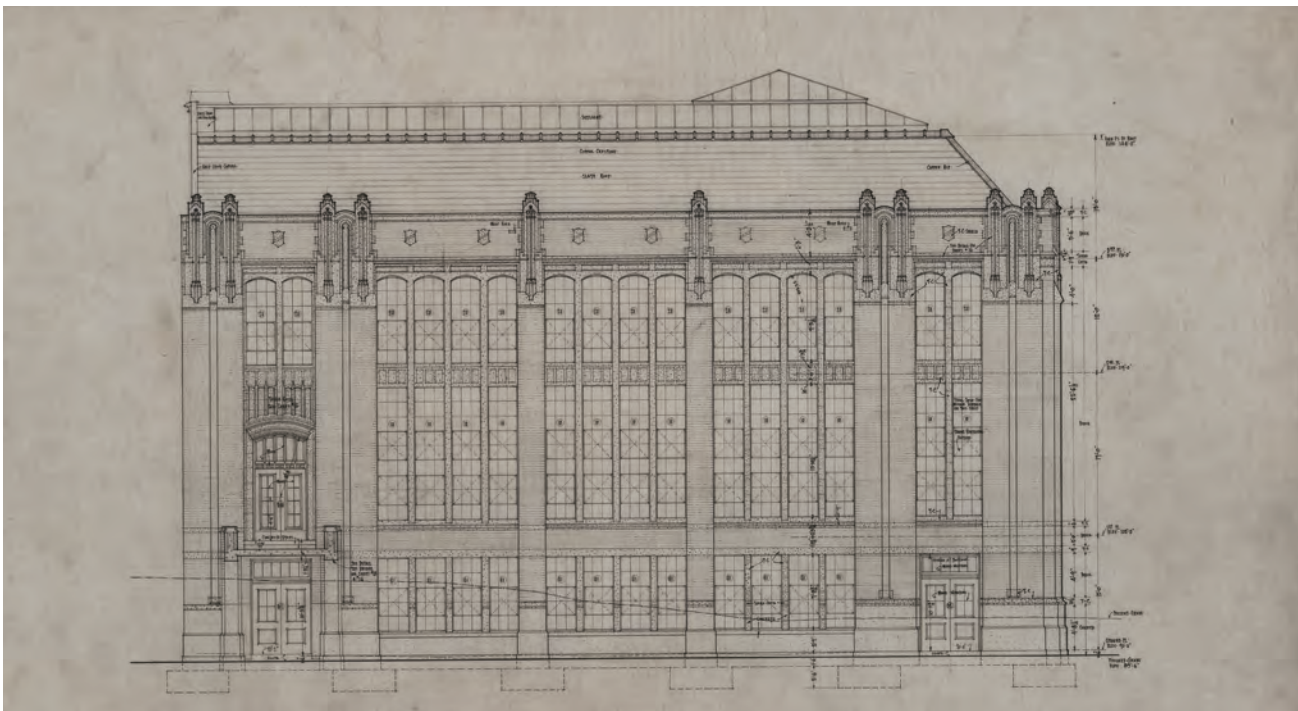


View from Wilcox Hall

Style of Architecture

Roberts Hall was designed by Bebb & Gould in the Collegiate Gothic style, which was the architectural form extensively used on the upper campus quadrangle. The typical characteristics of this style were all included in the exterior treatment of Roberts Hall, including arched window and door openings, buttresses, and masonry walls. In the engineering quadrangle Bebb & Gould made a few modifications to the Collegiate Gothic style, as noted by T. William Booth and William H. Wilson:

"The mines building (1921, now Roberts Hall), required a three-story space for a rock crusher. Gould capped the space with a large skylight, then continued the skylight over the laboratories on the top floor. The slender brick buttresses, minimal decoration, and expanses of industrial steel sash set within the buttresses make an appropriate envelope for the no-nonsense discipline taught within."





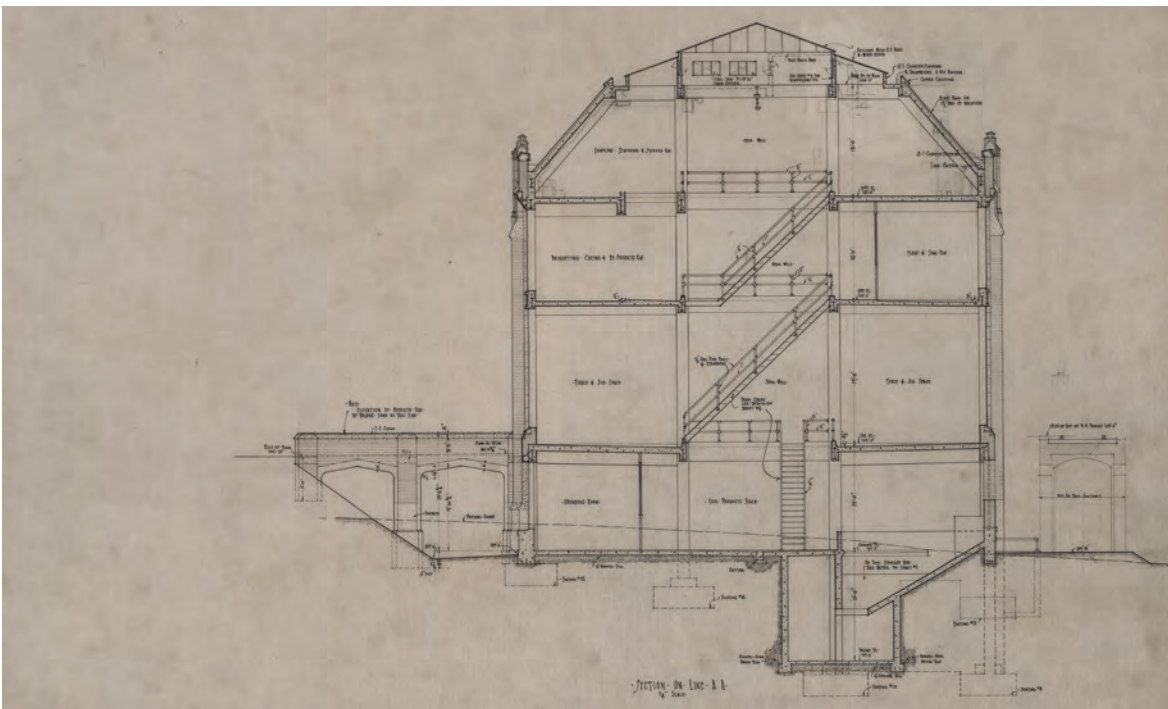
Roof and Roofing Materials

The roof structure is constructed of steel beams encased in concrete, and is basically a hip roof with a steep lower section at a slope of approximately 14:12 and an upper skylight at a slope of approximately 5:12. A pyramid shaped skylight crowns each end of the roof, with a lower flat roof with mechanical equipment running along the middle. The steep lower roof is slate, and the skylights were replaced in 1987 with aluminum tube rafters and caps and insulated glass panels.

A lower gutter at the base of the steep lower roof is approximately 9" wide with a parapet height of approximately 1'-4" (varies with the slope). This gutter is lined with a membrane and flashing and is accessed by a hatch on the northeast side. An upper gutter at the top of the steep slope and the base of the skylight is approximately 21" wide with a parapet height of approximately 10". This gutter is accessed by a ladder from the lower roof gutter at the roof hatch, or from the flat center roof.

Current Conditions

Roberts Hall is in very good condition with no evidence of water penetration through the roof, skylights, windows or masonry walls. The slate roof, skylights and gutters appear to be in good condition. Of primary concern, however, is the currently unsafe situation for accessing the roof areas for maintenance and repair work. There is no fall protection at the lower steep roof, and an inadequate cable system at the skylight gutter at the pyramidal end skylights.



5. Evaluation and Recommendations



Identification of Conditions Requiring Recommendations

Recommendations will be made for the exterior of the building where the proposed safe access and roof anchor system will require additional elements to be added to the roof. Primary consideration will be given to the visibility of these changes to the public view of the structure from the main approach on Stevens Way as well as the pedestrian pathways along Mason Road. In addition, recommendations will be made for the interior of the building where the proposed roof anchor system requires fasteners through the concrete structure which will be visible to the building users.

- **New Guardrail at Existing Roof Hatch**

An unsafe condition exists at the roof hatch on the northeast side of the building, where the hatch opens onto a narrow 9" wide gutter with a 16" raised coping (dimensions vary with the slope of the gutter). A new guardrail is needed for protection while a worker is in the process of tying off to the cable system and is proposed to be 8' long and 42" high. The guardrail is fabricated from 1 1/2" round steel pipe with a hot-dip galvanized finish, and is mounted toward the outboard edge of the gutter.

- **Fall Arrest Anchor at Upper Roof Gutter**

The upper gutter runs around the base of the skylight and is 21" wide with a 10" high curb on the outer face. The proposed fall arrest system consists of a galvanized steel eye bolt at approximately 17'-6" oc., attached through the skylight curb 12" above the bottom of the gutter. A stainless steel cable threads through the eye bolts with an energy absorbing mechanism at the end of each run.

- **Fall Arrest Anchor at Lower Roof Gutter**

The lower roof gutter runs around the base of the sloped roof and is 9" wide with a 16" raised coping on the outer face. The proposed fall arrest system consists of a galvanized steel eye with a bracket at approximately 17'-6" oc., attached through the roof structure 27" above the bottom of the gutter. A stainless steel cable threads through the eye brackets with an energy absorbing mechanism at the end of each run. On the northeast side of the roof the stainless steel cable turns and runs up the slope of the roof adjacent to the existing ladder, providing a way to tie off while climbing up to the upper roof gutter.

- **Fasteners Through the Concrete Structure**

Both the eye bolts at the upper roof gutter and the eye brackets at the lower roof gutter have fasteners through the concrete structure that will be visible on the interior.

Impact of Proposed Safe Access and Roof Anchors

- **New Guardrail at Existing Roof Hatch**

The proposed guardrail will be visible from the upper floors of More Hall, from the parking lot adjacent to Wilcox Hall and Roberts Annex, and from a short section of the Burke Gilman Trail.

The guardrail will not be visible from the primary approach to Roberts Hall from Stevens Way.

- **Fall Arrest Anchor at Upper Roof Gutter**

The fall arrest anchors and cables will be nearly even with the outer curb and therefore will not be visible from the ground. An added benefit is that this system will replace the existing unsightly cables around the base of the pyramidal end skylights

- **Fall Arrest Anchor at Lower Roof Gutter**

The fall arrest anchors and cables mounted to the slate roof will be approximately 9-1/2" higher than the raised coping on the outer edge of the gutter. The anchors and cable will be visible from the ground at a distance of approximately 130' from the face of the building. On the primary view side of Roberts Hall, the fall arrest system will be visible to about half way between Stevens Way and the building. When the anchors are fastened to the roof, some slate roof tiles will have to be replaced.

- **Fasteners Through the Concrete Structure**

Both the eye bolts at the upper roof gutter and the eye brackets at the lower roof gutter have fasteners through the concrete structure that will be visible on the interior.



Mitigation Recommendations

- **New Guardrail at Existing Roof Hatch**

The guardrail is not visible from the main approach to the building, but can be seen from the parking area between Wilcox Hall and Roberts Annex and to a lesser extent from the Burke-Gilman Trail and Montlake Boulevard NE in front of Edmundson Pavilion. The guardrail and the roof hatch should be painted to match the slate roofing, and be finished with a satin sheen to reduce any reflections or glare.

- **Fall Arrest Anchor at Upper Roof Gutter**

The fall arrest system will not be visible except at a great distance (300' or more). No mitigation is needed.

- **Fall Arrest Anchor at Lower Roof Gutter**

The brackets holding the cables will project at least a few inches out from the face of the slate roofing and will cast a shadow. Our recommendation is to locate the brackets on the centerlines of the vertical pinnacles (approximately 17'6" on center) to hide the bracket when viewed from straight on, and to repeat the rhythm of the exterior bays when visible. The cables should be discontinuous at the building corners – workers can work around the interruption. The brackets should be painted to match the slate color. New slate roof tiles needed to replace damaged tiles in the installation of the brackets should match the color and size of the existing slate roof tiles.

- **Fasteners Through the Concrete Structure**

On the interior of the building there is an original decorative motif of 4" square orange/red tiles, mounted in a diamond pattern. In a previous renovation similar tiles were used to hide connectors on the walls and at cable trays. Our recommendation is to utilize similar tiles to cover the thru fasteners for the fall restraint brackets.

