

# **Plant Operations Building Historic Resources Addendum University of Washington**

**Cardinal Architecture PC  
9 May 2014**

## **1. INTRODUCTION**

### **Background**

The University of Washington is planning a project to replace existing windows in the Plant Operations Building. The building was built in 1929 and is connected to the campus Power Plant to the south by additions to the Power Plant built in 1978 and 2002.

The Plant Operations Building is located on the east side of the University of Washington campus on Jefferson Road NE. In addition to the Power Plant to the south, adjacent buildings are the Engineering Annex and Loew Hall to the west and the Power Plant's cooling towers to the east. There are several smaller wood-framed buildings that house University Facilities and Plant Operations Annexes to the north.

The University's Historic Preservation Policies and Practices require a Historical Resources Addendum (HRA) to be prepared for any project that makes exterior alterations to a building more than 50 years old (2003 Seattle Campus Master Plan). This report provides documentation of the historical and architectural features of the Plant Operations Building, built in 1929. The building is 85 years old. This report does not consider the Power Plant addition that is connected to the Plant Operations Building to the south.

This HRA was developed by Cardinal Architecture PC of Seattle, Washington. The research was undertaken in April 2014 and a report was prepared for 9 May 2014.

### **Research Methods**

Cardinal Architecture PC undertook research to provide historic context and other information about the Plant Operation Building and the east central campus area. Research sources used in the preparation of this report included construction drawings available in the University of Washington Facilities Records, as well as maps, campus plans and historical photographs collections available digitally from the UW Libraries Special Collections and the Museum of History and Industry. Information about the proposed project came from Tom Berg and Ashley Kangas of the UW Capital Projects office and the Capitol Projects Office website ([www.cpo.washington.edu](http://www.cpo.washington.edu)).

### **Executive Summary**

The Plant Operations Building is not identified as significant in the 2003 Seattle Campus Master Plan, and it is not an architecturally significant structure on the Seattle campus. The alteration of the building is not an action that requires mitigation under the University's historic preservation policies.

## **2. HISTORIC PRESERVATION FRAMEWORK**

### **Historic Preservation Policies**

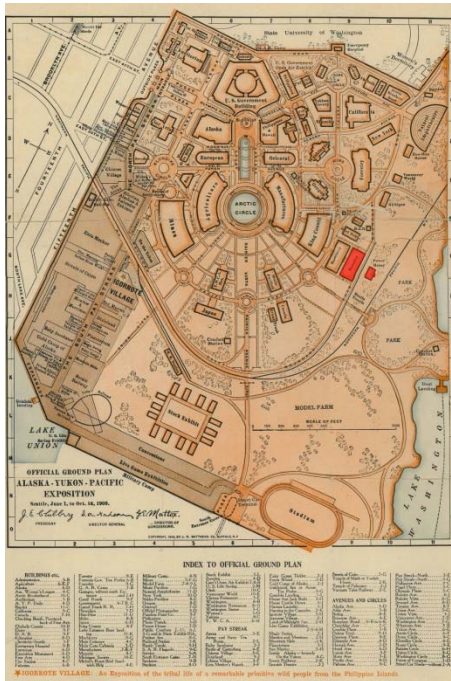
In the 2003 Seattle Campus Master Plan, the Regents of the University of Washington provide for project review to insure historic context. This includes the requirement of an Historic Resources Addendum for any exterior alterations to a building older than 50 years. According to the Master Plan, "the information

and analysis provided in the HRA provides a framework and context to insure that important elements of the campus, its historical 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.” (2003 Seattle Campus Master Plan, p. 26)

In addition, the Master Plan specifically identifies campus elements that are historically significant because of their association with early campus plans and development, including the 1898 Oval Plan, the 1909 Alaska Yukon Pacific Exposition Plan, and the 1915 Regents Plan (2003 Seattle Campus Master Plan, Fig. III-2, p. 25). The Plant Operations Building is not included on this list, nor is it mentioned elsewhere in the master plan document.

### 3. HISTORICAL CONTEXT

#### Development of the University of Washington’s Campus

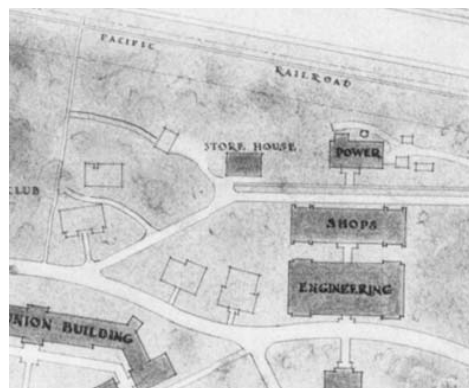


**Plan for the 1909 AYPE. Locations of Power Plant and Foundry are highlighted in red.**  
University of Washington Libraries, Digital Collections, UW27945z

The early development of the University of Washington’s Seattle campus was shaped by three campus plans. First was the Oval Plan, designed by Engineering Professor A. H. Fuller in 1898, which addressed only the northern part of campus. Second was the Olmsted Brothers plan for the Alaska Yukon Pacific Exposition of 1909. The AYPE plan developed the lower (southern) portion of the campus and established key campus features that are evident today, including the Rainier Vista and Geyser Basin (now Drumheller Fountain). The third plan typically cited in the University’s early development is the Revised General Plan of 1915, commonly referred to as the Regents Plan. Developed by Carl Gould of the Seattle firm Bebb & Gould, the Regents Plan built on the 1909 Olmsted design for the AYPE and laid the groundwork for the future development of the University’s Seattle campus.

The east-central portion of campus, where the Plant Operations Building is located, has been the site of utilitarian buildings since the earliest days of the University campus, including three existing buildings that were originally constructed for the 1909 AYPE. The Power Plant, in a much smaller form, was built in its current location for the AYPE with the intent of expanding to serve the future University. The location was

chosen for its proximity to the railroad tracks along what is now the Burke Gilman Trail, which allowed for easy delivery of coal. The current Engineering Annex, which is located to the south west of the Plant Operations Building, was built as the Foundry Building for the exposition. Plant Operations Annex 4, located just north of the Plant Operations Building, was originally the Dairy Barn for the AYPE. Since the AYPE, it has served a series of storage and maintenance functions. The Plant Operations Building was built in 1929 and, first appears on a campus plan dated 1931 as “Store House”.



**Campus Plan from 1931 & detail showing “Store House” outlined in red.**  
University of Washington Libraries, Special Collections, UW13953

Development of this portion of campus has been largely limited to utilitarian functions. Loew Hall and the Engineering Library (built 1969) and the Mechanical Engineering Building (built 1959) were built on the west side of Jefferson Road NE, but the main façades and entrances to these buildings face Stevens Way, with loading docks and back entrances facing east across Jefferson Road. The Power Plant has been expanded many times, with significant additions in 1922, 1935, 1939, 1950, 1959, 1960, 1962, 1969, 1978, 1996 and 2002. The 1978 addition involved the demolition of a one-story 1954 addition to the Plant Operations Building, and the 2002 addition linked the two buildings with an additional story above the 1978 addition. Other buildings in the area are primarily smaller wood-framed structures housing University Facilities and Plant Operations annexes, built between 1962 and 1993.

### **Building History and Use**

The Plant Operations Building was originally designed by John Graham, Sr. as central storage for the University. The original building drawings for the Plant Operations Building are dated September 13, 1929 and titled “Storage Building for University of Washington”. The original site plan shows dashed lines indicating the outline of future additions to the north and south. All subsequent additions and renovations to the building were designed by the University Physical Plant department. A small single-office addition was constructed on the southwest corner in 1950, and a larger addition to the lower level was built on the south side in 1954. The building underwent an interior renovation in 1968 when its use was changed from storage to its current function as the Plant Operations Building. This renovation converted the first and second floor interiors from open storage space to its current configuration of offices and small shops, but the basement remained in an open configuration until 1996, when another renovation created the current layout of offices and shops. The 1954 addition was demolished in 1978 to make way for the one-story Power Plant Chiller building, which created an interior connection between the Plant Operations building and the Power Plant. A second story and additional interior connection were added to the Chiller Building in 2002 to house a new emergency power system.

The Plant Operations Building was used in its original function as Central Storage until 1968, when Central Stores were moved to the Plant Services Building. Since 1968, it has been occupied by offices and shops used by Plant Operations.



**John Graham, Sr.**  
HistoryLink.org

**Original Architect – John Graham, Sr.**

John Graham, Sr. was born in 1873 in Liverpool, England. He had no formal education as an architect, but gained his skills through apprenticeships in England. His career as an architect began after he moved to Seattle in 1901, and he went on to design a wide range of projects over the next four decades, including many of Seattle's major downtown commercial buildings. Graham partnered with David Myers beginning in 1904. The team of Graham and Myers designed several pavilions for the 1909 Alaska Yukon Pacific Exposition, as well as several other Seattle projects. Graham set out on his own in 1910, and in 1913 completed two projects that would become emblematic of his career – the Joshua Green Building in downtown Seattle and the Ford Assembly Plant in South Lake Union.

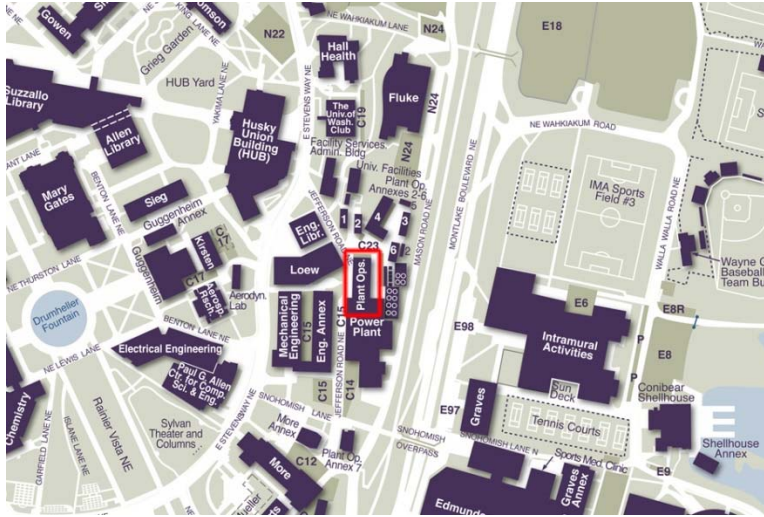
Graham's work on the Seattle Ford plant led to other similar projects for Ford, including an assembly plant in Portland, Oregon. He opened an office in Detroit from 1914-18 for the purpose of supervising these projects.

In the late 1910s and 1920s, Graham designed several of downtown Seattle's early commercial buildings, including the Fredrick & Nelson Department Store (now Nordstrom), the Dexter Horton Building, and the Exchange Building.

Graham also completed seven buildings for the University of Washington, including the Plant Operations Building in 1929. These include three of the main Science quad buildings: Johnson Hall (1930), Physics Hall (now Mary Gates Hall) (1928) and Guggenheim Hall (1928). He also designed the women's dormitory (now Hansee Hall) in 1939 and the Oceanography Building in 1932.

Graham retired in 1946, and his practice passed to his son, John Graham, Jr. The firm continued under the name of John Graham & Company until the younger Graham's retirement in 1986. John Graham, Sr. passed away in 1955.

#### 4. ARCHITECTURAL DESCRIPTION



Current Map of the East-Central Campus with the Plant Operations Building outlined in red  
[www.washington.edu/maps](http://www.washington.edu/maps), April 2014

#### Campus Setting and Site Features

The Plant Operations Building is located in the east-central portion of campus on Jefferson Road NE. The back of Loew Hall, with its loading and service entrances, is adjacent to the west across Jefferson Road. Smaller structures housing Plant Operations Annexes 2-6 and University Facilities Annexes 1 & 2 are located to the north across parking lot C23. There is a fenced area containing electrical equipment directly to the east of the building, and the 1978 Cooling Tower addition to the Power Plant is located between this area and the Burke Gilman Trail. The Plant Operations Building is connected to the Power Plant on its south wall. The Engineering Annex, originally built as a foundry building for the AYPE in 1909, is located across Jefferson Road to the southwest.



Site East of Plant Operations



Site North of Plant Operations

The site of the Plant Operations Building slopes steeply to the east, losing a full story in elevation from the front (west) to the back (east) of the building. The building is two stories tall on the west façade and three stories on the east. The building is surrounded by parking lots and driveways on the north, east and west sides.

## Building Architecture



**View from Northwest**

The Plant Operations Building is a concrete-framed building that is utilitarian in its design. The west and east sides are finished with a brick veneer with decorative brickwork above the upper story windows. The windows are multi-panel steel frame windows with single pane non-insulated glass. The steel frames on the west side are painted dark green and match the doors and other details, although the original color of windows and doors appears to be a lighter green that can be seen in a few locations that were not covered by subsequent repainting. The windows on the east and north sides are painted black. The concrete frame is exposed on the north side, with hollow clay tile infill, and the single window on the north side is not shown in the original drawings. There are fire escapes on the east and north walls that were not part of the original construction. There is a 1-story brick elevator penthouse on the northwest corner of the building, and a smaller roof hatch providing roof access from a ladder at the top of the south west stairwell.



**Window Detail showing multiple layers of green paint**

There is a loading platform on the west side with a marquee above that is anchored to the façade by three thin steel rods. The south end of the marquee is connected to a one story office that was added to the building in 1950. The addition was built to match the original building architecturally, and incorporates the original window that was covered by the addition. The south side of the Plant Operations building is connected Power Plant at the basement and entry levels to the Power Plant through Power Plant additions built in 1978 and 2002, respectively. The steel fire escapes on the north and east sides of the Plant Operations Building were added as part of the 2002 project. The ADA access ramp was likely added in the late 1980s.

The building interior has been extensively remodeled since it was originally built as an open storage building in 1929. The first and second floors were partitioned into offices and shops in a 1968 renovation, and interior walls were added to the basement in 1996. Only the freight elevator and stairwell remain relatively unchanged.



**Marquee Detail**



**West Elevation**



**East Elevation**





**North Elevation**

**Timeline of Additions and Renovations**

**1929** – Built as University Central Stores

**1950** – First Floor Office Addition, southwest corner

**1954** – Ground Floor Addition adds approximately 3500 SF on south side

**1968** – Central Stores moves to new Plant Services Building  
Plant Operations occupies building  
First & Second Floor renovations convert storage space to offices

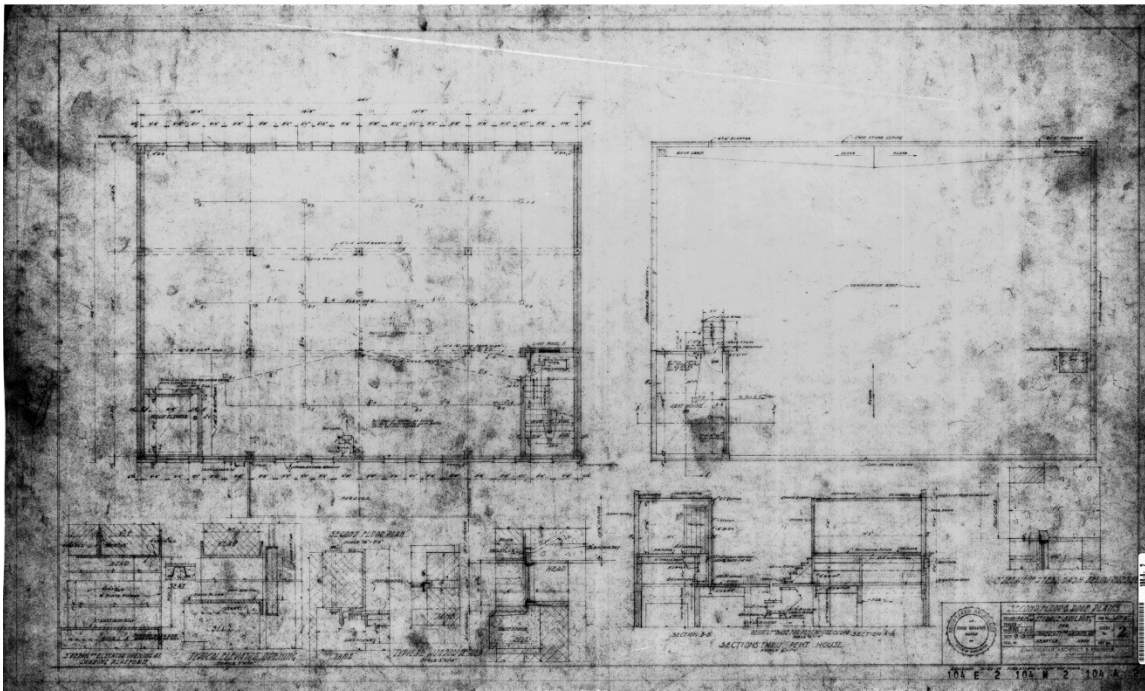
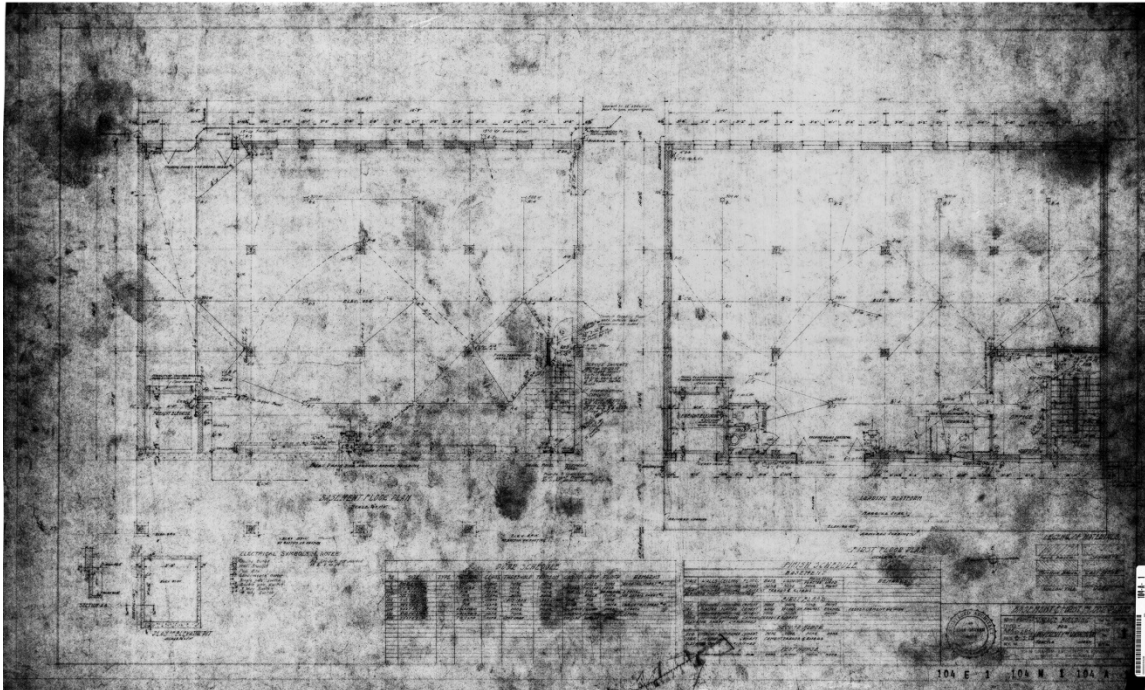
**1978** – 1954 addition removed for construction of Power Plant addition  
Ground Floor interior connection to Power Plant is created

**Late 1980s** – ADA compliant access ramp installed in loading dock on west side

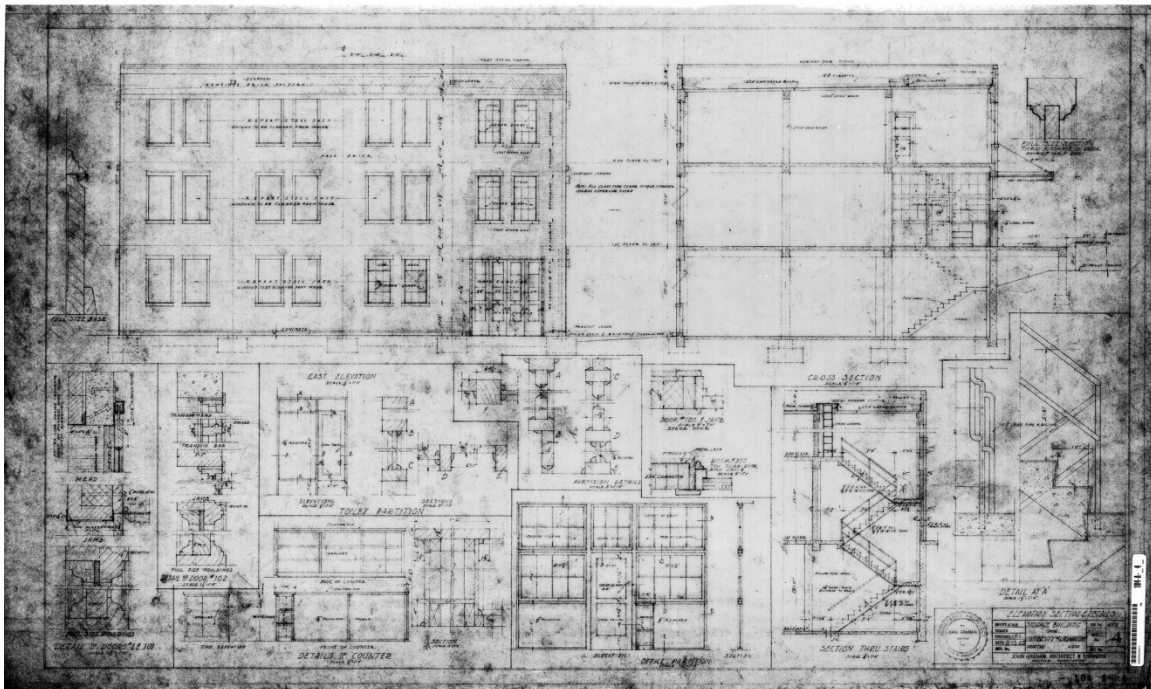
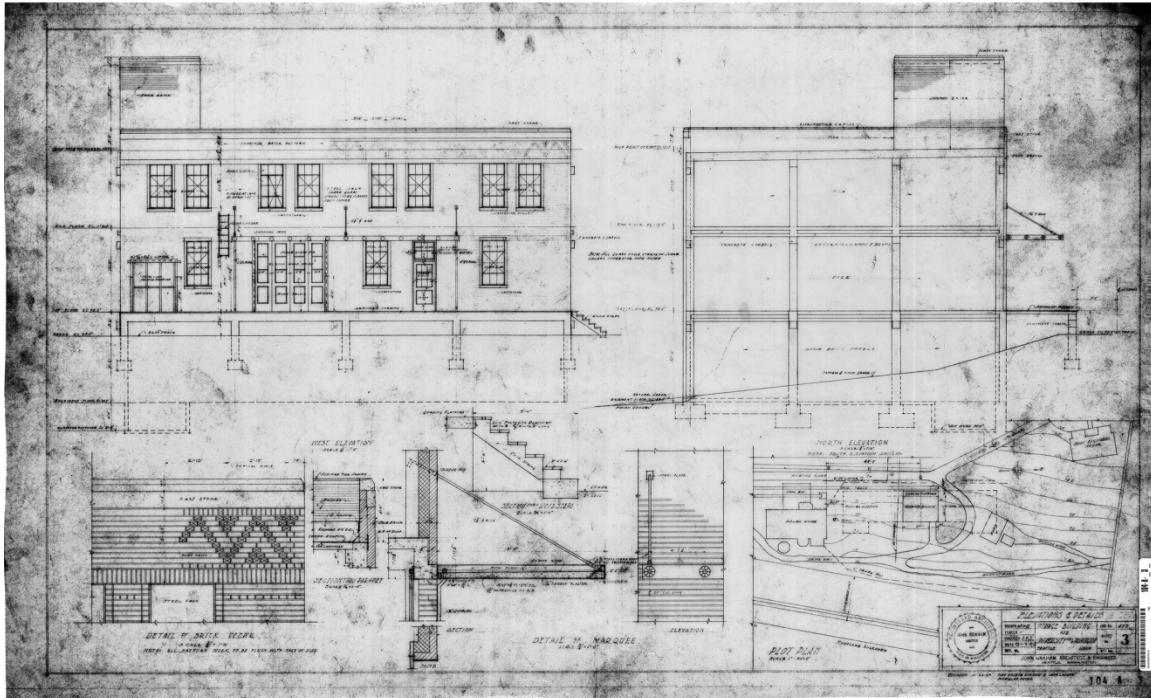
**1996** – Basement renovation converts storage space to offices & small shops

**2002** – Upper level added to 1978 Power Plant addition  
First Floor interior connection to Power Plant is created  
Steel fire escapes added to east & north sides

University of Washington Plant Operations Building – Original Plans (Dated September 1929)



University of Washington Plant Operations Building – Original Elevations (Dated September 1929)



## Windows



Original Window – West Side



Original Windows – East Side

There are 34 windows on the Plant Operations Building that will potentially be affected by the proposed replacement project. There are 13 original windows on the west side, 1 on the north side, and 13 on the east side. Additionally, there are 7 windows on the upper level of the east side that were replaced in a previous renovation and may be replaced again as part of the proposed project. The windows are arranged in pairs (see building elevations) and measure 6'-2" high by 3'-2" wide. One lower level window and one upper level window on the east side were replaced by doors as part of an earlier renovation project. The original windows have steel sashes with multiple panes of non-insulated glass and a cast stone sill. The windows operate on a central horizontal pivot. The window sashes and frames on the west side are painted dark green to match the doors and trim on the marquee, while the sashes and frames on the north and east sides are painted dark brown. Drawings of both types of existing windows are included at the end of this report.

## 5. EVALUATIONS & RECOMMENDATIONS

### Building's Significance

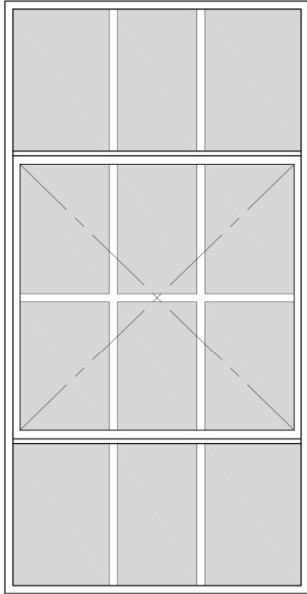
The Plant Operations Building is not identified as significant in the 2003 Seattle Campus Master Plan, and is not an architecturally significant structure on the Seattle campus. The alteration of the building is not an action that requires mitigation under the University's historic preservation policies.

### Comments and Recommendations

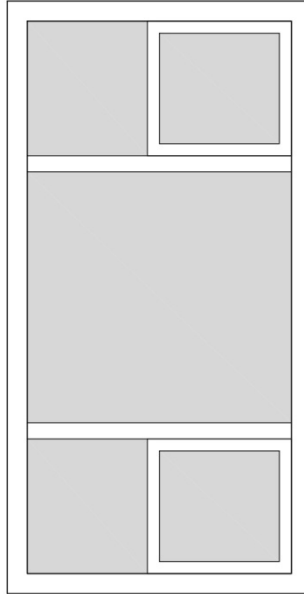
The Plant Operations Building was designed as a utilitarian storage building with functionality as the primary factor in its design. Both its interior and exterior have been modified extensively. The original windows are no longer functioning as required for noise reduction and energy efficiency, and may be replaced as needed. While the building is not historically significant, there are stylistic considerations that may be taken into account when selecting replacement windows for the proposed project. There are windows available that will meet the energy and sound requirements of the proposed project while maintaining the original look and feel of the building. Drawings of suggested options for replacements are included on the following page.

A typical commercial aluminum window such as those made by Kawneer will not have narrow enough construction to resemble the original steel windows. Aluminum windows by Fleetwood ([www.fleetwoodUSA.net](http://www.fleetwoodUSA.net)) or a similar manufacturer, may be considered for the replacement. These

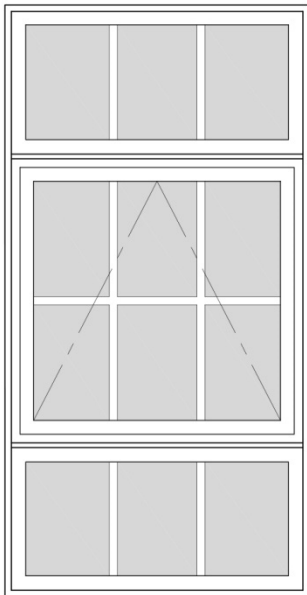
windows are available with insulated glazing units and surface mounted mullions that will replicate the look of the original steel windows. These windows are available in custom factory finish colors, and either the current green or the lighter green original color would be appropriate. If custom paint colors are cost prohibitive or unavailable, a standard black or dark bronze anodized finish would also be acceptable.



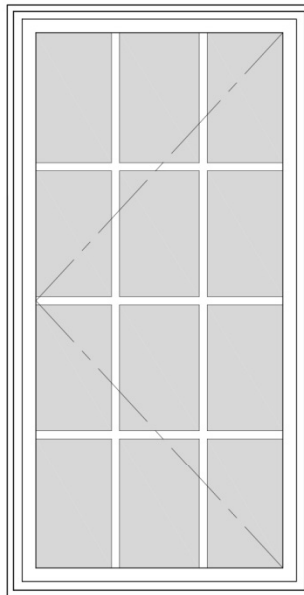
**Typical Original Window**  
**Steel Frame, Single Pane**



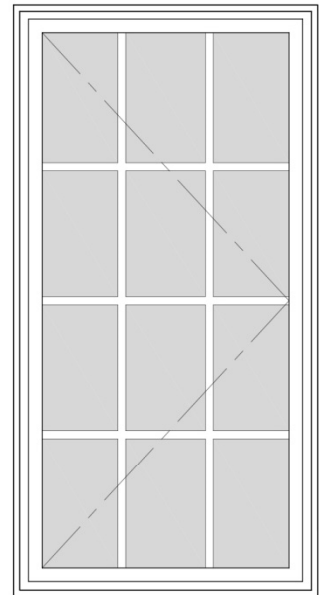
**Typical Existing Replacement Window (2nd Floor Only)**  
**Typical Commercial Aluminum Window (Kawneer Type)**



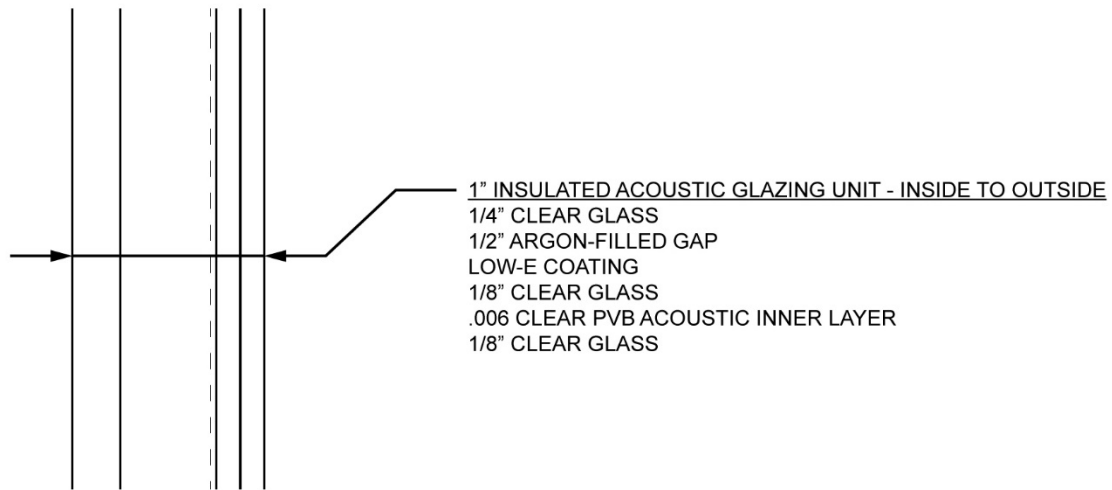
**Recommended Replacement:**  
**Center Awning**  
**Fleetwood-type Aluminum Windows**



**Replacement Option: Opposing Casements**  
**Fleetwood-type Aluminum Window**



To meet the project requirements for both insulation and sound reduction, a glazing unit similar to the diagram below should be used. The dual-pane, argon filled unit, installed in a thermally broken aluminum frame, will provide excellent insulation, and the clear PVB acoustic inner layer will decrease noise without compromising the clarity of the glass.



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