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Lighting Existing Conditions & Design Criteria Report

Executive Summary

The following Lighting Existing Conditions and Design Criteria Report analyzes the existing lighting system in William H. Gates Hall. While the report provides a general overview of the entire building's, lighting system, four spaces are examined in detail. These spaces include the Marion Gould Gallagher Law Library, the Senator Warren G. Magnuson & Senator Henry M. Jackson Trial Courtroom, the Jeffrey & Susan Brotman Galleria and the terrace. All information considered regarding the existing lighting design, equipment, materials and spatial considerations has been indicated below. This includes but is not limited to, the existing layout, luminaires, lamps, ballast, light loss factors, materials and their corresponding reflectances. In addition to analyzing the electric light systems within these spaces, daylighting was taken into consideration and a daylight study performed when appropriate. All of these factors were taken into consideration in determining the appropriateness and effectiveness of the different lighting systems.

In order to effectively analyze the existing lighting systems, design criteria and goals are established in order to provide a basis of quality measurement for the system. The design criteria included in this report is based on the recommendations of the IESNA Handbook. Special considerations are incorporated for each individual space in order to determine the best overall design goal and ideal standards. While each of the spaces being studied in William H. Gates Hall is vastly different from another, all spaces are evaluated on the basis that the overall design goal of the building is to incorporate a lighting design that reflects that excellence and tradition that defined the University of Washington School of Law. In addition to outlining design criteria, computerized models are used as a tool in evaluating each system.

Taking into consideration specified design criteria and the computer generated renderings, an extensive critique of each of the spaces was performed. As a whole, the majority of the outlined criteria were met in all of the four spaces. However, as with any design, there are areas that have potential for improvement or can be designed using a different approach. Such areas include, but are not limited to: accentuating distinct architectural characteristics, creating more interesting and inviting light patterns, increasing uniformity on work plane, maintaining required illuminance levels (an important factor in maintaining safety), and more extensive daylighting control and integration. As a whole, there are several opportunities to improve the design so that it is more efficient, more functional, and more aesthetically pleasing.

Special attention was also taken in verifying compliance with ASHRAE 90.1 power density and control standards. All of the spaces comply with the specified requirements with the exception of the space-by-space power density requirement of the terrace. Improvement is required within this area to reduce power consumption since the power density exceeds the given requirement.