

77 K STREET

Washington, DC



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Executive Summary

This final proposal report will serve as an outline for spring coursework in AE482. The overarching theme for the proposal is LEED accreditation based on the LEED Green Building Rating System for Core & Shell Development Version 2.0. Spring coursework will explore various outlets for the 77 K Street project achieving additional accreditation points. Cost and schedule implications of such changes will also be considered.

Analysis 1: Commercial Office LEED Analysis

This critical industry research topic will explore the opinions of developers and owners in regard to pursuing LEED accreditation. It has been commonly accepted that LEED accreditation adds value to a building but it also comes at a higher upfront construction cost. Through the use of surveys, this analysis will assess whether owners and developers are willing to pursue sustainable, LEED accredited projects given these added initial costs.

Analysis 2: Window and Solar Shade Design (Mechanical and Solar Breadth)

By adjusting the current window and shadow box design on the building, solar gain can be optimized during winter and summer months. This analysis will focus on energy savings and obtaining LEED points. A mechanical breadth will be incorporated by calculating the change in the cooling load on the HVAC system resulting from the change in direct solar rays entering the building.

Analysis 3: Green Roof Design (Structural Breadth)

Green roofs can be a central feature of LEED accredited projects. The structural impacts of adding a green roof will be assessed and the roofing system will be redesigned as needed. The cost and schedule implications of such an addition will be addressed as well.

Analysis 4: Short Interval Production Schedule Development

Short interval production schedules often lead to reduced project schedules when highly repetitive activities occur in a project. Through the development of a short interval production schedule (SIPS), the overall schedule will be reduced and tracking work flow will become much easier. The "parade of trades" and schedule reduction will be illustrated through the use of a 4D model.