

77 K STREET

Washington, DC



Todd Povell | Construction Management | Consultant: Dr. John Messner

Executive Summary

The 77 K Street project is a class A core and shell office base building project consisting of 11 above grade levels and 3 levels of below grade parking garage. The site is located at the intersection of 1st and K Streets in Washington, DC in the North of Massachusetts development district north of the Capitol Building. The project includes approximately 350,000 gross square feet of above grade office space and an additional 100,000 square feet of below grade parking.

The investigation of the 77 K Street project throughout the fall semester led to the thesis proposal and eventually this final thesis report. One of the most intriguing ideas that emerged from the fall investigation came from conversations with the building's owner, Brookfield Properties. James Berkon, the primary point of contact within Brookfield Properties, had informed me that the project had considered pursuing LEED accreditation. Unfortunately, this thought did not emerge until well into the design process. Making the project LEED accredited at this point was simply too costly. Consequently, the financial feasibility of changing the design hindered the incorporation of measures that would allow the project to achieve LEED certification.

The purpose of this thesis report is to investigate ways in which the 77 K Street project could achieve accreditation. The report uses indepth knowledge learned within the construction management option area as well as information from other architectural engineering disciplines. This thesis report is a culmination of a year long's worth of work in senior thesis coursework. The report draws from investigative studies of the existing building's design as well as research into potential changes to the existing design and scope.

A logical place to start seemed to investigate industry trends in sustainable accreditation to see if indeed LEED accreditation is an accepted and well looked upon sustainable practice. Rather than perform a literary review of prior research, information was collected and analyzed from firsthand sources, building owners themselves. This investigation, which explored owner representative's views on LEED accreditation, helped lay the groundwork as to whether indeed LEED accreditation is viewed as a positive measure within the commercial office building sector.

After investigating industry trends, two key analysis areas were identified that could significantly contribute to the building's sustainable design. These two areas are the incorporation of a green roof in lieu of the existing EPDM roofing membrane and also the use of more efficient solar glazing. Both of these investigation areas required extensive breadth analyses. They pulled from structural, mechanical, and solar knowledge bases. The focus throughout remained on the incorporation of cost effective sustainable design that is not only environmentally conscious but also financially enticing from a developer's perspective. Cost, schedule, value engineering, and constructability were primary concerns in all investigation areas.

The following report outlines in detail the methodology and the results of the three studies listed above. Additionally, the report provides an overview of the project's existing LEED status, as well as the project's potential LEED status if it were to pursue the green roof design and glazing alternative.