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October 5th, 2007

Executive Summary:

The following report provides a detailed analysis of the existing lighting design and system of the Duke University Medical School- Duke School of Nursing building in Raleigh, NC. The report focuses on analyzing four different multifunctional spaces throughout the building. For each of these four spaces a lighting design criterion was developed in order to express our thoughts on how these spaces should appear or function. The report also analyzed the existing fixtures, ballasts, materials, and LLF within the spaces. The four spaces that were looked at in depth were: 54 seat outdoor courtyard area; a 64 seat café/ lounge area that is a double high space that has full height glass curtain walls that look out onto the courtyard; a 150 seat AV/multipurpose auditorium classroom; and a grand double high entrance lobby, which is located in the prominent Gothic tower portion of the building.

There was a common theme of being inviting and comfortable to all 4 of these analyzed spaces. However, the feeling desired in each space varied based upon the variety of uses each space encounters. Due to the multifunctional uses of these spaces, flexible controls are demanded by the spaces. Since the building is going for LEED certification, daylight integration as well as proper fixture and lamp selections are not only recommended but required in some cases.

In my analysis of these four spaces I noticed that the courtyard and its points of interests were not really brought into the design. I realize that the courtyard receives a lot of ambient light from the adjacent double high glass curtain walls of the café but there is no accenting of prominent features or points of interest throughout the space. I feel that by applying accents to a few key elements then the courtyard would appear more inviting at night than in its current state. However, as a whole, the lighting design was very impressive and it appears the designers achieved their design criteria.

Finally, the ASHRAE/IESNA Standard 90.1 was analyzed to determine the existing lighting power densities for these four spaces. It was determined that each space met or was below the Space-by-Space Method standard. This means that in my redesign I will have the necessary flexibility to achieve my design criteria goals.