

Breadth Proposal

The mechanical redesign at the Hauptman-Woodward Medical Research Institute will likely have effects on the other systems within the building. Furthermore, it is likely that improving some of the other systems in the building will have a direct effect on the mechanical system of the building. The two breadth areas under consideration will likely have a major impact on the mechanical system. First, altering the lighting systems will ultimately decrease the cooling load of the mechanical equipment. Second, the incorporation of wind power will alter the electrical load and reduce the amount of electrical consumption from the city electric grid, and require a redesign of the electrical switchgear and generator systems.

Lighting

In the first technical assignment, it was found that the lighting system provided an unusually high amount of watts per square foot. The cause for this may be due to the incorporation of indirect lighting within the office spaces. Although the precise fixture type is unknown, a visit to the site over the holiday break may provide clues as to why there is such an unusually high watt output. Once the precise fixtures of the current system are analyzed, it will be easier to discuss alternative schemes that will provide lower watt output while keeping the architectural integrity of the space intact.

Wind Power

The fact that Buffalo, New York resides on the Great Lakes makes it a prime area for wind power. It is my intent to analyze wind power alternatives in this region and the feasibility of such a system at the Hauptman-Woodward Medical Research Institute. Additionally, the implementation of such a system would require minor redesign to the electrical system so that the wind turbine can first, provide alternative power to the space and secondly, supply energy to the grid in the event of a surplus. The major benefit to this system is a reduction in energy costs from the city, especially during a time when electric and gas rates are on the rise.