

Breadth Topics

Construction Management

In conjunction with redesigning the building using a concrete structure as apposed to the current steel framing method, the project's construction schedule will be evaluated and revised as needed to allow for the amount of time required to construct and finish a cast in place concrete structure. Aside from the project's scheduling demands, the cost differential between the structural steel and concrete systems will also be analyzed and assessed. In these ways it can be determined which procedure allows for the most efficient way to complete the project based on cost and time constraints.

Building Envelope

The building exterior, aside from the brick façade, contains an aluminum panel curtain wall system on the north facing elevation of the new tower addition. A building's envelope is an area that may pose considerable amounts of concern with subjects such as water penetration and heat loss. While conducting a site visit of the hospital, it was brought to my attention that there had been a few leakage problems and that water damage is currently a concern of the hospital's maintenance personnel. The processes used to install the system, as well as testing methods performed and alternative solutions, will be investigated to determine if the current façade system was the best choice, or if it could have been constructed in a more efficient manner.

Sustainability / Mechanical Systems Analysis

Once all of the final components of the hospital are considered, and it has been determined which system will be declared the more functional structural design method for the hospital, the building can be evaluated for the effects it places upon the environment and its application of sustainable practices throughout the building's construction phases and life cycle. From there, it can be determined what steps will need to take place in order for the hospital to become recognized as a LEED certified "green" building, or if there are any steps that can help it to achieve a higher ranking. By evaluating the amount of LEED points the building would earn in its current condition and the amount of points that are easily within reach, it can be determined what the costs of upgrading the building's environmental status may amount to. Since the building functions as an establishment for healing the sick, indoor air quality will remain an important issue throughout the building's entire life cycle. With that stated, an in depth analysis of the mechanical systems in place within the hospital and their efficiency with meeting indoor air quality demands would be a pertinent issue for a more comprehensive sustainable design inspection.

Being that there are three breadth ideas listed above, as further evaluation of the latter two topics are investigated and it is determined which one poses to be a more significant concern, the third option will be neglected within the final thesis or only briefly mentioned with a minor degree of significant detail.