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V. Conclusions

The critical industry issue affecting the City Hospital Phase 1 project is the use of Building Information Modeling – 3D Modeling. BIM is already well known and is becoming highly demand in the construction industry. Some pioneer schools have already implemented BIM courses into their curriculum, for example, University of Minnesota. BIM has great potential for the next generation of architects, engineers, and construction managers. On the Phase 2 of this City Hospital project, BIM has already proven to be an effective tool in evaluating the construction process on a LEED® rated hospital and will impact the project by reducing the cost and schedule.

The first technical analysis examines some LEED® point options that can be additionally obtained by City Hospital to achieve a GOLD rating instead of the SILVER rating that is currently being aimed for. The additional credits include EA Credit 5: Measurement & Verification, EQ Credit 1: Outdoor Air Delivery Monitoring, WE Credit 2: Innovative Wastewater Technologies and SS Credit 6.2: Stormwater Design: Quality Control. There is an initial costs associated with incorporating such systems into the building but energy savings would outweigh the costs over time. The stormwater system is a feasible option for City Hospital and would be recommended. The first cost of a rainwater system typically would range from \$25,000 to \$40,000 depending on the components incorporated with an annual savings of about \$5,000.

The second technical analysis compares a medium voltage generator (4160V) to the low voltage generator (480V) currently used on the project. The factor that will need to be considered is mechanical ventilation due to radiated heat from the transformer. Also, the proposed location of the transformer (Level B) is currently in a place where electrical water cooler is located, the plumbing the contractor will have to coordinate relocation of the cooler. In terms of electrical work, it was realized that the proposed system would reap savings of \$640,400. The result of my study suggests that with fewer wires being installed it would be easier for the contractors to coordinate conduit run which would decrease time on the schedule.

In conclusion, the design, coordination, and construction process has and will always require careful planning; sustainable design, and efficient application.