7.0 FINAL SUMMARY AND CONCLUSIONS

The first analysis, which looked at a critical industry issue, examines the use of 4D Modeling as a comparison tool for the Baltimore Washington Medical Center- Women's Center and Inpatient Tower. The study involved the development of a 4D Modeling process, which could be used to compare scheduling and sequencing for two systems. The process was reviewed on the structural and façade analyses where the process proved to be somewhat effective in comparing the alternatives. It was discovered that the 4D Model could be used as a comparison is some instances, but not all instances. For the structural analysis, the 4D tool proved to be effective in showing the different timing between the two structural systems. However, with the façade analysis, it was difficult to clearly show the scheduling and sequencing of the façade systems using the 4D Model. Even though there are some improvements that need to be made with the program, the 4D comparison tool would still have been useful on the BWMC-Women's Center and Inpatient Tower.

The second analysis looked a small portion of the structural system for the Patient Tower. The investigation focused on replacing the precast hollow core planks with a composite slab for the area above the existing mechanical room. The study included a structural design of the composite slab and an analysis on the cost, schedule, and constructability of the alternative system. The alternative system proved to be the best system in terms of cost and also constructability. The schedule durations for the two systems were the same, but the alternative system had no restrictions on when it could be placed whereas the precast planks could only be placed on the weekend when the tower crane was free to use. It is recommended that the composite slab be used in place of the precast hollow core concrete planks.

The third analysis focuses on the changing the façade system from EIFS to GFRC. The original design for the project was GFRC; however, EIFS replaced it as a value engineering option. For the analysis, the two systems were compared based on their thermal quality, their impact on the structural system, initial and life cycle cost over 25 years, schedule duration and sequencing, and constructability. From the investigation, there were advantages and disadvantages for both systems. The biggest advantage for the EIFS is the initial and life cycle cost. The EIFS proved to be much cheaper than the GFRC. The advantages of the GFRC included thermal quality, schedule durations, and constructability. Even though I believe the GFRC is the best system in terms of quality, the huge cost savings associated with the EIFS system make it the best system for this project.