I. Executive Summary

The main purpose behind this senior thesis research is increase productivity and efficiency by utilizing today's technology in design to construction. Reducing rework from design to facility management is a multidimensional process. Tracking the work flow of information from facility management to design results in the identification of valuable data, which can be used for the building information model.

Alternative Structural Bracing for the Theatre

This depth study into the constructability looks at the alternate methods of bracing. The cost and strength of the bracing was found to be equal to the original design. The primary advantage is that the alternative bracing reduces site congestion and concrete slab shoring. RAM Elements and Revit were utilized for the quantity take-offs to expedite the estimating process.

Connecting the Electrical System to the Existing Combined Heat and Power Plant

This analysis examines the peak load shaving to create energy savings. After creating an energy model, the required electrical equipment was selected and priced. The outcome shows a return on investment of less than five years, with an annual electricity savings of $8,147.

Utilization a Matrix schedule

The crowded construction site of New York City proved to be the ideal selection for creating a matrix schedule. By dividing up the site plan into zones a feasible alternative was easily found. Scheduling the underground utility work in the beginning phase of construction potential delays from underground work can be prevented.

Building Information Model and Facility Management Integration

This section studies a critical industry issue of integrating the BIM and FM while focusing on what information owners are using in the field. By understanding what technicians are using in the field it becomes clear what information is critical to implement within the BIM. Another key to the BIM and FM integration is organizing the information in a structured format from design to construction. As a result, information can be successfully passed to the owner.