



## **Executive Summary**

The beginning of this report is meant to provide a brief background of the Lancaster General Hospital 5<sup>th</sup> and 6<sup>th</sup> floor Fit-Out and Cardiac Elevator Addition. This section of the report includes a project overview, project team overview, project cost summary, project schedule summary, and project logistics detail. This information was compiled during the fall semester of this senior thesis course.

The depth study section of this report contains industry research on commissioning of new construction and retro-commissioning of existing building equipment. In order to complete this research a survey was developed and distributed to industry personnel. These survey results along with interviews and research from industry reports on commissioning were summarized to develop recommendations for the use of commissioning processes.

The first breadth study analyzes the proposed use of pre-cast concrete floor planks in place of the designed cast-in-place concrete on composite metal decking for the Cardiac Elevator Addition. In order to complete this analysis calculations were completed to determine the size of pre-cast concrete floor plank required to replace the cast-in-place system. Additionally cost and schedule reduction analyses were completed to determine what impact the switch in structural system had on cost and schedule. These analyses showed a \$1,612.00 increase in cost and a 2 day reduction in schedule. The final part of this section contains a constructability review of the Cardiac Elevator Addition.

The second breadth study analyzes the mechanical connections used at the Infection Control Risk Assessment (ICRA) partitions. Focusing on the selection of mechanical connections that reduce rework at the partition locations saving unnecessary costs and schedule impacts.

The final section of this report contains a summary and conclusions of the work conducted in this senior thesis.