

II. Executive Summary

This senior thesis final report is intended to provide an in depth analysis of the bayhealth medical center located in Dover, Delaware. This report contains information regarding owner information, bayhealth 10 year strategic planning, an in depth summary of the current phase two expansion, summary of the podium building and its systems, project team, companies involved, a summary of construction costs, and a summary of the podium building's schedule. This senior thesis final report also contains an in depth look into four analysis topics. The analysis topics that are discussed in this report are a look into issues encountered with the curtain wall system, a green roof addition, a look into prefabrication, and 3-D coordination. Also Two breadth topics, a structural and a mechanical, that both involved the green roof analysis will be discussed.

Analysis One:

The bayhealth medical center expansion's façade is comprised of three different systems: metal panels, masonry brick, and a curtain wall system. The problem that the project team ran into was tying the Eastern curtain wall facades waterproofing into the other two systems efficiently and effectively.

Analysis Two:

There were very few sustainable ideas implemented on the bayhealth medical center expansion. Green roof technology is beginning to emerge in the construction industry today as a way to not only make a building more environmentally friendly, but also as a way to provide savings to the owner in the long run. A green roof system is a great way to reduce storm water runoff, reduce the buildings heat island effect, and also reduce mechanical loads.

Analysis Three:

Because of the extensive amount of MEP systems needed in a hospital, a lot of time and money is spent installing these systems. Since these systems are so important to the overall building, their installation is usually on the schedules critical path. Because cost and quality are paramount to the bayhealth medical center expansion owner, the installation of these systems must be watched over diligently. The installation of these systems is not only time consuming and expensive, but can also be very problematic.

Analysis Four:

BIM seems to be one of the most talked about topics in the construction industry today. It is completely revolutionizing how construction projects are being done today. Using even the basic concepts of BIM, like clash detection and 3D coordination, can greatly reduce the time and money it takes to ensure that building systems can be properly installed, and reduce the number of change orders and field problems that occur due to improper coordination.