

December 11
2009

CARDEROCK SPRINGS ELEMENTARY SCHOOL



Carderock Elem. Sch.
August 23, 2009

**FACULTY ADVISER:
DR. CHRIS MAGENT**

JOSEPH HIRSCH
CONSTRUCTION MANAGEMENT
EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This proposal will provide a summary of the topics that will be researched in the Spring 2010 semester and will serve as the guide to the research into the topics discussed in this report. The areas of research will include Building Information Modeling and its potential impact on small scale projects, relocation of underground storm water retaining system, a redesign of certain structural systems, and the impact the addition of solar hot water heating and rain water reclamation will have on the project. The goal in all of these analyses will be to identify how BIM can assist in streamlining processes and add value and savings to the project.

Analysis 1 will focus on Building Information Modeling and the benefits of 3D coordination. This research will focus on cost effective ways to implement BIM on smaller projects. Particular areas of research will concentrate on outsourcing of modeling, contracting options to minimize risk, and specific areas in which BIM can assist the other proposed analyses.

Analysis 2 is the relocating the Underground Storm Water Storage System to a new location. The goal of this proposal is provide value and cost savings to the project. It also has potential to accelerate the schedule. Primarily it will focus on site utilization, cost of moving the system, and schedule acceleration scenarios. Another research topic will be how 3D site coordination can be used to propose the best locations for underground utilities outside of the building.

Analysis 3 will change the structural system in the Gymnasium and Multipurpose room from CMU load bearing walls to structural steel. This analysis will attempt to minimize trade coordination and provide opportunity to save time in the schedule. It also as the potential to save the project money since steel is less labor intensive than masonry. This analysis will demonstrate breadth in structural analysis.

Last, Analysis 4 will research how the addition of solar hot water heating and rain water reclamation systems can increase the sustainability of the project and also provide opportunities to add value with potential for long term reduction in energy and water utility bills. These proposals will also look into how 3D coordination of building systems can assist in locating areas for these systems. This analysis will also demonstrate breadth in mechanical systems