
EXECUTIVE SUMMARY

The following Spring 2007 Senior Thesis, for Penn State's Architectural Engineering program, will cover an entire school year's work and analysis on the Health Care Center, located in Dauphin County, Pennsylvania. Included in this report is a building overview, local conditions, building systems, proposal, research analysis, structural breadth analysis, mechanical breadth analysis, and recommendations to those analyses.

The building overview will give a brief introduction about the Health Care Center, the function of the building, project team involved and a brief introduction into the report. The local conditions will describe where the building is located and what the subsurface conditions are like. The building systems section discusses the structural, mechanical, and electrical systems along with other interesting facts about the building.

The proposal will briefly describe what will be analyzed in the research and breadth topics. The research topic will be analyzing the integration of value engineering and sustainability; a topic that affects the construction industry. The purpose is to incorporate value engineering to a project that is striving for LEED or another sustainable status. Value engineering will be used to find alternative solutions without affecting the building's green accreditation. The structural breadth will analyze a six inch concrete foundation wall that extends sixteen feet high to the roof elevation. The mechanical breadth will examine the Health Care Center's plumbing system, finding an alternate system to the increasing problem of highly priced copper piping.

After the analyses, a recommendation is made on the two breadth areas that will be most beneficial to the Health Care Center.