

Executive Summary

This research paper explores many aspects of the Pennsylvania State Recreation Hall Wrestling and Student Fitness Center project, located in State College Pennsylvania. Two design features were analyzed and discussed, as well as a construction management process and the LEED process for the project.

The first analysis completed was of the designed reinforced fill system. I proposed to remove the system and replace with traditional compact fill. It was believed a large cost savings could be achieved through this change in the design. An investigation into the ability of the foundation wall system to resist the lateral forces, previously held by the reinforced fill system, was conducted. A comparison of the time and cost difference between the two systems was also completed. Upon compiling all factors a recommendation on the system was made.

The second analysis completed was an investigation into the changing of the double pane glass curtain wall to triple pane. The hope was to find a large savings in long term energy costs through this change. The long term savings were compared to the difference in the initial costs to determine the payback period required to offset the higher initial cost. Upon considering all results and options, a recommendation was made.

The third analysis examined the benefits of implementing a ProPress system in place of the traditional solder method on the domestic water system. Upon completing the cost and schedule analysis for this system, a decision was made for the type of system which is most advantageous.

A research study comparing two case studies describing methods for reducing cost on LEED projects to the methods enforced on the Recreation Hall project was completed. The analysis describes the methods put in place on the Rec Hall project as well as makes recommendations that could have improved the LEED process for the construction management team.