

EXECUTIVE SUMMARY

This Thesis Proposal serves a plan for the research and analyses that will be performed on the Department of Interior Cafeteria Modernization Project. The core of this investigation will evaluate critical industry issues, value engineering decisions, reviews of constructability, and opportunities to reduce the project schedule. The four analyses are as followed:

Technical Analysis I *Critical Industry Issue: High Performance Buildings*

This analysis will review the shortcomings in the design, construction, and maintenance of High Performance Buildings. Specifically, it will focus on areas in the cafeteria project where the high performance design was not maintained either through errors in construction or lack of knowledge in maintenance.

Technical Analysis II *Using Tablet PCs for Quality Control*

Analysis II will research the use of Tablet PCs in the field to coordinate with construction activities. By being able to access the BIM model and other construction documents in the field, hopefully many of the errors in the quality control process can be remediated. The cafeteria project is a prime candidate for this technology due to the lack of quality control throughout the project.

Technical Analysis III *Historic Preservation*

This analysis breaks down each of the historic preservation decisions on a cost and schedule basis. These findings will then lead to value engineering decisions. This section also contains a breadth for architectural design. This breadth determines a way to keep the historic character while maintaining modern appeal.

Technical Analysis IV *Advanced Lighting Controls*

The final analysis looks into combining the new design for the skylight system with an artificial lighting system in the dining room. By combining the use of photovoltaics and advanced lighting controls, the dining room has potential to use net zero energy for lighting. This section contains an electrical and renewable energy breadth as well

