

## Executive Summary

The University of Maryland, Baltimore Administration Building was finished on time and under budget. All requirements were met by both the Owner, The University of Maryland, Baltimore, and the Contractor, Barton Malow. With any project it is valuable to explore areas of potential improvement. The following proposal highlights such areas where possible schedule and efficiency improvements can be made.

The UMB Administration Building was constructed of post-tension, cast-in-place concrete. The elevated slabs were formed using job built, multi-use plywood and the columns were formed using unlimited use formwork. Forming the entire superstructure out of unlimited use formwork will be investigated in the analysis that follows. The focus will be placed on saving time of the schedule but much time will be used to ensure that the impact on the budget is not significant.

During these economic times a major concern for owners is energy efficiency. Since more energy is lost through windows than any other component of the building an analysis will be made involving the current window system and an alternate window system. The analysis will examine the initial and long term costs and determine if it is logical, financially, to utilize this exchange. In conjunction with a mechanical analysis, a structural analysis will be performed to ensure that the building can support these new loads that will be imposed. If not alterations will be necessary to support these loads.

Safety is the most important issue on any jobsite. Most safety regulations deal with issues that have immediate health risks. Hand Arm Vibration (HAV) is something that construction workers are exposed to on a daily basis but the health risks involved are not seen until it is too late. The injuries associated are debilitating and permanent. While the European Union has adopted standards to prevent injuries due to HAV there are no such laws in America. This proposal aims to educate everyone, from managers to journeymen, about the risks involved in over exposure and improper equipment. Literature will be developed to make people aware of the risks and what can be done to limit injury.

The final analysis will investigate the viability of using prefabricated columns instead of cast-in-place. With the objective to save time on the schedule, evaluations involving the differences in cost and labor will also be made to ensure that the impacts on the budget will still allow the change.

Closing out the proposal are the conclusions of all these analyses and a weight matrix that breaks down how time will be spent for each analysis.