

Executive Summary

Through the completion of this thesis report several areas of the Apartment Complex project in Bethesda, MD, as well as some industry issues were analyzed. The report is divided into two main parts.

The first part of the report is a project overview. In this section, the project is introduced and information such as project and staffing organization, client information, delivery method, existing conditions, site plans, schedules, and estimates, is provided.

Following, the second section is an in depth analysis of four areas. Four analyses will be conducted and presented in this section. Each analysis will contain several elements. A background of the problem, a problem statement, proposed solutions, methods to be used for each solution, task and tools to be used for each solution, and concluding remarks will be done for each analysis.

The first analysis will be prefabrication. In this analysis I plan to study if prefabrication would have been a better option for the exterior wall assembly. The second analysis is very related to the first. Since the proposed exterior wall will be made out of prefabricated panels, I decided to select the ThermaGuard Slenderwall System which is a 100% thermal-break/air barrier precast system. I plan to study how these prefabricated panels will reduce the Heat transfer through the walls. Moreover, I plan to study if these panels could reduce the heat transfer enough so that the air handling system of the residential area can be reduced.

The third analysis is not related to the other two. This analysis consists on redesigning the interior structure. The current structural system consists on load bearing wood framing. I will redesign the structural system to a metal studs/joist framing system and study the impacts that this design will have during and after construction. The fourth analysis will be dedicated to research a problem that our industry is facing. The fact is that most of the construction workers are Spanish speakers, who do not speak English. On my few years of experience on the construction industry I have notice that the language barrier has become a problem. Therefore this analysis will focus on how this problem is affecting the industry. The goal of this analysis is to determine if this problem is really affecting the industry, and in that case find try to find a solution.