

Executive Summary

The PACE roundtable discussion, as well as my research on the topics discussed at this meeting have narrowed my options for my proposal. After identifying many problems that my project had, I decided to research four specific topics for my final proposal. Prefabrication, changing the material for the interior framing, changing the exterior wall, and workforce development, are the three topics I plan to research. I narrowed my options to these four topics because I believe that those topics have the most potential to improve the project. I plan to study these four topics in more depth to determine which of them I will peruse on the spring semester as my final thesis proposal.

This document is intended to outline the issues I plan to research during the spring semester. Moreover, this report shows the steps that I plan to follow in order to conduct my research on each topic. 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 in each solution, and concluding remarks will be done for each of the proposed analysis.

One topic that was really interesting to me at the PACE roundtable was the workforce development. After a while, the discussion on workforce development took many different paths. One of them was the fact that most of the workers are Spanish speakers. On my few years of experience on the construction industry I have notice that the language barrier has become a problem. Therefore In this report contains a plan to research this topic as well.

My goal is to organize all the information that I have in order to do the research in the most efficient way. Ultimately, my goal is to determine which analysis could benefit my project the most. Once my research on each analysis is done, I plan to continue researching one topic in order to determine how much money or time could have been saved or how much value could have been added to the project if my proposed ideas would have been selected instead.

Breadth Studies

The four analyses that I plan to study for my final proposal are related to each other. Moreover, each analysis covers more than two breadth areas. Below, there is a description of the breadth areas that each analysis covers.

Analysis 1: Prefabrication of the Façade

Breadths covered by this analysis are: Construction, Structural, and Architectural.

This analysis covers the construction breadth since the whole purpose of doing the prefabrication façade is to reduce the schedule duration and therefore save time and money. Moreover, planning will be an issue since the crane and the staging area will have to be coordinated in order to meet the needs of the project. The analysis covers the structural breadth as well since the prefabricated panels will need bracing in order to be attached to the structural system. Therefore, the structural system will have to be redesigned. Lastly, the appearance of the façade may change if the façade is prefabricated. Therefore, the architectural breadth will be covered as well.

Analysis 2: Wood studs Vs Metal Studs and insulation

Breadths covered by these analyses are: Construction, Structural, and Mechanical.

The construction breadth will be covered by this analysis since this change will affect the schedule, the cost, and the methods of construction of the project. This analysis will also affect the structure since the framing forms part of the structure, and if the framing is changed, then the structure will change as well. With the changing of the exterior framing, I was planning to implement some changes to the insulation as well, which will affect the room temperatures, and therefore the mechanical system.

Analysis 3: 4" brick exterior wall Vs CMU exterior wall and insulation

Breadths covered by these analyses are: Construction, Structural, Mechanical, and Architectural.

The construction breadth will be covered by this analysis since this change will affect the schedule, the cost, and the methods of construction of the project. This analysis will also cover the structural breadth since the proposed CMU exterior wall will need a different type of bracing that will affect the structure. With the changing of the exterior wall, I was planning to implement some changes to the insulation as well, which will affect the room temperatures, and therefore the mechanical system. Lastly, if the exterior wall is made with CMU, this would change the appearance of the façade since it will need to be painted afterwards. The brick façade appearance will be eliminated. Therefore, the architectural breadth will be covered as well.

Analysis 4: Workforce development (language barrier in the Industry)

Even though this analysis is very interesting to me, and it could really help the industry; it seems to me that this analysis does not cover many breadths. I will not start my research on this topic until comments are made, and the idea is approved.