Executive Summary

Introduction:

A brief review of the project basics is provided in the introduction. It summarizes the building type, CM, owner, architect, contract type, delivery method, etc.

Analysis Descriptions:

Analysis Description 1-Building Envelope Performance:

Identified as a constructability issue in a previous submission, the exterior wall will be studied for opportunities to improve constructability, thermal performance, value. It addresses the critical issues associated with the energy crisis, high first costs, and changing roles. This analysis primarily covers a breadth in sustainability.

Analysis Description 2-Mechanical System Design:

The mechanical system design is being questioned for its feasibility of individual units at each residence so an analysis of the feasibility of switching to a centralized unit will be performed. It's believed that the opportunity exists to incorporate the site pond into the design as well. This analysis will primarily compare the cost and schedule impacts of the current system against the proposed system. An analysis of the achievable LEED credits will be performed. Analysis Description 2 will demonstrate a strong mechanical breadth.

Analysis Description 3-Construction Waste Management:

Analysis Description 3 is aimed at greening the project and project team while improving productivity through maintaining a clean site. This is believed to be assisted by developing an achievable and affordable construction waste management plan. An evaluation will be performed to compare the cost and schedule impacts of implementing the plan. It will also contribute to the LEED certification of the project.

Analysis Description 4-Water Efficient Landscaping:

In a last minute race to earn LEED certification, this analysis will attempt to replace the current landscape design with a more conservative one. It's believed that this type of activity could be implemented late in the construction process on many projects if they are on the verge of earning enough LEED points for certification. The site impacts, water consumption, and a cost comparison will be provided with this analysis.

Weight Matrix:

The weight matrix shows an estimate of how much time will be allotted toward the research, value engineering, constructability, or schedule reduction for each analysis description. In this case, it is respectively 25%, 38%, 26%, 11%.

Appendix 1-Breadth Studies:

Breadth studies demonstrate a student's competency and interest outside construction management. This is done through additional research or evaluation in at least two outside areas. As mentioned in the Analysis Descriptions, this thesis will demonstrate some form of breadth in several areas, but will focus primarily on Sustainability and Mechanical.