

Thames St. Wharf Office Building

Executive Summary

This proposal is a continuation of the topics that were discussed in Technical Assignment III. It set the groundwork for the research that will be conducted during the spring 2010 semester. A major theme for this proposal is having a more integrated design and how that affects the end building product.

Analysis One: Project Delivery Method

The first analysis will be on the impact of changing from a design-bid-build delivery method to an integrated project delivery method (IPDM). This analysis will be conducted by researching case studies of projects that have been completed using an IPDM as well as hopefully interviewing industry personnel that have worked on IPDM projects. Additionally the shortcomings of the design-bid-build delivery method will be examined in the coming semester. This analysis will incorporate the MAE research requirements.

Analysis Two: Southern Façade Redesign

The southern façade of the Thames St. Wharf Office Building is currently made of all glass and is likely causes large thermal gains during the summer months. This analysis will be to redesign the façade into a brick and glass combination thereby reducing the total heat gain in the building by reducing the amount of glazing. The cost and schedule impacts of the change in the façade system will also be examined. Analysis two incorporates an architectural breadth and a portion of the mechanical breadth that will be pursued next semester.

Analysis Three: Mechanical System Redesign

Following the redesign of the southern façade it is expected that the building cooling loads will be reduced eliminating the need for such a large and extensive mechanical system. Research will be done into the different types of mechanical system available and what type will create the most comfort in the building while remaining under budget. The cost and schedule impacts of the mechanical system redesign will be evaluated. Analysis three includes research and calculations that will be done for a mechanical breadth that will presented next semester.

Analysis Four: Affects of Contractor Change

The final analysis is what affects the change in a construction manager or subcontractor has on a project and how those affects can be lessened. This is becoming increasingly important in these tough economic times with more firms likely to default on work that they have been contracted to complete. Industry personnel that have worked on projects where contractors have defaulted will be interviewed about what some of affects of the failure were and how those affects could have been lessened or prevented as well as what was done.

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Appendix 1 – Breadth Studies & MAE Requirement

Breadth One – Architectural

Using Revit the southern façade of the building will be redesigned to incorporate brick and glass. The new façade will be created to match the façades of the building that are currently brick and glass. It will also be designed to match the look of the Bond St. Wharf building located one block to the East of the Thames St. Wharf Building. The effects of the new façade on the heating and cooling loads will also be taken into consideration and are a large portion of the reason behind the redesign. Cost and schedule issues of changing a portion of the building façade will also be examined.

Breadth Two – Mechanical

Following the redesign of the southern façade it is expected that the heating and cooling loads on the building will change and the mechanical system will be able to be redesigned to reduce its total cost. The mechanical breadth study will include both the thermal calculations of the new façade system and of the requirements of a new mechanical system. The initial cost and constructability of the new mechanical system will also be examined.

MAE Requirement

To satisfy the MAE requirement knowledge learned from two 500-level classes will be demonstrated. Analysis one will require items learned in AE 572 - Project Development and Delivery Planning. In 572 multiple different types of delivery methods, as well as their benefits and drawbacks were studied. Additionally for analysis two and the architectural breadth AE 542 – Building Enclosure Science & Design will be needed. During that course it is expected that information regarding effective wall systems will be discussed.