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## Executive Summary

The following encompasses three analyses that will be conducted on the Bloomingdales located in Chevy Chase Maryland. The analyses will give an understanding of each of the goals, method uses, and expected outcomes. The overall themes of these analyses are investigating the integration of sustainable building methods into the commercial construction industry. With regard to the current values of owners research will be performed on why these owners do not have the strong desire to achieve a LEED rating for their projects. When shown the life-cycle costs of their structure owners would be very perceptive as long as the project can be completed with out substantial increase to schedule and/or time budget.

### Analysis 1 – Critical Issues Research - Sustainable Buildings and the Owner

This will include the research to compile the values of retail market owners, as well as the life-cycle benefits of LEED buildings over industry standard buildings.

### Analysis 2 – Technical Analysis – Project Acceleration Aided by GC involvement in the redesign phase

A GC aided redesign phase will have an analysis of cost/benefit. Additionally the importance of reducing a schedule and cost due to the extended schedule to help avoid late completion penalties and damages.

### Analysis 3 – Technical Analysis – Value Engineering

An investigation will be conducted to see if there would be any benefit to utilizing a masonry system over the currently used precast system for coordination, schedule, and cost. Additionally looking at whether coordination would be more productive with further respect between multiple construction companies on site.



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## **Analysis 1 - Critical Issues Research**

### **Sustainable Buildings and the Owner**

#### **Depth**

##### **The Problem:**

Within the retail portion of the construction industry it seems that many owners are reluctant to produce green projects. Common reasons for this is owners view the initial cost and project duration as the critical issues. Buildings are built from designed prototypes and then put out for bid to General Contractors, this reduces the opportunity for design- build.

##### **The Goal:**

Research the values and concerns of retail owners in regards to LEED projects and create a compilation of what is found through this research.

##### **The Methodology:**

1. Provide data on past projects, built under LEED certifications using the United States Green Building Council (USGBC) and the U.S. Department of Energy. This data on LEED rated and non-LEED rated projects from D4 Cost databases will include:

- Square Footage
- Initial Cost
- Life-Cycle Cost
- Overall Project Savings

2. Compile information that establishes the potential long term benefits of building green in regards to building energy performance and building function performance.

3. Form a communication line to retail owners using direct responses and information from them to further my research

##### **Expected Results:**

The data collected from past LEED rated projects will prove efficiency of the initial cost throughout their buildings life-cycle. The expected result is to find that most owners simply do not have the care to look into achieving a LEED accredited structure. A common misconception is that there is no true long term benefit, or that a building of this nature is simply more expensive. When shown the life-cycle costs of their structure. I believe owners would be very perceptive as long as the project can be completed with out substantial increase to schedule and/or time budget.



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## **Analysis 2 – Technical Analysis Project Acceleration – Redesign Phase Breath**

### **The Problem:**

This project has went through a redesign phase where the General Contractor was not involved. Instead they were put on hold completing minimal task.

### **The Goal:**

Find out why the owner did not involve the GC. Investigation of ways that the GC could have aided in the redesign phase through

### **The Methodology:**

1. Compile information that establishes the potential benefits of a GC aided redesign.
2. Create a questionnaire for construction companies/owners to find out their problems and successes with redesigns, and whether the project used the resource of a GC/CM, and if so did they believe it to improve the project.

### **Expected Results:**

I plan on researching what the GC feels would be the most beneficial part of a GC working with the redesign team. They will display a multitude of benefits from working on keeping the project within budget, added benefit of giving them an idea of what they working towards, helping to reduce change orders and any surprises.



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## **Analysis 3 – Technical Analysis**

### **Value Engineering**

#### ***Breath***

##### **The Problem:**

This site had limited spacing and was very congested. This created a large issue of coordination of staging areas, crane location, sequencing and movement, material placement, etc. Multiple General Contractors on site added to coordination issues between the two companies and the areas they were to occupy.

##### **The Goal:**

To investigate the possibility of switching precast to just masonry that would have the added advantages of saved coordination, redesign, and possibly some issues of the steel connections. Address issues of multiple contractors on site. Investigation of the issues that arise under these circumstances' and what can be done towards maintaining good relations between jobsites in close proximity.

##### **The Methodology:**

1. Perform a detailed take-off of brick, mortar and horizontal reinforcement as additional material cost.
2. A detailed estimate of the cost of the designed precast system will have to be calculated as well as a cost comparison so the alternate can be compared to the designed system. This can be completed using RS Means and similar programs
3. Research additional factors such as scaffolding cost, constructability of a masonry system under certain temperatures, associated labor costs, etc.
4. I intend to create a questionnaire for construction companies and owners to find out their problems and successes with close proximity projects. Their feedback is very important in understanding what values respect all companies must have for one another to allow them to make progress in the area and establish a mutual respect for one another.

##### **Expected Results:**

I anticipate that, a masonry system will help to improve the coordination on the project site and allow more to be accomplished in the same schedule. This will be completed with an effective cost comparison. The questionnaire will help me to understand the critical issues of project site respect and how it can be achieved.