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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 preformed 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 – Building respect issues on a project with close proximity, or shared sites. Analyzing what is done to complete a successful project, as well as what can be learned from Bloomindales.

Analysis 2 – Technical Analysis – Project acceleration aided by CM involvement in the redesign phase. Highlighting the aspects of a CM 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 structural/cost 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.

Analysis 4 – Air Purification

Utilizing UVGI's to add to the purification system will look forward to future fears of spreading disease and viral infection in public areas.



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

### **Building Respect – Close Proximity Sites**

#### **Breadth**

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

Many projects have either neighboring projects, or share a site with a General Contractor, or Construction Management firm. An investigation of forming respect creating a successful practice will be completed. Analyzing failures/successes in the past will be completed to present what works and what doesn't.

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

Research 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:**

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 and 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. Adding my research will be articles form about projects of the past, including the Bloomingdales project.

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

The survey will help me to understand the critical issues of project site respect and how it can be achieved. Through research and interviews of personnel that have completed projects, such as this, I will increase understanding of the future issues I will face as a member of the construction community.



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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 on the interior of the building.

### **The Goal:**

Conduct research on why the owner did not involve the GC. Investigation of ways that the GC could have aided in the redesign phase through, adding input in critical areas – saving time and cost incurred by delays.

### **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:**

Considering both sides of the perspective, seeing the owners point of view and the General Contractors point of view. 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 unforeseen complications in the future.



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## **Analysis 3 – Technical Analysis**

### **Value Engineering – Precast System**

#### *Depth*

#### **The Problem:**

This site had limited spacing and was very congested. This created a large issue of coordination of staging areas, crane location, sequencing, movement, material placement, etc. Multiple CM firms 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 the precast envelope system to a masonry system that would have the added advantages of less structural loads, steel connections, and saved coordination of crane placement.

#### **The Methodology:**

1. Perform a detailed analysis of the horizontal reinforcement as well additional connections for both the precast system and masonry system.
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 constructability of a masonry system under certain temperatures, associated labor costs, etc.

#### **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 with minimal affect on the structural system. This will be completed with an effective cost comparison.



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## **Analysis 4 – Technical Analysis**

### **Value Engineering -Mechanical Systems**

#### *Depth*

#### **The Problem:**

Concerns of public spaces being breeding grounds for common illnesses and developing viruses are common place. Air systems are given the responsibility to handle these concerns and limit the effectiveness of them. Many times filters are not enough, yielding development of Ultra Violet Germ Irradiation, or UGVI systems.

#### **The Goal:**

To investigate UVGI systems and the benefit they could have in a public area. Researching what they do and how they are effective.

#### **The Methodology:**

Using material provided by Virobuster, research will be completed on these systems and applied to a public space comparable to that of Bloomingdales.

#### **Expected Results:**

I anticipate that a UVGI system would greatly aid the mechanical system at limited additional cost to the owner. Added systems will cause benefits such as reduced sick leave, increased productivity, etc.