

## EXECUTIVE SUMMARY

Information about the renovation of Constitution Center, located in Washington, DC, can be found throughout the following document. In the first section, one can find project background, including information on why the building is being renovated. Also, the project team is outlined, along with the client, David Nassif Association. Next, there is data about the project delivery system and how it played a part in the selection of the subcontractors. An overview of the building systems is discussed, along with a summary of the project schedule. Finally, the section is concluded with an evaluation of the project costs.

### Analysis: Chilled Beams & Commissioning

The first analysis deals with the chilled beam system being installed. This is the largest system being installed in the United States and provided an area to gain knowledge to a system that may become widely used in future buildings. This analysis also provided an area for a critical industry research and a mechanical breadth. Both of these topics dealt with the commissioning requirements for Constitution Center. In this section, one can find information about the three different types of chilled beams and a recommendation on which one would be most cost efficient to use on the project. Additionally, a study of the commissioning outlines the lessons learned about the requirements on numerous projects.

### Analysis: Parking Garage Waffle Slab

The second analysis incorporates a structural breadth for a redesign of the parking garage waffle slab. During the renovation process, quadrants of the parking garage were completely shut down in order for the floors to be updated. The redesign will focus on a two-way reinforced concrete system. After the redesign, a recommendation on which system would be best to use based on studying both the schedule and the cost requirements.

### Analysis: Curtain Wall Installation

The third analysis incorporates the MAE Graduate-Level component of *CE 533 - Construction Productivity Analysis and Performance Evaluation*. The research focused around the curtain wall installation procedures and how they impacted both the schedule and the site logistics. The section is concluded with an overview on how productive the installation was throughout the project.

### Analysis: Pedestrian Safety

The final analysis studied the safety requirements for the pedestrians about Constitution Center. Since the L'Enfant Metro Station Entrance was within the construction site, it was a problematic feature to keep the pedestrians safe, but not limiting the use of the metro or the work taking place on the construction site. One can find an overview of how DAVIS implemented special safety techniques in order to keep everyone safe. Finally, the section is concluded with survey results on how companies are applying safety to their jobsites.