

Executive Summary

The project for this thesis is the Aquarium Hilton Garden Inn located in Atlanta, Georgia. This is a mixed use project consisting of a hotel, parking garage, retail area, restaurant area, and a sky bar. Several building components are analyzed to see if an alternate means could be used to construct the building.

The first analysis looks at the foundation system on the project. The current system is a caisson deep foundation system. This caused many delays in the project due to underground conditions. The proposed mat foundation system was found to speed the construction schedule up by two months allowing the building to get out of the ground faster. The cost of this mat foundation system was much more expensive than the current system but this price difference may be made up in schedule difference.

The second analysis looks the foundation systems on the south entrance to the hotel. The construction documents call for a basalt stone that comes from Europe and has an extremely long lead time. The proposed StoneLite panels are cheaper, lighter, mechanically comparable and have a much shorter lead time than the stone façade system. The research in this thesis explores how BIM can be implemented and used in the construction process. It showed that although there is a lot to be learned about BIM it is still very worthwhile to have on a construction project.