

# RESIDENCE INN

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## Executive Summary

Three technical issues and one critical industry research area will be explored for possible improvements. Throughout these analysis and research areas I hope to add value to the building by implementing more green technologies and materials, as well as reducing the schedule and cost, and improving the constructability of the project.

The underground structural system provides an area for improvement because the underground garage is made entirely of cast in place concrete. The project is already behind schedule due to unexpected water issues, if the garage was made of pre-cast Filigree panels there is a possibility for schedule acceleration without taxing the ability of the tradesmen. Based on the analysis of structural design, cost, schedule, and constructability the Filigree slab and beam system is the recommended system. It exceeds the original design and the flat plate re-designed system in every aspect. It is quicker, saves the owner money, and helps them bring in more revenue.

The fan coil units in each guestroom are set to run 24 hours a day. This is due the high sound levels produced by the nearby metro tracks. This provides an area of research in finding better controls and sound attenuation system in the façade to reduce the amount of energy consumed. Based on the analysis, the Delta Controls system using the DNT – T103 is the recommended system. It produces a superior system to the original but is not as expensive as the INNCOM system. Its performance results are nearly equivalent to the INNCOM. This system provides the guests with an acceptable environment thermally and acoustically as well as providing savings to the owner.

Hotels produce a large amount of greywater everyday; this provides another area of research to institute a greywater system into this hotel. This should not add a great deal of design and construction coordination because the building already has separate supply risers to the water closets and shower as well as having the water closets in an easily separated location on the sanitary riser. Based upon this analysis the constructed wetland greywater treatment system has both positive aspects and negative aspects associated with it. These aspects should be considered when deciding to install a constructed wetland system. Considering these factors, the owner of the project would play the deciding role. The system would be recommended if the owner is focused on helping the environment and aesthetic appeal of the building. However, the system would not be recommended if the owner is only concerned with the bottom line, saving money.

There an unfortunate misconception in this industry that adding green value or achieving LEED points simply costs too much no matter what the benefits could be. The goal of this research is to investigate the sustainability or “Greening” of hotels by incorporating green design into the project and analyzing the corresponding cost. This research will compare typical building materials and systems to their green alternative. The analysis includes comparing upfront cost, installation cost, and life cost to determine which is most economical.