



Conclusion

Recommendation

Having a building with a height restriction limits the design of the floor system by keeping it as thin as possible. The post-tension floors are 7-1/2" thick compared to the Girder-Slab floors which are 8-3/4" thick. A reduction of floor to floor height by 1-1/4" should not be a noticeable difference.

Based on the cost estimate and schedule produced for this thesis study a recommendation can be made to use the redesigned steel system compared to the existing concrete system. The concrete system was less expensive than the steel system, but savings have been made on the reduction of footing sizes and the hotel will be able to generate revenue earlier based on the faster erection time of the steel structure. A cost summary can be seen in Table 7.

	Cost	Savings
CIP Concrete	5,126,712.35	
Steel	5,192,391.73	
Difference	-\$65,679.38	
Reduced Footings		\$72,150.00
Generated Revenue from earlier opening date		\$1,713,150.00
Savings from Steel System		\$1,719,620.62

Table 7: Cost Summary

Having the luxury of designing a complete structure and then evaluating schedules and costs was significant for thesis study. It should be noted that this is not always the case in the industry. Girder-Slab works well for projects such as apartment's buildings, dorms, and hotels. If this same study was completed for an office building or other facility types the results may have differed.

It was proved that the increased cost of the alternate steel system could be compensated for by the faster erection time. With the faster erection time of the steel system, the hotel would be able to open its doors earlier and begin to generate revenue. Generated revenue value was determined in the Schedule Impact section of this report on page 35. Using the redesigned steel system in place of the existing concrete system, will have saved/ made the 'BWI Hilton' \$1, 719, 620.62.

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