

RESIDENCE INN

BY MARRIOTT

2345 MILL RD, ALEXANDRIA, VA

JULIA E. PHILLIPS

CONSTRUCTION MANAGEMENT



Research Conclusion

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 by 23 schedule days, saves the owner money totaling \$340,644.45, and helps them bring in more revenue, as much as \$1,190,700.00.

The Delta Controls system using the DNT – T103 is the recommended system to reduce energy consumption. It produces a superior system to the original but is not as expensive as the INNCOM system, saving \$96,478.00. 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.

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.

- If the system is installed it adds at least \$88,787.52 to the total budget, as well as schedule time. But it saves \$518.80 and 757,375 gallons of water annually.
- If the system is not installed, time and money are saved, but 757,375 more gallons of water will be used annually. It also saves bringing an additional crane to the site and the site congestion associated with the construction.

Considering these factors, the owner and tenant of the project would play the deciding role. The constructed wetlands greywater system is recommended because Marriott is extremely focused on helping the environment and increasing aesthetic appeal of the building.

By implementing all recommended systems the owner would be able to save approximately \$351,200.00 and gain as much as \$1,190,700.00 in revenue. The figure below details the total cost savings with all systems implemented.

System	Cost Savings	Additional Savings
Slab and Beam Filigree Structure	\$340,644.45	\$1,190,700.00 Added Revenue in 45 Nights
Delta Controls DNT-T103	\$98,790.94	696,231.56 kWh of Energy Annually
Constructed Wetlands Greywater	-\$88,268.72	757,375.00 Gallons of Water Annually
Grand Total Cost Savings	\$351,166.67	

Figure 38: Final Cost Savings