

Executive Summary

The Renaissance Schaumburg Hotel and Convention Center located in Schaumburg, IL is a 17-story cast-in-place concrete structure which supplies the greater Chicago area with 500 guest suites and many other community services. The structure relies on post-tensioned concrete slabs, 11"-18" shear walls, and 42" circular columns for primary framing support. Although the current design is very efficient in carrying the prescribed loading, there is a chance that the building could increase efficiency in terms of cost and constructability with the implementation of a different structural framing system.

This proposal will focus on a replacement of the current cast-in-place concrete structural system with a composite steel and concrete system. Future analysis of both the current shear wall system and a braced frame lateral system will be used to determine which system will perform with the most efficiency and also compare both methods in terms of cost and construction timeline.

Issues that arise with the other systems throughout the building will also be taken into consideration (including HVAC plenum space). Overall, the continued analysis of The Renaissance Schaumburg Hotel and Convention Center will provide a detailed comparison of the proposed system change with considerations including, but not limited to; design economics, labor/construction costs, material costs, construction schedule impacts, and systems behavior.

This proposal includes simplified sketches for further explanation of system layouts and details. The redesign proposal of The Renaissance Schaumburg Hotel and Convention Center will detail proposed system changes and analysis of redesign impact on the structural system and entire building.

