BREADTH STUDIES

In addition to the structural depth study, two additional breadth topics are required in an area outside of the structural engineering requirements. The first study to be considered is an investigation of the facade of the alternate design. The second study will be an involved investigation of the construction management issues.

Breadth Study I: Architectural Investigation

Due to the proposed alternate structural design of the building, an investigation of the impact this design has on the architecture of the building will be performed. Converting the building system from all concrete to steel may alter the architectural features of the hotel. Research will be done in regards to the impact the current architecture has on the building and how a new architectural system can improve the layout and look of the building. The use of steel, as opposed to the load bearing masonry shear walls used along the exterior, will affect the exterior façade of the building. With the use of steel, this could allow the building to make use of either a curtain wall system that provides natural day lighting into the hotel, or non-load bearing shear walls. To provide more natural day lighting to the 18 foot lobby of the hotel, the curtain wall system could be utilized along this entire level. The curtain wall system could be continued up the façade of the building or removed and the concrete masonry façade will continue up the entire height of the building. Heat loss calculations will be provided for the existing concrete masonry shear wall system and for the new curtain wall system. Conclusions will then be drawn on which system is more efficient for the Fairfield Inn and Suites.

Breadth Study II: Construction Management

Due to the proposed alternate design of the Fairfield Inn and Suites, the primary material used will now be steel. Two issues that will now be targeted are project cost and construction schedule due to the impact the steel material will have on the construction process of the building. These issues will be compared for both the existing and proposed alternative building system. The cost estimate will be influenced by the construction schedule, material availability, construction financing, and the project deadline. Conclusions will then be drawn based on viability of the new structural system with respect to cost and time efficient constructability.