

The Hilton Hotel at BWI Airport is an 11-story, 203,300 s.f. hotel located in Linthicum Heights, Md. Located only 2 miles from the BWI Airport, as well as a few minutes from Baltimore's Inner Harbor, this hotel makes an ideal stay for business and leisure.



Having a close proximity to the airport limited the height of the structure to roughly 290' from datum. Working with this constraint, the structural engineer utilized a flat post tension slab 7-1/2" thick for typical hotel room floors. This type of floor system allowed for a wide, open bay layout used by the architect. The grand entrance to the hotel brings you around a circle under the porte coche for bag drop off and check-in. The ground floor has an elaborate 8,300 s.f. ballroom with an adjacent assembly/pre-function room and offers dining with the Acqua restaurant. Parking is accommodated by an 80-car parking level that is located below grade.

This report focuses on the in depth study of engineering an alternate structural steel system to the existing cast-in-place system. To keep floor thickness to a minimal, the Girder-Slab system was utilized for typical guest room floors 4-11. Floors ground through 3rd were designed as a composite steel and concrete deck system. The lateral system was changed from concrete shear walls to concentric braced frames to keep continuity of the steel system. Investigation of a steel system was conducted to see how much the hotel could profit from having the structure erected by an earlier date.

In conjunction with the depth study of an alternate steel system, two breadth studies were completed. The first breadth study analyzed construction management issues that occurred while redesigning the structure from concrete to steel. This study involved the determination of cost and schedule of each system. The other breadth study involved research and survey data on how the consumer feels about the idea of LEED certified hotels. The survey was exploratory and meant to gain ideas of what the consumer wants in a LEED certified hotel.