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Structural Option
Eight Tower Bridge
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Structural Technical Report #2

Pro/Con Study of Alternate Floor Systems

Executive Summary

This technical report deals specifically with the flooring system of Eight Tower Bridge located in Conshohocken, Pennsylvania. This sixteen story steel high-rise office tower currently employs a concrete slab poured over 2" metal deck in full composite action with wide flange steel beams. This report introduces five alternative flooring systems for the office tower. They include:

- Long span open web steel joists
- Short span open web steel joists
- Long span one-way concrete pan joists
- Short span one-way concrete pan joists
- Precast hollow core concrete deck

The five systems were evaluated on a number of different criteria including overall system weight, fire rating of the assembly and most importantly, and overall system depth.

Of the five alternative systems presented, both the long span open web steel joist system and precast hollow core concrete deck were deemed to have too deep of an overall system thickness, which cancelled out any possible benefits the system might have. The best alternative to further investigate was decided to be the short span, one-way concrete pan joist system.