STRUCTURAL TECHNICAL REPORT 2
STRUCTURAL STUDY OF ALTERNATE FLOOR SYSTEMS

EXECUTIVE SUMMARY

The following report is on a preliminary analysis of various potential structural floor systems for the Comcast Center. The purpose of the analysis is to get an idea of which system will satisfy most of the requirements of the building in a time efficient manner. As a result, the calculations performed are the minimal calculations needed to estimate the size of the structural members. A more in depth calculation would be required for the actual design of the structural floor system of the Comcast Center.

The four different systems that were analyzed are hollow core plank supported by steel beams, composite concrete slab supported by open web steel joists, one-way concrete slab supported by concrete beams, and one-way concrete joist slab supported by concrete beams.

The various systems were rated based on different criteria such as floor depth, member size, slab thickness, quantity of columns, cost, material quantity, and fire-protection.

The floor system depth is the controlling factor for the structural system design. The thinnest possible floor was needed to minimize the weight of the building, maximize the rentable space and allow the necessary angle for natural light to penetrate the building and reduce the artificial energy consumption of the building.

The existing composite slab floor system is the most suitable for the needs and size of the Comcast Center. With a typical maximum floor depth of 18 inches, the composite slab system allows for the shallowest floor depth.