FINAL REPORT

A. EXECUTIVE SUMMARY

A.1 BUILDING DESCRIPTION

The Comcast Center is located in downtown Philadelphia, Pennsylvania on John F. Kennedy Boulevard and 17th Street. The 57 story building functions primarily as office space with some retail and restaurant spaces. The structural system consists of a massive concrete core with steel members framing into the core. The floor system is a composite metal deck. The footprint of the Comcast Center tower is approximately 195 feet by 135 feet.

A.2 STRUCTURAL DEPTH SUMMARY

The existing 6 web concrete core can be reduced to a 4 web core and still meet serviceability criteria. Reducing the size of the concrete core introduces several areas of flexibility into the architecture. Three levels of below grade parking will benefit with extra spaces for parking. The mechanical system spaces originally tightly enclosed in concrete have greater flexibility for maintenance work when enclosed by a rated partition wall. The concrete cost was approximately equal to the steel cost for the existing project. The 4 web system offers significant saving by reducing the amount of concrete needed. Reducing the core has a minor effect on the schedule, it will take less time to prepare the forms and rebar however the concrete will require the same amount of time to cure as for the 6 web system.

A.3 SUSTAINABILITY BREADTH #1

Liberty Property Trust uses green design concepts in their buildings to enhance the quality of their spaces. The Comcast Center currently features water reducing plumbing fixtures. At a height of 1001'-6" Philadelphia's tallest skyscraper would benefit from utilizing wind energy to generate electricity.

A.4 ARCHITECTURE BREADTH #2

The Comcast Center's vertical transportation system is composed of 35 elevators
The 35 elevators that make up the vertical transportation system run on a system called Destination Dispatch. A computer system organizes the information and directs the occupants to their designated elevator. Through technology the number of required elevators can be reduced to increase net rentable space.

A.5 CONSTRUCTION MANAGEMENT BREADTH #3

Even the most detailed and well thought out buildings face constructability and tolerance issues during the construction phase. The Tuned Liquid Column Damper of the Comcast Center, originally a cast-in-place system, was redesigned as a pre-cast system to accommodate the steel erection schedule. A higher percentage of cement than specified was used in the concrete core to account for the chemical reactions invoked by the pumping process. As a result the core is stronger and stiffer than originally designed which will need to be considered when tuning the Tuned Liquid Column Damper.