THESIS PROPOSAL

A. EXECUTIVE SUMMARY

BUILDING DESCRIPTION

The Comcast Center is located in downtown Philadelphia, Pennsylvania. 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 member 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.

The proposed project will include an analysis and assessment of alternative core systems. The first alternative will look at reducing the concrete core by removing the two outer web members. A steel braced frame core will be used in the second alternative. The systems will be checked for strength, serviceability, construction time, cost, and blast resistance.

With several other LEED rated buildings already completed Liberty Property Trust, the developer of the Comcast Center, strongly supports the sustainable design movement. The Comcast Center will become the largest LEED rated building upon completion. The exact level of rating for which Liberty Property Trust is applying for is not publicized. Currently the sustainable concepts that the Comcast Center will be using are waterless urinals to decrease water usage, high floor to ceiling heights to utilize natural daylight and decrease electricity usage, and an entrance to South Station to encourage the use of public transportation. The proposed thesis will determine the practicality of using energy collecting technologies such as small hidden wind turbines on the roof and photovoltaic patches in the glass façade.

The second breadth topic explored in this thesis will be on Construction Management issues such as cost estimates, site layout, scheduling, and site management. Site management will be assessed from a sustainable viewpoint since it is possible to achieve more points by maintaining an environmentally conscious construction site.