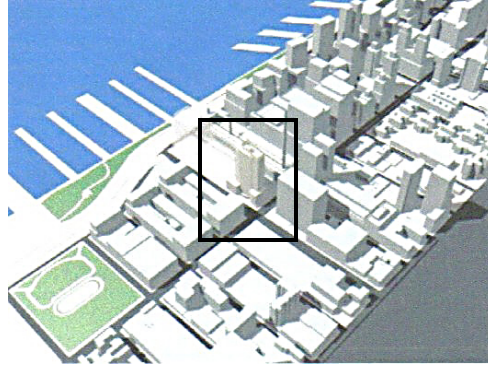


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Structural
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The Helena
New York City, NY
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Pictures courtesy of Fox & Fowle Architects

Thesis Proposal

Executive Summary

This document serves as a proposal to make a design adjustment to the structural design of The Helena and subsequently making other analyses based on the major design as well as checking other systems to make sure they are compatible with the major design. The Helena is a 600,000 square foot apartment building in Manhattan, New York. The structural system for the building is designed of reinforced concrete columns which are not spaced to design a typical bay. From a detailed analysis performed throughout the past several months, it is seen that the column layout of this building is a problem which has limited the design of the building's floor system to one best fit choice of a two-way flat plate slab. As part of this proposal, a new column layout will be created to give the floor design more options to a possible alternative floor system as well as the use of a different foundation system which may on the cost or time of the project development. As part of the supplemental design, the foundation will be re-designed using the new locations and loads of the columns as well as being based on the soil competency and bearing capacity. Also, the mechanical ductwork for the building will be analyzed to determine whether the new column locations will interfere with the routing of the ductwork. Depending on the results of this analysis, a schematic would need to be made to layout a new routing plan for the mechanical ductwork.