

*Executive Summary*

360 State Street is a new landmark for New Haven, Connecticut. It consists of street level retail, four stories of parking, and five-hundred rentable apartment units. The design of the building couples sustainable resources and tactics with location and architectural allure. Overall, the building reaches 32 stories and makes a statement about the convenience and romance of an urban lifestyle.

The intent of this report however; is to identify a problem and propose a potential solution as an in-depth thesis study. The report includes a general overview of 360 State Street's structural systems, three topics of research, and strategies to obtain design solutions.

Summarizing the previous technical reports, this document establishes the need to further investigate the use of staggered steel trusses as the main framing system. The objective of this study is to provide an alternative solution that can be recommended to the owner given that it can address the shortfalls of the existing systems. Additionally, the project goals include a structure that is more durable, marketable, and attentive to sustainable issues.

As the main topic of study in this report, it is proposed to redesign the gravity and lateral systems of 360 State Street using traditional steel framing and hollow core precast planks. The design intent is to increase the strength and rigidity of the structure while minimizing the floor depth by shortening spans. Additionally, the new system aims to decrease the overall building weight in order to optimize the foundations.

In related topics, a study of the building's envelop will be compared to an alternative glass façade. Thermal properties will be explored as well as its hanging system's structural performance. Marketability will also be considered to ensure 360 State Street will maintain its architectural appeal. Furthermore, a cost and schedule analysis will be conducted to compare the viability of the proposed systems. The thesis project will conclude with a recommendation to the owner.

Furthermore, the scope of the study is defined in an outline provided within this report. Tasks and strategies are listed and illustrated in a timetable. The goal is to complete the majority of the research and design by Spring Break in mid-March 2010. Thereafter, the final report and presentation will be prepared for its showcase in April. Bi-monthly progress checks were additionally established to ensure the project develops in a timely manner.