



246 West 17th Street

New York, NY

Proposal Executive Summary



December 12, 2008

Prepared by
Alissa Leigh Popovich
Structural Option

Prepared for
Prof. Parfitt
Thesis Faculty

Executive Summary

Purpose

The purpose of this report is to propose an alternative solution to the current design of 246 West 17th Street. The current structural system for the new stories utilizes a flat plate slab system with concrete columns, which has been added atop the existing three stories of historic steel framing. The façade of the original building is a mass masonry wall, which has been largely left intact, while the new façade incorporates glass and aluminum curtain walls, metal paneling, and brick veneer on metal stud backing.

Proposal Statements

Structural Breadth

The current concrete system allows for an irregular column grid that works well with the interior architecture; however, the weight of this system prohibits that the historical steel be used to its full potential. The existing steel was encased in concrete to structurally reinforce the members against gravitational loading, and these members were not considered for use in the lateral load resisting system. Instead, shear walls were used to resist lateral loads. The addition of concrete floors, columns, and shear walls greatly increased the weight of the structure, ultimately increasing seismic loading and requiring a redesign of the existing foundation.

To decrease the building weight and utilize the existing steel structure, an alternate system consisting of steel framing shall be explored. Through reducing the gravitational loads on the garage structure, and through implementing steel lateral resisting systems, it is anticipated that the historic structure will be successfully integrated into the load-resisting framing system.

Architectural Breadth

As a result of the new structural layout, it is anticipated that the architectural floor plans will have to be redesigned. In order to keep with the integrity of the current condominium design, all structural elements shall be hidden within architectural elements.

Acoustical Breadth

Acoustically soundness will be implemented in the new interior design to ensure that noise isolation is achieved between individual condominium units and between floors. This shall be achieved through the use of materials, and wall and floor systems that will reduce sound transmission.

Please Note

To clearly distinguish between the various structures both present and proposed in 246 West 17th Street, the terms *existing*, *historic*, and *original* will refer to the 1925 structure. The terms *current*, *as-designed*, and *new* will refer to the 2008 renovation design. The term *proposed* and *alternate* refer to the proposed thesis design.