

1.0 - EXECUTIVE SUMMARY

The Towers at the City University of New York is a new residence hall for CUNY students and faculty. It is the first dormitory for the Manhattan college in its 185 year history. The building is located at 130th Street and Saint Nicholas Terrace in the upper west side of New York City. The 11 story building is capable of housing 600 CUNY students and faculty in 165 apartments. The total cost of development and construction of the Towers was \$54 million. Some of the features of the 181,000 square foot building are fully furnished apartments with private bedrooms, a laundry room, a fitness room, classroom spaces, administrative offices, a reception desk that is operational 24 hours a day, and numerous lounge and study spaces. Ground was broken in May 2005 and was completed in August 2006.



This report consists of a detailed study of an alternate steel structural system. This was done to eliminate columns in the floor to ceiling corner windows at the corners of the building and to create a regular column grid. RAM Structural System and RAM Frame were utilized in the design of the structure. The final design consists of a composite steel beams and girders with 4 1/2" composite metal deck slab. The beams are W10 or W12 shaped and the girders were kept at a maximum depth of 21" to keep a 2' plenum depth. All gravity columns are W10 shapes and all lateral columns are W12 shapes for added stiffness. The lateral system consists of braced frames around all stair and elevator cores and moment frames elsewhere throughout the building.

Two breadth studies were performed to understand the impact of the proposed structure on the other building systems. The first was an analysis to determine if The Towers could be LEED Certified. The second study was to study the impact of cost and scheduling of the existing concrete structure and the proposed steel structure. It was determined that a steel structure would cost approximately \$6.0 million and take 19 weeks to construct.