

Technical Report 1: Structural Concepts/Structural Existing Conditions Report

EXECUTIVE SUMMARY

Gateway Plaza is a new, 15-story office under construction in Wilmington, Delaware. It is the first new tower to be constructed in the Central Business District in 15 years. The \$52 million complex is being constructed on the site of the former Delaware Ave. parking lot. Gateway Plaza is returning parking to the site with a 5-story parking garage in its rear, which will provide 600 spaces. Ground was broken in July 2005 and the Plaza's long-awaited arrival is slated for May 2006. The building will feature a public, plaza level which will house a café, U.S. Post Office, and WSFS Bank Branch. Gensler is the design architect on the project. It features a glass curtain wall that will stand out among its EIFS-clad neighbors. The northeast corner of the building is on an angle which mimics the rounded edges of its neighboring DuPont Hotel and Sheraton Hotel. The building will top out at 210'-6" and provides spectacular views of the city. The building offers 387,000 ft² of rentable space. The developer and property manager, Buccini/Pollin Group, has already leased 5 of the 14 office floors to its primary tenants, WSFS and Morris, James, Hitchens, & Williams. The remainder of the space is currently for tenant fit-out and is an open floor plan.



The report contains a detailed description of the structural systems: drilled pier foundations, composite steel framing and slabs, and braced and moment frame lateral load resisting elements. A list of codes and standards applicable to the building, and the development of loading conditions are also included. The loading conditions developed will be used to check random member sizes. These random checks will assure that the assumptions made in the report are sound. The attached appendices are intended to supplement the findings of the report through more descriptive diagrams and detailed calculations. Appendix A contains framing plans, B provides detailed lateral load calculations, and Appendix C includes details on the hand calculations and software output of spot-checks.

The goal of this report is to investigate the systems being used in the building and understand their design and development through analysis. An important aim of this report is to become familiar with the development of lateral loading from wind and seismic conditions and how to design elements to resist these loads. Analysis was performed using several methods. Loads were obtained through application of standards in Excel spreadsheets, and members were checked both by hand calculations and through RAM model analysis.