

Executive Tower

Sean Howard
Structural

Technical Assignment 3 Lateral System Analysis and Confirmation Design



Executive Summary

In this report, a detailed analysis of the lateral forces was performed in efforts to examine and test the lateral resisting framing system for the Executive Tower. This report is divided into three sections. Section one is a second look at the wind and seismic forces initially examined in technical report 1. The wind and seismic were checked, recalculated and compared using charts to find which scenarios govern over the other. The second section explains the structural systems in place and how they coordinate with each other. It was assumed, besides the shear being the main lateral resisting system, that a study of six moment frames creating the perimeter beam and exterior columns of the building would be beneficial in studying the building. Finally a detail analysis of the frames and shear walls were performed to check stresses, flexural and drift through the use of STAAD and RAM analysis programs.

This technical report looks in depth lateral systems and the drifts that are resulted from the combined lateral and gravity loads. Hand calculations of spot checks at critically stress locations found all columns to be able to withstand the combined loads. The check of the shears at the worse case scenario found the wall sections and reinforcement to be adequate. From the technical report, the lateral forces for the Executive Tower were checked and corrected to still be used in future examinations.