



Erie on the Park

Chicago, IL

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Structural Emphasis

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Executive Summary

It is the intent of this report to analyze the structural design procedures implemented when designing 500 W. Erie St. Chicago, Illinois.

Building Description

Erie on the Park is a 25 story condominium complex on W. Erie St. in Chicago, IL. By using steel for the main structural system the architect on this project goes against the normal practice of using concrete as the major structural system for a residential high-rise building. In doing this he allows himself greater flexibility when designing the layout of each of the tenant spaces, and provides a strong architectural statement with the steel chevrons punctuating the building's façade. The entrance to the building is through a grand lobby with a 30' high ceiling. The next four stories are part of a parking garage with many spaces for tenants to park their cars out of the elements. The sixth floor has a fitness center and is the beginning of the tenant living spaces. Floors seven through 25 are condominiums that provide a dynamic living space and spectacular views of the Chicago skyline through the floor-to-ceiling windows.

Structural Design Code

Chicago Building Code

Calculations

When designing elements of this building I used the ASCE-7 design guide which uses different loadings and force distributions than the CBC. These differences account for some of the discrepancies between the member sizes that exist and the ones that I designed. Another reason for there to be differences is that the floor slabs were designed to withstand a horizontal diaphragm load of 250 PLF per bay. When I designed the floor slabs of various bays I did not take this into account. It is for these reasons that there is a difference between the existing structural elements and those that I designed.