

## Executive Summary

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The thesis being proposed will investigate the benefits and drawbacks of introducing alternative lateral framing systems to the Visteon Village Corporate Center. The current system is composed of special steel moment frames with beams spanning up to 40 feet. The intent of this thesis will be to optimize drift performance while minimizing the amount of steel required by introducing various types of braced frame configurations as the main lateral force resisting system. This will require multiple full redesigns of the lateral framing system, which might also include a reconfiguration of the lateral framing locations. Once all of this data is gathered, a feasibility and cost analysis will be performed and recommendations will be made as to which system provides the maximum benefits to the Visteon Village Corporate Center project.

In addition to the main structural redesign of the lateral framing system of the Visteon Village Corporate Center, two breadth studies will be performed. The first study will analyze the effects that the framing changes will have on the construction process. The second study will focus on the architectural accommodations that will be required to integrate the new framing system into the building.

The construction study will focus on the benefits and drawbacks the different types of braced framing systems provide to the construction process in comparison with the existing moment frame system as well as with each other. This study will cover the topics of cost, installation, estimating, and scheduling issues.

The architecture study will focus on the design issues caused by the implementation of the new braced frame system. Keeping the lateral resisting frames in their current locations would mean that multiple spans along the column grid which are currently open would have some sort of bracing interfering with the layout in the new design. A redesign of the floor plan would be in order to show that a feasible and functional change of the architectural layout can be achieved. Another option for this study is to change the locations of the lateral resisting members to optimize the functionality and convenience of the architectural plan, which would require additional structural analysis.