

Conclusion



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The overall goal of my thesis project was to analyze the feasibility of altering the current structural system. I altered the system from the original load bearing masonry walls with pre-cast hollow core planks to a structural steel skeleton. Since such a structural change affects other aspects of the building, it was necessary to study the feasibility of these changes mechanically and also how they affect the constructability of the building.

After a thorough analysis structurally, it seemed as if the building would be able to be redesigned as a structural steel skeleton. Although, it was necessary to realize that changing from the current system would yield consequences architecturally. For example, the new columns necessary for the redesign did not fit into the new partition walls. This can be changed easily by altering the design of interior partitions.

Another change that had to be analyzed was the exterior wall. Once I analyzed the exterior wall for my new design I was able to conclude that new design did meet ASHRAE standards and low heat transfer was maintained.

Finally, everything was redesigned, and it was time to analyze the impact the new changes would have on the cost and duration of construction. I conclude that a savings of roughly 3.3% was not a substantial enough amount to render a decision of changing the structural system. This is because the completion of the building would have to be pushed back to a later date by about 3 months. The original design is best suited for the owners needs.