

## **Executive Summary**

The proposed thesis will include a redesign of the floor system using post-tensioned beams with a one-way slab. All columns will be redesigned using concrete, and will replace the existing steel columns. A significant increase in building weight will result from changing the building structure, and as a result the foundation will be engineered to support the heavier dead load. The lateral force resisting elements will be switched from braced frames to concrete shear walls, which will exist in the same locations the frames do.

The breadth proposal will include a study of the cost and schedule impact, created by constructing the building with concrete. Comparisons will be drawn between the original costs/schedule and the new costs and schedule.

The second breadth study will focus on architectural impacts. All exterior steel columns are enclosed by a brick veneer on light gauge metal studs, and the column lines are prominent feature of the building's architecture. In comparison to the steel columns, much larger concrete columns will be required to support the factored loads. This increase in size will impact the exterior architecture of the building. A study will be completed to determine if there will be a detrimental change to the architecture or if facade changes can be avoided by limiting the dimensions of the columns.