Conclusions & Recommendations

Conclusions & Recommendations:

The goal of this thesis project was to find a more effective lateral force resisting system. Furthermore, alternate floor and bearing wall systems were studied to determine if a more economical structural system could be found.

In conclusion, the new system of hollow core planks, masonry bearing walls, and reinforced masonry shear walls presents a very reasonable alternative to the existing system. The existing lateral force resisting system of X-braced shear walls was not able to sufficiently resist the seismic forces calculated in this project. The new system of reinforced masonry shear walls is able to resist these forces using fewer walls. The hollow core planks and masonry bearing walls are also able to appropriately resist the gravity loads as calculated by code.

An in depth cost analysis of the new system showed a savings of $23,643 over the existing system. In addition to cost analysis, a construction schedule showed that the new system can be constructed in approximately the same amount of time as the existing system. This study shows that the new system is a feasible alternative.

It can also be concluded that a level of LEED certification could have been achieved if appropriately incorporated into the original design. This would allow the building to make as little environmental impact as possible. Any additional initial costs of this aspect of the project would be offset by the long term cost savings of the green systems.

The final recommendation made from this thesis is to incorporate these results into future projects. Masonry construction should be given more consideration for projects of this size. LEED certification should also be given more consideration to help protect the environment.