Andrew Solomon
Structural Design Option
Advisor: M Kevin Parfitt
Spring Run Assisted Living
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Thesis Proposal

Executive Summary

The purpose of this proposal is to introduce possible alternative designs. It is the result of work generated throughout fall semester 2005 for the purpose of a structural redesign of Spring Run Assisted Living. Upon approval, this proposal will serve as objectives and a schedule for spring semester 2006.

The structural redesign for Spring Run Assisted Living is to convert this load bearing masonry shear wall building utilizing hollow core precast planks and limited amounts of steel, to a steel skeleton building using none load bearing steel studs with masonry limited to subgrade retaining walls. The redesign will also use composite metal decking and concrete slab as the floor system. The lateral system will use a combination of moment connections and cross bracing.

The breathe topics to be evaluated in spring semester are based on the structural redesign and what sort of impact it will have on the building. First, two schedules will be created. One schedule will be of the current design followed by a schedule of the redesign and finally a comparison of the two will be completed. Secondly, a cost analysis and comparison of the two systems will be performed and an analysis of the comparison will be performed.

The following breathe topic is of the mechanical nature. It will be an analysis of the effects which changing the external wall composition will have on the building.

"All modifications and changes related to the original building design and construction methodology will be solely for the purpose of academic development. Changes and discrepancies will in no way imply that the original design contained errors or was flawed. Different assumptions, code references, requirements, and methodologies will be incorporated into the redesign; therefore, investigation results will vary from the original design" (The Pennsylvania State University, Architectural Engineer Department, Thesis E-Studio Disclaimer).