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Structural Option
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Thesis Proposal

Executive Summary

Wellington at Hershey's Mill is a retirement community located in West Chester, Pennsylvania. Consisting of 370,000 square feet and a total of 5 stories, Wellington offers 197 independent living apartments on the top three levels, a garage level directly below them, and a section with a lobby and offices for businesses within the building.

Wellington's foundation is slab on grade with strip footings in the exterior, spread footings in the interior, and a cmu foundation wall. The lobby floor and roof and first floor framing consists of steel joists bearing on girders in the interior and masonry bearing walls in the exterior. The girders are supported by interior steel columns. The second and third floors are 2x6 wood framing with open web wood trusses bearing on the walls. The roof framing is similar to the second and third floor except for slightly sloped wood roof trusses. Wood framed gypsum shear walls and masonry towers located at the elevator shafts and stairwells make up the lateral load resisting system.

The intent of this thesis is to design two alternate structural systems, perform an analysis of their impact on the interior acoustics and overall building envelope, and then choose the best system after a comparison.

The following is a summary of what is included in this proposal:

- Background information on Wellington at Hershey's Mill
- Description of the existing structural system
- Descriptions of two proposed alternate systems
- Intended methods of design and research sources
- Description of two breadth topics resulting from the redesign of the structure
- Tasks required for thesis completion and intended schedule