



Nicole Drabousky
Structural Option
Thomas E. Boothby
Wellington at Hershey's Mill
West Chester, Pennsylvania
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Structural Technical Report 2

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.

Technical report two is a comparison of the current floor system with the alternate systems that will be introduced and examined. At the conclusion of this report, it will be clear what options are viable as an alternate floor system for Wellington and which are not.

The existing floor system consists of a non-composite steel beam and concrete slab system for the lobby level and first level and a wood joist floor system bearing on wood framed walls for the second and third levels. The alternate systems being considered are:

- Pre-cast hollowcore plank system
- Wood Joist system
- One-way concrete joist construction (CRSI)
- Light-gauge steel system

The layouts of the systems were similar to the existing one due to the intended use of each level. Since the layouts are different between the first level and second and third levels, the same section on both the first and second levels will be evaluated for the alternate systems.

The systems were evaluated for cost, depth of the system, susceptibility to vibrations, fireproofing, and weight. The light-gauge steel system was determined to be the most efficient in cost, weight, and depth. The wood joist and hollowcore plank systems were not ruled out as possibilities but are not superior to the light-gauge system. The one-way concrete joist system was determined to not be an advantageous solution due to cost and construction time issues.