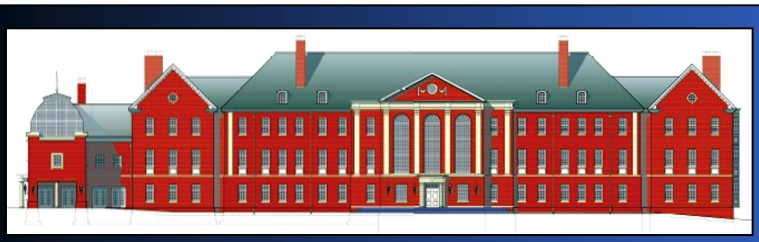

Barshinger Life Science & Philosophy Building

Michael A. Hebert

Structural Option
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November 21, 2005

Structural Technical Report #1

Structural Concepts / Structural Existing Conditions Report

Executive Summary

This report is a preliminary discussion of the building's structural systems and the loads cases that the systems are designed to support. Essentially, the superstructure is comprised of 6 ½" composite concrete slab-on-deck, supported by composite wide-flange members, carried upon wide-flange columns, and grounded with concrete piers and shallow concrete footings. Lateral forces are resisted by ten (10) concentrically braced steel frames located throughout the structure.

Simplified design calculations were performed using ASCE7-02 and the International Building Code (IBC) 2000 to determine the live, dead, snow, wind, and seismic loads acting on the building. The resulting loads are summarized in the table below.

Live	Offices	50 psf (+20 psf partitions)	
	Laboratories	60 psf	
	Public Spaces	100 psf	
Dead	Floor Loads	120 psf	
	Exterior Walls	45 psf	
Snow	Flat Roof	23.1 psf	[25 psf]*
	Sloped Roof	27.7 psf	[28 psf]*
Wind	N-S Base Shear	65.5 k	
	E-W Base Shear	143.2 k	
Seismic	Base Shear	846 k**	[865 k]*

*Design values in brackets if known **Controlling Lateral Load Case

Spot checks were performed on a typical floor bay and a lateral force resisting brace to validate the calculated load cases. In both cases, the spots checks produced results very similar to those of the design engineers.