

Shawn Jones  
Structural Option  
Advisor: Dr. Hanagan  
Hershey Academic  
Support Center  
Hershey, PA  
10/05/05



## Thesis Proposal

### Breadth Summary

The breadth projects I chose to do will supplement the changes made in my thesis proposal. The first breadth topic will deal with Construction Management issues, specifically dealing with costs of the lateral system. The second breadth topic will address some Architecture in the building, specifically examining the Fire System. The current system could be modified to meet fire code if the slab thickness was increased by one inch. The second topic will look at the affects to the building system if the slab thickness was changed to meet fire code.

#### Topic #1: Construction Management

For the first breadth proposal, I will focus on specific cost comparison of the current lateral system against other lateral options. My lateral system uses moment connections at almost every column in the building. I will talk to some steel fabricators about the specific costs of partially restrained as well as fully restrained moment connections in conjunction with the cost of using braced frames. A second cost issue connects the two breadth topics is the cost of the fire system before and after the slab thickness increase.

#### Topic #2: Architecture

For the second breadth proposal, I will take the current fire system of 2.5" Lightweight concrete slab with spray on cementitious fireproofing and change it to a 3.5" slab with no fireproofing to see how this is advantageous. The new system will result in more weight on the structure, possibly affecting floor members or the foundation, but this should reduce labor costs and overall hours to complete.