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*Structural Option*

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The 400: Bremerton, WA  
December 12, 2005  
AE 481W



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## Thesis Proposal Breadth Analysis Summary

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### **Breadth Analysis**

#### *Progressive Collapse:*

Because of the proximity of The 400 to the Naval base in Bremerton, Washington, the possibility of a blast will be considered. Ideally, a blast would not occur, but in the event one would take place, the likelihood of a progressive collapse must be evaluated.

First, the most common progressive collapses will be researched and evaluated. Second, the causes of these collapses will be identified. Lastly, possibilities to prevent this progressive collapse from occurring will be determined and evaluated.

#### *Envelope Study:*

The building envelope of The 400 consists of a masonry veneer with rigid insulation and sheathing connecting to the metal studs of the structural system underneath. Each floor's building envelope is supported by a ledger, and the masonry veneer is connected to the metal studs by veneer anchors.

In any location, it is possible for water to seep through the envelope of the building inside the structure, deteriorating the structural support of the building, but special consideration must be taken in an area of increased precipitation, such as Bremerton, Washington.

The envelope of The 400 will be evaluated to determine possible areas of consideration for seepage into the structure. Research will be conducted on failure modes of building envelopes. Updates to the current envelope system or a proposed new envelope will then be completed to determine an ideal design with the smallest chance for building envelope failure. General or actual field procedures will then be compared to expected and designed procedures.