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*Structural Option*

Advisor: Dr. Linda Hanagan  
The 400: Bremerton, WA  
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AE 481W



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## Thesis Proposal

### Proposal of Research to be Completed Spring of 2006

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The bottom two stories of The 400 consist of slab on grade or post-tensioned slab parking (generally 8" normal weight). Four stories of light gage steel residential frame construction are built above the two levels of parking. Wooden trusses are then used to frame the roof. The gross floor area for The 400 is approximately 124,000 square feet.

#### *Depth Work—Blast Redesign:*

The mention of the city of Bremerton to anyone in the area means one thing—Navy. Bremerton, Washington is primarily a Navy base, and tourists for the most part do not visit the area unless they are visiting the Navy base. It is proposed that the owner of The 400 is interested in renting the condominiums to military families. A redesign or upgrade of the existing structural system is proposed to develop a design which is considered to be blast resistant for certain attacks deemed important enough to be considered for study in Bremerton, Washington.

#### *Breadth Work—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.

#### *Breadth Work—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. Because of the increased precipitation in Bremerton, Washington, special consideration must be taken to ensure that water does not penetrate the building envelope.