



**Breadth 1 – Structural Analysis**

I propose to research the possibility of removing the reinforced fill system specified for the East half of the building. This system is located at the interior of the 10 foot high foundation walls. This system, manufactured by Tensar, will carry the lateral load created by the backfill inside the building footprint and will prevent the foundation wall from sliding or overturning. I will replace the reinforced fill system with a traditional compacted backfill system. This will require the redesign of the foundation wall, grade beams, pile caps and possibly the piles in this area. I hope to determine the Tensar system is not required, and the proposed system is less costly and less time consuming.

**Breadth 2 – Mechanical Analysis**

I propose to compare the initial and long term costs of replacing the double pane glazing in the large curtain wall with triple pane glazing, for my second breadth research topic. This will require calculating the differences in thermal resistance in the two systems, and computing the long term costs for each system. This will allow me to determine if the long term costs for a higher thermal resistance glazing is beneficial enough to overcome the higher initial cost for the triple pane glazing.