

## ***Breadth Studies***

### ***Structural Breadth***

The braced wall system within the Student Life Building initially posed a large aesthetic issue. Changing the braced wall sections to match the existing exterior columns would eliminate the overlap between the curtain walls and braced walls. This change requires the interior columns of the structure to be redesigned to support a larger load. Redesigning the buildings structural system qualifies as a 'structural breadth' and will require assistance from an industry professional.

The analysis can also be divided between a value engineering problem-comparing the braced wall vs. large interior columns, and a constructability issue. The construction of the braced wall would obviously be a very detailed process with multiple connections. The larger interior columns will have a cost increase. Comparing these cost changes and estimated schedule changes will help to determine which method would have been more beneficial.

### ***Mechanical Breadth***

The fire suppression system within the Student Life Building is a wet system. It currently is designed to have two sets of sprinkler heads; one directed upward, above the hanging ceiling, and one below the ceiling. The dual system is necessary because of the ceiling material, which creates two sizeable, separate areas. The ceiling is for acoustic and aesthetic purposed, but does not completely cover the space. As an analysis topic, I would like the change the current system to one use one set of sprinkler heads. This would significantly change the cost of equipment and labor – installing less sprinkler heads would need less labor, and ultimately shorten the schedule.

This analysis issue and mechanical breadth study will be completed through researching local fire code, speaking with fire system professionals, researching possible system changes and alternate ceiling materials, and estimating a new system cost. As described, the research involved would encompass a value engineering study, a study in constructability and scheduling, and involve industry involvement.