



Thesis Proposal  
22 January 2007

### Breadth Work: Mechanical

Located in the Recreation Center, I will be redesigning the lighting for the gymnasium. I plan to add clerestories as well as glazing on the south-facing windows. I will then analyze the effect the two changes have on the HVAC system design. The added glazing could affect the ASHRAE Standard 90.1 as well as the designed heating and cooling loads for the space.

### Breadth Work: Construction Management Cost Analysis

Once the redesign of the electrical, lighting, and part of the mechanical systems are complete, I will take a look into cost comparisons of the existing system to the new system after labor and installation. I will use this analysis to see if the new system will be more beneficial for the client.

After speaking with the superintendent on the job, several value engineering and constructability issues arose while on the job. One of which was the concourse ceiling which is a custom cut radius metal panel ceiling that required the lights to fit perfectly. To better this value engineering issue I will look into a high-end ceiling grid system with lay-in fixtures and compare the cost of the new and existing systems.