

BREADTH TOPICS

When implemented, any mechanical system redesign will consequently alter other building systems. After feedback from design engineers, the following construction management and lighting/electrical breadths will be analyzed during the Spring 2011 Semester.

Construction Management

This construction management breadth will investigate the potential savings in construction costs and installation schedule. With the design engineer's current prediction of a lengthy 9 phases being implemented in the 707 Building systems renovation, a more rapid installation schedule will be examined. Specific research will be gathered for the cost, schedule, and commissioning for any change to the mechanical system.

Designing a system with chilled beams leads to the ability to combine several services in a single integrated unit. Aside from known HVAC services, a full range of building services such as fully addressable lighting solutions, fire alarms, and sprinkler heads can be incorporated into the beam. A decrease in costs and on-site installation time is nearly guaranteed by incorporating fire protection and/or lighting features into the beam.

Lighting/Electrical

A lighting/electrical breadth will examine the benefits of multiservice integration within the chilled beams in the office space. A reduction in the cooling load is also plausible with this renovation. With the resizing of the chiller and boiler, an alteration in electric load will most likely occur. Design loads for the building's current electrical distribution system will be compared to the redesigned system. An electrical study will be performed comparing the current electric load output to the renovated one.

TOOLS FOR ANALYSIS

The following is a description of tools and methods that will be used to substantiate and ensure the work that will be put forth throughout the redesign of the 707 Building.

Construction Management

Any cost information needed that cannot be obtained from the project manager, design engineer, or approved submittals will be referenced from RS Means. Once the scheduling data is supplied by JMT, Microsoft Project will most likely be used to rework the renovation schedule.

Lighting/Electrical

An electrical analysis will be run using TRACE to determine the overall effect in reducing the cooling load by implementing active chilled beams. Data sheets in Microsoft Excel will also be utilized to compare and contrast the differences between the systems.