

## Breadth Topics

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### PART VI

#### Breadth Topics

Along with the redesign of the mechanical system, it is necessary to look into other aspects of the design in order to make a well-educated decision. The topics I will investigate include construction management and the electrical system of the building.

#### Construction Management Breadth

If these systems are to be installed in the building, it is necessary to calculate the cost and time of construction. By analyzing the cost and impact on schedule that each of these systems will cause, it should become evident which system, or combination of systems, will be the most practical. Chilled beam and DOAS systems usually have a low cost of installation, but ground source heat pumps do not. This breadth topic will be most helpful in deciding if GSHPs should be used, as well as the payback period for the installed system.

#### Electrical Breadth

If any or all of these systems were installed in this building it should significantly reduce electrical loads. Many mechanical system components will either be reduced in size, or eliminated all together. This will result in a smaller electrical load and less wiring required. In addition to resizing the wiring, circuit breakers could also be reduced in size. This will help calculate how much this type of system can save in terms of material, and help demonstrate the how much changing the mechanical system can impact electrical design. All electrical components that feed part of the mechanical system will be investigated to determine if they can be altered or eliminated.