

# Breadth Proposal

Preliminary Proposal for Spring 2011 Project



## APPELL LIFE SCIENCES

York College of Pennsylvania

York, PA

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Mechanical Option

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## Construction Breadth

Since the use of a GSHP system is being implemented the construction first cost and schedule will change. An analysis of excavation costs for GSHP systems will be done to compare first cost. An analysis of the change in schedule will also be done to compare the change in time for completion of the project. Excavation will most likely occur in the parking lots which will increase first cost a bit and add to schedule by having to repave the lots.

## Electrical Breadth

Since the use of a GSHP system is being implemented there are many pumps being added to the system. The adding of these pumps will change the electrical demand from the mechanical systems. A new electrical system to serve the mechanical systems will be explored in order to not increase the electrical demand from the new system or have too much electricity supplied to the systems.

## Tools for Analysis

### Proposed Breadths

For the construction breadth research on excavation costs will need to be implemented. Also, a schedule of construction from the project might be needed to add and make changes to, so a comparison of time for completing the initial project and redesign can be done.

Information about the current electrical system will be needed to help compare the new system that will supply the mechanical systems. Research will have to be done to ensure that the system will be efficient enough for the new mechanical systems.