THESIS PROPOSAL
ANALYSIS 1 (BREADTH):
COURTYARD INFILL STRUCTURE DESIGN

This technical analysis will consist of analyzing the utilization of a steel structural system instead of a cast-in-place concrete system for the courtyard infill. To develop this analysis the following steps will take place:

- Consult with a structural option faculty for help designing a structural steel system. RAM structural system will be used to design beams, columns, and footers.
- Determine impact of using structural steel to the floor plan and floor to floor height.
- Determine the cost impact of using structural steel. This can be assessed by looking at the current cost of using cast-in-place concrete compared to that of a steel system. This will be done using MC^2 estimating software.
- Determine the cost impact on general conditions. There will most likely be a schedule savings from using steel; however there may be a cost increase due to the need for a crane to erect steel members.
- Determine the schedule impact of using structural steel. This can be assessed by looking at the current schedule using cast-in-place concrete compared to that of a steel system.

The cast-in-place courtyard infill structure at Frederick Memorial Hospital does not tie into the existing structure in anyway. The two structures are separated by an expansion joint. Therefore there are no constructability issues to worry about by going to a precast structure. A steel structure will most likely cost more money however there will be schedule savings which will result in the roof being able to be constructed sooner, meaning the building will be dried in sooner.

THESIS PROPOSAL
ANALYSIS 2 (BREADTH):
PRECAST BRICK VENEER FAÇADE

This technical analysis will consist of analyzing the value added from using a precast brick veneer façade instead of a mason laid brick façade. To develop this analysis the following steps will take place:

- Consult with a structural option faculty or an industry member to get help designing the precast panels. The panels must be designed for erection as well as other structural requirements.
- Consult with a mechanical option faculty to formulate a heat and moisture analysis of the two different façades.
- Perform a U value analysis, comparing the heat transfer properties of the existing system to the proposed system.
- Determine the impact to the existing structural system of using precast panels.
- Determine impact of the precast panels to the site layout plan. The site plan must be changed to allow for a staging area for the precast members. Another option would be erecting the members right off of the truck.
- Determine the cost impact of using a precast brick façade and a precast concrete structural system. Manufacturers will be contacted in order to determine the cost of using precast brick systems.
- Determine the schedule impact of using a precast brick façade by comparing the current schedule length of the masonry activity with the length of time it would take to erect precast panels.

There will be several benefits to using some sort of precast system. By saving time on the masonry the building will be able to be dried in faster. There is also a chance that glazing could be preinstalled into the panels, saving even more time. In addition to designing the members, the site plan must be analyzed so there is room for a staging area.

THESIS PROPOSAL
ANALYSIS 3:
INFECTION CONTROL RISK ASSESSMENT

Because of the importance of infection control, the last technical analyses will be an infection control risk assessment performed for the Frederick Memorial Hospital. To develop this analysis the following steps will take place:

- Do a literature review to determine what type of assessment to perform.
- Do a literature review to determine the various guidelines governing infection control.
- Perform the infection control risk assessment.
- From the assessment and the published guidelines, propose suggestions for infection control on the project.
- Compare the proposed suggestions to what is actually being done in terms of infection control at Frederick Memorial Hospital.

THESIS PROPOSAL
RESEARCH: GETTING TO KNOW THE OWNER

Getting to Know the Owner

At the 2005 PACE Roundtable a recurring theme within the healthcare discussions was the impact of the healthcare owners upon the contractors. Industry members lamented the fact that "owner" usually consists of some combination of the board of directors, head nurses, facilities management, maintenance, and head doctors, just t o name a few. Numerous communication problems arise because of this, slowing down construction and causing work stoppages. The critical issues research will address this problem.

Because the topic of research is somewhat new the goal is not to find some solution to the problem; that will be left to upcoming researchers. Instead, the main objective of this research is to develop a simple guide to learn how to address the different entities of the owner and how to better understand and deal with them.

The end result of this research will be a description of the different entities in an owner, describing what characterizes them and what is important to them. Additionally, an outcome of the research will be recommendations for dealing with the intricacies of having multiple entities as an owner.

To achieve these objectives contractors will be surveyed. The data collection will come from online surveys. The survey will consist of questions about the four typical entities of an owner: president, chief financial officer, end user, and operator. Additional questions regarding the complex nature of the relationships between the entities and how this can affect the contractor will be asked as well.