3.0 Breadth Topics

3.1 Solar Shading

An analysis on the inherent value of solar shading will be considered for both Building A and B. External solar shading was not initially included on the architectural façade due to the requirements set forth by State Historic Planning Commission for the new buildings constructed. With these requirements noted, an analysis will be performed to see the load reduction possibilities for external electronically controlled solar shading.

Daylight still needs to be provided within the space due to the positive effects that it can have on the recovery process of patients. A study will be done looking into different types of solar shading that can be used and the corresponding amount of daylight let into the space along with the quality of light transmitted through the shading device.

Also, the building load reduction that may be seen after solar shading is analyzed will be put in terms of a total cost savings with energy and equipment. This cost savings when presented to the owner may justify the added cost or architectural façade redesign that may need to take place in order to have this idea approved by the State Historic Planning Commission.

3.2 Central Plant Acoustics

When a change is proposed to the existing mechanical room by the addition of new equipment such as a gas fired turbine, an acoustic evaluation must take place to see what effects have been rendered on the acoustic performance within the space along with adjacent spaces. The acoustics in the mechanical room will change greatly with the addition of equipment for the proposed CHP and backpressure steam turbine investigations. Most likely the result will be an increase in sound level within the space which will need additional absorption and isolation in order to mitigate the travel of sound to the surrounding occupied spaces. This investigation will be into the changes in sound level within the mechanical room and proposed solutions to achieve acceptable sound reduction so disturbances are not noticed within the surrounding spaces.