

## 9.0 Breadth Topics

**Acoustics** - The first breadth topic that will be addressed is the acoustical problems associated with the operation of the generator for the cogen system. Generators can often create a great deal of noise and certain precautions need to be taken to ensure that the equipment is isolated and no issues will arise with break-in noise to adjacent spaces. As part of this breadth, the sound characteristics of the central plant will be analyzed as it pertains to generator noise isolation. If needed, new materials and construction methods may be suggested to account for this and also the cost data will be analyzed and combined with the overall cost for the proposed CHP system.

**Electrical** - The second breadth topic will be the addition of photovoltaic solar panels to provide power to the building and reduce some of the peak load on the electrical system from the utility power. In the state of California, there are incentives in place to purchase PV panels at a lower rate so it could be shown that the added initial cost of purchasing and installing the PV panels could pay off with energy savings, reduced emissions of electricity generation, and cost incentives. The breadth topic will include a cost-feasibility analysis, sizing of the system (feeders, breakers, etc.), and how the PV array will tie into the existing electrical system.