

## **6.0 Breadth Work**

The redesign of the current mechanical system will directly affect other aspects of the building's composition. These changes in the building systems must be reevaluated in order to ensure that they meet code and design intent.

### Electrical

Most immediately the electrical system will be altered. The current system draws power from the grid while the redesign generates power internally. Various means of switches and connections to the grid will have to be researched and implemented. Also new load for the proposed mechanical equipment will have to be calculated and incorporated. If the mechanical rooms are relocated, the electrical supply will also have to be rerun. With the changing of the electrical loads the feeders, panel loads, over current protection devices, and main distribution lines would have to be checked and resized.

### Structural

The mechanical room is currently located within the building; upon relocating it to the exterior perimeter of the building the internal structure can be altered. This will result in more prime space being allotted for the resort. Currently the structural system is supporting equipment on the roof above the mechanical room, with out this load the structural system would be redesigned to allow for differently loaded beams to be installed. Also a new structure would need to be constructed for the proposed mechanical redesign that would be able to carry the weight of the new equipment.

### Construction Management

Electricity will be generated within the building in the redesign. Therefore it would be of interest to analyze the costs of the new system in regards to the lifecycle and overall building cost along with operational costs. The construction schedule would have to allow for the timely delivery and installation of the CHP systems so that electricity can be supplied to the building process.