



Executive Summary

Depth Work:

The depth topics to be analyzed are both in **lighting** and **electrical** designing. For the lighting proposals, the lighting systems of the gymnasium/stage, cafeteria, façade, media center/library, and entrance & corridors will be redesigned. Lighting fixtures will be selected as appropriate to meet the lighting designing goals and criteria and power density requirements although cost of installation/maintenance has to be considered. Needless to say, aesthetic part of designing is one of the most important issues to be considered. From each space, at least two photorealistic rendering images will be created by aid of either Lightscape, AGI32 or Radiance. For the electrical proposals, imaginary situation of the Brecht Elementary School as a community evacuation space in case of emergency will be designed so that stand-by electrical system can afford appropriate cooling, heating and necessary energy requirements. This includes sizing of panelboard schedules, protective devices configuration, and circuit layouts.

Breadth Work:

The breadth topics in this thesis are **daylighting** analysis and **mechanical** system redesigning after daylighting system was designed. Daylighting redesigning of the gymnasium and stage space will be done as appropriate and heat gain calculation as outcome of it will be used to redesign appropriate HVAC system to afford the heat gain from solar energy.