Executive Summary and Breadth Topics

The Harker School is one of the top K-12 schools in the state of California located in San Jose, CA. The new Science and Technology Building is a two story, 50,000 ft^2 located on the upper school campus (grades 9-12).

The current designed mechanical system is an innovative direct/indirect evaporative cooling system with a traditional two pipe boiler. There are only a few systems of its kind currently in use in the San Francisco Bay Area.

In the November ASHRAE meeting, Donald Wulfinghoff gave a presentation which advocated the use of single zone systems in all buildings. This project offers an ideal chance to research and implement many of the ideas he talked about in his presentation, so a single zone system is proposed for use.

Breadth 1: With the increase in number of air handling units needed to serve all the spaces, that means that there will be much more of a load due to equipment located on the roof. A study on the subject will be necessary. The current structural system will be analyzed and any changes that are needed will be researched further and the changes will be made.

Breadth 2: Since most of the spaces have a main usage involving public speaking and lecturing, acoustical quality is a primary concern. Various spaces throughout the building will be analyzed acoustically to determine if any adjustment is required. If so, the proper alterations will be researched and completed.