Executive Summary

The New Science and Technology Center was already designed with energy efficiency and occupant comfort in mind. Some of the implementations however still have the possibility to be improved. While the current VAV air distribution system can be very effective when used properly, problems occur as occupants manually operate the controls. Given the building has mainly labs and workshops air quality in the return system may also be in question. By switching the supply air to strictly outdoor air and replacing the terminal units with active chilled beams any problem with return air quality will be minimize to the individual zone. With the addition of a thermal storage system the space will require less energy for heating and cooling, which may result from the active chilled beam system. The thermal storage system will be either a passive solar design taking advantage of available sunlight or an active system with a nearby storage tank.

In coordination with the main re-design a daylight study will show if the building is receiving enough quality daylight to justify the incurred expense of a daylight harvesting system. Also, given the space is an educational facility, acoustics are very important. A space by space analysis will provide enough information to properly coordinate materials and space layout to provide the necessary reverberation times.