Section VII- Building Automation Systems

a.) Summary:

A Building Automation System (BAS) is a computerized system that controls the mechanical systems in a building based on the occupancy schedules. It decreases energy costs by keeping the building climate within a preset range, while monitoring the system’s performance and providing notifications to the building engineering staff. These systems have become increasingly complicated over the years. In some cases, a BAS may be designed beyond the building operator’s ability to use it. The following recommendations should assist designers and building operators in ensuring these systems perform efficiently.

- Ability to control and document systems and settings
- Design to the level of ability of operating personnel
- Assure adequate training and ability to manipulate

b.) Technical Information:

A BAS should allow building owners to set schedules for equipment and lighting. Optimal equipment starts with adaptive learning, allowing operators to become accustomed to the equipment. It should also have time and respond capabilities based on the demand in different zones of the building. While monitoring and metering energy use, the system should trend data and have the ability to reset schedules for systems. A BAS should also send alarms notifying the operators when a system in not working properly. In some cases, entire systems may be controlled from a single laptop.

c.) Case Study: Full Building Automation System (BAS)
This system allows for district-wide control, generating the same automation system in every single building. These buildings can be controlled from a central location, allowing for minimal control at each space.

d.) Potential Issues:

![Image of BAS system]

This Community College in Southern Illinois had a BAS system installed in one of their buildings without any training on how to use it. This required the building operations to call the BAS manufacturer every time there was a malfunction. Eventually, they stopped calling, which caused the building to start functioning improperly.