

Control Systems

Electric Controls

The electric controls will consist of a thermostat for each classroom and office, and a main control panel with a timeclock to control night setbacks. We will probably have several zones of control for night setback: eg., classrooms, multi-purpose room, library and offices, and ventilation. Each zone will have a occupied-unoccupied-auto switch on the face of the panel. The occupied position keeps the rooms at the daytime temperature setting on the thermostats (typically 70° F) all the time. The unoccupied position keeps the rooms permanently set back 10° F from the thermostat settings (used for extended vacation periods). The automatic position enables the timeclock to control when the rooms are set back and set up; this is the normal position. In addition a timer switch for each zone can be used to easily override night setback for unscheduled nighttime occupancy. The timer switch can be located on the control panel or somewhere within the zone.

Digital Controls

DDC controls will consist of a "host" computer, with "Windows"-based software, which enables the Owner to control and monitor all mechanical equipment from a central location. The computer will be used to set the occupancy schedules for each room individually, to monitor the temperature history of each room, and to monitor mechanical system performance, i.e. boiler run time, heating supply water temperature, circulator operation, ventilation supply air temperature, etc. The computer enables the Owner to spot mechanical system malfunctions quickly. If a modem is included, the maintenance staff could monitor building performance from a remote location during vacation periods using a laptop or other computer. A modem would also enable the control contractor to call up the host computer to assist the Owner with troubleshooting or repairs.

Each classroom and office would still have its own "thermostat", in this case "sensor", which allows individual room temperature settings; the computer can limit the allowable range of these settings if desired.

The mechanical equipment will each have its own controller which "talks" to the host computer, but is also capable of stand-alone operation in case of computer malfunction.