Project: Weather and Air Quality Monitoring
Client: Rexburg and Blackfoot Middle Schools
Location: Rexburg/Blackfoot, Idaho
Year: 1994

IEI Monitoring & Control Systems

ApplicationNotes:

The communities of Blackfoot and Rexburg are located in the southeastern Idaho. Through funding from the schools, the communities, and the state, two sites were chosen for weather and air quality monitoring. By locating the sites near the local middle schools, the instruments and the data from them could be used for multiple purposes: first to provide the community with climate and air quality data and secondly to provide the middle school students with an opportunity to learn about meteorology and air quality.

LED Display/Message Center connected to Weather and Air Quality Monitoring Station

InstallationandSystemDesign:

The two sites were instrumented the same. Another local company installed instruments for PM-10 particulate monitoring. Intermountain Environmental personnel, assisted by a local environmental consulting firm, installed 50 ft. triangular instrument towers. The middle school location for each of the towers made it necessary to use self-supporting towers with anti-climb guards. We didn't want students running over guying wires or climbing the tower. All of the instrumentation was enclosed with a chain link fence for additional protection. The towers were designed so that they could be tilted down when the instruments needed to be calibrated or repaired.

Air temperature and relative humidity are measured at two heights using an AT41372 housed in a DC043 Aspirated Radiation Shield for highly accurate measurements. Solar Radiation is measured at two heights using an SR200 Pyranometer. Wind Speed and Direction were measured at 40 ft. with a WS5103 Wind Monitor. Precipitation was monitored with an RG2500E Electrically Heated Tipping Bucket Precipitation Gauge that was surrounded by an RG2592 Alter Type Wind Screen. All of the sensors from the weather station and the air quality instruments were routed to a data logger for measurement and recording.

The system was powered by AC power that was run to the site. A 110-volt AC to 12-volt DC converter was used in-line to trickle charge a 7 Amp Hour battery. Should the AC power ever fail, the battery will provide a back up source until the AC power can be restored. Cabling was then run from the Data logger to a computer in one of the classrooms in the school and also to a large LED Display that was prominently displayed in front of the school.

Blackfoot, ID Middle School Weather & Air Quality Monitoring Site

For Information on this project or these products please contact:

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