

Education Case Study

Toltec elementary school - Arizona City

Keeping control in the classroom

When Phoenix AZ based Mechanical Maintenance Inc won the building controls contract for Toltec elementary school in Arizona City, they quickly saw the benefits of providing a solution based on Novar IQ controllers. Their flexibility, cost-effectiveness and ease of integration with other manufacturers' controls, were key factors in MMI's decision. Though it was one of the first jobs on which they had used an IQ system they were able to engineer and integrate it with little difficulty. This was due in part to the close technical support and training that Novar provided.



The newly built Toltec school was completed earlier this year. Attended by 580 students, it has a floor area of roughly 70,000 ft². Given that it is located in the Arizona desert, where temperatures range from 20 – 115°F, effective control of its air conditioning is crucially important. The school has a total of 56 fan coil units, each controlled by an IQ212. This maintains optimum comfort conditions by modulating the fan coil's chilled water valve or staging on its electric heater strips.

An IQ229 performs various control and monitoring functions on the chilled water plant, including modulating the speed of the secondary circuit pumps via variable frequency drives. A further IQ – this one a 221 – controls fresh air dampers and exhaust fans based on its calculations of enthalpy. It also incorporates a ModBus interface, via which the networked IQ system can communicate with the chiller controls and vfd's. Once the interface had been connected, less than an hour was needed to program it and make it operational.

The system's main operator interface is a '962 client/server' PC-based supervisor that connects directly to the school's Ethernet IT network. Through this, the School Superintendent can monitor conditions and make adjustments to control settings. MMI is able to fully access the system via the Internet using a standard web browser.

The advantages of IQ control technology have helped MMI to win valuable new business. This includes a contract from Mesa Public Schools, Arizona, for a project that is Lon-based.

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