

# 5800 Students Keep a Cool Head in the Metropolitan School District of Decatur Township

## Background

Decatur needed a comfortable and healthy learning environment and required central monitoring and control capabilities; from one or more locations. A new BAS system had to provide HVAC control and allow for integration of future facility management controls. Simplicity was necessary and power monitoring that could accurately forecast long-term savings was essential.

## Challenges

The district faced many challenges including a lack of adequate temperature control with aging and proprietary BAS systems, they were hindered in their ability to choose controls vendors, their energy costs were unacceptable and budget constraints were in place.

## The Solution

Decatur chose to integrate other systems with the HVAC including: lighting, access, security, CCTV and power monitoring. The system is monitored from a single center reducing time and cost.

“We liked the idea of having an Open System, and that is the main reason we purchased the Circon control package. It does a much better job of controlling what we want to control, and I have certainly seen a reduction in the number of complaints from staff.” Bill Smith, Assistant Superintendent, Decatur Township.

Sharing of information over the LONWORKS network played a key role in justifying the cost of a dual duct system for a new Decatur building. The system utilized one side of the dual duct box to deliver fresh air using occupancy sensors and CO<sub>2</sub> sensors. With LONWORKS providing

true interoperability, one manufacturer’s configurable VAV controller was selected for one side of the dual duct box while Circon’s programmable VAV controller was used for the other side. Resulting savings are 30% per classroom.



**The LonWorks installation saves Decatur over \$235,000 (USD) of energy costs.**

Circon’s software provides total control with the ability to monitor and change temperature set points and schedules. Circon’s site management controller collects, prioritizes and transmits alarms. Both allow Decatur to consider a wide variety of LONWORKS based systems and solutions for future needs.

“I have very little background in computers, but with the Circon System I can diagnose 50% of the problem before dispatching someone to the site, and I can do it from any location in the district.” Tim Cook, Maintenance Supervisor, Decatur Township.

The lighting control keeps the split-ballast lighting at required levels. Lights are energized during unoccupied mode when the CCTV camera sends a signal to the lighting controller. Multi-purpose room lighting needs are determined by scheduling or occupancy detection. Outdoor lighting is controlled by schedules and photocells.

The access control grants access to required areas of the facilities, while maintaining locked conditions in others. Valid card presentations activate appropriate lighting. The security system assists teams with monitoring the facilities and use the same occupancy sensors utilized in other systems, while the CCTV systems monitor doors and parking lots. Images matched with card presentations help staff determine whether access cards are being properly used. Built-in motion detector ability in each camera is shared across systems.

The power management systems allow the owner to verify utility bills and control peak demand. When peak demand approaches set points, load shedding occurs. Operator interface requirements were stringent and a web based front-end was chosen. Monitoring, set point adjustment, overrides, scheduling, trending and alarming abilities were keyed-in. Any computer with Internet access allows staff full access to their system. This installation creates annual energy savings of \$235,000 (USD).

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