



Installation: **Osceola School District, Kissimmee, Florida**

Circon Integrator: **Jack Joyner Heating and Air Conditioning, Clearwater, Florida**

Building Type: **School**

Physical Description: **Celebration School 7 buildings, Gateway High School 23 buildings**

Duration of Project: **February 2000 to ongoing**

THE CLIENT

Celebration School and Gateway High School are two campuses in Osceola School District, one of the fastest growing districts in Florida. These schools are the first in the district to be retrofitted for open control using a multi-vendor approach that included Circon HVAC controller products that communicate using the LonWorks® network protocol. This integrated Building Automation System project won Best Multi-Vendor Installation at LonWorld 2000, an open control system industry conference.

THE CHALLENGE

- *Deliver a full featured, open and interoperable Building Automation System (BAS)*
- *Implement individual classroom temperature control with central and web-based control options*
- *Provide a control system platform that facilitates future expansion and integration*
- *Provide a cost effective networked solution*

The existing BAS in both schools was originally installed using a closed and proprietary system, which limited future expansion and integration. In addition, on-going problems in maintaining this system caused high-levels of frustration among the maintenance staff. These two key issues drove the school district to seek a replacement system and its solution was to upgrade the schools to an open control network platform and to deploy industry leading open control products.

The school district wanted a system that would provide seamless integration on a single network and allow for system expansion and multiple application integration. A key requirement for the control system was to enable separate classroom temperature regulation by teachers and to do so without the use of wall thermostats, which are highly susceptible to tampering by students. In addition, the maintenance staff wanted the system to be simple to operate and maintain.

“The most prohibitive problem we pinpointed in the existing Building Automation System was that it was not open or interoperable. Consequently, the system could not be expanded to serve the requirements of a high-growth school district such as Osceola. New, improved products from multiple vendors were needed to control systems such as HVAC, security, lighting, refrigeration and power. We chose to use a Circon system in order to give the customer everything they wanted in a BAS.” **Rick Joyner**, Vice President of Controls, Jack Joyner Heating and Air Conditioning

THE SOLUTION

- *Circon variable air volume, air handling unit and chiller plant control products*
- *A single LonWorks® network*
- *Multi-vendor control products*
- *Web-based control network graphical user interface*
- *A flexible and adaptable design*
- *A high level of comfort and functionality*

The fully integrated open protocol BAS solution provided by Jack Joyner Heating and Air Conditioning today makes it possible for Osceola School District to have a seamless and expandable network to control its major facility functions. By incorporating some of the existing equipment and by utilizing the existing Ethernet as a

communication backbone, the school district realizes significant annual energy savings while maintaining and improving overall comfort. The savings will allow the district to replace legacy equipment with Circon open system controllers as well as to expand the system to incorporate other critical facility control applications and products from other, and in some cases competing, manufacturers.

A Circon Integrated Building Automation System (IBAS) allows for the selection of best of breed products that are monitored on a single control network. Individual classroom temperature is controlled and monitored through password protected web pages that are incorporated into the network. This allows teachers to control classroom temperature from their desktop for optimal comfort, flexibility and elimination of the likelihood of students tampering with the system.

The school board has since established a committee to develop Circon and LonWorks networks as the standard for all schools in their district. Future plans will finalize this standard and expand the IBAS to incorporate lighting control, card access and security applications.

THE DETAILS

HVAC CONTROLS

- *Integrate existing controllers into the open system*
- *Provide efficient energy usage*
- *Deliver intelligent monitoring and control*

Circon programmable HVAC Controllers control the main Air Handling Units (AHU) and the chiller plants. Circon Terminal Unit VAV Controllers control terminal Variable Air Volume (VAV) units that service each classroom. All HVAC controls are integrated onto a single, distributed network.

Jack Joyner Heating and Air Conditioning was able to integrate some of the existing LonWorks compatible Honeywell controllers into the new open system.

SYSTEM MANAGEMENT

- *Built in password protected Web pages for monitoring and control*
- *Provide unlimited user access through a Web browser*
- *Utilize existing Ethernet backbone*

The incorporation of Echelon® Corporation's i.LON® 1000 router/web-server enabled Circon and Honeywell® HVAC controllers to be represented as nodes on the Internet. The built-in Web server allows control information to be accessed easily via a Web browser. The password protection feature provides access to the information and status of each device on the LonWorks network for authorized users working from a Web browser anywhere. By programming the i.LON 1000 to utilize the existing Ethernet backbone, additional underground wiring expenses were avoided.

SYSTEM COMPONENTS

CELEBRATION SCHOOL

29 Circon Programmable HVAC Controllers
52 Circon Terminal Unit VAV Controllers
100 Honeywell Excel 10 VAV Controllers
7 Echelon i.LON 1000 Web servers
9 ABB LonWorks-enabled Variable Frequency Drives
Echelon LonPoints

GATEWAY HIGH SCHOOL

33 Circon Programmable HVAC Controllers
100 Circon Terminal Unit VAV Controllers
33 Honeywell Excel 10 VAV Controllers
24 Echelon i.LON 1000 Web servers
26 ABB LonWorks-enabled Variable Frequency Drives
Raytheon Fiber Optic Modems
Echelon LonPoints

For more information about this case study, please call us at 1-800-338-1866.

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