



# Premier Health Facility Recognizes Need for Long-Term Sustainability

**E**stablished in 1888 in Little Rock, Arkansas, USA, by the Sisters of Charity, under the name the Charity Hospital, St. Vincent Health System has grown into the premier health care facility in the State of Arkansas. The multi-campus network consists of an eight-story infirmary, a four-story hospital and a medical center, all in Little Rock, plus a three-floor rehabilitation facility and a healthcare center in Morrilton. In addition, St. Vincent has numerous medical clinics throughout Arkansas.

In 2002, with no expectations other than to provide the best solution to meet St. Vincent's immediate need, Middleton, the systems integrator, working with Distech Controls and its regional distributor, Control Tech Supply, soon gained the customer's total trust and began the retrofit of the health system campus.

## The Challenge

Like many hospitals that date back to earlier centuries, St. Vincent grew over time around a center core of aged buildings and infrastructure systems. Many of the critical areas, notably the surgery suites, had obsolete HVAC equipment and building automation controls. It was becoming increasingly difficult to meet the needs of a controlled medical environment and of patients who expected modern standards of comfort. Furthermore, very few technicians had sufficient knowledge and expertise to service the first generation proprietary controls systems technology. St. Vincent faced the challenge of implementing upgrades to address its most urgent needs and at the same time, develop a plan for long-term sustainability.

With continuing growth came more additions and buildings spread over a wider geographic region. Monitoring controls and servicing the ever-expanding network of buildings added to the challenge. Networkability across multiple campuses was non-existent and there was no central monitoring capability. St. Vincent recognized that it was critical to best-practices levels of operating efficiency and long-term sustainability.

While many issues were identified, the immediate priorities were the old pneumatics and proprietary systems and lack of interface between systems, resulting in inadequate monitoring, the inability to expand upon the existing building automation system and the need to

ensure dependable, cost-sustainable technical support. Furthermore, hospitals have unique and challenging air quality and control requirements. At St. Vincent for example, some surgery suites must maintain a strict 11C° (52F°) temperature and a 30% relative humidity level.



## The Solution

Middleton approached all these challenges by first developing a retrofit master plan to replace individual, antiquated systems with a fully automated and interconnected system. The new system provided for a modern-day level of data input, reduced overall operating costs and laid the groundwork for future upgrades, by creating an open and sustainable building automation system. St. Vincent approved Middleton's recommendations for upgrading the Building Automation Systems (BAS) to a more sustainable level, thereby providing for campus expansions with best-in-class products and technologies.

For the upgrade, Middleton chose Distech Controls' EC-Net Web based multi-protocol platform with Distech Controls' LONMARK® certified controllers. EC-Net provides a sustainable building automation system platform for network integration and graphical user interface, powered by the Niagara Framework®. EC-Net allows the management of the building automation system in real-time over the Internet, with access and monitoring from a Web browser. It also enables the management and reconciliation of the geographically dispersed sites within one system.

This optimizes monitoring and data sharing. Additionally, EC-Net provides for the seamless integration of all HVAC systems and protocols, such as Modbus™ for

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the boilers and LONWORKS® platform and BACnet® for the HVAC controls and the VFDs. Furthermore, it lays the path for future expansion of any HVAC control or terminal equipment, regardless of protocol or manufacturer.

Distech Controls' LONMARK International certified configurable controllers were selected for control of VAV and other terminal equipment. The control system also uses Distech Controls' LONMARK International certified programmable controllers that allow full customization of control sequences, enabling the flexibility to address all specific requirements of the HVAC equipment. These range from the complex central plant equipment such as air handling units, large boilers and chillers, to features for environmental quality requested by the hospital.

All controllers are programmed using Distech Controls' EC-Net wizards that significantly improve efficiencies in the engineering and programming process. The controllers also provide additional features including the programmable controllers' manual switches for Hand-Off-Auto override of any mechanical function. This feature ensures dependable emergency backup and faster trouble shooting.

The plan embraced many more needs, some critical such as instant notification of alarms through cell phones, texting and emails and others that make the work place safer and easier for technicians: for example, a user-friendly graphical interface that a maintenance person can easily understand and quickly spot problems or anomalies. Middleton also maximized the advantages of EC-Net's advanced graphical user interface by completing the floor plans with documentation embedded in the graphics, such as controller datasheets and Visio® drawings of the control system. The complete library of information is readily available to all users.

### Customer Benefits

St. Vincent has achieved its goal of a sustainable, automated system for its multi-building campus. The new level of quality, convenience, and comfort benefits all who work in or visit the facilities.

From an operations standpoint, maintenance has improved tremendously now that St. Vincent can access a central monitoring and control interface. Moreover, all the new and user friendly technologies integrated into BAS system make it easy for St. Vincent technicians to identify any issues and promptly correct them.

### Energy Savings

St. Vincent Health System estimates a savings of over US\$1 million annually since the start-up of the retrofit (2002).

Anthony Dorse, HVAC Department Lead Technician St. Vincent Infirmary. "Our highest priority was to find both a manufacturer and a local systems integrator

who could provide extremely quick emergency service and technical support. They would have to provide reliable hardware and flexible software to meet our complex sequences of operation, monitoring and alarming needs. Monitoring of our expanding HVAC and mechanical systems over multiple campuses was a must and it had to be done with an intuitive, and simple to understand GUI that all of our maintenance staff could feel confident with. Distech Controls and Middleton Inc. have met all of these challenges.

They have trained our personnel both in-house and with classes provided by local Distech Controls distributor, Control Tech Supply. We have such confidence with Distech Controls that our maintenance staff want to retrofit the rest of our existing systems as soon as possible. Distech Controls is simply easier to work with than the other systems."

### Distech Controls Products:

- LONMARK International Certified Programmable and Configurable Controllers
- EC-Net Web based multi-protocol building automation system
- Total number of controllers: 517
- Total number of points: 4700

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