



Amazon.com, Whitestown Indiana



A Amazon.com, a Fortune 500 company based in Seattle, Washington, is the global leader in e-commerce. Amazon.com's unparalleled growth has created the need for the establishment of multiple distribution centers throughout The United States, and one of those centers was designated to be located in Whitestown, Indiana (northwest of Indianapolis).

The Challenge

Amazon.com's commitment to providing work places that are healthy and environmentally responsible led them to seek the Leadership in Energy and Environmental Design (LEED) Gold building certification. LEED is an internationally recognized sustainable building certification system, providing third party verification that a building or community was designed and built using strategies intended to improve performance in metrics such as energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

Amazon.com's minimum requirements for the 650,000 square foot facility in Whitestown, IN, were to create an environment that is healthy and allows their employees to thrive and be productive, and to construct a

facility that is environmentally responsible, sustainable and energy efficient.

The Solution

LONMARK® Associate member Davis Industries delivered a full featured, open and interoperable Building Automation System (BAS).

Circon programmable HVAC controllers control the main Air Handling Units, and Circon Terminal Unit VAV controllers; along with Hubbell motion control sensors control the terminal Variable Air Volume units in the office spaces. The warehouse utilizes Circon HVAC controllers to control the make-up air units with automatic ventilation relief provided through space CO2 and humidity sensors. The controls utilize advanced VAV sequencing strategies for optimized ventilation control throughout the facility.

All warehouse lighting is controlled by a hybrid Direct Digital Control (DDC) system developed by Davis Industries. In lieu of traditional motion sensor on each fixture, a series of networked motion sensors were installed to support system changes from the graphical user interface. All HVAC and lighting controls are integrated onto a single, distributed LONWORKS® network. A daylight-harvesting feature further reduces lighting loads to maximize energy efficiency.

A Niagara AX JACE Web server allows control information to be accessed easily via a Web browser. The web-based user interface provides access through a password protection feature. Authorized users have access to key information and device status throughout the LONWORKS network from any web browser locally or remotely.

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The Result

The fully integrated, open protocol BAS solution provided by Davis Industries allowed Amazon.com to achieve their desired goals through the implementation of a seamless and expandable network to monitor and control its major facility functions. By implementing an energy management interface, strict ventilation control sequences, and motion/daylight sensing for the lighting systems, Amazon.com now realizes significant annual energy savings while maintaining and improving overall comfort.

System Components

- Circon Programmable HVAC Controllers
- Circon Terminal Unit VAV Controllers
- Honeywell WebsAX Graphical User Interface
- Douglas Daylight Harvesting System
- Hubbell LX-Series Lighting Control Product
- Davis Industries High-Bay Network Motion Sensor System

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