

## Training Fills Gaps in Experience



### Riddle Elementary School

Facility Type:	Public Elementary School
Square Footage:	108,000
Date Built:	2003
Number of Staff:	107, including three building operators
BOC Participant Profiled:	Jeff Jean, Head Custodian



**Riddle Elementary School** is one of five facilities operated by the Mattoon Community Unit School District #2 in a rural Illinois community of 20,000 residents. Riddle Principal Bruce Barnard and his staff strive to create a safe, healthy environment supporting the District goal of providing a quality education. **Head Custodian Jeff Jean** and Principal Barnard see **Building Operator Certification (BOC)** training as an excellent way to make improvements to the physical environment of the building through better operations and maintenance. In addition to creating a healthier school environment, BOC training has significantly added to Jeff's job skills and is helping the District achieve significant energy savings.

### ■ CHALLENGES

#### Limited Training in Building Operations and Maintenance

Before coming to Riddle, Jeff worked as a mechanic and truck driver. He had held one custodial position earlier in his career but worked in a building with automatic controls and mainly relied on trial and error to operate the building systems. After joining Riddle's custodial staff, Jeff received a few training sessions on how to run the software controlling the school's HVAC system, but he had no general training in building operations and plant maintenance.

#### Indoor Air Quality Concerns

Several staff members at Riddle had raised the issue of indoor air quality (IAQ) after noticing some spots on the carpeting that appeared to be due to high levels of moisture. An IAQ consulting firm was hired to take air samples and to examine the vapor barrier below the building to ensure that moisture was not entering the building from the ground. The IAQ investigation drew attention to the operation and maintenance of the building's HVAC system as a possible contributing factor.



## ABOUT BOC



Building Operation Certification (BOC™) is a nationally recognized training and certification program for building operators offering improved job skills and more comfortable, energy-efficient facilities. The training topics include building systems overview, energy conservation techniques, HVAC systems and controls, efficient lighting fundamentals, environmental health and safety regulations, indoor air quality, and facility electrical systems.

The Northwest Energy Efficiency Council (NEEC), a nonprofit business association of the energy efficiency industry, developed BOC with support from the Northwest Energy Efficiency Alliance (NEEA).

The Midwest Energy Efficiency Alliance (MEEA) is a 501(c)(3) nonprofit organization and a collaborative network whose purpose is to advance energy efficiency in the Midwest in order to support sustainable economic development and environmental preservation. MEEA administers a regional BOC program in Illinois, Minnesota, Missouri, and Ohio with the support and involvement of the Illinois Department of Commerce and Economic Opportunity; the Minnesota Department of Commerce, Minnesota Power, and other Minnesota energy utilities; the Energy Center of the Missouri Department of Natural Resources and AmerenUE; and the Ohio Department of Development and the Ohio Public Facilities Maintenance Association. For a complete schedule of upcoming BOC training series, visit [www.boccentral.org](http://www.boccentral.org).

## Inadequate Lighting Awareness

Jeff was not keenly aware that small changes could lead to a big difference in energy costs—switching off unneeded lights, for example. He was not taking full advantage of the natural light entering the building and the efficiencies of Riddle’s existing lighting system.

## ■ RESULTS

### Improved Building Operations and Maintenance

BOC training greatly increased Jeff’s knowledge of building operations and maintenance, especially his understanding of HVAC systems. As a result, he began regular boiler blow-downs, and started a motor maintenance program that includes checking belts and motor alignment. Jeff also learned that energy efficiency is not achieved through equipment alone; he understands that people’s behavior also plays an important role. For example, while the teachers generally do a good job of turning off the lights when a room is unoccupied, they sometimes need to be reminded.

### Improved Indoor Air Quality

BOC training taught Jeff about the adverse effect of poor indoor air quality, particularly on children. It helped Jeff identify simple actions that he can take to improve the indoor environment as well as save energy and money. He now uses biodegradable cleaning products and schedules heavy cleaning tasks after hours whenever possible. When he cleans the carpet during the summer, he runs the air handlers to ensure that the carpet dries quickly and completely, preventing excessive humidity and mold growth. To verify and maintain the improvements in IAQ, Jeff now has an independent company conducting indoor air quality testing at the school on a regular basis.

“I NOW HAVE A BETTER IDEA OF HOW TO MANAGE INDOOR AIR QUALITY AND MAKE THE BUILDING MORE ENERGY EFFICIENT.”

—Jeff Jean, Head Custodian,  
Riddle Elementary School

### More Efficient Use of Lighting

BOC training made Jeff aware of the amount of energy consumed by lighting. Riddle’s lighting fixtures already use energy-efficient T-8 fluorescent lamps and electronic ballasts. Most fixtures are double-switched, allowing half the lamps to be used at a time. Jeff learned that daylight, the highest quality light source for visual tasks, may enhance student and teacher performance. Now on bright days, when daylight can be effectively utilized, he turns off some classroom lights and saves energy.

## ■ A WORTHWHILE INVESTMENT

Jeff was promoted to Head Custodian partly as a result of BOC training. He now has a much better understanding of building systems, making him more effective in carrying out day-to-day building operations and maintenance. BOC training has also given him more confidence on the job. “I learned a lot from my BOC training,” he reported. “I now have a better idea of how to manage indoor air quality and make the building more energy efficient.”

