

C-TEC: Ohio's First All-Green School

BY ANGIE KRALL

Driving by the one-story facility on the quiet residential street in rural Ohio, a visitor would never guess the environmentally friendly conservation strategies behind the construction of the Career and Technology Education Centers (C-TEC) of Licking County in Newark, Ohio. But one step inside the building, opened in 2006, and it's another story. Inside, one is greeted by plenty of natural light, pure, monitored airflow and cool earth tones. The Leadership in Energy and Environmental Design (LEED) certification by the U.S. Green Building Council proudly hangs on the wall.

C-TEC is a leader in the green movement and the first certified public building to meet that qualification, not just in central Ohio, but in the state. While eco-friendly schools in states like New York and California are becoming the norm, the green movement has been slower in the Midwest. When C-TEC broke ground, Ohio and surrounding states Indiana and West Virginia had no green schools, while Michigan and Pennsylvania had only a few.

Although the school has been open for two years, it is still being discovered and sought out as a model. "We are getting more and more businesses

and other schools visiting. Sometimes, they don't always know where we are located; but before too long, they're setting up a tour," said Ronald A. Cassidy, C-TEC superintendent.

As these visitors walk through the building, they learn about the clean inside air (air quality is monitored in every classroom), paint without fumes, chairs made of totally recycled products and waterless urinals. Hidden in the back of the building they'll find a composting pile, 250 newly-planted trees (a total of 1,060 shrubs and trees on the entire property) and a storm-water retention pool.

The Color of Money—Green

The decision to go green was well researched given a tough economy when schools are facing financial concerns. Rick Orr, facilities manager for C-TEC, said the benefits are tangible: Constructing and renovating buildings that meet environmental standards may cost more in the short term compared to meeting regular building codes and standards. However, just how costly depends on the selection of materials, what is done, the size of the building and other factors. "Helping people become aware of why a school would spend more money up

front is a huge part of this process," Orr said. "The message has to be this: Going green is a long-term view and the most responsible thing to do—for the students, environment and taxpayers."

According to Orr, there were three primary reasons the district went green: long-term financial and energy savings; a healthier environment; and environmental stewardship. He invested considerable time in documenting operational costs for the previous building and researching the rationale behind the green construction. The decision to go green didn't happen overnight, Orr said. In 1998 he observed a sharp rise in the cost of utilities. That year, electricity and water bills reached a total of \$200,000. Minor actions, like tightening faucets and turning off lights, brought a 15 percent savings the following year.

At the same time, Cassidy looked at enrollment, especially the adult population. The current facility could not accommodate the needs. Plus, new Ohio academic standards, particularly in science, necessitated additional room for high school classes. Career and technical education offerings at satellite locations helped, but with 700 high school students and 3,900 adult students served annually,

space in the 35-year-old building was a growing issue.

The architectural firm selected for the project documented that the investment should yield a life-cycle savings of more than 10 times because of product selections such as waterless urinals, ground-face block in the walls and energy-controlled lighting. Before constructing the storm water pool, the average annual bill was \$22,000. Last year, the storm water tax was half of that amount.

Breathe Deeply—Attendance Improves

Cassidy can't attribute the increase in student attendance specifically to the healthier internal environment; but there has been improvement. The student attendance rate in 2005, prior to the new facility, was 93 percent. In 2008, the rate was 96 percent. Faculty and staff health insurance costs also decreased 11 percent in the first year in the new building.

Waste Not, Want Not

C-TEC requested that no soil leave the property during the construction, Cassidy said. "Instead, it was utilized to enhance the landscape features by mounding," he notes. "This enabled us to save signifi-



ISTOCK.COM PHOTOS

Angie Krall is marketing manager at Career and Technology Education Centers, Newark, Ohio. She can be contacted at akrall@ctec.edu.



▲ Early construction of the facility rotunda, which is the central point of the Secondary Center.



▲ Environmental science instructor Kay Holton with Cheyanna Ballenger, junior. Cheyanna waters the class herb garden which is part of the conservation project.



▲ From left to right: Culinary arts instructor Jessica Karr and students, Ashley Yantis and Caleb Korzenborn, flatten giant-sized aluminum cans for recycling.



▲ Electricity instructor Greg King (left) and student Kenny Copley are recycling steel and copper which earns \$3,500 a year.

Fuel efficiencies and recycling enabled students and staff to feel a part of the process and ambassadors of a green environment.



cantly on transportation, fuel and labor costs associated with the removal.”

Another requirement was recycling materials that could be diverted from the landfill. “Everything from cardboard to asphalt, concrete, metal, wood and electrical items was taken to be recycled locally,” according to Orr. “This building project documented 6,200 tons of recycled products that could have ended up in a landfill.”

Fuel efficiencies and recycling enabled students and staff to feel a part of the process and ambassadors of a green environment. It soon started spreading over into the high school programs.

Electricity

For electricity instructor Greg King, there is a larger mission for practicing and teaching greenness to his students—industry competitiveness.

“The construction business is a green business,” he said. “This is the direction our industry is going; my students need to be on the cutting-edge of that awareness.”

King, a 1984 graduate of C-TEC, is saving his program money. Pointing to

two bins—one for insulated and uninsulated copper wiring and one for steel—he noted that in the fall of 2008 his program earned approximately \$3.50 a pound for recycled copper and \$1 a pound for recycled steel. During the 2007-2008 school year, the electricity program earned \$3,500 from recycling that was put back into the program. In addition to conservation of materials, there are lessons of ethics and honesty. Most companies forbid employees from removing materials at a site—doing so can be cause for job dismissal, he said.

Culinary Arts

From fryer oil to paper products and vegetable waste, culinary arts instructor Jessica Karr and her students aren’t just talking about green practices. Last year, ceramic plates and bowls replaced foam and paper products in the cafeteria, saving \$75 each week. This year, they estimate a ton of waste will be saved because of recycling fryer oil, vegetable clippings, cardboard, plastic, glass and steel cans.

Students also began to compost vegetable clippings. To make the compost

better, Karr teamed up with C-TEC Adult Education Center horticulture instructor Lois Whyde and secondary center science teacher Kay Holton. “All of us have been surprised at the amount of waste,” said Karr. “We’re looking to see if we can grow herbs in the compost and use some of them in our cooking and with salads.”

Diesel and Power Equipment Mechanics

Dave McNabb’s students in diesel and power equipment mechanics collected \$2,455 for recycling an old 80-passenger school bus. But the senior scrap project was about more than a check that went to their SkillsUSA organization.

“We talked about the process and the materials—the steel, aluminum and glass—and how to remove them and where to recycle,” McNabb said. “They learned what tools should be used to remove what parts and in what order. The students now understand the value of not just throwing something away.”

In fact, the bus project resulted in students asking to form a green team. The

team’s goal is to look into recycling possibilities with all projects.

Science

C-TEC juniors in Holton’s environmental science classes are developing a plan to encourage more students and staff to live green. This includes a campaign to stimulate overall awareness of the effects of various practices on the environment, such as turning off computers and recycling the paper, plastic, metal and cardboard used in classrooms. The class has taken this process seriously. They have formed an Environmental Club which now has three committees: teach, live and help.

Teach—Committee members will be involved in activities that educate others (students, staff, community) about environmental issues. Members are in the process of developing a schoolwide theme and logo contest for the club.

Live—Committee members will be involved in activities that promote green living at C-TEC and foster the development of lifelong skills for environmentally conscious living. Students are

developing a schoolwide recycling plan for paper, plastic, glass, metal and cell phones.

Help—Committee members will plan community service activities that help make our environment a better place. The club is participating in the Licking County Adopt-a-Road Program, and will be selecting an animal cause to support through their various activities.

Protecting Our Students’ Futures

Cassidy expressed his appreciation to the board of education, advisory committees, staff, students, parents and community members who understood the value of the decision to build a green facility and support it.

“Our community realizes that the decision to go green strongly supports the district’s vision about creating community-minded citizens, and that all students can learn in a safe and structured environment,” he said. “We have a responsibility for our environment,” said Cassidy. “If we all keep going at the rate we are, we’re leaving the very students we’re educating with a serious problem.”



▲ The driveway into the Secondary Center at C-TEC.



▲ The reception area of the Board of Education/Treasurer and Administration building.



▲ The focal point of the Secondary Center, the rotunda area allows bright sunshine to leak into the facility.



▲ Student courtyard off the Adult Education Center.