



**AWARD OF EXCELLENCE in
NEW PUBLIC BUILDING
WARREN COUNTY SCHOOL DISTRICT
SHERMAN CARTER BARNHART ARCHITECTS**

South Warren County Middle & High School aerial photo courtesy of Sherman Carter Barnhart Architects, photographer Marshall Ray of Ray Images.

Nationally recognized for its energy efforts, Warren County Public Schools (WCPS) has developed an energy conservation policy and high performance building commitment that has offset nearly \$9.8 million in energy costs since 2003. (At least a 25% net cost avoidance benefit.) This accomplishment is equal to saving more than 196 teaching positions!

Safety was also an important consideration in the choice to switch from traditional masonry and build with insulated concrete forms (ICFs) and hollow core concrete plank floors. The area had historically experienced high winds and severe storms that were a concern.

This award recognizes that the forward-thinking approach adopted by Warren County Public Schools for the past twelve years has influenced other schools throughout the U.S., and even internationally. The team behind this dramatic shift in the energy consumption of Warren County Schools has changed the way other school districts set goals to reduce energy costs in order to free up more budget dollars for education and teachers' salaries.

From the outset, the leaders of Warren County Public Schools and their architectural firm of Sherman Carter Barnhart Architects have embarked on an ongoing program to share what they have learned with others.

The Warren County Public School system is home to the nation's first net zero school, Richardsville Elementary, which is capable of operating virtually without energy costs, as it produces more clean energy with solar panels than it consumes in purchased energy - a net positive result.

"We constantly host tours of the Richardsville Elementary Schools, for other school districts, international visitors and even the USGBC," reported Jay Wilson, energy manager for WCPS. "Next year we plan to have a graduate student from Western Kentucky University completing an internship and learning about energy management. We showcase our program every way possible to show that Warren Public Schools

are good stewards of our tax dollars. We also want to pass along to future generations an understanding about the importance of good environmental stewardship." Wilson added, "What has happened here started from a collaboration of the school district faculty and staff with the architects and engineers to look at new technologies and construction methods that could make a difference."

Warren County Schools and Sherman Carter Barnhart Architects were the first in Kentucky to utilize Insulated Concrete Form (ICF) construction for schools. In 2005-2006, Alvaton Elementary was built. The first public school in the nation designed with ICF. WCPS selected NUDURA ICFs, which contain 50% recycled materials, reduce construction waste and provide excellent sound attenuation. The opportunity to accelerate construction schedules was an added attraction.

South Warren Middle & High School is the largest single-structure ICF installation in North America at 332,000 square feet. The complex is also Kentucky's largest public school building and the third school in Warren County to utilize ICF construction for the entire building's structural wall system, both interior and exterior bearing walls. The two separate schools are connected by a 750-seat theater complex and a central kitchen. New energy-efficient kitchens are being added to older schools during renovations.

Bristow Elementary, Richardsville Elementary and South Warren Middle & High, were the first three educational projects in the U.S. to utilize ICF construction for the entire building's structural wall system, both interior and exterior bearing walls. As a result of the interior ICF walls, teachers appreciate quiet classrooms that minimize distractions from the learning environment.

Ultimately the choice to build ICF walls was influenced by the goals of improving safety for the students, staff and teachers, while reducing operational costs to a dramatically measurable extent.

Text by Sherry A. Boyd

Warren County Public Schools
ICF buildings with 2014-2015 kBtu data

<p>Richardsville Elementary 72,285 sq. ft. - 2 Stories</p> <ul style="list-style-type: none"> • Nation's First Net Zero Energy Public School • EUI 20.3 kBtu per sq. ft. annually • LEED Gold Registered • Energy Star Certified 	<p>Jody Richards Elementary 80,904 sq. ft. - 2 Stories</p> <ul style="list-style-type: none"> • Net Zero Ready ICF School • EUI 21.1 kBtu per sq. ft. annually • Energy Star Certified
<p>South Warren Middle & High School 332,000 sq. ft. - 2 Stories</p> <ul style="list-style-type: none"> • Largest ICF Building in North America • EUI 22.1 kBtu per sq. ft. annually • Energy Star Certified 	<p>Alvaton Elementary 79,518 sq. ft. - 2 Stories</p> <ul style="list-style-type: none"> • First ICF Public School in the Nation • EUI 37.5 kBtu per sq. ft. annually • Energy Star Certified
<p>Bristow Elementary 79,817 sq. ft. - 2 Stories</p> <ul style="list-style-type: none"> • Kentucky's First Net Zero Ready School • EUI 24.9 kBtu per sq. ft. annually • LEED Silver Certified • Energy Star Certified 	<p><i>By comparison, the average school in Kentucky consumes EUI 73 kBtus per square foot annually.</i></p>



Richardsville Elementary, the first Net Zero Energy (NZE) school in the nation. Photo by Chris Prebus.

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