

ust building a school...  
uilding a FUTURE!



Proficiency in Kentucky Schools

March 2008


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**PROJECT DATA:**
**Alvaton Elementary School**  
**Bowling Green, Kentucky**
**Firm:** Sherman-Carter-Barnhart Architects

**Client:** Warren County Board of Education

**Area:** 77000 sq. ft.

**Total Cost:** \$11,300,000.00

**Cost per sq ft:** \$146.76

**Completion Date:** August 2006

This Energy Star school was designed to meet Warren County School District's goal of green design, which emphasizes energy efficiency and consumption. The school's green design components include:

- Insulated concrete form (ICF) wall construction.
- Sandwich panel metal roof system.
- Geothermal heat-pump system.
- Lighting and HVAC occupancy sensors.
- Clerestory daylighting.
- Green finishes.

Alvaton is the first educational building in Kentucky to use the ICF system, which offers increased building envelope insulation. The school's energy-saving design uses 35 kBtu's annually—less than half the ASHRAE 90.1 design standard for elementary schools.

The "great hall" links the media center with other public areas of the building, including the gymnasium, cafeteria and entrance lobbies on the upper level. The need for artificial lighting during the typical school day is reduced by the great hall's full-length clerestory that washes the entire space, and adjacent spaces, with natural light.

# Real Kentucky Schools... Real Kentucky Savings...

Mark Ryles, Director of the Kentucky Department of Education's Division of Facilities Management, said, "The development of ENERGY STAR Schools in Kentucky has enhanced our collective knowledge to improve school design and construction, while raising local district awareness about how schools should perform and can be better operated. The combination of enhanced design and operation creates a change in the culture of a school, where energy conservation and environmental stewardship are visible every day, and the facility becomes a teaching instrument."

It is estimated the typical school in Kentucky uses 76 kBtus per square foot per year. The typical Kentucky ENERGY STAR school uses 41 kBtus per square foot each year. The 12 ENERGY STAR schools in Kentucky are saving \$474,000 in energy costs each year and eliminating six to seven tons of CO<sub>2</sub>.\*

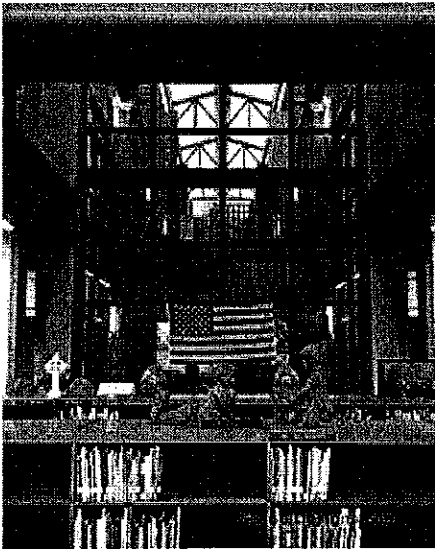
## Estimated energy savings per year versus a typical school\*\*

Alvaton Elementary School	\$52,000
Caywood Elementary School	\$47,000
Drakes Creek Middle School	\$40,000
Harmony Elementary School	\$50,000
Henry Moss Middle School	\$40,000
Isaac Shelby Elementary School	\$33,000
Kenwood Station Elementary School	\$42,000
New Highland Elementary School	\$30,000
North Butler County Elementary	\$25,000
Parkway Elementary School	\$37,000
Twenhofel Middle School	\$41,000
Warren East Middle School	\$37,000



\* Savings are calculated based on average energy prices and energy use of 76 kBtus per square foot per year for the typical school.

\*\* This is assuming that energy prices don't increase!



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