



98% Reduction in water use

100% Of spaces have daylight & views

97% Of construction waste diverted from landfill.

Imagine . . .

a classroom as elegant and efficient as a flower that responds to the eco-region's characteristics and that

- generates its own energy with renewable resources
- captures and uses all of its rainwater on site
- has a healthy indoor environment.
- uses regionally available and ecologically responsible materials
- uses resources efficiently but for maximum beauty
- Structural insulated panels manufactured in a high-tech Missouri factory
- and is a teaching tool for students, teachers and the community

LEED® Potential

Eco Schoolhouse Columbia, Missouri

LEED for New Construction
Registered: May 22, 2008

Platinum **60***

Sustainable Sites 12/14

Water Efficiency 4/5

Energy & Atmosphere 16/17

Materials & Resources 10/13

Indoor Environmental Quality 15/15

Innovation & Design 3/5

*Out of a possible 69 points

Principles in Action

The Eco Schoolhouse shows what can happen when a community works together toward a common goal.

Project Background

With the goal of giving back to the community as a way to celebrate its 30th Anniversary, Peckham & Wright Architects began looking for a project that also would serve as a model of sustainability. Initial ideas for the project, though, were set aside when the Columbia Public School District suffered the loss of one of its classroom trailers to arson. The focus immediately shifted to finding a way to replace the classroom in a way that would best serve the needs of School District, Grant Elementary teachers and, most importantly, the children.

Making a School a Teaching Tool

The result of brainstorming with the School District and leaders in the design and construction community was the Eco Schoolhouse, a small energy-efficient and economical building designed as an alternative to trailer classrooms common at schools throughout the United States. Its design looks ahead toward a sustainable future, even as it reflects the history of education in Missouri. The building, reminiscent of the one room schoolhouses in which many of our grandparents were educated, will be located adjacent to the 98 year old Grant Elementary School. This prominent position near the school and a major thoroughfare will highlight the school's focus on sustainability.

By designing a building to meet LEED criteria, the school itself will become a teaching tool. The Photovoltaic Panels not only provide a net-zero electrical use on an annual basis, they will be seen each day by the 2nd graders receiving a year of their education there. As students move their chairs across the bamboo floor teachers will have an opportunity to discuss rapidly renewable materials. The low-e, double-glazed, argon-filled windows will provide light and views of the native landscape while serving as a visible example of energy efficiency. In fact, everything the children will see and touch will have a sustainability story to tell.

Sustainability Points

- The Structural Insulated Panel system is the skin and structure of the building. The R values of the walls are a true R-24, the roof a R-42.
- The tubular skylights and south facing windows, shaded by the roof overhang, will provide daylighting and reduce the need for electric lighting.
- Rainwater will be collected and used to irrigate the surrounding native landscape.
- The solar panels will provide electricity.
- Fire proof drywall makes the school safer.
- The energy-efficient heating and cooling system will save money every year.

About the Columbia Public School District

The Columbia Public School District serves more than 17,000 K-12 students in 28 schools – with two more schools under construction (three counting the Eco Schoolhouse). The School District is concerned about its impact on the environment and uses a number of strategies to help educate and reduce its carbon footprint.

“We cannot solve our problems with the same thinking we used when we created them.”

- Albert Einstein

Owner: Columbia Public School District
Project Advisor: Nick Peckham, AIA
Architect: Peckham & Wright Architects, Inc.
Commissioning Agent: Project Solutions Companies
Contractors: Community Volunteers
MEP Engineer: Timberlake Engineering
Structural/Civil Engineer: Trabue, Hansen & Hinshaw, Inc.

Other Contributors:

Ahrens Steel
Alpine Builders
Axiom
Boone County Lumber
Cloatman-Stingly
Central Concrete Company
Columbia Sign Service
Creative Woodworking
Dave Griggs' Flooring America
Designer Landscape
Docucopy
Fastsigns
Home Depot
James Hardie
Johnston Paint
Marathon Office Interiors
Mark Hall Cabinets
Mid City Lumber
PedNet
Precision Electric, Inc.
PC & E-Professional Contractors & Engineers, Inc.
Quaker Windows
Seth Paul Excavating
Star Heating and Cooling
Stickman Productions
Thermocore of Missouri
Watkins Roofing
Worth Cabinets

Project Size: 1,024 square feet

Project Estimate: \$30,000

(excluding donations of approximately \$220,000.)

Construction Estimate per square foot: \$190



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