



High School Experience



Exceptional Design Changes Lives.

**Our
designs
make a
difference**



**SHERMAN
CARTER
BARNHART**
ARCHITECTS

K-12 EDUCATION

Sherman Carter Barnhart Architects believes, "Exceptional Design Changes Lives." We change lives by designing schools focused on **learning spaces for generation next**, that **engage and inspire learning in a healthy, safe and sustainable environment while dramatically reducing or eliminating energy costs.**

Recognized as leaders in the planning and design of schools, Sherman Carter Barnhart's team of educational specialist offer an unparalleled level of knowledge in Next Generation Learning, Resilient Design, and Zero-Energy design. Our dedicated team provides innovative design solutions that enhance safety, sustainability, and functional efficiency of each school, while catering to the unique needs of every student. We understand that each school is different, and our approach to every project begins with listening to our clients' goals and values to shape their vision.

As your partner, we assist with facilities assessments, pre-design services, site analysis services, educational programming and design services, pre-bond planning, and coordination & communications/public relations. We develop high-quality drawings for accurate cost estimates and better bids, assisting with bidding and negotiations, and leading contract administration and field observations.

Our team of educational professionals are dedicated to the planning, programming, and design of schools. Our portfolio includes over 700 schools, including:

- + 74 New Elementary Schools & 239 Renovations
- + 23 New Middle Schools & 109 Renovations
- + 21 New High Schools & 261 Renovations
- + 15 New Career & College Readiness Centers & 22 Renovations
- + 2 - Zero Energy Schools
- + 23 - Zero Energy Ready and/or Emerging Schools

Our design process involves collaboration with clients to translate their goals and values into a distinctive, customized solution that meets the needs of their district. We design schools that enrich how students learn, set standards in energy efficiency, and encourage community use and engagement.

At Sherman Carter Barnhart Architects, we are committed to improving lives and leaving a positive impact on the communities we serve through our designs.

Our schools are designed to improve peoples' lives in the community they serve.



SHERMAN
CARTER
BARNHART
ARCHITECTS

EDUCATION SPECIALISTS

UNIQUE CAPABILITIES

A school designed by Sherman Carter Barnhart is planned for today and tomorrow to inspire, support, and promote meaningful learning opportunities for all students.

We recognize the balance among student achievement, curriculum, assessments and standards, school leadership, technology, safety, community building, public support, and how a building can impact learning.

WE ARE PASSIONATE ABOUT LEARNING. Together with the communities we serve, we explore options, generate new ideas, and provide tailored solutions, which result in school facilities programs, plans and designs to transform your educational vision

WE CONTINUALLY EXAMINE WHAT WE HAVE DONE.

We evaluate past projects to build on our successes, to ensure our design solutions provide an educational environment crafted around each of our districts unique educational model. Why? To ensure every student learns to their full potential.

This dedication, puts Sherman Carter Barnhart at the forefront of educational planning and design. We are committed to **CREATING LEARNING SPACES FOR GENERATION NEXT**, by designing schools that **engage and inspire learning in a healthy, safe and sustainable environment while dramatically reducing or eliminating energy costs.**

WE FOCUS ON TWO THINGS:

We design with **LEARNING + ENERGY** in mind.

LEARNING SUPPORTING EVERY STUDENT

We design learning environments for generation next.

When we say generation 'next,' we refer to the current and future students who are growing up in a rapidly changing world, where technology, diversity, and innovation are key drivers of success. We believe that learning spaces should adapt to students evolving needs and provide them with the tools and environments they need to thrive.

We know that students have different learning styles, interests, and goals. That's why we design schools with flexible spaces that can accommodate various teaching and learning modalities, from traditional lectures to collaborative projects, hands-on experiments, and virtual simulations. By providing students with a choice of spaces and technologies, we empower them to take ownership of their learning and tailor it to their individual needs and preferences.

Sherman Carter Barnhart believes school design is not just about creating aesthetically pleasing buildings but also about optimizing the learning experience for all students. We take into account key factors that influence student learning, such as acoustics, lighting, ventilation, accessibility, safety, and sustainability. The integration of these design principles ensures that our buildings enhance the learning environment and support the educational goals of the school.

The typical classroom reflects a "factory" approach to education, known as "cells and bells."(figure 1) All classrooms and desks lined in a row, identical in purpose to promote conformity in a "streamlined" educational model, teaching the basics... the three "R's" - reading, writing, and 'rithmetic".

Research has shown new technologies, global competition, and complex problem-solving skills are in high demand. Therefore, students need to acquire a range of skills that go beyond the traditional 'Three R's' and prepare them for the "next" generation of challenges and opportunities. These skills fall into three categories;

1. **LEARNING SKILLS**- critical and creative thinking coupled with collaborating and communicating (the 4 C's)
2. **LITERACY SKILLS** - information, media, and technology literacy;
3. **LIFE SKILLS** - leadership, productivity, social, and flexibility.

By fostering these skills into the learning environment, we can equip students with the tools and mind-set they need to succeed in their future careers and live

FIGURE 1: TYPICAL CLASSROOM

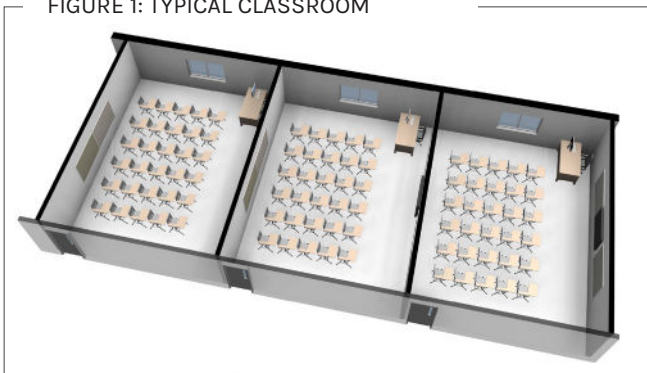


FIGURE 2: LEARNING ENVIRONMENT



Our focus on the design of learning spaces not classrooms, has yielded key objectives essential for successful learning environments.



ALLOW

With recent advances in both digital technology and social media, students and teachers require 24/7 access to learning tools and resources.

Yesterday's library and today's media center are changing to a digital information hub, channeling all learning resources to allow the follow of knowledge "at your fingertips".



ENABLE

Research shows students need different learning environments tailored to their individual pace.

They "connect" to problem solving with a "real- world" context, better enabling each student to reach their full potential.



SUPPORT

Learning techniques are rooted in the support of teachers collaborating, sharing, and integrating.

Classroom clusters and instructional zones can be designed to encourage and support teachers working together for a diverse educational experience for each student.



PROVIDE

Classrooms are designed for maximum flexibility.

From large seminar groups to small focused teams, and even individual study, it is critical to provide teachers the ability to shape their learning environments.



CREATE

The building itself can be designed to inspire learning.

Dynamic spaces are designed to create an atmosphere of "anytime, anywhere" educational experiences, both in and beyond the classroom.



ENCOURAGE

A student's success can be realized when family, teachers, and the community are encouraged to participate in all aspects of a child's education.

The school can become the "heart and soul" of the communities it represents.

WE FOCUS ON TWO THINGS:

We design with **LEARNING + ENERGY** in mind.

DID YOU KNOW?

- Energy is a school districts second highest expenditure.
- A Zero-Energy designed school costs the same as a conventionally built school.
- A Zero- Energy Achievable school can lower a school district's operating costs by up to 75%.
- Energy is an expense schools can reduce without sacrificing educational quality.

ENERGY MONEY FOR STUDENTS NOT ENERGY

As the architect of the first Zero-Energy school in the nation, we design every school to achieve at least a 75% reduction in energy use. Ultimately, with an added alternative energy source (solar energy), we can eliminate energy costs!

Knowing dollars saved in operating/energy costs can be invested directly into your **STUDENTS** needs, is what drives Sherman Carter Barnhart's focus on energy efficient/cost saving school designs.

Understanding Consumption

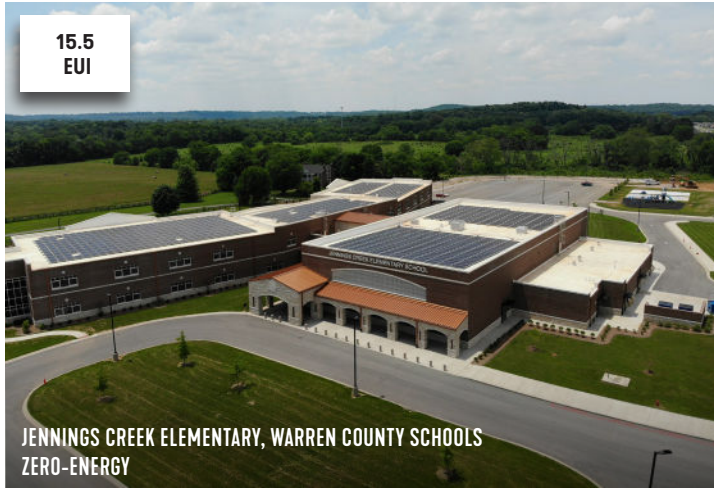
Before attempting to reduce energy consumption in a building, designers must have a comprehensive understanding of what consumes energy. Knowing every design decision will have both a direct and an indirect impact on a schools energy performance, we analyzed where energy is consumed and found leading to the following key strategies:

1. **Site Orientation:** Provide north/south building orientation to maximize daylighting opportunities and to incorporate thermal mass/passive solar strategies.
2. **Building Envelope:** Compact building footprint (perimeter wall and height) with high R-value and high-thermal mass materials such as ICF (insulated concrete forms).

3. **HVAC and Electrical Systems:** Energy-efficient HVAC system (geothermal) with occupant diversity, CO2 array quality sensors, and LED lighting and wireless technology for reduced energy demand.
4. **Kitchen and Operations:** On average, 22% of the energy consumed by a school can be attributed to the kitchen/cafeteria operations. To minimize energy usage we: replace Type 1 hoods with steam and convection cooking only, energy star/performance-based appliances, utilize variable speed hood monitoring for make-up air, evaluate gas-fired versus electric equipment, and develop 24/7 building operation plan.
5. **Technology and Plug Loads:** Eliminate traditional computer lab with wireless technology throughout the school, limit use of classroom appliances.

Creating high performance, energy efficient buildings involves all aspects of the design process. We believe in presenting strategies to our clients, and together we evaluate the factors that impact "first costs" as well as the "life cycle cost" of the design. We have the knowledge, experience, and real world data to assist each client in evaluating all design decisions.

A school designed by Sherman Carter Barnhart enriches how each student best learns, & sets standards in energy efficiency.



2
ZERO ENERGY
schools

9
ZERO ENERGY
EMERGING schools

14
ZERO ENERGY
ACHIEVABLE schools

definitions:

ZERO ENERGY ACHIEVABLE
(energy use (EUI) is at 25 or less and infrastructure is in place. if solar is added it could reach zero energy emerging or full zero energy.)

ZERO ENERGY EMERGING
(some form of solar is installed, to offset energy use, just not enough to power the entire building)





HIGH SCHOOL EXPERIENCE

Warren County Schools, Bowling Green

- Impact Center for Leadership & Innovation
- New South Warren Middle & High School
- New Greenwood High School
 - Major Campus Renovation & Addition
 - Auxiliary Gym Addition
- Warren East High School Addition/Renovation
- New Warren Central High School
 - Addition + Renovations

Hopkins County Schools, Madisonville

- Central High School Auxiliary Gymnasium/Storm Shelter
- Madisonville North Hopkins High School Auxiliary Gymnasium/Storm Shelter

Johnson County Schools, Paintsville

- New Johnson Central High School
 - Master Plan
- Johnson County Middle and Original High School
 - Cafeteria Renovations
 - Home Economics Classroom Renovation
 - High School Vestibule & Upgrades
- Johnson County High School Area Technology Center Renovation

Allen County Schools, Scottsville

- Allen County High School/Middle School Campus Renovation

Ashland Independent Schools, Ashland

- Paul G. Blazer High School Master Plan
- Paul G. Blazer High School Renovation/Addition

Bardstown Independent Schools, Bardstown

- Bardstown High School Renovation & Addition

Boyd County Schools, Ashland

- New Boyd County High School

Breckinridge County Schools, Hardinsburg

- Breckinridge County High School Addition + Renovation

Corbin Independent Schools, Corbin

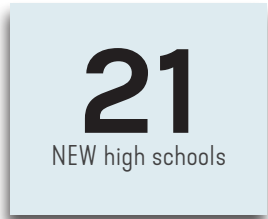
- High School Addition & Renovation Phase I & II

Edmonson County Schools, Brownsville

- Edmonson County High School Addition + Renovation

Elliott County Schools, Sandy Hook

- Elliott County High School Addition + Renovation



Fayette County Schools, Lexington

- New Bryan Station High School & Athletic Complex
 - Security Vestibule Renovation
- New Paul Laurence Dunbar High School & Athletic Complex
 - Security Vestibule Renovation
- Tates Creek High School Renovation/Addition
- Henry Clay High School Security Vestibule Renovation
- Lafayette High School Roof Replacement
 - Security Vestibule Renovation

Glasgow Independent Schools, Glasgow

- New Glasgow High School

Hart County Schools, Munfordville

- New High School
- Original Hart County High School Security Improvements
- High School Master Plan

Henry County Schools, New Castle

- High School Floor & Roof Replacement + Athletic Improvements

Larue County Schools, Hodgenville

- Larue County High School Renovations

Laurel County Schools, London

- South Laurel Middle & High School Addition + Renovation
 - Auxiliary Gym Addition
 - Cafeteria and Media Center Expansion
 - Athletic Improvements
- New North Laurel High School & Athletic Complex
 - Addition
 - Athletic Improvements
 - Auxiliary Gym Addition
 - Cafeteria Expansion

Floyd County Schools, Prestonsburg

- New Floyd Central High School & Athletic Complex
- Betsy Layne High School Gymnasium Addition/Renovation
- Allen Central High School Gymnasium Roof Replacement
- Prestonsburg High School Gym Renovation + Athletic Improvements

Meade County Schools, Brandenburg

- James R Allen Freshmen Academy Renovation & Addition
- Meade County High School Phase I & II

Menifee County Schools, Frenchburg

- Menifee County High School Renovation

Middlesboro Independent Schools, Middlesboro

- Middlesboro High School Renovation

Paris Independent Schools, Paris

- Middle School/High School Campus Improvements

Powell County Schools, Stanton

- Powell County High School Renovations

Pulaski County Schools, Somerset

- South Western High School HVAC Renovation

Russell County Schools, Jamestown

- High School Renovation & Roof Replacement + Athletic Upgrades

Spencer County Schools, Taylorsville

- Spencer County High School Addition/Renovation

Taylor County Schools, Campbellsville

- New High School

Union County Schools, Morganfield

- High School Roof Replacement

Williamsburg Ind. Schools, Williamsburg

- K-12 School Renovation + Addition

Christian Academy of Louisville, English Station Campus

- New High School



HIGH SCHOOL EXPERIENCE

McCracken County Schools, Paducah

- New McCracken County High School

Sayre School, Lexington

- Upper School Building Renovation/Addition Study

Anderson County Schools, Lawrenceburg

- Anderson County High School Annex Addition & Renovation
- Anderson County High School Addition + Renovation

Calloway County Schools, Murray

- Calloway County High School Addition/Renovation

Frankfort Independent Schools, Frankfort

- Frankfort High School Addition + Renovation

Grant County Schools, Dry Ridge

- Grant County High School Classroom Renovation

Graves County Schools, Mayfield

- Graves County High School
 - Performing Arts Center Addition
 - Athletic Academic Center & Gymnasium Renovation
-

Jessamine County Schools, Nicholasville

- New East Jessamine High School
- 9th Grade Center Addition

Knott County Schools, Hindman

- Knott Central High School Renovation

Mercer County Schools, Harrodsburg

- New Mercer County Senior High School
- Existing High School Into 9th Grade Academy & Alternative School '08

Montgomery County Schools, Mt. Sterling

- Montgomery County High School Addition + Renovation
- New Montgomery County Arena

Owen County Schools, Owenton

- New Owen County High School

Owensboro Independent Schools

- Owensboro High School
 - Phase 1 Campus Redevelopment
 - Phase 2 Gymnasium Addition
 - Phase 3a Fine Arts Addition
 - Phase 3b Renovations

Marshall County Schools, Benton

- Marshall County High School Renovation & Addition

Pendleton County Schools, Falmouth

- Pendleton County High School Addition/Renovation

Scott County Schools, Georgetown

- Elkhorn Crossing School
- New Scott County High School

Shelby County Schools, Shelbyville

- New Martha Layne Collins High School & Athletic Complex

Wayne County Schools, Monticello

- New Wayne County High School

Lincoln County Schools, Stanford

- Lincoln County High School Addition + Renovation

Letcher County Schools, Whitesburg

- New Letcher County High School
 - Soccer Field/Track & Concessions
 - Athletic Complex - Football
 - Baseball & Concessions Complex
 - School Softball Complex

Greenup County Schools, Greenup

- Greenup County High School Renovation

Hardin County Schools, Elizabethtown

- North Hardin Addition/Renovation Phase 7

Jefferson County Schools, Louisville

- Ballard High School Renovation



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