

# 21<sup>ST</sup> CENTURY EDUCATION + 21<sup>ST</sup> CENTURY ENERGY



21<sup>ST</sup> CENTURY  
EDUCATION + ENERGY



SHERMAN  
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ESTABLISHING THE "RIGHT DESIGN PRIORITIES"

## 21<sup>ST</sup> CENTURY EDUCATION & ENERGY (21E)



A 21E SCHOOL ENGAGES AND INSPIRES LEARNING IN A HEALTHY, SAFE AND SUSTAINABLE ENVIRONMENT WHILE DRAMATICALLY REDUCING OR ELIMINATING ENERGY COSTS.



## SUPPORT EVERY STUDENT

LEARNING STREETS • COLLABORATIVE LEARNING SPACES • NON-TRADITIONAL LEARNING AREAS



## SAFE & SECURE

SECURE VESTIBULE: FIRST LAYER OF DEFENSE • ACCESS CONTROL • WELCOMING



## CREATIVE & INNOVATIVE

MAXIMIZE FLEXIBILITY • ANYTIME, ANYWHERE LEARNING





# COMMUNITY CONNECTED

THE "HEART & SOUL" OF THE COMMUNITY



# ENERGY EFFICIENT

THE FIRST ZERO-ENERGY SCHOOL IN THE UNITED STATES



# COST EFFICIENT TO BUILD & OPERATE

A LEADER IN RESILIENT BUILDING DESIGN - INSULATED CONCRETE FORM (ICF)



# DISASTER RESILIENT/STORM SHELTER

A LEADER IN RESILIENT BUILDING DESIGN - INSULATED CONCRETE FORM (ICF)



- Hold occupants for up to two hours with temporary ventilation, power, plumbing and water (generator required).
- Usable clear area of 5 SF/person.
- Capable of withstanding 250 mph winds and pressure of a direct tornado strike.
- Must include restrooms.
- Two-hour fire barrier, all doors rated for 90 minutes plus ICC-500 impact resistance rating.
- Third party peer review and quality assurance plan.



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**A 21E SCHOOL ENGAGES AND INSPIRES LEARNING IN A HEALTHY, SAFE AND SUSTAINABLE ENVIRONMENT WHILE DRAMATICALLY REDUCING OR ELIMINATING ENERGY COSTS.**

Sherman Carter Barnhart understands the critical issues to consider in school planning and design - ways in which the building can make a difference:

- With recent advances in both digital technology and social media, **21st Century school students and teachers require 24/7 access to learning tools and resources.** Yesterday's library and today's media center are evolving into digital information hubs, channeling all learning resources to provide knowledge "at your fingertips".
- 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.
- 21st Century 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.
- **21st Century 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.
- **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.
- **Zero Energy efficiency.** Dramatic energy reduction strategies coupled with the ability to add a renewable energy source is at the heart of each school we design.
- **Disaster Resiliency.** Many states have adopted building codes requiring a tornado shelter within the school. Our design strategy utilizes insulated concrete form (ICF), concrete construction capable of withstanding the 250 mph winds and pressure of direct tornado strike.