

Agenda

Presented by Paul Westbrook

Residential Energy Efficiency Requirements/Certifications

- Climate zones
- Energy conservation standards and the residential provisions of the International Energy Conservation Code (IECC)
- Energy/sustainable certifications compared
- To seek (or not to seek) sustainable certifications
- Define net zero
- Energy modeling

Project Plans and Orientation

- Good design practices
- Solar orientation

Designing an Energy-Efficient Envelope

- R-values and U-factors
- Thermal and vapor barriers
- Foundation, roof and exterior walls
- Windows and doors
- The ideal "box"

Mechanical System Design

- Heating and cooling system sizing and types
- Ventilation systems
- Distribution and ductwork
- Hot water systems
- Thermal storage

Electrical, Power, Lighting and Renewable Energy Systems

- Lighting design
- Controls
- Solar photovoltaic
- Battery storage

Case Study

- Examples and operating data



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Designing and Constructing Net-Zero Energy Homes

Live, Interactive Webinar - Friday, August 23, 2024

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PO Box 278
Altoona, WI 54720-0278



Learning Objectives

You'll be able to:

Consider the effect of climate zones and energy conservation codes on the design of energy-efficient homes.

Explore energy modeling and its benefits.

Discuss thermal barriers, vapor barriers and insulation and their use in creating energy-efficient building envelopes.

Examine options for heating and cooling systems.

Talk about lighting design and consider the impact of adding a renewable energy system.

Evaluate case studies, including operating data from completed projects.



HalfMoon Education Inc., Your LIVE Education Leader Presents Designing and Constructing Net-Zero Energy Homes

*Design toward a net-zero energy goal in
this live online workshop*

Live, Interactive Webinar - Friday, August 23, 2024



Explore residential energy efficiency requirements and voluntary certifications

Orient homes to conserve energy

Design energy-efficient building envelopes

Examine the efficiency of HVAC systems

Consider the efficiency of lighting, power, and electric systems

Evaluate case studies, including operating data from completed projects

Continuing Education Credits

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6.0 PDHs

Architects
6.0 HSW CE Hours
6.0 AIA LU | HSW

International Code Council
.6 CEUs (Energy)

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Webinar Information

Online - Friday, August 23, 2024

Log into Webinar

8:00 - 8:30 am CDT

Break

11:30 am - 12:30 pm CDT

Morning Session

8:30 - 11:30 am CDT

Afternoon Session

12:30 - 4:00 pm CDT

Tuition

\$339 for individual registration.

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Faculty

Paul Westbrook *Re:source Design, LLC*

Mr. Westbrook designed his own solar home in north Texas in 1996, which won the Energy Value Housing Award for Innovative Design. It still ranks as one of the most efficient homes in Texas. While serving as sustainable development manager at Texas Instruments International Facilities, Mr. Westbrook was the LEED AP for the 1.1 million- square-foot Texas Instruments factory, the first LEED Gold semiconductor factory in the world. He led the effort to improve the energy and water efficiency of TI's 20 million square-feet of existing global facilities. They were able to double the company's energy and water efficiency in less than 10 years. In 2012, Mr. Westbrook was named a senior fellow for the U.S. State Department's Energy and Climate Partnership of the Americas program. He visited Honduras, Bolivia, Columbia, and Peru where he worked with governments, universities, and industry on efficiency and renewable energy. Mr. Westbrook received his B.S. degree in Mechanical Engineering from Louisiana State University, Baton Rouge, in 1982.

Credit Information

This webinar is open to the public and is designed to qualify for 6.0 PDHs for professional engineers and 6.0 HSW continuing education hours for licensed architects in all states that allow this learning method. Please refer to specific state rules to determine eligibility.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida (Provider License No: CEA362), Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00049300) and North Carolina (S-0130). HalfMoon Education is deemed an approved continuing education sponsor for New York engineers and architects via its registration with the American Institute of Architects Continuing Education System (Regulations of the Commissioner §68.14(i)(2) and §69.6(i)(2)). Other states do not preapprove continuing education providers or courses.

The American Institute of Architects Continuing Education System has approved this course for 6.0 HSW LUs (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The International Code Council has approved this event for .6 CEUs in the specialty area of Energy (Preferred Provider No. 1232).

Attendance will be monitored, and attendance certificates will be available after the webinar for those who attend the entire course and score a minimum 80% on the quiz that follows the course (multiple attempts allowed).

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6.0 HSW LUs (AIA)

Additional Learning

Seismic Requirements for Existing Buildings

- Tuesday, August 6, 2024 | 9:00 am - 4:00 pm CDT

Using the 2020 National Electrical Code Quick-Card

- Tuesday, August 6, 2024 | 9:00 am - 12:00 pm CDT

How to Analyze Common Construction Defects and Failures

- Wednesday, August 7, 2024 | 2:00 - 4:00 pm CDT

Retaining Wall Design and Slope Stabilization Techniques

- Wednesday, August 7, 2024 | 9:00 am - 5:00 pm CDT

Structural Forensic Engineering of Buildings

- Wednesday, August 7, 2024 | 9:00 am - 4:50 pm CDT

2024 International Building Code: Code Fundamentals

- Tuesday, August 13, 2024 | 12:00 - 4:30 pm CDT

Pervious Concrete Pavements:

Design, Construction, and Maintenance

- Tuesday, August 13, 2024 | 9:00 am - 12:10 pm CDT

Tiny House Design and Construction

- Tuesday, August 13, 2024 | 9:00 am - 5:15 pm CDT

Engineering Ethics and Engineering

Code of Conduct for Professional Engineers

- Friday, August 16, 2024 | 10:00 am - 12:00 pm CDT

Finance and Engineering Economics for Engineers

- Monday, August 19, 2024 | 10:00 am - 2:30 pm CDT

- Tuesday, August 20, 2024 | 10:00 am - 2:30 pm CDT

Basics of Structural Steel Design and Construction

- Tuesday, August 20, 2024 | 8:30 am - 4:30 pm CDT

Complying with NFPA 101 (2021): Life Safety Code

- Wednesday, August 21, 2024 | 8:30 am - 5:00 pm CDT

Solar Photovoltaic Energy Systems in the Southeast: Residential and Small Commercial Systems

- Wednesday, August 21, 2024 | 8:00 am - 3:00 pm CDT

Improving Interior Air Quality in

Residential and Commercial Buildings

- Friday, August 23, 2024 | 12:00 - 2:00 pm CDT

2024 International Building Code:

Administration and Enforcement

- Tuesday, August 27, 2024 | 12:00 - 4:30 pm CDT

Structural Engineering Calculations for Wood Construction

- Tuesday, August 27, 2024 | 10:00 am - 1:15 pm CDT

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