

Credit Information

Deep Foundations and Excavations

This webinar offers 7.0 PDHs to professional engineers and 7.0 HSW continuing education hours to architects licensed in all states.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida (Provider No. 0004647), Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700) 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 7.0 LU | HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The International Code Council has approved this event for .70 CEUs in the specialty area of Sitework (Preferred Provider No. 1232).

Completion certificates will be awarded to participants who complete this event, respond to prompts and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

Designing and Constructing a Net-Zero Energy Home in the Midwest

This webinar offers 8.5 PDHs to professional engineers and 8.5 HSW continuing education hours to architects licensed in all states.

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The American Institute of Architects Continuing Education System has approved this course for 8.5 LU | HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The International Code Council has approved this event for .85 CEUs in the specialty area of Energy (Preferred Provider No. 1232).

Completion certificates will be awarded to participants who complete this event, respond to prompts and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

Can't Attend? Order the Webinar as a Self-Study Package!

Recordings of each webinar are available for purchase. See course listing online for more information and please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit. Self-study packages do not qualify for AIA credit.

Live, Interactive Webinars

- Deep Foundations and Excavations
- Designing and Constructing a Net-Zero Energy Home in the Midwest

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Live, Interactive Webinars

Deep Foundations and Excavations

- Friday, November 12, 2021 | 8:30 am - 5:00 pm CST

Designing and Constructing a Net-Zero Energy Home in the Midwest

- Monday, November 22, 2021 | 8:30 am - 1:00 pm CST
- Tuesday, November 23, 2021 | 8:30 am - 1:30 pm CST

**To register, view detailed presenter biographies,
and see other learning opportunities, please visit:**

www.halfmoonseminars.org

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HalfMoon Education Live Webinars



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AIA: 7.0 LU | HSW International Code Council: .7 CEUs (Sitework)



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AIA: 8.5 LU | HSW International Code Council: .85 CEUs (Energy)

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Deep Foundations and Excavations

Friday, November 12, 2021 | 8:30 am - 5:00 pm CST (incl. a 60-min break)

Tuition: \$289 per registrant, \$239 per registrant for three or more

Credits: Professional Engineers: 7.0 PDHs Architects: 7.0 HSW CE Hours
AIA: 7.0 LU|HSW International Code Council: .7 CEUs (Sitework)

Agenda

Soil Mechanics, Bearing Capacity, and Earth Retention

- Understanding soil characteristics
- Basic earth pressure theory
- Bracing systems
- Soil nail walls
- Secant pile and diaphragm walls
- Top-down excavations
- Using cofferdams
- Tieback anchors
- Sheet pile and soldier pile walls

Reviewing Deep Foundation Types

- Types of deep foundations
 - Driven piles
 - Auger cast piles
- Hybrid foundations
 - Grouping piles
- Life expectancy, cost, soil conditions
- Drilled shafts
- Others
- Selecting foundation type:

Pile Design

- Effective stress
- Skin friction
 - Granular soils and cohesive soils
- End bearing
 - Soil and rock
- Uplift capacity
- Computing settlement
- Lateral capacity design
- Battered piles
- Estimating axial capacity
- Down drag
- Moment resistance

Installation and Testing

- Construction preparation
- Quality assurance/quality control
- Field records
- Performance/integrity
 - Load test, PDA, CAP/WAP, PIT/PET
- Restriking
- Construction techniques
- Pile testing

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Agenda Day One

Residential Energy Efficiency Requirements

- Reviewing residential provisions of the International Energy Conservation Code (IECC)
- To seek (or not to seek) sustainable certifications
- Helpful resources
- Software for energy modeling and energy-efficient design

Introduction to Project: Net Zero Energy Home

- Integrated approaches
- Sizing, orientation and preliminary plans
- Energy modeling and HVAC design
- Customer considerations

Workshop: Designing an Energy-Efficient Envelope

- R-values and U-factor alternatives
- Foundation, roof and exterior walls
- Thermal and vapor barriers

Agenda Day Two

Workshop: Choosing Windows and Doors

- R-values and U-factor alternatives
- Prescriptive fenestration
- Envelope testing for net zero success

Workshop: Designing Heating and Cooling Systems

- HVAC systems for zero energy homes
- Ductwork and distribution
- Thermal systems
- Self-powered HVAC
- Service hot water systems
- Mechanical ventilation systems

Workshop: Electrical Systems and Distributed Energy Resources

- Electrical and lighting systems
- Electric vehicle infrastructure
- Solar photovoltaic energy systems
- On-site power generation and energy storage

Project Wrap-Up

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Faculty

Deep Foundations and Excavations

David Harmanos *Branch Manager at Hillis-Carnes Engineering Associates, Inc.*

Mr. Harmanos is a professional engineer with extensive experience in subsurface exploration, soil testing, infiltration testing, geosynthetics, and seismic and advanced analysis. His expertise includes commercial, industrial and institutional foundation design; retaining wall and steep slope design; sinkhole remediation; landfill design; site work; forensic engineering; LEED consulting; and construction quality control/assurance (CQA/QC). Mr. Harmanos is a graduate of Drexel University where he received both his BS and MS degrees in Civil Engineering (Geosynthetics and Geotechnical).

Hillis-Carnes performs geotechnical engineering consulting and laboratory testing services. Its construction services include evaluation of bearing materials, inspection of pile driving, slope inclinometer installation and monitoring, and retaining wall construction observation.

Designing and Constructing a Net-Zero Energy Home in the Midwest

Jason LaFleur Sr. *Program Manager, GTI Energy*

Mr. LaFleur joined GTI in 2017 as a program manager for the Emerging Technologies team, and he manages emerging technology programs, working with clients such as the Department of Energy's Building America program and the Department of Defense to improve energy efficiency and create resilient energy systems and infrastructure. Prior to joining GTI, he founded Eco Achievers, a nationally active zero energy consulting firm. Mr. LaFleur has extensive experience working with emerging technologies in the building sector, helping project teams through design, construction and delivery of several zero energy buildings and dozens of high-performance single- and multi-family buildings. He has certified hundreds of homes to LEED, ENERGY STAR, and Passive House standards. Mr. LaFleur is a voting member of ASHRAE 227 Passive Building Standard.

Additional Learning

Advanced Healthy HVAC: Balancing First Cost, Occupant Comfort, and Safety

- Fri, Oct 15, 2021 | 8:30 am - 5:00 pm CDT

AIA Contract Document Workshop

- Mon, Oct 18, 2021 | 8:30 am - 4:30 pm CDT

Handling Ethical Issues in Construction Contracting

- Mon, Oct 18, 2021 | 10:00 - 11:00 am CDT

SketchUp for Building Professionals

- Tues, Oct 19, 2021 | 11:00 am - 2:45 pm CDT
- Wed, Oct 20, 2021 | 11:00 am - 2:45 pm CDT

Focus on Passive House and Reducing Carbon Footprint

- Wed, Oct 20, 2021 | 11:00 am - 1:00 pm CDT

Retaining Walls and Lateral Earth Pressure

- Wed, Oct 20, 2021 | 10:00 am - 12:00 pm CDT

Residential Structural Design

- Mon, Oct 25, 2021 | 8:30 am - 4:30 pm CDT

Whole Building Technical Commissioning

- Mon, Oct 25, 2021 | 8:30 am - 4:00 pm CDT

How to Analyze Common Construction Defects and Failures

- Tues, Oct 26, 2021 | 2:00 - 4:00 pm CDT

Handling Ethical Issues Associated with Construction Defects and Failures

- Wed, Oct 27, 2021 | 9:00 - 10:00 am CDT

Passive House: Planning, Design and Construction

- Wed, Oct 27, 2021 | 8:30 am - 4:30 pm CDT

Vegetated Green Roof Technology: Design and Construction

- Thurs, Oct 28, 2021 | 8:30 am - 4:00 pm CDT

International Existing Building Code 2021

- Fri, Oct 29, 2021 | 7:30 am - 3:20 pm CDT

Shallow Foundation Design, Construction and Repair

- Mon, Nov 1, 2021 | 8:30 am - 5:00 pm CDT

Drone-Based Inspection and Maintenance

- Fri, Nov 4, 2021 | 8:30 am - 4:30 pm CDT

For more information and other online learning opportunities visit:
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