

## 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. 5554646), Indiana (License No. CE21655559), Maryland, New Jersey (Approval No. 24GP55555655), North Carolina (S-5135), and North Dakota. 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 .7 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).

### **Shallow Foundation Design, Construction and Repair**

This webinar offers 6.0 PDHs to professional engineers and 6.0 HSW continuing education hours to architects licensed in all states.

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The International Code Council has approved this event for .6 CEUs in the specialty area of Building (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).

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**Live, Interactive  
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## February Foundation Webinars

### **Deep Foundations and Excavations**

- Tuesday, February 23, 2021 | 9:00 am - 5:00 pm CST

### **Shallow Foundation Design, Construction and Repair**

- Wednesday, February 24, 2021 | 11:00 am - 2:15 pm CST

- Thursday, February 25, 2021 | 11:00 am - 2:15 pm CST

**To register, view detailed presenter biographies,  
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International Code Council: .7 CEUs (Sitework)

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**AIA  
Continuing  
Education  
Provider**

# Deep Foundations and Excavations

Tuesday, February 23, 2021 | 9:00 am - 5:00 pm CST (incl. a 30-min. break)

**Tuition:** \$289 per registrant, \$199 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)

## Soil Mechanics, Bearing Capacity, and Earth Retention

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

## Reviewing Deep Foundation Types

Types of deep foundations

- Driven piles
- Drilled shafts
- Auger cast piles
- Others

Hybrid foundations

- Grouping piles
- Selecting foundation type

Life expectancy, cost, soil conditions

## Pile Design

Effective stress  
Estimating axial capacity  
Skin friction

- Granular soils and cohesive soils

End bearing

- Soil and rock

Uplift capacity Computing settlement  
Down drag Lateral capacity design  
Moment resistance Battered piles

## Installation and Testing

Construction preparation Construction techniques  
Quality assurance/quality control  
Field records Pile testing  
Performance/integrity

- Load test, PDA, CAP/WAP, PIT/PET

Restriking

## Presented by

**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.

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# Shallow Foundation Design, Construction and Repair

Wednesday, February 24, 2021 and Thursday, February 25, 2021

**Tuition:** \$289 per registrant, \$199 per registrant for three or more

**Credits:** Professional Engineers: 6.0 PDHs Architects: 6.0 HSW CE Hours  
AIA: 6.0 LU|HSW International Code Council: .6 CEUs (Building)

## Day One: Wednesday, February 24, 2021

11:00 am - 2:15 pm CST (incl. a 15-min. break)

### Evaluating Building Sites

Soil mechanics overview Site exploration  
Subsurface exploration Laboratory soil testing  
Design soil profile

### Shallow Foundation Design

Bearing capacity Settlement  
Spread footings Mat foundations

## Day Two: Thursday, February 25, 2021

11:00 am - 2:15 pm CST (incl. a 15-min. break)

### Special Considerations in Foundation Design and Construction

Foundations on expansive soils Foundations on stratified soils  
Foundations on the slope Retaining and basement walls  
Slope stability Excavation and grading  
Dewatering and drainage Surface preparation and verification  
Complying with building codes

### Soil Improvement and Foundation Diagnosis and Repair

Soil improvement Causes of foundation damage  
Repair techniques

- Structural support
  - Helical piers
  - Slab jacking
- Grouting methods
  - Cement grouting
  - Fracture grouting
- Jacked piers
- Pit underpinning
- Mini piles
- Chemical grouting
- Jet grouting
- Compaction grouting

## Presented by

**Ibraheem Shunnar, P.E.**

*Principal and Director of Engineering at The Mannik & Smith Group, Inc.*

Mr. Shunnar has more than 25 years of experience in geotechnical engineering with expertise in specialty foundations, ground improvement, slope stability, instrumentation and waste management. He has a master's degree in Geotechnical Engineering from the University of Michigan, and he is a registered professional engineer. He is the author of many articles and papers on geotechnical engineering. He was the project manager for the Fairlane Green redevelopment project, winner of the 2008 National Phoenix Award. He is also the recipient of the distinguished achievement award from the University of Michigan.

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# Additional Learning

## Project Management Fundamentals for Engineers

- Tuesday, January 26, 2021 | 8:30 am - 4:00 pm CST

## International Building Code 2021

- Tuesday, January 26, 2021 | 10:00 am - 2:30 pm CST  
- Wednesday, January 27, 2021 | 10:00 am - 1:30 pm CST

## Aerial Mapping: Technologies and Procedures

- Thursday, January 28, 2021 | 8:30 am - 12:00 pm CST  
- Friday, January 29, 2021 | 8:30 am - 12:15 pm CST

## Estimating the Cost of Sitework

- Friday, January 29, 2021 | 7:30 am - 3:30 pm CST

## National Electrical Code 2020

- Friday, January 29, 2021 | 8:00 am - 4:00 pm CST

## Site Design

- Friday, January 29, 2021 | 8:00 am - 4:00 pm CST

## Timber Frame Design and Construction

- Monday, February 1, 2021 | 9:30 am - 5:30 pm CST

## Effective Stormwater Infiltration

- Tuesday, February 2, 2021 | 8:30 am - 4:45 pm CST

## Drones in Construction

- Tuesday, February 2, 2021 | 10:00 am - 4:50 pm CST

## A Roadmap to Ethical Issues in Construction: A Primer for Design Professionals

- Tuesday, February 2, 2021 | 11:00 am - 1:00 pm CST

## Understanding Mixed Occupancies

- Thursday, February 4, 2021 | 8:30 am - 4:20 pm CST

## Architectural Application for Means of Egress in 2018 IBC

- Thursday, February 11, 2021 | 8:30 am - 5:00 pm CST

## Introduction to HEC-RAS Modeling

- Thursday, February 11, 2021 | 8:30 am - 5:00 pm CST

## 2021 International Residential Code: Fundamental Provisions, Concepts, and Existing Buildings

- Friday, February 12, 2021, 11:00 am - 3:30 pm CST

## Construction Project Management

- Friday, February 12, 2021 | 11:00 am - 3:15 pm CST

## Important Ingredients for a Successful Solar PV Project: Best Practices and Lessons Learned

- Friday, February 12, 2021 | 8:30 am - 4:00 pm CST

## Handling Ethical Issues in Construction Contracting

- Tuesday, February 16, 2021 | 9:00 - 10:00 am CST

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