## Agenda

#### Presented by David Harmanos

#### **Evaluating Building Sites**

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

#### **Shallow Foundation Design**

Using spread footings Using mat foundations Using hybrid foundations Using slab foundations

#### Allowable Settlement and Consolidation

Determining bearing capacity Understanding consolidation and settlement Effects of load types and soil types Increasing bearing capacity

#### **Shallow Foundation Construction**

Grading and soil improvement Dewatering and drainage Excavation and underpinning Complying with building codes

#### **Basements as Foundations**

Construction of footings, floor and walls Drainage considerations Walk-outs

#### Handling Special Considerations in Foundation Design

Foundations on stratified soils Foundations on expansive soils Foundations on reinforced soils Foundations on slopes

#### **Diagnosing and Repairing Foundation Problems**

Causes of foundation damage Repair techniques

- Ground improvement Underpinning
- Soil tiebacks • Piers, piles

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

Recordings of this webinar are available for purchase. See registration panel 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.

## 2021 Shallow Foundation Design, ó 5 Repair - Tuesday, July and Live, Interactive Webinar ction Constru



#### You'll be able to:

**Consider** the importance of subsurface exploration and soil profiles when evaluating building sites.

**Explore** design considerations for mat, hybrid, and slab foundations.

**Understand** shallow foundation construction considerations, including excavation and underpinning.

**Discuss** basements as foundations, including walk-outs.

Describe special issues with foundations on stratified, expansive, and reinforced soils.

*Identify* causes of foundation damage and discuss repair techniques, including piers, piles, soil tiebacks, and underpinning.



# NON-PROFIT U.S. POSTAGE PAID EAU CLAIRE, WI PERMIT NO. 2016

HalfMoon Education Inc. PO Box 278 Altoona, WI 54720-0278

## **HalfMoon Education Online Learning** Shallow Foundation Design, **Construction and Repair**



*Evaluate* soil conditions on building sites

**Explore** the key benefits of subsurface exploration

**Determine** bearing capacity of the building site and surrounding soil

### **Continuing Education Credits**

**Professional Engineers** 7.0 PDHs

Architects 7.0 HSW CE Hours



Live, Interactive Webinar - Tuesday, July 6, 2021

**Understand** the effects of settlement and consolidation

**Explain** the utility of spread footings in transferring loads

**Examine** the function of mat foundations for alternative soil types

AIA 7.0 LU|HSW International Code Council

.7 CEUs (Building)



## Facultv

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 (COA/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.

## **Additional Learning**

AIA Contract Document Workshop - Tues, June 1, 2021 8:30 am - 4:30 pm CDT

**Commercial Site Pavement Design**, Installation and Maintenance

- Wed, June 2, 2021 | 8:30 am - 4:30 pm CDT

#### Skatepark Design and Construction

- Wed, June 2, 2021 9:30 am - 4:30 pm CDT

### How to Design

and Construct MSE Walls - Wed, June 2, 2021 | 10:00 am - 1:30 pm CDT

### **Basics of Structural Steel Design**

- Fri, June 4, 2021 | 8:30 am - 3:45 pm CDT

#### **Slope Stabilization**

and Landslide Prevention - Mon, June 7, 2021 8:30 am - 5:00 pm CDT

## Soils Engineering

- Tues, June 8 2021 | 11:00 am - 2:15 pm CDT

- Wed, June 9, 2021 | 11:00 am - 2:15 pm CDT

#### Writing Successful Proposals and RFPs - Tues, June 8, 2021 | 8:30 am - 5:00 pm CDT

Integrated Stormwater Management

- Thurs, June 10, 2021 | 11:00 am - 3:15 pm CDT

- Tues, June 15, 2021 | 10:00 am - 1:45 pm CDT

- Wed, June 16, 2021 | 10:00 am - 2:15 pm CDT

**Timber Frame Design and Construction** 

- Tues, June 15, 2021 | 8:30 am - 4:30 pm CDT

and other online learning opportunities visit:

International Residential Code 2021 - Wed, June 16, 2021 | 8:30 am - 4:30 pm CDT

- Fri, June 11, 2021 | 11:00 am - 2:15 pm CDT

Structural Forensic Engineering

- Tues, June 8, 2021 2:00 - 5:15 pm CDT

**Practical Site Engineering:** 

Science & Techniques

For more information

www.halfmoonseminars.org

**Deep Dive into** 

Registration

## **Continuing Education Credit Information**

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 Jersey (Approval No. 24GP00000700), and North Carolina (S-0130). HalfMoon Education

The American Institute of Architects Continuing Education System has approved this course for 7.0 LU | HSW (Sponsor No. 1885). 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 Building (Preferred Provider No. 1232).

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

Florida (Provider No. 0004647), Indiana (License No. CE21700059), Maryland, New 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.

How to Register	Registrant Information			
Online:	Name: Company/Firm:			
www.halfmoonseminars.org	Address:			
Phone:	City:State: Occupation:	·		
715-835-5900	Email:			
Fax: Code:	Phone:			
715-835-6066	Additional Registrants: Name:			
Mail:	Occupation:			
HalfMoon Education Inc.,		Email:		
PO Box 278, Altoona, WI	Phone:			
54720-0278	Name:			
Complete the entire form.		Occupation:		
Attach duplicates if necessary.	Email: Phone:			
	() ら、 I need special accommodations. F	Please contact me.		
<ul><li>registrants from the same</li><li>( ) I am not attending. Please</li></ul>	<b>ve webinar.</b> Single Registrant - <b>\$289</b> e company registering at the same ti se send me the webinar recording: eo/PDF Manual for <b>\$299.00</b> . ual for <b>\$299.00</b> .			
<b>Checks:</b> Make payable to Half <b>Credit Card:</b> <i>Mastercard, Visa,</i> Credit Card Number:	American Express, or Discover			
Expiration Date:	CVV2 Code:			
Cardholder Name:				
Billing Address:				
City:	State:	Zip:		
Signature:				
Email:				

	(	)	l am	not	attending.	Ple
--	---	---	------	-----	------------	-----

v to Re	egister	Registrant Information			
ne: halfmoonseminars.org ne: 835-5900		Name:			
		Occupation: Email:			
35-6066	Code:	Phone: Additional Registrants: Name:			
	ication lnc., ltoona, Wl	Occupation: Email: Phone: Name: Occupation:			
Idete the entire form.       Email:         a duplicates if necessary.       Phone:         Email address is required for credit card receipt, progr.       changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.		card receipt, program ng seminars and			
		() <b>E</b> I need special accommodations.			
registrant <b>am not</b> a Stre	s from the same attending. Pleas	<b>Te webinar.</b> Single Registrant - <b>\$289</b> company registering at the same the same the same the send me the webinar recording: eo/PDF Manual for <b>\$299.00</b> . ual for <b>\$299.00</b> .			
it Card: /		Moon Education Inc. American Express, or Discover			
		CVV2 Code:			
holder Na	ame:				
g Addres	s:				
		State:	Zip:		
ature:					
l:					

w to Re	egister	Registrant Information		
ne: v.halfmoonseminars.org ne: -835-5900		Company/Firm: Address:		
		City:State: Occupation: Email:		
<b>:</b> 835-6066	Code:	Phone: Additional Registrants: Name:		
	ication Inc., ltoona, WI	Occupation: Email: Phone: Name: Occupation:		
<b>plete the entire form.</b> h duplicates if necessary.		Email: Phone: Email address is required for credit card receipt, program		
		changes, and notification of upcomi products. Your email will not be solo	ng seminars and d or transferred.	
		() 5. I need special accommodations.	Please contact me.	
registrant I am not	ts from the same <b>attending.</b> Pleas	<b>re webinar.</b> Single Registrant - <b>\$28</b> company registering at the same t se send me the webinar recording: eo/PDF Manual for <b>\$299.00</b> . ual for <b>\$299.00</b> .		
dit Card:/		Moon Education Inc. American Express, or Discover		
iration Dat	te:	CVV2 Code:		
dholder N	ame:			
ng Addres	s:			
:		State:	Zip:	
nature:				
ail:				

low to Re	egister	Registrant Informatio		
<b>Online:</b> vww.halfmoonseminars.org		Name: Company/Firm: Address:		
<b>Phone:</b> 715-835-5900		City: Occupation: Email:		•
<b>ax:</b> 15-835-6066	Code:	Phone: Additional Registrant: Name:		
Mail: HalfMoon Education Inc., 20 Box 278, Altoona, WI 64720-0278 Complete the entire form. Attach duplicates if necessary.		Occupation: Email: Phone: Name: Occupation:		
		Email: Phone: Email address is required for credit card receipt, program		
		changes, and notification products. Your email will	n of upcoming se	eminars and
		( ) 🖧 I need special accor	nmodations. Pleas	e contact me.
registrant ( ) <b>I am not</b> a Strea	ts from the same <b>attending.</b> Pleas	re webinar. Single Regist company registering at e send me the webinar r eo/PDF Manual for <b>\$299.</b> ual for <b>\$299.00</b> .	the same time ecording:	
Credit Card: /		Moon Education Inc. American Express, or Disco	over	
Expiration Dat	te:	CV	V2 Code:	
Cardholder Na	ame:			
Billing Addres	s:			
City:		State:		Zip:
Signature:				
Email:				

How to Re	gister	Registrant Informa		
<b>Online:</b> www.halfmoonseminars.org		Name: Company/Firm: Address:		
Phone: 715-835-5900		City: Occupation: Email:		
F <b>ax:</b> 715-835-6066	Code:	Phone: Additional Registra Name:	nts:	
Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278 Complete the entire form. Attach duplicates if necessary.		Occupation: Email: Phone: Name: Occupation:		
		Email: Phone: Email address is required for credit card receipt, program changes, and notification of upcoming seminars and		
		products. Your email v ( ) للجي ا need special ac	will not be sold o	or transferred.
registrant ( ) <b>I am not a</b> Strea	s from the same attending. Pleas	<b>e webinar.</b> Single Reg company registering e send me the webina co/PDF Manual for <b>\$29</b> al for <b>\$299.00</b> .	at the same tim r recording:	
Credit Card: /		Moon Education Inc. American Express, or Di	scover	
			CVV2 Code:	
Cardholder Na	ame:			
Billing Address	s:			
City:		State:		_ Zip:
Signature:				
Email:				

ignature:	
0	

## Webinar Information

Log into Webinar 8:00 - 8:30 am CDT Break

Morning Session 8:30 am - 12:15 pm CDT

### Tuition

\$289 for individual registration

**\$199** for three or more registrants from the same company at the same time. Included with your registration: PDF seminar manual.

### How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Webinars are presented via GoToWebinar. Instructions and login information will be provided in an email sent close to the date of the webinar. For more information, please visit our FAQ section of our website, or visit www.gotowebinar.com.

Cancellations: Cancel at least 48 hours before the start of the webinar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another webinar or the self-study package. You may also authorize another person to take your place.

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

Recordings of this webinar are available for purchase. See registration panel 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.

12:15 - 1:15 pm CDT Afternoon Session

1:15 - 5:00 pm CDT

## Shallow Foundation Design, Construction and Repair

Live, Interactive Webinar - Tuesday, July 6, 2021

© 2021 HEI #21 USSFDCAR 7 6 WEBR BA