

# Agenda

*Presented by Bill Simpson, PE*

## Retaining Walls: What They Do and How They Do It

Identifying and quantifying forces acting on retaining walls

- Weight of the wall
- Pressure from retained soil
- Pressure on foundation of wall
- Characteristics of soil
- Loads on retained soil
- Impacts of water—liquid and frozen
- Vibration
- Expansion/contraction

Equations and examples

## Geosynthetics and Retaining Walls, Embankments and Slopes

Calculations and software

Types of retaining walls

Embankments

Slopes

Materials

Alternatives

Exercise

- Learn to visually identify geosynthetics as to type, method of manufacture, relative strength, relative permeability, and relative cost

## Slope Stabilization Techniques

Examining slope failures

Slope stability analysis

Stabilization techniques

- Unloading
- Drainage
- Reinforcement
- Mechanical stabilization

## Slope Stabilization Case Histories

Fundamental soil characteristics and slope instability

Engineering mechanics underlying slope instability

Geologic conditions and construction practices

Field observations to distinguish types of instability

Construction practices to improve or restore stability

## Retaining Wall/Slope Failures and Fixes

How to prevent a potential problem or failure

How to recognize a potential problem or failure in the field

Typical causes of problems or failures with geotechnical structures

Case studies/examples of failures and repairs

**Retaining Wall Design and  
Slope Stabilization Techniques**  
Online Webinar - Thursday, April 23, 2020

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

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



## Learning Objectives

**You'll be able to:**

**Identify** and quantify forces that act on retaining walls.

**Explore** different types of retaining walls and applications for each.

**Identify** geosynthetics as to type, method of manufacture, relative strength, permeability and cost.

**Analyze** slope stability and evaluate slope stabilization techniques, including unloading, reinforcement and mechanical stabilization.

**Review** case studies of retaining wall and slope failures and repairs.



Find us on  
Facebook

# HalfMoon Education Online Learning Retaining Wall Design and Slope Stabilization Techniques

*Online Webinar - Thursday, April 23, 2020*



**Review** the forces acting on retaining walls, including pressure from retained soil, and consider the impacts of groundwater

**Understand** typical causes of failure for slopes and retaining walls and learn to prevent them

**Identify** geosynthetics as to type, method of manufacture, relative strength, permeability and cost

**Get** tips on preventing retaining wall/slope failures

**Utilize** slope stabilization techniques such as unloading and mechanical stabilization

## Continuing Education Credits

**Professional Engineers**

6.5 CE Hours

**Floodplain Managers**

6.5 ASFPM CECs

**Landscape Architects**

6.5 LA/CES HSW PDHs

**Contractors**

6.5 Continuing Ed. Hours

**Architects**

6.5 AIA LU|HSW

Webinar instructions and login information will be provided in an email sent close to the date of the webinar. To register, please fill out the attached form or visit us at:  
[www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)



HalfMoon Education Inc.  
WWW.HALFMOONSEMINARS.ORG



AIA  
Continuing  
Education  
Provider



**Faculty**  
**Bill Simpson, PE** *Engineered Earth Solutions, LLC*  
Mr. Simpson is a geotechnical structure design specialist at Engineered Earth Solutions, LLC. He has designed and reviewed shop drawings for construction and repair of earth structures in the public and private sectors in over 30 states, and he consistently works on more than 1,200 projects and 10 million square feet each year. He performs site visits for new project reconnaissance, construction verification, and construction assistance. Mr. Simpson manages, supervises, instructs, and mentors a team of staff engineers to ensure strict deadlines are met for construction schedules while maintaining design and analysis accuracy. He works with owners, site designers, and contractors to provide designs which are not only structurally sufficient but also financially responsible. Mr. Simpson earned his B.S.C.E. and M.S.C.E. degrees from Georgia Institute of Technology.

**Here’s what past attendees have to say about the program and speaker Bill Simpson:**  
“Love seeing the case studies (photos). Helps bring theory to life.” – *Architect*  
“He kept us thinking. Relates very well to participants. Very personable.” – *Architect*  
“The best seminar - great on theory and application.” – *Civil Engineer*  
“Great seminar to understand retaining wall/slope stabilization.” – *Landscape Architect*

## Seminar Information

|                                           |                                         |
|-------------------------------------------|-----------------------------------------|
| Log into Webinar<br>8:00 - 8:30 am MDT    | Break<br>12:00 - 1:00 pm MDT            |
| Morning Session<br>8:30 am - 12:00 pm MDT | Afternoon Session<br>1:00 - 4:30 pm MDT |

**Tuition**  
**\$299** for individual registration  
**\$279** for three or more simultaneous registrations.  
**Included with your registration:** Seminar manual in PDF format.

**How to Register**  
• Visit us online at [www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)  
• Mail-in or fax the attached form to 715-835-6066  
• Call customer service at 715-835-5900

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



### Webinar Series

**Tree Science**  
• **Biology and Benefits of Trees**  
Wed., April 15, 2020, 11:00 AM - 1:00 PM CDT  
• **Tree Infrastructure:**  
**Design Elements That Appreciate**  
Wed., April 15, 2020, 1:30 - 3:00 PM CDT  
• **Trees and Site Requirements**  
Thurs., April 16, 2020, 11:00 AM - 12:00 PM CDT  
• **Project Completion**  
**and Tree Threat Prevention**  
Thurs., April 16, 2020, 12:30 - 12:30 PM CDT

**Water Conservation**  
• **Reviewing the Owner’s Commitment to Water Conservation and Applicable Codes and Standards**  
Thurs., April 23, 2020, 11:00 AM - 12:30 PM CDT  
• **Assessing the Building Site**  
Thurs., April 23, 2020, 1:00 - 2:00 PM CDT  
• **Conserving and Reducing Water Use**  
Fri., April 24, 2020, 11:00 AM - 1:00 PM CDT  
• **Onsite Water Recycling and Minimizing Water Use**  
Fri., April 24, 2020, 1:30 - 3:30 PM CDT

For more information  
and other online learning opportunities visit:  
**[www.halfmoonseminars.org/webinars/](http://www.halfmoonseminars.org/webinars/)**

### Continuing Education Credit Information

This seminar is open to the public and offers a professional enrichment opportunity to Arizona engineers, landscape architects, and architects. Continuing education is not mandatory in Arizona. This activity will qualify for 6.5 PDHs for professional engineers in all states and 6.5 HSW continuing education hours for architects and landscape architects in most states.

This seminar is approved by the American Institute of Architects Continuing Education System for 6.5 LU|HSW (Sponsor No. J885) and the Landscape Architecture Continuing Education System for 6.5 HSW PDHs. Visit [www.halfmoonseminars.org](http://www.halfmoonseminars.org) for complete AIA/CES information under this course listing. Only full attendance is reportable to the AIA/CES and LA/CES.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana, Maryland, New Jersey (Approval No. 24GP00000700), North Carolina, and North Dakota. HalfMoon Education is deemed an approved continuing education sponsor for New York engineers, landscape architects and architects.

The Association of State Floodplain Managers has approved this course for 6.5 CECs for certified floodplain managers.

This program offers a continuing education opportunity to construction contractors. It has not been approved by any contractor licensing board for mandatory continuing education credit.

Attendance will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

**Can’t Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!**  
Audio recordings of this seminar are available for purchase starting at \$279. 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.

## Registration

### Retaining Wall Design and Slope Stabilization Techniques

Online Webinar - Thursday, April 23, 2020

| How to Register                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Online:</b><br><a href="http://www.halfmoonseminars.org">www.halfmoonseminars.org</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| <b>Phone:</b><br>715-835-5900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |
| <b>Fax:</b><br>715-835-6066                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Code:</b> |
| <b>Mail:</b><br>HalfMoon Education Inc.,<br>PO Box 278, Altoona, WI<br>54720-0278                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |
| <b>Complete the entire form.</b> Attach duplicates if necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |
| <b>Registrant Information</b><br>Name: _____<br>Company/Firm: _____<br>Address: _____<br>City: _____ State: _____ Zip: _____<br>Occupation: _____<br>Email: _____<br>Phone: _____<br><b>Additional Registrants:</b><br>Name: _____<br>Occupation: _____<br>Email: _____<br>Phone: _____<br>Name: _____<br>Occupation: _____<br>Email: _____<br>Phone: _____<br><small>Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.</small><br>( )  I need special accommodations. Please contact me. |              |

| Tuition                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ( ) <b>I will be attending the live webinar.</b> Single Registrant - <b>\$299.00</b> . Three or more registrants from the same company registering at the same time - <b>\$279.00</b> each.                                                                                                                                                                           |
| ( ) <b>I am not attending.</b> Please send me the self-study package:<br><input type="checkbox"/> Downloadable MP3 Audio/PDF Manual for <b>\$279.00</b> .<br><input type="checkbox"/> CD/Manual Package for <b>\$299.00</b> . <input type="checkbox"/> USB/Manual Package <b>\$299.00</b> .<br>(S&H included. Please allow five weeks from seminar date for delivery) |
| <b>Checks:</b> Make payable to HalfMoon Education Inc.                                                                                                                                                                                                                                                                                                                |
| <b>Credit Card:</b> <i>Mastercard, Visa, American Express, or Discover</i>                                                                                                                                                                                                                                                                                            |
| Credit Card Number: _____                                                                                                                                                                                                                                                                                                                                             |
| Expiration Date: _____ CVV2 Code: _____                                                                                                                                                                                                                                                                                                                               |
| Cardholder Name: _____                                                                                                                                                                                                                                                                                                                                                |
| Billing Address: _____                                                                                                                                                                                                                                                                                                                                                |
| City: _____ State: _____ Zip: _____                                                                                                                                                                                                                                                                                                                                   |
| Signature: _____                                                                                                                                                                                                                                                                                                                                                      |
| Email: _____                                                                                                                                                                                                                                                                                                                                                          |