

Agenda

Presented by Siva K. Sivathasan, PhD, PE, GE, DGE, QSD, F.ASCE

Types of Retaining Walls

Traditional cantilevered retaining walls

- Reinforced concrete walls
- Reinforced concrete masonry walls
- Soldier pile and lagging walls

Traditional timber walls

Traditional gravity walls

Reinforced soil retaining walls

Anchored retaining walls (tie-backs, soil nailing, etc.)

Temporary retaining walls

Over-steepened reinforced slopes

Gabion walls Crib walls

Private-sector vs. highway retaining wall systems

Cost of retaining walls

Retaining Wall Design

Soil design parameters

Lateral earth pressure

External stability

- Sliding • Overturning
- Bearing capacity
- Settlement • Scour

Internal stability Global stability

Special considerations for tiered retaining walls

Backfill Groundwater

Service life Design software

Slope Stabilization

Science of slope stability

Surficial vs. deep-seated slope stability

Long term vs. short term stability

Slope stabilization techniques

- Regrading
- Excavation and replacement
- Slope reinforcement/pinning
- Ground improvement
- Toe retaining walls

Retaining Wall and Slope Stabilization Case Histories

Various commercial, residential projects

Various highway and institutional projects

Retaining Wall Design and Slope Stabilization Techniques

Pasadena, CA - Thursday, December 19, 2019



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Learning Objectives

You'll be able to:

Explain the types of forces that act on retaining walls.

Identify the features of and applications for various types of retaining walls, including reinforced concrete walls, traditional gravity walls, reinforced soil retaining walls, anchored walls and gabion walls.

Describe the factors that influence retaining wall design, including soil design parameters, lateral earth pressure, bearing capacity, settlement, groundwater and backfill.

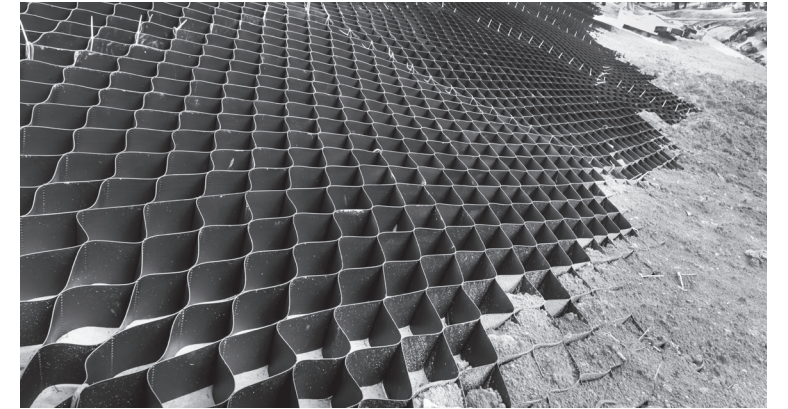
Describe methods of stabilizing slopes, including regrading, slope reinforcement/pinning, excavation and replacement, and ground improvement.



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Retaining Wall Design and Slope Stabilization Techniques

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Discuss traditional cantilevered retaining walls, timber walls, gravity walls, reinforced soil walls and crib retaining walls

Design retaining walls for external, internal and global stability

Examine the science of slope stability

Stabilize slopes by regrading, reinforcing and ground improvement

Explore retaining wall and slope stabilization case histories

Continuing Education Credits

Professional Engineers

7.0 Continuing Ed. Hours

Floodplain Managers

7.0 ASFPM CECs

Landscape Architects

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Architects

7.0 AIA LU|HSW
(Non-qualifying for CA
architect licensure)



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Faculty

Siva K. Sivathasan, PhD, PE, GE, DGE, QSD, F.ASCE
Senior Vice President/Managing Officer/Principal Engineer for Converse Consultants

Dr. Sivathasan is a registered civil and geotechnical engineer in California, with 25 years of geotechnical and construction experience. He is skilled at analyzing complex geotechnical problems and has prepared comprehensive reports with detailed recommendations. He also has extensive knowledge of construction projects from managing geotechnical observation and testing, special inspection and material testing, and Caltrans source inspection services. He has been providing source inspection for major transportation projects in Southern California. He is a subject matter expert for the California Board of Professional Engineers, Land Surveyors, and Geologists for geotechnical engineering exam development. Dr. Sivathasan has been teaching several civil engineering undergraduate and graduate classes at Cal Poly Pomona and Cal State Fullerton on a part-time basis. He also taught civil engineering classes at the University of Peradeniya, Sri Lanka; the University of California at Davis and Irvine; and Cal State Northridge. He teaches geotechnical engineering and engineering surveying sections for the California Professional Engineer Exam. He is the past chair of the ASCE Los Angeles Section Geotechnical Group and has published several papers in journals and for international and national conferences.

Seminar Information

Residence Inn Los Angeles Pasadena/Old Town	Registration	Lunch (on your own)
21 West Walnut Street	8:00 - 8:30 am	12:15 - 1:15 pm
Pasadena, CA 91103	Morning Session	Afternoon Session
(626) 204-9220	8:30 am - 12:15 pm	1:15 - 5:00 pm

Tuition
\$289 for individual registration
\$269 for three or more simultaneous registrations.

Included with your registration:
Complimentary continental breakfast and printed seminar manual.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

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

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.

Additional Learning

Webinar Series

Structural Forensic Engineering

- **Introduction to the Forensic Engineering Process**
Tues., Nov. 12, 2019, 11:00 AM - 1:00 PM CST
- **Causes of Failures and the Forensic Engineering Report**
Tues., Nov. 12, 2019, 1:30 - 3:30 PM CST
- **Forensic Examination of Structures and Use in Litigation**
Wed., Nov. 13, 2019, 11:00 AM - 1:00 PM CST

Stormwater Management Systems

- **Basics of Stormwater Regulations and Requirements, Including EPA Regulations**
Wed., Nov. 20, 2019, 11:00 AM - 12:00 PM CST
- **Site Planning and Choosing Best Stormwater Management Practices**
Wed., Nov. 20, 2019, 12:30 - 2:00 PM CST

• **Working with the MS4 Regulator**
Thurs., Nov. 21, 2019, 11:00 AM - 12:00 PM CST

• **Long-Term Stormwater Management Practices**
Thurs., Nov. 21, 2019, 12:30 - 2:00 PM CST

Cogeneration System Principles and Practice

- **Understanding the Benefits of Cogeneration**
Thurs., Nov. 21, 2019, 11:00 AM - 12:30 PM CST
- **Laws, Regulations and Building Codes Impacting Cogeneration**
Thurs., Nov. 21, 2019, 1:00 - 2:30 PM CST
- **Examining Cogeneration Technologies**
Fri., Nov. 22, 2019, 11:00 AM - 12:30 PM CST
- **Moving to Cogeneration: Analysis, Modeling and Case Studies**
Fri., Nov. 22, 2019, 1:00 - 2:30 PM CST

For more information and other online learning opportunities visit:
www.halfmoonseminars.org/webinars/

Continuing Education Credit Information

This seminar is open to the public and offers a continuing education opportunity to California professional engineers, landscape architects, architects (non-credit), and floodplain managers. Continuing education is not required for license maintenance or renewal in California.

This seminar is approved by the American Institute of Architects Continuing Education System for 7.0 LU|HSW (Sponsor No. J885) and the Landscape Architecture Continuing Education System for 7.0 HSW PDHs. Only full attendance is reportable to the AIA/CES and LA/CES. Visit www.halfmoonseminars.org for complete AIA/CES information under this course listing.

This event has been approved by the Association of State Floodplain Mangers for 7.0 CECs.

Professional engineers, landscape architects, and architects seeking continuing education credit in other states will be able to apply the hours earned at this seminar, in most cases. Refer to specific state rules to determine eligibility.

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 \$269. 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
Pasadena, CA - Thursday, December 19, 2019

How to Register		Registrant Information	
Online: www.halfmoonseminars.org		Name: _____	
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Code:		City: _____ State: _____ Zip: _____	
Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		Occupation: _____	
Complete the entire form. Attach duplicates if necessary.		Email: _____	
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		Additional Registrants:	
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		Occupation: _____	
		Email: _____	
		Phone: _____	
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		Occupation: _____	
		Email: _____	
		Phone: _____	
		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.	
		() I need special accommodations. Please contact me.	

Tuition

() **I will be attending the live seminar.** Single Registrant - **\$289.00**. Three or more registrants from the same company registering at the same time - **\$269.00** each.

() **I am not attending.** Please send me the self-study package:

☐ Downloadable MP3 Audio/PDF Manual for **\$269.00**.

☐ CD/Manual Package for **\$289.00**. ☐ USB/Manual Package **\$289.00**.
(S&H included. Please allow five weeks from seminar date for delivery)

Checks: Make payable to HalfMoon Education Inc.

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