

Agenda

Presented by James “Jay” A. McKelvey, III, P.E., D.GE, F.ASCE

Types of Retaining Walls, Soil Mechanics Review, Earth Pressures on Walls

- Types of retaining walls
 - Cut walls
- Soil mechanics review
 - Soil classification
 - Shear strength
 - Permeability
- Earth pressures on walls
 - Soil and hydrostatic pressures
 - Surcharge loads
 - Seepage
- Fill walls
 - Physical properties
 - Deformation properties
 - Lateral earth pressures
 - Influence of slopes
 - Seismic

Modes of Failure, Retaining Wall Theory and Design, Geosynthetic Design

- Modes of failure
 - External failure modes
 - Serviceability failure
- Retaining wall theory and design
 - Overturning
 - Sliding
 - Deformation
- Geosynthetic design
 - MSE walls and slopes
 - Allowable strength
 - Geosynthetics in walls and slopes deformation
- Internal failure modes
 - Eccentricity
 - Bearing capacity
 - Geosynthetic materials
 - Anchorage capacity
- Retaining wall and slope software

Slope Stability and Slope Stabilization

- Slope stability
 - Theory
 - Wedge failures
- Slope stabilization
 - Types of failures
 - Geosynthetic reinforcement
- Circular failures
 - Drainage relief
 - Soil nails and rock anchors

Case Histories

- Stabilization of failed slope
- MSE failures
- MSE stabilization with soil nails
- MSE stabilization with buttress wall
- Slope stabilization with piles
- Shotcrete walls with tiebacks
- Slope stabilization with shotcrete and soil nails
- Geosynthetic reinforced slope

Retaining Wall Design and Slope Stabilization Techniques

Live, Interactive Webinar - Thursday, January 11, 2024

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Learning Objectives

You'll be able to:

- Review** the soil mechanics of retaining walls and slopes and learn about the impact of soil types and the presence of groundwater and surface water.
- Identify** common modes of retaining wall failure.
- Understand** retaining wall stability theory, including the concepts of overturning, sliding, deformation and eccentricity.
- Explore** geosynthetic materials and design.
- Understand** types of slope failure, and explore stabilization techniques, including geosynthetic reinforcement, soil nails and rock anchors.



HalfMoon Education Live Webinars

Retaining Wall Design and Slope Stabilization Techniques

Live, Interactive Webinar - Thursday, January 11, 2024



- Examine** types of retaining walls and review soil mechanics

Analyze earth pressures on walls, such as soil and hydrostatic pressures

Consider modes of failure, retaining wall theory and design
- Discuss** geosynthetic materials and design

Explore retaining wall and slope software

Examine actual case studies of slope failures and stabilization strategies

Continuing Education Credits

- Professional Engineers**
6.0 PDHs

Architects
6.0 HSW CE Hours
6.0 AIA LU | HSW
- Landscape Architects**
6.0 HSW CE Hours
6.0 LA CES HSW PDHs

International Code Council
.6 CEUs (Sitework)

Floodplain Managers
6.0 ASFPM CECs



Webinar Information

Log into Webinar 8:00 - 8:30 am CST	Break 12:15 - 1:15 pm CST
Morning Session 8:30 am - 12:15 pm CST	Afternoon Session 1:15 - 4:15 pm CST


Tuition
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Faculty



James “Jay” A. McKelvey, III, P.E., D.GE, F.ASCE
Director - Geotechnical Design Division at Earth Engineering Inc.

Mr. McKelvey is the director of the Geotechnical Design Division at Earth Engineering Inc. in East Norriton, Pennsylvania. He is a registered professional engineer (P.E.) in California, Delaware, Maryland, New Jersey, Pennsylvania, Virginia, and the District of Columbia. Mr. McKelvey is also a Diplomate (D.GE) of the Academy of Geo-Professionals and a Fellow of the American Society of Civil Engineers (F.ASCE). Mr. McKelvey has extensive experience in geotechnical engineering including site assessment and field investigations; deep and shallow foundation design for buildings, bridges, and other structures; retaining wall design; embankment stability; mechanically stabilized soil structures; and subsurface hydrology. He also has significant experience in mitigating heavy construction claims and in litigation support pertaining to impacted heavy construction projects. Mr. McKelvey has also handled construction support and construction quality assurance projects. His environmental engineering experience includes technical contributions to the remediation of many Superfund sites and over 50 landfill design projects. Mr. McKelvey has published over 30 technical papers in journals, conference proceedings and trade magazines. He is the past chair for the Delaware Valley Geo-Institute (DVGI) and is a voting member in ASTM committees Soil and Rock (D18), and Geosynthetics (D35). He is an editorial board member of the *Geotechnical Testing Journal*. Mr. McKelvey also serves on two Geo-Institute committees; Earth Structures and Embankments and Dams, the latter of which he is a member of the subcommittee on landslide risk assessment.

Credit Information

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- Residential and Small Commercial Timber Frame Design and Construction**
- Monday, December 11, 2023 | 9:00 am - 4:30 pm CST
- Accessible Trail Design, Construction, and Operation**
- Tuesday, December 12, 2023 | 8:30 am - 12:15 pm CST
- Wednesday, December 13, 2023 | 8:30 am - 11:45 am CST
- Soils in Construction**
- Wednesday, December 13, 2023 | 8:30 am - 5:00 pm CST
- Complying with the Fire/Life Safety Provisions of the International Building Code (2021)**
- Wednesday, December 13, 2023 | 9:00 am - 5:00 pm CST
- Foundations in Cold Regions**
- Thursday, December 14, 2023 | 11:00 am - 2:15 pm CST
- Friday, December 15, 2023 | 11:00 am - 2:15 pm CST
- Construction Cost Estimating**
- Friday, December 15, 2023 | 9:00 am - 4:30 pm CST
- Load Paths: Determining Member Loads in Structure**
- Tuesday, December 19, 2023 | 9:00 am - 4:30 pm CST
- Urban Street Design**
- Tuesday, December 19, 2023 | 9:00 am - 4:30 pm CST
- Reinforced Concrete Building Design and Construction**
- Wednesday, December 20, 2023 | 8:30 am - 4:30 pm CST
- Ethical Issues in Structural Engineering**
- Wednesday, December 20, 2023 | 11:00 am - 12:00 pm CST
- Deep Dive into Drainage Rights**
- Wednesday, December 20, 2023 | 12:00 - 2:00 pm CST
- Solar Photovoltaic Energy 2024: Residential and Small Commercial Systems**
- Wednesday, December 27, 2023 | 8:30 am - 3:30 pm CST
- 2021 International Building Code Essentials**
- Thursday, December 28, 2023 | 8:30 am - 4:30 pm CST
- Preventing and Addressing Construction Defects and Failures**
- Thursday, December 28, 2023 | 8:30 am - 5:00 pm CST
- The EPA’s 2022 Construction General Permit**
- Thursday, December 28, 2023 | 9:00 am - 4:00 pm CST
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