

Agenda

Presented by Terry McCleary

Science of Structures and Soils

Typical loads on shallow foundations

- Gravity loads
- Lateral loads

Typical loads on walls

- Gravity loads
- Soil loads

Typical loads on slabs

Soil mechanics and effects on structures

- Soil properties
- Bearing capacity
- Soil settlement
- Effects of water, frost and freeze/thaw cycle

Foundation Features, Materials and Functionality

Design and construction of shallow foundations

- Continuous wall footings, column footings

Design and construction of slab foundations

Design and construction of basements and retaining walls

Design and construction of specialty features: walkouts, partial-exposed foundations

Evaluating and Repairing Foundation/Slab Damage

Inspecting, monitoring and assessing damage

- Settlement
- Frost heave
- Expansive soils
- Shrinkage
- Subsurface erosion
- Subsidence
- Cracking
- Utility failures

Repairing foundations and slabs

- Piers, piles
- Soil Tiebacks
- Underpinning
- Ground improvement

Evaluating and Repairing Basement/Retaining Wall Damage

Inspecting, monitoring and assessing damage

- Settlement
- Frost loading
- Expansive soils
- Shrinkage
- Poor drainage
- Utility failures

Repairing wall damage

- Piers, piles
- Soil tiebacks
- Soldier beams
- Crack repair
- Secant-tangent walls
- Underpinning
- Reconstruction

Foundation Damage and Repair: Science, Materials and Techniques

Eagan, MN - Friday, August 16, 2019

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Learning Objectives

You'll be able to:

Learn about soil mechanics and the effect of soils on structures.

Explore typical loads on shallow foundations, walls, and slabs.

Get tips on the design of wall footings, column footings, slab foundations, basement walls and retaining walls.

Learn how to evaluate foundation and wall damage and understand how to repair damage.

Explore foundation and wall repair techniques such as underpinning, piers, crack repair, and reconstruction.



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Learn about soil mechanics and its effect on structures

Discuss foundation features, materials and functionality

Evaluate foundation and slab damage and understand repair techniques

Repair wall damage from frost loading, settlement, and utility failures

Continuing Education Credits

Professional Engineers

6.5 HSW PDHs

Architects

6.5 HSW PDHs

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Faculty

Terry McCleary *McCleary Engineering*
McCleary Engineering specializes in geotechnical investigations and recommendations for foundation design, retaining walls, slope stability, embankments, pavement design and rehabilitation, subgrade treatments and other engineering services such as drainage studies. McCleary Engineering is Illinois Department of Transportation (IDOT) prequalified in the general geotechnical services, subsurface explorations, structure geotechnical reports and construction inspection categories.

Mr. McCleary has nearly 19 years of construction and geotechnical engineering experience with IDOT. Six years were spent on the front lines of contract administration in construction as a resident engineer on bridge and roadway projects which included construction layout, material inspection and construction practice inspection. For the last 13 years at IDOT, Mr. McCleary was the District #3 geotechnical engineer, working with hands-on subsurface investigations; analysis, design, and inspection of geotechnical engineering projects; and on-the-spot problem solving. He has served on numerous statewide committees involving abutment design, piling, aggregate subgrade, subgrade stability, pavement under drains and pavement rehabilitation. He served on a nationwide Federal Highway Administration (FHWA) pooled fund study on deep soil mixing technology. In 2009, Mr. McCleary left IDOT to work full time at his company, McCleary Engineering. Mr. McCleary is a licensed professional engineer in the states of Illinois, Indiana, Iowa, Georgia, Montana, Ohio, Oklahoma and Wisconsin. He is a member of the American Society of Civil Engineers, the National Society of Professional Engineers, the Deep Foundations Institute, the Pile Driving Contractors Association and the Illinois Association of Highway Engineers. He is currently serving on the National Cooperative Highway Research Program Committee for the research of bridge scour on gravel bed rivers.

Seminar Information

Holiday Inn Airport SE - Mall Area	Registration	Lunch (On your own)
2700 Pilot Knob Road	8:00 - 8:30 am	11:45 am - 12:45 pm
Eagan, MN 55121	Morning Session	Afternoon Session
(651) 454-3434	8:30 - 11:45 am	12:45 - 4:30 pm

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

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

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Additional Learning

- Webinar Series**
- International Existing Building Codes**
- **Working with the International Existing Building Code**
Thurs., June 20, 2019, 11:00 AM - 12:30 PM CDT
 - **Chapters 3, 4 & 6**
Thurs., June 20, 2019, 1:00 - 3:00 PM CDT
 - **Chapters 7-10: Alterations and Occupancy**
Fri., June 21, 2019, 11:00 AM - 1:00 PM CDT
 - **Chapters 11, 12 and 14: Additions and Historic Buildings**
Fri., June 21, 2019, 1:30 - 3:00 PM CDT

- Retaining Structures**
- **Earth Pressures and Surcharges**
Wed., June 26, 2019, 11:00 AM - 12:30 PM CDT
 - **Cantilever & Apparent Earth Pressures**
Wednesday, June 26, 2019, 1:00 - 2:30 PM CDT
 - **Apparent Earth Pressures**
Thurs., June 27, 2019, 11:00 AM - 12:30 PM CDT

- Industrial Stormwater**
- **Understanding the Federal Industrial Stormwater Program**
Thurs., June 27, 2019, 11:00 AM - 12:30 PM CDT
 - **Examining Stormwater Pollutants and the Development of Total Maximum Daily Loads (TMDLs)**
Thurs., June 27, 2019, 1:00 - 2:00 PM CDT
 - **Creating Stormwater Pollution Prevention Plans (SWPPPs)**
Fri., June 28, 2019, 11:00 AM - 12:00 PM CDT
 - **Implementing Best Management Practices (BMPs), Sampling and Reporting**
Fri., June 28, 2019, 12:30 - 2:00 PM CDT

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 6.5 HSW PDHs/continuing education hours to professional engineers and architects in most states, including Minnesota and Wisconsin. Educators and courses are not subject to preapproval in Minnesota or Wisconsin.

This seminar is approved by the American Institute of Architects for 6.5 LU|HSW (Sponsor No. J885). Only full attendance can be reported to the AIA/CES.

Professional engineers and architects seeking continuing education credit in other states will be able to claim 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

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