Residential, Commercial, Institutional, Industrial Foundation Damage Assessment and Repair Alternatives

Jessup, MD - Thursday, December 15, 2016

You’ll be able to:

Understand structural foundation, slab, basement and retaining wall loading.

Study the design of different types of foundations, including continuous footings, column footings, and basement walls.

Explore procedures for foundation inspection, monitoring, and damage assessment.

Repair damage caused by settlement, expansive soils and frost heave.

Review repair methods, including piers, soils, tiebacks and underpinning.

Structure Loads, Soils, Groundwater and Drainage

- Structural foundation, slab, basement, retaining wall loading
- Extreme weather, man’s activities, geohazard impacts
- Soil mechanics and structures
  - Soil properties
  - Groundwater and site drainage
  - Underground utilities and roof drains
  - Foundation bearing capacity and settlement
  - Soil loads on basement and retaining walls

Foundation Design and Construction

- Design-construction of shallow, deep and intermediate foundations
- Continuous wall footings, column footings types
- Overview of basement wall types, construction, and design

Evaluation of Foundation - Slab Damage and Repair Alternatives

- Inspection, monitoring, and damage assessment
  - Settlement
  - Expansive soils
  - Subsurface erosion
  - Mine subsidence
  - Cracking
  - Repair methods and example case histories
  - Piers, piles
  - Underpinning
  - Soil tiebacks
  - Ground improvement

Evaluation of Wall Damage and Repair Alternatives

- Inspection, monitoring, and damage assessment
  - Settlement
  - Expansive soils
  - Poor drainage
  - Failure of connections to supporting diaphragms
  - Repair methods and example case histories
  - Piers, piles
  - Carbon fibers
  - Crack repair
  - Underpinning
  - Soil tiebacks
  - Soldier beams
  - Secant-tangent walls
  - Reconstruction

Foundation Design and Construction

- Overview of retaining wall types, construction, and design
- Foundation underpinning using micropiles, helical piles

Evaluation of Foundation - Slab Damage and Repair Alternatives

- Inspection, monitoring, and damage assessment
  - Settlement
  - Frost heave
  - Shrinkage
  - Pumping-dewatering
  - Utility failures

Evaluation of Wall Damage and Repair Alternatives

- Inspection, monitoring, and damage assessment
  - Settlement
  - Frost loading
  - Shrinkage
  - Utility failures

Learning Objectives

- Foundation Design and Construction
- Evaluation of Foundation - Slab Damage and Repair Alternatives
- Evaluation of Wall Damage and Repair Alternatives

Continuing Education Credits

- Architects
  - 6.0 HSW Contact Hours (CEUs)
  - 6.0 AIA HSW Learning Units
- Professional Engineers
  - 6.0 PDHs (MD Category A)
- Contractors
  - Non-Mandatory Continuing Ed.

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Examine foundation design and construction

Understand the effects of structure loads, soils, groundwater and drainage

Identify types of foundation slab damage and repair alternatives

Learn about foundation and basement wall damage

Discuss the design and construction of specialty features, including walk-outs and retaining walls

Presented by: Michael Perlow Jr., P.E.
Mr. Perlow is a retired civil and geotechnical engineer with more than 40 years of experience in foundation and marine geotechnical engineering with special technical expertise in geo-environmental hazard assessments, failure investigations, sinkhole stabilization, foundation and utility infrastructure repair. Mr. Perlow is a registered professional engineer and a graduate of Lehigh University with BSE and MSCE degrees. He is also the author of some 30 technical publications and has presented at numerous conferences, seminars and meetings. Mr. Perlow retired from full-time consulting in April 2015 and continues to work part-time in retirement. He remains the owner of EKMLLC - Engineering Knowledge Management LLC and is completing publications and an Elsevier book on geo-environmental hazard risk management. In addition, Mr. Perlow is also completing publications on a two-year applied research project focusing on drilled foundation limit state design. He also provides continuing education seminars and webinars. He is developing a unique drilled foundation knowledge management system (DFKMS) that will accumulate user knowledge, experience and foundation design-performance data through the use of simple estimating spreadsheets. User collective knowledge and experience is archived in the DFKMS which will result in constant improvement of the estimating spreadsheet predictions and validation. A similar knowledge-based geo-environmental hazard risk management system (GEHRMS) application is also under final development by Mr. Perlow in 2016. Mr. Perlow has also been a speaker for HalfMoon Education since early 2016.

Here’s what attendees had to say about the seminar and presenter Michael Perlow:

“Very engaging. Kept my attention.” – Insurance Professional

“This was a very good review for many foundation problems we encounter in our industry. Good class.” – Civil Engineer

“Michael introduced me to some construction technology I was unaware of.” – Structural Engineer/Contractor