2020 Conference Program

In Cooperation with:

ADSC - The International Association of Foundation Drilling

International Society for Micropiles

PDCA - Pile Driving Contractors Association

U.S. Federal Highway Administration

Media Partner:

PileBuck International, Inc.

www.dfi.org/S3-2020
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Roberto Lopez, P.E.
Malcolm Drilling Co. Inc.

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Deep Foundations Institute

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Mary Ellen Bruce Large, P.E., D.GE, Director of Technical Activities
Fern Dickey, CMP, Director of Programs
Angie Gibble, Meetings and Events Specialist

Thank You to Our “Virtual” Event Key and Online Proceedings Sponsor
11:00 a.m. - 11:05 a.m.  **Conference Introduction**

*Roberto Lopez, P.E.*
Malcolm Drilling Co. Inc. | Program Chair

11:05 a.m.- 11:30 a.m.  **Incorporating Deep Foundations in Limit-Equilibrium Slope Stability Analyses: Revisiting Fundamentals and Seismic Applications**

*Ben Turner, Ph.D., P.E.*
Dan Brown and Associates, PC

Deep foundations are commonly used to prevent or stabilize existing landslides, deriving resistance to slope movement through embedment in bearing material below the slide plane. A variety of design methods are used in practice to incorporate piles into limit-equilibrium method slope stability analysis, some of which fail to adequately capture the pile resistance mechanism or correctly identify the critical pile failure mode, leading to false interpretation of factors of safety. Of particular concern is the common practice of assigning the shear strength of the pile material, such as the shear strength of concrete or steel multiplied by the cross-sectional area of the pile, as a resisting force in slope stability analyses. Without performing separate laterally-loaded pile analyses, this approach fails to identify whether shear failure is in fact the controlling pile mechanism; more often than not, analyses show that the pile would actually fail in flexure prior to shear. As a result, the shear strength approach may drastically overestimate the pile contribution to stability, inflating the calculated factor of safety.

11:30 a.m.- 12:30 p.m.  **Software Discussion**

The following providers will analyze the problem using a variety of methods, present the solutions, and engage the audience in a detailed Q&A session:

- Itasca Consulting Group, Inc.
- GREGORY GEOTECHNICAL
- Rocscience, Inc.
- Bentley/Soilvision/Plaxis

12:30 p.m.-12:45 p.m.  **Break**

12:45 p.m.- 2:00 p.m.  **Continuation of Software Discussion with Question and Answer Session**

*Panelists:*

- **Varun Varun, Ph.D.**
  Itasca Consulting Group, Inc.
- **Garry Gregory, Ph.D., P.E., D.GE**
  GREGORY GEOTECHNICAL & OSU
- **Jeff Lam, M.Eng., P.Eng.**
  Rocscience, Inc.
- **Augusto Lucarelli, P.E.**
  Itasca Consulting Group, Inc.
- **Murray Fredlund, Ph.D., P.Eng.**
  SoilVision Systems Ltd.
- **Sina Javankhoshdel, Ph.D., P.Eng.**
  Rocscience, Inc.

*Subject to Change*