

Technical Activities Update

The DFI Committee Project Fund (CPF) has fostered practical research since its inception in 2012. A significant role of DFI Technical Committees is to encourage the use of the CPF to support initiatives that improve the design and execution of geotechnical construction technologies, such as deep foundations, excavation support and ground improvement.

Committees are currently discussing concepts for proposals for 2019 awards, which are due in December. The CPF is aimed at supporting committee projects, so all proposals must be submitted through and endorsed by a committee. Since funded projects must produce a usable deliverable, numerous research documents, reports and articles on current

industry issues have been produced and are available on the 'Awards/Committee Project Fund' page at www.dfi.org. All members are encouraged to share ideas on research topics that could advance the understanding and use of deep foundations.



COMMITTEE CHAIR TANNER BLACKBURN, PH.D., P.E.

Ground Improvement Committee



The Ground Improvement Committee continues to serve as a resource for industry practitioners, owners, engineers, contractors and academics. DFI committee members volunteer their time to improve, promote and grow the geotechnical engineering and geotechnical construction industries. However, DFI members who are not on

technical committees can contribute to this effort as well! One example of this potential contribution is to volunteer to give a presentation on a relevant ground improvement topic. Lyle Simonton of Subsurface Constructors has started a database of potential speakers for ground improvement topics. This database is a resource for DFI members who are planning seminars, workshops, or regional or local seminars. You can volunteer to present by adding yourself — or encouraging others to add themselves — to the database via a web-based form, located on the DFI Ground Improvement Technical Committee webpage under 'Groups' at www.dfi.org.

The committee has supported DFI Committee Project Fund projects, which have resulted in practical publications that advanced the state of the practice. In 2018, Dr. Armin Stuedlein, P.E., Oregon State University, was awarded funding by the DFI Board of Trustees for a two-year research project titled "Seismic Performance of Rigid Inclusions." This project, supported by multiple committees (Ground Improvement, Augered Cast-in-Place and Drilled Displacement Pile, and Seismic and Lateral Loads Technical Committees), will use numerical modeling to investigate the soil-structure response of minimally reinforced rigid elements subjected to kinematic loading and cyclic shear strains.

It is anticipated that Dr. Stuedlein's research effort will provide useful industry guidance for the appropriate use and proper design of rigid inclusions in seismic areas. Because this study aims to produce results that will be immediately transferrable to practice, Dr. Stuedlein requests that DFI members that construct rigid inclusions provide project information (e.g., plans, specifications

and subsurface profiles) for their most common treatment conditions. Send this information directly to Dr. Stuedlein at Armin.Stuedlein@oregonstate.edu or contact him with questions as you develop packages for distribution to the research team.

Lastly, the committee is always seeking ideas for new initiatives and projects, including research projects eligible for DFI Committee Project Funds. Contact me directly to discuss your ideas and proposals at jtblackburn@haywardbaker.com.

COMMITTEE CHAIR DAVID MILLER, P.E.

Soil Mixing Committee

The Soil Mixing Committee has been active in research through the DFI Committee Project Fund. Dr. George Filz, P.E., Virginia Tech University, submitted the final version of his research report on "Influences of Mixture Proportions and Test Conditions on the Strength and Stiffness of Wet Mixed Soil and Cement," which is published and available at www.dfi.org, under 'Publications/ Project Fund Deliverables.' The paper is the result of extensive work by Dr. Filz and his graduate students.

George Onorato and Dr. Giovanni Bonita, GEI Consultants, have been awarded funding through the CPF for research on "The Effect of Curing Stresses on the Mechanical Properties of Soil-Cement Mixed Materials." This study includes project data mining and field data collection to establish correlations for strength and permeability with confining stress. This extensive undertaking will require industry cooperation, and the research team is inviting companies to collaborate on the project. All client information will be kept confidential. For each project, they are seeking general site location, project type, duration, schedule, mixing depth and soil types. It is important to know that as part of the research, the researchers will need all available site geotechnical characterization



data (e.g., grain size, Atterberg, moisture, and SPT or CPT logs) and typical quality control data (i.e., wet samples testing) for research comparison. Also, they would welcome QC or QA teams to perform field consolidation tests on wet grab samples using GEI's research consolidometer. Instructions will be provided. They are hoping participating companies can furnish unconfined compressive strength testing. If not, the research team will arrange to ship the specimens to a collaborating laboratory. If your company can help in the endeavor, contact George at gonorato@geiconsultants.com.

The committee discussed creation of a white paper on recommended QA/QC testing parameters and evaluation at the International Foundations Congress and Equipment Expo (IFCEE) in March. We have received some positive feedback and suggestions, and at our next meeting, we will be looking for input on which tests should be considered, appropriate sampling techniques and follow-up testing.

After the IFCEE meeting, a technical seminar on Deep Mixing and Sand Compaction Piles was held on Tuesday, April 24, at Rutgers University. Dr. George Filz and Dr. Masaki Kitazume delivered keynote lectures, which were well received.

The next Soil Mixing Committee meeting is being held during the 43rd DFI Annual Conference on Deep Foundations in Anaheim, Calif., October 24-27, 2018. An email reminder confirming the meeting date, time and location will be sent to the committee members. See the meeting schedule on page 27.

New Webinars to Watch on DFI's YouTube Channel

Visit DFI's YouTube Channel to watch three presentations recorded as live webinars at SuperPile '18. You can access the YouTube Channel from the home page at www.dfi.org.

Florida Department of Transportation TIP In-Situ Testing

A review of research conducted to extend the use of thermal integrity methods to auger-cast piles and to further investigate techniques used for thermal testing.

The Federation of Piling Specialists - UK Working Platform Initiative and Calculation of Rig Bearing Pressure

Reviews the development and implementation of the UK working platform initiative and illustrates the use of the FPS Rig Track Bearing Pressure Calculation Tool (a spreadsheet for calculating rig track bearing pressures).

The FEM Group – Female Engineers of Moretrench

Discusses the origin, development and mission of the Female Engineers of Moretrench (FEM) group.



DFI Technical Committee Chairs

DFI-ADSC Anchored Earth Retention

Ed Laczynski, P.E.
G.A.& F.C. Wagman

Jeff Segar, P.E.
Braun Intertec

Augered Cast-in-Place Pile

Morgan NeSmith, P.E.
Berkel and Company Contractors

BIM/Digitalisation (DFI Europe)

Jason Boddy
Arup

Codes and Standards

Daniel Stevenson, P.E.
Berkel and Company Contractors

Deep Foundations for Landslides/Slope Stabilization

Chris Ramsey, P.E.
Amec Foster Wheeler
Environmental & Infrastructure

Drilled Shaft

Paul Axtell, P.E., D.GE
Dan Brown and Associates

Driven Pile

Ben Vance, P.E.
Strata

Electric Power Systems Foundations

Peter Kandaris, P.E.
DiGioia Gray & Associates

Steve Davidow, P.E., S.E.
Quanta Subsurface

Energy Foundations

Tony Amis
GI Energy
Guney Olgun, Ph.D.
Virginia Tech

Ground Improvement

Tanner Blackburn, Ph.D., P.E.
Hayward Baker

Helical Piles and Tiebacks

Gary Seider, P.E.
Hubbell Power Systems/Chance

Manufacturers, Suppliers and Service Providers

Mark Bryant, EIT
MacLean Power Systems Civil Division

Marine Foundations

Rick Ellman, P.E.
Mueser Rutledge Consulting Engineers

DFI-ADSC Micropile

Steve Davidow, P.E., S.E.
Quanta Subsurface

Terence P. Holman, Ph.D., P.E.
Turner Construction Company

Project Information Management Systems

Massimo Mucci
Bencor Global

Seepage Control

Michael Kynett, P.E.
U.S. Army Corps of Engineers

Seismic and Lateral Loads

Kwabena Ofori-Awuah, P.E.
KCI Technologies

Slurry Wall

Giovanni Bonita, Ph.D., P.E., P.G.
GEI Consultants

Soil Mixing

David Miller, P.E.
ADM Consulting

Subsurface Characterization for Deep Foundations

Victor Donald, P.E.
Terracon

Sustainability

Currently Unchaired

Testing and Evaluation

Gerald Verbeek
Allnamics Pile Testing Experts

Tunneling and Underground Systems

James Morrison, P.E.
ILF-USA

David R. Klug
David R. Klug and Associates

Women in Deep Foundations

Maysill Pascal, P.E.
USW, a Menard Group USA Company