

DFI Technical Committees and Working Groups – Always Something New Happening



DFI's technical committees held their annual committee meetings at the DFI 43rd Annual Conference in Anaheim in October. Two new DFI Committees (Tunneling and Underground Systems Committee and Project Information Management Systems Committee) held their first meetings, and two potential new committees (International Grouting and Risk) also held exploratory meetings. Industry-wide working groups on working platforms and risk also held

meetings. Hundreds of DFI committee and working group members gathered to discuss the many and varied projects aimed at furthering the advancement and understanding of deep foundations. Successes were praised, and new challenges were proposed to meet the needs of the industry. Please see the bulleted lists below of committee activities and projects, and join a technical committee to become more involved.

DFI-ADSC Anchored Earth Retention Committee

Co-Chairs: Ed Laczynski, P.E., Wagman, rlaczynski@wagman.com
 Jeff Segar, P.E., S.E., Braun Intertec, jsegar@braunintertec.com
Trustee Liaison: Tom Richards, P.E., D.GE, Nicholson Construction, trichards@nicholsonconstruction.com

- Established a joint committee with ADSC's Anchored Earth Retention committee.
- Co-organizing S3: Slope-Support-Stabilization Seminar and Software Symposium, August 6-8, 2019, Minneapolis Minn.
- Reviewing AASHTO soil nail specification.
- Finalizing epoxy coating performance report.
- Developing temporary soil nailing guidance.
- Reviewing hollow bar anchor specification for FHWA.
- Conducting a review of geotechnical information that is typically required for anchored systems and how additional information/advanced methods could improve uncertainty.
- Conducting a research study on the impacts of metal creep in large diameter tendons.

Augered Cast-in-Place Pile and Drilled Displacement Pile Committee

Chair: Jonathan Huff, P.E., Richard Goettle, jhuff@goettle.com
Trustee Liaison: Matthew Meyer, P.E., Langan Engineering and Environmental Services, mmeyer@langan.com
Incoming Trustee Liaison (2019): Morgan NeSmith, P.E., Berkel and Company Contractors, morgan@berkelandcompany.com

- Organized ACIP and Drilled Displacement (DD) Pile seminar in April 2018 in Baltimore, Md.
- Completed report for 2016 research project in conjunction with Florida DOT regarding the installation, monitoring, testing and performance of ACIP piles for inclusion in Florida DOT specifications. Dr. Gray Mullins from the University of South Florida conducted additional studies on thermal integrity profiling (TIP) in ACIP Piles. Free download from DFI website.



Ed Laczynski



Jeff Segar



Tom Richards



Jonathan Huff



Matthew Meyer



Morgan NeSmith

- Reviewed and commented on ACIP Pile specifications for NAVFAC and Florida DOT (on going).
- Developing proposed specification for ACIP piles for AASHTO.
- Conducting a research project in conjunction with Drs. Antonio Marinucci and Anne Lemnitzer at UC Irvine regarding the lateral forces generated during DD pile installation (i.e., effects of installation on existing foundations, tunnels, retaining walls, utilities, etc.).
- Collecting TIP readings and manual measurements of pile circumference for 2018 research. Committee members are installing TIP wires in ACIP test piles and recording and submitting readings and pile installation records. Piles are then excavated and/or extracted for manual measurement of pile circumference. Goal is to build a database to help refine interpretation of TIP results.

Codes and Standards Committee

Chair: Daniel Stevenson, P.E., Berkel and Company Contractors, dstevenson@berkelandcompany.com

Trustee Liaison: Lori Simpson, P.E., G.E., Langan Engineering and Environmental Services, lsimpson@langan.com

- Continued efforts to rewrite Chapter 18 on *Foundations of the International Building Code* (2018 version) through the GeoCoalition Code Council (including active members from ASCE, Geo-Institute GBA, ADSC and strong involvement by PDCA on Chapter 18.10).
- Plan to submit new Code Change Proposals for the 2021 Code Cycle, due January 2019. Several committee members to attend the public code hearings May 2019 to speak in favor of the changes.
- Participating in DFI's effort to update the DFI Glossary/Lexicon.
- Performed comprehensive review of *ASTM D1143*, and submitted proposed changes of *ASTM D1143* to ASTM Subcommittee D18.11 for consideration.

Deep Foundations for Landslides and Slope Stabilization

Chair: Chris Ramsey, P.E., Wood Environment & Infrastructure Solutions, Inc., chris.ramsey@amecfw.com

Trustee Liaison: Erik Loehr, Ph.D., P.E., University of Missouri Columbia, eloehr@missouri.edu

- Co-organizing S3: Slope-Support-Stabilization Seminar and Software Symposium, August 6-8, 2019, Minneapolis Minn.
- Conducting a study to compare limit equilibrium and advanced numerical methods for slopes reinforced with stabilizing piles.
- Completed literature study and modeling to compare strain wedge and GROUP procedures to define simplified analytical steps for A-Wall systems. Report is available for free download from DFI website.
- Preparing a *DFI Journal* issue with papers specific to Deep Foundations for Landslide/Slope Stabilization topics

DFI Europe Digitalisation Committee

Chair: Jason Boddy C.Eng., MICE, Arup, jason.boddy@arup.com

Trustee Liaison: Frank Haehnig, BAUER Spezialtiefbau, frank.haehnig@bauer.de

- Promoting digitalisation and information sharing in the foundation industry.
- Undertook BIM and Digital survey of DFI Europe's membership to identify trends and needs.
- Co-chaired Digital Session and presented committee update at DFI/EFFC International Conference on Deep Foundations and Ground Improvement in Rome in June 2018.
- Liaising with DFI PIMS Committee and collaborating with other industry bodies – FPS, EFFC, AGS.
- Planning digital and BIM guide for clients and practitioners.



Daniel Stevenson



Lori Simpson



Chris Ramsey



Erik Loehr



Jason Boddy



Frank Haehnig



Paul Axtell



James Johnson

Drilled Shaft Committee

Chair: Paul Axtell, P.E., D.GE, Dan Brown and Associates, paxtell@dba.world

Trustee Liaison: James Johnson, Condon Johnson and Associates, jjohnson@condon-johnson.com

- Conducted a collaborative study among DFI, EFFC and ADSC to develop a guide to improve tremie concreting and testing practices for deep foundations (drilled shafts and diaphragm/slurry walls). The 2nd edition of *EFFC-DFI Best Practice Guide to Tremie Concrete for Deep Foundations* (2018) is available for free download from DFI website.
- Collaborating on a co-funded study with the DFI Seismic and Lateral Loads Committee, through the DFI Committee Project Fund, and ADSC to evaluate the shear demand in drilled shaft rock sockets. Construction and testing are ongoing with results expected to be available in early 2019.
- Collaborating on a study through the DFI Committee Project Fund to produce next generation p-y curves. Project is ongoing with results expected to be available at SuperPile '19.
- Provided an industry review on the proposed revisions and updates to the *FHWA Drilled Shafts: Construction Procedures and LRFD Design Methods (GEC-10)*, scheduled for distribution in the fall of 2018.
- Conducted a productive committee meeting at SuperPile '18 in New York, with more than 25 attendees. Multiple active and potential committee projects were discussed.

Driven Pile Committee

Chair: Ben Vance, P.E., STRATA, bvance@stratageotech.com

Trustee Liaison: Matthew Janes, P.Eng., MBA, Isherwood Associates, matthew@isherwood.to

- Exploring possibility of presenting a driven pile webinar in conjunction with National Highway Institute.
- Investigating ways to utilize the structural capacity of steel piles more efficiently in the design process.

Electric Power Systems Foundations Committee

Co-Chairs: Peter Kandariss, P.E., DiGioia Gray & Associates, pkandariss@digioiagrays.com and Steve Davidow, P.E., S.E., P.Eng., Quanta Subsurface, sdavidow@quantasubsurface.com

Trustee Liaison: Howard Perko, Ph.D., P.E., Magnum Piering, hperko@magnumpiering.com

- Held a well-attended, committee-sponsored social event at the IEEE PES Transmission & Distribution Conference and Expo in Denver in April 2018. Similar social events are being planned at other electric industry and DFI events later this year and in 2019 to foster committee outreach efforts.
- Completed a state-of-the-practice white paper on transmission line foundation engineering, design and construction. Detailed review and editing were discussed during the June SuperPile meeting and are in progress. The goal is to submit the final document to DFI by the March 2019 ASCE GeoCongress Conference.
- Sponsored a panel discussion at the DFI Annual Conference in Anaheim to discuss foundation design shortcomings in the electric power industry.
- Presented the third in a series of papers on the industry state-of-the-practice white paper at the SEI Electric Transmission and Substation Conference in Atlanta, Ga., on November 4-8, 2018.
- Holding committee meetings at the DFI Annual Conference, the March 2019 GeoCongress in Philadelphia and SuperPile '19 in Seattle in May 2019. The committee has about two dozen active members, with a number of other utility engineers, contractors and consultants providing input. Meetings are accessible via teleconference.

Energy Foundations Committee

Co-Chairs: Tony Amis, GI Energy, tamis@gienergyus.com and Guney Olgun, Ph.D., Virginia Tech, olgun@vt.edu

Trustee Liaison: Gerry Houlahan, P.E., Moffatt & Nichol, ghoulahan@moffattnichol.com

- Discussing ways to raise the profile of energy foundations in the U.S.
- Encouraging other DFI committees to consider energy foundation projects and dissemination of design and construction information.
- Compiling case histories on the use of energy foundations for infrastructure projects.



Ben Vance



Matthew Janes



Peter Kandariss



Steve Davidow



Howard Perko



Tony Amis



Guney Olgun

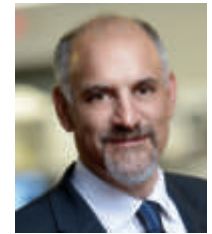


Gerry Houlahan



Tanner Blackburn

- Organized a one-day seminar at University of Illinois at Chicago (UIC) in September 2018 on energy foundations design, construction and good working practice. Considering annual road show at different universities around the U.S.
- Supporting the implementation of the Ground Source Heat Pump Association's guidance document on design and construction of piles used as geothermal heat transfer elements.



Martin G. Taube

Ground Improvement Committee

Chair: Tanner Blackburn, Ph.D., P.E., Hayward Baker, jtblackburn@haywardbaker.com

Trustee Liaison: Martin G. Taube, P.E., P.G., Menard USA, mtaube@menardusa.com

- Provide industry support for the DFI Committee Project Fund research project titled "Seismic Performance of Rigid Inclusion," being conducted by Dr. Armin Stuedlein at Oregon State University. This project is investigating the soil-structure response of rigid elements subjected to seismic kinematic loading.
- Continue to populate and maintain a ground improvement presentation and speaker database for DFI members offering local and regional seminars and workshops.

Helical Piles and Tiebacks Committee

Chair: Gary Seider, P.E., Hubbell Power Systems/Chance, glseider@hubbell.com

Trustee Liaison: Howard Perko, Ph.D., P.E., Magnum Piering, hperko@magnumpiering.com

- Developing standard specifications for helical soil nails.
- Developing a committee-endorsed engineering instruction/training program for helical designers.
- Organizing annual topical seminars.
- Developing a helical pile design guide.
- Planning the next phase of the *Helical Seismic Research Study* including full-scale field testing (Researcher: Prof. Amy Cerato, University of Oklahoma).
- Working on two draft ASTM Standards – one for helical pile testing and another for installation/testing.
- Continue working with ICC-ES staff and Helical Ad Hoc Committee on revisions to *Helical Pile Acceptance Criteria AC358*.
- Conducting *Helical Seismic Liquefaction Research Study* including scale mode shake table testing (Researcher: Prof. Ramin Motamed, University of Nevada – Reno), through DFI Committee Project Fund.
- Planning a DFI and Helical Pile World Educational Tradeshow on helical piles, tiebacks and anchors in Cincinnati, Ohio, June 4-5, 2019.
- Conducting a research study on Development of *Design Recommendations for Helical Pile Anchorages Subjected to Cyclic Lateral Loads* including scale models, simulations and analysis (Researcher: Prof. Serhan Guner, PEng, University of Toledo), through DFI Committee Project Fund.

International Society for Micropiles

Chair: Dan MacLean, P.Eng., Keller Foundations, dmaclean@kellercanada.com

- Updated and approved by-laws for the organization.
- Continuing work on membership recruitment programs.
- Planning well under way for the 14th International Workshop on Micropiles to be held in Broadbeach, Australia, August 21-23, 2019.

Manufacturers, Suppliers and Service Providers Committee

Chair: Mark Bryant, EIT, MacLean Power Systems Civil Division, mbryant@macleanpower.com

Trustee Liaison: Mike Kelley, Dywidag-Systems International, mike.kelley@dsiamerica.com

- Continuing to develop “expo” sessions for commercial presentations at Annual Conference.
- Developing quarterly technical showcase emails highlighting MSSP members and services.



Gary Seider



Howard Perko



Dan MacLean



Mark Bryant



Mike Kelley



Rick Ellman



Dan Brown



Steve Davidow



Terence Holman

Marine Foundations Committee

Chair: Rick Ellman, P.E., Mueser Rutledge Consulting Engineers, rellman@mrce.com

Trustee Liaison: Dan Brown, Ph.D., P.E., D.GE, Dan Brown and Associates, dbrown@dba.world



John Wolosick

- Presented the 2018 Ben C. Gerwick Award for Innovation in the Design and Construction of Marine Foundations to Akio Kitamura, founder and president of Giken. The award was presented at IFCEE 2018 on Thursday, March 8, in Orlando, Fla. Kitamura made a presentation on the Silent Piler technology.
- Held committee meeting at SuperPile '18 in New York City.
- Submitted committee project proposals for DFI funded research.
- Chair attended the First International Conference on Press-In Engineering 2018, Kochi, Japan, in September.
- Exploring applications for marine structures.

DFI-ADSC Micropile Committee

Co-Chairs: Steve Davidow, P.E., S.E., Quanta Subsurface, sdavidow@quantasubsurface.com and Terence P. Holman, Ph.D., P.E., Turner Construction Company, tholman@tcco.com

Trustee Liaison: John Wolosick, P.E., D.GE, Hayward Baker, jrwolesick@haywardbaker.com

Incoming Trustee Liaison (2019): Dan MacLean, P.Eng., Keller Foundations, dmaclean@kellercanada.com

- Continuing work on micropile inspection guide.

- Participating in working platform discussion regarding small diameter drilling.
- Developing bridging document for 2005 FHWA *Micropile Design and Construction* reference manual.
- Assisting with planning for 2019 ISM Workshop in Australia.
- Completed database of literature for reticulated micropile projects and research (Dr. James Mason, P.E.), through DFI Committee Project Fund.

Project Information Management Systems Committee

Chair: Massimo Mucci, Bencor Global, massimo.mucci@bencorinc.com

Trustee Liaison: Gianfranco Di Cicco, GDConsulting, gdcons2015@gmail.com

- Held membership drives and meetings at the DFI Annual and IFSE conferences.
- Hosted a technical session and “town hall” open forum at the DFI-EFFC International Conference in Rome June 2018.
- Published a non-technical white paper titled, “Project Information Management Systems in the Deep Foundations Industry,” to introduce PIMS concepts. Available for free download from DFI website.
- Published an article in Sept/Oct 2018 issue of *Deep Foundations* on PIMS processes for the deep foundations industry.

Seepage Control Committee

Chair: Michael Kynett, P.E., MBK Engineers, kynett@mbkengineers.com

Trustee Liaison: David Paul, P.E., U.S. Army Corps of Engineers, David.B.Paul@usace.army.mil

- Reviewed final draft of USACE *Engineering Manual on Seepage Control Cutoffs for Dams and Levees*.
- Prepared and reviewed draft summary notes on the USACE Sacramento District cutoff wall workshop.
- Participating in update of ICOLD Bulletin 51, *Filling Materials for Watertight Cutoff Walls 1985*.
- Exploring opportunities to study long-term performance and aging of cutoff walls.
- Working with the PIMS Committee on development of guidelines.
- Assisted DFI in exploring establishing of a Grouting Committee at the 2018 Annual Conference in Anaheim.

Seismic and Lateral Loads Committee

Chair: Kwabena Ofori-Awuah, P.E., ENV SP, KCI Technologies, kwabena.ofori-awuah@kci.com

Trustee Liaison: Anne Lemnitzer, Ph.D. P.E., University of California Irvine, alemnitz@uci.edu

- Developed *Design Guidelines for Bridge Pile Foundations Subjected to Liquefaction-Induced Lateral Spreading – Ground Motions* (Researcher: Prof. Arash Khosravifar, University of Portland) through the DFI Committee Project Fund. Available



Massimo Mucci



Gianfranco Di Cicco



Michael Kynett



David Paul



Kwabena Ofori-Awuah



Anne Lemnitzer



Giovanni Bonita



Stefano Valagussa

for free download from DFI website.

- Researched the Minimum Required Length for Geotechnical Lateral Stability of Rock-Socketed Pile Shafts with goal of project to develop practical solutions to resolve the issue of “un-zipping” of p-y springs in strong rock.
- Developing a white paper on Practical Aspects of Pile Head Fixity.
- Developing a white paper on P-Y Curves.
- Preparing to roll out the Seismic and Lateral Loads Design Guide Workshops in 2019, funded through the DFI Committee Project Fund
- Revising the *Seismic and Lateral Load Design Guide*.

Slurry Wall Committee

Chair: Giovanni Bonita, Ph.D., P.E., P.G., GEI Consultants, gbonita@geiconsultants.com

Trustee Liaison: Stefano Valagussa, TREVIICOS Corporation, svalagussa@treviicos.com

- Finalizing the *Guide to Selection of Cutoff Methods*.
- Developing PowerPoint presentations on structural slurry wall and cutoff wall construction.
- Published consensus guidelines for design and detailing of reinforced concrete diaphragm walls used as permanent basement walls in regions of high seismicity, including practical and economical design recommendations and proposals for influencing relevant building code provisions. Available for download from DFI website.

- Working to connect technical committee members with technical members from DFI's new Tunneling and Underground Systems Committee and tunneling societies (NATC, RETC).
- Discussing specification for slurries for deep foundations.
- Discussing participation in Working Platforms Industry-Wide Working Group.

Soil Mixing Committee

Chair: David Miller, P.E., ADM Consulting, amiller527@aol.com

Trustee Liaison: Matthew Meyer, P.E., Langan Engineering and Environmental Services, mmeyer@langan.com

- Published research report, "Influences of Mixture Proportions and Test Conditions on the Strength and Stiffness of Wet-Mixed Soil and Cement," by Roberto Nevárez-Garibaldi, Dale Miller, and George Filz, Virginia Tech. Funded through DFI Committee Project Fund.
- Conducting research study on the effect of curing stresses on the mechanical properties of soil-cement mixed materials (George Onorato and Dr. Giovanni Bonita of GEI Consultants). Funded through DFI Committee Project Fund.
- Creating a white paper on recommended QA/QC testing parameters and evaluation.
- Helping plan 2020 Deep Mixing Conference in Gdansk, Poland.
- Supporting S3: Slope-Support-Stabilization Seminar and Software Symposium, August 6-8, 2019, Minneapolis Minn.

Subsurface Characterization for Deep Foundations Committee

Chair: Victor Donald, P.E., Terracon, vrdonald@terracon.com

Trustee Liaison: Conrad Felice, Ph.D., P.E., C.W. Felice, conrad.felice@cwfelicellc.com

- Planning activities to raise the level of awareness on the need for and economic benefits of accurate and effective subsurface characterization information.
- Promoting active liaisons with AASHTO, ACI, ADSC, ASTM, FHWA, GeoProfessional Business Association (formerly ASFE), Geo-Institute, TRB and USACE.
- Developing liaison with the DFI of India task force on geotechnical investigation.
- Conducted industry survey of awareness and use of Geotechnical Baseline Report (278 responses).
- Taking a leadership role by administering Geo-Industry Risk Working Group comprising DFT, ADSC, PDCA, GI and GBA.



David Miller



Matthew Meyer



Victor Donald



Conrad Felice



Gerald Verbeek



Erik Loehr

Sustainability Committee

Trustee Liaison: Gianfranco Di Cicco, GDConsulting, gdcons2015@gmail.com

- This committee is charged with researching specifications and regulations related to sustainable practices.
- Seeking a chair for this committee.

Testing and Evaluation Committee

Chair: Gerald Verbeek, Allnamics Pile Testing Experts, verbeek@allnamics-usa.com

Trustee Liaison: Erik Loehr, Ph.D., P.E., University of Missouri Columbia, eloehr@missouri.edu

- Conducting monthly meetings.
- Continuing to prepare series of videos on foundation testing methods and data analysis for nonpractitioners. After the releases of the first video on static load testing, work has started on second video on high strain dynamic testing.
- Preparing an overview of suggested use of instrumentation for various applications. The first module (urban excavations) is nearly complete, and work has started on the second module (slope stability).
- Initiated the ITS Money (Increased Testing Saves Money) program with a first quarterly webinar tentatively scheduled for November 2018.
- Reviewing terminology associated with crosshole sonic logging with publication of DFI consensus white paper.
- Initiated a review of proper calibration methods for SPT equipment to ensure more representative N-values.
- Ongoing liaison with ASTM, ACI, AASHTO, CGS, TRB, Geo-Institute and PDCA.

Tunneling and Underground Systems Committee

Co-Chairs: David Klug, David R. Klug & Associates, dklug@drklug.com

James Morrison, P.E., COWI North America, JSMN@cowi.com

Trustee Liaison: Conrad Felice, Ph.D., P.E., C.W. Felice, conrad.felice@cwfelicellc.com

- Committee objectives: to identify and facilitate the advancement of new methods and technologies for design, construction, inspection, maintenance, and operation of tunnels and underground systems.
- Collaborate with owners, design engineers, academic community, equipment suppliers and major tunnel contractors.
- Address tunnel industry technical requirements for technical studies and / or research programs.
- Promote the education and training of students at the graduate and undergraduate levels, fostering and developing emerging industry leaders in this field of practice.
- Encourage participation in the various technical task groups globally and in North America.
- Advance tunneling technologies and practices in the industry.

Women in Deep Foundations Committee

Chair: Maysill Pascal, P.E., USW, a Menard Group USA Company, mpascal@menardgroupusa.com

Trustee Liaison: Michael Wysockey, Ph.D., P.E., Thatcher Engineering Corporation, mwysockey@thatcherfoundations.com

Advisor: Mary Ellen Bruce Large, P.E., D.GE, DFI Director of Technical Activities, melarge@dfi.org

- Continue to hold committee calls on the third Thursday of month at 11:00 a.m. Eastern time.
- Organized Joint Society Women's Professional Development Skills Workshop at IFCEE 2018.
- Organized dinner meeting with ASCE Pittsburgh Section Mentoring Networking event.
- Organized annual WiDF networking reception at SuperPile '18.
- Organized fourth annual networking and reception at DFI 43rd Annual Conference in Anaheim.
- Held one-hour golf clinic at the 2018 DFI Educational Trust PA Golf Outing in July (Pittsburgh).
- Continuing to sell beaded lanyards as a fundraiser for the Women in Deep Foundations fund.

Geo-Industry Risk Working Group

Chair: Victor Donald, P.E., Terracon, vrdonald@terracon.com

- Created an industry-wide working group as a clearinghouse for risk related information in the industry; recognizing that all GeoCoalition associations have risk-related activities and resources for the industry (guidance documents, seminars, white papers, etc.).
- Developed group webpage (DFI website on Alliances page).



David Klug



James Morrison



Conrad Felice



Maysill Pascal



Michael Wysockey



Victor Donald



Paul Gildea



Terence P. Holman



Matthew Meyer

- Defined group purposes: to increase awareness of associations' activities, reduce duplication of efforts, facilitate collaboration, and address risk practices that will improve the industry.
- Identifying and cataloging risk resources and opportunities for publicizing widely to industry.

Working Platforms Industry-Wide Working Group

Co-Chairs: Paul Gildea, P.E., Langan Engineering and Environmental Services, pgildea@langan.com and Terence P. Holman, Ph.D., P.E., Turner Construction Company, tholman@tcco.com

DFI Trustee Liaison: Matthew Meyer, P.E., Langan Engineering and Environmental Services, mmeyer@langan.com

- Continuing review of international practices for design, construction, maintenance and legal issues of working platforms for heavy tracked plant.
- UK Perspective Working Platform presentation given by Jim de Waele, representing the Federation of Piling Specialists in the UK combined with Working Platform Workshop held at DFI-EFFC International conference in Rome (June 2018).
- Presented paper on "Key Legal Considerations for Safe Working Platforms" (July 2018), during ADSC Summer meeting in Colorado.
- Preparing consensus deep foundation industry "Position Paper on Working Platforms for Foundation Construction and Related Equipment in the United States of America."
- Conducting FPS Rig Bearing Pressure Tools webinars (taught by Dr. Derek Egan, Remedy Geotechnics).