October 2019 DVGI Dinner Meeting

SPEAKER:
Martin McDermott, PG, Moretrench, Rockaway, NJ & Jeffrey Goodwin, PE, Foundation Test Group, Inc., Owings Mills, MD

TOPIC:
Philly Load Test Delivers Knockout Punch

DATE:
Tuesday, October 15, 2019

LOCATION:
Valley Forge Casino, Parkview Ballroom, 1160 First Ave., King of Prussia, PA

TIME:
5:30 PM Social Hour, 6:30 PM Dinner and 7:15 PM Presentation

***Registration and Payment Online at www.dvgi.org***

This presentation, entitled “Philly Load Test Delivers Knockout Punch,” will show the drilled shaft load test design and execution results that more than doubled the allowable drilled shaft end bearing value to 200 ksf. in the Wissahickon Formation. Historically, the differentially weathered character of this rock mass results in the assignment of low allowable end bearing values of 50 to 60 ksf. Experience has shown us that most load tests on drilled shafts are only a “proof” test confirming conservative design values. For a load test to maximize geotechnical success, “failure” is the best option. The irony in that truth is clearly quantified in the results of The Philly Knockout Punch load test.

ABOUT THE SPEAKERS:

Martin McDermott, PG, received his Bachelor’s degree in Geology from LaSalle University and Master’s degree in Engineering Geology from Drexel University. He spent the first 13 years of his career as a geotechnical consultant, the majority with Woodward Clyde. Over the past 23 years, Martin has worked as a deep foundation contractor predominantly with the Keller companies of McKinney Drilling and Moretrench.

Jeffrey Goodwin, PE, Chief Engineer of Foundation Test Group, was contracted by Moretrench to be the geotechnical and structural design engineer for the load test and final foundation redesign recommendations. Jeff will be a co-presenter with Martin.

Langan is also recognized as the geotechnical design engineer for the owner and a valuable contributor in the success of the redesign process.

We anticipate 1 PDH will be awarded for attendance.
Compressibility, In-Place Density, and Shear Strength of UL-FGA

Michael McGuire, Ph.D., P.E., Dept. of Civil & Env. Eng., Lafayette College, Easton, PA

Ultra-lightweight foamed glass aggregate (UL-FGA) is a closed-cell material made from 100% recycled glass using a dry foaming process with a silicon carbide foaming agent. UL-FGA has a bulk dry unit weight of approximately 15 pcf and a typical compacted dry unit weight of 20 pcf. The high intra-particle porosity of UL-FGA and high particle surface roughness contribute to a material behavior that is distinct from conventional fill materials. Dr. Michael McGuire (Lafayette College) and Dr. Daniel VandenBerge (Tennessee Tech) are currently conducting research with the support of AeroAggregates, LLC, to improve the understanding of the compressibility, in-place density, and shear strength of UL-FGA. This presentation focused on two works-in-progress: (1) field-scale compaction experiments using terrestrial LiDAR to observe changes in fill volume in response to compactor passes, and (2) incremental one-dimensional compression tests using 12-inch diameter specimens with pre- and post-test particle size analysis. Preliminary findings from these experiments were shared and discussed during the presentation as well as plans for additional testing.

ABOUT THE SPEAKER:

Dr. Mike McGuire is an Assistant Professor in the Department of Civil and Environmental Engineering at Lafayette College. He teaches courses in geotechnical engineering covering introductory topics, foundation design, wall design, slope stability, and ground improvement. He also teaches courses on sustainability and engineering design. His research interests include column-supported embankments, shear strength characterization, and remote sensing. Mike is originally from Media, Pennsylvania; receiving his BS degree in civil engineering from the University of Pennsylvania, and his MS and Ph.D. degrees from Virginia Tech. Mike is a registered Professional Engineer in Virginia and is active in service to the Geo-Institute through participation in the Geosynthetics Technical Committee and Student Participation Committee.
ANNOUNCEMENTS

Upcoming Dates for 2019 Dinner Meetings and events are as follows:

- **October 15 Dinner Meeting**: Martin McDermott, Moretrench, and Jeffrey Goodwin, Foundation Test Group: Philly Loadtest Delivers Knockout Punch
- **October 17 GeoForum 2019**: Geosynthetics short-course in King of Prussia, PA, see announcement for details.
- **November 19 Dinner Meeting**: Brandon Buschmeier, Menard: Route 295 Ground Improvement

_One PDH will be awarded for most dinner meetings that you attend._

_If you are interested in presenting at one of our monthly meetings or have ideas about potential speakers, please get in touch with a DVGI board member._

---

**DVGI PROJECT OF THE YEAR**

Inaugural DVGI Geotechnical Project of the Year Competition

Project of the Year to be selected in May 2020

Selected projects to be profiled in Newsletters

Stay tuned for more info on how to submit your project!
ANNOUNCEMENTS

GeoForum
October 17 – 18, 2019 - Philadelphia, PA

Opening the Tool Box, Beyond the Traditional

HUESKER and DVGI are delighted to invite you to join us for GeoForum. GeoForum is a highly technical geosynthetic short-course, where you will hear from subject-matter experts about case studies of high profile projects which utilized geosynthetics, as well as cutting edge applications for geosynthetics. In addition to the talks, during the first day, we will present a series of short hands-on conceptual demonstrations. Attendance on the second day is required but is highly recommended as we will be visiting the Geosynthetic Institute.

This year marks the third occurrence of this HUESKER organized event, and for the first time, GeoForum is taking place away from our headquarters in Charlotte, NC. In coming years we will take GeoForum around the country, and likely will not be back to the Philadelphia region again soon, so do not miss your opportunity to attend GeoForum this October.

Confirmed Presenters:

Dr. Robert Koerner
Geosynthetic Institute

Dr. Jorge Zornberg
The University of Texas at Austin

John Volk, PE
AECOM

Dr. Oliver Detert
HUESKER Synthetic GmbH

Dr. Danny Reible
Texas Tech University

Agenda:

October 17th  8:30 am - 5:00 pm
Main Event Day

October 18th  9:00 am – 11:00 am
Tour of Geosynthetic Institute in Folsom, PA

Venue:

Hyatt House of King of Prussia
240 Mall Blvd., King of Prussia, PA

Questions? HUESKER@geoforum.us

Register at GeoForum.us
Registration Cost is $90
7 PDHs will be awarded to participants

**Register Online at dvgi.org**
ANNOUNCEMENTS

2019-2020 Board of Directors

Chair
Russ Preuss, P.E.
(rpreuss@gfnet.com)

Past Chair
Archie Filshill, Ph.D.
(archie@aeroaggregates.com)

Vice-Chair
Theresa Loux, Ph.D., P.E.
(tloux@aeroaggregates.com)

Treasurer
James M. Beideman, P.E.
(jbeideman@kleinfelder.com)

Secretary
Eric Backlund, P.E.
(ebacklund@kleinfelder.com)

Newsletter Director
Jeremy Brown, P.E.
(jbrown@schnabel-eng.com)

At-Large Directors
Jerry (Tse-Wei) Chen
(Jerry.Chen@wsp.com)

Conrad Cho, P.E.
(ccho@langan.com)

Web Advisor
Robert Crawford, P.E.
(bobc@jjaconstruction.com)

Academic Liaison
Joseph Coe, Ph.D.
(joseph.coe@temple.edu)

Board Advisors
William K. Petersen, P.E.
(bpetersen@rimkus.com)

Craig Calabria, Ph.D., P.E.
(crealabria@msn.com)

Robert M. Sabanas, P.E.
(bsabanas@gmail.com)

ASCE Liaison
James A. McKelvey III, P.E.
(jaym@earthengineering.com)

Top Row (L—R): J. McKelvey, R. Crawford, R. Preuss, E. Backlund, R. Sabanas, C. Calabria,
ANNOUNCEMENTS

Upcoming GSI Webinars for 2019
(1.5 PDH each / upon completion of exam)

11:30 AM—1:00 PM (Eastern Time)

Topics, Dates and Registration at www.geosynthetic-institute.org/webinar.htm

Cost: GSI Members $200; Nonmembers $250

<table>
<thead>
<tr>
<th>October 9</th>
<th>W-15</th>
<th>In-Situ Stabilization of Soil Slopes Using Nailed (or Anchored) Geosynthetics</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 23</td>
<td>W-27</td>
<td>Stability Design of Landfill Cover Soils</td>
</tr>
<tr>
<td>November 13</td>
<td>W-24</td>
<td>Disposal of Coal Combustion Residuals (CCRs)</td>
</tr>
<tr>
<td>November 27</td>
<td>W-25</td>
<td>Soil Consolidation using Wick Drains, aka PVDs</td>
</tr>
<tr>
<td>December 11</td>
<td>W-22</td>
<td>Geosynthetic Reinforced MSE Walls: Overview, Failures and Items for Improvement</td>
</tr>
</tbody>
</table>

HAVE DVGI PUBLISH YOUR ARTICLE, ADVERTISEMENT, OR JOB POSTING

- Do you have an interesting article on a project or individual in your organization that you would like to have published in the DVGI newsletter?
- Would you like to get the word out about a job opening, new venture, etc. to our membership via the newsletter?

Please submit your articles or news items for consideration in the next edition of the newsletter or get in touch about our reasonably priced advertising by contacting Theresa Loux (tloux@aeroaggregates.com).

DVGI Merchandise Available for Purchase

Coffee mugs ($8) and lapel pins with the DVGI logo ($5) are available for purchase. See Russ Preuss if you are interested in purchasing either of these items.

ASCE/G-I Members:
Read past and present issues of Geo-Strata magazine online at www.asce.org
Conrad Cho, P.E.

Langan

Conrad Cho is a project manager at Langan. He is DVGI's newest board member, starting this year. He received a bachelor's in civil engineering from The Cooper Union and a master's in geotechnical engineering from Virginia Tech. Conrad started out in Langan's NYC office and later transferred to Philadelphia where he has been for the past 7 years. He currently resides in Narberth, PA.

Q & A with Conrad:

Q: What got you first interested in the geo-world?
A: Well, I think it’s more like the geo-world found me; not the other way around. In high school, I thought I wanted to be an architect. Luckily for me, I attended a pre-college program where I took several classes in architecture. The classes were interesting but I quickly learned that architecture wasn’t for me. As a civil engineering student, I initially thought that I would go into structural engineering, but throughout the course of my college experience, I was fortunate enough to hear from guest speakers, many of whom happened to be practicing geotechnical engineers who spoke about how the innate variability of soil (compared to steel and concrete) made for an interesting and fulfilling work experience. After hearing that several times from different established professionals, I started to believe it. That was the initial spark that jumpstarted my entire career.

Q: What is your favorite thing about your Alma Mater?
A: This is easy. My favorite thing about Cooper Union is the free tuition scholarship we all received when we were accepted into the school. I’m fortunate to have received a great education without having to worry about stifling college debt that a lot of young professionals are struggling with these days.

Q: What is something about yourself that would surprise us?
A: Well, Cooper Union is on the lower east side of Manhattan. Not many of my colleagues in Philadelphia know this, but I was in college when 9-11 happened. I witnessed the horrific scene of that day firsthand from my dorm. Like so many others, the events of that day have changed my life in profound ways that I’m still figuring out many years later.

Q: What advice would you give to students studying a geo-profession?
A: Internships and co-op programs are so important. Do as many internships/co-ops as you can and do them early. If you are set on the geo-profession, try to land internships with a geotechnical engineering consulting

Continued on the following page...

We will continue to feature DVGI members in upcoming issues of the Newsletter. Please feel free to contact any of the board members with any general comments or member spotlight suggestions. Board member email addresses can be found on Page 5.
firm, a foundation contractor and a developer. The experience you will have gained and the relationships you’ll have established will be invaluable for whichever route you eventually choose.

Q: What are three career lessons you’ve learned thus far?
A: 

a. Don’t forget the big picture. As technical professionals, we can become entrenched in very minute details. While the details are important, it is equally if not more important to understand the larger objectives of the project or tasks for which you were assigned. If your very detailed and technical work doesn’t make much sense in the grand scheme, it’s back to the drawing board for you.

b. Management is not the same as leadership and in order to be an effective manager you really need to be a great leader.

c. Never use the phrase “that’s not my responsibility.” Don’t even think it. There is no scenario where this works to help your career.

Q: What are your hopes for our industry?
A: This is a little selfish but wouldn’t it be great if when you introduce yourself as a geotechnical engineer, the person across from you actually understands what that means? I don’t see geotechnical engineering being a household profession like lawyers or doctors any time soon though. Along the same lines, I hope that more owners and developers understand the importance of geotechnical engineering and how we add value to a project.

Q: What is your favorite thing to do in Philadelphia?
A: I really enjoy checking out the very many great restaurants in Philadelphia. Philly is a great foodie city because there are so many unique and creative restaurants.

Q: What aspect of your job do you enjoy the most?
A: As geotechnical project managers, we put all the pieces of the project puzzle together and tie them into a neat package for the client. No two projects are the same. Ground conditions can vary significantly. I enjoy that challenge and in the end when you are able to fit that last piece of the puzzle into its rightful place, it’s a very fulfilling feeling.

Continued on the following page...
Q: What is the most challenging aspect of your job?
A: My degrees are in civil and geotechnical engineering. I unfortunately haven’t had any courses in college about managing projects and people. One of the biggest challenges I had when I became a manager was the shift from getting tasks assigned to you to becoming the person assigning the tasks. It was interesting getting used to the idea that I wouldn’t always be doing the work myself and of placing trust in your staff engineers to do the job well. That progression into management was challenging but also it allowed and almost forced me to understand people better.

Q: What do you like most about Langan?
A: I’m never bored at Langan. The work is challenging and fulfilling. It’s been a great experience and I feel appreciated for the hard work I put in. I’ve learned so much here.

Q: What has been your favorite project at Langan that you have been a part of?
A: The project for Penn Medicine’s PennFirst Patient Pavilion was and is a great project because of the very many geotechnical aspects involved with it. The project included rock excavation, soldier pile and lagging, underpinning, vibration monitoring, waterproofing, micropiles, caissons, rock anchors, and a large mat foundation. The high rise tower is the main attraction, but they also have a tunnel and several pedestrian bridges in the works that all need geotechnical attention. It’s a treasure trove of geotechnical engineering.

(All images courtesy of C. Cho)
You are invited to participate in RamJack’s L&L seminar. The presentation includes discussion of principles and the underlying assumptions, and explanations of the theories behind geotechnical analyses of helical (Screw) piles/anchors. References to sources of uncertainties in geotechnical analyses will be made to avoid a false sense of accuracy. The application of engineering principles to practical problems will be illustrated using Case Histories. The presentation touches on the use of computer software.

For more information, please contact Taylor Rizzotte – taylor@ramjacktri.com or Cindy MacKay – cindy@ramjacktri.com to schedule your L&L seminar.
EVENTS AND CONFERENCES

99th Annual Meeting > January 12–16, 2020 > Washington, DC

Geo-Congress 2020
Minneapolis, Minnesota | February 25–28, 2020

GEO-STRUCTURAL ASPECTS OF PAVEMENTS, RAILWAYS, & AIRFIELDS 2019
Building Infrastructure from the Ground Up
November 4–7, 2019 | Colorado Springs, Colorado | The Antlers