February 2020 DVGI/SEI Joint Dinner Meeting

SPEAKER: Dave Brown – Vice President of CBG Building Company

TOPIC: Structural Design for Multifamily Projects

DATE: Thursday, February 20, 2020

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

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

Please email phillysei+meeting@gmail.com with any questions.

This presentation will discuss structural design for multifamily projects. Different design techniques including foundation improvements, podium design, and wood framing will be presented. Specifically the different types of podiums will be reviewed: Concrete (PT and conventional), Steel/Concrete, Precast Plank, Composite (Hambro). Also the advantages/disadvantages of each, cost, and construction impact in this market will be discussed.

ABOUT THE SPEAKER:

Dave started the Philadelphia office in 2017 and is currently responsible for all work in the greater Philadelphia area. His portfolio in this market includes: The Smith Valley Forge (320 units · $57M), Parkview at Oaklands (291 units · $52M), and 130 Monument (205 units · $41M). Dave is a 2009 graduate from Virginia Tech with a degree in Civil Engineering.

We anticipate 1 PDH will be awarded for attendance.
Foundation Design for The Comcast Technology Center in Philadelphia

Dan Marano, P.E., Pennoni Associates, Philadelphia, PA

The new Comcast Technology Center located in Philadelphia, PA, opened its doors in the summer of 2018. The structure is the tallest building in the City of Philadelphia at over 1,100 ft, and now the 13th tallest structure in North America. The foundation system for this building is a combination of drilled piers (commonly called caissons) and a mat foundation below the core of the building. The presentation discussed the design of the foundation system and provided a summary of the geotechnical investigation, laboratory testing of soil and rock samples, engineering analysis, and observations made by the geotechnical consultant who was involved in the project throughout the investigation and construction process.

ABOUT THE SPEAKER:

Dan Marano has over 15 years of Geotechnical related design experience in the Philadelphia area. His experience includes the design of deep foundations, retaining walls, dams, and ground improvement. He received his Master’s and Bachelor’s degrees in Civil Engineering from Drexel University. Dan is now serving on the DFI2020 technical committee for their conference to be held at the National Harbor, Maryland.
Upcoming Dates for 2020 Dinner Meetings and events are as follows:

- **February 20, 2020, Dinner Meeting:** DVGI/SEI Joint Meeting—Dave Brown, CBG Building Company—Structural Design of Multifamily Projects
- **March 11, 2020, Dinner Meeting:** Student Night—Villanova University
- **April 16, 2020, Dinner Meeting:** ASCE Joint Meeting—Michael Senior, Schnabel Engineering—Boundary Hydroelectric Dam Rock Stabilization
- **May 19, 2020, Dinner Meeting:** Willie NeSmith, Berkel—DFI Traveling Lecture
- **June 2020 (TBD):** Golf Outing

*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

Submissions accepted now through April 1, 2020

Project of the Year to be selected in May 2020

Projects to be featured in DVGI Newsletters

Visit dvgi.org to apply now!

Submit Applications to Theresa Loux at tloux@aeroaggregates.com
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ANNOUNCEMENTS

Upcoming GSI Webinars for 2020
(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>Date</th>
<th>GSI No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 19</td>
<td>W-18</td>
<td>Pond Liner Design and Performance</td>
</tr>
<tr>
<td>March 25</td>
<td>W-27</td>
<td>Stability Design of Landfill Cover Soils</td>
</tr>
<tr>
<td>April 22</td>
<td>W-9</td>
<td>Behavior and Analysis of Twenty Solid Waste Landfill Failures</td>
</tr>
<tr>
<td>May 20</td>
<td>W-23</td>
<td>Geotextile Filters: Concerns and Issues</td>
</tr>
<tr>
<td>June 24</td>
<td>W-15</td>
<td>In-Situ Stabilization of Soil Slopes Using Nailed (or Anchored) Geosynthetics</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 Jeremy Brown (jbrown@schnabel-eng.com).

ASCE/G-I Members:
Read past and present issues of Geo-Strata magazine online at www.asce.org
MEMBER SPOTLIGHT

Martin McDermott
Keller North America

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.

Martin and his wife Nancy got married nearly 16 years ago. There was a Keller connection that brought their lives together in 2003. Each of them brought two kids into the marriage. Today, he says his wife and he (1 + 1) are greater than 2, and that their kids (2 + 2) are much greater than 4. They now have 7 grandkids and have been blessed so abundantly in life and love…. he is beyond humbled.

Q & A with Martin:

Q: What got you first interested in the geo-world?
A: After graduating from high school, I wanted to see the country. So my brother and I drove my 1968 Oldsmobile Delmont 88 (nicknamed DELMO) to Denver, CO, to visit (freeload) my sister. She took us on a whirlwind tour of the Rocky Mountains, Yellowstone, and the Grand Canyon National Parks in a span of about two weeks. We drove her 1971 VW Beatle giving DELMO the gas guzzler and our skimpy wallets a break. Witnessing God’s majesty on display in our National Parks planted the geo-seed. The next summer (1979) a friend and I drove cross country (over 13,000 miles) and hiked in most of our National Parks over a nine week period. No hotels….campsites or freeloading on family and friends. Many memorable moments but the highlight was hiking down the North rim of the Grand Canyon, then along the Colorado River to Phantom Ranch, then up the South Rim. The Grand Canyon is a mile deep with stunning rock outcrops that reveal each page of her history book. We hiked 27 miles in three days. Crazy thing is this……being young and dumb…..upon exiting the Grand Canyon, we realized our truck was parked on the North Rim over 200 miles away. Uber was not an option. So we posted “Need a ride to North Rim” sign on the South Rim Bulletin Board. With no response to our message we started thumbing (hitchhiking) a ride as we walked out of the park with full backpacks. Miraculously, a Park Ranger going on duty to the North Rim picked us up. I fell asleep on the ride and awoke five hours later at the North Rim.

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.
Martin McDermott
Keller North America

Q: What is your favorite thing about your Alma Mater?
A: The LaSalle Explorers were the right fit as an undergraduate. I started as a business major. I explored. Then took advanced math and science classes as a computer science major, then geology major. After starting a family and working in the field for over five years, I started Drexel's Masters program in Engineering Geology. This program resonated with me as it was structured to meet a working person's desire to increase knowledge at night school, enhance professional performance and build personal sustaining relationships that endured the test of time.

Q: What is something about yourself that would surprise us?
A: I am now a deacon at my church. After spending a number of decades focusing on me, me, me…..it was time to serve Him. This Bible verse convicted me in my self-centered tendencies. 1 Peter 4:10: “As each has received a gift, use it to serve one another as good stewards of God’s varied grace.” As an industry, we are wired to serve and give back. It’s nice to see the varied gifts among our group used to serve.

Q: What advice would you give to students studying a geo-profession?
A: Persevere. Seek authentically to discover and develop the passion that drives you. Don't forget patience. A wise man once told me, “If it was easy, any knucklehead could do it.”

Q: What is your favorite thing to do in Philadelphia?
A: Eagles tailgate and game day. Give family and friends from out of town my Poor boy Philly tour that starts at the Waterworks and Art Museum, rumbles past Billy Penn, then historic Old City, then a cheese steak at Jim’s on 4th and South Street, then a brew (or two) at McGillin’s Old Ale House (oldest continuous operating bar in town......and it has the smell to prove it).

Q: What aspect of your job do you enjoy the most?
A: That we can make a meaningful difference in our “civil”ization.

Q: What is the most challenging aspect of your job?
A: Technology is fast, like Jimmy John’s “really fast.” My challenge is keeping up with it.

Continued on the following page...
Q: What do you like most about Keller?
A: Keller touches just about every aspect of our geoconstruction industry. Our people are talented and can be found nearly everywhere. Our charge now as One Keller is to be intentional, generate connectivity among our disciplines, look beyond our specific areas of expertise and better communicate to meet the needs of our clients and our industry as a whole. My job now is to serve our clients and help get them connected to the right folks for the right geo-solution. I like that Keller recognized that gap in our organization and is actively seeking to close it.

Q: What has been your favorite project at Keller that you have been a part of?
A: After 9-11 attacks, my local Keller office (McKinney) was called to help design and construct the Pier A Emergency Relief Ferry Platform at Battery Park about 2500 feet from the World Trade Center collapse. “We will never forget”…..those lives we lost, the shock, the deafening silence, the acrid smell of perpetual burning rubble, our humility in service…..and the honor to be able to serve. We in the geoconstruction industry are called to equip our members to serve our community.
PROJECT OF THE YEAR SUBMISSION

Project: S.R. 209, Section RSM, Mansion House Hill Rock Face Remediation
Client: Pennsylvania Department of Transportation, Engineering District 5-0
Contractors: Road-Con Inc., Axis Stabilization, Ameritech Slope Constructors, Inc.
Engineer: Gannett Fleming, Inc.
Submitted By: Joe Krupansky, PG, Gannett Fleming, Inc.

Project Description
U.S. Route 209 (S.R. 209) traverses the southeast side of a narrow, steep-sided valley carved by the Lehigh River just south of the Borough of Jim Thorpe, Pennsylvania. During original roadway construction, a nearly vertical rock cut was required on the uphill side of the roadway. Weathering and erosion from precipitation events, freeze-thaw cycles, and root prying have caused the rock slope to become unstable over time. Consequently, this section of S.R. 209 has experienced regular rockfall events over the past several years, including a sizable rockslide in early September 2017 that resulted in temporary closure of the roadway and emergency rock slope repairs.

To remediate this 2,800-foot-long rockfall-hazard-prone section of roadway, Gannett Fleming evaluated the nature of the failures occurring along the exposed rock cut and designed a stabilization treatment program to protect the traveling public from future rockslide and rockfall events.

Gannett Fleming’s field investigation included a detailed digital photogrammetry survey of the rock cut to allow for software-based geologic measurements of the rock mass and develop an orthomosaic view of the exposed rock slope. Kinematic analyses were performed to identify potential modes of failure. Based on these analyses, rock slope stabilization measures were designed, including rock slope scaling, pattern and spot rock bolts, high-tensile strength steel wire mesh, and horizontal slope drains.

Overview: Scenic State Route 209 follows the steep-sided valley carved by the Lehigh River. (Photo Courtesy of Axis Stabilization)

Geotechnical Challenges
Given the lack of an existing rockfall catchment area, the verticality of the rock face, and steepness of the upslope, it was not feasible to regrade the slope or construct a protective barrier along the roadway. To overcome these challenges, Gannett Fleming developed a stabilization solution that combined post-tensioned pattern rock anchors with high-tensile strength steel wire mesh. This solution provides active reinforcement to increase the normal force acting along potential failures.
failure surfaces, and protection against rockfall material that may break out between anchors.

During construction, Gannett Fleming served as PennDOT’s Geotechnical Representative, providing oversight and consultation for the stabilization activities. Following initial site clearing, previously unknown, broken and potentially unstable rock outcrops were discovered upslope of the project limits. Gannett Fleming performed field reconnaissance of the exposed area of concern, provided detailed slope stability analyses and rockfall modeling, and prepared a quick-response stabilization solution that was included under the ongoing construction contract. The additional stabilization included a 400-ft-long hybrid elevated rockfall barrier and wire mesh drapery system, and a custom-designed rock netting system for in-place stabilization of a hazardous rock mass located more than 125 feet above the roadway. The project was a success as a result of continuous communication and collaboration between PennDOT, Gannett Fleming, and the Contractors, along with detailed attention to the geologic conditions revealed during construction.

Continued on the following page...
Hybrid: The hybrid elevated rockfall barrier and drapery system provide protection from rockfall originating on and above the slope face.

Multiple Operations: Performing multiple concurrent operations resulted in the rock slope stabilization work being completed ahead of schedule. (Photo Courtesy of Axis Stabilization)

Scaling: Prior to installing permanent stabilization measures, loose and unstable rock masses were removed using hand scaling methods.
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.
Mid-Level Geotechnical Engineer

Kleinfelder’s Exton office is seeking a creative, highly talented, experienced Midlevel Geotechnical Engineer to join our growing company. Our Exton office offers a wide range of challenging project work and a great opportunity to develop professionally.

In this role, the ideal candidate will have the opportunity to work as part of a solid team while helping mentor more junior level team members. The position includes trouble shooting field issues, working on geotechnical calculations and analysis and report writing. To be successful in this role, it is crucial that the chosen candidate have the ability to organize priorities and multi-task effectively, a thirst to learn and achieve continuous improvement in a team environment, and a can-do attitude and problem-solving mindset.

Daily activities include but are not limited to the basic components of the delivery of a fundamental geotechnical investigation including:

- organization and performance of the field investigation
- assignment of the appropriate lab testing
- performance of the associated engineering analyses under the PE’s guidance
- preparation of the geotechnical report
- ability to work with design teams to incorporate geotechnical aspects into site designs
- demonstrate experience with, or the ability to readily learn earthwork and foundation construction observation

Basic requirements:
- BS in Civil Engineering with EIT
- 5+ years of engineering consulting experience with a focus in geotechnical engineering (including site grading, erosion / sedimentation control or stormwater management)
- 2+ years field experience (drilling, boring sampling, data collections)
- Strong verbal and written communication skills
- Regional geotechnical experience
- Ability to travel up to 25% to project sites and Kleinfelder offices

Preferred requirements:
- Professional Engineer (PE) licensure
- MS in Geotechnical Engineering
- Construction experience
- Experience with CAD, gINT, Lpile, and SlopeW software

Kleinfelder offers an excellent compensation and benefits package, including: medical, dental, vision, life insurance, 401(k) plan, and paid holidays. Kleinfelder is an Equal Opportunity Employer – Minorities/Women/Disabled/Veterans (Compliant with the new VEVRAA and Section 503 rules).

Please contact Jim Beideman, jbeideman@kleinfelder.com or 610-594-1444 extension 109, for more information and to submit a resume.
EVENTS AND CONFERENCES

DFI45
ANNUAL CONFERENCE ON DEEP FOUNDATIONS
OCTOBER 13-16, 2020 | NATIONAL HARBOR, MARYLAND

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

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