



## Fall 2010 Calendar of Events – See more at [www.pile.com/events](http://www.pile.com/events)

- October 4-7, Charleston, WV: 42nd Annual Southeastern Transportation Geotechnical Engineering Conference. **Visit the PDI/GRL booth.** Info: [www.stgec.org](http://www.stgec.org).
- October 10-13, Hollywood, CA: Deep Foundations Institute 35th Annual Conference on Deep Foundations. **Visit the PDI booth.** Info: [www.dfi.org](http://www.dfi.org).
- October 12-14, Chicago, IL: Roads & Bridges Live: 2010 - Bridge Infrastructure. **Pat Hannigan will present.** Info: [www.roadsbridgeslive.com](http://www.roadsbridgeslive.com).
- October 15, 11:30 am to 1:00 pm Eastern Time: ASCE Webinar on Installation, Verification and Application of Driven Piles. **Garland Likins will present.** Info: <https://secure.asce.org/ASCEWebsite/WEBINAR/LISTWEBINAR.aspx>.
- October 19-20, Columbus, OH: Ohio Transportation Engineering Conference. **Visit the GRL booth.** Info: [www.otecohio.org](http://www.otecohio.org).
- **October 18-20, Madrid, Spain: Dynamic Foundation Testing Seminar, GRLWEAP Workshop and PDA and CAPWAP Workshop. Presented by PDI and G-Octopus. Frank Rausche and Jorge Beim will present. Visit [www.pile.com/events](http://www.pile.com/events) for registration flyer.**
- **October 21, Ecuador: Dynamic Foundation Testing Seminar. Presented by PDI and Sociedad Ecuatoriana de Mecánica de Suelos y Roca. Camilo Alvarez will present. Visit [www.pile.com/events](http://www.pile.com/events) for registration flyer.**
- **October 22, Warsaw, Poland: Dynamic Foundation Testing Seminar. Presented by PDI and Pile Dynamics Europe. Frank Rausche and Jorge Beim will present. Visit [www.pile.com/events](http://www.pile.com/events) for registration flyer.**
- **November 3, Seoul, South Korea : PDA and CAPWAP Workshop. Presented by PDI and the Korean Geotechnical Society. Garland Likins will present. Visit [www.pile.com/events](http://www.pile.com/events) for registration flyer.**
- November 4, 2010, Charleston, SC: 11th Annual Design and Installation of Cost-Efficient Piles Conference. Presented by PDCA. **Mohamad Hussein will present.** Info: [www.piledrivers.org](http://www.piledrivers.org)
- November 8-12, New Delhi, India: Sixth International Congress on Environmental Geotechnics. Presented by The Indian Geotechnical Society (IGS) and International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE). Info: [www.6icg.org](http://www.6icg.org). **Visit the booth of PDI representative AE&C.**
- **November 10-12, Jakarta, Indonesia: Dynamic Foundation Testing Seminar and PDA and CAPWAP Workshop. Presented by PDI and the Indonesian Society for Geotechnical Engineering. Garland Likins and Jorge Beim will present. Visit [www.pile.com/events](http://www.pile.com/events) for registration flyer.**
- **November 15, Da Nang, Vietnam: Dynamic Foundation Testing Seminar. Presented by PDI and the Nguyen Cao Company Limited. Jorge Beim will present. Visit [www.pile.com/events](http://www.pile.com/events) for registration flyer.**
- **November 17, Hanoi, Vietnam: Dynamic Foundation Testing Seminar. Presented by PDI and Inotech JSC. Jorge Beim will present. Visit [www.pile.com/events](http://www.pile.com/events) for registration flyer.**
- November 23-26, 2010, Shanghai, China: Bauma China 2010. Info: [www.bauma-china.com](http://www.bauma-china.com). **Visit the booth of PDI representative Earth Products China.**
- December 1-3, San Antonio, TX: 7th International Bridge Engineering Conference - Improving Reliability and Safety - Restoration, Renewal and Replacement. Presented by TRB, FHWA and Texas DOT. **Visit the PDI booth.** Info: [www.TRB.org/Conferences/2010/IBEC](http://www.TRB.org/Conferences/2010/IBEC).

## NEW AND REVISED AASHTO SPECIFICATIONS

The 3rd Edition of the American Association of State Highway and Transportation Officials "LRFD Bridge Construction Specifications", as well as the 5th edition of the "LRFD Bridge Design Specifications", were released in the first half of 2010. Both may be purchased from the AASHTO online bookstore. The Bridge Construction Specifications require the contractor to submit a Wave Equation Analysis to the engineer, showing that the piles are drivable. It also specifies that hydraulic hammers be equipped with a system for measurement of ram energy (the E-Saximeter meets those specifications), and requires that dynamic testing with "signal matching" (e.g. PDA with CAPWAP®) be conducted according to ASTM D4945. Garland Likins reviews how the new Bridge Design Specifications reward enhanced foundation testing by allowing the use of more favorable factors in the Q2 issue of PDCA's PILEDRIVER Magazine. Read the article at [www.pile.com/reference](http://www.pile.com/reference).

## FHWA DRILLED SHAFTS PUBLICATION

The US Federal Highway Administration has released GEC10, "Drilled Shafts: Construction Procedures and LRFD Design Methods", available at [www.fhwa.dot.gov/engineering/geotech/index.cfm](http://www.fhwa.dot.gov/engineering/geotech/index.cfm) or in hard copy from [www.nhi.fhwa.dot.gov](http://www.nhi.fhwa.dot.gov) or [www.adsc-iafd.com](http://www.adsc-iafd.com). GEC10 recommends that, when Standard Penetration Test results are to be used for foundation design, the SPT equipment used for the test be calibrated according to ASTM D4633 (the SPT Analyzer or the PDA may be used for the calibration). It also includes a comprehensive chapter on load testing of drilled shafts, with a section on High Strain Dynamic Load Test that recognizes that it "has been used for many years with driven pile foundations" and "can be applied to drilled shaft foundations with some considerations for the different nature of a drilled foundation". (GRL Engineers performs such tests with its APPLE load testing system.) Lastly, it highlights the importance of integrity testing as part of the QA/QC program of drilled shaft construction. Among the various integrity methods mentioned, Cross-Hole Sonic Logging (CSL) performed according to ASTM D6760 is the preferred one (the CHAMP performs this test). It is recognized, however, that Sonic Echo or Impulse Response methods (both can be performed with the Pile Integrity Tester and are standardized by ASTM D5882) may be the best option for shafts not built with the access tubes required for CSL.

## GRL WELCOMES NEW ENGINEERS

Dr. Yan Liu has just completed his PhD in Geotechnical Engineering from Case Western Reserve University and has joined the Corporate Office of GRL. Alex Ryberg has just completed his Master's in Civil Engineering from Drexel University and has joined the PA office.

## PDI HAS RELEASED A NEW MODEL OF PIR

(Automated Monitoring Equipment for augered cast-in-place, continuous flight auger and drilled displacement piles)

The new model of the PIR has a larger back lit color screen that is much easier to read in bright sunlight and low light conditions. The color display makes it very clear to the pile installer if adjustments to the grouting process are needed – an indicator turns from green to red if targets are not being met. Read about other enhancements to the PIR at [www.pile.com/pdi/products/pir](http://www.pile.com/pdi/products/pir).



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**GRL**  
engineers, inc.

**GRL Engineers, Inc.**  
Corporate Office: 30725 Aurora Road  
Cleveland, Ohio 44139 USA  
[info@pile.com](mailto:info@pile.com)

**Tel: +1-216-831-6131**  
**Fax: +1-216-831-0916**

California • Colorado • Florida • Illinois • Louisiana • North Carolina • Ohio • Pennsylvania

**PDI**  
*Pile Dynamics, Inc.*

**Pile Dynamics, Inc.**  
30725 Aurora Road  
Cleveland, Ohio 44139 USA  
[info@pile.com](mailto:info@pile.com)

**Tel: +1-216-831-6131**  
**Fax: +1-216-831-0916**

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