



GRL
engineers, inc.

PDI
Pile Dynamics, Inc.

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GRL Engineers, Inc.

GRL Engineers, Inc. is the new name of Goble Rausche Likins and Associates. The change reflects the retirement of founder and long time partner Dr. George Goble, and highlights the pride that GRL takes in its team of highly experienced engineers. GRL will continue to provide the same high quality dynamic testing services under the new name, as in the past. Phone numbers, faxes, e-mail addresses and office locations remain the same.

Berkel & Company Contractors Uses Latest Technology for Pile Monitoring and Testing

By Tracy Brettmann
Berkel & Company Contractors, Inc.

For the past several years Berkel & Company Contractors, a large auger pressure grouted (APG) pile contractor with multiple US offices, has been using Pile Dynamics' PIR-A (Pile Installation Recorder for Augercast Piles) and performing high strain dynamic testing on APG piles. This relatively new PIR-A technology for APG piles has been utilized on many of Berkel's large projects throughout the country.

The PIR-A equipment automatically monitors and records key aspects of the pile installation. Measured auger tip depth, hydraulic pressure (torque), and time are recorded during drilling. During auger withdrawal (grouting), depth, grout volume, grout line pressure and time are recorded. Grout volume is measured directly with an in-line magnetic flow meter rather than indirectly through a pump calibration. The results are then digitally recorded and printed. The PIR-A provides accurate, dependable and useful data for monitoring and reporting of APG pile installation.

High strain dynamic testing of APG piles has also been a new and growing technology for Berkel's projects. Dynamic Testing on APG piles is performed using a Pile Driving Analyzer® (PDA) and the results are analyzed using CAPWAP®. In order to better mobilize the high capacities developed with APG piles, Berkel employed GRL's APPLE Load Testing System. The significant ram weight of the APPLE (starting at 7.5 tons) easily activates pile capacities of 400 to 500 tons on 18-inch-diameter piles. (Higher loads can be proven on larger piles using larger GRL APPLE systems.) The results of the high strain dynamic tests have compared well with the static load testing results.

ASTM Standard for Cross Hole Sonic Logging

The American Society for Testing and Materials has issued a new standard for Cross Hole Sonic Logging, ASTM D-6760. The standard may be obtained from the ASTM website, www.astm.org. *Garland Likins* contributed his expertise to the preparation of this standard.

ASCE Deep Foundations Congress in Orlando, Florida, February 14 to 16, 2002

About 500 professionals met in Orlando for an ASCE sponsored three day update on the latest developments in deep foundation technology. There were 108 papers presented at six parallel sessions, producing more than 1,500 pages of proceedings. Approximately half of the papers dealt with design, the next largest group was on testing.

Participation by Pile Dynamics and GRL was significant: *Garland Likins* (PDI) led workshops on Low Strain and High Strain Testing and presented two papers, "Alternate Verification Methods for Augercast Piles" and, in cooperation with *Dr. Ken Bell* of Bechtel, "Proven Success for Driven Pile Foundations". *Brent Robinson* (GRL Central) presented "Dynamic Load Testing of Drilled Shafts at National Geotechnical Experimentation Sites", and *Mohamad Hussein* (GRL FL) presented "The Use of Superposition for Evaluating Pile Capacity". *Dr. Frank Rausche* (GRL Central) lectured on "Prudent, Practical and Efficient Use of NDT Software".



The cell phone to cell phone transmission capabilities of the remote PDA (PAL-R) were successfully demonstrated in conjunction with the Congress prediction contest. The contest consisted of predicting the static capacity on two previously driven pipe piles, one tested in compression and one in tension, and predicting blow counts on a third pile installed during the live field demonstration. Unexpected challenges were encountered: GRL performed the uplift test with its static test electronic measurement system. The test was interrupted when the tension bar yielded at 35 tons. The compressive test was performed by the University of South Florida and ended at 135 tons when the applied load exceeded the dead load reaction system. Thus, in both cases no ultimate load was verified.

The blow count part of the contest also presented difficulties since the relatively small APE 8-22 reached 1,200 blows per foot at a depth of 15 ft. After driving through this layer, the pile advanced to a final depth of 45 ft with final blow count of 55 blows per foot. The same APE 8-22 had driven the static test piles with maximum blow counts of 180 blows per foot in the upper dense layer. The test was instrumented, and data processed with the PAL-R. *Ameir Altaee* of Urkkada had predicted the highest blow count and won the contest. The rewards for the other two static prediction contests were given to universities.

CALENDAR OF EVENTS

June 19-21, Logan, UT: Design and Construction of Driven Pile Foundations short course featuring GRLWEAP and DRIVEN software: presented by Utah State University. There are still space available. For information call Dr. Joe Caliendo at 435-797-2896 or e-mail joe@cc.usu.edu.

July 22-26, Logan, UT: A one week long course for University Professors on the Design, Installation, and Testing of Driven Pile Foundations. Sponsored by the Pile Drivers Contractors Association. For information call 970-945-1231 or e-mail ceo@piledrivers.org.

September 19-20, New Orleans, LA: The Design & Installation of Cost-Efficient Driven Piles. Presented by the Pile Driving Contractors Association. For information call 970-945-1231 or e-mail ceo@piledrivers.org.

September 19-21, New York City, NY: Geotechnical and Structural Design and Construction Monitoring of Deep Foundations. Presented by Foundation Courses, Instructors Dr. George Goble and Jerry DiMaggio. For information call 303-494-0702 or e-mail law@bridgetest.com.

September 23-25, Bingen, Germany: Workshops on PIT (in German) and PDA, CAPWAP, GRLWEAP (in English). For information call Dr. O. Klingmüller at +49-621-331-361 or e-mail gsp-ife-ok@t-online.de.

September 30-October 2, Charleston, SC: Geotechnical and Structural Design and Construction Monitoring of Deep Foundations. Presented by Foundation Courses, Instructors Dr. George Goble and Jerry DiMaggio. For information call 303-494-0702 or e-mail law@bridgetest.com.

October 9-11, San Diego, CA: The Deep Foundations Institute 27th Annual Members Conference. For information call 201-567-4232 or e-mail dfihq@dfi.org.

November 14-15, Orlando, FL: ASCE Short Course on Deep Foundations: Design, Construction & Quality Control. For information call 800-548-2723 or e-mail conted@asce.org

November 17-20, College Station, TX: First International Conference on Scour of Foundations, Texas A&M University. For information call 979-845-6554 or e-mail briaud@tamu.edu.

Historical Article Translated by Frank Rausche

The Historic American Engineering Record (HAER) (visit at website LCWEB.LOC.GOV/SPCOLL/117.HTML), a unit of the National Park Services, commended *Dr. Frank Rausche* on his "masterful translation of the technical portion of Karl Culmann's article on wooden bridges of the 1850s in the United States, published in *Allgemeine Bauzeitung* during the mid-nineteenth century". It is believed that this is the first English translation of this important historical article. The translation will be published by the Newcomen Society, a UK entity dedicated to the study of the history of engineering and technology.

Workshop Attendees Satisfied

Pile Dynamics held a PDA and CAPWAP workshop in Cleveland, OH on April 11 and 12. The DFI/FQA PDA Testing Examination was offered in conjunction with the event. The 15 participants gave high ratings to the event, along with suggestions for future workshops. We reproduce some comments:

Jamal Nusairat of E.L. Robinson Engineering of Ohio Co. in Dublin, OH: "Thank you a lot for the effort during the two day class. It was very beneficial and helped me refresh my information. We will be looking forward to more of these classes."

Dave Purdue of Gemtec Limited in Fredericton, NB: "Cleveland is an impressive city, quite a bit larger than I had anticipated. I enjoyed the workshop, particularly the segment on PDA data interpretation. Also it was nice to meet and share experiences with other people involved in the dynamic pile testing business."

William K. Cody of American Engineering Testing, Inc. in St. Paul, MN: "I really enjoyed the workshop and am thankful for your efforts. (...) We both came back motivated to review the things we saw on the test..."

Our Clients Write

Vincent Hofer, of De Cérenville Géotechnique SA in Switzerland: "I've just visited your web site and read about your new Cross-Hole Analyzer. We have been using your PDA PAK for many years and are plenty satisfied with your products and the after sales services (it is a golden one thanks again)."

The Engineers of EPSA-LABCO in the Dominican Republic: "The (CAPWAP) training was excellent and we were able to analyze several examples of problems to be encountered. Camilo (*Camilo Alvarez*, GRL FL) is a very dedicated professional and an excellent engineer. He has the ability to teach difficult subjects in very understandable terms."

PAL-R Wins Manufacturing Excellence Award

Pile Dynamics won the prestigious Manny award for the introduction of the Pile Driving Analyzer® model PAL-R. This award is presented by Inside Business Magazine and the Cleveland Advanced Manufacturing Program (CAMP) in recognition of the achievement of Northeast Ohio manufacturing companies. Pile Dynamics is proud of its valuable team of employees, without whom this accomplishment would not have been possible.



GRLWEAP

The beta version of GRLWEAP 2002-1 is now in the final stage of testing, with a projected release date of June 2002.



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