

Pile Driving Contractors Association
13th Annual
Design and Installation of Cost-Efficient Piles
The E³ Conference

Modern Approaches to Maximize Driven Pile
Efficiency, Effectiveness and Economy - E³

Thursday October 11, 2012

DoubleTree by Hilton Seattle Airport - Seattle, WA

DICEP - E³ PARTNERS

The Pile Driving Contractor Association and the PDCA Pacific Coast Chapter



Supporting Organizations



Professional Engineers will earn 6 Professional Development Hours

The Pile Driving Contractors Association
1857 Wells Road, Suite 6, Orange Park, FL 32073
Phone: 888-311-PDCA (7322) Facsimile: 904-215-2977
www.piledrivers.org

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Who Should Attend?

The PDCA 13th Annual Design and Installation of Cost-Efficient Piles (DICEP) conference is designed for geotechnical, structural and civil engineers; contractors and other firms or individuals who support, conduct business or are associated with the deep foundations, earth retention and/or the driven pile industry. Licensed P.E.'s needing Professional Development Hours can obtain 6 PDH from this conference.

What Will You Learn and Experience?

The DICEP conference will present modern approaches to maximize **Efficiency**, **Effectiveness** and **Economy** (E³) of driven piles through a series of presentations including, energy efficient piles, efficient pile design utilizing setup, rebound, pile constructability, pile driving noise reduction, software, case histories, and more.

Exhibitors

All presentations and functions will be held in the same area as the exhibit hall to maximize exhibitor traffic. Exhibitor's space will accommodate 6' table tops ONLY. Exhibitor fee is \$400.00. Exhibitor registration includes exhibit space and full conference registration for one person. Electrical available for an additional charge (contact PDCA for info). Fill out the Exhibitor Registration portion of the conference Registration Form to reserve your space. The PDCA will assign spaces on a first-registered and paid-in-full basis.

Exhibitor Visits, Networking and Social Schedule

7:30 AM - 8:30 AM	Registration Opens, Exhibitor Hall Opens, Continental Breakfast
10:30AM - 11:00 AM	Mid-Morning Break - Exhibit Hall
12:00 PM- 1:00 PM	Buffet Luncheon and Exhibitor Visits
2:30 PM - 3:00 PM	PM Break - Exhibit Hall

Hotel Information

DoubleTree by Hilton Seattle Airport
18740 International Boulevard, Seattle, WA 98188

Located just 1/2 mile from the SeaTac (SEA) International Airport, the DoubleTree by Hilton Enjoy our complimentary shuttle service between the hotel and the airport 24 hours a day. The hotel's proximity to the Link Light Rail Station means you have easy access to downtown Seattle. Transport to the station is available upon request. Complimentary wireless internet provided by the PDCA will be available in all guest rooms.

Room Rates: **\$149.00** King room in the North Tower, close to meeting space for your convenience. Conference participants are responsible for making their own reservations by calling **1-800-222-Tree** or you may use this link: [DoubleTree](#) Identify yourself as part of the *Pile Driving Contractors Association* or group code **PDC** to receive the discounted room rate. Room reservations must be made prior to **Tuesday, September 25, 2012**, to guarantee your accommodations at this special room rate. If you need assistance contact **Lorraine Engelman with Blue Ribbon Travel at 718-767-5455 or Lorraine@travelblueribbon.com**



**Don't Miss This Year's
Premier
Engineer and
Contractor Focused
Driven Pile Conference!**

Receive 6 PDH's



PRESENTATION TOPICS and PRESENTERS

7:30 AM - 8:30AM - REGISTRATION AND CONTINENTAL BREAKFAST

8:30 AM - 4:30 PM - CLASSROOM PRESENTATIONS

PRESENTATION SUMMARIES

A Case History - Testing and Analysis Using UniPile Software - Pierre Goudreault, P.E., President of UniSoft Geotechnical Solutions Ltd., a graduate of University of Ottawa, Civil Engineering.

The records of the driving and static testing of a 1,830 mm diameter, 40 m long, open-toe pipe pile are presented consisting of pile head load-movement, and load distribution as determined from 13 pairs of vibrating wire gauges. The pile was driven through 4 m of gravelly sand (fill) underlain by layers of compact gravel, sand, and glacioluvial and glaciolacustrine non-plastic silt into dense to very dense sand. The static test mobilized the pile capacity. The measured load distribution and the load-movement response of the pile is simulated using the UniPile software and adjusted due to residual load, found to have a significant influence on the interpretation of the test results, and applying t-z functions to simulate the pile shaft resistance and q-z functions to simulate the pile toe resistance in effective and total stress analysis. Details of the analysis are presented. Selection of soil parameters for use in final design considerations are discussed and choices are demonstrated applying the software.

A New Method to Reduce Under Water Pile Driving Noises - Mark S. Wochner, Ph.D., is the CEO and Co-Founder of AdBm Technologies LLC. He has a B.A. in Physics from Vassar College, and Ph.D. in Acoustics from Penn State University.

An Introduction to the AdBm Noise Attenuation System and its Simple and Effective Application to Impact Pile Driving.

Comparison of Anchored Combination Walls and Cellular Structures for Use as Bulkheads - Richard J. Hartman, P.E., Ph.D., Hartman Engineering

Larger, deeper draft cargo ships are being constructed and they require that ports be built with higher bulkhead walls. There are two types of steel sheet piling walls most commonly used. One type is combination walls composed of alternating "king piles" and one pair of sheet piling. These walls are typically restrained near the top and are classified as "anchored walls". They require tie rods, anchor walls, and numerous connections. The second type of bulkhead is cellular construction using circular sheet piling structures filled with sand and gravel. The cellular bulkheads depend only upon the tensile strength of the sheet piling and the weight of the sand and gravel fill.

Case History: Design and Installation of Driven Piling for the SR520 Pontoon Casting Facility

- Stuart Moore, P.E., Kiewit Bridge and Marine, Federal Way, WA & Robert Mitchell, P.E., Shannon & Wilson, Inc., Seattle,

The Washington State Department of Transportation contracted Kiewit-General to design and construct a Pontoon Casting Facility (PCF) that will fabricate 33 concrete pontoons for use in the proposed SR 520 floating bridge in Seattle, Washington. The basin for the PCF is 900 feet long by 190 feet wide and 30 feet below the adjacent ground surface. Over 900 driven steel pipe piles comprise the foundation for the casting slab, crane trestle and headwall structure at the entrance to the Chehalis River. This presentation covers how the project team met the unique site and schedule requirements using an innovative basin excavation and pile installation sequence; including performance of a dynamic pile testing program, along with discussion the importance of contractor-geotechnical engineer-structural engineer interaction that is required for this complex design-build project that was on a fast-track schedule.

Columbia River Crossing Project: Overview and initial results from drilled shaft and driven pile test project - Frank Green, Structures Manager Columbia River Crossing—Washington Department of Transportation

The Columbia River Crossing project will replace an outdated, aging interstate bridge set in liquefiable soils. Bridge construction is scheduled to begin in late 2014, provided construction funding is secured. The project is currently conducting a test project to evaluate the strength and stability of the soil and the construction techniques for the support structures. The work will increase certainty and allow engineers to refine design assumptions, ensuring the construction phase for the CRC project stays on schedule and on budget. An overview and initial results of the test project will be provided.

Design Stage – Drivability Analyses- Dr. Joe Caliendo O.E., Ph.D., Utah State University

The latest AASHTO code states that "The establishment of the installation criteria for driven piles should include a drivability analysis". This is to be done at the design stage of a project. Typically a drivability analysis is obtained from a wave equation analysis. A drivability analysis ensures that the pile can be driven to the required static capacity, with a reasonable blow count and without overstressing the pile material.

This presentation will show how a drivability analysis is done. It will discuss the criteria that must be satisfied for a successful analysis. The limitations of a design stage analysis will be discussed and finally an actual wave equation computer run will be done for a closed end steel pipe pile.

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PRESENTATION SUMMARIES—Continued

Driven Pile Foundation in the Offshore Fields of Qatar: Installation Problems, Challenges, and Potential Solutions

- Dr. Waddah Akili

Discrepancies between design of driven piles for offshore platforms in Qatar, the Arab Gulf, and their “as-installed” ultimate capacities and safety factors are focused on, relying on pile installation records derived from several platforms in the offshore of the Gulf Region. The presentation evaluates “as-installed” ultimate capacities and safety factors, recommends remedial installation procedures, when piles refuse before reaching design penetration, and proposes means for determining pile acceptability for piles meeting refusal short of design penetration. Relevant recommendations, to guide the design and installation of future offshore structures is suggested, enabling the geotechnical community in the Region to solve their current offshore pile installation problems.

Identifying High Pile Rebound Soils Using CPT Pore Water Pressure Measurements: Case Studies in Florida -

Fauzi Jarushi, Florida Institute of Technology

At certain depths during large diameter displacement pile driving, rebound well over ¼-inch was produced and followed by a small or non-permanent set during each hammer blow. This phenomenon, termed high pile rebound (HPR) has occurred over a large region of North America, with numerous sites in Florida. HPR soils may stop the pile driving and result in a limited pile capacity. The overburden depth at which HPR occurred ranged from 50 to 90 feet. In some cases, rebound led to pile damage, delaying the construction project, and the foundations required redesign.

Design Requirements for Driven Pile Foundations for Offshore Wind Turbines - William M. Isenhower, Ph.D., P.E. and Erica

B. Rendon, Ensoft, Inc

The design of pile foundations offshore wind turbines requires the minimum value foundation stiffness to meet or exceed the minimum foundation stiffness required by the turbine manufacturer. To meet this requirement for design, it is necessary to evaluate the loadings on the foundation by wind and waves. This presentation is a description of the types of engineering computations needed to evaluate these loadings and how these loads are considered in the design of the driven pile foundations.

Amtrak New Cascades Maintenance (Phase I) and New Warehouse & Administrative & Health Welfare Building (Phase II), King Street Coach Yard, Seattle, Washington - Martin Page, P.E., LEG– Senior Associate Geotechnical Engineer Sahn-

non & Wilson, Inc.

Pile foundations were used to support two new buildings for Amtrak in Seattle, Washington. Two different pile types were used to accommodate a deep bearing layer that ranged from 60 feet deep to over 125 feet deep. The Maintenance building over the shallower bearing layer utilized driven-grout piles with diameters of 14- and 16inches. The Administrative building was supported on driven, closed-end steel pipe piles able to reach the deeper bearing layer. Diameters of 18- and 24-inch were used to support allowable vertical capacities of up to 580 kips. Static and dynamic pile load tests were performed for the project.

**Presentations subject to change

Early Bird Registration Ends September 13, 2012

**If you would like to present at the 14th Annual Design and Installation Conference (DICEP) in Houston, TX
please email lori@piledrivers.org**

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REGISTRATION FORM

Complete & Return to: PDCA, 1857 Wells Road, Suite 6, Orange Park, FL 32073; or fax to 904-215-2977; or scan & email to lori@piledrivers.org. Please type or print clearly. Please fill in all relevant information - PDCA will not process incomplete Registration Forms. If necessary photo copy this form or download additional forms from the PDCA website, www.piledrivers.org.

EARLY BIRD REGISTRATION DEADLINE: THURSDAY, SEPTEMBER 13TH, 2012

REFUNDS - 50% PRIOR TO SEPTEMBER 20, 2012 NO REFUNDS AFTER SEPTEMBER 20, 2012

Main Conference Registration and Exhibitor Information:

Last Name	First Name		
Additional Individual Same Co. Last Name	First Name		
Additional Individual Same Co. Last Name	First Name		
Company Name	Mailing Address	City	
State	Zip	Phone Number	E-mail Address

Registration and/or Exhibitor Fees:

Total Fee Each Line

<u>Member PDCA or Supporting Organization Member</u>	
Early Bird - \$225.00	_____
Early Bird Additional person(s) from the same company - \$175.00	_____
After Early Bird - \$275.00	_____
After Early Bird Additional person(s) from the same company - \$225.00	_____
<u>All Others</u>	
Early Bird - \$275.00	_____
Early Bird Additional person(s) from the same company - \$225.00	_____
After Early Bird (No discount for additional person(s) - \$300.00	_____
Federal , State, USACOE and Military (ID present at conference) - 65.00	_____
Students enrolled in Engineering Programs (ID present at conference) - 65.00	_____
<u>Exhibitor Registration</u>	
Early Bird - Includes Exhibit Space and (1) one Full Conference Registration - \$400.00	_____
Early Bird Additional person(s) from the same company - \$200.00	_____
After Early Bird - \$550.00	_____
After Early Bird Additional person(s) from the same company - \$275.00	_____

Sponsorships:

Luncheon - \$250.00	_____
Continental Breakfast - \$250.00	_____
Mid-Morning and PM Break - \$200.00	_____

Parking: *valet parking not included*

Day Passes- \$8.00	_____
Overnight - \$10.00	_____

TOTAL PAYMENT DUE PDCA

Payment Information (All information must be completed to process your Registration Form)

Check One: Check Visa MC AMX **Exp. Date:** _____

Name On Card: _____ **Security Code (3 or 4 Digit code)** _____

Card Number: _____

Card Billing Address: _____

Signature: _____