

PILED RIVER

THE OFFICIAL PUBLICATION OF THE PILE DRIVING CONTRACTORS ASSOCIATION | WINTER 2004 VOL. 1, NO. 1



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New Bulkhead

POLYMERIC PILES

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Carolina Chapter



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COVER:
Piling, Inc. constructs new bulkhead for petrochemical company.

2004 Sees New Change in Presidency

By Wayne E. Waters, PDCA President



Tanya Goble, who has completed her first year as our Executive Director. Tanya, along with President Jim Frazier's leadership, direction from the Board, and much effort from the committees and members, has put us in a very positive financial position. They also planned and delivered a very successful Winter Roundtable, Professor's Course, and DICEP Conference, while greatly enhancing our Web site and magazine. Many thanks to everyone involved.

On November 12, a meeting was held with the Federal Highway Administration in Washington D.C. Jerry DiMaggio, national supervisor of geotechnical engineers, along with Chris Dumas and Peter Osborn, represented FHWA. The PDCA was represented by the executive director, executive officers, and representatives from the technical, membership development, and marketing committees. Representatives from the concrete, steel and timber industries were also present. This meeting, requested by the PDCA, was set up to obtain FHWA's

technical and management input on the industry's research development and training activities over the next five years. Our objective is to partner with FHWA and state DOTs to better meet the design and construction challenges of current and future highway projects. Discussion on topics, such as the application of high-performance steel and concrete for foundations, pile-supported embankments, and improved equipment for rapid pile installation, made for a very productive meeting. We look forward to continuing our relationship with the FHWA.

Again, thank you for electing me as your leader for 2004. Your Executive Committee and board of directors have formulated an aggressive agenda to make PDCA more visible in 2004. We strive to create obvious reasons for all pile-driving contractors to desire membership in our organization. As a member, help spread the word. If you're a pile driver, or provide services that support the piling industry, then you should belong to the PDCA. ▼

Thank you for your confidence in electing me as your president for 2004. It is indeed an honor. I will do my best to move PDCA forward in accordance with the desires of the members and direction from a very energetic and capable slate of officers and board of directors.

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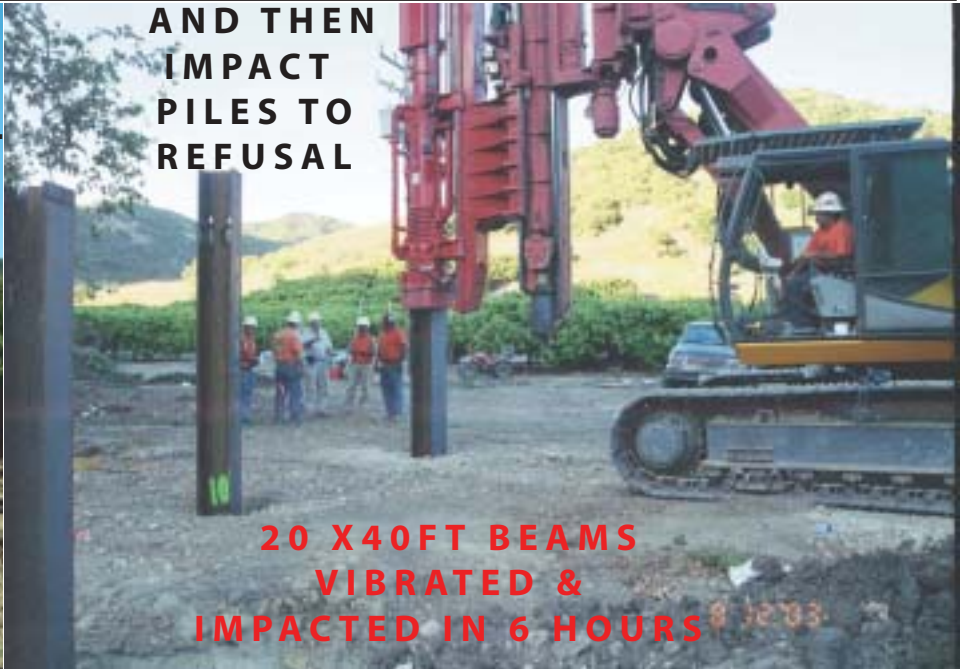


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PDCA and the FHWA Work Together for a Better Driven Pile

By Tanya Goble, PDCA Executive Director



Driven pile foundations have traditionally been, and continue to be, the primary foundation type supporting our nation's highway structures. The PDCA is collaborating with the FHWA and state DOTs to find ways to better meet the deep foundation design and construction challenges of today's highway projects.

In November, members of the PDCA board of directors met in Washington D.C. with members of the FHWA National Geotechnical Engineering Team (NGT), led by Jerry DiMaggio, senior geotechnical engineer in the Office of Bridge Technology. PDCA members, representing steel, concrete, and timber piling producers and suppliers also attended.

The PDCA and the FHWA NGT have shared an ongoing cooperative

relationship for several years and successfully partnered on several efforts to advance deep foundation practice. Complete efforts include:

- National Highway Institute (NHI) Driven Pile Inspector Training program.
- NHI driven pile design and construction courses.
- AASHTO code revisions to support load and resistance factor design (LRFD).
- The Professors Piling Institute held at Utah State University.

For more information on the above NHI programs, visit their Web site at www.nhi.fhwa.dot.gov and search on "driven pile."

The objective of the November meeting was to obtain the FHWA's technical and management input on various research, development, and

training activities that could significantly advance our industry and dramatically affect the cost, quality, and speed of delivering deep foundation features. These projects may include the development of improved equipment for rapid pile installation, implementation of rapid testing methods for real time assessment of capacity and damage focusing on accelerated construction and improved quality, increasing pile material stresses in order to reduce cost and optimize design, developing environmentally friendly smokeless and noiseless hammers, and the application of high-performance steel and concrete for foundation elements, which can improve performance and cost.

Some next steps include updating the PDCA strategic plan to incorporate the ideas generated from the meeting. You can find out more about the PDCA's plans by attending the 2004 Winter Roundtable Conference in Orlando from February 19-21. One of this year's speakers will be Chris Dumas from the FHWA. He will discuss ways that contractors can increase their market share. And, in this and future editions of the magazine, we will be featuring more articles about FHWA and state DOT projects.

The PDCA wishes to thank Jerry DiMaggio, Chris Dumas, and Peter Osborn of the FHWA for their time and we look forward to future joint efforts. ▼

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PDCA Member Piling, Inc. Constructs a New Bulkhead With No Original Plans Intact

By Lisa Kopochinski, Piledriver Editor

When a petrochemical company in the Houston/Gulf Coast area approached Piling, Inc. to design and reconstruct a new concrete bulkhead at their facility, the Texas City, TX-based pile-driving contractor knew it had its work cut out for them.

“The original bulkhead was built sometime before World War II and was failing both horizontally and vertically,” explained Randy Dietel, president of Piling, Inc. and a PDCA vice president.

“One of the main difficulties was that there were no plans left of the original bulkhead, just some fragmented sections. The Texas City disaster (see sidebar on page 12) of April 16, 1947 destroyed, not only the plans, but also claimed nearly 500 lives. It was considered the worst man-made disaster in the U.S. until 9/11.”

Dietel and his team began the daunting task of a preliminary conceptual design in September, 2001.

“This design was a king pile/sheet pile system between 18-20 feet in front of the failing concrete bulkhead,” he says.

“The next phase was to get a structural engineer to review the concept. The petrochemical company was in the process of looking at alternative usages of one of their docks and the design was to have 40 feet of water depth.”

Piling, Inc. sought the advice of a local dive company for information on the existing concrete bulkhead. It then employed a soil-testing company to determine the soil parameters that they would be confronted with.

“After the review by the engineer, we found that the system would not meet the loads due to the depth of water and weakness of soil. We were also not able to develop a tie-back system because of the failing concrete wall. So, we began to look at alternatives.”

Piling, Inc. then proposed a cantilever designer where the components consisted of a 40-inch diameter x 117-foot-long pipe pile driven side-by-side. The pipe pile was connected by a small pipe/T-bar interlock system that was welded to each 40-inch diameter of pipe. The structural engineer and soil engineering company both determined that this system could



work with the proper backfill and rip-rap material to relieve stress on the pipe pile bulkhead.

“The new pipe pile bulkhead is now completed,” Dietel happily reports, “and all backfill is in place. A cap was placed on top of the pile. It consisted of 54 inches of continuous flat plate with rolled edges (to cover the front and back of the pipe pile). Each 40" diameter pile was filled with sand and the 6" diameter interlocks were filled with small rock from the mud line up to 3 feet below the water line and with concrete from there to the top.”

Piling, Inc. completed the nearly \$2 million project this past September, having commenced construction nine months earlier in January 2003.

Dietel says one of the biggest challenges was dealing with the existing concrete bulkhead.

“The concrete cap on top was vertical, but the concrete sheet pile underneath were leaning out towards the ship channel. We had to develop a leak-proof closure from the last straight (new) pipe pile installed next to the old leaning concrete wall, which opened up to a 4-foot, 7-inch gap at the mud line.”

With the use of divers, Piling, Inc. developed a system of interlocking flat sheet pile and plating. A special interlock was created for some flat sheet pile to transition into the pipe pile interlock system. The flat sheets were put in short sections and welded. The sheets were driven into the mud line with the use of a special drive tool and a vibratory hammer.

He continues: “A 3" x 5" angle was bolted to the concrete wall and a made-to-fit, wedge-shaped piece of plate was welded to the last flat sheet pile and the angle. The solution to fixing the problem from the top of the existing concrete cap, down to 15 feet below waterline where the leaning concrete sheet pile began, was the easier of the problems. This ledge stuck out towards the channel 3½ feet. The problem was resolved with installing four pieces of smaller diameter pipe pile (10"-14" diameter) and welding corresponding sheet pile interlocks to each piece of these smaller pipe. The small pipes were secured to the underwater flat ledge with angle iron being bolted to the horizontal concrete ledge and welded to the pipe pile.”

While the project was definitely a challenge, Dietel says what he enjoyed most was being able to develop a solution for the petrochemical company’s very difficult problem. Even with the myriad of obstacles – no original plans left of the concrete bulkhead; a wall that was failing both horizontally and vertically; an existing pipe rack carrying all the products from the dock to their refining units, only a mere 15 feet behind the original bulkhead (blocking off access to the land side); and a new dock line that was only 18-20 feet in front of the existing bulkhead, Piling Inc. proved itself to be up to the task. The petrochemical company couldn’t be happier.



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Texas City Disaster Takes Nearly 500 Lives

The 1947 disaster in Texas City, TX was caused by a fire in the hold (compartments in the hull) of a ship called the "Grand Camp." The ship was loaded with munitions and ammonia nitrate. (Ammonia nitrate is used as a fertilizer, as well as constructing explosives).

The fire was presumed to have been started by a cigarette, which was either tossed, or fell, into the hold. The captain first ordered the hatch covers closed in order to smother the fire. This was standard procedure, but did not work. Next, they opened the hatch covers and attempted to put the fire out with water. By that time, the fire department had arrived and was using fire trucks to pump water onto the fire.

However, this failed as well. The water was causing a reaction with the fire and heat, which consequently built up in the hold causing a continued chain reaction, followed by an explosion. The whole waterfront was ablaze.

Almost the entire fire department was killed. Many bystanders were also killed or wounded. One of the anchors from the ship was found almost a mile away.

Approximately 10 hours later, a second ship, the "High Flyer" blew up. It was moored in a slip just to the south of the "Grand Camp." It caused another set of chain-reaction explosions and more deaths.

Much damage was caused throughout the city. School children, homes, and businesses had steel shrapnel raining down on them. Windows and doors were blown out of their frames, and houses were knocked down by the shock waves.

The Red Cross and many communities, from as far away as Colorado, came or sent aid to Texas City.



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Polymeric Piles: A Cost-Effective and Environmentally Friendly Practice

By Stephen L. Borg

With the return of marine borers such as *Limnoria* and *Teredo* to the cleaned up New York City Harbor waters, exposed wood piles along the shoreline of the city have deteriorated at an alarming rate.

With environmental concerns and questionable effectiveness associated with the use of wood preservatives such as creosote, CCA and the less toxic substitute treatments, alternate piling materials are needed for marine applications.

Polymeric materials is a cost-effective and environmentally friendly practice that has encouraged the development of innovative products. The reclamation of these materials, and the energy expended to renew them into products in the marketplace, has proven to be an efficient and worthwhile venture. There is current development of high-quality innovative products, such as structural plastic lumber and load-bearing piles made with polymeric materials. Several of these piling products have been subjected to full-scale field testing, such as static-pile load tests and dynamic monitoring during impact driving.

Some of these products are capable of withstanding the installation stresses and supporting axial loads to the same degree as piles made with conventional materials. These piles have a perceived best benefit in direct application for use in light applications in waterfront areas for piers, docks, and walkways. The initial cost of the polymeric piling material, when compared on a cost-per-ton basis, is greater than conventional materials. Therefore, a life-cycle cost analysis must be applied to determine the true value of using these materials.

The common polymeric products, in use today, are made with varying densities of recycled polyethylene mixed with randomly oriented fiberglass filler material. Products on the market consist of composite sections of steel or



fiberglass-reinforcement cages molded within a matrix of polyethylene. Piles are also manufactured with just polyethylene and a fiberglass filler with foaming agents that are generally introduced to the core of the section to reduce the gross weight. Piles can be treated with UV protective and antistatic electricity agents, as well as flame retardants.

One type of polymeric pile, not made of recycled materials, is a concrete-filled structural fiberglass pipe. The fiberglass pipe acts as an external structural reinforcement for the concrete and provides the tensile and bending properties required for handling and impact driving of the concrete core. One product is manufactured by using a continuous roving fiberglass filament that is wound on a steel mandrel.

This process allows the foundation engineer to specify a ribbed texture along a specific length of the pipe to increase the friction characteristics of the pile shaft.

A composite pile-testing program, funded by the Federal Highway Administration (FHWA) and administered by the Empire State Development Corporation (ESDC), was undertaken at the Port of Newark, in Elizabeth, N.J. Five pile manufacturers participated in the program which involved impact driving of the piles with a variable stroke hydraulic hammer, monitoring installation with dynamic pile testing and conducting static pile load tests. Laboratory testing was conducted to determine the static elastic modulus of the composite pile sections, along with tests to evaluate long-term creep under varying temperatures. Analytical methods are being adapted and developed to predict long-term creep behavior of plastic materials.

For the most part, the piling products at the Elizabeth test site withstood the installation stresses and were able to be driven to the design toe elevation. There was fair correlation between the dynamic and static testing data for the composite polymeric piles and the capacities were comparable to those expected from conventional piling materials.


In a wetland mitigation project along the shore of the Harlem River in New York City, the New York State Department of Transportation (NYSDOT) used concrete-filled fiberglass pipe piles to support a pedestrian bridge and viewing platform. A specification was written, with special provisions for a structural fiberglass pipe filled with concrete and the piles that became a bid item in the contract. During construction, the pile was subjected to the standard NYSDOT material and pile installation review process with field oversight by NYSDOT inspection staff. Dynamic pile testing was performed to monitor pile stresses, hammer operation and to evaluate the capacity. All piles were driven to the design toe elevation, without damage, and the required capacity was exceeded.

Further research is needed to accurately determine the overall wave speed of composite polymeric piles so that dynamic pile-testing results can be used with confidence. The cost for field verification of these piles would become prohibitive if dynamic pile-testing methods could not be applied and static pile load testing became the only alternative.



As these products continue to be developed, a growing advantage will be the ability of the foundation engineer to optimize the foundation design by tailoring the pile properties to the subsurface conditions at each project location. ASTM draft standards for structural grade plastic lumber and polymeric piles are currently under development, with both standards closely approaching initial balloting.


Stephen L. Borg is a supervisor of a structure foundation squad in the geotechnical engineering bureau for the New York State Department of Transportation in Albany. He began work with the department in 1985. He supervises engineers in the design and construction of bridge foundations and earth-retaining structures and supervises the preparation of foundation reports, contract specifications and subsurface soil profiles. He heads the High Strain Dynamic Pile Testing program for the department and is responsible for the implementation of nondestructive testing methods for quality control of drilled shafts and determination of unknown foundation lengths. In addition to his department duties, he has served on an FHWA-funded composite pile-testing program committee, ASTM committees on plastic lumber and polymeric piles, and has published papers related to deep foundations and the application of stress-waves to piles. He is a registered professional engineer in New York and possesses a bachelor's degree in civil engineering from the University of Massachusetts, Lowell.



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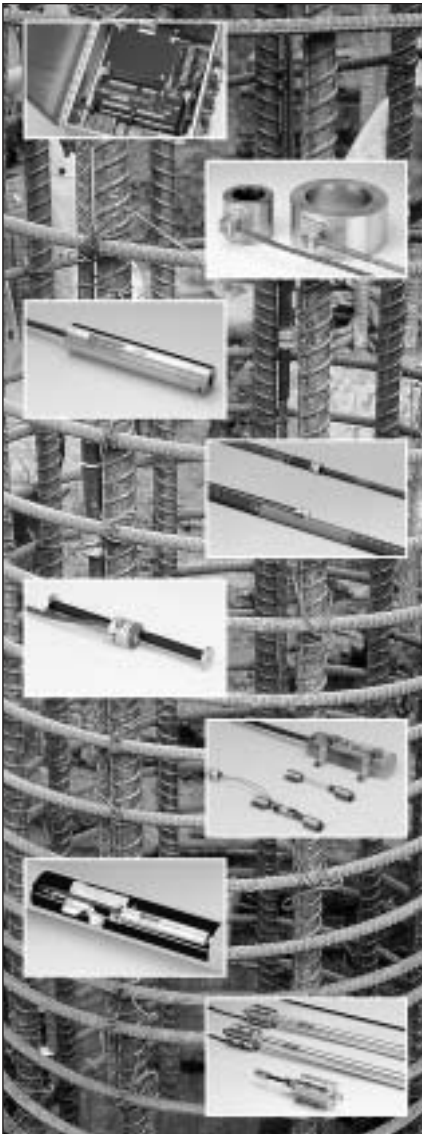
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PROJECT: Civil and Marine Ltd.'s new \$30 million ground granulated blast furnace slag (GGBFS) processing facility a Port Canaveral, Florida, the world's first quadramodel (land, sea, air and space) transportation facility.

CONTRACTOR: Hal Jones Contractor, Inc.

JOB REQUIREMENTS: Drive the foundation piling for the facility - a total of 165 24"-square reinforced precast concrete piles. The project called for 50 piles to support each of the two slag silos and 65 piles to support the foundation of the main grinding mill and office.

EQUIPMENT USED: ICE Model 44-50 Vibratory Driver/Extractor; ICE Model 55AT Auger; ICE Model 220 Hydraulic Impact Hammer; two ICE power units; two 80' sets of ICE leads; Linkbelt crawler crane.

JOB STATUS: Completed without delay.

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MEMBERSHIP BENEFITS

General Membership Information

We are the premier association for pile-driving contractors

The PDCA was founded in 1996 to promote use of driven-pile solutions in all cases where they are effective. We strive to build and maintain working relationships among end users, manufacturers, government agencies, educational institutions, engineers and others involved in the design, installation and quality control of the driven pile.

We are dedicated to advancing the driven pile

As the only organization solely dedicated to pile-driving contractors, we know that you understand the superiority of the driven pile in most applications. We are the only association addressing the intrusion of non-driven solutions that take away business from the driven-pile contractor. The PDCA understands that to survive in today's competitive marketplace, a pile-driving contractor must strive to stay abreast of the latest trends and technologies in the industry. That is why we maintain close ties with the world's leading suppliers to the industry. It's why we provide a broad range of educational programs for university professors, practicing engineers and contractors. And, it's why more and more contractors, engineers and suppliers are realizing that the PDCA significantly increases their value in the marketplace.

We are a direct link to decision makers

Major manufacturers take an active role supporting the PDCA. At our conferences, we bring together the world's

leading design manufacturers and technical application experts to assist you in advancing the driven pile as a superior product.

The PDCA works closely with the technical community to format design codes and installation practices. We offer seminars throughout the country for engineers and educators on the capabilities and advantages of the driven pile. We also work with agencies, such as the Federal Highway Administration and state DOTs, which develop specifications for highway building and other infrastructure project that use driven piles.

We offer timely, valuable services

The PDCA improves your company's bottom line, as well as your stature in the construction industry, through a variety of programs and services:

Job Referrals

We are the only organization that provides contractor referrals to end users of driven piles. You tell us where you will drive piles and we will refer you to end-users. We also provide referrals to our supplier and technical members.

Peer-to-Peer Opportunities

With more than 100 contractor members, networking opportunities abound at the PDCA. Whether at our Winter Roundtable, our regional seminars or by just picking up the phone, you'll develop long-lasting professional relationships and friendships in the industry.

Annual Membership Directory

As a member, you'll receive PDCA's annual membership directory of our contractor, supplier and technical members. Your company is listed along with the piling solutions you employ and states in which you work. This directory is provided throughout the year to construction users on a complimentary basis.

Educational Conferences and Meetings

The PDCA offers cutting-edge education for contractors, engineers, geotechs and anyone else interested in the driven pile and its applications at two major conferences annually. Members receive discounts on exhibit and registration fees.

- The Winter Roundtable, held each February since 1997, is a nationally recognized conference that brings together leading technical experts, suppliers to the piling industry and contractors. This conference focuses on the key issues faced by pile-driving contractors and features discussions and presentations as well as an extensive exhibit area.
- The Design and Installation of Cost-Efficient Driven Piles Conference (DICEP), held each September since 2000, is a nationally recognized two-day conference that brings together geotechnical and design engineers, college professors and contractors to discuss the latest trends in understanding, analyzing and controlling piling costs.

Industry Development

The PDCA continually strives to expand market share for the driven pile. The PDCA sponsors the College Professors Piling Institute, held at Utah State University in Logan, Utah. Up to 25 professors, from major engineering schools, are invited to participate in an intensive, week-long program that presents them with the latest concepts in driven-pile design, installation and quality control. Some of the leading faculty in the deep foundation field has attended the institute to date. The program supplies the educators with the tools and knowledge to be able to teach their students about the advantages of the driven pile. It promises to have a long-term impact on market share for the driven pile.

Publications and Reference Materials

As a PDCA member, you will receive our quarterly publication, "Piledriver," which presents articles on issues and trends of interest to our industry. As a member, you'll receive



"Through its programs and services, PDCA has presented our company with numerous opportunities to continue our business success. It is certainly a cornerstone for growth in a very competitive business."

D.R. JORDAN, PRESIDENT AND
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discounts on advertising in the magazine.

All PDCA members receive a complimentary copy of the PDCA's codebook, "Recommended Design Specifications for Driven Bearing Piles," now in its third edition. This book covers all required guidelines for driven piles and includes a suggested bid and payment schedule.

The PDCA also sells "The Pile Design Manual," an FHWA manual on the design and construction of driven piles. Order forms are available on the PDCA Web site.

Connect Worldwide at www.piledrivers.org

The PDCA's newly redesigned Web site at www.piledrivers.org lets you research the latest trends in the industry and find direct links to manufacturers, suppliers, engineers and others. PDCA members receive a free listing in our member search area, which is being used by an increasing number of end users to find pile driving contractors and services. Our forums area makes it easy for you to connect with others to discuss issues and problems.

Leadership Opportunities

Membership in the PDCA provides opportunities for recognition and leadership. Positions are available on the PDCA board of directors and various committees that impact the industry. The PDCA recognizes noteworthy contributions to the industry with our "Driven Pile Project of the Year" award, giving opportunities for high profile recognition.

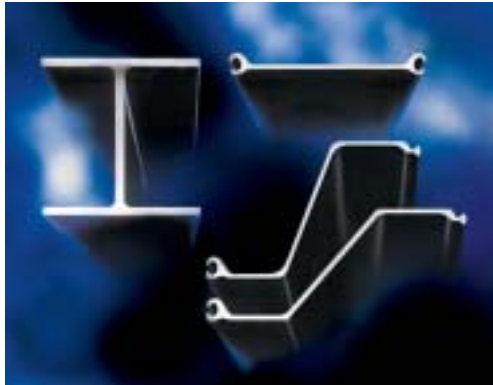
Membership is available to you

There is strength in numbers and we, at the PDCA, need to count your company when telling government agencies, engineers and suppliers that we are interesting in keeping your business viable and in growing market share for the driven pile. We need your ideas and efforts in working together toward a common goal: the use of driven-pile solutions. You can contribute your expertise and assist the Association in developing:

- A greater focus on safety
- The quality of driven pile products
- The formatting of codes and specifications for the driven pile
- Support for a program to help educate students in the use of driven piles

Join today. Be part of a growing and vibrant organization that will play a key role in the future of deep foundations. Support your industry by completing the membership application in this issue. You will immediately begin to enjoy benefits of membership.

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HP8x36		HP10x42	HP10x57

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Section Designation	AREA		WIDTH		HEIGHT		WEIGHT (MASS)				MOMENT OF INERTIA		SECTION MODULUS				SURFACE AREA			
	in ²	cm ²	in	mm	in	mm	PER SINGLE	PER WALL	PER SINGLE	PER WALL	in ⁴	cm ⁴	Per Single	Per Wall	Total Area	Nominal Area*				
							lb/ft	kg/m ²	lb/ft ²	kg/m ²			in ³	cm ³	in ³ /ft	cm ³ /m	ft ² /ft	m ² /m	ft ² /n	m ² /m
PZ22	11.9	76.6	22.0	559	9.0	228.6	40.4	60.1	22.0	107	151	6301	32.5	532	17.7	952	4.92	1.50	4.48	1.37
PZ27	12.1	78.2	18.0	457	12.0	304.8	41.2	61.3	27.5	134	282	11734	45.3	742	30.2	1622	4.93	1.50	4.48	1.37
PS27.5	13.4	86.6	19.7	500	—	—	45.6	67.9	27.8	136	5.02	209	3.19	52.2	1.94	104	4.58	1.40	3.88	1.18
PS31	15.2	98.2	19.7	500	—	—	51.8	77.0	31.5	154	5.51	229	3.35	55.0	2.04	110	4.58	1.40	3.87	1.18

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MEMBERSHIP APPLICATION

Step 1: Select Membership Type

I wish to apply for the following membership status (check one):

Contractor (\$650/year)

A Contractor Member is defined as a specialty subcontractor or general contractor who commonly installs driven piles for foundations and earth retention systems. Includes one primary membership. Secondary memberships are \$75 each.

Associate (\$650/year)

Associate Members of the Association shall consist of firms or corporations engaged in the manufacture and/or supply of equipment, materials, testing or other services to the pile driving industry. Secondary memberships are \$75 each.

Technical Affiliate (\$95/year)

Technical Affiliate Members of the Association shall consist of individuals who are involved with the design and installation of driven piles or in teaching the art and science of pile design and installation. They may be employed engineers, architects, government agencies, or universities. Employees of contractors are not eligible to become Technical Affiliate Members. Note: Technical Affiliate Membership category is for individuals only. For a company listing in the directory and on the Web site, you must join as an Associate Member.

Retired Industry Member (\$50/year)

A Retired Member shall be defined as any individual who has reached retirement age as defined by U.S. law, who has left active employment and who wishes to remain a member.

I am retiring as a: Contractor Associate Technical Affiliate

Step 2: Demographic Information

Title: Mr. Mrs. Ms. Dr. Prof. Other

Business Title _____ Business Phone _____

Name _____ Business Fax _____

Company Address _____ Primary Email _____

Business Address _____ Home Page _____

City/State/Zip _____

Step 3. Company Description (complete only the category for which you are applying)

A. Contractor Only Company Description (check all that apply):

Bridge Building	Docks & Wharves	Marine
Bulkheads	Earth Retention	Pile Driving
Deep Dynamic Compaction	General	Other _____
Deep Excavation	Highway & Heavy Civil	

B. Associate Company Only Company Description (check all that apply):

Accessories

Cutter Heads & Drill Bits	Lubricants & Greases	Safety Equipment
Dock & Marine Supplies	Pile Cushions	Other _____
Hammer Cushions	Pile Points & Splicers	
Hoses & Fittings	Rigging Supplies	

Applications Systems

Aluminum Sheet Piles
Coatings & Chemicals
Structural Steel
Synthetic Material Piles
Other _____

Steel Pipe Piles
Steel Sheet Piles
Vinyl Sheet Piles
Other Structural Materials

Timber Piles/Treated Lumber & Timbers
Concrete Piles
Composite Piles
H-Piles

Equipment

Air Compressors
Cranes
Drill Equipment
Drive Caps & Inserts

Hammers
Hydraulic Power Packs
Leads & Spotters
Pumps

Specialized Rigs & Equipment
Other

Services

Consulting
Design
Freight Brokerage
Geotechnical

Marine Drayage
Surveying
Testing
Trucking

Vibration Monitoring _____
Other _____

General

Rental Sales Other _____ Other _____

C. Technical Affiliate Only (check all that apply)

Analysis Civil & Design Consulting Educational/Association
Geotechnical Materials Testing Pile Driving Monitoring
Surveying Vibration Monitoring Other

Step 4. Geographic Areas Where Contracting, Products and Services Available

(All applicants check all that apply)

All States	CT	ID	MD	NC	OH	TN	WV
AK	DC	IL	ME	ND	OK	TX	WY
AL	DE	IN	MI	NH	OR	UT	Canada
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Step 5. Sponsorship: Who told you about PDCA?

Member Name _____

Step 6. Method of Payment

Attached is my payment of \$_____ for annual dues.

I understand that dues are due annually on December 31 and, that if I joined PDCA after March 31, I may be entitled to a prorated dues amount for the subsequent year only.

I am making payment in full by

Check # _____

Credit Card: MasterCard Visa American Express

Card Number: _____ Expiration Date: _____

Name as it appears on card: _____ Signature: _____

Please send this completed application to: PDCA

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PDCA 2004 Winter Roundtable Set for Orlando

The 2004 PDCA Winter Roundtable will be held February 19 – 21, 2004 at the Wyndham Orlando Resort in Orlando, Florida. The Winter Roundtable is the premier event of the Pile Driving Contractors Association. The Roundtable is for contractors, geotechnical and structural engineers, owners, developers, suppliers, academics, and anyone else who deals with and supports the pile driving industry.

The Winter Roundtable provides an opportunity for you to meet with your peers and industry leaders, from around the country, to discuss what's new in the industry, the needs of the industry, common problems, and possible solutions. Find out what is happening in other areas of the industry, too. A wide range of exhibitors will

be on hand with information on a variety of products and services.

An outstanding line up of speakers has been assembled to cover a variety of topics related to the driven pile. Topics include Trends in Marine Pile Driving, Underwater Noise and Pile Driving, Sheet Pile Cofferdams, the Rising Cost of Insurance and in-depth discussions of several driven major pile projects.

This year's conference will be held at the Wyndham Orlando Resort. The Wyndham Orlando Resort is located on International Drive, just minutes from Orlando International Airport, and near many of the famous Central Florida attractions, such as Walt Disney World, Universal Studios, and Sea World. Additional information can be found on the hotel's Web site

located at www.wyndham.com/hotels/MCOWD/main.wnt. Room reservations can be made by calling (407) 351-2420. Ask for the PDCA Winter Roundtable Meeting room block. The deadline for the guaranteed conference rate of \$169 is January 28, 2004. After that date, rooms are on a space-available basis only.

Please plan to attend the PDCA Winter Roundtable. For more information and registration forms, please visit the PDCA Web site at www.piledrivers.org.

Pre-Conference Short Courses

Thursday, February 19, 2004

9:00 – Noon

Pile Design for Non-Engineers

Dr. George Goble teaches this session on the basic methodologies and terminologies of driven pile design. This course is intended for non-civil engineers working in the piling industry that would benefit from greater knowledge and understanding of the design process.

1:00 – 5:00 PM

Wave Mechanics and Dynamic Pile Testing

Taught by Mohamad Hussein, vice president of GRL Engineers, this course will cover pile types, installation equipment and methods, wave equation analysis background, and practical applications and the dynamic testing and analysis of driven piles.

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PDCA 2004 Winter Roundtable Program

THURSDAY, FEBRUARY 19, 2004

9:00 – Noon

Short Course: Pile Design for Non-Engineers

Dr. George Goble

1:00 – 5:00 PM

Short Course: Wave Mechanics and Dynamic Pile Testing

Mohamad Hussein, GRL Engineers

Noon – 2:30 PM

Committee Meetings: Technical, Membership, Finance

2:30 – 5:00 PM

Committee Meetings: Education, Market Dev., Communications

6:00 – 7:30 PM

Opening Reception

FRIDAY, FEBRUARY 20, 2004

7:00 – 8:30 AM

Continental Breakfast

8:30 – 9:00 AM

8th Annual Membership Meeting

PDCA President Wayne Waters, Ed Waters & Sons Contracting Co., Jacksonville, FL, will discuss PDCA results for 2003 and plans for 2004 and beyond.

9:00 – 9:45 AM

Trends in Marine Pile Driving

Bob Bittner, President, Ben C. Gerwick. Designers are using larger piles for in-water bridge foundations, which allow the pile caps to be located off the bottom of the waterway. Mr. Bittner will discuss the development of a new type of cofferdam, the float-in cofferdam and illustrate the specific concept details with case histories.

9:45 – 10:15 AM

Break in Exhibit Hall

10:15 – 11:15 AM

Underwater Noise and Pile Driving

Dr. Robert Abbott of Strategic Environmental Consulting, San Francisco, discusses the impact of

shock waves from marine pile driving on fish and methods and costs of mitigation.

11:15 – 12:00 PM

Hathaway Bridge Project

Bill Crittenden, Project Manager, Granite Construction, discusses the fabrication and installation of 60" diameter cylinder piles for this bridge replacement project in Panama City, FL.

12:00 – 1:30 PM

PDCA Project of the Year Award Presentation and Luncheon

1:30 – 2:15 PM

St. John's Bridge Project

Amy Scales of the Florida Department of Transportation presents an overview of the I-4 St. bridge project over the St. John's River, including the full-scale pile test program, design-build bid process and the actual construction process including verification of pile capacity.

2:15 – 3:15 PM

Building Contractor Market Share and Size by Raising the Bar

Chris Dumas, Senior Geotechnical Engineer, Federal Highway Administration, discusses how contractors can expand their market share and size by implementing more sophisticated designs and quality control methods.

3:15 – 3:45 PM

Break in Exhibit Hall

3:45 – 5:00 PM

The Rising Cost of Insurance

Brian Cooper, Managing Director and Allen Brooks, Senior Vice President, Arthur J. Gallagher & Co. will discuss the construction insurance and surety market; what factors are impacting insurance; where things are headed and what contractors can do about it.

5:00 – 6:30 PM

President's Reception

SATURDAY, FEBRUARY 21, 2004

7:00 – 8:00 AM

Continental Breakfast

8:00 – 8:45 AM

The Remote Pile-Driving Analyzer

Craig Christenbury, Chief Manager, Chris-Hill Construction Company reviews the costs and benefits of the use of the PAL-R remote dynamic testing device on four projects and describes how it compares to ASTM and static testing.

8:45 – 9:30 AM

Sheet Pile Cofferdams

Harold V. Anderson, an industry expert on cofferdams, will define the uses of cofferdams, the common problems encountered during construction, the types of cofferdams recommended for different applications and several examples of successful cofferdams, including the 1999 San Mateo Bridge Pier foundation extension for seismic retrofit.

9:30 – 10:00 AM | Break

10:00 – 10:45 AM

Oakland – San Francisco Bay Bridge Approach Skyway Project

Presented by Kiewit/FCI, this \$1.1 billion project involves the use of 8' x 300" steel pipe piles and a precast segmental structure.

10:00 – 10:30 AM | Break

10:45 – 11:30 AM

Orlando Airport Project:

The Benefits of Pile Setup

Wayne Waters, Ed Waters & Sons Contracting Co., presents a case study involving piling foundations for a new passenger transit system at the Orlando Airport. A significant savings of time and cost was realized due to the use of set-up to achieve required pile capacities at relatively shallow tip elevations.

11:30 – 12:00 PM

Roundtable Discussion: Competitive Advantage from Pile Setup

1:00 – 5:00 PM

PDCA Board of Directors Meeting

Calendar of Events

February 19-21, 2004

8th Annual Winter Roundtable Conference

Wyndham Orlando Resort
Orlando, Florida

September 16-17, 2004

5th Annual DICEP Conference

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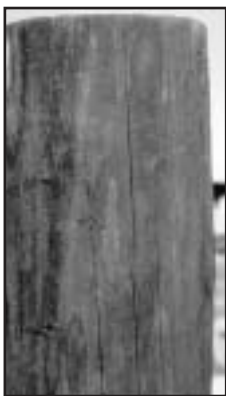
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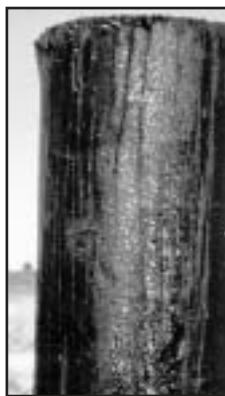
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BMP Quality

PDCA's Harry Robbins Starts South Carolina Chapter

By Jennifer Bernal

When the pile driving industry in South Carolina began to suffer, Harry Robbins had an idea that would bring local pile drivers together. He helped start the Pile Driving Contractors Association of South Carolina, which was officially chartered on April 1, 2003.

"The pile driving market in coastal South Carolina was shrinking. Our market share was being eroded by ground modification, augered systems, caissons, etc. Those who sell these alternative systems were doing a much better job of marketing their products than we were. It occurred to me that we could pool our resources through a local chapter and collectively market our product, which is driven piles, to local owners and designers," he explains.

The chapter meets quarterly and currently has 23 members that include pile-driving contractors, structural engineers, geotechnical engineers, material suppliers, equipment suppliers, and a trucking firm.

"PDCA gives me the opportunity to more effectively market my product than I could do on my own," Robbins says. "I believe that driven piles are the best option for a proven deep foundation system. Working through PDCA is a more effective way to share this message than trying to do it alone."

Robbins believes that establishing more local chapters can be beneficial in promoting driven piles at the grassroots level.

"PDCA can support this local effort by providing educational support for local engineers. This support can be in the form of technical papers that favorably address pile driving issues such as vibration and noise. This support can also consist of technical guidance on how to design driven piles to meet the International Building Code."

Robbins, 53, graduated from The Citadel in Charleston, South Carolina, with a bachelor of science degree in business administration.

After graduating, he worked for eight years in the underground utility business. In 1980, he began working for Palmetto Pile Driving Inc. as project manager and, in 1983, he was promoted to vice president and general manager. Six years ago, he started his current position as president.

"As president of Palmetto Pile Driving Inc., I'm responsible for the overall operation of the company," Robbins explains. "This includes estimating, project management, marketing, personnel, etc. We are blessed with a strong core of long-time, quality employees."

Palmetto Pile Driving Inc. installs any type of conventional driven piles for foundations on land. The company



Harry Robbins and his Australian Shepherd Luke sit in front of a fountain that his company built at Charleston Waterfront Park. Palmetto Pile Driving Inc. installed 663 80-foot long, 14-inch prestressed concrete piles when this park was constructed in 1988.

also manufactures prestressed concrete piles, which it produces for clients and distributes to other pile driving contractors.

The type of projects it is involved with includes hospitals, schools, office buildings, parking garages, manufacturing plants and water treatment facilities.

"We have a solid, conservative approach to business. Our primary area of interest is coastal South Carolina. Huge projects for us do not come along every day. This means we strive to be the best in our area at driving piles for office buildings, schools, etc. when we are fortunate enough to have the opportunity. When an unusually large project does come along, we expand to take care of that project with little



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As far as safety and environmental issues go, Palmetto Pile Driving works hard to prevent any problems.

"In historic Charleston, there is a concern for the effects of pile-driving vibrations on old and historic structures. Often the perception is that construction activities, and especially pile driving, will cause problems. The construction team's job is to make certain that perceived problems do not become actual problems."

Some of the procedures they use, to ensure safety, are surveys of the existing conditions by geotechnical engineers, setting vibration limits, preaugering, using a clean-running, hydraulic-powered hammer with a variable stroke, and doing a post-pile driving survey using the same geotechnical engineer. These procedures all ensure that vibrations will not harm existing structures.

Robbins has a corporate philosophy that ensures his company's success: "Do it safe. Do it right. Do it fast. But always, do it in that order."

To keep abreast of technology issues, Robbins reads trade journals and attends trade conferences where he gains much information from equipment vendors, suppliers, engineers, and peers.

Robbins has a corporate philosophy that ensures his company's success: "Do it safe. Do it right. Do it fast. But always, do it in that order."

He's also been involved in various national and local organizations during the course of his career.

As president of PDCA's South Carolina chapter, and a board member of the national PDCA, Robbins has also been a member of the American Subcontractors Association and the ASA Charleston chapter since 1979 and held several offices over the years. He is a member of Charleston Contractors Association and the Charleston Area Civil Engineers Club. From 1991 to 1994, he was a member of the PCI Prestressed Concrete Piling Committee.

In his free time, Robbins is an active member of the Exchange Club of Charleston.

"The Exchange Club of Charleston owns and operates the Coastal Carolina Fair," he says. "Through our efforts with the fair, we are able to make substantial contributions to local charities. Last year, our club donated over \$425,000 to Charleston area charitable organizations."

Robbins also enjoys spending time with his wife Cyndi and their two daughters Jolee and Elaine. Some of his favorite pastimes include running with Luke (his Australian Shepherd), boating, kayaking, and playing golf.

As far as his career goals, he says, "This is what I do. I only want to do it better."

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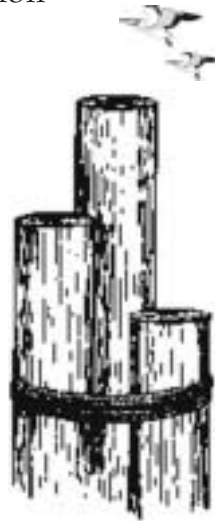
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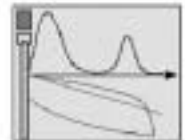
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The Sharon Springs Bridge before the fire.

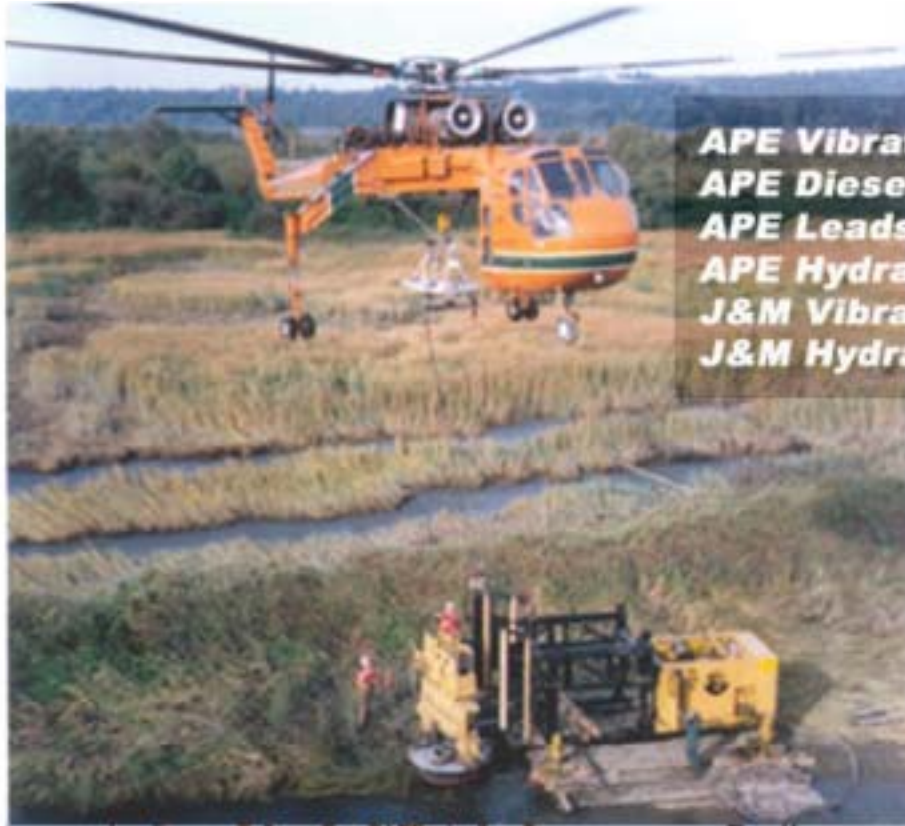
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