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Plaquemines LNG driven pile megaproject

ECA receives Service Partner of the Year award

Vermeer launches PD25R pile driver for solar field construction

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President & CEO: ***David Langstaff***

Managing Editor: ***Lyndon McLean***
lyndon@delcommunications.com

Sales Manager: ***Dayna Oulion***

Advertising Account Executives:
Jennifer Hebert | ***Michelle Raike***

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Canada's construction industry *unveils critical report on climate resilience*

The Canadian Construction Association (CCA) recently released a pivotal report emphasizing the urgent need for increased investment and stronger policies to protect Canadians and their critical infrastructure from the increasing threats of climate change.

The report, titled Climate resilience in construction: Building for a sustainable future, stresses the importance of building resilient infrastructure that can withstand extreme weather events, protect lives, and support community well-being. Recent incidents, like the flooding in Toronto and wildfires in Jasper, show these threats are real and disrupt the everyday lives of Canadians. Calgary's broken water main signals even deeper problems with Canada's aging infrastructure.

"Canada's infrastructure is the backbone of our communities, but it's under threats from climate-related disasters," says Rodrigue Gilbert, CCA President. "With much of our infrastructure aging or in poor condition, we must act now to future-proof our infrastructure and meet our environmental goals."

The construction industry is already working to build sustainably, but it cannot do it alone. Significant investment, strategic planning, and collaboration are needed to build infrastructure that is both resilient and sustainable.

"The construction industry is making progress in reducing our environmental impact," Gilbert adds. "But to reach our net-zero objectives and protect our infrastructure, we need support from both stakeholders and all levels of government."

Key points from the report:

- Urgent need for investment: To protect infrastructure assets and address the rising strain from increasing population and housing developments, substantial investment is essential.
- Industry progress and challenges: The construction sector is actively working to reduce its environmental impact, but long-term sustainability requires broader support and collaboration. Incentives to pilot new processes and technologies are also needed.
- Policy environment: We need effective policies to ensure infrastructure is built to last. This includes addressing issues like labour shortages, procurement, alternative delivery models, and supply chain challenges.

"Too often, infrastructure investment decisions are based on what's politically expedient, not what's genuinely needed in a given region of Canada," Gilbert says. "We need to focus on projects that are 'shovel-worthy', not just 'shovel-ready' to ensure Canadians have the infrastructure they depend on."

Download the report at https://www.cca-acc.com/wp-content/uploads/2024/09/CCA-Climate-resilience-in-construction-E.pdf

About the Canadian Construction Association

CCA represents more than 18,000 member firms drawn from 64 local and provincial integrated partner associations across Canada. CCA gives voice to the public policy, legal and standards development goals of contractors, suppliers and allied business professionals working in, or with, Canada's institutional, commercial, industrial, civil and multi-residential construction industry.

The construction sector is one of Canada's largest employers and a major contributor to the country's economic success. The industry, 70 per cent of which is made up of small and medium enterprises, employs more than 1.6 million Canadians and contributes 7.4 per cent of Canada's Gross Domestic Product. ●

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ECA receives Service Partner of the Year award

Equipment Corporation of America (ECA) is proud to announce that it has been honoured with the Bauer Service Partner of the Year Award for 2023, an important goal in the company's commitment to delivering outstanding customer service and support. This award recognizes ECA's industry-leading efforts in providing proactive, solutions-oriented service, which has become the hallmark of the company's strategy since 2019.

The award was presented at the annual Bauer Parts and Service Meeting in Germany, where ECA edged out strong competition from other Bauer subsidiaries and dealers worldwide to earn the prestigious accolade

"This achievement reflects the hard work and dedication of everyone at ECA," said Joel Ross, VP of Product Support at ECA. "The award has been a key objective of ours since it was identified in our 2019 strategic planning. We realized that to truly grow, we needed to shift our focus from individual branch performance to supporting customers at every level of the organization. It's about developing meaningful relationships and finding unique solutions to serve our customers better. Winning this award shows that we're on the right track."

Gordian Ulrich, VP of Bauer Product Sales at ECA, echoed the sentiment, emphasizing the "all-in" attitude of the Service department.

"The award has been a key objective of ours since it was identified in our 2019 strategic planning. We realized that to truly grow, we needed to shift our focus from individual branch performance to supporting customers at every level of the organization."

"When we developed our five-year strategic plan, we decided to become more service-focused, as we believed that was what would set us apart. I'm thrilled to share that our hard work has paid off—we finally won the Bauer Service Partner of the Year Award, and I dedicate this honor to all the incredible people in our Parts and Service teams," Ulrich said.

Success in this department could not be attributed to one individual according to Ross and Ulrich, but rather the collective effort of the entire ECA team. Key contributors such as Kevyn Bates, who provided a relationship-based blueprint for building parts sales, Chris Horne, ECA Canada's Director of Service, with his depth of knowledge and never-give-up attitude, Shawn Cunningham, who pioneered the role of Product Support Sales Representative (PSSR), a vital position for ECA that has expanded into five other territories, Chris Recke, who originally started ECA's Bauer Service Team with Ulrich in 2019, and Gus Delfarno who brought a contactor-oriented mindset to our team.

"The Bauer executives repeatedly highlighted how far ahead ECA is compared to other subsidiaries," Ross added. "While it's encouraging, this award isn't a reason to rest on our laurels. Instead, it's motivation to keep pushing forward to achieve 100 per cent customer satisfaction. We believe that with the dedication and expertise of our team, it's an achievable goal."

Ulrich believes it is ECA's commitment to elevating the customer experience through teamwork, continuous improvement, and innovative service strategies that made the goal achievable.

"Managers may set the stage," Ulrich said, "but it's our team that plays the music. This award belongs to them."

As ECA celebrates this achievement, the company remains focused on enhancing its service capabilities and strengthening customer relationships across all regions, staying true to the philosophy that exceptional service is not just an outcome – it's a mindset.

About Equipment Corporation of America

ECA has been a leading supplier of foundation construction equipment for more than a century. We are the exclusive distributor for BAUER Drilling Rigs, KLEMM Anchor and Micropile Drilling Rigs, RTG Piling Rigs, and BAUER MAT Slurry Handling Systems. We also distribute HPSI Vibratory Pile Hammers, WORD International Drill Attachments, Pileco Diesel Hammers, Dawson Construction Products, ALLU Ground Improvement Equipment, Pile Master Air Hammers, DIGGA auger drives, and Olin Concrete Pumps. ECA offers sales, rentals, service, parts and training from 11 facilities throughout the Eastern U.S. and all Canadian Provinces. ●

Keller announces Paul Leonard as president of Keller North America

To drive continued growth and enhance organizational capability, Keller announced Paul Leonard as President, North America. He will succeed Eric Drooff, who will be focusing on groupwide operational projects.

"I'm honored to have the opportunity to join the talented Keller team in North America" Leonard said. "Keller is made up of incredible people who embody excellence in the high-quality work and expertise they deliver each day. I look forward to collaborating with the team and building strong client partnerships to deliver successful projects."

Leonard is a highly experienced industry professional with a long tenure at ExxonMobil, where he began his career as a project engineer before leading major projects and world-class engineering and operations teams. Leonard joined Wood Group PLC in 2014 and held roles including President of Operations, responsible for all aspects of Wood's Operations in the Americas. Most recently, he held the role of President of Transformation, where he was responsible for the transformation of Wood's global Consulting Business. Leonard holds a Bachelor of Engineering from Memorial University in Newfoundland.

At Keller, Leonard will be based in Houston and lead more than 4,000 employees across the United States and Canada. He will also sit on the Keller Group Executive Committee.

"We welcome Paul to the Keller team," said Keller Group Chief Executive Officer Michael Speakman. "Paul is a tenured leader, experienced in the delivery of major projects. He brings a fresh perspective and will continue to drive the implementation of Keller's strategy in North America, focusing on targeted growth and exceptional operational performance." ●

Piling machine market size to reach USD 7.48 billion by 2032, driven by infrastructure expansion and renewable energy

The piling machine market set for robust growth driven by infrastructure expansion and renewable energy projects and the surge in construction demand and innovative technologies

Research by SNS Insider

The piling machine market is experiencing significant growth, driven by the rapid expansion of infrastructure projects, renewable energy installations, and industrial construction worldwide. One of the primary drivers is the surge in renewable energy projects, particularly in wind energy. According to the International Trade Administration (ITA), global renewable capacity is expected to increase by 107 gigawatts (GW) in 2023, supported by policies promoting clean energy and rising energy security concerns. The demand for piling machines in renewable projects, especially offshore wind farms, is rising as these machines are essential for building the robust foundations required for turbines. In the U.S., the construction industry plays a crucial role in the demand for piling machines.

Construction spending, both residential and non-residential, grew by 3.5 per cent year-on-year in June 2023, according to the U.S. Census Bureau. This growth is further accelerated by government initiatives like the USD 1.20 billion Bipartisan Infrastructure Bill, which allocates USD 550 billion for infrastructure spending, bolstering construction output. This surge in infrastructure development, along with efforts to revitalize semiconductor production by building new factories, is creating substantial demand for piling machines to support the foundational work in these projects.

Access complete report details of Piling Machine Market Analysis 2024-2032 at https://www.snsinsider.com/reports/piling-machine-market-1193. ●

Plaquemines LNG *Driven Pile Megaproject*

By Jordan Romero, Jimmy Nettles and Daniel Sprunk, Cajun Industries, and Brandon Phetteplace, P.E., GRL Engineers

This article was originally published in DFI's bi-monthly member magazine, Deep Foundations*, September/October 2024 issue. DFI is an international technical association of firms and individuals in the deep foundations and related industries. To join DFI and receive the magazine, go to www.dfi.org.*

The Venture Global Plaquemines LNG Project in Port Sulphur, Louisiana, stands as a great achievement in the world of liquefied natural gas (LNG) infrastructure. Encompassing a 632-acre (255 ha) site, 20 miles (32 kilometres) south of New Orleans along the Mississippi River, it's designed to be one of the largest LNG export facilities in the U.S., with the capacity to handle up to 20 million metric tons (22 T) of LNG per year. The project's scope includes multiple LNG trains, storage tanks and large marine terminal infrastructure. The construction involves significant civil works, including deep foundation and flood protection systems.

Given the scale and complexity of the project, the construction process is highly intricate, involving a multitude of deep foundation disciplines and coordination among various contractors and stakeholders. Cajun Industries was tasked with several critical components of the piling and civil construction phase, including the development of hurricane protection systems and the execution of extensive deep foundation scopes through the life cycle of the project.

This involvement in the project began with a small-scale precast concrete test pile program using just one pile driving rig in 2020. By May 2024, operations had expanded significantly, with a peak workforce of 200 employees, 30 piling rigs and 15 different piling scopes. These scopes included a design-build flood protection system for the project's laydown yard and construction support facilities, single-piece pipe piles up to 145 ft (44 m) long, precast concrete piles up to 120 ft (37 m) long, 41 cofferdams with sheet piles up to 80 ft (24 m) long, as well as 140 ft (43 m) long H-piles. The scope also encompassed a comprehensive test pile program featuring more than 150 load tests. Over the course of the project, the team executed more than 575,000 safe man-hours, installing 18,300 piles of various types and sizes. These efforts equated to

the installation of more than 1,965,900 ft (600,000 m) of piling or 372 mi (600 km), weighing a staggering 312 million lb (142 million kg). For perspective, one could travel three round trips to outer space when comparing the linear footage of piling.

Early engagement and design challenges

The project team got involved with the Plaquemines LNG Project in June 2020, with an initial focus on estimating and design work for several early works scopes. The onset of the COVID-19 pandemic introduced unforeseen delays, impacting the project's timeline by approximately 18 months. Despite these setbacks, the team demonstrated remarkable resilience and flexibility, maintaining its commitment to the project through ongoing pricing exercises and design discussions.

In January 2022, Cajun secured a contract with W.T. Byler Co., a sitework subcontractor based in Houston. The scope of this contract was to design and build a hurricane protection floodwall system for the early and temporary works (ETW) area. This area was crucial for housing essential infrastructure including a construction parking lot, material laydown areas and office complexes. Given the region's susceptibility to hurricanes and storm surges, the development of a robust flood protection system was imperative for ensuring the continuity of construction activities. This ETW floodwall system contract was multifaceted, involving design, procurement and installation.

The design process for the floodwall system involved rigorous calculations to account for wind loads, soil scour and estimated seepage rates. The floodwall was designed for a 50-year storm event, ensuring that it could withstand significant hurricane conditions. This design required several key components including 7,600 wall ft (2,300 m) of steel sheet piling, and four reinforced construction access floodgates, prefabricated offsite and test-fitted onsite, weighing nearly 40,000 lb (18,000 kg), and designed to be removable for access during flood events. The system also included two outfall structures for dewatering and two staircases for personnel access during flood events. These components were critical for maintaining functionality and safety within the ETW area.

The installation process was equally challenging, requiring precise coordination and execution. Crews

faced numerous logistical hurdles including managing the delivery and placement of massive steel sheet piles and coordinating the installation of floodgates and other structures while other construction activities were starting to ramp up. The successful execution of this scope was a testament to the team's expertise and commitment to project success.

As the deep foundations program moved into the winter of 2022, crews mobilized test piling resources back to the project to begin the 24 in (610 mm) precast concrete pile test program. In mid-December they installed and tested 24 x 24 in (610 x 610 mm) square precast concrete piles up to 120 ft (37 m) long. The largest pile weighed in at 72,000 lb (33,000 kg) per pile. The test pile program was successful in meeting or exceeding the capacity requirements. This resulted in awarding the 24 in (610 mm) production piles for the marine area pipe bridge foundations to Cajun Industries.

The marine terminal pipe bridge piling scope required an uncommon execution strategy. This was due to the sheer size of the 24 in (610 mm) x 120 ft (37 m) long precast piles and the constraints associated with material lead times, project schedule and pile layout. The initial challenge requiring attention was the long lead time on the splices for 24 in (610 mm) precast piles, which exceeded the milestone start date set forth by the client. To mitigate this, the team engineered a custom piling ground template capable of holding up to 10 piles with 30 per cent embedment. This innovative solution allowed for the installation of full length 24 x 24 in (610 x 610 mm) square x 120 ft (37 m) long precast concrete piles in lieu of splicing. Furthermore, this allowed the pile vendor, Gulf Coast Prestress, to meet the pile procurement schedule.

As a result of fabricating the piles in one piece, the project team had to develop a solution for installing full length, 72,000 lb (33,000 kg) piles. This required two cranes to loft the piles into the template: one crane lifting the pile and another tailing the bottom of the pile. This execution plan was proven successful as pile installation began, but shortly thereafter an external constraint arose due to the proximity to the Mississippi River Levee System and the Army Corps of Engineers' requirements with high river stages. When the Mississippi river gauge is up over 11 ft (3.3 m), no excavation or penetration work is allowed within 1,500 lft (457 m) of the levee. Ultimately this caused three weeks of downtime over the course of the project. Despite these constraints and schedule setbacks, the team was able to execute the project incident free while still managing to meet the required milestone finish dates.

Geotechnical challenges and solutions

In the early spring of 2023, Venture Global and its development, engineering, procurement and construction contractor, a joint venture of KBR and Zachry Group, recognized the need to diversify the piling types on the project. This was due to many factors, some of which included a push to accelerate overall project schedule and emerging geotechnical concerns stemming from the initial deep foundation system design.

To identify alternative foundation solutions, the joint venture proposed performing an extensive open ended pipe pile and H-pile load test program at two separate locations within the phase II project limits. Each location had eight load test piles each for pipe piles and H-piles installed with varying sizes and diameters to varying depths, 32 total test piles. Each test pile was PDA (dynamic load) tested during initial drive, 20-minute restrike, 24 hours restrike and after static load testing restrike.

Each set of eight piles required six compression tests, two tension tests and two lateral tests.

Based on the geotechnical report and previous testing performed on the project, there was a significant geotechnical advantage to penetrating the foundation into or beyond the dense sand layer that varied in depth from 100–130 ft (30.5–40 m). For this reason, the load test program was designed to stop short of the sand, to be fully embedded in the sand and to penetrate beyond the sand layer.

Due to the complexity and scale of the pile dynamic analysis and static load test programs, including the priority of safety and schedule, several in-person planning meetings were held prior to the start of the load test program to identify potential issues and optimize timing. As with all load test programs, communication among the client, contractor and the testing firm, GRL Engineers, was critical to the execution of the established testing goals. Second to communication was the criticality of the plethora of testing equipment that was mobilized between the contractor's static load test frames and GRL's static load testing equipment. This allowed for onsite optimization of the testing sequence. The original goal for the 40 static load tests between the sites was aggressive at 10 days, the firms were able to successfully complete all tests in eight days.

The static load test results were collected electronically with digital dial indicators, load cells and vibrating wire pressure gages. This electronic data collection allowed for post processing of the results

From March to May 2023, the team conducted more than 150 static load tests, averaging four to six static load tests per day. Results yielded the highest capacities for the project; in some cases, two times the capacity of the drilled cast-in-place displacement piling being installed by others.

within 24–48 hours and transmittal to the client. Due to this, the client and its team were given preliminary indications of the testing results well ahead of schedule.

From March to May 2023, the team conducted more than 150 static load tests, averaging four to six static load tests per day. Results yielded the highest capacities for the project; in some cases, two times the capacity of the drilled cast-in-place displacement piling being installed by others. The ability to expedite the extensive test pile program gave the client the information needed to make important decisions to help expedite the project schedule. Partly due to the successful completion of the test pile program and the contractor's approach of being responsive and providing creative solutions, the owner was able to convert more than 25 per cent of the piling scope to driven pipe piles for the phase II portion of the project.

Large-scale execution and project integration

From July 2023 to May 2024, the team undertook a substantial piling scope, simultaneously installing more than 10,400 pipe piles and 1,278,000 sq ft (118,000 sq m) of sheet piles across phases I and II of the project. This required a high level of meticulous planning, seamless communication and execution on all work fronts. To be successful, personnel put a concentrated focus on safe execution, training, equipment sourcing from reputable and trustworthy vendors, material supply and logistical planning, installation strategy, and simultaneous operations with other contractors working at the site. Effective communication, both internal and external, was key to the project's success.

The team coordinated closely with suppliers JD Fields, Atlas Tube and Nucor Skyline to procure and transport full-length pipe piles ranging from 100–145 ft (30.5–44 m) in length. The pipe procurement process began at the Atlas Tube mill in Blytheville, Arkansas, where the 24 in (610 mm) piles were rolled to their full length of up to 145 ft (44 m) and the Nucor mill, also in Blytheville, to roll 18 in (457 mm) piles up to their full length of 120 ft (36 m). The pipe piles were then loaded onto barges for a 650 mi (1,046 km) journey down the Mississippi River to a designated offloading facility near the site. From there, they were transferred onto specialty stretch trailers for highway transport and finally offloaded onsite for installation.

Pipe piles were installed using 10 driving rigs at peak capacity. The installations included 1,286 piles of 18x100, 850 piles of 18x120, 3,181 piles of 24x120, and 4,545 piles of 24x145, totaling 9,862 piles. Rig 1 mobilized on June 19, 2023, with the project ramping up to 10 rigs by August 14, 2023, with nine person crews. At peak, crews utilized three handling rigs to support installation and three drill rigs to predrill holes. Rigs 1 and 2 started in the pretreatment area, then Rig 3 was added to finish working south to north, west to east. Rigs 4–10 worked in the power island area from south to north, west to east. The overall duration was nine months (June 2023 to March 2024), with direct manpower peaking at 120. Each crew was supported with a 200-ton crane, diesel drive hammer, leads, trackhoe, wheel loader and a manlift.

The sheet piling cofferdam scope presented its own set of challenges. The need for temporary retaining structures was realized later than expected in the project, creating additional design and installation constraints. The team had to develop a fast-paced design approach and coordinate with ongoing civil, mechanical and electrical work during installation. It created a "home-grown" cofferdam turnover procedure to ensure safety and efficiency during install, excavation and construction activities inside and around the cofferdams. This procedure required detailed planning and daily communication with the client and other contractors to ensure smooth integration and minimal disruption to concurrent work. Overall, 41 temporary and permanent retaining structures were designed in house by Cajun Engineering Solutions and Huval & Associates.

Achieving excellence through collaboration

The Venture Global Plaquemines LNG Project represents a significant achievement in LNG infrastructure, and the successful completion of this work highlights an ability to handle complex challenges and deliver high-quality results. From initial floodwall design to the installation of various pile types, including precast concrete, pipe piles and sheet piling cofferdams, the project team highlighted its ability to innovate and adapt to changing project requirements through meticulous planning, effective communication and a commitment to safety. By putting the health and safety of its employees above all else, striving for operational excellence and exceeding the expectations of the client, the team was able to successfully navigate challenges and deliver outstanding results, contributing to the project's success.

The collaboration between Cajun, the KBR and Zachry Group joint venture, Venture Global and other stakeholders exemplifies the power of teamwork in achieving ambitious construction goals while ensuring safety and quality every step of the way.

Jordan Romero is a project manager for Cajun Industries, deep foundations business unit, with a background in multidiscipline deep foundation systems and a specialty for shoring systems and driven piling. Specific to this project, he was responsible for managing multiple scopes on the project, including sheet piling, precast concrete piles, pipe piles and test pile programs.

Jimmy Nettles is a senior project manager for Cajun Industries, deep foundations business unit, with a background in multidiscipline deep foundation systems. Specific to this project, he was responsible for managing the phase II pipe pile scope on the project.

Daniel Sprunk is a senior project manager for Cajun Industries, deep foundations business unit, with a background in multidiscipline deep foundation systems. Specific to this project, he was responsible for managing the ETW floodwall scope on the project.

Brandon Phetteplace, P.E., is branch manager/vice president for GRL Engineers, Texas and Louisiana offices, with a background in deep foundation testing and a specialty for Gulf Coast quality control testing. Specific to this project, he was responsible for managing the PDA testing during the load test program on piles and production testing, static load testing for the load test program, and APPLE testing on the augered foundations. ●

Vermeer launches PD25R pile driver for solar field construction

Vermeer PD25R pile offers unprecedented versatility and efficiency for contractors tackling diverse installation projects

Vermeer unveils the PD25R pile driver, engineered to meet the evolving demands of the growing solar market. This new model features a 25-foot (7.6-metre) pile driving capability, allowing solar contractors to install longer piles for larger solar arrays and on varied terrain. The PD25R's extended reach enables contractors to adapt to changing project requirements and site conditions for optimal productivity in solar field construction.

"The PD25R represents a significant advancement in pile-driving technology," says Ed Savage, product manager at Vermeer. "We've incorporated 12 years of customer feedback to create a machine that offers greater flexibility, capacity and optimized performance."

Powerful performance and versatility

Powered by a robust 74 horespower (55.2-kW) Tier 4 Final/Stage IV engine, the Vermeer PD25R delivers impressive performance in the field. It achieves transport speeds of up to 2.5 mph (four km/hr) and generates substantial hydraulic power for optimal hammer downforce. This power combination enables the machine to operate effectively across a wide range of ground conditions, including challenging terrains. As a result, contractors can confidently tackle diverse project sites, expanding their business opportunities and improving project efficiency.

The innovative design of the Vermeer PD25R pile driver includes a telescoping mast and rotating upper half, eliminating the need for assembly and disassembly. This design allows for quick rotation and positioning of the mast, significantly optimizing setup and teardown time. For contractors, this means less non-value-added time between jobs and the ability to complete more installations in a day.

With a 25-foot (7.6-metre) pile driving capability and the ability to leave up to 10 inches (25.4 centimetres) of pile exposed above ground, the PD25R demonstrates remarkable versatility. These features allow the machine to meet various installation requirements for solar arrays, inverters and battery storage systems. By providing flexibility for different applications within a single project, the PD25R helps solar contractors streamline their operations.

Advanced automation and diagnostics

Designed to support automation, the Vermeer PD25R includes features like auto plumb, auto home, auto target and an optional laser receiver. The machine is also ready to accept Trimble or Carlson GPS systems, enhancing accuracy and consistency during installation. This automation helps improve installation quality and reduces the learning curve for new operators, helping contractors address labor shortages and training challenges in the industry.

Equipped with advanced technological features, the PD25R enhances operational efficiency and management. Intelligent on-rig diagnostics provide operators with specific explanations and prescriptive troubleshooting steps, enabling quick issue resolution and optimizing uptime. This system is integrated with telematics connectivity, offering contractors comprehensive insights into their machine's performance, location, and maintenance needs. These combined technologies allow operators of various skill levels to keep the machine running efficiently while providing project managers with real-time data for improved fleet management and resource allocation.

Enhanced maneuverability and safety

The Vermeer PD25R is equipped with rubber tracks and exerts a low ground pressure of just 5.7 PSI. This design enhances flotation and turning abilities, minimizing ground disturbance and allowing work to continue in various weather conditions, including rain. Combined with its compact footprint – measuring 122 inches (309.9 centimetres) in length, 101 inches (256.5 centimetres) in transport width and 121 inches (307.3 centimetres) in operating

width – the PD25R offers exceptional maneuverability and adaptability to diverse jobsites.

Safety features of the PD25R include an automatic stop, tracking speed control based on hammer height and tilt, and bump bars for optional automation systems.

Optional row-to-row technology

Vermeer is also introducing new row-to-row technology as an available option on the PD25R pile driver, enhancing automation in solar installations.

"With the optional row-to-row technology, operators no longer need to manually pivot or turn the machine into the next row," Savage explained. "This technology means less room for operator error during the installation process and can lead to optimized training for beginner operators. For solar contractors who opt for this feature, it translates to faster installation times and improved overall project effectiveness."

The row-to-row system uses GPS to locate waypoints and complete installation accurately and consistently. When combined with the Vermeer point-to-point system, it allows for comprehensive machine navigation throughout the solar field with minimal operator input. This level of automation not only speeds up the installation process but also allows a high degree of accuracy, helping reduce the need for costly rework and improving the overall quality of solar field construction.

The Vermeer PD25R pile driver, with its optional automation technologies, offers solar contractors a powerful solution to help maximize output, improve streamlined performance and address labor challenges in pile installation.

For more information about the Vermeer PD25R pile driver and its optional automation features, visit vermeer.com or contact your local Vermeer dealer.

About Vermeer Corporation

Vermeer delivers a real impact on the way important work gets done through the manufacture of high-quality underground construction, agricultural, surface mining, tree care and environmental equipment. With a reputation for being built tough and built in a better way, Vermeer equipment is backed by localized customer service and support provided by independent dealers around the world. To learn more about Vermeer, products, the dealer network and financing options, visit vermeer.com.

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Please contact your local Vermeer dealer for more information on machine specifications.

Liebherr-Werk Nenzing GmbH converts to HVO fuel

The use of HVO in the machines at the Liebherr factory in Nenzing can save 300,000 litres of diesel per year and reduce CO_2 emissions by 810 tonnes.

Since August 2024, the Liebherr factory in Nenzing, Austria, has switched to HVO fuel for the machines it produces. The company is thus making an important contribution to reducing global greenhouse gas emissions by using this largely CO_2 neutral fuel.

Hydrotreated vegetable oil (HVO) is a synthetically produced fuel that is mainly obtained from vegetable and animal oil, and fat waste from the food industry. These are converted into hydrocarbons with the addition of hydrogen. The HVO fuel from Neste used by Liebherr in Nenzing is one of the highest quality fuels on the market and is free from palm oil. Compared to conventional diesel and other fossil fuels, HVO produces up to 90 per cent less CO_2 emissions during combustion.

The use of HVO in the machines at the Liebherr factory in Nenzing can save 300,000 litres of diesel per year and reduce CO_2 emissions by 810 tonnes. This corresponds to a 20 per cent reduction in direct CO_2 emissions at the site. As HVO can be mixed with fossil diesel in any ratio and used with conventional combustion engines, most Liebherr machines in the global fleet can be operated immediately and effectively with HVO. The higher the proportion of HVO in the fuel mixture, the higher are the CO_2 savings.

HVO in logistics

Since the beginning of August 2024, a well-known Vorarlberg transport company has also been carrying out all transport operations for Liebherr-Werk Nenzing GmbH using HVO-powered vehicles. Thanks to this collaboration, the site is significantly reducing its CO_2 footprint and improving environmental standards in the supply chain. This conversion can save 23 per cent of transport emissions and 3,500 tonnes of CO_2.

About the Liebherr Group – 75 years of moving forward

The Liebherr Group is a family-run technology company with a highly diversified product portfolio. The company is one of the largest construction equipment manufacturers in the world. It also provides high-quality and user-oriented products and services in a wide range of other areas. The Liebherr Group includes over 150 companies across all continents. In 2023, it employed more than 50,000 staff and achieved combined revenues of over 14 billion euros. Liebherr was founded by Hans Liebherr in 1949 in the southern German town of Kirchdorf an der Iller. Since then, the employees have been pursuing the goal of achieving continuous technological innovation and bringing industry-leading solutions to its customers. Under the slogan "75 years of moving forward", the Group celebrates its 75th anniversary in 2024. ●

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Keller installs CFA (auger cast) piles for Kinder Morgan Bridge Abutment

The project

Kinder Morgan constructed a new pipe rack, designed to be 1.9 miles (three kilometres) long, connecting the proposed new oil tanks at their baseline terminal to the Kinder Morgan Edmonton Terminal. The ground conditions consisted of an uncontrolled fill layer overlying glacial till and lacustrine clay, followed by bedrock. The planned pipe rack route included a small bridge crossing a roadway.

The challenge

- Existing utilities close to proposed pile locations
- Work occurred next to an existing roadway, requiring a heightened safety awareness.

The solution

A deep foundation solution was needed to support the pipe rack bridge abutment. Keller installed 33 CFA (auger cast) piles to depths of 80.4 feet (24.5 metres). Keller also worked with the client to modify pile designs near the existing utilities. Work was sequenced as required after high-traffic hours to ensure crew safety. Keller completed their scope on schedule for the client to move to the next construction phase.

Project facts:

Owner(s): Kinder Morgan Terminals
Keller business unit(s): Keller
Main contractor(s): Alberco
Solutions: Deep foundations
Markets: Oil, gas and chemical
Techniques : CFA (auger cast) / ACIP piles ●

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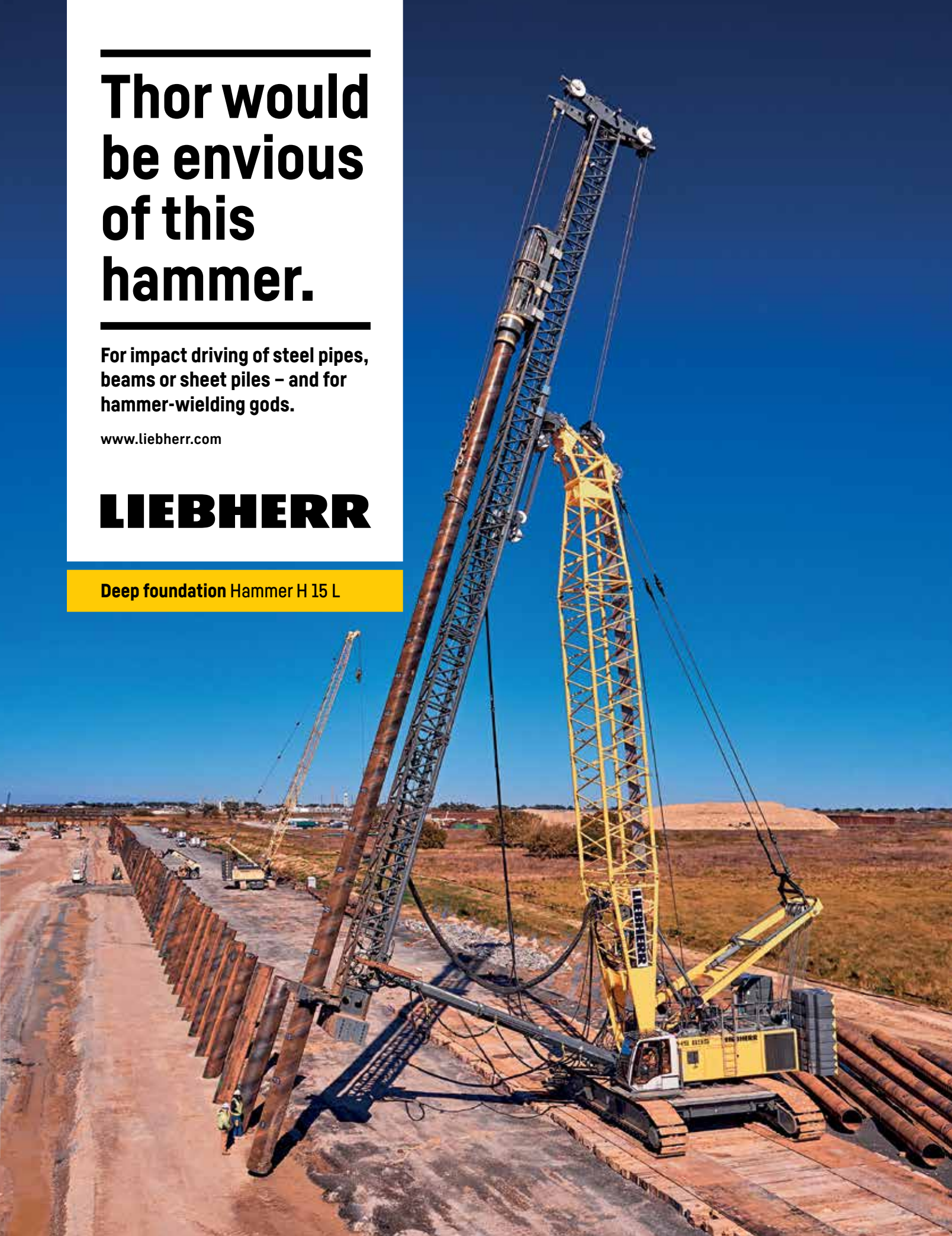

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