

soilmec journal

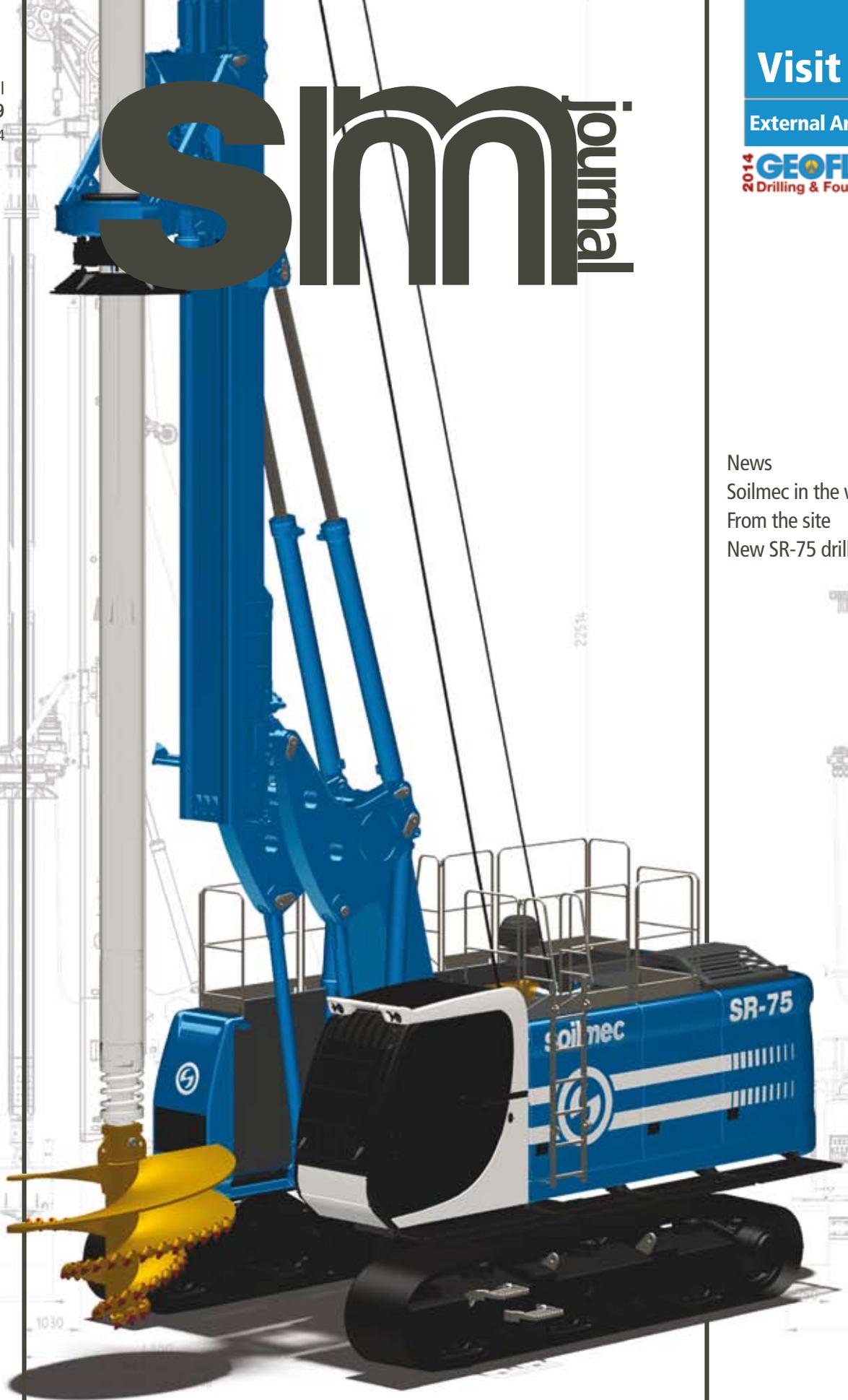
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External Area 9H

2014 **GEOFLUID**
Drilling & Foundations

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Blue: the color of Innovation



colophon

Soilmec Journal – Year 9, Issue No. 2/2014

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ON COVER

New blue livery of Soilmec machines.

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Simone Trevisani, Managing Director.

SOILMEC: RETURN TO THE ORIGIN

In this issue, we have decided to dedicate our cover to the new livery of Soilmec machines. A **total blue** that recalls the first foundation machines manufactured by Pali Trevisani. Not only a tribute to the past, to the expertise gained onsite, which inspired the design and manufacture of machines for underground works. This is a new *starting point* to reach out to our end customers, and share and meet their expectations at best. A company committed to customer satisfaction, which talks to their customers and shares their views, trying to solve their problems or to improve their expectations. We have named this new phase '*Solution Provider*'. Like Pali Trevisani did right from the onset, by designing their machines according to the needs of their best customers, that is themselves!

This issue anticipates the Geofluid show in Piacenza, which will see numberless exhibitors and visitors coming from all over the world. We have decided to present our Brazilian corporate – Soilmec do Brasil –, as well as our most recent products, some reports from our building sites and an interesting and successful case history of onsite training, and much more.

Finally, let me dedicate the last words of this issue to Marco Pedrelli, our designer since ever, who retired after working so many years with us. He certainly deserved it.

My best wishes to him and you all.

Simone Trevisani

Oil & Gas sector

New contracts for Drillmec and Petreven

news

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Drillmec and Petreven, Trevi Group companies specialized in the manufacturing of oil drilling rigs and services, have been awarded new contracts from Eni and YPF

For Eni: Drillmec will provide three new hydraulic technology HH-300 (Hydraulic Hoist) rigs that will be utilized by the joint venture (PetroJunin), formed by PDVSA (60%) and Eni (40%) for onshore drilling in Venezuela. The innovative design of these HH offshore rigs will ensure full execution of all crude oil extraction activities while significantly reducing operating costs for our customer. The HH rigs will be produced and tested at the Drillmec factories in Piacenza, Italy and Houston, Texas (USA) and will then be subsequently transferred and installed in the "Junin 5" oil field located in the *Faja del Orinoco* in Venezuela, 550 km south-east of Caracas in an area under development, with a capacity of 35 billion barrels of oil.



For YPF: Petreven in Argentina, has signed a new three years contract relative to the drilling rig Drillmec HH-102. The contract also provides for the extension of two further years and the commencement of drilling activities in the coming weeks.

The CEO of Drillmec, **Simone Trevisani** commented: *"The acquisition of these new orders further confirms the strong interest in the HH Series of Drillmec. The superiority of Drillmec's hydraulic rigs will ensure optimal performance for drilling and at the same will allow a significant reduction in costs to our customer. We are very pleased to take active part as a technology partner in the oil drilling activities in Venezuela and we are convinced that the Oil & Gas sector will continue on its path of growth and greater added value for the Group".*

The CEO of Petreven, **Cesare Trevisani** commented: *"The Petreven division enters 2014 with a new contract for drilling services further increasing its presence in Latin America. Petreven's operational excellence, Drillmec's technological know-how and the constant focus towards our clients continue to be elements of specific importance in the selection process. We are confident in the operational improvement of this division and we believe that the prospects in this area will lead to future developments for the company".*

news

New offshore oil drilling rigs in the North Sea

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Drillmec S.p.A. has been awarded the supply of new offshore oil drilling rigs from Aker Solutions. Drillmec will provide a revolutionary new hydraulic technology HH-220 (Hydraulic Hoist) rig that will be installed on a fixed platform in the North Sea. The rig is being built at the manufacturing plant in Piacenza and will subsequently be installed on the platform in the second half of 2014.



Soilmec In the world

Soilmec's experience in Brazil began in the early Nineties when the thriving economy of this South American country stimulated growth and both the property market and major building projects were given a boost. Thanks to the collaboration of a local agent, Soilmec sold a number of its historically most popular rigs: the CM-48, the RT-3, the R-622 and the SM-400.



Soilmec world

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Soilmec do Brasil



External view of the production unit.

The economic situation then took a turn for the worse but after a couple of years with the market sluggish, the currency weak and the country in debt, Brazil managed to pick itself up and make a comeback, setting the country back on the road to economic recovery and jump-starting the market of infrastructures, construction and major public works. It was at that time that Soilmec decided to invest in the South American country, establishing Soilmec do Brasil in 2009 locating its headquarters in San Paolo, the most important industrial city in Brazil and South America. Soilmec became a major presence in Latin America and today is joined by another branch, Soilmec Colombia, and two exclusive agents: Maquinaria Alfo, which has been operating in Mexico since 1998, and Uberto Battaglia in Venezuela.

The SC-70 crane with BH-8 hydraulic grab at work in Barra da Tijuca building infrastructures for the forthcoming Olympics.



Soilmec do Brasil staff celebrates the first SR-55 produced at the San Paolo manufacturing facility.



The geographical diversity of the country and the size and density of the town and city centres have led to the growing implementation of the main foundation engineering techniques: from bored piles to micropiles and diaphragm walls dug with grabs. Technologically speaking, the Brazilian market has always favoured continuous flight auger digging rigs and micropile machinery for diameters up to 500 mm.



Soilmec world

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The Soilmec PSM-20G at work in San Paolo, building the foundations of a new shopping centre.





Soilmec do Brasil staff at the Concrete Show in San Paolo.

Continuous flight auger drilling rigs, which guarantee low running costs and high production capacity, are usually requested for diameters which can go from 400 to 800 mm (and on rare occasions also 1,000/1,200 mm) up to considerable depths; it is quite common, in fact, to find

piles of 27 up to depths of 30 metres. Soilmec drilling rigs, renowned for their high performance and multi-functionality, are a popular commodity on the market because the same machine can drill both continuous flight auger piles and bored piles with Kelly bar, thanks to a quick transformation kit, while maintaining the same reliability and performance standards.

Soilmec wanted to provide the Brazilian market with a product that delivered the best quality/price ratio, so opened a manufacturing facility in San Paolo at the beginning of 2011 with a dedicated drilling rig production line: the Soilmec SR-55.

Soilmec world

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Having a special production facility means being able to offer more competitive prices which are not subject to customs duties on imports. It also allows purchasers to take advantage of organisations funded and facilitated by the government for companies which invest in Brazilian equipment.

The SR-55 is a hydraulic drilling rig and weighs 55 tons in working conditions. It is mounted on a Caterpillar turret and powered by a CAT C9 diesel engine able to deliver 200 kW of



Production line of the Soilmec SR-55 on a Caterpillar turret.

power at 1800 rpm and with a maximum torque of 160 kNm transmitted to the rotary head. Designed to dig continuous flight auger piles at a depth of up to 24 m and with a maximum diameter of 1,000 mm and bored piles up to 54 m in depth and 1,500 mm in diameter (1,200 mm if cased), it is an agile versatile drilling rig, quick and easy to operate on site and designed for the Brazilian market using Soilmec technology.

The San Paolo branch also provides technical assistance throughout the country and, given the sheer vastness of the land, it is not unusual for them to use air travel to reach their clients. Its warehouse of spare parts also ensures clients receive prompt service in the shortest time possible.

More than 100 Soilmec rigs have been sold in Brazil in the past three years, in particular the SR-55, the micropile rigs SM-5, SM-14 and SM-20 and the BH-8 hydraulic grab mounted on the SC-70 crane.

Thanks to the quality of Soilmec products and the customer care provided by Soilmec do Brasil, the company has been able to increase market penetration and establish the brand throughout the country. Further growth and substantial investment are now on the cards, bearing in mind that Brazil will hosted the World Cup in 2014 and that the Olympic Games will be held in Rio de Janeiro in 2016.



Soilmec do Brasil technical team.



The SR-55 at work in CFA configuration.

Shaping our future together



dealer meeting



In the photo, from left: Davide Trevisani, Federico Pagliacci, Stefano Trevisani.

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5th Soilmec Dealer Meeting – 2014



Presidente Davide Trevisani speech.

Soilmec global sales network met in Milano Marittima (near the Cesena factory) for a day meeting to focus on future strategies and plans.

The day was dedicated to the presentation of the new Soilmec structure, the new product range, R&D and Marketing news.

During the morning session, Mr. Riccardo Losappio, the new Soilmec General Manager, presented himself and his working plan, and Mr. Marco Casadei introduced the new product division that will be in charge of water well and mini-piling drill rigs.

In the afternoon, all the participants divided in different groups, had the opportunity to share their ideas and plan short, middle and long-term actions.

The meeting concluded with the Soilmec 2013 awards ceremony. Prizes were awarded to L.Y.A. for the best success story, and to American Equipment and Champion Equipment for the best annual communication campaign (with a special mention to Mr. Vincent Jue).

Mr. El Didi was conferred an Honorary award.

The day spent together, enhanced by participants' great enthusiasm, promoted a real team building atmosphere through very open and frank discussions.



The presentation of awards and prizes..



dealer meeting

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New Soilmec General Manager

Riccardo Losappio (*picture below*), 55 years old, graduated in nuclear engineering, is the new Soilmec General Manager. After having played leading roles in leading companies worldwide, Losappio lands in the Mechanical Engineering Division - Foundations area of the Trevi Group. The official introduction to the whole international trade network has taken place during the latest company Dealer Meeting.



Where Solution Provider Happens

from the site

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The first occasion after the Soilmec Dealer Meeting 2014 to "shape our future together" was the mechanical skills training project for two technicians of Frankipile Australia

Report of the FTA (Foundation Technology Academy) course, which was held from 27 May to 5 June 2014 for two technicians of Frankipile Australia, in order to improve their knowledge regarding Soilmec products and technologies.

The FTA course was shared in two parts, they spent the first week in Soilmec headquarters side-by-side with the After-Sales Service Department and completed their training session in the job site during the second week with the TOS (Training On Site). They made a workshop visit on the SR rigs assembly line analyzing together with the tutor the various installation procedures especially regarding the on-board electronic and hydraulic systems always starting from a classroom lesson and then implementing these concepts in the workshop. They were taught the diagnostic elements for possible machine failures and breakdowns with consideration on causes and effects over rigs and personnel in the job site, completing this first part with a final test. The first training week was completed in the Soilmec DMS (Drilling Mate System) center in which the two Frankipile Australia technicians, lead by the FTA tutor Saverio Santucci, were able to deepen their knowledge on practical DMS to understanding the DMS assisted working cycles, settings and common operations on-board. The opportunity to interact directly with the tutors and to put into practice the concepts learned in theory have brought very positive results leading to a substantial improvement in knowledge of the Frankipile Australia technicians especially by strengthening the team spirit. The second week was spent training on site during which, thanks to the hospitality of Trevi people, gave valuable hands-on experience on the Soilmec rigs.

The job site was located in Pioltello, one of the municipalities of Milan's metropolitan area, in which two Soilmec SF-50 continuous flight auger dedicated rigs were being used.

Frankipile Australia technicians watching DMS monitor during the drilling phase.



The project consists in two hundred piles for the foundation works of the new multilevel park of the headquarters of Esselunga spa, one of the most profitable companies in the European retail store chain sector, for a total widening of 500 parking spaces. The SF-50 is a 40 ton class hydraulic drilling rig powered by a Cummins QSB6.7 diesel engine that delivers up to 164 kW (220HP) which together with its compact dimensions enhance its agility and maneuverability on site. The production rate and performance are guaranteed by the heavy duty rotary head, able to transmit up to 100 kNm of torque, and the generously dimensioned winch that gives an extraction force of 510 kN allowing the SF 50 to drill -down to a depth of 25 m and up to a maximum diameter of 900 mm. The geological conditions of Pioltello were mainly characterized by the presence of sand and gravel that has enabled the use of CFA technology, a perfect method for projects in urban centers, as it eliminates vibration and disturbance to adjacent structures and reduces noise emissions. In particular, the ground was composed from the top by a first layer of 1,5 m of compacted gravel backfill followed by gravelly medium sand up to 10 m deep, crossed by a water table at 4,6 m deep, and medium/coarse sand with gravel and few presence of cobbles. The piles, drilled with an auger of 600 mm diameter up to an average depth of 17 m, was mainly performed in groups of 4 piles adjacent to each other, proportionally distributed inside a square that will become the plinths foundation for the pillars of the multi-level park. Thanks to the friendly hospitality combined with the great professionalism of the Trevi people and especially of

from the site

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Soilmec SF-50 in Pioltello job site.



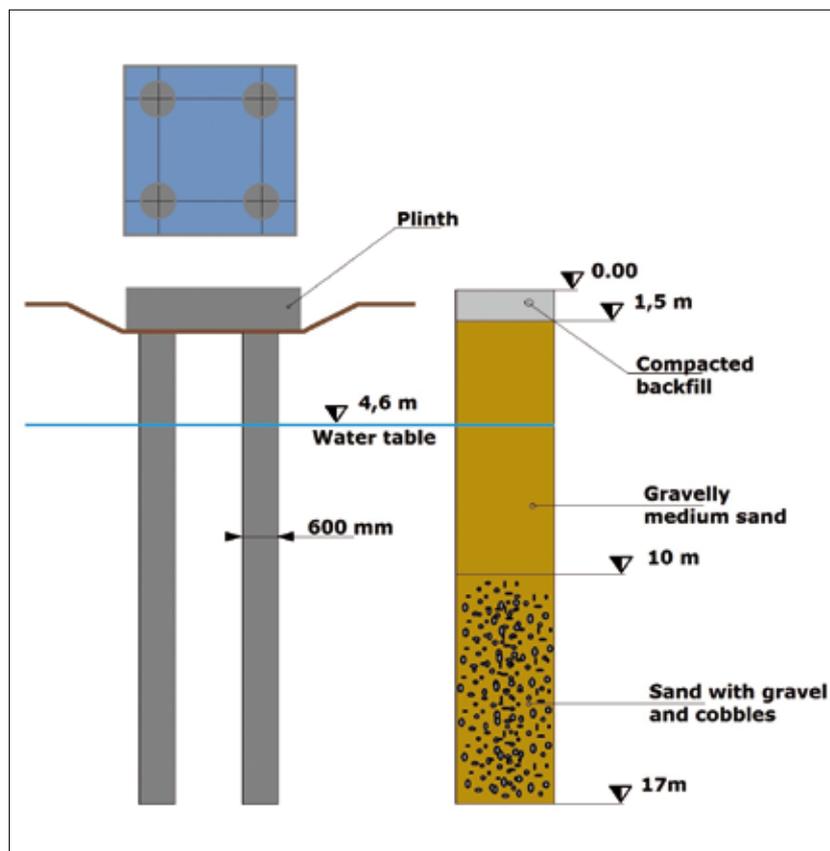
Operators can follow the different pile execution phases thanks to DMS monitoring system.

FTA tutor Mr. Riccardo Bedont, Trevi job site manager, it was possible to appreciate the different pile execution phases followed by DMS monitoring of the rig's status and drilling and concreting parameters. On the last day it was possible to observe the de-rigging of the SF-50 which, thanks to its design characteristics, in few hours was possible to load on trucks the rig, the concrete pump, all the ancillaries and tools and the auxiliary excavator that are going to start another job site in the north of Italy.

Spending two weeks on the FTA course, hand-in-hand with our customer's two technicians in order to improve their knowledge regarding Soilmec products, to deal with each other regarding technologies and drilling methods means "Solution Provider", means starting to shape our future together.

from the site

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Plinth scheme related Pioltello soil conditions.

Banora Point highway upgrade



VSL's own Soilmec SM-14 drilling rigs carried out most of the drilling work.

The Banora Point upgrade involves the construction of 2.5 km of six-lane dual carriageway and includes a major viaduct as well as interchanges at both ends. It is located on the most heavily trafficked section of the Pacific Highway and on the border of New South Wales and Queensland, Australia. Owner is the State of New South Wales; engineers are Seymour Whyte Constructions and Snowy Mountains Engineering Corporation; main contractor is Banora Point Upgrade Alliance (Abigroup and RTA).

from the site

Fabrication, installation and stressing of VSL rock anchors and nails with Soilmec SM-14 drilling rig

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The VSL anchor system was fitted complete with load monitoring collars.

The most significant feature of the prestigious project is the cutting through Sexton Hill, which required 1,000 m of continuous secant piled walls up to 32 m high, with multi-layered ground anchor tie-backs and soil nails. The variability of ground conditions ranging from marine clays to extremely hard igneous rock presented a real geotechnical challenge. VSL was chosen for the ground engineering works including drilling, supply, fabrication and installation of ground anchors and soil nails. Drilling works were carried out by the site crews and a pair of VSL's own Soilmec drilling rigs in a series of staged works progressing top-down through the cutting in a series of benches, often following the drill and blast contractors. The pattern allowed for multiple work fronts to be opened up, maximising efficiency of the works. The anchoring and stressing works were carried out in strict accordance with the RMS's B114 specification. VSL used a new tendon greasing machine to accommodate the new greasing requirements.

The scope of work involved the supply and fabrication of over 7,500 m of ground anchors and 1,000 m of soil anchors carried out over a 12-month period. More than 500 m³ of grout was used as a consequence of the quantity of work required and the fractured rock base that was encountered. Typical tendon sizes ranged from 32 m of 12-strand 15.2 mm anchors for the top row to 15 m of seven-strand 15.2 mm anchors for the bottom row.

Quality and certification of the bars and components were managed by VSL's NATA-accredited manufacturing facilities at Noble Park, Victoria. This allowed bars to be provided on time without being outsourced and minimised additional handling. On-site production was preferred for the rock anchors and soil nails to provide immediate flexibility in choosing the length of specific anchor points according to geological assessments.

The new SR-75 Advanced harmony between design and performance

new products

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The SR-75 drilling rig was built with the new Soilmec “blue” concept design, with guidelines for extreme flexibility in order to guarantee the best solution for specific drilling requirements

Today in a global market the rigs requests are various, from the specialist of bored piles up to the multipurpose rig users. The SR-75 was built in order to guarantee the best solution for specific drilling requirements. The structure design is suited to set the machine for different drilling technologies and the use of modern material and high strength steel allows the rig to be lighter and give higher performance.

The Soilmec “blue” concept design arose from the need to fit the rigs with both Tier 3 and Tier 4 emission standards Diesel engines and Soilmec has used this opportunity to completely re-vamp its product line. The new SR-75 is a 70 ton class rig mounted on a variable gauge undercarriage with telescopic side frames complete with predisposition for a casing oscillator. The base machine structure was completely redesigned to hold the CAT C13 Diesel engine coupled with Bosch Rexroth hydraulic pumps and blocks that delivers more flexibility, efficiency and increase their impressive output to 328 kW (440 HP).

The electrical system was simplified and strategically located into a single panel and all the electrical connections are provided with harness cable and led signal in order to optimize the maintenance operation. The H-CAB guarantees an outstanding space inside (1,050 mm width) with greater visibility and included as standard a sliding door, powerful air-



conditioner system, air-suspended seat and adjustable DMS touch screen console which match automotive comfort standards and the four LCD cameras with multi-display monitor allows control over a greater working area making you feel safer.

Catwalk, handrail and self-mounting counterweight system was redesigned for improved safety and the new “blue” canopies are constructed with insulating materials of high quality enabling a lower noise emission. The structure of the SR-75 drilling mast uses a wealth of high-tech materials. They include lightweight rotary heads with increased torque value, a simplified integrated structure for the mast (built in high-strength steel), cathead and parallelogram system and a structural simplification to allow a fast transformation between CCS and WCS version. This intelligent lightweight construction optimize the forward weight balance of the machine and the excellent mechanical performance of the 293 kNm max rotary torque value and the higher effective pull-up force (up to 281 kN for CCS and 408 kN for WCS) resulting in enhanced stability, increased rig agility and pile capability.

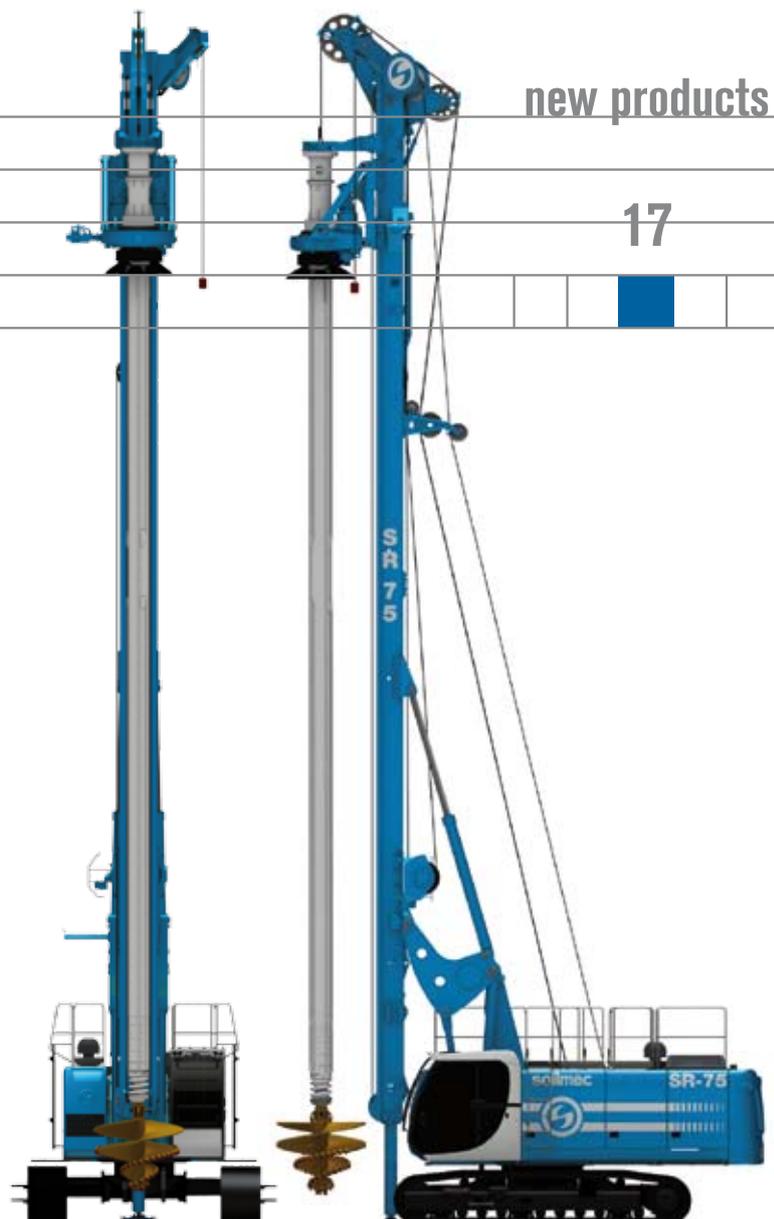
The SR-75 was built with highly flexible concept to adapt to the many drilling technologies developed by Soilmec, such as LDP, CFA, CAP/CSP, DP and TJ succeeding great results in terms of performance. The SR-75 was projected to give more controllability and comfort with greater mechanical performance and the enthusiastic feedback from our customers in UK and Turkey that have worked with the SR-75 on the job site underline the rightness of the new Soilmec equipment, designed for the future, ready today.

SR-75

HYDRAULIC DRILLING RIG

Operating weight (approx.)	75000 kg / 165345 lb
Diesel Engine	CAT C13
Rated output ISO 3046-I	328 kW @ 1800 rpm / 440 HP @ 1800 rpm
Engine conforms to Exhaust emission Standard	EU Stage III B, US EPA Tier 4i or EU Stage IIIA, US EPA Tier3
Max torque (theoretical, restricted intermittent)	293 kNm / 216038 lbf*ft
Rated torque (theoretical)	251 kNm / 185070 lbf*ft
WCS - Crowd winch system pull up/down	408/408 kN / 91720/91720 lbf
CCS - Crowd cylinder system pull up/down	281/201 kN / 63171/45187 lbf
Main winch 1 st line pull	246 kN / 55300 lbf
Transport weight (approx.)	50000 kg / 110230 lb
LDP - LARGE DIAMETER PILE	
Max diameter (LDP)	2500 mm / 98,43 in
Max depth (LDP)	76 m / 249,3 ft
CFA - CONTINUOUS FLIGHT AUGER	
Max diameter (CFA)	1200 mm / 47,24 in
Max depth (CFA)	25,5 m / 83,6 ft
CAP/CSP - CASED AUGERED AND SECANT PILE	
Max diameter (CAP/CSP)	1000 mm / 39,37 in
Max pile depth (CAP/CSP)	23 m / 75,4 ft
Max cased depth (CAP/CSP)	17 m / 55,8 ft
DP - DISPLACEMENT PILE	
Max diameter (DP)	600 mm / 23,62 in
Max TCT diameter (DP)	800 mm / 31,50 in
Max pile depth (DP)	30,7 m / 100,7 ft
TJ - TURBOJET	
Max diameter (TJ)	1500 mm / 59,06 in
Max depth (TJ)	30,7 m / 100,7 ft

soilmec
Drilling and Foundation Technology



new products

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Keltbray invests in 1st new generation piling rigs in Europe

new products

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Keltbray has increased its fleet and capacity by investing in three new piling rigs. These includes brand new models, two Soilmec SR-75 and a Soilmec SR-30



Keltbray Piling, which is part of Keltbray Group, has increased its fleet and capacity by investing in three new piling rigs. These include two Soilmec SR-75 and one Soilmec SR-30.

The two SR-75 rigs are the first of its kind in Europe and part of a new generation of rigs designed by Soilmec for large diameter piling, where the structural components have been redesigned to reduce weight.

These rigs are fitted with the latest Tier IIIB/IVi engine, which exceeds stringent new emission standards and reduces CO2 by around 17%, while still delivering more power, efficiency and flexibility.

To enhance safety, Keltbray is also currently trialling a wide-angle camera system, which provides 360 degrees in-cab vision for the rig operators.

Keltbray is the UK's leading specialist engineering, construction,

decommissioning and environmental services business providing fully integrated services to meet the needs of diverse and complex projects. The company was recently shortlisted for the "Ground Engineering Contractor of the Year Award 2014" on the back of its expansion, and is securing and successfully delivering increasingly complex and major contracts. These include the development of Osterley Campus for BskyB and a contract at The Glebe, which is being developed by Brookfield Multiplex and set to become London's most exclusive residential development in the heart of Chelsea. Managing Director of Keltbray Piling, Stuart Norman, said: *"Our growth is a result of our ability to increasingly tackle technically challenging contracts in sensitive environments; be it in urban areas, ports or infrastructure projects."* (Courtesy of Keltbray)

new products

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This article is reprinted from "Keltbray Live" (Issue 12, Spring 2014), house organ of the Keltbray Group.



service

DMS See underground

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The advantages of monitoring with the Soilmec's Drilling Mate System highlighted in Cityringen jobsite, the new metro project in Copenhagen

As the cultural, economic, and governmental center of Denmark, Copenhagen is experiencing a tremendous population growth due to a rise in birth rates and a surge of young people moving to the city. In order to meet the increase in transportation needs, Copenhagen is constructing a new underground metro line called "Cityringen". Cityringen will consist of a twin-tunneled 15.5 kilometer (9.6 mile) metro line circling the center of Copenhagen with 17 stations that will connect to the existing underground transit network. The new metro construction sites are wedged in between existing residences, narrow streets, and historic buildings throughout the heart of the city.

As the primary subcontractor responsible for construction of the permanent supporting walls for all the metro stations and service shafts, Trevi S.p.A. is coping with difficult subsurface conditions, strict environmental regulations, and challenging jobsite restrictions in Copenhagen. Trevi has maintained its production schedule with a perfect safety record with the help of a large fleet of Soilmec rigs equipped with Soilmec's Drilling Mate System (DMS).

The DMS is a high-tech, fully integrated, interactive tool whose interface is located in the cabin of the drill rig, allowing rig operators and jobsite personnel to monitor and control the machine in real time. The performance of both the drilling/excavation production and the diesel engine are monitored using data from an array of sensors and safety devices, which are located throughout the rig, transmitted to the cab, and displayed on a DMS touchscreen interface. Operators can use the DMS to monitor the overall operation of the machine, record alarms, perform troubleshooting, and plan maintenance.

The DMS is available on all new Soilmec machines, and older Soilmec equipment can be

Trevi workers construct cased auger piles in Copenhagen, monitoring drilling operations with Soilmec's Drilling Mate System.

retrofitted to accommodate the DMS. Standard DMS monitors and records various machine production parameters and drilling data, including depth, inclination, rotary speeds, and crowd pressure, to assist in drilling a quality pile. Soilmec has also developed specialized DMS software packages to optimize the performance of a wide range of technologies: large diameter piles, micropiles, continuous flight auger piles, cased secant piles, diaphragm walls, hydromill excavation, jet grouting/tie-back anchors, and soil mixing.

Operators can “see underground”

One of the challenges inherent with deep foundation systems is the inability to see what’s being built at depth. The construction is hidden below ground, in soil or rock conditions that are only partially known. The DMS enables the operator to “see underground” as it monitors in real time the operation and performance of the machine, providing the rig operator with active and precise instrument control.

Construction in Copenhagen’s dense, historic downtown is being performed in very close proximity to existing buildings and structures. For example, the walls for the Marmorkirken (Marble Church) metro station are only 100 millimeters (4 inches) away from the foundations of the 260-year old Marble Church, the largest domed church in Scandinavia. So it is vital for Trevi to set and monitor accurate drilling parameters during the foundation work to ensure that the neighboring buildings are left undisturbed.

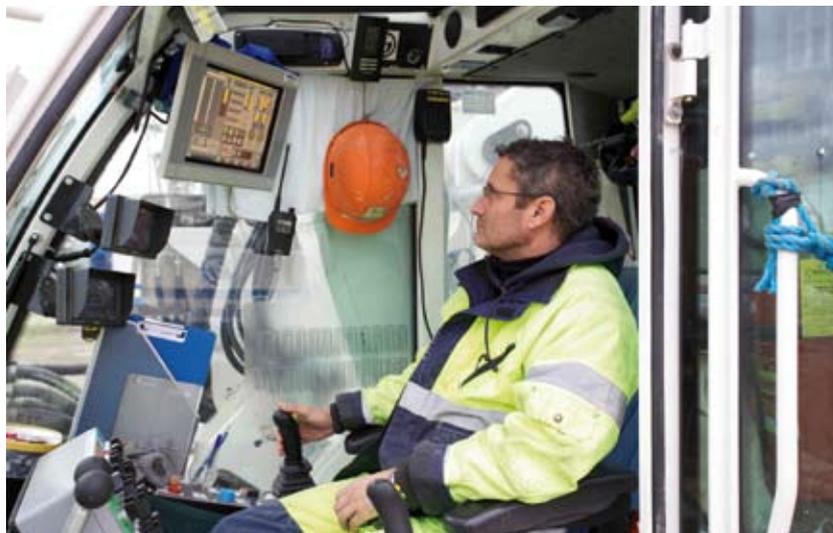
service

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Thanks to the DMS, Trevi has achieved high precision in reaching the target depths while maintaining the tight target verticality.

In addition, DMS provides real-time monitoring of the engine and its components, showing hydraulic oil pressure, fuel consumption, and power. This has allowed Trevi to perform its state of the art foundation work in Copenhagen with low fuel consumption and minimal completion time, helping to save money and maintain the production schedule.

The DMS data can also be transmitted via radio, GSM/GPRS, WiFi or satellite to a remote Control Center where DMS experts help troubleshoot in real time.

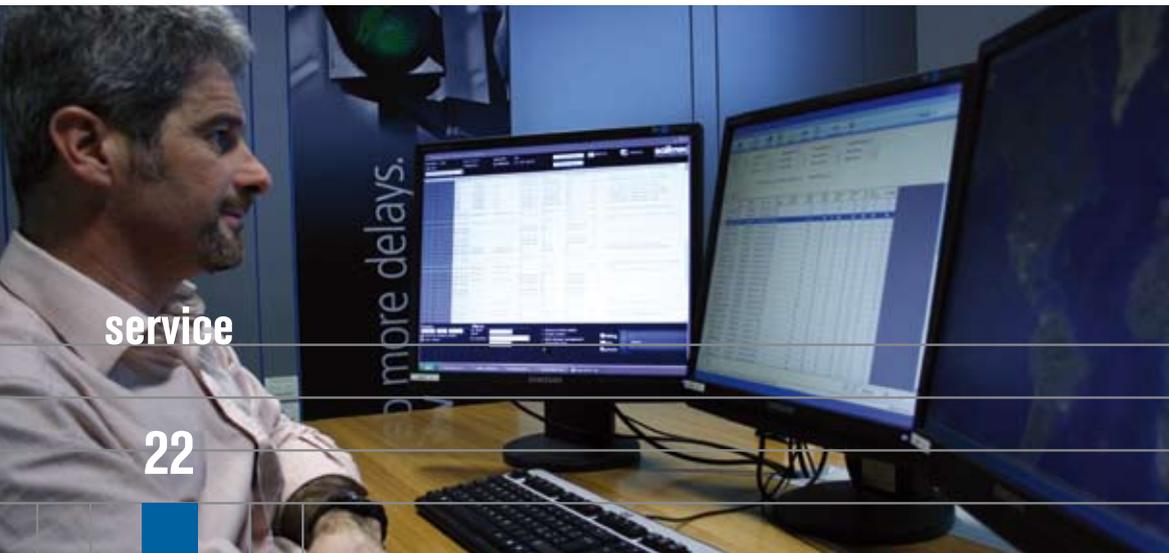


A Trevi worker uses Soilmec’s Drilling Mate System to monitor the hydromill diaphragm wall construction in Copenhagen.

These Soilmec service managers have a direct connection to the machine via the web, to see live what the operator sees on the DMS onboard display. The service managers can respond remotely to help fix most problems, rather than having to hop on a plane to visit the jobsite, which saves both time and money. All machines on the Cityringen project are monitored from the Soilmec headquarters in Cesena, Italy. This rapid troubleshooting assistance has helped to ensure that the construction quality consistently meets the demanding Copenhagen project specifications.

Maintenance alerts reduce downtime

Minimizing equipment downtime is fundamental to maintaining productivity. Alarm signals triggered by the DMS alert operators when maintenance is needed. For cased secant pile construction, DMS displays alarms for coolant levels, low foot pressure, rotary gearbox lubrication, rotary head filter clog, mast inclinometer x-axis or y-axis failure, hydraulic oil filter clog, diesel engine parameters, and fuel level.



DMS service manager Saverio Santucci at the Soilmec Control Center in Cesena, Italy. Expert 24/7 live assistance is also available at two Soilmec Control Centers in North America.



service

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The DMS alerts and displays to the operator which component triggered the alarm, and it identifies the severity of the alarm. By pushing a button, the DMS also displays the history of the alarm so the operator can see if that component has been failing frequently.

In addition, the remote DMS Control Center is alerted when a maintenance alarm is triggered, so Soilmec service managers can quickly call jobsites to help prevent larger problems from developing. This rapid troubleshooting assistance reduces maintenance times and helps create safer work conditions by ensuring that equipment works properly.

Monitoring maintenance issues using the DMS has been essential in Copenhagen, where the layers of hard boulders and flint rock have caused daily breakage of the cased secant piling tooling. The DMS has allowed Trevi maintenance managers to quickly identify and repair these equipment problems. Analysis of this data has also helped Trevi minimize downtime by improving their equipment and drilling techniques. For instance, intensive pre-drilling with a Wassara high-pressure water hammer has been used to break through the deep, hard layers of limestone rock and flint, which has doubled the production speed. Soilmec has also modified the cased secant piling tooling used in Copenhagen to reduce tool breakage a more aggressive auger was developed using thicker, higher quality steel and an adjustable tool position. The DMS data collected from the Cityringen project has been crucial to the development of new technology and the reduction of job delays.

Proper maintenance has also improved the performance and longevity of the equipment used in Copenhagen. Trevi personnel plan routine maintenance using the DMS touchscreen, which records the machines' scheduled maintenance

operations. In addition, the Spare Parts Online Center facilitates faster ordering of replacement parts.

Jobsite managers understand operations better

All of this important data on machine operations, alarms, materials consumption, and maintenance can be streamed via cellular networks to a computer, so jobsite managers located in a field trailer or at a remote office can monitor and process the information. Even in the absence of GSM/GPRS or WiFi, the DMS retains all the data on a memory card or USB flash drive. The DMS software allows managers to create customizable jobsite, operational, and accounting reports – or the data can simply be exported as tables.

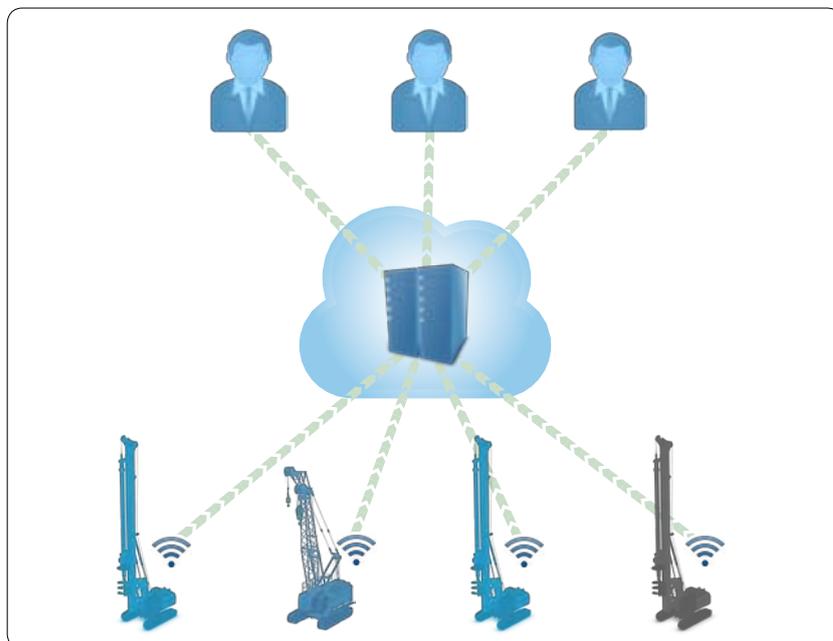
The DMS data can be analyzed offline and plotted graphically for easy interpretation. Managers can show bored piles or panels in order of completion status to check work progress. Data can be graphed as a function of either time or depth. For instance, hydromill production parameters – depth course, drilling speed, left motor pressure, right motor pressure, mud pressure, digging load, x-deviation and y-deviation – can be automatically plotted as a function of depth or time and can be displayed by clicking on the “depth” or “time” report tab using the DMS software.

Jobsite managers can also process and plot critical parameters – pile profile, concrete pressure, and concrete flow – as a function of depth so they can analyze their construction quality. These graphs can identify potential construction problems like voids in the concrete, as well as provide an assessment of construction quality.

service

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The ability to analyze the DMS data is crucial for complex jobs like the Cityringen project, where Trevi personnel are managing 21 jobsites with challenging subsurface conditions, environmental regulations, and jobsite restrictions. Offline analysis of the data recorded by DMS has allowed Trevi to construct high quality permanent supporting walls for the Cityringen metro system while saving time and money.



Data flow of Soilmec's Drilling Mate System. DMS allows rig operators, project managers and Soilmec service managers to monitor machines in real time and analyze data offline.



network news

A 2000 HP land rig from Poland

After taking the decision at the beginning of 2013 to bring together the 5 Polish state-owned companies operating in the oil and gas business (NAFTA Pila, Ogec Krakow, Jaslo, Diament and Krosno) in a single one called Exalo, the national scenario in the oilfield sector is still complicated. One only has to think that the National Oil Company PGNiG (Polskie Górnictwo Naftowe the Gazownictwo)

under which the same Exalo is located, has seen a sudden and unexpected change of leadership and the shale gas continues to attract investors, but at the same time finds negative opinions by people and by the same drilling contractors, some of whom, operating in the Polish market, are going to change horizons. The domestic Exalo is not outdone and now after the merging process, it owns 54 rigs distributed in over 260 projects, half of which are located outside the Poland borders. One of the countries in which the above is working is Pakistan, same place where a Drillmec 2000 HP land rig has been moved.

This rig has been designed to drill at an average depth of 5500 m using DP of 5", with a maximum pull up capacity of 590 tons, equipped with an electrically powered gear driven drawwork. The peculiarity of this Drillmec land rig lies in the so-called "rig walking system" that allows the entire rig moving in order to perform multiple holes in a single drilling site. The "rig walking system" is composed of four stabilizers driven by the hydraulic cylinders which can lift and move the entire rig without lower the mast and substructure, and thus saving time. This solution is a winning alternative to the skidding system mainly in two circumstances: when the moving length is high, the rail system is not the most cost-effective and, if the well heads are not perfectly aligned along the longitudinal axis, the "rig walking system" allows to make small adjustments also in the lateral direction. All of this confirms the fact that the two countries are tightening political and economic ties; the Government of Pakistan has received full support from the approval of the package in Poland ATPs (Autonomous Trade Preferences) which allows to export 75 domestic products without customs charges (for the most part related to the textile world) to European markets. In this framework of mutual cooperation Pakistan expresses its readiness to greater cooperation in the energy sector and the capacity to invest in drilling on its own territory. Drillmec from its side is waiting for further developments having already learned an important opportunity in a market which has great potential.

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1st HH rig for new geothermal plant

Iceland Drilling mobilize its Drillmec Odinn HH-220 Geothermal Drilling Rig from New Zealand to Apas Kiri in Tawau, Malaysia with an expected drilling start at the end of April 2014. At a recent visit to New Zealand Energy, Green Technology and Water Minister of Malaysia, visited the Wairakei combined flash and binary geothermal power plant, and the Ngatamariki binary geothermal power plant, both located near Taupo, with their respective geothermal fields being part of the Taupo Volcanic Zone (TVZ). The minister and his delegation were briefed by Contact Energy and Mighty River Power, the operators of the respective power plants, on the design, operation and maintenance, and environmental compliance of the power plants. Geothermal power plants currently contribute about 15% of New Zealand's total energy needs. The delegation also visited ODINN, the Drillmec Drilling Rig contracted to undertake the drilling operations for the project. It is owned and operated by the Iceland Drilling Company (IDC) and is a 1,300 HP Hydraulic Rig, 220 ton pull up, which has had a successful track record both in Iceland and New Zealand. IDC will provide a turnkey package for the drilling operations, including rig and accessories, drilling crew, materials and consumables. Drilling is expected to commence in the end of April 2014 on site at Apas Kiri in Tawau. The project will be Malaysia's first geothermal power plant and is expected to deliver 30 MW of electricity to the Sabah State Grid in May 2016.

network news

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Reliability and Records of Top Drives

The Drillmec's Top Drive fleet in FSU is still growing. The last 21st has been sold last February in Usinskgeoneft beating the strong competition with Canrig. UNG is not a new customer for us in fact it has been working some time with our equipment and this is an additional order which confirms once again the absolute reliability of Drillmec's product.

We definitely have more of a reason for being proud and positively looking the future. In fact one need only consider that in 2008 only 2 Drillmec TD were operating on Russian territory, but now our sales can be compared to those of specialized player such as Tesco and Canrig. Moreover thanks to Piper International collaboration, we can count now on TD hiring putting ourselves like our competitors.

The TD hiring has increasingly demanded, especially from customers who are using our products for the first time and want to check their reliability. It is also clear that the hire service is a good omen for future sales.

It should be also pointed out that, thanks to the excellent performance of our Top Drive, we have finally been able to undermine the widespread skepticism that hydraulic equipment are penalized when operating in arctic ambient temperatures. Saying that, we would like to mention the last record beaten by a HTD200C at Novy Urengoy in Western Siberia, which has been working at -52°C without any problem.

Token of Appreciation to Ali Ghalib

At the end of December, just before Christmas, Drillmec has organized the usual season's greeting reunion, "La Bicchierata", to meet up each other after a whole year of hard work. In particular during this year edition Ali Ghalib President of the Al Ghalib Company has been rewarded with a prize for his excellent performance in 2013 in the Iraqi market.

Mr. Claudio Cicognani, Drillmec President, and Mr. Stefano Angeli, Drillmec Vice-President Sales, have honored Mr. Ali Ghalib with a token of appreciation for the excellent sale of six land rigs. Three of those have been already delivered in 2013 (2000 HP land rig- swift lift), meanwhile the others (three land rig - one 3000 HP sling shot and two 2000 HP sling shot) are expecting to be consigned in 2014. Those new six land rigs sold to Iraq in the last five years reached to 32 land rigs, and all of them are in operation with the international oil companies all around the territory of Iraq. In front of all the Drillmec's staff members, Mr Cicognani took the floor enhancing the importance of everybody's commitment and collaboration for the design, engineering and production of those rigs for the Iraqi market. Ali Ghalib has received the prize showing his full appreciation thanking everybody for the reliance and kindness received.



Drillmec Gold Sponsor for RDCR 2014

Encouraged by the excellent result of the last year, for this edition, Drillmec has decided to attend the RDCR once again as a gold sponsor. RDCR is the main event linked to the oil & gas sector in Russia. The event has put together all the rig manufactures of the Russian market, local and international contractors and the major suppliers of drilling equipment and services from around the world. It was a unique event of its kind held at the Hotel Baltshug Kempinski in Moscow for two days. RDCR 2014 has allowed the drilling experts to interact and discuss directly about the latest developments and technologies involving the regional drilling fleets in an interactive environment.

Central point of the event were the speeches by various Drillmec's representatives. Yuri Parnivoda, General Director of Drillmec Russia, and Diego Ferrandes, FSU Area Manager, have presented on-shore and off-shore drilling solutions exposing for the latter one the Lukoil Project in the Caspian Sea. Eugene Ognev, Deputy General Manager of Piper International (after sales Drillmec Russia representative), has introduced warehouses recently opened in strategic locations in western Siberia. Ognev has also highlighted the importance of having a well-organized and structured after sales service able to meet urgent requirements as well routine checks. The last presentation was given by Oleg Alampiev, General Director of Seismotekhnika, focusing it on drilling rig production in Gomel from 2010 till now and explaining the warehouse improvements from the beginning of our collaboration. The interesting discussion among drilling contractors, has brought to light once again their main needs such as equipment of new generation to replace the obsolete one and advanced technology to improve performances and increase the production.

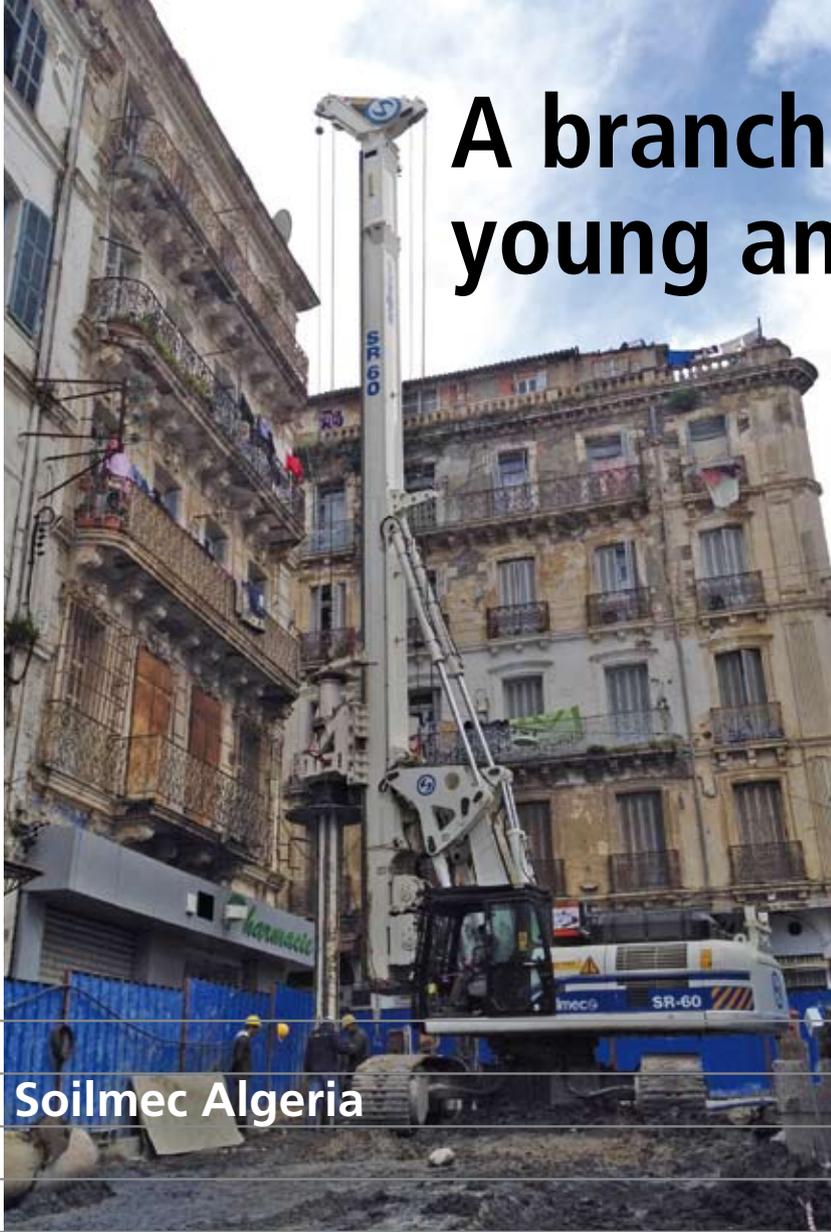


A branch young and active

network news

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Soilmec Algeria



Soilmec SR-60 drilling rig at work in the center of Algiers.

Soilmec already has many clients on Algerian territory through sales efforts of its French subsidiary for many years. To be closer to its customers and to answer more successfully to the needs of a demanding market Soilmec and Trevi Group decided to establish a local presence. Soilmec Algeria Sarl, branch in the North African country, was born in 2010. Its headquarters is in Algiers and its president is Mr. René Ledez.



The headquarters of Soilmec Algeria in Algiers.



The picture shows the staff of Soilmec France and Soilmec Algeria.

Archirodon, the leading international general contractor, is using a Soilmec drill rig supplied by Soilmec Arabia in the "Perth 2" (jetty line) project at Ras Laffan Port. The port of Ras Laffan is located around 80 km north of Doha, Qatar. The Soilmec rig is being used in particular to construct around 130 large 1,300 mm diameter piles at a maximum depth of 33 m from a platform.



Soilmec Arabia, drilling rig for piles

Technical seminar in Phoenix (USA)

Soilmec customers Matt Ramsden, Andy Grant, Mike Wysocky, Allen Cadden, and Phil Stilson joined Federico Pagliacci, Soilmec Vice President of Development (3rd from left in the group photo) participated as presenters at the 5th annual technical seminar and golf tournament in Phoenix (Arizona, USA).





The taste of Innovation

Soilmec people

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When we talk about Marco Pedrelli we refer to unquenchable curiosity, research and development in the history of foundations. We talk about the ability to find the right quantities for a great ground engineering recipe

Marco Pedrelli is among the engineers who have undoubtedly grown up along with the Trevi Group. The ground engineering market proved to be ideal for his attitude as a researcher: Marco contributed to the development of many innovations to the current foundation rigs, thanks to his ideas and – quite often – to his job site tests. When we knew about his retirement, we asked him a short interview that turned out to be a remarkable picture of the history of foundations. This is what Marco told us: “My work experience started in 1974, when I was employed by Trevi Spa and, more precisely, I used to work at the Rig Study Department, which, today, has become the R&D Department. I started dealing with special applications for job sites; for example, it was back at that time that the Porto Tolle project began. Trevi carried out the foundation piles of the thermoelectric power plant using the TREVITUB driven pile system, a technique by which the hammer blows on a special mandrel placed at the bottom end of the casing instead of the traditional pile head. Because of the high concentration of piles in some areas, some deformation cases occurred along the piles. To avoid future similar events, a soil-drain pad was inserted between the piles, in order to decompress the subsoil. With regard to those projects it was necessary not only to find the correct rigs and technologies but also to invent the machine to make the drain pads! My Trevi years proved to be really interesting: I self-learned welding and turning, I could take part in the prototype field tests and follow the rigs to the job site to see their operation. At the time, Mr. Cicognani (General Manager in Soilmec, today Drillmec President) thought I had the makings of a rig designer and, in 1980, he offered me to work in Soilmec as the coordinator of the Technical Department whose team was then made of about 15 people. During the early 80s, Soilmec started to expand abroad and I was especially involved in

Marco Pedrelli “on site”.



the "study" of the British foundation market which led me to often visit and talk with English customers together with Mr. Brunetti, Europe Area Manager of Soilmec. CFA pile technologies were widely used in the UK market so we decided to develop a self-erecting drilling rig. It was a winning idea because, in those years, the rig manufacturers used to offer drilling applications mounted on a crawler crane that were far too slow and bulky for this country where the booming housing market was paving the way for numberless small-sized foundation job sites in cities. Since 1982, with the production of the first CM-42 which was the precursor of the current SF series, we have never stopped improving our rigs based on this technology; these rigs are still very much appreciated, also in terms of sales. In the same period we started to manufacture the first self-erecting hydraulic drilling rig with Kelly bar, the R-12. Let me point out that, also in this case, the direct involvement with job sites proved to be the right choice. With Mr. Caillat, Soilmec Sales Manager, we travelled across Switzerland and Germany to watch closely and study our competitors' rigs: we appreciated their mechanical performance but we disliked the complex pile positioning and the difficult

Marco Pedrelli at office and a funny cartoon by him.



Soilmec people

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and time-consuming rigging up they were offering. Our goal was to design a powerful but also flexible rig and, as it often happens in these circumstances, we were inspired by an application that was already used in pile driving rigs; we improved it and applied it to our product. This process resulted in the Soilmec parallelogram system, which is still a key feature of our rigs. During the 90s, I started being in charge of the feasibility studies for all special applications requested by our Sales Department and, in particular, with regard to two main large projects: the pretunnel rig, manufactured and subsequently tested at the Colleferro job site, and the trencher, a rig developed for the simultaneous excavation and concreting of diaphragm walls. In 2006, as agreed with the Trevi Group HR Department, I started working as a "trainer". I prepared a basic course on ground engineering design that was initially intended for designers alone, but which was later extended to the Sales Department too, due to its big success. Personally, I think that the experience gained by directly working in job sites was really useful for this type of training activity, especially the years spent in Trevi showed me what it means to be on the other side of the fence, i.e., to think both about the mechanical performance and the job site production requirements. All the above gave me the opportunity to convey technical contents in addition to the significance of being part of a Group and the importance to work as a team in order to achieve a great result. My last big project with Soilmec was the involvement in the field tests carried out in Gualdo, where, once again, the team-working strength established between the Soilmec and Trevi people was crucial for the achievement of a goal that had been deemed unachievable until then: the performance of a 250m deep diaphragm wall by means of a Hydromill."

This is another brick he laid to build the history of ground engineering foundations.





Historical photo of Marco Pedrelli at work in a Trevi jobsite.

It is not easy to summarize over thirty years of professional history in a few lines. But as for Marco Pedrelli, who has always loved to find ingenious solutions almost as much as concocting pranks on colleagues, we would like to mention two things: one is linked to a memorable joke that is still recalled and the other to what he did best, that is, to find ingenious solutions to problems that seemed unsolvable.

Soilmec people

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Anecdotes about Marco Pedrelli

Memories and other stories from Trevi Group's board of directors celebrating the man and the innovator

With regard to the prank, let's go back to the past, to a time when the local health authorities (AUSL) began to carry out their first inspections in workplaces. Pedrelli was still working with Trevi. Taking advantage of the forthcoming visit of the AUSL staff, Pedrelli and others published a notice in which all employees were invited to bring a sample of urine the next day. The notice said that the urine sample was needed for the employment card. They also wrote to consign the vial to Giacomo Mazzotti, a Soilmec employee. A worker named Petronio, who was tall and quite sturdy, was probably the most diligent one and in fact he was the first, in the morning, to go to Mazzotti to give him the vial... When Mazzotti was given the urine sample, he went berserk, hence also causing Petronio's violent reaction. By seeing this scene, the other colleagues – who were lined up with the vials in their hands – vanished in the blink of an eye. And so, shortly thereafter, the bathrooms of the company were filled with piles of empty vials, but no one wanted to admit to have been pranked...

It's quite complicated to choose an example among Pedrelli's many inventions, something that depicts his ability to find effective solutions to complex problems. Let's mention when, in the yard of the Gioia Tauro Port, in Calabria, he developed the jetting drill to carry out piles into a soil that had to be treated with this new system. "He was in the yard, I was in my office – so Mazzotti recalls – and we used to often talk on the phone in order to agree on the shape of the nozzles. At that time there was no computer, we couldn't send and swap designs, but things, despite the complexity of transferring a design idea by phone, went well anyway. The yard was a great success".

Pedrelli is also acknowledged for having designed the CM-48 rig for the UK market: the first continuous flight auger rig.

Solution provider

New Soilmec hydromill reaches 150 and 250 meter deep

New HYDROMILL technology for diaphragm walls



Read this QR code with your smartphone.
See Hydromill technology in function on job site

<http://goo.gl/wGcpN3>

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Drilling and Foundation Equipment

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ITALIAN TOOL, SPECIALIST REVS UP

GIANT DRILL NEEDED, PRONTO!

Soilmec's drills have no trouble boring holes with a diameter of 3.5 meters. But in order to provide this sought-after excavation equipment rapidly and flexibly to customers worldwide, the company now needs to think of its machine platforms in modular terms. Beneficiaries include the Leaning Tower of Pisa.



CEO Simone Teresani and his management team

BY GERNAL SCHREIFF

When the Costa Concordia cruise ship ran aground near the Italian island of Giglio in January of 2012, no one imagined that experts from the region of Emilia-Romagna would later be playing a role in the extensive salvage operation. After all, the staff of Soilmec S.p.A. in the northern Italian city of Cesena are not maritime engineers. But rather specialists in excavation-drilling equipment. However, CEO Simone Teresani and his team are absolutely not accustomed to thinking in terms of "business as usual." Soilmec's gigantic drilling systems cut their way through the earth at large-scale construction sites 24 hours a day, seven days a week. They're at work on foundations of New York's Grand Central and are helping to build subway systems in places like Amsterdam and ...

corporate

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Soilmec in a... Porsche

An article featuring Soilmec, its technologies, projects and management, appeared in the magazine "Porsche Consulting – The Magazine", the house organ of the prestigious car manufacturer. The magazine provides an interesting take on many different sectors and publishes features on financial issues and portraits of successful international businessmen.



Soilmec on cover

Soilmec gains the cover of Columbian magazine "Makinaria".

From Japan to PSM

Presentation of the company's geothermal rigs and in particular the new SM-10GT model, specially developed for the Japanese market; guided tour of the PSM plant in Asolo; Soilmec Group presentation: this was the schedule which awaited the 18 members of the delegation from the Land of the Rising Sun. The representatives were welcomed and accompanied during the visit by Stefano Cordella, Marco Rapuano, Alessandro Moretti, Patrizio Puntel, Roberto Severi, Luca Versari, together with the rest of the PSM staff.



In the photos, the Japanese delegation visiting Soilmec Group premises and plants.

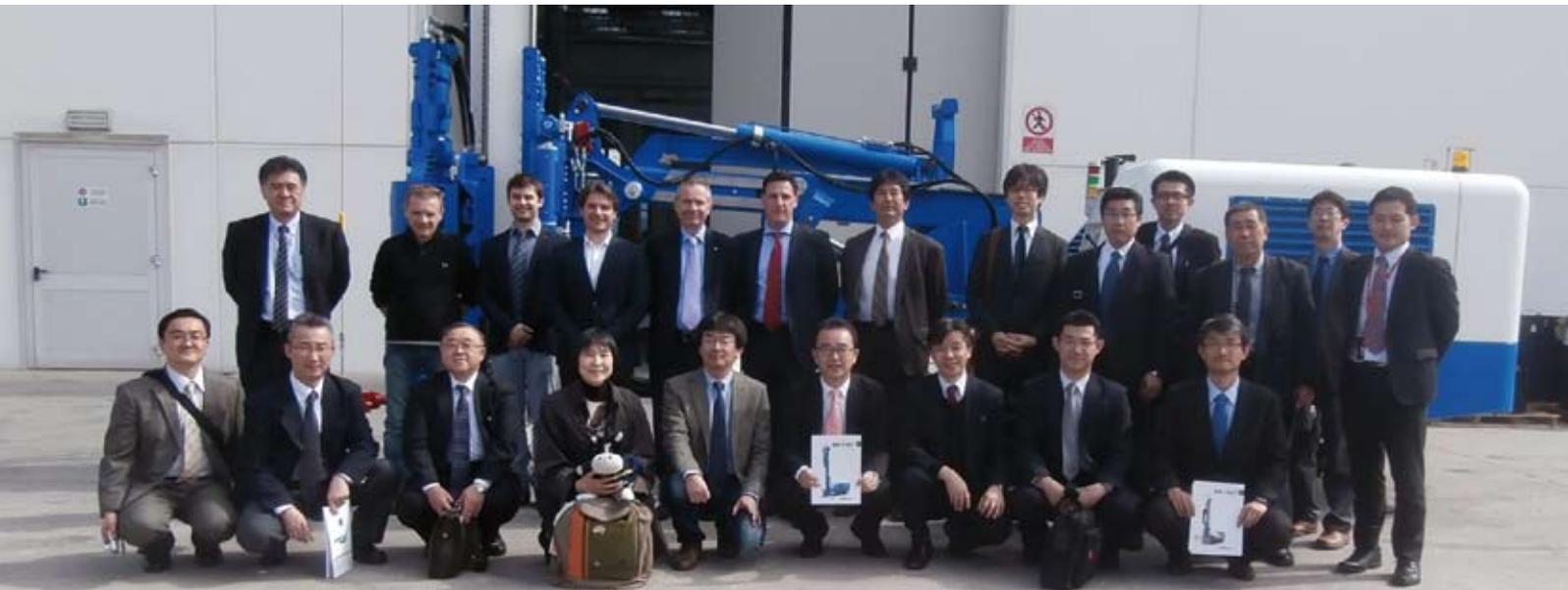
corporate



A delegation of technicians and operators from the Land of the Rising Sun visits the PSM plant to learn more about the Soilmec Group, its technologies and new products

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The members of the delegation were: Prof. Nagano Katsunori (Hokkaido University); Fujii Hikari (Akita University); Komatsu Toshiko (Saitama University); Harada Katsuhiko (Japan Heat Source System); Katsuragi Masahiko (Japan Underground Development); Yoshida Rikio (YBM); Shimaoka Hirohide and Yamaguchi Kenjiro (Obayashi); Shibata Kazuo (Nisshin Techno); Ono Naoto (Topre); Kawase Shinichi (Hokkai Heat Machine); Watanabe Takayuki and Nagao Yasuka (Sunpot – Heat Pump manufacturer); Shiba Shigemitsu and Shiba Yoshiro (General Heat Pump – manufacturer); Oda Yoshinari (Dimplex Japan); Hikawa Takeshi and Kuroda Naoto (HPTCJ Association).



Soilmec and Drillmec in action at...



Soilmec SR-70 drilling rig at work near Lázaro Cárdenas, Michoacán, **Mexico**



A **Soilmec SC-100** crawler crane is at work for a road infrastructure in the State of **California**, USA



Soilmec SM-8 in action for subsequent injections performed for the **Panama Canal** expansion Project



click on site

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HH-102 Drillmec rig at work in the "Bloque Flamenco" oilfield, Province of Magallanes, **Chile**



H-203 and H-204 both **Drillmec rigs** at "Vaca Muerta", **Argentina**





Drillmec HH-220 geothermal drilling rig in Apas Kiri, Tawau, **Malaysia**



A **Soilmec SR-100** in action for CSP piles on the Levante dock jobsite in the Port of Naples, **Italy**

[click on site](#)

Soil investigation with **Soilmec drilling rig** for the "Sifah Road Project", **Oman**



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Rainbow over **Soilmec rig** for special foundations works for wind turbines in Pagudpud, **Philippines**



The first **Soilmec machine in CSP configuration** went into action, **Singapore**





Soilmec and Watson, a successful presence

events

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CONEXPO-CON/AGG

Las Vegas (Texas, USA)

March 4-8, 2014

Hundreds of people visited the combined Soilmec-Watson booth at CONEXPO in Las Vegas to view new drilling rigs – and to partake of the renowned Italian hospitality! The Soilmec-Watson exhibit area was filled with customers, colleagues, and friends from all over the world.

Soilmec models displayed at CONEXPO included the new SR-45 and SR-75 for large diameter piling, and the new SM-17 for microdrilling and anchoring. Watson

brought three drills to the show including the 1100TM, 3110TM and Watson's new EDT18 ExcaDrill attachment.

Any show require an incredible amount of behind-the-scenes exuberant effort to be successful. Thanks to all of the Soilmec and Watson staff involved with designing, building, stocking, and running the booth – and assembling, polishing, and selling the machines! It's this commitment that helps makes Soilmec and Watson the "Best in Show."



CONCRETE SHOW **August 27-29, 2014** **São Paulo (Brazil)**



Concrete Show is the leading exhibition and conference on concrete technology in Latin America. Concrete Show South America is an international meeting point of business and technology, exclusive for concrete supply chain and its users. The trade show will be attended by thousands of construction professionals from all over the world gathering in Sao Paulo to do business. This year Concrete Show South America promises to bring you an even larger and better show with the best and new technologies in machineries, equipments, commercial construction products, services and constructive systems from leading industry suppliers.

REUNIÓN DEL CONCRETO **September 24-26, 2014** **Cartagena (Colombia)**



In its fifteenth version, the Concrete Meeting will be the perfect scenario where visitors will find buildings and infrastructure in a one place, spaces designed specifically for the upgrade, business, business contacts and meeting with colleagues and professionals in engineering and architecture over 20 nationalities. In the last edition: more than 2.300 assistants of 20 represented countries; more than 90 conferences; 5 simultaneous lounges; 15 topics linked to the construction with cement and in concrete; 4 live demonstrations; commercial sample with more than 130 stands.

GEOFLUID 2014 **October 1-4, 2014** **Piacenza (Italy)**



Geofluid is the international exhibition and conference of technologies and equipment for prospecting, extracting and conveying underground fluids. The show has constantly grown in terms of exhibited product range and highly qualified visitor attendance always focusing the specialized target of drilling and underground working sectors, including subsoil fluid prospecting and extraction, soil investigation, special foundations and geotechnical works and other geological and geophysical applications.

events

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high safety, high performance



Each Drillemec rig is designed & built with two things in mind: safety & efficiency. The distinctive pipe handling system provides for a safe and efficient method of making up your drill string, reducing manpower on drill floor. It's that kind of innovation which is built into every Drillemec rig and drilling equipment. From complete rig package to top drives or mud pumps you can count on Drillemec for solid products with a solid track record.



The core of drilling innovation

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