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with a system that integrates the conveyor chain, transverse augers, metering feeders and control terminal for accurate results.

This was followed by a Wirtgen WS 250 tractor-towed stabiliser and a WR 200i self-propelled recycler/stabiliser. Although the WR 200i is the most compact machine in Wirtgen's range, it was able to mix the soil and binding agent to a depth of 500mm across a width of 2m per pass. The company said this allowed it to achieve daily production levels of up to 8,000m² on the project.

Project manager Max Bachteler of Fischer said, "Despite the high performance, the machine is very economical thanks to the low fuel consumption. The quality of the stabilised soil also impressed me."

Finally, H 20i rollers from sister company Hamm were used to compact the ground. Bachteler said, "The job was completed successfully and on time thanks to well-planned logistics, properly co-ordinated work processes and the right machinery."

Liebherr's H5 8300 HD duty cycle crawler crane now features the company's Pactronic hybrid drive, which captures waste hydraulic energy for storage and re-use by the machine. Liebherr said this increased capacity and hoisting speeds, while reducing noise and maintenance, and delivering "significant" fuel savings.

The LRB 355 piling and drilling rig is also new from Liebherr. Based on the long, stable undercarriage design of Liebherr's pure drilling rigs, the LRB 355 has been designed for drilling with a full displacement tool. However, it can be used for a number of different applications including Kelly drilling, double rotary head and continuous flight auger drilling, soil mixing and piling with vibrators and hydraulic hammers.

Options include an automatic engine stop control, which shuts down the engine during

long breaks to save fuel. There is also an eco mode to help save fuel.

Liebherr says it designed the LRB 355 with transportation in mind. It can be transported with the leader, multi sledge and rope still attached, and leader can be folded to reduce transportation length.

US crane manufacturer Link-Belt has introduced the TCC-500, which has joined the 70 tonne capacity TCC-750 and the 100 tonne capacity TCC-1100 to complete the line-up of Link-Belt telescopic boom crawler cranes.

The TCC-500 has a four-section, full-power boom and has a standard counterweight package of 11.3 tonnes. The model can be transported in most countries, while staying under 45.5 tonnes. It is powered by a Stage IV Cummins QSB engine. A Stage IIIA version is also available.

The company said the TCC-500 had a variable displacement piston pump package, which was designed to provide "positive and precise control" with independent or simultaneous operation of all crane functions, like when using an auger or pole claw attachment. It said, "The TCC-500 can also hydraulically extend its tracks for three working track gauges, including fully extended, intermediate and fully retracted."

HYDRO PACK

BSP has introduced its new HP 260 Hydro Pack, which is now fitted with a Stage IV-compliant low emission Cat C9.3 engine for developed markets or the Stage IIIA version for other parts of the world.

The unit is designed to power piling hammers, and the new engine is said to offer a 4% fuel saving compared to its predecessor.

As well as the clean engine, the new Hydro Pack range includes a redesigned, robust, welded steel skid frame with bund for containment of spillages, lockable access doors, and tank-mounted hydraulic filter with sensor for service indication, while the hydraulic oil temperature is controlled by an independent air blast cooler. Control panel functions include, engine rpm, and emergency stop.

BSP senior sales manager Ray Ransome said, "Installing this Stage IV engine continues our tradition of providing quality products with built-in durability, reliability, low cost of ownership and fuel efficiency. BSP is the first OEM in the UK to equip its power

packs with this new engine."

Pile Dynamics has released a new version of its Pile Driving Analyzer (PDA) system – the PDA-8G – for dynamic load tests of deep foundations. Like previous PDAs, this eighth generation model performs the test normalised by the American Society of Testing & Materials standard ASTM D4945.

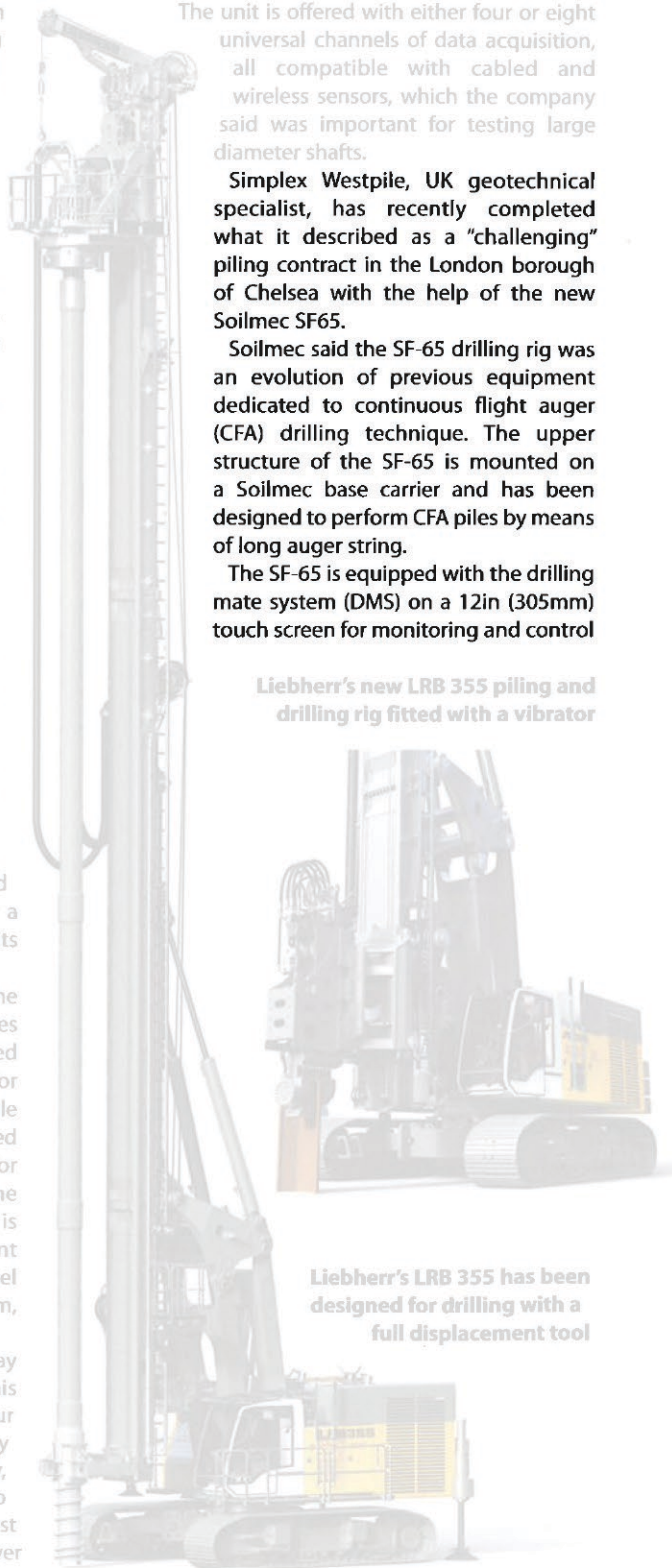
The new model features the company's updated SiteLink technology, which transmits test data in real time from the field to an office computer at a different location. The company said that anyone using the PDA-8G in the field would appreciate the thinner design of the tablet computer.

The unit is offered with either four or eight universal channels of data acquisition, all compatible with cabled and wireless sensors, which the company said was important for testing large diameter shafts.

Simplex Westpile, UK geotechnical specialist, has recently completed what it described as a "challenging" piling contract in the London borough of Chelsea with the help of the new Soilmec SF65.

Soilmec said the SF-65 drilling rig was an evolution of previous equipment dedicated to continuous flight auger (CFA) drilling technique. The upper structure of the SF-65 is mounted on a Soilmec base carrier and has been designed to perform CFA piles by means of long auger string.

The SF-65 is equipped with the drilling mate system (DMS) on a 12in (305mm) touch screen for monitoring and control



Liebherr's new LRB 355 piling and drilling rig fitted with a vibrator

Liebherr's LRB 355 has been designed for drilling with a full displacement tool



FOUNDATIONS

of the rig performances and operating parameters.

The property in the Chelsea project is situated in the grounds of the Royal Hospital Chelsea and is undergoing a major transformation project managed by Candy & Candy. Walter Lilly, provider of residential construction services, appointed Simplex Westpile to design and install the ground works across the 8,000m² site.

LOW HEADROOM

Split into two phases, the initial visit saw the construction of a CFA secant pile wall, 160m in length, with pile diameters up to 750mm and to a depth of 19m. Approximately 10m of the wall was located in the existing house and required installation using specialist low headroom equipment. In addition to the wall there were 140 CFA bearing piles constructed to a depth of 24m.

The second visit involved the installation of additional CFA secant pile wall and load bearing piles for an outdoor swimming pool. In total, over 160 piles of 600mm diameter were installed to a depth of up to 18m.

The existing house is a listed building and the new basement was to be constructed between this and the boundary. These restricted conditions led to the team using the Soilmec SF-65, which Simplex Westpile said was used to great effect because of its versatility.

Matt Walpole, operations manager at Simplex Westpile – part of Bachy Soletanche



A Soilmec SF-65 was used at the Chelsea site

– said, “The confined working environment of the Chelsea project presented us with a fantastic opportunity to showcase the capabilities of the Soilmec SF-65.”

Ditch Witch has introduced the SK850, a new mini skid steer which has been designed specifically for digging foundation trenches.

The machine can cut to a width of 410mm and a depth of 910mm thanks to a specialised heavy-duty trenching chain attachment,

powered by a 28kW diesel engine.

Ditch Witch said the SK850 created cleaner, more consistent trenches than an excavator could, and in less time, and added that it was more compact than many excavators, so was better suited to cramped and confined sites. The SK850 can trench from either a centreline or offset position, which means it can dig next to obstructions.

The SK850 carrier itself is the Ditch Witch's

For the Luise-Kieselbach-Platz area in Munich, open-cut tunnelling was used

Bauer's tunnel walls

Work on the largest construction site in Munich, Germany, has been completed after an eight-year construction period, and one of the companies involved in the 2.5km tunnel in the Luise-Kieselbach-Platz area in the southwest of the city was Bauer Spezialtiefbau.

The company was commissioned as part of a joint venture for the execution of the specialist foundation engineering work for the tunnel and also with the construction of an approximately 400m trough area with ramp structures. The total cost of the project was €398.5 million.

Bauer began construction of the tunnel in mid-2009, using the top-down method. For the Luise-Kieselbach-Platz area, open-cut tunnelling was used. The walls of the tunnel consist of secant bored piles, and up to 21m deep excavations were necessary for the operating stations and emergency exits.

The foundation works carried out by Bauer Spezialtiefbau included 10,091 piles with diameters ranging from 900 to 1,500mm, a 28,000m² soldier pile wall, 780 support columns in 1,500mm diameter piles, 25,000 metre tie-back anchoring and the additional jet grouting and steel bracing.

The bored piles were installed using different rotary drilling rigs manufactured by Bauer Maschinen. Up to the end of construction work by Bauer Spezialtiefbau in 2013, sometimes six rigs were in use.

The city marked the opening of the tunnel to traffic with two events. First, joggers had the chance to see the completed structure during a run through the tunnel. The official opening ceremony took place on 25 July. Among those present at the ceremony were Dieter Reiter, Mayor of Munich, the Bavarian Interior Minister Joachim Herrmann, and Rosemarie Hingerl from the municipal building authority. Prof Thomas Bauer, chairman of the management board of Bauer, and Walter Haus, member of the Bauer management board also took part in the opening festivities.