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CONSTRUCTION

MAY - JUNE 2015



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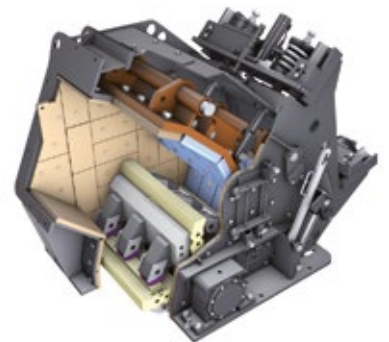


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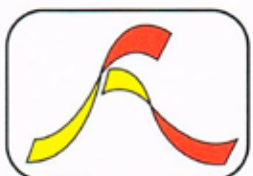
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Contents



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(page 70)

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NEWS

NEWS IN SOUTHEAST ASIA	12
NEWS IN SOUTHEAST ASIA & EAST ASIA	16
NEWS IN EAST ASIA	18
NEWS IN THE MIDDLE EAST	20
NEWS IN EUROPE	22
NEWS IN THE AMERICAS	24
IPAF HIGHLIGHTS	32

EVENTS

CALENDAR OF EVENTS	28
EVENTS	30

PRODUCTS

NEW IN INDUSTRY	34
MIXED CATEGORY	45



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Contents

PROJECTS & SPECIAL FEATURES

APPLICATIONS ON SITE	59
TRENCHLESS PROJECT	70
EDUCATIONAL BUILDING	78
FOCUS ON AUSTRALIA & NEW ZEALAND	80
REVIEW OF WORLD OF CONCRETE 2015	92



59



78



80



62



90



84



63



88



92



66

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Lum Chang wins Northpoint City project

Frasers Centrepoint Limited (FCL) has awarded the main contract for the construction of Northpoint City to Lum Chang Building Contractors and spadework is expected to commence in April 2015.

Located in the northern area of Singapore with a gross floor area of about 1.33 mil sq ft, the project will include a 920-unit residential development, a massive retail mall with over 500 outlets, a first-of-its-kind Community Club, a vibrant Town Plaza and an integrated transport hub consisting of a bus interchange and shopping underpass to Yishun MRT Station.

The rooftop Community Garden is another highlight, which features the size of nearly three basketball courts and will complement the existing Town Garden. The multi-purpose plaza set amid lush tree formations in the Community Garden offers residents with an expansive area under the cover of green canopy for various leisure activities.

The project is scheduled for completion in 2018.

North Park Residences

North Park Residences is part of the Northpoint City development, which is located in close proximity to the medical hub of the north, including Khoo Teck Puat Hospital and community healthcare facilities such as Yishun Community Hospital and



Left: Northpoint City is expected to be completed in 2018.

Below: North Park Residences is part of the Northpoint City development, which will comprise 12 towers of 10 storeys each.



All images © Frasers Centrepoint Limited.

Yishun Polyclinic. There are also plans to build new elderly care facilities along Yishun Central and Yishun Ring Road to meet the needs of its elderly residents.

Covering more than 30,000 sq m, North Park Residences will have 12 towers of 10 storeys each, offering a total of 920 units. Lots of greenery and water-themed elements will feature prominently in the outdoor

areas. There are over 88 areas of leisure facilities set in three themed gardens, namely Waterfall Gardens, Fountain Gardens and Spring Water Gardens.

An extensive 15.5 km cycling network will also be built in the precinct, while more green spaces, parks and park connectors will boost the outdoor recreational needs of residents. ■

XCMG has new subsidiary in Thailand

XCMG has set up a new subsidiary in Thailand, XCMG Machinery Sales & Service (Thailand) Company Ltd, reinforcing its commitment to the Thai market. The company said it has also signed cooperation agreements with several strategic partners in the country.

According to XCMG, Thailand has launched some major infrastructure projects since the beginning of 2015, including the double-track railways, BTS route extension, as well as highway, airport and wharf expansions. Therefore, demand for construction equipment is likely to increase and XCMG would be well positioned to capitalise on this potential. ■



XCMG has set up a new subsidiary in Thailand and signed cooperation agreements with several strategic partners in the country.

Van Oord and Boskalis to build artificial island in Indonesia

Van Oord and joint venture partner Boskalis have been awarded a contract by PT Muara Wisesa Samudra to design and construct the artificial island for the dredging and land development works for Pluit City off the coast of Jakarta, Indonesia. The contract carries a value of approximately €350 million.

The project involves reclaiming approximately 160 ha of new land requiring in excess of 20 mil cu m of dredged sand. Two jumbo

trailing suction hopper dredgers will be deployed for the dredging and reclamation activities sourcing sand from local borrow areas. Soil improvement and rock revetment works also form part of the project.

Work will commence immediately and the project is expected to be completed in 2018. When constructed the new island will be used for both residential and commercial purposes. ■

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Kobelco Cranes establishes global parts centre in Singapore

Kobelco Cranes has opened a global parts centre in Singapore, strengthening its market position in Asia Pacific (APAC) as well as in the Middle East, Africa and Europe. The facility started its operations on 1 January of this year.

“The establishment of Kobelco Global Parts Centre in Singapore is one of our strategies to increase our presence in this region and through this facility, we can further enhance the level of customer satisfaction with more prompt availability of our service parts in the APAC region, as well as in the Middle East, Africa and Europe,” said Akihiko Tsukamoto, president & CEO of Kobelco Cranes.

“To optimise the supply of service parts and achieve extensively rapid delivery times to our customers, we have begun operations of Kobelco Global Parts Centre in Singapore where we can supply the parts within 36 hours after confirmed order, and as a result we are hoping to increase our parts sales of JPY 1.3 billion in 2014 to JPY 2 billion in five years,” said Toshiyuki Hiromitsu, operating officer and head of customer support division of Kobelco Cranes.

Kobelco is increasing its parts stock in Kobelco Global Parts Centre to JPY 400 million in 2015 and is planning to expand to JPY 1 billion by 2020. ■



From left: Shinsuke Izumi, director operating officer, Kobelco Cranes Co Ltd; Minoru Ota, director, Kobe Steel Asia Pte Ltd; Akihiko Tsukamoto, president and CEO, Kobelco Cranes Co Ltd; Yasunori Takahashi, officer, Nippon Express Co Ltd; Masaki Seki, general manager, Singapore Corporate Banking Division, Mizuho Bank Ltd; and Toshiyuki Hiromitsu, operating officer, Kobelco Cranes Co Ltd.

JCB appoints new dealer for Kalimantan

Mitra JCB has been appointed as the exclusive JCB dealer for Kalimantan, Indonesia. The company will promote and support the full range of JCB machines including telescopic handlers, backhoe loaders, large excavators, compactors, wheel loaders, skid steer loaders and mini excavators.

“Indonesia is a key priority in our SE Asian strategy,” said Tom Cornell, managing director of JCB Southeast Asia. “We are confident Mitra JCB have the right experience and approach to our customers and will be able to offer the range of products and after-sales support they need and expect.”

Mitra JCB will base its operations in Balikpapan, East Kalimantan and will establish branches in Banjarmasin (South), Sampit (Central) and Pontianak (West). The company is closely linked with the Mitra Cakrawala Group, which is based in Banjarmasin.

“There are growing industrial, mining, construction and plantation industries on Kalimantan and JCB’s extensive product range is ideal to take advantage of these markets. The versatility they offer is perfect for the terrain and climate of the area and the many different types of work too,” said Adi Hermanto Ierawan, Mitra JCB’s chief executive and dealer principal. ■



From left: Tom Cornell, managing director of JCB Southeast Asia; Idam Textanto, service manager of Mitra JCB; Adi Ierawan, chief executive of Mitra JCB; and Davin Frankel, JCB’s regional manager for Indonesia.

Exchange Square under construction in Phnom Penh

Exchange Square is a new mixed-use development currently being built in Phnom Penh, Cambodia. Developed and managed by Hongkong Land, it is located in the centre of the city’s emerging financial district where parks, major boulevards, government ministries and the original French colonial administrative centre are in close proximity.

Construction of the project started

in September 2013, with the first phase scheduled for completion in 2017, which will include a Grade A office tower with 17,000 sq m of office space over 16 levels and 13,000 sq m of retail space over a four-level podium. ■

Exchange Square is expected to become a new landmark in Phnom Penh.





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Hong Kong is 'most expensive market in Asia for construction'

Hong Kong is the most expensive market in Asia for construction, followed by Macau and Singapore, according to the International Construction Costs Report released by Arcadis. Singapore has seen significant relative cost reductions over the last year and has moved down five places in the global ranking compared to the previous global ranking. Switzerland and Denmark overtook Hong Kong to become the top two most expensive markets in the world.

The annual study, which benchmarks building costs in 43 markets across the globe, found that relative construction costs have been affected by currency fluctuations, commodity prices and increasing demand for development in some recovering economies. These changes have seen the relative cost of building in Asia markets decrease significantly compared to markets in other regions.

In contrast to last year's index, European countries dominate the top 10. This is due, in part, to the ongoing economic recovery in the likes of Germany and France, which is gradually translating into contractors demanding more for their services. Meanwhile, currency devaluation in many emerging markets like India, Indonesia, Malaysia, Thailand and Vietnam has caused the relative costs to drop considerably.

"Singapore saw strong growth throughout the year, driven by a combination of robust housing markets and high levels of

infrastructure spend. For 2015, the growth rate for the construction cost is estimated to be 2 to 4 percent," said Alan Hearn, head of buildings solutions for Asia.

"In China, the gradual shift to a consumption-based economy means that the huge growth in construction that we have witnessed over the last 10 years is unlikely to continue in the long term. Elsewhere in Asia, construction markets had another strong year, particularly in Japan, where the stimulus associated with one of the three 'arrows' of Abenomics has had a significant impact."

Mr Hearn continued, "In 2015, we expect construction investment in China to continue to diversify across both project types and geographies, which will sustain strong growth. Meanwhile, Malaysia has seen strong growth of late and this looks set to continue. As for emerging markets such as the Philippines, Indonesia, Vietnam and India, fluctuations in commodity and currency markets, along with wider economic trends, may also affect the ability of these markets to fund projects or attract PPP (Public Private Partnership) investment."

The top 14 most expensive markets for construction in Asia are (in order): Hong Kong, Macau, Singapore, Japan, South Korea, China, Brunei, Philippines, Thailand, Malaysia, Indonesia, Taiwan, Vietnam and India. ■

Chee Fatt expands into construction

Chee Fatt Co Pte Ltd, a Singapore-based distributor of industrial equipment and tools, is expanding further with the formation of a construction division. The company represents several brands, one of which is Enerpac. It has recently been honoured by Enerpac as its longest-serving Southeast Asia distributor.

Chee Fatt has completed more than 40 years service for Enerpac, supplying its high quality pumping, lifting, professional bolting and other products to a wide range of industries such as oil and gas, mining and energy, marine and offshore, and aerospace, to name just a few. The company believes it would be a good fit with the construction industry, which also values the rugged reliability, safety and ergonomic performance built into Enerpac tools.

"Our philosophy has always been to represent key brands respected by the industry and Enerpac is definitely one of those very famous brands. The brands we represent are from USA and Europe and are all known for their reliability and

safety. They have been tried and tested in various industries across the world," said Desmond Poh, Chee Fatt's deputy director of sales and marketing.

Chee Fatt operates from its office, warehouse and workshop complex at Tanjong Penjuru. "This is the ideal position from which to service our expanding base of established customers and to offer the same standards of quality and service to our new construction industry customers in Singapore, which serve clients throughout Southeast Asia," said Mr Poh. ■



Chee Fatt's Desmond Poh and Ivan Poh (centre and right) with Enerpac's area sales manager, Vaughn Sng.

'The Boutiq' opens



'The Boutiq', Singapore's new luxury 39,972 sq ft residential development designed by Broadway Malyan, has opened to residents. Broadway Malyan provided architectural and landscape design services to a consortium comprising Heeton Holdings, KSH Holdings and TEE International.

The development features two 10-storey blocks and provides 130 one- to two-bedroom apartment units and one- to three-bedroom penthouses. Sky gardens punctuate every floor and provide a multi-level forum for residents to relax, play and interact. ■



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Atkins to design landmark supertall development in China

Atkins has been awarded a contract to design the centrepiece development for a new expansion project in Changsha, in the province of Hunan, China.

Changsha Northstar Real Estate Development Company will be developing the Northstar Delta site to build a new landmark, Northstar Changsha Centre. Atkins has been appointed to provide architecture design services for this development.

The Centre will integrate residential, cultural, retail and commercial space of the riverside area to create a central public space for activities. This will include a supertall 400 m landmark office tower, regional convention centre, department stores, five-star hotel and serviced apartments. The project will cover a floor area of 406,000 sq m.

Based on existing road planning, the development has been designed to be very pedestrian friendly, and a major civic plaza will connect the buildings with a network of elevated walkways. Vertical recesses running up the sides of the towers will make them look more slender and the tops of the towers are 'stepped' to add differentiation to the overall shape.

Sustainability is another focus of the project, and the convention centre in particular is expected to set new standards in passive energy efficiency due to its careful orientation and sophisticated roof design. Rows of large skylights orientated to the north will bring diffused light into the halls and foyers below, utilising natural light effectively. ■



The new Northstar Changsha Centre will include a supertall 400 m landmark office tower, regional convention centre, department stores, five-star hotel and serviced apartments.

Gammon awarded contract for Hong Kong residential development

Gammon Engineering & Construction Company Limited has won a contract for the TW5 Cityside residential development in Tsuen Wan, Hong Kong. The total value of the contract is HK\$3.2 billion. The project has commenced since January 2015 and is scheduled for completion in 2018.

Developed by Chinachem Group, the project includes the construction of seven residential towers, from 12 to 40 storeys, on three-storey retail podium and recreational facilities and one-storey

basement. The total construction floor area is 112,000 sq m. The project also involves the reprovision of public transport interchange and the building of five footbridges. Upon completion, the development will provide about 900 residential flats.

As the development is adjacent to the existing West Rail Tsuen Wan West Station and the residential community, the project team will deploy comprehensive measures on sustainable development and environmental management throughout the construction process. ■

Taiwan's new museum breaks ground

Work on Taiwan's new National Museum of Marine Science and Technology (NMMST) in Keelung has begun. It is believed to be the largest aquarium in northern Taiwan. The sustainable concept is rooted in analysis of the site and the surrounding urban grain, Keelung's subtropical climate and conservation of marine life. The building is oriented to face Badouzi harbour, while maintaining connectivity between the waterfront and the fishing village to the east of the site. The museum's focal point will be a new public plaza at the heart of the aquarium. ■



Work has started on Taiwan's new National Museum of Marine Science and Technology.

Mott MacDonald to work on Shanghai Foxconn Plaza

Mott MacDonald has been appointed by Foxconn (Shanghai) Ltd to provide engineering, procurement and construction management services for the CNY850 million Shanghai Foxconn Plaza in China. Located in the financial centre of Shanghai by the Huang Pu River, the 50,000 sq m plaza will be the headquarters of Hong Hai Technology Group. It will comprise 21 storeys and four annex levels, as well as a

32,000 sq m basement made up of four floors.

Construction of the Shanghai Foxconn Plaza is due to be completed in 2017. It is targeting both LEED platinum medal and national two-star green building certificates. The design includes sustainable features such as a double curtain wall facade, rainwater harvesting, LED lighting, solar panels and geothermal heat exchange. ■

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Qatar, Saudi and UAE among hottest construction markets

The value of construction activity in the emerging world surpassed that of the advanced economies combined in 2012, and the difference will continue to widen over the coming years, according to the latest research from Timetric's Construction Intelligence Centre (CIC).

In 2010 emerging markets accounted for 47.6 percent of global output, a share that is estimated to rise to 52.8 percent in 2015 and then forecast to reach 56 percent by 2020, with much of this growth driven by emerging markets in the Middle East. Timetric forecasts the top five fastest growing markets in 2016-2020 include Qatar, Saudi Arabia, UAE, Colombia and Vietnam.

Qatar's construction industry is predicted to be the fastest growing in the world in 2016-2020, maintaining the position it held in the preceding five-year period. Double-digit growth in recent years has been driven by massive public investment in infrastructure projects, in part aimed at diversifying the economy from one that is overly dependent on the oil sector. Over the coming five years, growth will continue to be driven by the National Vision 2030 and the hosting of the 2022 Fifa World Cup.

The construction industry in Saudi Arabia will remain among the fastest growing in the world, supported by investment in buildings and infrastructure to diversify the economy. The drop in oil prices could impact on the viability of new energy projects. However, the country's fiscal position is robust and thus public investment plans are not expected to be greatly affected.

The construction industry in the UAE started to recover in 2013, having contracted over the previous three years and the outlook is one of continued growth. Large-scale infrastructure projects, including the expansion of the Dubai metro and the planned Abu Dhabi metro and light-rail network, will help to drive industry growth, as will the hosting of Expo 2020 in Dubai. The UAE will also continue to attract investment in the commercial buildings sector given its rapid emergence as a major hub for regional and global business and tourism.



Construction of a new stadium near Lusail, Qatar.

The construction industry in Colombia has been expanding at a rapid rate in recent years, by an average of 9.5 percent a year in real terms in 2011-2015. The property market is also booming, in part reflecting increased confidence in the economy. With the government intending to spend heavily on infrastructure developments, while encouraging private investment under PPPs, construction growth will remain high, making it the fastest growing industry outside of the Middle East.

Vietnam's construction industry has returned to a relatively healthy condition following the decline in 2011 and the collapse in the property market. However, the dominance in the economy of the state sector over the more dynamic private sector will prevent a more rapid recovery. Nevertheless, in 2016-2020 the industry will expand by an annual average of 6.4 percent in real terms, as the economy regains growth momentum and foreign investment confidence returns. ■

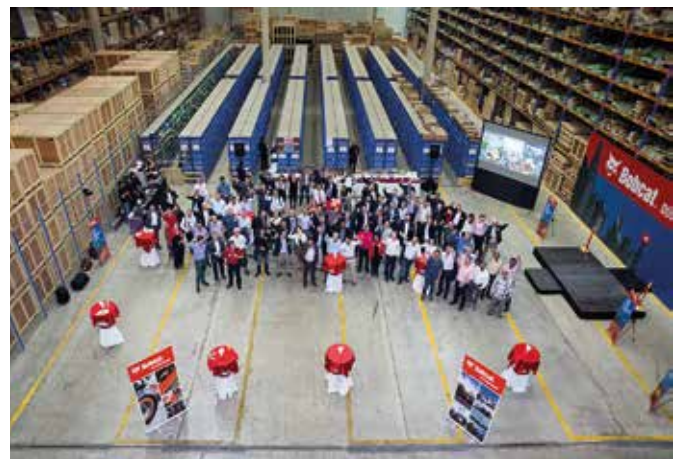
Doosan opens new parts distribution centre for Middle East and Africa

Doosan Construction Equipment has opened a new parts distribution centre (PDC) for Bobcat and Doosan Portable Power products in Dubai, UAE. It is a collaboration with the global logistics provider Agility, which is also hosting and managing this new facility located at the Jebel Ali Free Zone.

The new Dubai PDC will provide parts support for dealers and customers of Bobcat and Doosan Portable Power products in the Middle East and Africa (MEA) region. In combination with the existing Doosan PDC at Puurs in Belgium, the company will now be able to deliver parts to over 90 percent of the region within 24 hours.

"With the opening of the new Dubai PDC, we will be able to provide a much better parts service for our dealers and customers throughout the MEA region. As well as enhancing our aftermarket service, the new PDC demonstrates our strong commitment to the MEA market," said Gaby Rhayem, regional director for Doosan Construction Equipment in Middle East and North Africa.

The storage space for Bobcat and Doosan Portable Power parts covers an area of 1,540 sq m in the Agility warehouse, stored in 3,500 separate parts locations. ■



Doosan's new parts distribution centre in Dubai will provide parts support for dealers and customers of Bobcat and Doosan Portable Power products in the Middle East and Africa region.

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Skanska to upgrade M25

Skanska, in a joint venture with Balfour Beatty, has been awarded a construction contract to upgrade a junction of the M25 highway for the UK's Highways Agency. Work was scheduled to start in January 2015 and is expected to conclude by 2017.

The joint venture Balfour Beatty Skanska is a construction partner to Connect Plus, the company responsible for managing and upgrading the M25 highway and has already delivered £1.3 billion worth of 'smart' highway upgrades to 117 km of the M25 since 2009. The work on junction 30 will provide enhancements to the highway as part of a project to reduce congestion and supporting the government's national infrastructure plan.

In addition, in a joint venture with Balfour Beatty and MWH Treatment, Skanska has been awarded a contract as part of Thames Water's eight20 alliance to deliver essential improvements to the company's network over the next five years. The contract runs from 1 April 2015. ■



Skanska, in a joint venture with Balfour Beatty, has been awarded a construction contract to upgrade a junction of the M25 highway for the UK's Highways Agency.

Linden Comansa appoints Norway dealer

Linden Comansa has appointed Craneway AS as its new distributor in Norway. Craneway's facilities and yard are located at the Follestad industrial park in Røyken, about 35 km away by road from the capital, Oslo.

Craneway is owned by Jan Ståle Døhl, who has worked in the tower crane industry for more than 35 years; Hæhre Entreprenør AS, one of Norway's largest construction companies; and the Mikkelsen group, which provides rental of mobile cranes and transportation of machinery, among other businesses.

The first cranes in Craneway's rental fleet are 12 self-erecting cranes provided by Hæhre, which also contributed with an experienced assembly and technical assistance team. These cranes will soon be joined by new flat-top tower cranes from Linden Comansa. In addition, Craneway has developed a three-year plan that includes an acquisition of 30 to 50 tower cranes for rent, not only to attend projects from Hæhre, but also to offer solutions to other construction companies.

With the appointment of Craneway, Linden Comansa has completed the distribution and service network of its tower cranes in all Scandinavian countries. ■

Terex Trucks' new distributor in Austria

Mlečka Baumaschinen has been appointed as the official distributor of Terex Trucks articulated and rigid dump trucks in Austria. The company is strategically based in Oeynhausen, near Vienna, and will cover the whole of Austria, providing full technical support throughout the region.

Founded in 2011, Mlečka has an extensive team of customer support specialists on-hand to support new and existing customers countrywide. "Our team is experienced with working on these well-respected machines and we are all very pleased with the new partnership," said Harald Mlečka, owner of Mlečka Baumaschinen. "The efficiency and durability of Terex Trucks dump trucks make them ideal for sand and gravel handling at construction sites in Austria. We are confident that we have the right resources, together with Terex Trucks, to support existing customers in the country; as well as to expand the truck manufacturer's market share."

"Mlečka is the perfect fit for representing Terex Trucks in this region," said Thomas Schmitt, Terex Trucks' EMEA customer support manager. "The company has the experience and knowledge to support our customers. They are a highly productive team, well known for their excellent level of customer support."

With the increase in product range, Mlečka has added to its employee base, and the company is planning expansion to a new location in the west of Austria by the end of this year. ■



Mlečka Baumaschinen has been appointed as the official distributor of Terex Trucks articulated and rigid dump trucks in Austria.

Atlas Copco discontinues Powercrusher business

Atlas Copco has decided to discontinue its Powercrusher business, which manufactures and sells mobile crushers and screeners for quarrying, civil engineering and recycling. The company plans to stop the production at its St. Valentin plant in Austria during 2015; but will continue to provide aftermarket service support for existing Powercrusher customers.

"We are discontinuing this business as it does not fit strategically for us," said Johan Halling, president of Atlas Copco's Mining and Rock Excavation Technique business area. "We will ensure existing Powercrusher customers will continue to have their equipment serviced in the best way."

The Powercrusher business has about 70 employees and in 2014 it had revenues of about SEK 255 million. ■

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US construction equipment exports drop 13 percent in 2014

Exports of US-made construction equipment ended 2014 with a 13.2-percent drop compared to 2013, with a total US\$17.26 billion shipped to global markets, according to the Association of Equipment Manufacturers (AEM), citing US Department of Commerce data. Business to Europe, South America and Australia/Oceania was the hardest hit.

Canada dropped 2 percent, for a total US\$6.66 billion; South America declined 28.3 percent, totalling US\$2.57 billion; Asia decreased 7.1 percent, for a total US\$1.98 billion; Europe dropped 22.6 percent, for a total US\$1.98 billion; Central America fell 11.4 percent, totalling US\$1.95 billion; Africa decreased 5.2 percent to US\$1.23 billion; and Australia/Oceania fell 32.4 percent to US\$889.5 million.

The top countries buying the most US-made construction machinery during 2014 were: Canada (US\$6.66 billion, down 2 percent); Mexico (US\$1.59 billion, down 11.3 percent); Australia (US\$808.3 million, down 34.9 percent); Brazil (US\$720.5 million,

down 19 percent); South Africa (US\$669.5 million, down 1 percent); Chile (US\$617.4 million, down 38.2 percent); Belgium (US\$461.3 million, down 25.2 percent); Peru (US\$460.4 million, down 27.8 percent); China (US\$367.8 million, down 3.1 percent); and Saudi Arabia (US\$326.9 million, up 10.7 percent).

The fourth quarter of 2014 marked the eighth consecutive quarter that US construction equipment exports experienced year-over-year declines. While exports have been decreasing steadily since the second quarter of 2012, imports have been trending higher. The fast growth in the post-recession export figures (2009-2012) was a strong driver for domestic manufacturers, though it appears the domestic market has become one of the more robust growth engines for the industry.

The recent declines in total construction equipment exports, which were in line with regional development, have been partly due to a retrenching from accelerated spending earlier in the economic recovery; a strengthening dollar against the Japanese Yen; and declines in commodity prices, particularly oil, copper and coal. ■

Manitowoc and Sennebogen form partnership in North and Latin America

Sennebogen and Manitowoc have formed a long-term strategic partnership to offer telescopic crawler cranes in the North and Latin American markets.

Starting in 2015, Sennebogen will produce three new models of Grove Hydraulic Crawler (GHC) cranes in Straubing, Germany, including GHC55, GHC75 and GHC130. The cranes are fully supported by Manitowoc Crane Care's service network and will be offered for sale exclusively in North and Latin America.

According to Sennebogen, the equivalent models from the company's product range - Sennebogen 653, 673 and 6113 - will not be offered in these sales regions. Other Sennebogen products and their existing distribution channels will not be affected by this agreement.

The new GHC telescopic crawler cranes offer the benefits of small crawler cranes with the versatility of telescopic booms. They are designed to be compact and easy to transport; once these cranes reach the job site, no assist crane is needed for on-site assembly.

The GHC series cranes' compact footprint provides excellent manoeuvrability on the job site and can handle all types of job site conditions. Mountainous or swampy terrain, for example, is easily navigable, and the cranes work well in congested spaces.

"The GHC series is for customers that need a compact, manoeuvrable crane that can face the rigors of merciless terrain. With minimal transport requirements, 100 percent pick-and-carry ability and a telescopic boom, these cranes will prove very nimble in both getting to and navigating job sites," said Mike Herbert, global product director for rough-terrain cranes at Manitowoc.

All three cranes in the GHC series offer the ability to pick-and-carry at 100 percent of their load chart and can swing loads a full 360 degrees. This makes them ideal for applications such as utility projects, where the cranes can carry loads across the job site, adjusting boom length as necessary.

A variety of attachments are available for GHC cranes, including an auger attachment and pole claw. Companies working on power line projects, for example, will be able to drill holes with the auger



The new line of GHC telescopic crawler cranes is the result of a partnership between with Manitowoc and Sennebogen. The cranes will be available in the North and Latin American markets.

and lift poles with the claw, using only one crane where before they may have needed several. The requirement of only one operator and one rigger saves additional time and money.

The Grove GHC55 has a 55 USt (50 t) capacity and 30.4 m main boom length. The total crane length with boom retracted is just 10.7 m long and crane retracted width is 3.5 m – its overall height is 3.2 m.

The Grove GHC75 has a 77 USt (70 t) capacity and 36 m main boom length. The total crane length with boom retracted measures just 13 m and crane retracted width is 3.2 m – its overall height is 3.2 m.

The Grove GHC130 has a 132 USt (120 t) capacity and 40.2 m main boom length. The total crane length with boom retracted measures just 15.3 m long and crane retracted width is 3.9 m wide – its overall height is 4 m. All three cranes feature Tier 4 final compliant Cummins engines. ■

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Another record breaking auction for Ritchie Bros.

Ritchie Bros. has sold a record-breaking 10,500+ equipment items and trucks at its premier global auction in Orlando, Florida, USA, which took place from 16 to 20 February 2015. The event attracted 9,350+ on-site and online bidders from 81 countries and generated US\$179+ million in gross auction proceeds, including a record US\$66+ million sold to online buyers. Multiple Orlando auction site records were also set, including total number of registered bidders (9,350+), number of online bidders (5,000+), total number of buyers (2,650+), number of online buyers (1,300+) and number of sellers (875).

“Our February Orlando auction is the largest auction we hold each year. The record 10,500+ industrial assets sold at this year’s sale, and the record number of worldwide bidders the auction attracted, demonstrates the global reach and cross-sector appeal of this multi-day event,” said Ravi Saligram, CEO of Ritchie Bros. “In fact, we sold more transportation sector assets at this sale than any of our previous Orlando auctions before, including a record 310 truck tractors on Friday. We’re also pleased with the strong performance of the transactions we underwrote at this auction.”

Ritchie Bros. sold equipment for 875 sellers, including 80+ heavy construction items for Hermanos Yarull T & Co, a civil engineering contractor based in the Dominican Republic. “This was our first time selling with Ritchie Bros. and we were blown away by the magnitude of the auction and the efficiency of how it all came together,” said Cesar Alvarez of Hermanos Yarull T & Co. “We’ve been in business for more than 40 years and have tried selling equipment piece-by-piece in a variety of ways before and it was a headache. With Ritchie Bros. we just give all the equipment to them and it’s done. We get better resale prices and great customer service.”

The auction attracted equipment buyers from across North America and around the world, in person and online. Close to US\$144 million of equipment (80 percent) was sold to buyers located outside



Ritchie Bros. Orlando auction in February featured a record-setting 10,500+ equipment items. All items were sold without minimum bids or reserve prices.

the state of Florida, including more than US\$48 million (27 percent) sold to buyers outside the country. Buyers participated from as far away as Australia, Ecuador, Thailand, Italy, the UK and the UAE.

The tremendous crowd at the auction, with a large presence both on site and online, resulted in strong prices throughout the week particularly on crawler tractors, excavators and transportation equipment, said Steve Kriebel, regional sales manager at Ritchie Bros.

The record-setting selection of equipment in the Orlando auction included 500+ compactors, 450+ excavators, 270+ wheel loaders, 240 crawler tractors, 310 truck tractors, 200+ van trucks, 90+ dump trucks and more. Every item was sold without minimum bids or reserve prices. ■

Skyjack expands North American team with new territory managers

Skyjack has added three new territory managers to support growth in North America. The company realigned territory boundaries and created the new roles to enhance coverage and better serve Skyjack customers. As territory managers, the trio will be responsible for strengthening relationships with existing national accounts and developing new relationships with independent customers.

George Kidwell will be responsible for sales in Alabama, Louisiana and Mississippi. Mr Kidwell has over 20 years of sales experience, including seven years in construction sales at Sunbelt Rentals, giving him background knowledge of Skyjack products. In his new role, Mr Kidwell hopes to help grow Skyjack’s market share in boomlifts and telehandlers, as well as bring new customers into the Skyjack product family.

Richard Pomponio will be responsible for sales in Pennsylvania and New York. Mr Pomponio brings over 25 years of experience in the construction equipment business, including 20 years working directly in sales and management. This experience has allowed him to build strong relationships with his customer base and familiarise himself with Skyjack products. Mr Pomponio plans to use his past management experience to focus on expanding the Skyjack customer base.



Douglas Mingst.



George Kidwell.



Richard Pomponio.

Douglas Mingst will be responsible for sales in New Jersey, New York City metro area, eastern Pennsylvania, Delaware, Maryland and Washington, DC. Mr Mingst has more than two decades of sales experience in the aerial work platform industry, giving him extensive knowledge of the industry’s products as well as the equipment rental market. In his new role, Mr Mingst intends to use his first-hand knowledge of the industry and its products as well as his existing customer relationships to help Skyjack grow its customer base and sales in the Mid-Atlantic region. ■

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26 May 2015	IPAF Asia Conference 2015 Royal Garden Hotel Kowloon Hong Kong	IPAF Tel: +65 6339 3279 Email: sea@ipaf.org Website: www.ipaf.org/asiaconference
27 to 29 May 2015	BuildTech Yangon 2015 Myanmar Convention Centre Yangon Myanmar	Sphere Exhibits Pte Ltd Tel: +65 6319 4037 Email: lingoh@sph.com.sg Website: www.btyangon.com
9 to 12 Sept 2015	Construction Indonesia 2015 Jakarta International Expo Kemayoran, Jakarta Indonesia	PT Pamerindo Indonesia/IEM/OES Tel: +65 6233 6777, Fax: +65 6233 6768 Email: violet@iemallworld.com Website: www.constructionindo.com
10 to 12 Sept 2015	Cambuild 2015 Diamond Island Exhibition & Convention Centre Phnom Penh Cambodia	AMB Events Group Tel: +603 4041 9889, Fax: +603 2770 5301 Email: richard@ambexpo.com Website: www.expocambodia.com
10 to 12 Sept 2015	The Big 5 Construct India 2015 Bombay Exhibition Centre Mumbai India	FICCI Tel: +91 882 624 6663 Email: shaurav.pandey@ficci.com Website: www.thebig5constructindia.com
17 to 19 Sept 2015	AseanMach 2015/OneBuild 2015 Putra World Trade Centre Kuala Lumpur Malaysia	One International Exhibition Sdn Bhd Tel: +603 8943 7488, Fax: +603 8943 7599 Email: info@oneinternational.com.my Website: www.oneinternational.com.my
22 to 25 Sept 2015	BICES 2015 New Beijing International Exhibition Centre Beijing China	CCMA, CNCMC and CCPIT - MSC Tel: +86 10 5222 0905/0946/0930 Email: info@e-bices.org Website: www.e-bices.org
7 to 10 Oct 2015	Buildtech Malaysia 2015 Putra World Trade Centre Kuala Lumpur Malaysia	Trade Link ITE Sdn Bhd Tel: +603 7842 9863, Fax: +603 7842 7863 Email: info@tradelink.com.my Website: www.tradelink.com.my/buildtech
28 to 30 Oct 2015	Concrete Show Southeast Asia 2015 Jakarta International Expo Jakarta Indonesia	UBM Tel: +62 21 2930 5959, Fax: +62 21 2930 5960 Email: niekke.budiman@ubm.com Website: www.concreteshowseasia.com
14 to 16 July 2016	LankaBuild 2016 Sri Lanka Exhibition & Convention Centre Colombo Sri Lanka	AMB Events Group Tel: +603 4041 9889, Fax: +603 2770 5301 Email: suraya@ambexpo.com Website: www.lankabuild.org
22 to 25 Nov 2016	bauma China 2016 Shanghai New International Expo Centre Shanghai China	Messe München GmbH Tel: +49 89 949 20251, Fax: +49 89 949 20259 Email: info@bauma-china.com Website: www.bauma-china.com
Date	Events outside Asia	Organiser & Contact
23 to 26 Nov 2015	PMV Live at The Big 5 2015 Dubai World Trade Centre - Sheikh Saeed Halls Dubai UAE	dmg events Tel: +971 4 438 0355, Fax: +971 4 438 0356 Email: pmvlive@dmgeventsme.com Website: www.pmvlive.com
2 to 5 Feb 2016	World of Concrete 2016 Las Vegas Convention Centre Las Vegas, Nevada USA	Hanley Wood Exhibitions Tel: +1 972 536 6300, Fax: +1 972 536 6301 Email: contactus@worldofconcrete.com Website: www.worldofconcrete.com



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ICEF and WCTS to be held in November 2015

The second International Construction Equipment Forum (ICEF), a key conference and meeting place for construction equipment fleet owners, will be held at the NH Grand Krasnapolsky hotel in Amsterdam, the Netherlands, from 2 to 3 November 2015.

The event will serve as a forum to discuss various issues such as whole life equipment costs, financing, machine control and telematics, outsourcing and trends in construction equipment technology. It is targeted at construction equipment fleet owners including contractors, rental companies and materials producers.

ICEF is organised by KHL Group and its magazines International Construction and Construction Europe. The event will start on the evening of 2 November with a networking and awards dinner, which is followed by a full-day conference on 3 November.

Confirmed speakers include Scott Hazelton, managing director of construction and industry practices at IHS Global Insight; Anna Hyvönen, executive vice president for Finland and Baltics at Ramirent; Carl Lockwood, senior vice president for strategy and business development at Volvo Construction Equipment; Michiel van Ramesdonk, vice president for global fleet customer accounts at DLL (formerly De Lage Landen); Alex Schuessler, founder of SmartEquip; Nicolas Thizy, system application specialist at Caterpillar; and Dirk Legrand, deputy general manager of Komatsu Europe.

ICEF 2015 will build on the successful inaugural event held in Amsterdam in November 2013, when speakers included former Spanish Prime Minister José María Aznar, as well as Simon Purchon, business development director of Babcock Mobile Assets and Xavier Therin, vice president of Lafarge. ICEF is the new identity of the CEWEF event created by Groeneveld Group, the mobile equipment technology manufacturer. CEWEF was acquired by KHL in 2012. Groeneveld remains a key partner for ICEF.

“Construction equipment fleet management is rapidly becoming a science, with major owners of equipment seeking to maximise the efficiency of their fleets and minimise their overheads,” said Murray Pollok, events director at KHL. “ICEF will provide fleet managers and equipment procurement managers with key information on cost control, equipment maintenance, finance trends and fleet management tools to help them in their day to day work.”

The event programme is designed to appeal to a broad range of executives and senior managers throughout the construction industry from disciplines such as contracting, equipment manufacture, materials production, equipment rental, finance, project management and consultancy.

The evening of 2nd November will also see a gala dinner and the award of prizes in six categories for outstanding performance in the construction industry. The most sought-after is expected to be the International Construction Project of the Year award, which will recognise a scheme worth US\$ 100 million or more, of international significance.

World Crane and Transport Summit

The fifth World Crane and Transport Summit (WCTS) will take place at the same venue, from 4 to 5 November 2015. The conference will include a special focus on wind turbine operations and the recruitment of young and new people to the industry, with round-table sessions on both topics.

Norbert van Schaik of Siemens Wind Power will give a presentation on the implications of wind turbine design trends for transport and lifting of components and he will also take part in a



Former Spanish Prime Minister José María Aznar was speaking at the previous ICEF.



The last WCTS in the US attracted more than 260 delegates.

panel discussion on the subject.

On recruitment there will be a round-table of young people in the industry who will describe their experiences and discuss how to best recruit young talent. Already confirmed for the panel is Marcus Chee, a crane specialist with Bok Seng Logistics in Singapore.

Jan Kleijn, Mammoet CEO, will give the keynote address at the conference. Other speakers are Alexandre-Jacques Vernazza, Mediaco's president; Ton Klijn, Wagenborg Nedlift's managing director; and Mathias Rehe of Dacotrans/Daco Heavy Lift in Guatemala.

Other topics will include new guidelines on the operation of self-propelled modular transporter (SPMT) and proposals for a crane operator licence scheme for Europe. Crane accident analysis, meanwhile, will be the topic covered by Judy Goh, senior consultant at Matcor Technology & Services, a Singapore-based company that specialises in forensic investigation of crane accidents.

The previous event, held in Miami, USA in November 2014, attracted more than 260 delegates. This year sees the event return to Amsterdam where the first three conferences were held. WCTS is organised by KHL Group and its magazines International Cranes and Specialist Transport and American Cranes & Transport (ACT). ■

Website:

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	<p>Duty cycle lattice boom crawler cranes</p> <p>lifting capacity</p> <p>BME-G series (European model) 80t</p> <p>BMS series (Standard model) 80~100t</p> <p>BMS1200HD (Standard model) 120t</p>		<p>Telescopic boom crawler cranes</p> <p>lifting capacity</p> <p>TK series 55~75t</p>

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Studdert is now IPAF president

Andy Studdert, chairman and CEO of US-based NES Rentals, has been appointed as the new president of the International Powered Access Federation (IPAF). Nick Selley, group business development of AFI-Uplift, is the deputy president and Brad Boehler, president of Skyjack, is the vice president.

IPAF achieved a 9.4 percent increase in turnover, reaching £4.65 million in 2014, up by £0.4 million over 2013. This turnover produced a surplus of 3.2 percent. All surpluses are re-invested in safety, membership and training activities in line with the aims of the not-for-profit Federation.

The accounts and financial statement audited by CLB Coopers show IPAF closing 2014 slightly above budget set by members of the IPAF Council, the Federation's governing body, as well as the gradual accumulation of reserves to meet the target set by Council. Membership increased by 6.9 percent from 1,037 to 1,109 in 2014. A record number of 137,429 people were trained by IPAF-approved training centres in 2014. This is an increase of 7.9 percent over the 127,365 people trained in 2013.

"The ongoing push to eLearning will be a major theme of IPAF's activities in the next several years," said Mr Studdert, who succeeds Steve Couling, managing director of the IAPS Group. "This new technology will change the learning experience for operators and drive the safety message home in a very positive way. A second major area of focus will be embracing, handling and implementing change. We need to look at what we've done in the past and ask ourselves if that is still relevant. The way forward for the Federation must be simple, powerful and focussed."

Mr Studdert is a firm champion of safety in the access industry. He has been the CEO of NES Rentals for the past 11 years, where he instilled a stringent safety culture based on repeatable processes, a culture of intervention and crisis preparation. Almost all the NES Rentals management and staff hold an IPAF PAL Card (Powered Access Licence) as proof of training, including the CEO. Mr Studdert joined the IPAF Board of Directors three years ago and has been instrumental in pushing for the development of the IPAF operator eLearning module. He was voted IPAF Safety Champion of the Year at the 2009 International Awards for Powered Access (IAPAs). ■



From left: IPAF CEO Tim Whiteman, outgoing IPAF president Steve Couling of the IAPS Group, and new IPAF president Andy Studdert of NES Rentals.

IPAF helps train Singapore youth



IPAF is working with the Institute of Technical Education (ITE) West College of Singapore to equip the young workforce with operator skills and get young people trained to operate mobile elevating work platforms (MEWPs) in the categories 1a and 3a (left).

IPAF is assisting ITE West to become set up as an IPAF-approved training centre and is seeking member companies who can help sponsor this youth training initiative.

ITE West is looking for a company who can sponsor a machine in each of the categories 1a and 3a. These machines will be used to train students in the faculty departments of Facility Management and Lighting & Sound.

ITE West is also looking for an existing IPAF-approved training centre to sponsor an IPAF certified instructor's time for three years. The sponsored instructor would assist the ITE instructor to gain more MEWP operating and teaching experience to enable him or her to conduct IPAF operator training in the future.

"This is a great opportunity for IPAF members and training centres to contribute in shaping the future workforce," said Raymond Wat, IPAF South East Asia regional general manager. "The ITE is a model technical institution and receives many international visitors coming to learn from and adopt what the institute is doing. It is a win-win situation as young people will be familiar with MEWPs before they join workforce and be able to make use of the safety and productivity benefits of this type of equipment."

IPAF members interested in sponsoring this youth training initiative should contact: sea@ipaf.org. ■

Steady growth



A record number of 137,429 people were trained by IPAF-approved training centres in 2014. This is an increase of 7.9 percent over the 127,365 people trained in 2013. Training available from IPAF-approved centres includes operator courses for which a PAL Card (Powered Access Licence) is issued, and harness and management courses for which a certificate is issued.

IPAF issued a record 130,230 PAL Cards worldwide through its approved training centres in 2014, an increase of about 7 percent over the 121,744 PAL Cards issued in 2013.

There are now more than 640 IPAF-approved training centres around the world and more than half a million valid PAL Cards in circulation. At the end of 2014, IPAF had a total of 1,109 members from 53 countries. ■



New hoist!

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Alimak Hek is introducing two new construction hoist models: ALIMAK SC 65/32 and SC 45/30. Available in single or dual car configuration, both new hoist models offers payloads of 2,000 kg per car, and car sizes 1.5 x 3.2 m and 1.4 x 3.0 m. The hoists are available with either DOL (Direct-on-line) or FC (Frequency Control) drive via a highly efficient helical gearbox system.

With the quality and safety that have always been a hallmark of Alimak Hek products, and a competitive price tag, the new hoists will suit all known project demands for vertical access.

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Hardox Tube 500 range features extreme wear resistance

The new Hardox Tube 500 range from SSAB provides the same hardness and toughness as Hardox wear plate, but in circular form. This new range is designed to give excellent performance in any application where high wear resistance in combination with a lighter product solution is beneficial.

The Hardox Tube 500 is suitable for transporting all types of abrasive materials such as wet concrete, soil, gravel and ore slurry. Its extreme wear resistance allows for a lighter product with a long service life. According to SSAB, using Hardox Tube 500 can increase the competitiveness of certain products by extending their service life by two, five, 10 times or more.

The Hardox Tube 500 is available from stock in 88.9-133 mm diameters and different material thicknesses. Custom tubes in thinner materials and other diameters are also available.

Website: www.ssab.com



The new Hardox Tube 500 range.

Hardox Wearparts

Hardox Wearparts now offers customers quick, 24-hour access to thousands of wear products through a unique online interface. This guaranteed fast, easy service for customers is now available at nine of SSAB's centres across the globe including the US, Chile, the UK, China, South Africa, Australia, Singapore and two locations in Canada: in Vancouver and Montreal.

The new service - Hardox Wearparts Web Shop - provides customers with easy access to product details such as dimensions, materials, tolerances, logistics and on-site service. The Hardox Wearparts Web Shop concept was initially launched in the US.

Visitors to Hardox Wearparts Web Shops will find products conveniently categorised by market segment, which includes

mining - movable and fixed, cement, recycling, energy, quarries, construction, metal works and agriculture.

Once customers click on a specific segment, they can choose the equipment and the appropriate wear part needed, which can be either a standard or custom part. They can then request a quote online and receive a quick response to their request from a representative at the local Hardox Wearparts Centre convenient to the customer's location. Customers can also register their account and keep track of previous enquiries, thus making the reorder process easy and convenient.

SSAB said the Web Shops are initially available at nine of SSAB-owned centres and more web shops are coming soon. ■

Website: www.hardoxwearparts.com/shop

Ammann's pneumatic tyred rollers ideal for demanding jobsites

The series of pneumatic tyred rollers from Ammann features machines with hydrodynamic and hydrostatic drive systems in the weight category from 10 to 24 t, for instance with 1.25 to 3 t per wheel. A flexible ballast system allows the machines to be used for a wide range of construction works – from asphalt compaction to substrate stabilisation. The rollers are suitable for compacting up to the following substrate layer thicknesses (after compaction): asphalt mixes up to 120 mm; hydraulically consolidated mixes up to 150 mm; loamy and clayey substrates up to 150 mm; mixed substrates up to 200 mm; and sand and gravel substrates up to 250 mm.

Ammann's pneumatic tyred rollers with a front-steered, isostatic front axle and rear axle drive offer good stability even under difficult working conditions. Each axle has four soft tyres that are powered by either a hydromechanical or hydrostatic drive system. A hydrostatic drive system provides gentle acceleration and deceleration, thus preventing any marks on the fresh asphalt that are otherwise created when the roller changes direction.

The ballast system allows the weight of the machine to be adjusted between 10 and 24 t. Many different materials such as water, sand, gravel, cement, scrap steel or solid steel can be used as ballast. This flexible system allows quick adjustment of the machine's weight to the requirements of the task in hand. The pneumatic tyred rollers are available with engines compliant with



Ammann's pneumatic tyred rollers offer good stability even under difficult working conditions.

Tier 2/EU Stage 2, Tier 3/EU Stage 3A and Tier 4i/EU Stage 3B. ■

Website: www.ammann-group.com

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Enerpac's new split flow pumps

Enerpac's new SFP-series split flow pumps are specifically designed to assist in lifting evenly distributed loads for the building and construction, mining, oil and gas, and shipping industries. The electrically driven 700 bar split flow pumps are suitable for applications with multiple lifting points where synchronisation of a maximum of plus or minus 4 percent is appropriate to ensure safety of the job. For even more precise lifts, the SFP-series is complemented by the PLC-controlled EVO synchronous lifting system, which can lift uneven loads with four, eighth or 12 points all controlled from a central control position.

The SFP split flow pumps are particularly beneficial when lifting complex loads with multiple lift points, and are a far more efficient and safe option than using separately operated pumps, as they provide greater consistency of flow, said Enerpac. The load can be lifted simultaneously using single or double-acting cylinders. Depending on the application, the lifting points can be operated individually or simultaneously.

The SFP pumps, which are encased in a rugged roll-cage for harsh applications, feature both single and synchronised multiple outlet control either through joystick or pendant operation, for optimum efficiency during different lifting tasks. They are offered with 40 or 150 l reservoirs. Each outlet has equal oil flow and the pump can be divided into two, four or six split-flow outlets, depending on individual requirements. The flow ranges from 0.45 to 4.20 l/min at 700 bar.



Enerpac's new SFP-series split flow pumps.

The SFP split flow pumps are ideally complemented by Enerpac RC-series single acting cylinders and RR-series double acting cylinders, depending on the application. The RC-series features general purpose cylinders, designed to be used in all positions. The RR-series features cylinders designed ruggedly for tough jobsites and for high cycle industrial use. ■

Website: www.enerpac.com

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New powerful Genie boom lifts for high productivity

The new Genie SX-150 telescopic boom lift is an addition to the company's Super Boom product family. The boom offers four programmable height settings of 150 ft, 135 ft, 120 ft and 100 ft for rental versatility, and a 10 ft horizontal and vertical rotating jib allows for quick local repositioning of the platform. With a horizontal outreach of 80 ft, this boom also offers 70 ft of outreach at 120 ft of platform height.

The SX-150 can reach its full platform height of 151 ft in under three minutes. The boom lift provides unrestricted ROM with a lift capacity of 750 lbs for a maximum of two people. A standard 7.5 kW on-board generator powers tools, including welders. Weighing 50,700 lbs, with a tail swing of 3 ft 6 in and ground clearance of 15 in, the boom lift is transportable on a standard trailer; no over-size permits are required.

The boom uses an identical, field-proven chassis design to the SX-180 and ZX-135 boom lifts. External sensors and manifolds are protected under steel covers that are easily removed, providing excellent service access. The rotating jib worm drive reduces backlash while increasing reliability and offers 60 degrees of horizontal motion for increased working area. The boom lift contains hydraulic hard lines wherever possible to increase durability while a four stage hydraulic filtration system ensures cleanliness.

The SX-150 is also known for its serviceability. All manifolds offer easy wrench access while a swing out engine tray provides easy service for maintenance access. The boom lift has easy to reach hydraulic filters, with a drop-in, in-tank filter for simple cleaning and replacement, as well as bulk-headed hydraulic lines so hoses can be removed and replaced in one piece. A boom extend system features a cylinder and wire rope cartridge for fast service or replacement.

The SX-150 is suitable for construction, maintenance, telecommunications, gas and oil refineries, chemical maintenance, and large utility applications.

In addition, Genie's new Z-62/40 articulating boom lift is an update of the Genie Z-60/34 articulating boom lift. The Z-62/40 increases the working height from 60 ft 4 in to 61 ft 11 in and provides more horizontal outreach with a maximum of 40 ft 9 in compared to 36 ft 3 in in the previous model.

The Z-62/40 still delivers an excellent up and over clearance of 26 ft 8 in with a maximum lift capacity of 500 lbs. The boom lift offers zero rear tail swing and minimal front turntable tail swing in the stowed position, and has a below ground reach of up to 5 ft 6 in. All of these features are available on a machine that weighs only 22,155 lbs and stows to the compact size of 24 ft and 10 in with the jib tucked.

The Z-62/40 has a 5 ft jib with 135 degree range of motion. With its Genie Fast Mast boom system, operators can descend and retrieve needed tools or materials and quickly return to working height. The dual parallelogram lift linkage allows precise positioning of the platform on the jobsite for improved accuracy. The boom lift features four-wheel drive and full-time active oscillating axles. A proportional control system provides the users with smooth operation.

The boom was designed with serviceability in mind and has enhanced access to electrical and hydraulic service points. A swing out engine tray allows for easy access to either side of the engine assembly to quickly service the starter, exhaust or filters. This new boom reflects the newly introduced Genie design language of an all-black chassis and an updated colour scheme. The boom will also



The SX-150 telescopic boom lift (above) and Z-62/40 articulating boom lift.

have improved ergonomic features, updated hinges and latches, and stiffer covers.

For rugged environments, the Z-62/40 is available with sand or rough terrain air or foam filled tyres. By the end of 2015, the boom is expected to be available with the exclusive Genie four-point TraX track drive system, which provides improved terrainability and lower contact pressure for reduced damage to sensitive ground surfaces, as well as a four wheel steer option for greater manoeuvrability in tight spaces. ■

Website: www.genielift.com

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Sennebogen 640 HD crane

Sennebogen is extending its E-series with the new 640 HD duty cycle crawler crane, which features a safe working load of up to 40 t. Powered by a 186 kW Cat diesel engine, the machine can be used in a broad range of applications.

Thanks to its robust construction, powerful multi-circuit hydraulic system and strong slewing drive, the 40 t duty cycle crawler crane is excellent for special civil engineering work. Applications with leaders or rope grapples can be realised with the same high level of reliability that is offered for operation of hydraulic casing oscillators in well digging or underground engineering.

With a maximum boom length of 41.1 m and an optional auxiliary jib and fly boom, the Sennebogen 640 HD is ideally equipped for use as a crane. Fitted with a rope grapple or dragline bucket, it is suitable for hydraulic engineering and mining applications. Here, two 12 t freefall winches ensure optimal pulling force. These winches are also available in a heavy duty 16 t version.

The Sennebogen 640 HD is stable and secure on its 700 mm three-grouser base plates. The compact dimension and simple ballast mounting system save time and money when transporting between construction sites. With the crawler undercarriage telescoped in, the crane has a width of just 3 m. With an uppercarriage length of 6.62 m, it can be transported easily and cost-effectively using a flatbed trailer. The total weight with the lower boom section is just 38.7 t, which can be further reduced to 30.5 t.

The Maxcab comfort cab offers an ergonomic work environment for the operator. Numerous headlights and supplemental surrounding cameras ensure a convenient all-around view and high level of safety. The Sencon diagnostic and control system supports the operator in daily operation. As an option, the cab can be designed for 15 degree inclination or 2.70 m elevation to enable a better view of attachment and work environment. ■

Website: www.sennebogen.com



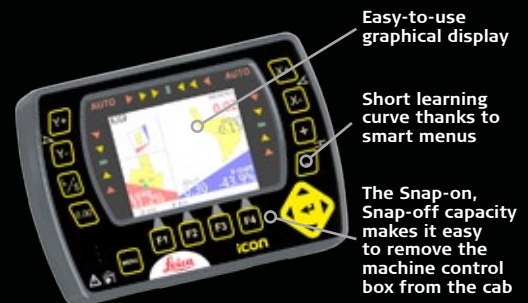
Sennebogen's new 640 HD duty cycle crawler crane is ideal for a variety of applications ranging from special underground engineering to mining.

Leica iCON Excavate iXE2



Easy elevation and dual slope control

Leica iCON excavate iXE2 is an easy-to-use, multifunctional 2D control system designed to make excavating easier and more productive. The system allows multiple elevation and slopes to be constructed, at any orientation without resetting the machine or laser height reference. Just enter the required depth and slopes and start off digging.



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XCMG unveils various new products

XCMG'S XAP80J asphalt mixing plant is compact, and can be assembled and disassembled quickly. It has a rated power of 307 kW, capacity of 80 t/hr, fuel consumption of 6.5 kg/t and low noise level of less than 85 dBA. According to XCMG, an XAP80J was recently delivered to Pakistan for use in road construction projects.

The XLZ230 II cold in-place pavement recycler combines the advanced technologies of XCMG's stabilised soil mixer and cold in-place recycling equipment. The XLZ230 II is intended primarily for in-place mixing of soil used for the base and sub-base pavements of highways, streets, airports, wharfs and parking lots. The unit can be easily cold-started in a very low temperature, said XCMG.

The MSP1561 crawler sieving station has been jointly

developed by XCMG Schwing, XCMG Research Institute and Beijing Technologies University. It is suitable for use in urban construction waste treatment, opencast coal mining, road and bridge constructions, as well as in metallurgy, energy, mining, highway and railway projects. The MSP1561 features a crawler chassis, minimum ground clearance of 343 mm and maximum climb angle of 9 degree.

XCMG has also developed an anti-collision buffer vehicle that aims to improve safety of construction machinery working on roads and highways. In addition, the XC6-4517 telescopic forklift is designed with a minimum turning radius of 3.8 m, and it can operate in narrow spaces and be adapted to various sites. ■

Website: www.xcmg.com



Above: The MSP1561 crawler sieving station has a minimum ground clearance of 343 mm.

Left: The XAP80J asphalt mixing plant is designed with a capacity of 80 t/hr.

Bretec enhances breaker range

The Bretec M17C and L20C hydraulic breakers from Sandvik Construction incorporate a number of new features and updates over the predecessors, the M17 and L20. Designed for carriers in the 15 to 23 t and 20 to 29 t operating weight class, the M17C and L20C boast operating weights of 1,240 and 1,650 kg respectively. Impact rates range from 280 to 760 blows per minute on the M17C, and from 390 to 700 blows per minute on the L20C.

Both models also incorporate many new features for greater reliability and durability, as well as delivering reduced ownership and operating costs. These include round retaining pins, which deliver extended life for lower cost of ownership and operation; new tool retaining system that allows faster tool changes for reduced downtime; improved tool seal to protect tool, bushings and retaining pins reducing ownership and operating costs; dust-protected housing,

which prevents dust ingress for reduced wear and helps reduce noise levels; idle blow protection that eliminates tie rod stress and oil overheating to protect against premature failure; and automatic greasing for greater tool protection.

In addition, the M17C and L20C benefit from the addition of durable hydraulic hoses as standard; a high pressure accumulator that protects against pressure peaks; improved gas sealing for extended service intervals; and an improved and self-adjusting pressure control valve to eliminate oil spillages.

The newly improved Bretec models join a product range that now includes 10 models, which are suitable for carriers in the 1.2 to 40 t operating weight class. ■

Website: www.construction.sandvik.com

The Bretec M17C hydraulic breaker has an operating weight of 1,240 kg.



Photography: ©Technal Architect: Akimedia



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Terex Cranes' compact Explorer 5500 all-terrain crane

The Explorer 5500 all-terrain mobile crane is one of the models in Terex Cranes' 130 t capacity class, which features a 60 m long main boom. Three extensions of 11, 21 and 33 m in length are available, all of which can be offset. The maximum system length is 86.5 m, maximum load moment 395 mt and maximum lifting capacity when telescoping 24.5 t. Outrigger extension positions of 2.54, 4.7 and 7 m can be selected.

With a carrier length of 12.1 m, a total length of 14.3 m and a width of 2.75 m, the five-axle crane is very compact, making it suitable for use inside cities as well as on narrow construction sites. In addition, steerable axles provide good manoeuvrability in tight quarters. For comfort and safety in driving operation, the crane has a dynamic launch control function that prevents it from rolling backwards when starting up and manoeuvring on uphill grades.

Thanks to various configuration options, the Explorer 5500 can be adapted to fulfill the road service approval regulations of key markets for this capacity class. This is possible with variable axle loads and axle pair intervals, the dismantlable main boom, transport dolly preparation, a maximum front overhang of 1.52 m and other features.

All components for the Explorer 5500 can be transported using a single standard support vehicle, resulting in low operating costs. The automatic counterweight setup system also allows the crane to be readied for operation quickly. The electronically controlled brake system makes for lower wear and thus reduced operating costs while at the same time increasing brake power. Simple maintenance is provided by easily accessible service points on the crane.

The Explorer 5500 features the Terex single-motor concept already seen on the Explorer 5600 and Explorer 5800. This lowers the operating costs even further, since only one motor requires maintenance. Terex has outfitted this system to give it special technical sophistication. The control system automatically recognises each demand; for instance, it switches from high power in driving operation to energy-saving mode during crane operation. Moreover, the system also has an energy-saving start/stop function. The motor is a powerful



The Terex Explorer 5500 is very compact, making it ideal for use inside cities as well as on narrow construction sites.

and, at the same time, economical 368 kW unit that meets emission standards Euromot 4 and Tier 4 (final). On request, a 331 kW motor for Euromot 3a/Tier 3 is also available in applicable markets.

The Explorer 5500 is equipped with ergonomically designed and spacious cabs for comfortable operation: the carrier cab lacks a B-column to provide optimum visibility, and the superstructure cab offers ample legroom. For operational safety, monitoring displays on a touch screen with intuitive controls provide the driver with important data on more than 10 operational parameters of the carrier, such as tyre pressure, brake system status and the suspension system. In addition, there is constant monitoring for maintaining the axle loads. In the superstructure, the time-tested, likewise intuitively operated Terex IC-1 control system is used, in which all load charts, the respective working range limits, and more are saved to offer rapid, simple, and safe configuration. ■

Website: www.terex.com/cranes



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Innovative construction lasers and control system from Leica

Leica Geosystems' Rugby 870 and Rugby 880 fully automatic construction lasers offer an intelligent interface software that combines the digital dial-in grade and Smart Targeting technology. This allows users to tie in slopes in either single or dual grade applications.

The RC800 versatile remote control makes it even more convenient when grade changes are required. Where a more accurate grade set up is essential, the axis alignment function automatically aligns laser axes to the position of the stakes to deliver reliable results.

The Rugby 870 (single grade) is best used for applications such as levelling, concrete pours and drainage in single axis. The key applications for the Rugby 880 (dual grade) are carparks, fencing and vertical alignment. For vertical alignment, the Rugby 880 plumb beam should be set up over the start point. Then by using the Leica rod-eye receiver the second point can be positioned easily.

The Rugby 880 also features a new self-calibration. While on site, users can easily check the instrument's calibration status using the rod-eye receiver. There is a full range of interchangeable battery options as well including Alkaline, Li-ion and now even solar panel.

With the Rugby's rugged design, military grade IP68 rating and ISO 17123-6 certification, Leica's 800-series ensures high accuracy even on demanding job sites.

In addition, the Leica iCON excavate iXE2 is an easy-to-use, multifunctional 2D control system designed to make excavation work easier and more productive. The system allows multiple elevations and slopes to be cut without resetting the machine or rotating laser.

The Leica iCON excavate iXE2 displays the bucket's actual position relative to the design elevation and slope, allowing users to reach the design grade faster. The system also features the unique PowerSnap concept that enables instant system installation and full interchangeability of control boxes. ■

Website: www.leica-geosystems.com



The Rugby 880 guides the laser based machine control using grade capability.



Above: The Rugby 870 laser is suitable for applications such as levelling, concrete pours and drainage in single axis.



Right: The Leica iCON excavate iXE2 is an easy-to-use, multifunctional 2D control system designed to make excavation work easier and more productive.



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Bomag's tampers, plates and multi-purpose compactors

Bomag offers the Economizer on its BMP 8500 multi-purpose compactor. The Economizer helps users to locate weaknesses in compaction at an early stage and take a timely action. The light diodes on the display increase until full compaction has been reached and work is finished. Unnecessary passes are avoided, over-compaction is prevented and work becomes highly efficient. Thus expensive remedial work is a thing of the past.

Bomag has also launched its first tamper with gas operation. The BT 60 G/BT 65 G is equipped with a petrol engine but operated with conventional gas. A long service life and easy operation make this tamper a practical and economical solution. Typical applications include internal areas and trenches. Here, the tamper achieves eco-friendly CO₂ values of nearly 0 percent, said Bomag.

On its reversible plate range, the company closes the remaining gap in its portfolio by introducing machines in the 300 kg class. The new heavy BPR 40/60 D is ideally suited for deep compaction work. As with models BPR 50/55 D and BPR 60/65 D, the new unit is also equipped with a robust all-round protection hood.

According to Bomag, all of the products will be available worldwide from July 2015. ■

Website: www.bomag.com



The Bomag Economizer is now available on its BMP 8500 multi-purpose compactor.

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JLG improves a wide range of machines

JLG has modified its ES and RT scissor lift lines. The changes will improve durability and repairability, and reduce weight for certain models. The improvements apply to these lines in all markets worldwide.

The platforms and deck extension surfaces for all ES model scissors have been upgraded to diamond plate steel to enhance strength, durability and repairability. A simple-to-use locking foot lever has replaced the rail-mounted locking handles for deploying the extension.

Two models, the 2030ES and 2630ES scissors, have been widened from 30 to 32 in. Accordingly, the model names have been changed to 2032ES and 2632ES. The wider footprint allowed JLG to reduce weight without compromising stability. The result is lighter machines with better weight displacement.

JLG's entire RT scissor line will now feature steel hoods. Steel adds strength and durability, and is easy to repair if damaged, explained JLG.

The JLG 5394RT high-capacity, rough-terrain scissor lift is the biggest scissor in the company's line. It lets operators place more personnel, tools and materials in the platform for more productive shifts. The machine has steel hoods for toughness and auto-levelling outriggers for rapid set up.

The completely redesigned 400S and 460SJ telescopic (straight) boom lifts and the 450AJ articulating boom lift offer excellent platform capacities and lift times, which can improve operator productivity.

Enhanced system designs and new hoods increase in-service time, which improves utilisation rates and total cost of ownership.

JLG's LiftPod FT140 and FT70 personal portable lifts are the latest products in the LiftPod line and provide a working reach of up to 20 and 13 ft, respectively. They are easily operated by one person, easy to move in a pick-up, van or SUV, and require very little space to stow.

The updated SkyTrak line of telehandlers features a single joystick control, a redesigned dash panel display and optional air conditioning. Outside, boom functions are faster, the rear counterweight now includes an integrated tow hitch, and there is a new colour scheme and new decals.

Furthermore, the new JLG telehandlers include five machines, ranging in capacity from 6,600 to 12,000 lbs, and in height from 42 to 55 ft. Highlight changes include a completely redesigned cab for improved operator comfort and control, a rear axle stabilisation system and improved serviceability. Many options are available for the new machines, including one of the industry's first reverse sensing systems, a new integrated digital display with back-up camera and digital load charts, and a ride-control system to enhance operator confidence.

JLG also has many new and upgraded accessories for telehandlers, including a pipe grapple, a material handling arm and a trash hopper. ■

Website: www.jlg.com



Left: The 5394RT high-capacity, rough-terrain scissor lift is the biggest scissor in JLG's line.

Above: The 2030ES scissor lift has been widened from 30 to 32 in, allowing JLG to reduce weight without compromising stability. Accordingly, the model name has been changed to 2032ES.

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Comacchio MC 30 drilling rig

The Comacchio MC 30 crawler drilling rig is powered by a Caterpillar C7.1 engine. The rig runs at a maximum speed of 205 kW/2,000 rpm, giving it nearly 25 percent more horse power compared to its predecessor, the MC 15. The MC 30 can drill up to a depth of 128 ft, and its robust design enables a much longer mast to be mounted on the rig.

The MC 30 can achieve an excellent drilling depth by single passage or semi automatic rod loading. The rig can be fitted with a wide range of rotary heads, hydraulic drifters, double head systems and drilling accessories, depending on the job requirements. Foundation Associates Engineering (FAE) is Comacchio's distributor in Singapore. ■

Website: www.fnapl.com



The Comacchio MC 30 crawler drilling rig is powered by a Caterpillar C7.1 engine, and has a drilling depth of up to 128 ft.

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Volvo launches 6 t wheel excavator into Malaysian market

Volvo Construction Equipment (Volvo CE) has introduced its 6 t EW60C wheel excavator to the Malaysian market. This C-series model boasts a powerful operational capacity, thanks to the Volvo D3.4 diesel engine that delivers high performance and fuel efficiency.

The EW60C has a new drive system that offers an excellent travelling capacity on flat or sloping ground, while its easily accessible engine and service check points enable fast and efficient maintenance to be performed, leading to increased uptime. The machine can manoeuvre well in tight spaces, and thus it is suitable for utility and infrastructure projects in built-up urban environments.

Volvo CE's full range of excavators can be fitted with Volvo buckets and other Volvo attachments to make them as versatile as possible. The EW60C features a bucket and dozer blade that are very narrow, making it ideal for levelling and finishing operations. Its durable undercarriage also ensures great performance and durability. ■

Website: www.volvoce.com



The 6 t Volvo EW60C has a new drive system that delivers an excellent travelling capacity on flat or sloping ground.

New generation X point-attack cutting tools from Wirtgen

Wirtgen has developed the new generation X point-attack cutting tools to further enhance the performance and cost-efficiency of its cold milling machines. The tools' wear resistance has been improved by optimising the composition of the carbide material. The cylindrical part of the carbide tip is reinforced by the relocation of carbide material in the tool tip, as revealed by the notching at the base. In this way, the carbide tip ensures higher utilisation of the carbide material and maximises the service life of the pick. Productivity is boosted by around 17 percent due to the prolonged, high penetration ability, said Wirtgen.

Milled particles penetrating between the toolholder and wear plate produce an abrasive effect. The centering cone on the bottom side of the wear plate has been increased by 140 percent, thus

reducing the tipping movement of the tool during the cutting process. This in turn reduces the ingress of milled particles and extends the service life of the toolholder in relation to longitudinal wear.

The outer edge of the wear plate has been made 75 percent stronger, according to Wirtgen. This further protects the toolholder when milling potentially abrasive asphalt material. The clamping sleeve specially developed by Wirtgen with two stops longitudinally arranged in parallel (twin-stop clamping sleeve) ensures limited axial backlash and drastically reduces the risk of deformed sleeves, as well as the number of broken tools. Optimised positioning of the stops in generation X reduces the risk of shafts breaking by a further 45 percent. ■

Website: www.wirtgen.com.sg



Left: The innovative geometry of the carbide tip of generation X combines the advantages of cylindrical tips with those of cap-shaped tips.

Right: The generation X point-attack cutting tools are designed to further enhance the performance and cost-efficiency of Wirtgen cold milling machines.



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Haulotte's HTL telehandlers designed for good stability

The Haulotte HTL telehandlers have lifting capacities of up to 4 t and lifting heights of up to 17 m. They can be rapidly fitted with multiple accessories (quick-fits) such as forks, simple or toothless buckets, work tools, hooked brackets, metal windscreen protectors and side-mounted work tool containers.

Thanks to their standard equipment, the HTL 4014 and 4017 offer excellent stability regardless of the terrain surface. This lateral stability is the result of the combination of automatic locking of the rear deck rotation, progressive movement deceleration system for limiting rearward travel and lateral tilt corrector.

The two forward stabilisers reinforce this stability in all working configurations. Their ability to operate independently allows them to adapt to various types of terrains at any time. Haulotte is raising performance levels for standard equipment with a rear deck locking system, thus reinforcing its stability. This stiffening of the two axles more than doubles the usual stabilisation surface.

Both the HTL 4014 and 4017 assist the operator in all operating positions with numerous visual and sound indicators. The 'travel' and 'worksite' modes make manoeuvring safe by avoiding any possible confusion. In this way, the 'travel' mode prevents any unforeseen lowering of the stabilisers and blocks all boom movements. With the assistance of all of these control indicators - covering overloading, stability and reversing - the operator can focus on the work.

For operator comfort, Haulotte has made ergonomics a priority. All controls have been positioned in such a way that they can be accessed according to their frequency of use. The 'smart control' joystick includes all boom functions for precision work. ROPS and FOPS fitted, spacious, soundproofed and easy to access, the cabs also feature ventilation, air conditioning (optional), adjustable seats, storage space and many more.

Retro lighted electronic dashboard centralises all information about the operating status of the machine for continuous monitoring. The load moment indicator (LMI) ideally positioned to be easy read in head high position includes an automatic cut off when operating with a tilting risk. The new generation of LMI enables the operator to manually reset the system without any maintenance tool, by pressing the 'test' button on the dashboard. Thanks to this improvement, there is no need to call a field



Above and below: Haulotte's HTL telehandlers.



technician, thus helping to reduce downtime and saving costs.

The hydrostatic transmission combines optimal torque, power and speed for an unequalled driving comfort. The 'flow sharing' system or 'sharing hydraulic flow' is an intelligent management feature allowing the use of all hydraulic movements on a continuous and simultaneous basis. The hydraulic fittings, in boom head, allow users to attach a wide range of accessories.

The HTL telehandlers are designed for all environments. Regardless of the nature of the ground and terrain obstacles, their four-wheel drive and steering provide power and manoeuvrability. The high strength

of the monoblock chassis guarantees the robustness of the machines while protecting the structure from stress. The tilt correction function provides horizontal stabilisation and the high ground clearance makes it possible to perform in demanding worksite terrain conditions. The HTL telehandlers conform to the EC directives and TUV.

For simple maintenance, access to the engine components has been made easy. Other things such as filters, oil supply, hydraulic system and fuel tank, are also within easy reach. All maintenance tasks, such as cleaning and reloading, can be performed quickly as well. ■

Website: www.haulotte.com

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Tiger DG700 drill rig boosts quarry production in Myanmar

Long Life Aggregate Mining Co Ltd, a Myanmar-based quarry company, has recently taken delivery of its first Tiger DG700 surface top-hammer drill rig. The machine was supplied by Sandvik Construction's authorised distributor in Myanmar, MSPM Ltd, and has been put to work boosting productivity as demand for high quality aggregates increases.

Featuring a robust structure, a low centre of gravity and heavy-duty tracks with an efficient guide system, the Tiger DG700 drill rig offers excellent stability and top-class balance even in uneven terrain. These features make it ideal for operations in countries such as Myanmar.

The rig is also equipped with a fixed boom, an efficient rod handling system and high performing Sandvik rock drills, which provide continuous excellent rates of penetration. Moreover, the advanced rock drilling control system guarantees smooth collaring thereby improving the rock tools' service life, delivering better hole quality and thus improved blasting results.

With its tailor-made user interface, the Tiger DG700 allows all drilling functions to be handled with a single joystick control. In addition to being ROPS and FOPS certified, the cabin is soundproof, keeping the noise level well under the limit of 85 dBA. Large windows offer an unobstructed view to the drilling spot, and the safety grid on the windshield protects operators from falling objects.

Further boosting its productivity, and making it ideal for Life Long Aggregates requirements, the DG700 is equipped with a 179 kW Tier 2 engine with a large fuel tank of 425 l, which maximises drilling time. Six working lights are situated at the front of the machine, with two at the rear, thus ensuring efficient operation even during limited light.

As with all Sandvik drill rigs, the new Tiger DG700 is also designed with ease of maintenance in mind. All daily maintenance points are on the ground-level, and components are placed within easy reach. This was a vital consideration in the choice of the drill rig, as daily maintenance will be undertaken at the quarry.

The Tiger DG700 is a new, highly productive and user-friendly drill rig. It provides an excellent technical solution that supplies top-rates of productivity and operator safety at economical initial investment levels. The entire Tiger series of rigs are designed for applications such as road cutting as well proving to be ideal for production drilling in medium-sized quarries such as found at Long Life Aggregate Mining. The company also operates a range of Sandvik crushers and screening equipment, including a CJ613 jaw crusher, CS440 screen and two CH440 cone crushers. ■

Website: www.construction.sandvik.com



Long Life Aggregate Mining Co Ltd in Myanmar has taken delivery of its first Tiger DG700 surface top-hammer drill rig.

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Eurotec batching plants overcome challenges in Abu Dhabi

Two Eurotec 5MZ3000T concrete batching plants rated 100 cu m/hr are currently working on the Ruwais refinery expansion project in Abu Dhabi, UAE. According to Eurotec, the units have produced a large amount of special concrete for the construction of refinery facilities, concrete piping works and roads.

Due to the harsh and hot weather in Abu Dhabi, concrete cooling technologies with both cold water and ice flakes have been incorporated into the batching plants. This is to ensure that concrete temperatures are kept within acceptable levels during the curing process, which in turn prevents thermal cracks from occurring.

Upon completion, the oil refining capacity will be increased to 400,000 barrels per day. Italian company Saipem is the main contractor on the project, and Dodsal Engineering & Construction is the subcontractor. ■

Website: www.eurotec.com.sg



Two Eurotec 5MZ3000T batching plants have been working to supply concrete for the expansion of a refinery in Abu Dhabi.

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O-cell technology used in Hong Kong's new viaduct

The Dragages - China Harbour - VSL joint venture has been commissioned to build a 9.4 km long viaduct, which forms part of the 12 km section connecting the Hong Kong - Zhuhai - Macao Bridge (HZMB) at the HKSAR boundary with the Hong Kong Boundary Crossing Facilities (HKBCF) at the Hong Kong International Airport.

Here, with bored piles traditionally founded on granite bedrock, the foundation contractor Bauer was presented with a difficult problem. The project is located more than 2 km offshore of Lantau Island and with rock head at places not encountered within the 115 m drilling depth of the piling equipment mobilised for the project, constructing the marine piles for the bridge piers would require a change in pile design philosophy from an end bearing pile to a skin friction, shaft grouted pile.

However, for piles not founded on granite rock, a preliminary pile was required to be load tested to confirm the soil strength parameters adopted in the pile design. Faced with the predicament of loading a preliminary pile to 160 MN of test load over 12 m of water, Bauer contacted Fugro to conduct the Osterberg cell (O-cell) technology, which loads the pile bi-directionally without the requirement for an external reaction.

At the location of the test pile, two stratum layers were of particular interest to the pile designers for determining the ultimate skin friction capacity. These two layers were the completely decomposed granite (CDG) and highly decomposed granite (HDG). It was decided to carry out the test using two levels of O-cells, i.e. a multi-level test that ensures sufficient movement of the pile shaft occurred within each specified stratum to obtain useful geotechnical parameters; this would not have been possible with a single level test alone, according to Fugro.

Each O-cell loading assembly comprised 81 MN of gross pile loading capacity with combined test pile gross loading capacity of 243 MN. O-cells were welded between bearing plates, allowing the O-cell loading assembly to be fixed to the reinforcing cage and positioned within the pile excavation at the designated elevation. Upon formation of the fracture plane, discrete pile sections are created. Standard O-cell loading assembly instrumentation to measure pile displacements under load together with extensometers to measure pile toe settlement

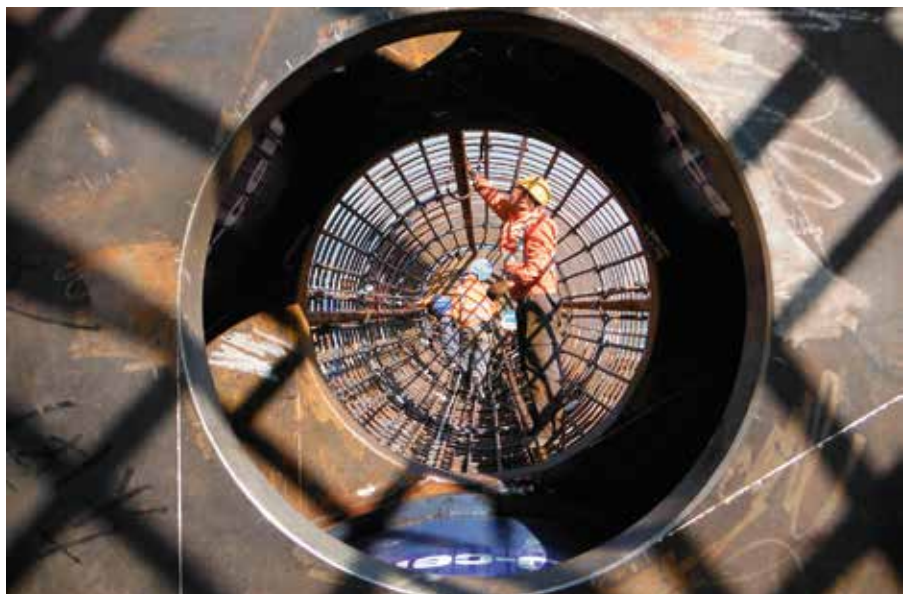


Above: Final check on O-cell assembly before lowering into bored hole.



Left: Installation of rebar cage together with O-cell assembly.

Below: Assembly works for an O-cell test pile.



and strain gauges at multiple levels were fixed to the reinforcing cages and embedded into the test pile to provide additional geotechnical data.

Data from the strain gauges was analysed to further enhance information on the distribution of skin friction within each

of the three pile sections tested. This allowed optimisation of the pile design ultimate geotechnical capacity and load-displacement behaviour to a suitable factor of uncertainty against failure. ■

Website:
www.fugro.com (under Deep Foundation Testing)

Potain tower cranes build residential developments in Kochi

Three 5 t capacity Potain MCi 85 A tower cranes are currently being used to perform a wide variety of general lifting duties at numerous high-rise, residential developments in Kochi, India, including a 27-storey tower and a triple-tower development.

Technoteam Constructions purchased its first Potain MCi 85 A in January 2014 and the crane will spend the next three years working on the Travancore Opus Highway project, the first residential area on the highway side of the city. The MCi 85 A is erected internally and will climb as the building grows to its final 27-storey height.

SILPA Projects & Infrastructure bought its first Potain MCi 85 A tower crane in 2012 and put it to work immediately on the Rarajagiri Campus Court project, a pioneering development of luxury apartments in Kakkanad.

Desai Homes, the construction wing of the DD group, relies on its newly purchased Potain MCi 85 A tower crane to build residential towers as part of the DD Diamond Valley project in Kakkanad. The three-tower project is in its first phase where an 18-storey tower will be built within two years.

Manitowoc said the MCi 85 A is the most popular Potain tower crane in India, which is built at the company's facility in Pune. It is designed for easy assembly and its strong load chart makes it a very versatile crane. With a 25 m jib, the crane can lift 3 t at jib end and with a full 50 m jib it can lift 1.3 t at jib end. ■

Website: www.manitowoccranes.com



The Potain MCi 85 A belonging to Technoteam Constructions working on the Travancore Opus Highway project. The crane is erected internally and will climb as the building grows to its final 27-storey height.



The Potain MCi 85 A is designed for easy assembly and its strong load chart makes it a very versatile crane.



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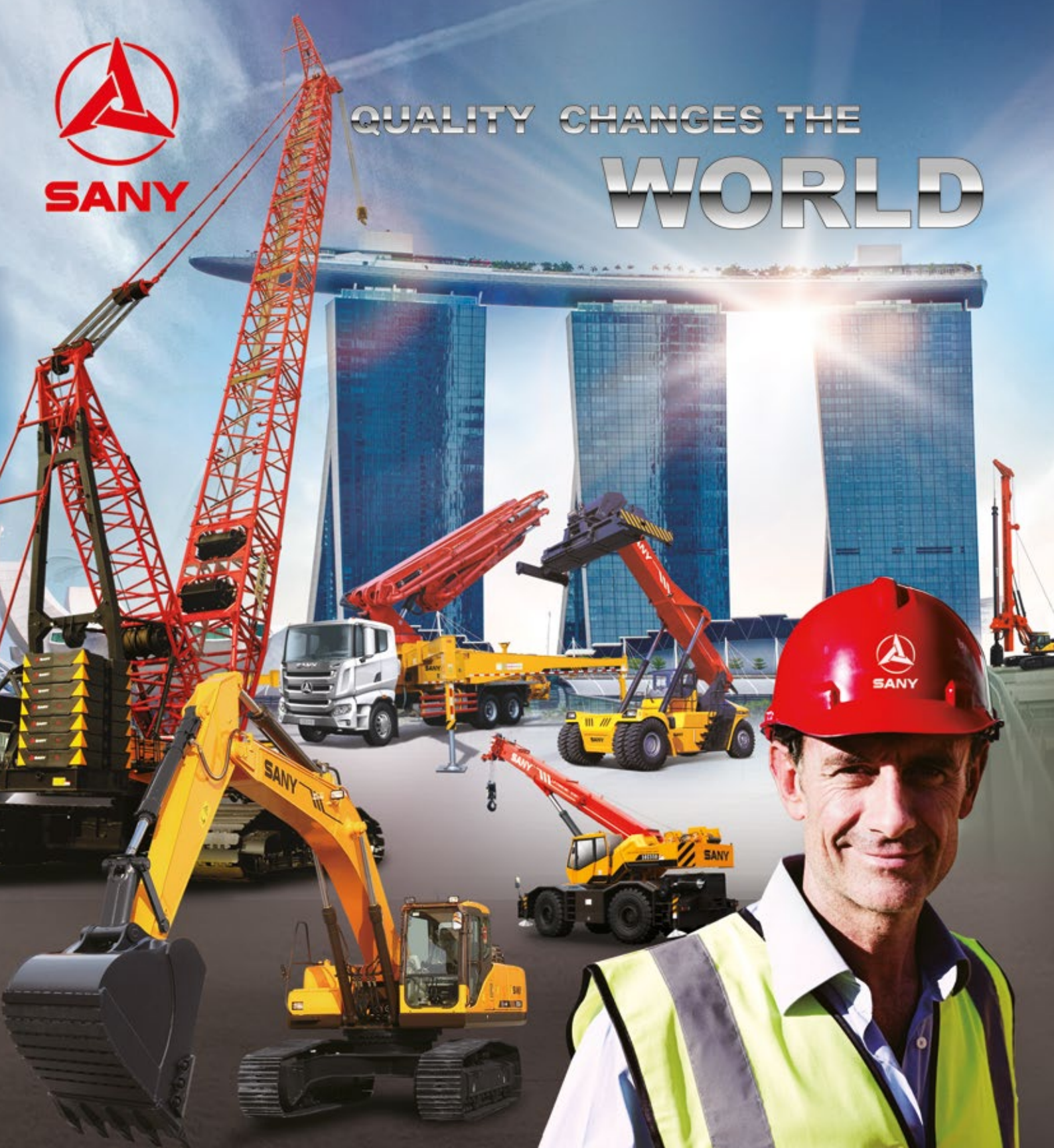


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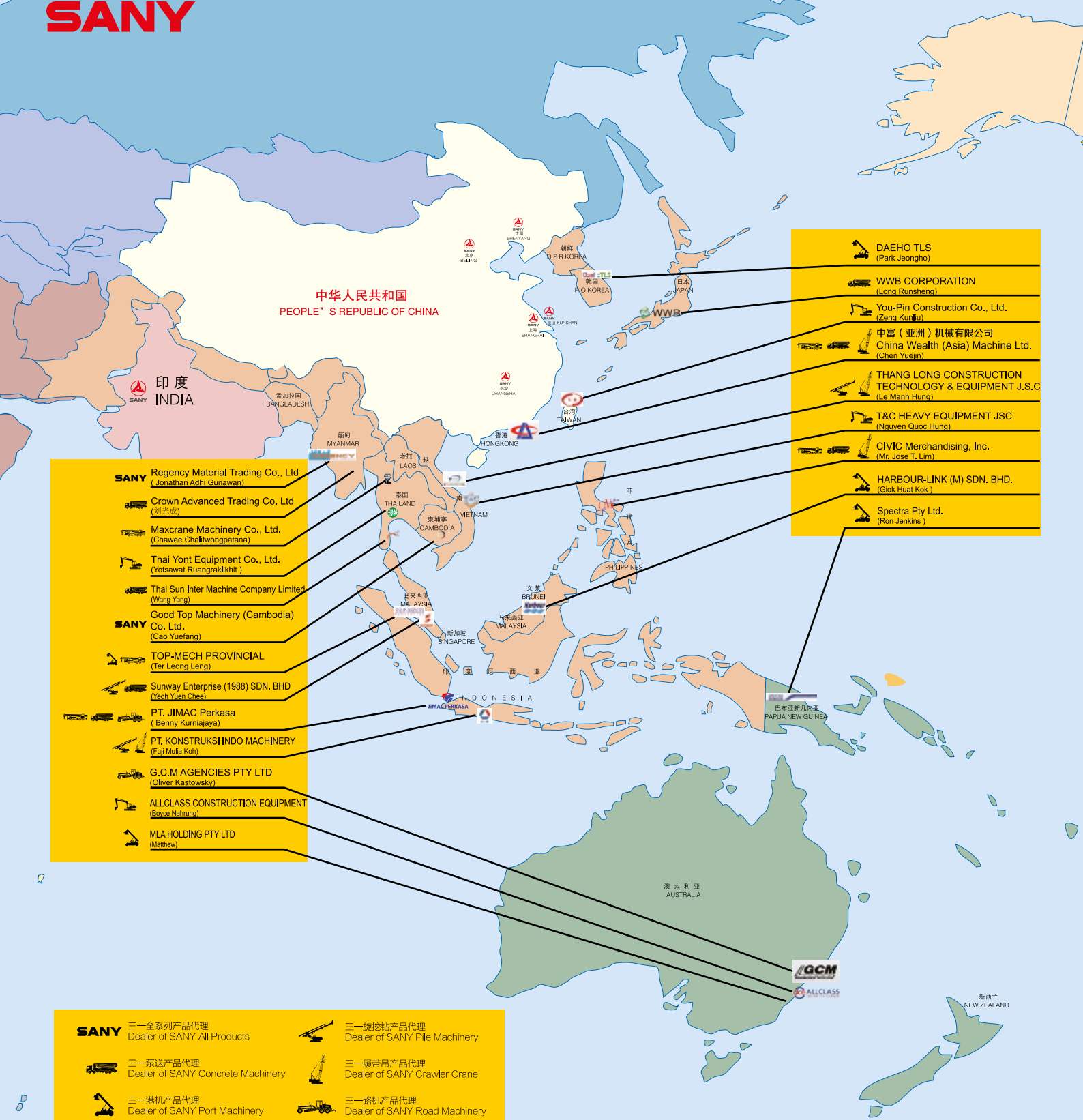
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Peri forms complex architecture in Poland

In Poland, the mausoleum commemorating a mass murder of the entire village of Michniów and other Polish villages across the occupied country during the World War 2 is currently being constructed. The museum features a traditional village hut, which gradually falls apart. Numerous offsets and inclined surfaces characterise the structure as well as the distinctive timber-like finish on concrete surfaces.

The complex structure of the mausoleum symbolises the interplay of architecture and history as presented through the gradual disintegration of the house hut. Thus, the museum has been bestowed as a symbol for past and future generations. The open arrangement of the museum will be exposed to the elements. Changes in the form along with the roof and wall inclinations show how the hut loses its shape and slowly crumbles 'until it is crushed into sand and gravel'.

Peri has provided its formwork solution to help build the mausoleum. The Trio panel formwork is used for the steeply inclined sandwich walls with a thickness of up to 150 cm. This system is uncomplicated and fast forming. To build the high, very often tilted reinforced concrete walls, Trio standard elements of varying dimensions are connected, and if necessary, braced by diagonal supports. Only the BFD alignment coupler is required to extend the large sized formwork units to heights of up to 5.40 m. Moving the units in one piece with the crane is possible due to the circumferentially fitted struts.

The customised formwork concept also facilitates pouring the concrete roofs to a thickness of 80 cm. By combining VT 20 formwork girders with SRU steel walers taken from the Variokit engineering



Above: A new mausoleum is being built in Poland, which features a striking design. Numerous offsets and inclined surfaces characterise this complex structure.

Left: Peri's Multiprop towers and Variokit system components form the up to 14.75 m high shoring.

Below: The tilting walls are formed using Peri's Trio large sized elements – supported by diagonal bracing.



construction kit, roof pitches of 40° to 50° can be easily managed.

Together with SRU steel walers and SLS spindles, Multiprop shoring towers form the supporting structure for the roofs up to 15 m high. These load towers are characterised by their great flexibility and high load bearing capacity. The complex construction can be easily adapted to suit the variable height of the roof surfaces.

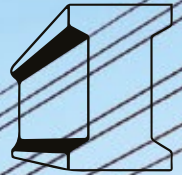
Another special feature of the building is that the walls and ceilings have a uniform timber like structure on the concrete surface. An unusual approach was adopted by the contractor to create the distinct texture. Due to a very complicated arrangement of the sandwich walls and inclined ceilings/slabs, combined with numerous installations passing through them, it was decided to create the timber like effect with a special plaster formed with roller stencils. The quality of concrete surface is thus crucial for the application and the final result. Trio panels repeatedly deliver smooth and appropriately even surfaces, which can be easily treated with the finishing touch.

The enormous offsets in the walls and roofs were a challenge for the construction team. Peri planned the implementation of the complex architecture with a tailored combination of formwork and shoring – featuring a very small quantity of custom-made formwork. ■

Website: www.peri.com

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MDP technology excels in Greece dam project

TENA SA has faced an enormous soil compaction challenge on a dam jobsite near Triantafullia, in northern Greece. The company was responsible for placing 42 m of compacted materials on an existing embankment of 33 m. The earthmoving volume for the massive earthen dam exceeded 350,000 cu m. The material had to be applied in 20 cm layers, and compacted to 15 cm at a length of 364 m and at a width of 18 m. According to TENA, the crew also worked in sandy clay, and achieving uniform compaction would prove difficult while monitoring densities would be challenging and less than comprehensive.

To overcome such challenge, TENA opted for a machine-integrated soil compaction measurement technology called Machine Drive Power (MDP) - a proprietary technology developed by Caterpillar. TENA said MDP has helped to save considerable time and money. In compacting approximately 280 layers, the company estimated the use of MDP enabled the elimination of 9,520 passes, or 34 passes per layer, with an average length of 364 m per pass. Productivity was more than doubled on the passes that were still required, as MDP also enabled the Cat CS66B soil compactor to increase its working speed from 2 to 4.5 km/hr.

MDP also proved reliable in clay soils where an accelerometer-based system would suffer from high variability, and therefore provide questionable readings, explained TENA. The company said that without MDP, it would not have been able to show target densities were achieved - and the passes would not have been eliminated. Quality control was improved by spotting problems early and taking immediate corrective action.

MDP is a significant change in compaction measurement technology. It is not a breakthrough in how machines compact; instead, it evaluates the rolling resistance. This resistance provides an indication of soil stiffness and load-bearing strength, and whether compaction is adequate to structurally support the road, parking lot, building - or whatever is planned for the site.

The ultimate benefit of MDP is believed to be uniformity, such as whether the entire site is compacted the same way or whether there are areas where structural integrity is compromised. It is said that historic methods of testing can only provide a snapshot, and are no guarantee of uniformity. Typically only 1 percent of the jobsite is tested. MDP acts as a proof roller while it works, enabling much faster discovery of inconsistencies across the entire jobsite. It works

in any type of soil, and performs whether the compactor is smooth or padfoot, vibrating or static.

Before the Triantafullia dam project began, authorities set the following requirements to ensure proper compaction: a rolling speed of 2 km/hr and 12 passes with the roller. When work started, the authorities tested MDP findings against other on-site measurements. They were reportedly impressed with MDP's consistency and their trust grew enough for them to make significant adjustments. The number of passes required was reduced from 12 to eight because MDP indicated targets were reached in four fewer passes than originally required. Rolling speeds for the remaining passes were increased from 2 to 4.5 km/hr as MDP showed the desired results were also being achieved at the much higher speed. ■

Website: www.cat.com/paving



Top, above and left: TENA has overcome a soil compaction challenge on a dam project in northern Greece with the help of a machine-integrated soil compaction measurement technology called Machine Drive Power (MDP) - a proprietary technology developed by Caterpillar.

HOBAS pipes speed up railway projects in Poland and Russia

The construction of HOBAS culverts beneath a railway line in the Polish area of Ciechanów was recently carried out as part of a nationwide project, the modernisation of E65 Warsaw-Gdynia railway line. The project was aimed to improve travel comfort, increase safety and shorten the journey by 27 minutes on this 103 km long section.

In order to save time and respect the given time schedule, microtunnelling was chosen as a suitable installation method - and HOBAS pipes were considered the optimum product for the realisation of this project. The pipes were jacked to establish three culverts, 16, 24 and 32 m in length, 1,720 mm in diameter and with a nominal stiffness of 100,000 kN/sq m. One 22-m-long section was implemented with HOBAS pipes De 2047, SN 64000.

The Polish contractor Przedsiębiorstwo Przewiertowe MOTYL made sure that the microtunnelling ran smoothly and was completed successfully. To streamline the installation process, the company used angular cut pipes and equipped these with precast headwalls from HOBAS Poland. This way, the works were completed only in a couple of days.

The client, the Polish State Railways (PKP Polskie Linie Kolejowe SA), was already familiar with HOBAS products, which are technically approved by the Road and Bridge Research Institute (IBDiM) and the Polish Railway Institute (IK), according to HOBAS.

In another project, RŽD granted HOBAS the permission to implement a pilot project on the railway section between Surgut and Tobolsk in the Russian oblasts Samara and Tjumen. A second rail track is under construction in this area, and the old culvert running beneath it needed to be replaced, since the old corrugated steel pipe showed heavy signs of corrosion that had affected its structural integrity. In addition, the contractor asked for the installation of protective measures against flooding during the construction works and not to alter the natural riverbeds. Disruptions to rail traffic should be avoided as well.

With such requirements, the contractor opted for HOBAS pipes De 1434, which would be jacked directly next to the old pipe beneath the railway track by means of auger boring. It was planned to first dispose of the spoil with an auger transporting it through a steel casing. Once the boring head had made its way through to the receiving pit,



Jacking of HOBAS GRP culverts De 1720 and 2047 under a rail line in Poland.



Jacking of HOBAS GRP pipes De 1434 and 1638 beneath a railway section in Russia.

HOBAS pipes were connected to the steel casing in the thrust pit and driven to the receiving pit. Subsequently, HOBAS pipes De 1638 were installed in an open trench. During the construction works on the rail around the site, trains were slowed to 40 km/hr. Thanks to the trenchless installation,

train traffic could be maintained.

The construction works were completed within four months, after which RŽD gave HOBAS Russia the official authorisation to use HOBAS products in future projects that run beneath the Russian railway. ■

Website: www.hobas.sg

Skyjack hard at work on new Minnesota stadium project

Work is progressing well on the new stadium for Minnesota Vikings, a National Football League team based in Minneapolis, Minnesota, USA. It is scheduled to be completed in time for the 2016 football season. Located in the heart of Minneapolis, the new glass-centric covered stadium will replace the Hubert H. Humphrey Metrodome, which was torn down in early 2014.

The nearly US\$1 billion new stadium will also be home to the 52nd Super Bowl in 2018, the National Football League's annual championship game. It will be Minneapolis' second time hosting the Super Bowl; the last time was in 1992 at the now demolished Metrodome. Upon completion, the 1.75 mil sq ft new stadium will feature moveable front windows, 65,400 seats, 800 hi-definition televisions, wifi and a translucent roof to let natural light that also makes snow removal easier.

Subcontractors Harris Mechanical, Parsons Electric and Gephart Electric are using more than a dozen Skyjack vertical mast lifts, 38 DC electric scissor lifts and two rough terrain scissor lifts to help install the plumbing, HVAC and electric components at the new stadium. The machines were supplied by the rental company Beaupre Aerial.

For the electric scissor lifts, the subcontractors selected the SJIII 3219, SJIII 3226 and SJIII 4632. The Skyjack SJIII 3219 has a raised platform height of 5.8 m, a working height of 7.6 m, a 3 ft roll out extension deck, 30 percent gradeability and a weight capacity of 249 kg.

The SJIII 3226 has a raised platform height of 7.9 m, a working height of 9.8 m, a 3 ft rollout extension deck, 30 percent gradeability and a weight capacity of 227 kg. The SJIII 4632 has a raised platform height of 9.8 m, a working height of 11.6 m, a 4 ft roll out extension deck, 25 percent gradeability and a weight capacity of 318 kg.

The subcontractors also chose Skyjack's SJ12 and SJ16 vertical mast lifts for their small turning radius in tight areas to help install HVAC systems. The self-propelled vertical mast lifts feature zero inside turning radius, 30 percent gradeability and a 20-in traversing platform that provides increased access and ability to reach over potential obstacles.

The SJ12 has a raised platform height of 3.65 m, a working height of 5.48 m and a weight capacity of 227 kg. The SJ16 has a raised platform height of 4.75 m, a working height of 6.58 m and a weight capacity of 227 kg.



Above and below: Skyjack aerial platforms are currently working on a new stadium project in Minneapolis, Minnesota, USA.

In addition, the subcontractors opted for Skyjack's SJ9250 RT rough terrain scissor lifts due to its huge platform, soaring work height and heavy-duty capacity. The SJ9250 RT has a raised platform height of 15.2 m, a working height of 17.1 m and a weight capacity of 680 kg. The machine features an expansive 24 ft platform that can be extended with the optional 5 ft powered extension deck.

The Skyjack aerial platforms currently work eight-hour shifts five days a week. Beaupre anticipates extending the machines' shift as the final deadline approaches. According to Beaupre, the project is expected to have more than 200 Skyjack units working on site by the second quarter of 2015.

All Skyjack machines are designed around the company's 'simply reliable' philosophy. Trouble-shooting and maintenance is made easy through the use of the colour-coded and numbered wiring system - Skycoded. Repairs are also cost effective due to the use of 'off the shelf' components as opposed to custom designs. Plus, using a relay based control system allows Skyjack machines to operate using a simplified system with fewer and less expensive components. ■

Website: www.skyjack.com



Sidewalk paving success with Gomaco GT-3200 paver

In 2013 Loewenhardt Construction Ltd was working on a subdivision project in Regina, Saskatchewan, Canada. The company was using its new Gomaco GT-3200 to slipform different widths of sidewalk.

The GT-3200 sidewalk paver has several features that made it suitable for the project. At only 2.6 m wide, it is able to get into and manoeuvre through tight-clearance conditions. All-track steering (ATS) also offers enhanced steering and mobility. For grade preparation, the paver can be equipped with an aggregate base mould with a spreader auger or a trimmerhead for fine grade trimming. Loewenhardt's was equipped with a 1.8 m wide trimmerhead.

The zero-clearance sidewalk paver has a 508 mm wide, 4.3 m long, hydraulic pivoting and folding conveyor. The conveyor's extra-long reach allows ready-mix trucks to discharge from the street instead of having to drive over the existing curb. The conveyor can rotate 180 degrees to allow for easy loading of concrete into the hopper from either side of the machine. Then, when the GT-3200 paves up to obstacles such as light poles and trees, the ground person can swing and fold the conveyor to slipform past the obstacle. The conveyor can also be raised without being folded to avoid smaller obstacles like fire hydrants and utility boxes.

The sidewalk mould has hydraulic



The conveyor on the GT-3200 sidewalk paver can be hydraulically raised without being folded to avoid smaller obstacles such as fire hydrants and utility boxes.

adjustable sideplates to form the Gomaco edge, while a trailing stainless pan provides the smooth finish to the surface of the new sidewalk. The moulds can be equipped with a bar inserter for placing transverse bars into the slab if that is a project specification. Loewenhardt ordered three different moulds for its sidewalk paver, 1.2 m, 1.5 m and 2.4 m wide.

The concrete for the sidewalk was specified by the city of Regina. It was a

32 MPa mix design with the slump not to exceed 40 mm. Each ready-mix truck carried a 5 cu m load, with five trucks supplying the GT-3200 during the pours.

The subdivision work consisted of several short pours, so efficiently moving and transporting the sidewalk paver was a concern. The GT-3200 can be transported fully assembled, with the trimmerhead and mould attached. ■

Website: www.gomaco.com

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Strega deploys one of its largest HDD rigs, Vermeer D1000 X 900, to complete a challenging 28-in diameter gas pipeline project in Thailand.

THAILAND GOES TRENCHLESS

THE HORIZONTAL DIRECTIONAL DRILLING (HDD) METHOD HAS BEEN USED WIDELY IN THAILAND FOR ONSHORE GAS PIPELINE INSTALLATIONS. SOUTHEAST ASIA CONSTRUCTION RECENTLY TRAVELLED TO AYUTTHAYA PROVINCE TO TAKE A CLOSE LOOK AT ONE OF THESE PROJECTS.



Strega Public Company Limited is currently involved in a gas pipeline project that runs between Ayutthaya and Nakhon Sawan provinces. The company will be installing 44 km of the nearly 200 km pipeline with a diameter of 28 in. Work started in November 2013 and is scheduled for completion in late 2015.

Strega explained the main challenge on the project. “The new 28-in gas pipe has to be installed parallel to an existing 30-in gas pipe, with a separation distance of only 4 m. So we have to be extremely careful,” said John Barton, Strega’s chief operation officer. “In this case, HDD is the most suitable installation method.”

“For extra protection of the existing gas pipeline, we also put a sheet pile wall at the HDD entry and exit points,” added Trin Pimhataivoot, Strega’s chief executive officer. “The 28-in steel pipe will be installed at depths of up to 20 m.”

Additional works included the installation of a 6-in steel casing pipe for fibre optic communication. This casing pipe is installed parallel to the gas pipeline at depths of up to 6 m. The company used a Vermeer D80 x 100 Series II HDD rig to install the 6-in casing pipe. The machine features a pullback force of 80,000 lbs and a rotational torque of 13,558 Nm.



Strega works 24 hours a day, on two shifts, seven days per week on the project.

“YOU MUST KNOW YOUR PROJECT WELL. THE KEY IS TO CONDUCT A PROPER PLANNING AND CHOOSE THE RIGHT EQUIPMENT FROM THE START.”

Strega works on two shifts, 24 hours a day, seven days per week on the project. As of 25 February 2015, the company has completed the installation of 35,620 of 28-in pipes and 37,510 of 6-in casing pipes.

Strega is using one of its largest rigs, a 500 t Vermeer D1000 X 900, to install the 28-in pipe. The company employs a team of 15 personnel on each shift to allow continuous operations.

The D1000 X 900 is said to be one of the largest HDD rigs in Asia. The machine can be used for up to 60-in steel pipelines with lengths in excess of 3,000 m. It is matched



Strega’s HDD team gets ready for pilot bore drilling. The D1000 X 900 rig features a 125,120 Nm rotational torque and a 1,000,000 lbs pullback force.

together with a 1,000 gpm recycling and pumping systems.

The D1000 X 900 is also one of Vermeer’s largest maxi-rig models, powered

by twin Caterpillar C-27 engines producing a 125,120 Nm rotational torque and a 1,000,000 lbs pullback force. The machine is 15.4 m long, 3.5 m high and 2.6 m wide.

Both the D80 x 100 Series II and D1000 X 900 rigs drill mostly through sticky clay, with an entry angle of 8 to 12 degrees. For the 28-in pipeline installation, Strega expects to complete 40 crossings in total, ranging from 400 m to 2 km for each crossing.

“To achieve an excellent drilling performance, we use quality bentonite mud,” said Michael Marchbanks, Strega’s HDD superintendent. “Sometimes we also add additives to enhance it.”

The bentonite mud is recycled on site, significantly saving time and cost. “The mud is transferred from one point to the other via the 6-in pipe; after that we clean it with our system, taking the sand and clay particles out of it, and then pump it back and reuse it,” explained Mr Marchbanks. The 6-in pipe is eventually used for installing the SCADA system, for the gas pipeline.

Proper planning

Strega is also working on two other gas pipeline projects, which are estimated to be completed in late 2015. One of them is the installation of an 8-in gas pipeline covering approximately 8 km long in Kamphaeng Phet province. Strega expects to complete



Left and right: The 28-in pipe was being prepared for installation at the exit pit.



Strega is using a Vermeer D130x150 VBM drill rig to work on another pipeline project.



The 28-in pipe will be installed parallel to an existing 30-in pipe, with a separation distance of only 4 m.

20 crossings using a Vermeer D130x150 HDD rig. The machine is equipped with a 179 kW engine, featuring a 130,000 lbs pullback force and a 20,337 Nm rotational torque.

The other project is to install 7 km of the nearly 300 km gas pipeline with a diameter of 42 in, which spans between Rayong and Saraburi provinces. Strega expects to complete nine crossings, ranging from 500 to 1,450 m, using a second Vermeer D1000 X 900 HDD rig.

According to Strega, the 42-in diameter pipeline is the biggest one that the company has ever installed so far. “An extensive, careful and detailed preparation is critical in order to accomplish the job successfully,” said Mr Pimhataivoot.

“You must know your project well,” said Mr Barton. “The key is to conduct a proper planning and choose the right equipment from the start.”

“The reliability of our dealer also plays a major role,” added Mr Pimhataivoot. “We often work round the clock and without their support, it would be difficult for us to complete the projects on time.”

Specialist dealer

Many of Strega’s HDD rigs have been supplied by Asia Technical Consulting Co Ltd (ATC), the exclusive dealer for Vermeer equipment in Thailand that has been established since 1993. ATC offers a total solution including after-sales service, spare parts provision and operator training.



Far left: John Barton, Strega’s chief operation officer.



Left: Trin Pimhataivoot, Strega’s chief executive officer.



Michael Marchbanks, Strega’s HDD superintendent.

Continued overleaf...



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“Our absolute priority is to provide 24/7 support for our customers,” said Jon Jamieson, owner and managing director of ATC. “These guys work day in, day out - also on weekends and public holidays - and sometimes in remote areas. We should be available whenever they need us.”

“For this reason, we maintain enough stocks of most spare parts to be able to deal with machine breakdowns immediately,” said Pan Jamieson, co-owner of ATC.

Both Mr and Mrs Jamieson started ATC with just four people, and now the company has become one of Thailand’s most reputable HDD equipment suppliers, employing 19 staff. “Half of our team members are dedicated to servicing customers,” said Mr Jamieson. “Being a specialist dealer for HDD equipment is what we do best, and we will continue to build on this strength.”

“Vermeer has constantly supported us to where we are today, which in turn allows us to maximise our service level for the benefits of our customers,” said Mrs Jamieson. “Such working relationship has kept our business going and growing. We are able to cover all Thailand with our specially trained team no matter where the customer is working.”

Mr Jamieson himself is a veteran engineer, with decades of experience working on construction projects globally. “When I first founded ATC, I had been living in Thailand for a few years and I saw a big potential to develop our business here, as HDD was relatively unknown.

“We began our collaboration with Vermeer in the late 1990s, as at that time it was the only global manufacturer of HDD equipment that had any real presence

internationally. Another advantage is that the whole range of Vermeer machines in general have commonalities, making them easy and quick to operate.”

Mr Jamieson recalled the early stages of his business-building. “Back then, HDD was still considered a new technique in Thailand. So I had to educate my customers personally - we did a lot of presentations, particularly in the government sector. Strega was one of our first customers; probably the only one that was already knowledgeable about HDD.

“During this period, our machines were predominantly used in small utility projects. Most of our customers were very cost-conscious and worked on short-term vision.”



Jon (right) and Pan Jamieson, owners of Asia Technical Consulting Co Ltd (ATC).



ATC presently has 19 staff, half of which are dedicated to servicing its customers. Here are some of them at the company’s headquarters in Pathum Thani.



ATC has been an exclusive dealer for Vermeer equipment in Thailand since late 1990s. The company offers a total solution including after-sales service, spare parts provision and operator training.

“THERE HAS BEEN A SHIFT IN THE MINDSET OF OUR CUSTOMERS. THEY NOW LOOK FOR BETTER QUALITY MACHINES THAT CAN LAST FOR MANY YEARS WITH LESS MAINTENANCE ISSUES AND A HIGHER RETURN ON MARGINS, BUT OFFER A HIGHER LEVEL OF SAFETY.”

Continued on page 76...



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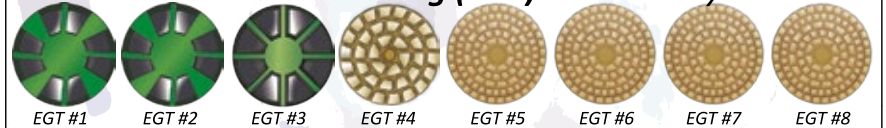
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Continued from page 74...

However, nowadays things are quite different. Mr Jamieson noted, “There has been a shift in the mindset of our customers. They now look for better quality machines that can last for many years with less maintenance issues and a higher return on margins, but offer a higher level of safety.”

“Today’s customers have a clearer understanding of the long-term benefits of quality equipment - they know that 10-15 years later, properly maintained, this equipment would still be running the way it did when they first took delivery of it.”

When asked whether the recent political troubles have affected ATC, Mr Jamieson replied, “Not at all! On the contrary, HDD projects around the country are still ongoing, they haven’t stopped. Last year was fine for us.”

“This year would be even better,” said Mrs Jamieson. “Thailand plans to build more powerplants and the government has made it easier for the projects to go ahead.”

“Thailand is much more urbanised now compared to 20 years ago,” explained Mr Jamieson. “The quality of life has improved, and people have greater social and environmental awareness. Thanks to



Above and bottom: Many of Strega’s HDD rigs have been supplied by ATC, including the Vermeer D1000 X 900.

this progress, many onshore pipeline projects are likely to be installed using the HDD method to minimise disturbance to the local community and environment.”

He added, “Given the large ongoing works on main gas transmission lines,

there is also a rosy future for smaller utility distribution works in the regional centres.” ■

Websites:
www.strega-hdd.com
www.vermeerthailand.com





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Sabah Al Salam University City



Top: The new Sabah Al Salam University City in Kuwait is currently under construction. Work on the project started in 2013 and is expected to be completed this year.

Above: Doka's formwork systems are being used to help accelerate the construction progress.

The Sabah Al Salam University City in Kuwait comprises in total more than 6 mil sq m with numerous facilities separated by gender. Construction of the project started in March 2013 and is expected to be completed in 2015.

Sinohydro Corporation Ltd, the contractor for a major campus, is using Doka's formwork systems for the striking building design consisting of five levels. Some challenges encountered during construction include the inclined columns as well as the high round columns and ceiling heights up to 8 m.

Core walls are erected using 20 sets of Doka's Top 50 large-area formwork and 150F climbing formwork that are flexible in adapting to any shape or size. The support wall featuring 2,300 m in length and varying heights is erected using the Top 50 system.

A total of 55 sets of the Top 50 formwork are used to pour the columns, some of them inclined. Doka recommended a combination of Staxo 40 load-bearing tower and Dokaflex 1-2-4 for building the floor formwork. Due to the small numbers and



The slabs are being erected by Doka's Staxo 40 load-bearing tower and Dokaflex 1-2-4.

light weight of its individual parts, the Staxo 40 can be assembled quickly and predestined for great ceiling heights. It is used to pour around 12,000 sq m of floor slab.

An additional 9,500 sq m floor slab area is built using Dokaflex 1-2-4 as well. This formwork system can be quickly set up and adjusted precisely to meet the heterogeneous building ground plans. Since large areas of the concrete sections will remain untreated, there

is an added requirement for fair-faced concrete quality; it can be achieved by selecting any type of form-facing.

Doka said trainings were held before construction started to ensure smooth set-up and operation of the formwork systems. According to the company, it has secured around 70 percent of the formwork contracts with various contractors. ■

Website: www.doka.com



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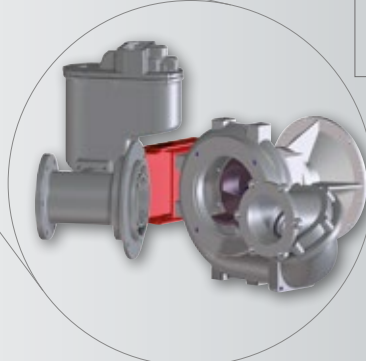


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The Brisbane Riverwalk under construction.

Brisbane Riverwalk

The new riverwalk in Brisbane, Australia, which was completed last year, replaces the popular floating walkway that was swept away in the 2011 Brisbane floods. Unlike the previous floating structure, the new riverwalk is fixed in place, sitting about 3.4 m above mean sea level. It features a rotating span to allow access for boats moored with the confines of the riverwalk, 24-hour lighting, separated pedestrian and cycle areas, and shaded rest stops.

The project involved the application of the wireless-controlled and diesel powered version of the Enerpac SyncHoist load hoisting and positioning system, which offers precision load manoeuvring vertically and horizontally using one crane instead of needing multiple cranes.

This version of the PLC controlled SyncHoist technology was developed for heavy lift and transport specialists Universal Cranes by Enerpac Integrated Solutions to safely control irregularly shaped and uneven loads weighing up to hundreds of tons, while reducing the risk of damage from oscillations of wire rope due to sudden crane starts and stops.

The SyncHoist technology was used in conjunction with a series of Enerpac Integrated Solutions lifting, pulling and skidding technologies employed on different parts of the project to manoeuvre concrete elements weighing up to 385 t, which make up the 850 m riverwalk link between new Farm and the Howard Smith wharves.



Mounted on a 280 t barge with crane and 130 t piling rig, Universal Cranes' SyncHoist system featured intelligent hydraulics to monitor and guide compact but powerful 700 bar double-acting push-pull cylinders integrated into four lifting points above loads. The SyncHoist SHS system could also be used for pre-programmed positioning, tilting and aligning of loads as well as for counterweighting and determining their centre of gravity.

"A beauty of its application on the Riverwalk project is that Universal Cranes achieves maximum precision through wireless operation, with the

Continued overleaf...

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An artist's impression of the Brisbane Riverwalk.



The Enerpac SyncHoist technology was used on the project to handle concrete elements.

crane operator doing the positioning while driving,” said Richard Verhoeff, Enerpac’s Integrated Solutions manager for Australasia.

“The synchronous lifting controls each of the four lifting points to within minute tolerances, so he can pick up the load evenly with optimum balance and safety. The driver can also see what load is on each point and it enables him to do some point loading to enhance stability. Wireless control of the latest SyncHoist enables a crane driver to more simply perform complex load lifting, shifting and positioning manoeuvres from his cab, ensuring loads remain evenly poised during the process and performing point load indications and checks where required.”

Available in load capacities customised to individual tasks, with system reach of 1,500 mm from each of several lifting points, SyncHoist offers very high accuracies (+/- 1.0 mm), less dependence on weather conditions and vastly improved operating speed and worker safety.

“The independent diesel power built into the Riverview system means the system can be deployed virtually anywhere – such as this barge – without its hydraulic functionality being dependent on fixed or separate power sources, such as generators,” explained Mr Verhoeff.

“The combination of diesel drive and wireless control also means the system is totally self-contained. There is no need to have power cables lying around or hoses connected between a hoisted object and the pump unit, because this pump unit can be positioned on the load itself – or on the spreader frame used to perform the lift.”

Lifting, pulling and skidding technologies

The Brisbane Riverwalk project also involved a combination of



Here, one of the concrete elements is suspended from the SyncHoist’s four yellow hydraulic lifting points controlled by the crane driver, while other concrete elements are slid into position for loading.



Compact Enerpac RCS 101 low height cylinders (bottom right of picture) are designed to fit where most other hydraulic cylinders will not, while offering a maximum power-to-height ratio.

complementary Enerpac Integrated Solutions technologies that were used to lift concrete elements from their mould and deliver them to the point where they were lifted onto the barge by the SyncHoist system.

The process included compact Enerpac RCS 101 low height cylinders designed to fit where most other hydraulic cylinders will not, while offering a maximum power-to-height ratio. A total of 55

10-t RCS cylinders with 38 mm stroke were used to separate cast concrete elements from their mould, so they could be lowered onto a series of Enerpac ER 80 heavy duty load skates on which they were pulled nearly 300 m for delivery to the barge containing the SyncHoist.

The concrete elements were placed on 80 t capacity ER 80 load skates on which they were pulled first 200 m in one direction, and then turned through 90 degrees to progress 90 m to a loading point beside the river. The load skates featured low profiles for increased stability and low rolling resistance for easy transportation.

Pulling power for the skidding operation was provided by pairs of RR series double-acting Enerpac RR 3014 cylinders with 368 mm strokes. The custom-engineered pairs of pulling cylinders integrated into the project's sliding and guiding system featured integrated clevis eye arrangements for smooth coupling and decoupling. The RR series is precision designed for high-cycle industrial uses on the toughest job site conditions. ■

Website: www.enerpac.com



The concrete elements were placed on 80-t capacity ER 80 load skates (left of picture) on which they were pulled first 200 m in one direction, and then turned through 90 degrees to progress 90 m to a loading point beside the river.



Left: Pulling power for the skidding operation was provided by pairs of RR series double-acting Enerpac RR 3014 cylinders with 368 mm strokes.

Right: The custom-engineered pairs of pulling cylinders integrated into the project's sliding and guiding system featured integrated clevis eye arrangements for smooth coupling and decoupling.

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Waterview Connection

The Waterview Connection tunnel project is one of the largest infrastructure developments in New Zealand. It is the centrepiece of six related projects, which are designed to close the glaring gap in Auckland's Western Ring Road. With three lanes each, the two tubes of the road tunnel will connect the two nationally significant motorways, Highway 16 and Highway 20. The tunnel alignment runs below a densely populated residential area and several parks.

"It is going to be a fantastic addition to the motorway network here in Auckland," said John Key, New Zealand's prime minister

during his visit to the project site in May 2014. The tunnel creates a time saving connection between the central business district and the international airport.

The Waterview Connection project is being delivered by the Well-Connected Alliance, which includes the Transport Agency, Fletcher Construction, McConnell Dowell, Parsons Brinckerhoff, Beca Infrastructure, Tonkin & Taylor and Japanese construction company Obayashi Corporation. Sub-alliance partners are Auckland-based Wilson Tunnelling and Spanish tunnel controls specialists SICE.



Construction of the Waterview Connection tunnel is one of the largest infrastructure developments in New Zealand.

For the project, Herrenknecht delivered its tunnel boring machine (TBM) to Fletcher Construction, McConnell Dowell and Obayashi. With a boring diameter of 14.46 m, the EPB Shield S-764 - named Alice - is one of the world's largest TBMs of its kind. Its gigantic cutting wheel is driven by 24 electric motors with a total output of 8,400 kW.

The TBM has relatively large openings for optimum removal of the

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excavated material and has been specifically designed for the expected geology. In the first section the TBM went through soils composed mainly of sandstone and siltstone. The cutting wheels' central cutting tools could be changed from the rear area. The ripper tools for softer grounds were thus replaced with disc cutters for harder rock when needed.

In addition to the actual TBM with three back-ups, which creates the tunnel shell, Herrenknecht designed and delivered an autonomous, fourth back-up. This followed TBM Alice at a distance on the first section. Its task is to lay a 'tunnel within the tunnel'. It creates a part of the tunnel invert that supply lines will later pass through. This method of operation fully independent of the TBM advance offers an important advantage: advance performances of the TBM and the lining of the invert do not limit each other and can be done in parallel to save time.

The TBM Alice excavated the first 2.4 km long tunnel in just 11 months, with an excellent performance of 126 m per week and 452 m per month. On 29 September 2014 at 1.45 pm local time, the gigantic boring shield finally broke through the wall to the first target shaft in Waterview.

"This is a fantastic achievement. Our construction partners on the Well-Connected Alliance completed the breakthrough safely and ahead of schedule," said Brett Gliddon, New Zealand Transport Agency's highway manager. "It is a huge engineering feat for New Zealand, one that is attracting worldwide attention. It demonstrates that with local and international experience and expertise, we can deliver infrastructure to equal the best in the world."

After the first breakthrough, the TBM and the first backup were turned by 180 degrees in a very tight space and moved to the starting position for the second drive, which then began in mid-December 2014.

Because of the limited space, a temporary second backup, also supplied by Herrenknecht, was docked onto the machine. In the initial phase it is responsible for the extension of the supply and disposal lines. With it, Alice is now boring an approximately 300 m long 'launch tunnel'. After this first part of the second tube has been driven, the original configuration with the longer backups 2 and 3 will be re-docked to the TBM. Then Alice will get going at full speed.

The shell of the second tube is due to be completed in 2015. The opening to traffic is scheduled for the beginning of 2017. ■

Website: www.herrenknecht.com



Above: At the end of September 2014, the cutting wheel of TBM Alice broke through the target shaft wall for the first time.



Left: John Key, New Zealand's prime minister (centre), visited the tunnel construction site in May 2014.



The EPB Shield S-764 was assembled at the Herrenknecht plant in Guangzhou, China. Core components such as the main drive, hydraulic station, electrical station and air locks were manufactured at the company's headquarters in Germany.

Project information: www.nzta.govt.nz/projects/waterviewconnection

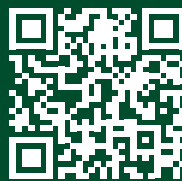


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Norah Head boat ramp

The reconstruction of Norah Head boat ramp in New South Wales, Australia, is scheduled for completion in May 2015. Located in Cabbage Tree Harbour within the Wyong Shire Council, it is said to be the district's only ocean access ramp that caters to a growing number of locals, tourists and other vessel launches.

The main double lane boat ramp and beach ramp are receiving full upgrades to allow for safe, low and high tide launch capacity. The upgrading works also include replacement of an existing retaining wall with a better rock wall structure, relocation of sewer mains and installation of a gross pollutant trap with a storm water outlet structure.

The project commenced in April 2014 and is estimated to cost A\$3 million, which has been made possible with joint funding from the Wyong Shire Council, the state government (under the Better Boating Program) and the federal government.

Australian civil construction company Civilbuild has been contracted to carry out grouting work on the project. The company is using a ChemGrout CG570 diesel hydraulic twin skid grout pump, which was supplied by Antec on a rental basis. Antec is a manufacturer and distributor of a wide range of products for the mining, mineral processing and infrastructure industries in Australia, and is the exclusive distributor of ChemGrout range of grout pumps. Civilbuild is working for the main contractor Bolte Civil, a civil construction company based in New South Wales.

Working within tight timeframes at low tide, the ChemGrout CG570 is placed on the beachfront for grouting eight precast concrete abutments, sealing the galvanised steel reinforcement bars that connect to the



Top: The Norah Head boat ramp has been undergoing upgrades to allow for safe, low and high tide launch capacity. The upgrading works also include the replacement of an existing retaining wall with a better rock wall structure, relocation of sewer mains and installation of a gross pollutant trap with a storm water outlet structure.

Above: A ChemGrout CG570 diesel hydraulic twin skid grout pump is used on the project for grouting eight precast concrete abutments, sealing the galvanised steel reinforcement bars that connect to the concrete pile headstocks.

Left: The original boat ramp.

concrete pile headstocks. Each of the eight abutments is grouted with 400 l of grout pumped through the 1-in hoses fitted with ChemGrout flowable couplings to a depth of 300 mm.

A Sika WT water resisting crystalline watertight 100 g admixture is added to each six bag batch to provide an impermeable barrier for the concrete, sealing any potential migratory passages of water through the structure, which over time could contribute to corrosion. The ambient temperature when placing grout is 29°C and the water temperature is 18.4°C. The grouting time is 30 minutes, which allows enough workability. The material density is 2,115 kg/cu m, with a water addition rate of 2.6 l per 20 kg bag. ■

Website: www.antec.com.au



Each of the eight abutments is grouted with 400 l of grout pumped through the 1-in hoses fitted with ChemGrout flowable couplings to a depth of 300 mm.



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Grosvernor Mine

Work on the Grosvernor project is currently underway, a 5 mil t/yr underground longwall mine planned for Moranbah in Central Queensland, Australia. Developed by Anglo American, the project is located immediately to the south of the existing Moranbah North mine that has been in operation since 1998. Redpath Mining is the project's main contractor.

Tunnel boring machine (TBM) technology is being used to build two drifts - one for the coal conveyor, which will transport coal from the underground longwall to the stockpile area on the surface; and another for people and equipment to access the underground once the mine is operational.

Similar to the tunnel borers that have been used to construct the road tunnels in Brisbane, the TBM tunnelling method is believed to deliver advances in safety, higher quality drifts and faster project development.

The TBM will pass beneath a steel archway roof that has been installed at the drift's entrance and begin drilling into the ground to build the 7 m diameter tunnel, descending at an angle of one in eight until it reaches the depth of the coal seam approximately 160 m below. As the TBM advances forward, precast concrete ring segments will be used to line the inside of the drift.

Mapei admixtures have also been used for backfill grout in this project. These included Mapequick CBS System 1 liquid retarding admixture for cementitious injection systems; Mapequick CBS3 liquid activator admixture for extremely fluid cementitious grout systems; Mapebent CBS5 bentonite; Polyfoamer FP liquid foaming agent for preparing stable TBM (EPB) foams; Mapeblox T tail seal grease for mechanised tunnelling with TBM; Mapeblox H main bearing sealant; Mapeblox PKG packing grease for mechanised tunnelling with TBM; and Mapedrill Bio natural, biodegradable, powder polymer and clay inhibitor for mechanised tunnelling with TBM. ■

Website: www.mapei.com.sg



All images: TBM technology is being deployed to build two drifts at the Grosvernor coal mine. Here, Mapei admixtures have also been used for backfill grout.



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WOC 2015 EXCEEDS EXPECTATIONS



Celebrating 41 years of industry excellence, World of Concrete 2015 held at the Las Vegas Convention Centre, USA, exceeded expectations across the board. The signature event for the concrete industry drew 55,779 registered professionals, up from just over 48,000 in 2014, and featured more than 1,459 companies exhibiting across more than 675,000 net sq ft of space, an increase of more than 100,000 net sq ft from 2014. This was the largest World of Concrete in six years, according to the show organiser.

“The excitement and energy we saw at the World of Concrete this year was like no other. We are very pleased with the results of the show in all categories from the increase in the number of exhibitors (up 200 companies) to the increase in attendees (up 15 percent) to the increase in the number of seminars taken (up 23 percent). These increases show not only the value that World of Concrete brings to



the concrete and masonry industries but also shows that the industry is getting stronger and poised for much success in 2015,” said Tom Cindric, vice president, Informa Exhibitions US, Construction & Real Estate.

“With the industry ramping up again education became a key asset at WOC this year. Attendees took more classes than they have in the last six years sharpening their skills for what’s to come. In addition, international attendees made a big impact scouring the show for new equipment, tools and technology to make their operations more efficient and profitable,” said Jackie James, show director, World of Concrete.

Highlights of the 2015 edition included the opening ceremony awarding the World of Concrete Legacy Award to recipient Ed Sauter, executive director, Tilt-Up Concrete Association, and executive director, Concrete Foundations Association, along with the Weatherton Scholarship, providing funds to help the next generation of concrete professionals attending the CIM (Concrete Industry Management) Program. In addition, CIM held its annual unreserved silent and live auctions at World of Concrete. The silent and live auctions raised an initial tally of approximately US\$800,000.

For the fourth year, World of Concrete 2015 recognised the accomplishments of crews in the commercial construction/masonry industry with the ‘Crews That Rock’ competition, sponsored by BASF. Crew members were honoured for their teamwork and contributions to the industry and their communities. Projects were submitted in one of two categories: Community Service/Not-for-Profit and Commercial/For-Profit. With 25 total finalists, including 19 in the Commercial category and six in the Community Service category,



All images: Scenes from World of Concrete 2015.

the contest resulted in thousands of online votes and tremendous interest through social networks.

Langston Concrete Inc received the award in the Commercial/For-Profit category for the Royal Gorge Bridge and Park, and the International Union of Bricklayers and Allied Craftworkers’ (BAC) La Grange Park’s Veterans Memorial received the award for the Community Service/Not-For-Profit category. The two grand prize winners were honoured at the show during the ‘Crews That Rock’ reception. BASF and TV personalities Dean & Derek presented awards and swag bags for the winning crews. ■

Website: www.worldofconcrete.com

GOMACO

Gomaco's next generation Commander III slipform paver features a redesigned frame and operator's platform with a new pivoting operator's control console. The frame has been rebuilt to accommodate Tier 4 engines and their cooling packages. The placement of the engine in the framework is reversed to provide increased operator visibility and the redesigned engine shroud provides easy access to service and fill points. The pivoting operator's console allows the operator to have hands-on control and ultimate visibility no matter what application is being slipformed or what the direction of travel.

Gomaco said that for the first time ever, the Commander III will be available with an optional on-board camera as a new device to monitor designated areas of the slipforming process. The camera can be positioned anywhere around the paver and feeds live to the G+ display on the console.

The next generation Commander III is designed for operator comfort. The operator's platform is now isolated to eliminate vibration. It is also quieter to work on the platform or around the machine. The Commander III has a new optimised cooling package with the hydraulic fan controlled by G+ to adapt cooling needs to jobsite conditions for both a quiet and efficient operation. It has improved fuel efficiency with a power-optimised engine and load-sensed hydraulic circuits. Excellent fuel efficiency combined with an increased fuel capacity allows an uninterrupted day of paving on the project.

The next generation Commander III has the new GBox on every leg to accommodate improved steering and grade with G+ controls. The GBox features a new location for the slave controller and proportional valves, reduces hose and wiring needs, eases serviceability and troubleshooting, and provides easy access with a horizontal swing door at ground level.

G+ controls make all of these advancements possible on the next generation Commander III, including hydraulic fan speed control, pivoting operating console, the electronic and hydraulic initiative and more. G+ controls will also accommodate telematics for remote engine and machine monitoring. G+ Connect easily interfaces with 3D guidance systems.

In addition, the Gomaco GT-3600 curb and gutter machine with 3D guidance quickly and accurately slipforms tight radii curb and gutter in parking lots. The paver with All-Track Steering (ATS) is built for turning tight radii, as tight as 610 mm. The Topcon 3D system uses algorithms for tight radii that simulate how steer sensors would work on stringline and automatically adjusts in and out of a radius. The software also has definable parameters to help sharpen cornering, as well as transitions in the entry and exit of the radius to provide smoother results. The 3D system is able to anticipate and adjust to the radius accordingly, because it has the project model loaded into its computer with the upcoming design elements.

The GT-3600 features a 4.6 m long, 610 mm wide charging conveyor and a hopper designed for extra concrete capacity. Fully loading the conveyor and hopper before entering the radius allows operators to complete the radius without having to wait for another concrete delivery. The mould on the GT-3600 is positioned to assure perfect placement of the concrete through the radius and the operator's platform offers ultimate visibility of the entire slipforming operation.

The three-track GT-3600 is versatile and its applications include curb and gutter, tight radii, cul-de-sacs, safety barriers, bridge



The next generation Commander III slipform paver.



The GT-3600 curb and gutter machine.

parapets, sidewalks, recreational paths and flat slabs up to 3 m wide. It has one of the fastest tracking speeds in the industry for quickly moving around large projects, according to Gomaco. The travel speed is up to 38 mpm, and the low speed provides the smooth crawl necessary for slipforming concrete.

Furthermore, the zero-clearance sidewalk paver has a 508 mm wide, 4.3 m long hydraulic pivoting and folding conveyor. The conveyor's extra-long reach allows ready-mix trucks to discharge from the street instead of having to drive over existing curb. The conveyor can rotate 180 degrees to allow for easy loading of concrete into the hopper from either side of the paver.

When the GT-3200 paves up to obstacles such as light poles and trees, the ground person can swing and fold the conveyor to slipform past the obstacle. The conveyor can also be raised without being folded to avoid smaller obstacles like fire hydrants and utility boxes. The GT-3200 sidewalk paver features ATS, which saves time getting on and off stringline, allows better jobsite mobility, and ease in loading and unloading for transport. ■

INSERO EQUIPMENT

The Insero AMP (Auxiliary Mobile Power) utilises a Cat skid steer loader base with an integrated power source to provide users with pneumatic, electric and hydraulic power.

The auxiliary power source allows operators to run tools such as jackhammers, drills, saws and welders from the various power circuits with over 100 ft of reel capacity. No outside power source is required while utilising the AMP, making remote jobsites easier to access with the necessary tools workers need, said Insero Equipment.

An added feature is the attachable One Trip Design Tool Rack that is easily loaded onto the AMP through its universal coupler and tool bracket with interchangeable inserts. This allows workers to transport up to four heavy-duty tools along with a standard bucket to their jobsite. The tool rack is easily removable, giving way to a fully functioning skid steer loader with work tool attachments if desired.



The Insero AMP combines the flexibility of a skid steer base with the addition of hydraulic, pneumatic and electric power sources.

The dynamic tool capabilities, self-sufficient power and transformative aspects of the AMP make it a versatile piece of machinery in any fleet. Key industries

that benefit from this multi-functional Insero AMP include railroad, construction, municipal, disaster recovery, mining and quarries. ■



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GENIE

The new Genie GTH-1256 telehandler features a lift capacity of 12,000 lbs with a vertical reach capacity of 7,000 lbs at a maximum lifting height of 56 ft and a 42 ft horizontal reach capacity of 3,500 lbs. The telehandler has a total weight of 36,600 lbs. A tight steering radius and hydrostatic transmission enables precise placement of materials and smooth machine control on jobsites. By adding the GTH-1256 to the smaller telehandlers, the Genie GTH-5519, 636, 844, 1056 and the larger GTH-1544 telehandler, it completes the Genie telehandler line.

The GTH-1256 is a telehandler that is built to last featuring a military grade chassis design, the same chassis found on the largest Genie telehandler, the GTH-1544. The rugged chassis with Dana axles offers full-time planetary four-wheel drive along with four-wheel steering capability. The telehandler has a four-stage boom with internal chains and hydraulic hard lines for extra protection. It has durable heavy duty fenders and is powered by a Deutz 154 hp Tier 4i engine, or a Perkins 148 hp Tier 4i engine.

The GTH-1256 is fitted with a side-mounted engine, providing excellent service access to the engine as well as hydraulic and electrical components. Genie also offers its service support and genuine Genie parts to help maintain the best uptime on the jobsite.



The Genie GTH-1256 telehandler.

The GTH-1256 is now in production and will only be available in the ANSI and CSA markets. ■

GUNTERT & ZIMMERMAN

The new MP550 material placer from Guntert & Zimmerman (G&Z) is capable of handling a wide variety of concrete slumps as well as dry materials. It features four-wheel drive with acumen, dual axle steering with only a 3.66 m inside turning radius. This offers greater ease of movement in and around the jobsite. The concrete hopper has been designed in such a way that can reduce the dump box height. The hopper's front lip is only 584 mm off the ground, allowing it to receive a wide range of trucks. The 10.7 m long swing conveyor, which can pivot 170 degrees, is designed with a hinge point near the tail pulley for ease of clearing barrier walls and other jobsite obstructions while minimising the material discharge height.

The hopper size can hold approximately 4.2 cu m. The hopper's front 'flop gate' is designed with a hydraulically adjustable rubber seal to virtually eliminate concrete losses while dumping. The hopper is also available with hydraulically adjustable front pusher rollers. The high capacity transfer and swing conveyors are capable of handling large loads without stall or slippage. The conveyors are equipped with rugged motors that offer ample torque for high production placing.

The MP550 is designed to be an easy placer to clean and maintain. The conveyors and their components are readily accessible, and they are also easy to clean and maintain. The hopper features a quick-release mechanism to allow the carrier to safely walk away for ease of access, cleaning or switching to other attachments. The carrier side panels simply guard the transfer conveyor during operation and provide access during daily cleaning. The tail end of the transfer conveyor can quickly be lowered (or even disconnected) for cleaning and maintenance. Each conveyor has also been meticulously designed for ease of continuous belt



The MP550 material placer.

replacement in the event of a failure. In addition, the 'Eco-Mode' feature on the MP550 reduces fuel consumption by up to 35 percent, and the tyre over track design choice dramatically reduces maintenance, according to G&Z. ■

DOOSAN

The new P185WDO air compressor from Doosan Portable Power is powered by a Tier 4 Final-compliant Doosan D24 engine with a diesel oxidation catalyst (DOC) aftertreatment system. The engine provides reliable power and improved cold starting capability, while delivering a 7 percent increase in fuel efficiency compared to previous models.

The P185 offers a low sound level at 74 dBA. With the Doosan D24 engine at the helm, the P185WDO delivers 10 hours of runtime at 100 percent load and 500-hour service intervals. Featuring 100 psi at 185 cfm, the P185 meets the needs of various applications, from powering handheld air tools, to sandblasting, sprinkler and irrigation line blow-out, cable laying and pipeline testing.

In addition, Doosan Portable Power plans to manufacture airends for insertion in portable air products, starting with the introduction of the HR350 airend. It will be available in the new XHP1170 air compressor and as a drop-in replacement for the previous HR2.5 airend.

The HR350 is the first Doosan-assembled airend to be installed in the company's air compressors and available to the OEM market. It features a highly efficient rotor profile that produces greater cfm output with less horsepower, resulting in lower fuel consumption



Doosan's P185WDO air compressor.

compared to previous airends. The HR350 also reduces the potential for downtime with strengthened internal castings that eliminate cracking and flexing, ultimately ensuring a longer machine life.

The HR350 airend will initially be installed in selected Doosan air compressors, with additional models scheduled for installation at a later date. ■



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PILOSIO

Pilosio's Slabform system is designed for concrete slabs with thicknesses of up to 100 cm. The assembly of the system is simple, thus saving time and costs. The reduced weight of each aluminium component (maximum 15.5 kg each) and the modularity of the components allow a single operator to manually reinforce a floor easily.

Highlight of the Slabform system is the possibility to dismantle the horizontal formwork quickly, so that it can be reused in the following phases. The main props remain in place, ensuring the support needed for the slab consolidation process. The modularity of the system makes it possible to create flooring of any shape since the Slabform aluminium supports allow the reinforcement of any floor, thanks to the openings ranging from 2 to 5.20 m and loading capacities of up to 7.5 kN.

Linear is a traditional system for on-site slab casting, made of high capacity aluminium props and a grid of main and secondary wooden PL20 beams. Using the upper elements (beams and plywood) a tailor-made supporting structure can be obtained and adapted to any slab load. Generally, the deformability and strength design for this system requires the main beams to be obtained with single PL20 wooden beams, while secondary beams are PL20s placed every 20-50 cm.

The ST50 Table is a modular system with a large surface for slabs cast on-site, which can be handled by a compensator. The system is suitable for casting monolithic slabs with large surfaces as well as for standard and repetitive shapes. The low weight and large reinforced



Pilosio's Slabform system is designed for concrete slabs with thicknesses of up to 100 cm.

areas lead to high productivity on site. The ST50 Table consists of four telescopic props constrained to the two main wooden beams with a connection rotating head. The secondary frame comprising PL 20 wooden beams and a counter casting surface in plywood or 'yellow' panels is placed on the main beams. ■

VANAIR

Vanair Manufacturing's new Viper series has towable running gear. Offered in either gas or diesel, the Viper suits various pneumatic tool needs. The package is more economical, more compact and has better fuel savings than a 185 cfm tow behind, said Vanair. Powerful and dependable, this rotary screw system delivers up to 80 cfm at up to 150 psi. It has enough power to operate a 90 lbs jackhammer and piercing tools. Its auto engine off and restart smart technology, as well as its auto variable throttle control (based on air demand to minimise fuel consumption and noise) are extra features offered by Vanair. According to the company, it has also added the optional running gear that features independent torsion axle suspension and heavy duty construction. An optional hose reel with a 3/4-in hose is available as well. ■



Vanair Manufacturing's new Viper series has towable running gear, offered in either gas or diesel.

STI

The STI-3030 Prep/Master grinder from Substrate Technology is designed to be versatile and easy to operate. It is ideal for polishing projects over 929 sq m and can be used on concrete, terrazzo, marble and granite floors. The machine is 218 cm long, 76 cm wide and 132 cm high, weighing 599 kg. It is fitted with a 22 kW motor, 8 m power cord and an EG proprietary attachment



system. Production rates for mastic removal is 56 sq m/hr, thin set removal 56 sq m/hr, mil coatings removal 39 sq m/hr and polished concrete 111.5 sq m/hr. ■

The STI-3030 Prep/Master grinder is ideal for polishing projects over 929 sq m.

POWER CURBERS

The Power Paver SF-1700 from Power Curbers is a compact concrete slipform paver, designed for paving widths from 3 to 7.5 m and is ideal for half-width paving. The paver is also excellent for working in tight spaces, such as congested city streets. With only 74 cm of side clearance required, the SF-1700 easily fits where larger machines will not such as in rehab projects, said Power Curbers.

The Power Curber 5700-C slipform curb machine was showcased in a curb and gutter setup, complete with Leica stringless machine controls. Also on display was the 5700-C-MAX with a 1.83 m sidewalk mould and Topcon's Millimeter GPS system. The 5700-C and 5700-C-MAX can handle a wide variety of applications, including curb and gutter, sidewalks, variable barrier wall, canals, ditches, slotted drains, stadiums and dams, as well as agricultural applications such as barn floors and feed troughs.

In addition, the 150 model extruder can extrude concrete or asphalt curb up to 30 cm high and 30 cm wide at a speed up to 7.6 m per minute. A continuous one-pass operation can turn a smooth radius as tight as 60 cm on either the left or right side of the machine. ■

The Power Paver SF-1700 works on a project in the Philippines.



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LIEBHERR

Liebherr's 37 Z4 XXT truck-mounted concrete pump is equipped with high-performance pump units in three different output sizes, in accordance with respective customer requirements. Liebherr offers pump units featuring maximum flow rates of 125 cu m/hr, 138 cu m/hr and 163 cu m/hr. Smooth changeover of the S-pipe is facilitated by the hydraulic cylinder with end-of-stroke damping. Configured in four sections, the 37 m distributor boom in Z-fold design is extremely torsion-resistant, and consequently exhibits low-vibration boom movements on the building site.

The concrete pipeline on the 37 Z4 XXT is configured close to the boom on the left and right-hand sides for a balanced weight distribution. The pipe bends of the concrete pipeline feature a large radius of 275 mm, ensuring minimal losses in pressure over the length of the distributor boom. To minimise the necessity of stockpiling different wear parts, Liebherr predominantly uses pipe bends of the same type. Numerous special design details facilitate the replacement of wear parts and optimise servicing.

The XXT-narrow support from Liebherr is extremely sturdy and torsion-resistant. The front and rear outriggers are secured directly to the boom pedestal of the distributor boom, whereby the forces are channelled directly into the supports from the boom, without deviation. All four outriggers are pivot-mounted, allowing maximum flexibility and a particularly extensive working range of the distributor boom with narrow supports. This can prove to be a decisive advantage on building sites with restricted access.



Chassis from various truck manufacturers may be selected by the customer as an underbody for the 37 Z4 XXT. Liebherr also offers an extensive range of optional accessories and equipment for the machine such as extra storage compartments, an additional diesel tank or an auxiliary access point on the left-hand side to suit all respective customer requirements. A magnetic rotating beacon ensures extra safety and a pneumatic end hose pinch valve prevents continued discharge of the concrete when repositioning the boom.

As well as the Z-fold boom design, the 37 Z4 XXT featuring a reach of 37 m is available with a rolled fold boom design. In addition, Liebherr offers the XXH- and ST-supports as an alternative to the XXT-narrow support.

Furthermore, the Liebherr L 538 wheel loader features a Z-bar linkage for standard operations, achieves a tipping load straight of 10,199 kg at an operating weight of 13,154 kg and is driven by a 115 kW. This loader is equipped with a 2.70 cu m quick hitch re-handling bucket with bolt on cutting edge.

The L538 belongs to the new generation of mid-size range loaders, most commonly referred as utility size. These size loaders are highly versatile machines suitable for a wide range of applications. They can be used in a traditional capacity, to stockpile or move earth/materials, or can be used to handle all types of construction material through the use different attachments.

The implementation of energy efficiency technologies such as the hydrostatic drive combined with the Liebherr Power Efficiency system (LPE), optimises the interaction between drive components. This system is able to adjust the performance and power for every working situation, enhancing the efficiency of the wheel loader and providing additional fuel savings of up to 25 percent.

Another contributing factor to fuel economy is the configuration of the machine and the positioning of its engine. The engine is used as a natural counterweight. The centre point of gravity of the driveline components is behind the rear axle to avoid unnecessary additional counterweight. Less operating weight has to be carried around and therefore, less horse power is required. Subsequently, less fuel is consumed. ■



Left: The 37 Z4 XXT truck-mounted concrete pump.
Above: The L538 wheel loader.

BON TOOL



Bon's new Keyway Groover (left) creates a key in footings, and is ideal for poured wall construction. The Keyway Groover is manufactured from rust-proof, tempered aluminium. It is equipped with Bon's Universal Mounting Bar to accept any Bon bracket and handle. The V-shaped groover is 24 in long and 4-1/2 in wide. The plow cuts a 2 in x 2 in 'V' groove.

In addition, Bon's new roller for decorative concrete work embeds filler aggregates such as paint flakes, vinyl chips and metallic fillers into liquid polymer flooring systems. Two smooth 24-in wide aluminium rolls ensure the broadcast material is evenly distributed and fully saturated. The heavy duty, cast aluminium frame is equipped with bracket to accept a bull float handle. The frame is easy to adjust for increased or decreased downward pressure. The dual-roll terrazzo roller is powdered coated. The rolls are equipped with ball bearings and stainless steel axles. ■

SIMA

Spanish manufacturer SIMA introduced its various products including masonry cutting bench saws, rebar processing (cutting, bending, etc.) and road saws, among others. The company used World of Concrete as a platform to enter the US market as well as to meet potential customers from Latin American countries. According to SIMA, it is currently looking for distributors in the US. The company is also interested in Asian markets such as Japan, India and Indonesia, and is seeking distributors in this region as well. ■



SIMA products on display at WOC 2015.

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PERI

Peri's Gridflex slab formwork system saves time by eliminating the need to set up and position girders individually. It provides ready-made aluminium grid elements that are simply hooked into the prophead and erected from below. Requiring only four main components – prophead, one standard and two filler elements – makes Gridflex intuitive and straightforward. After an area is enclosed, the grid just needs to be covered with any grade of plywood, which is then nailed down to the aluminium struts. The lightweight design, with a standard element only weighing around 40 lbs, allowing a single person to easily handle the system.

According to Peri, the Skydeck lightweight panel slab formwork will remain the company's efficiency flagship due to plywood already being integrated in the panel, the possibility of early stripping and other benefits; however, Gridflex is expected to be a major productivity upgrade in terms of time and labour savings for contractors who are still doing a lot of work with girder slab formwork or heavy panel slab formwork.

In addition, the Maximo system allows one person from one side to install a tie. It also requires no spacer tubes, no closing of unused tie holes on the forms, less ties in total and a neat finish. The system is said to be one of the most efficient and cost-effective solutions on the market. By requiring only one person on one side of the formwork to install a tie – with the nut already mounted to the formwork on the other side – Maximo can achieve significant savings in labour costs over traditional systems. Users can adjust the wall thickness in seconds by simply repositioning a pin within the MX 18 taper tie for wall thicknesses up to 24 in. And since Maximo always requires all tie holes to be utilised, while reducing the total number of ties, less time needs to be spent closing tie holes on the forms and the concrete finish. Peri's new heavy-duty wall formwork flagship withstands fresh concrete pressures exceeding 1650 PSF and is fully compatible with its predecessor Trio.

Peri has also developed a new self-climbing metal mesh perimeter protection panel as a weight-optimised alternative to conventional enclosures. The rentable rail-mounted panels are extremely flexible due to being telescopically adjustable, thus accommodating simple and complex building structures alike. This also facilitates trucking of the panels in tight heavily trafficked areas. The LPS screen is available in two versions, either as a perimeter protection system or with a working platform that provides access to the bulkhead formwork.

The close-meshed panels serve as a wind deflector as well as providing anti-fall protection during assembly of the top slab formwork. The mesh panels allow natural light to enter the working



The LPS screen is available in two versions, either as a perimeter protection system or with a working platform that provides access to the bulkhead formwork.

area, which is particularly useful when stripping the slab formwork. The panels are very light, which simplifies installation and the climbing procedure whilst also reducing the load on the building itself. The meshed enclosure is quickly and easily mounted to the climbing rails by means of clamp. Continuous connections are possible, thus allowing a free arrangement of the climbing rails. The slab shoe-guided climbing rails facilitate a fast and safe moving procedure. As an option, mobile hydraulic climbing devices also allow crane-independent moving. ■



The Maximo wall panel formwork system requires only one person on one side of the formwork to install a tie.

SCANMASKIN

Scanmaskin introduced a new floor grinding and polishing machine, the Scancombiflex 800DSP (below). Thanks to its new integrated computer, the machine can give accurate guidance to the operator through a control panel. Using sensors, the operator receives feedback and warning when the tool wear is too high or the tool is worn out. The sensors continuously measure the wear and thickness of the tool. The operator can also easily choose the speed and the tools with a manual mode. ■



MONTABERT

The Montabert V1800 and V2500 Evolution hydraulic breakers have been redesigned to extend their service life and reduce operating costs. The breakers feature a new heavy-duty housing that reflects the design of larger two-speed models, as well as the design of fully variable Montabert hydraulic breaker models. The fully enclosed heavy-duty cradles minimise ambient noise on the jobsite and protect working parts from dust and debris.

The V1800 is designed with a carrier weight of 25 - 30 t; operating weight of 1,885 kg; tool diameter of 140 mm; flow range of 140 - 220 l/min; striking rate of 310 - 800 bpm; and impact energy class of 6,000 ft lbs. The V2500 features a carrier weight of 27 - 40 t; operating weight of 2,570 kg; tool diameter of 160 mm; flow range of 175 - 250 l/min; striking rate of 350 - 800 bpm; and impact energy class of 8,000 ft lbs.

The breakers have two steel bushings. Operators can easily replace the lower bushing in the field without dismounting the breaker from the carrier. The two models also feature a modified lower suspension that extends the service life of the suspension system by reducing the wear on working parts.

An optional soft-start feature is now available. Equipped with this soft-start feature, the hydraulic breaker delivers high frequency and low energy at the onset of operation. After a few seconds, the breaker resumes normal operation, delivering higher energy at a lower frequency.

Ideal for activities such as rock splitting and oversize breaking, the soft-start feature minimises blank firing effects by creating a niche in the material for better positioning and energy transfer - preserving the breaker's tool retainers and front guide. Furthermore, the operator can manually adjust the hydraulic breaker into high frequency and low energy mode when working on soft ground.

Standard features of the V1800 and V2500 include a blank-fire protection system that reduces harmful metal-to-metal contact and an energy recovery system that recycles recoil energy from the piston to increase strike power. In addition, the breakers' upper and lower suspension extends the excavator's work-group life by absorbing harmful vibrations, while an automatic cradle or excavator-mounted grease station delivers continuous grease



The Montabert V2500 hydraulic breaker.

flow - reducing bushing and tool wear. An optional air pressurisation kit is available for underwater applications. ■

CS UNITEC

CS Unitec's triple-head concrete scabblers efficiently remove laitance and expose aggregate for the application of sealants and coatings. Three tungsten carbide tipped (TCT) pistons produce 7,200 blows per minute to reduce, roughen and texture concrete. The scabblers consume only 15.9 cfm, with a vibration level of 8.7 Aeq m/s² and noise level of 98 db(A). They weigh 11.5 lbs.

There are two styles of TCT carbide pistons available. Cruciform heads (on model 153.5200) are designed for levelling concrete and preparing cracks prior to repair, and Bush heads (on model 153.5250) are designed for exposing aggregate for the application of coatings.

CS Unitec's 11-headed, concrete floor scabbler is ideal for concrete keying and laitance removal without damaging the substrate below. The MHS 11 (model 159.6051) is designed with 11 one-piece piston TCT bush hammer heads that supply 24,200 total light blows per minute. This

heavy-duty, pneumatic floor scabbler has a cutting width of 9-5/6-in with a production capacity of approximately 100 sq ft per hour. Applications include laitance removal from large floor areas, roughing concrete prior to resurfacing and bridge deck preparation for waterproofing.

The floor scabbler also employs a three-point vibration damping system for operator comfort and has a vibration level of 4.96 Aeq m/s². The unit can operate from a single compressor, consuming 55 cfm of air at 90 psi.

CS Unitec's variable-speed, hand-held mixer features a two-speed gearbox making it ideal for demanding mixing applications. The model EHR 23/2.4 S Set has a load speed of 0-250 and 0-580 rpm. It is equipped with a rugged paddle that can handle high-viscosity materials in batches up to 200 lbs, including epoxy, mortars, plasters and cement; quartz-containing resins and flooring compounds; as well as insulation and other materials. The

mixer's heavy-duty galvanised paddle has a helical design that mixes the batch from the bottom up, preventing splash and keeping air from being sucked into the material. ■



Left and above: CS Unitec's triple-head concrete scabbler.

KUBOTA

Kubota Tractor Corporation revealed its new SSV-series skid steer loaders with two models, the SSV65 (64 gross hp) and SSV75 (74 gross hp). They have a unique, slide-up, front-entry door that rises overhead, instead of swinging out. This design allows the door to be opened regardless of loader position so that the operator can enter and exit the machine even when the skid steer is in a tight or difficult position. Other standard features include a spacious, dust-resistant pressurised cabin with an optimised climate control system and a sidelight that allows better visibility and safer operation at night. In addition, an optional multi-function lever feature is available, allowing for fingertip control of major machine and implement functions.

The SSV-series is powered by an EPA Tier 4 certified four-cylinder Kubota diesel engine. With standard two-speed travel and optional high-flow hydraulics, Kubota's vertical lift geometry skid steers will meet the needs of Kubota customers across the construction, rental and agriculture segments. The SSV65 boasts a rated operating capacity of 1,950 lbs and bucket breakout force of 4,839 lbs; the SSV75 has a rated operating capacity of 2,690 lbs and bucket breakout force of 5,884 lbs. Both models feature hand-and-foot controls, and pilot control models are expected to join the line-up next year, said the company.

Kubota engineered its skid steers to be easily serviced and maintained. For example, the battery on the SSV models is positioned



Kubota enters the skid steer market with the introduction of SSV65 and SSV75.

so that it is readily accessible for service and inspection; oil and fuel filters are placed in easy-to-access locations where drips will not leak on electrical components during changing; and bolt-on access handles were added to the cab so they can be easily replaced if damaged. Moreover, the large fuel tank is located in the rear door for quick, clean and easy refuelling and has enough fuel capacity to work all day. ■

ADVERTISERS' INDEX

ALIMAK HEK	33	KOBELCO	GATEFOLD	SAPA BUILDING SYSTEMS	43
AMMANN	9	KOBELCO CRANES	31	SENNEBOGEN	3
BICES 2015	6	LEICA	41, 53	SHANTUI	21
BIG 5 CONSTRUCT INDONESIA 2015	52	LINK-BELT	11	SHANGHAI GATOR MACHINERY	99
BOMAG	83	LINNHOF	37	SKYJACK	29
BUILDING & CONSTRUCTION INDONESIA 2015	65	LIUGONG	19	SUBSTRATE TECHNOLOGY	75
BUILDTECH MALAYSIA 2015	48	MANITOWOC	55	TEREX CRANES	35
CAMBUILD 2015	40	MAPEI	57	TEREX EQUIPMENT	39
CATERPILLAR	IBC	METALGALANTE	97	TIGER MACHINE	69
CONCRETE SHOW SEA 2015	60	MTU	15	TOWER LIGHT	27
CONSTRUCT INDIA 2015	58	MYANBUILD 2015	44	TRIMAX MACHINERY	89
DINGLI	17	ONEBUILD / ASEANMACH 2015	36	TRIO ENGINEERED	85
FOUNDATION ASSOCIATES	2	OSHKOSH-JLG	7	TROPIC	61
FUGRO LOADTEST	45	PARCHEM	49	TRXBUILD	13
GOMACO	OBC	PERI	1	VARISCO	79
HOBAS	73	PILE DYNAMICS	59	VERMEER	23
HYDRONIX	63	PMV LIVE / BIG 5 SHOW 2015	77	WIRTGEN	25
IPS-EUROTEC	95	PRAMAC	51	WORLD OF CONCRETE 2016	4
JCB	47	SANDVIK	IFC	XCMG	5
JPN	81	SANY	INSERT		

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