

SOUTHEAST • ASIA CONSTRUCTION

MAY - JUNE 2022

Cover Story: Hydropower construction

Features:

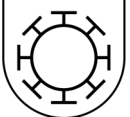
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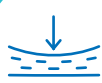
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On the cover:

Interview with SMEC on new construction technologies to build hydropower plants. (page 60)

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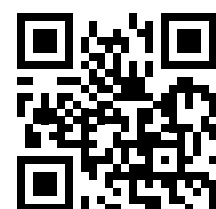
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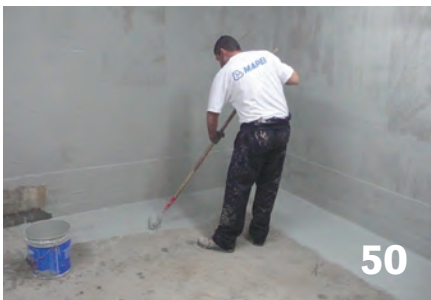
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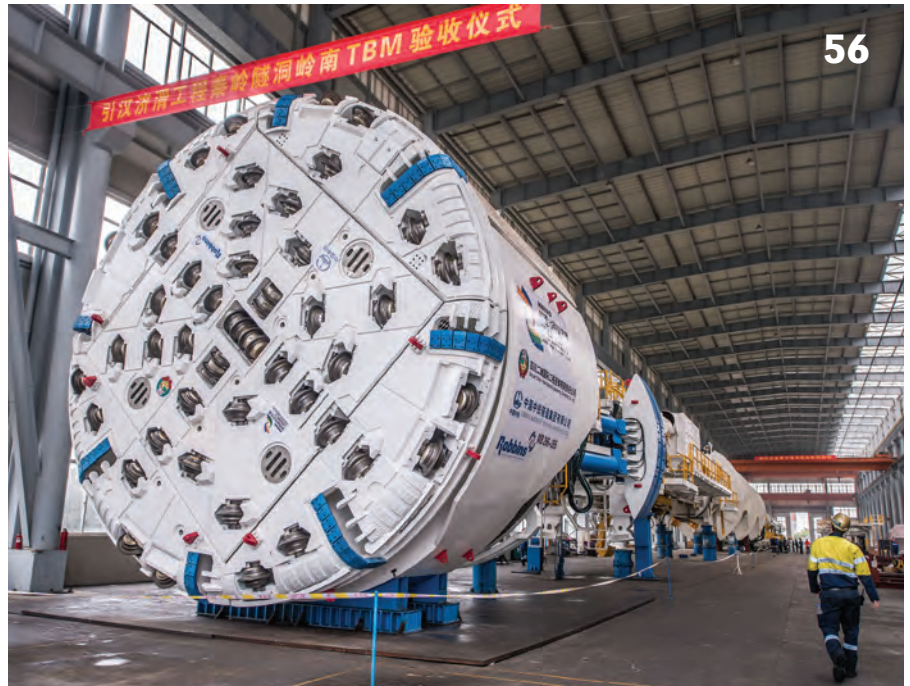
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VSIP Binh Duong III project in Vietnam breaks ground

Sembcorp Development, a wholly-owned subsidiary of Sembcorp Industries, recently broke ground on the third expansion of the Vietnam Singapore Industrial Park in Binh Duong province, Vietnam – referred to as VSIP Binh Duong III.

The 1,000-ha project marks a new design concept that aligns with Sembcorp's focus on growing its portfolio of sustainable urban developments. It is envisioned to be the model of a smart and sustainable industrial park, featuring smart technology across its operations – from energy, water and waste use, to traffic and security management.

The use of real-time tracking devices to remotely monitor, analyse and optimise performance allows for enhanced visibility over operations, so that the park can be more secure, reliable and efficient for customers and workers.

According to Sembcorp, the project's 100-ha first phase is also pre-qualified to meet Singapore Building and Construction Authority's (BCA) Green Mark for industrial districts, making it one of the greenest and most sustainable workplace environments in Vietnam.

Another highlight of VSIP Binh Duong III is its 50-ha onsite solar farm offering grid reliability and sustainability benefits to large industrial tenants. The park's first customer to tap on the planned solar farm is Danish toymaker Lego Group.

At the groundbreaking ceremony, the Vietnam government presented Lego Group with the investment licence for a production facility on a 44-ha site, representing an investment of more than US\$1 billion. Lego Group intends to operate its first carbon-neutral



The 1,000-ha VSIP Binh Duong III is envisioned to be the model of a smart and sustainable industrial park.

factory, which will be powered by renewable energy drawn from the solar farm installed by VSIP as well as solar panels installed onsite.

As part of the VSIP Binh Duong III masterplan, Sembcorp will also explore providing a wider range of sustainable solutions such as micro-grid-integrated solar and battery storage, wastewater recovery and electric vehicle charging infrastructure. Sembcorp Development is a co-master developer of the VSIP projects, leading the Singapore consortium's partnership with Vietnam's Becamex IDC Corporation in a 51:49 joint venture respectively. ■

Skyjack to manufacture products in China for Asia Pacific market

Skyjack has signed an investment agreement with the government of Binhai New Area in Tianjin, China, to manufacture products for the Asia Pacific market. This new facility will manufacture products under the Skyjack brand and play a central role in the continued development of the company's Asia Pacific region.

Initially Skyjack will develop and utilise manufacturing capability and facilities within its parent company Linamar's existing Tianjin plant, focusing on DC scissor lifts targeted at the domestic Chinese market. Skyjack is also increasing its sales and service operations to promote products to China's growing rental industry. To lead these activities, Skyjack has appointed Chan Tran as vice president of operations for Asia Pacific. As volume builds, Skyjack will invest in a dedicated purpose-built facility in the region to enable solid growth in Asia Pacific.

Linda Hasenfratz, CEO of Linamar, said, "The Asian market has started to grow in a meaningful way in recent years, making the establishment of in-region manufacturing not just viable but highly opportunistic. We believe this will create excellent growth potential for Skyjack in the region, both in terms of creating a close connection to the needs of our customers in the region and in terms of building our distribution network."

Ken McDougall, president of Skyjack, added, "I particularly want to pay tribute to the local government of the Binhai New Area for their help and assistance in securing this plan. We look forward to our continued partnership as we expand our Asian



The signing ceremony between Skyjack and the government of Binhai New Area.

footprint. Utilising a more global footprint also releases existing production capacities in our existing plants across the globe. That in turn will allow us to better react to growing customer demand in those markets."

According to Mr Chan, the Skyjack Tianjin facility is forecast to go into production in the third quarter of 2023 and manufacture DC scissor lifts and telescopic/articulating booms. "Linamar entered the China market in 2005 and with five facilities and one research and development centre, I believe the relationship and physical footprint can be significantly leveraged should the need arise," he said. ■

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Northeast Asia to account for 39% of global construction output, finds GlobalData

The construction output in Northeast Asia is forecast to record a 4.2% growth and reach US\$4.71 trillion in 2022 compared to US\$4.52 trillion in 2021. It will account for 39% of the projected US\$12.19 trillion of global output this year. However, the growth of construction output in Northeast Asia in 2022 has been revised downwards by 0.8% this quarter, due to the slowing construction activities across the region, according to data and analytics company GlobalData.

GlobalData's report, 'Construction Market Size, Trends and Growth Forecasts by Key Regions and Countries, 2022-2026', reveals that only China, Taiwan and Japan recorded real construction output growth in 2021. The remaining construction industries of the region recorded a second successive contraction last year, with the pandemic-induced scarring of potential construction output deepening as a result.

Out of the construction industries which contracted last year, only South Korea is expected to recover to its pre-pandemic output this year. A cause for further concern is the slowing of activity in the Chinese construction industry, the largest in Northeast Asia and globally, with growth slowing to just 2.1% in 2021 and headwinds mounting in the first quarter of this year.

"The growth of construction output in Northeast Asia slowed

in the final quarter of last year, primarily due to another weak period of construction activity in the Chinese residential sector. Regional growth in 2021 dropped to just 1.9%, with the growth of the Chinese construction sector standing at 2.1%," explained Willis Rooney, economist at GlobalData.

"Government restrictions on debt growth at Chinese real estate developers are expected to soften new residential development in the short term, and this is expected to be further exacerbated by falling home prices and sales volumes."

Elevated debt levels at Chinese local governments may further temper the construction growth in China this year, with the capacity of local governments to invest in public infrastructure development constrained.

Mr Rooney concluded, "A tightening of restrictions in Hong Kong and the lockdowns of Shenzhen and Shanghai in [mainland] China following severe outbreaks of Omicron are likely to have weighed on construction activity in the first quarter of this year.

"However, with an ambitious economic growth target of 5.5% set at China's National People's Congress in March 2022, further fiscal stimulus and an easing of monetary policy is expected this year, which will underpin regional construction growth in 2022." ■

Haulotte appoints RentEase as Bangladesh distributor

RentEase has been appointed as an authorised distributor for Haulotte aerial work platforms (AWPs) in Bangladesh. The rental company will manage customer sales and support services throughout the country.

Since its creation in 2017, RentEase has established itself as a leading AWP rental company in India and a long-time partner of Haulotte India. RentEase has more than 200 Haulotte machines in its fleet, which are sent to various jobsites across India.

Now, the rental company is spreading its wings in neighbouring

countries and has recently set up a subsidiary in Bangladesh, named RentEase BD Limited. In early April, Haulotte and RentEase signed a distribution agreement for Bangladesh, opening a new chapter in their relationship.

"The relationship between Haulotte and RentEase has been built on mutual trust and respect over the years. We are confident that this strong partnership will help our brand to grow successfully in Bangladesh," said Souma Ray, general manager of Haulotte India. ■



FAR LEFT: RentEase has more than 200 Haulotte machines in its fleet.

LEFT: The distribution agreement was signed by Meghraj Singh, MD of RentEase (on the right) and Souma Ray, GM of Haulotte India.



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New mixed-use township to be built in Vietnam

CMIA Capital Partners has signed a Memorandum of Understanding (MOU) with Ho Chi Minh City for the development of a 1,018-ha mixed-use township in the Trung An Commune of Cu Chi District, Ho Chi Minh City, Vietnam.

The Ho Chi Minh City Agri Food-Tech Eco Township will be a new integrated regional urban centre. It will have an industry focus on food science and technology, including food processing and manufacturing, product development, quality assurance and quality control, research, and regulation.

The value of the project is estimated at US\$1.1 billion. CMIA Capital Partners would lead the investment in, and Surbana Jurong would be the development manager of, the project.

CMIA Capital Partners is a private equity firm headquartered in Singapore, with a 20-year track record of investing in Asia. Surbana Jurong is a consultancy company focusing on infrastructure and urban development.

The new township, which will be home to 100,000 residents, will feature a 200-ha food science and technology industrial park and a myriad of recreational spaces and amenities. Residents will be able to live, work and play, all within the township.

In addition, the development is expected to create stable jobs for more than 20,000 employees. It will uplift the region's GDP per capita towards the US\$8,500 by 2025 target set by the Ho Chi Minh City People's Committee.

Nina Yang, CEO of Surbana Jurong – SJ CityGlobal, the development management arm of Surbana Jurong, said, "Surbana



The MOU for the new township project was signed at the Conference on Investment Promotion in Cu Chi District and Hoc Mon District 2022, Vietnam.

Jurong is able to harness our unique experience and expertise in master development to plan, design and implement large-scale urbanisation projects. Some of these projects include the New Clark City in the Philippines, Microsoft Zizhu Campus in Shanghai, Heart of Bay Project in Shenzhen and the G4 City, adjoining Almaty City of Kazakhstan. We're excited about partnering with CMIA Capital Partners to build a township and industrial park that enhance liveability and economic growth in Ho Chi Minh City." ■

Singapore's Builders Hub takes delivery of Zoomlion ZTC600R562 crane

Antar Cranes Services Pte Ltd recently delivered a new Zoomlion ZTC600R562 to Singapore company Builders Hub Pte Ltd. This 60-t truck crane is designed with a five section, U-shaped 11.6 m – 45 m main boom as well as a 14.6-m fly jib that can be offset at three different angles (5°, 25° and 45°). The jib's maximum lifting height is 61.5 m.

The ZTC600R562 has been approved for use on Singapore road, equipped with a Weichai Euro 6 engine to meet the Land Transport Authority's (LTA) requirement. The engine delivers 247 kW of power.

"One of the most notable features that impressed Lawrence Lee, project director of Builders Hub Pte Ltd, is the crane's maximum boom length of 45 m, which is one of the longest in its class," explained Antar Cranes.

"With an outrigger span of 7.10 m wide, this model is also suitable for Singapore jobsites where parking space for cranes is always an issue due to restricted working areas," added Mr Lee.

The Zoomlion ZTC600R562 is capable of a maximum drive speed of 60 km/hr, gradeability of 47% and minimum ground clearance of 0.285 m. The crane's tail slewing radius is 3.93 m.

The ZTC600R562 features a total length of 13.95 m, width of 2.8 m and height of 3.71 m. The crane provides a maximum counterweight of 11 t with a hydraulic ballast system, high slewing speed of 22 rpm and high hoisting speed of 125 m/min.

For operator comfort, the spacious cab can be tilted by up to 20° and is fitted with both air conditioning and heating systems plus USB ports.



Antar Cranes hands over the new Zoomlion ZTC600R562 to Builders Hub. This 60-t crane has a 45-m maximum boom length, one of the longest in its class.

"By delivering this crane, we hope to assist Builders Hub to increase efficiency in all their projects, as well as to secure more projects in the future," said Antar Cranes.

Antar Cranes is a subsidiary of JP Nelson Group, a one-stop solution provider of equipment and machines for the construction, marine and offshore, oil & gas and other related industries. Headquartered in Singapore, JP Nelson also has branch offices in several countries across Asia. ■

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Aurecon to work on floating solar projects in Singapore

Aurecon has been appointed by PUB, Singapore's national water agency, to carry out preliminary engineering design and feasibility studies for the proposed 100-MWp and 44-MWp large-scale floating solar photovoltaic (PV) systems at Lower Seletar Reservoir and Pandan Reservoir respectively.

The contract entails conducting a preliminary engineering feasibility study and a business model analysis to recommend suitable business models for PUB's adoption. PUB will also be conducting environmental studies for deployment at Lower Seletar Reservoir.

Should the studies show that it is feasible to proceed, the contract also calls for preparing prequalification documentation and request for proposal (RFP) materials, providing tender support, reviewing relevant engineering calculations, drawings and submissions as well as providing professional advice and support throughout the project construction.

"We are privileged to have this opportunity to collaborate with PUB and to support them in their sustainability journey. Our team looks forward to providing innovative and high-value technical and advisory solutions to shape what is set to be an iconic engineering feat in Singapore's water story," said Yang San (YS) Go, Aurecon's managing director for Singapore.

"This contract attests to Aurecon's proven capabilities and deep expertise in the renewable energy field, and reaffirms our commitment to support our clients in building a greener future," added Stephane Asselin, Aurecon's chief executive for Asia. "We look forward to contributing to Singapore's efforts in achieving its solar energy deployment target of 2 Gwp by 2030, about 3% of Singapore's 2030 projected electricity demand."

As a market leader in the renewable energy field, Aurecon



Both images © PUB



ABOVE: The 1.5-MWp Lower Seletar Reservoir floating solar PV system.

LEFT: An aerial view of Pandan Reservoir.

has been involved in delivering major solar projects globally. Among them include the Dau Tieng 1 and 2 PV Solar Power Plant in Vietnam – the largest solar power plant in Southeast Asia – to help meet increasing electricity demands of two nearby cities. ■

Swire Properties to develop mixed-used project in Xi'an

Hong Kong-based developer Swire Properties has announced that it will form a joint venture with Xi'an Cheng Huan Cultural Investment and Development Co Ltd, a state-owned subsidiary of Xi'an Qujiang New District Management Committee, to develop the Taikoo Li Xi'an project in mainland China.

This new retail-led mixed-use development, located at the Small Wild Goose Pagoda historical and cultural zone in Beilin district, Xi'an, Shaanxi province, will comprise retail and cultural facilities as well as a luxury hotel, serviced residences and business apartments. It will have an estimated gross floor area (GFA) of 269,218 sq m (above and below ground), and is planned to be completed by the end of 2025.

The total investment for the project is expected to be around RMB 10 billion. It sits on a site in the heart of downtown Xi'an, with a total site area of approximately 119,906 sq m, and will feature a "low-rise, open-plan architectural design that exemplifies the brand DNA of Taikoo Li," said Swire Properties.

Since 2017, the Xi'an Municipal government has been driving a comprehensive redevelopment of the Small Wild Goose Pagoda historical and cultural zone, as part of a major reconstruction project to improve the urban environment, protection of historical relics and the broader economic development of the city, with the



Both images © Swire Properties



ABOVE: An artist's impression of Taikoo Li Xi'an mixed use development.

LEFT: The project will cover a total site area of approximately 119,906 sq m.

aim of building a 'Quality Xi'an'. Taikoo Li Xi'an aims to play a key role in the urban redevelopment of this area. ■

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Proposals invited for Singapore's major tourism project

The Singapore Tourism Board (STB) has launched a request for proposals (RFP) to develop and operate an integrated tourism development at Jurong Lake District.

In 2019, STB announced plans for the development of a 6.8-ha site next to Jurong Lake to become a key lifestyle and tourism hub in Singapore's largest business district outside the CBD. With the launch of this RFP, the project is now estimated to be completed from 2028.

STB expects the development to comprise high-quality accommodation as well as a mix of attractions, retail, F&B and entertainment offerings – all with an emphasis on technology, 'edutainment' and sustainability. It should complement existing nearby attractions such as the Jurong Lake Gardens and the new Science Centre, and will be well-integrated with the entire Jurong Lake District through a seamless network of pedestrian-friendly streets and well-designed public spaces.

"While we refresh and rejuvenate existing tourism offerings, we must also create opportunities for investments in new tourism products. The launch of this RFP signals our intent to press ahead with our medium-term plans, so that we can build better for the future," said Keith Tan, chief executive of Singapore Tourism Board.

According to STB, under the modified concept and price revenue tender approach, investors are required to submit their concept proposals and tender prices separately. The tender will be open for seven months, and the closing date for the submission of proposals is 18 October 2022.

Companies that indicated their interest during an expression of interest (EOI) exercise for the site in 2019 will also be invited to participate in the tender, said STB. Upon the tender award, the entire site will be leased to the successful developer for 60 years.

Jurong Lake District

Spanning 410 ha, Singapore's Jurong Lake District (JLD) has four main precincts: Jurong Gateway, the existing commercial node around Jurong East MRT station; Lakeside East, a new mixed-use precinct around the future Cross-Island Line station; Lakeside West, a complementary leisure and recreational precinct surrounding Jurong Lake Gardens; and the International Business Park, which will be rejuvenated with more mixed uses in the coming years.



An artist's impression of the new integrated tourism development at Jurong Lake District.



An artist's impression of Jurong Lake District, which will span 410 ha with four main precincts.

Both images © Singapore Tourism Board

The district offers quality office spaces, attractive homes, and ancillary retail and F&B amenities to serve businesses, workers, visitors and the local community, revealed STB. Family-friendly attractions, and recreational, hotel and entertainment uses will be added to complement the Jurong Lake Gardens. When fully developed, JLD is expected to provide more than 100,000 new jobs and 20,000 new homes.

Plans are also in place to develop JLD as a major transport hub that connects existing and future rail lines, together with a comprehensive intra- and inter-district bus network that will link the district to surrounding estates. By the early 2030s, four major rail lines (North-South, East-West Line, and the upcoming Jurong Region Line and Cross-Island Line) will serve Jurong Lake District, improving its connectivity to the rest of the island and bringing jobs closer to homes.

STB further explained that to ensure seamless first and last mile connectivity,

an extensive network of park connectors, walking and cycling paths will be built to make travelling in and out of the district convenient and enjoyable, reducing the reliance on cars. With over 120 ha of greenfield land available for development and more than 200 ha of land dedicated to greenery and waterbody in JLD, the district is also envisaged to be a world-class sustainability district.

All new developments in JLD will adopt high sustainability targets and initiatives that would benefit the health and wellbeing of residents, visitors and workers, added STB. Land preparation and infrastructure works in the district will begin in the near term to support future developments and to progressively transform the area into a major business district. ■

Deadline for submission of proposals is 18 October 2022. For more information on the RFP process, visit <http://go.gov.sg/jldtourismdev> or contact JLD@stb.gov.sg

Kobelco expands production capacity at Ogaki plant

Kobelco Construction Machinery (KCM) is expanding the production capacity at its mini excavator plant in Ogaki, Gifu Prefecture, Japan, in order to adapt to the changing business environment swiftly and flexibly.

Although the global demand for hydraulic excavators declined due to the Covid-19 pandemic, the company said it has been mostly steady in the advanced countries. It also varies by region in the developing countries except for China, but it is expected to continue to see a stable growth.

KCM will put effort into steadily increasing the sales volume of its hydraulic excavators through measures such as sales network enhancement in each region, as well as improvement and addition of models and specifications tailored to each market's needs.

Given these circumstances, KCM decided earlier in February to sell and transfer the North American plant of its US subsidiary, Kobelco Construction Machinery USA Inc, to Takeuchi Mfg Co Ltd for about 3.95 billion yen, and to improve its competitive strength by relocating the entire production of hydraulic excavators – which used to be performed at its North American plant – to Itsukaichi plant in Hiroshima, Japan.

To deal with the increased production load at the Itsukaichi plant (production capacity of 10,500 units/year) due to the relocation, and in order to build a flexible product supply system that is highly adaptable to changes in circumstances, KCM will increase its Ogaki plant's production capacity in such a way that these two plants complement each other.


At the Ogaki plant, KCM will establish a new hydraulic excavator assembly line with a capacity of 3,000 units/year. At the same time, the company will increase the plant's fabrication capacity in order to increase the production capacity from 8,500 to 11,500 units/year.

The new assembly line will handle the 7-t machines, which are also manufactured at the Itsukaichi plant, as well as the 5-t machines that are also manufactured at the Ogaki plant's existing line, so as to establish a mutually complementary production system with the Itsukaichi plant, enabling flexible production according to the changes in the number of machines.

In the Kobelco Group Medium-Term Management Plan (fiscal years 2021-2023) announced last year, KCM set "a departure from dependency on the Chinese market" as one of the objectives towards ensuring a stable foundation for revenue generation, and this capacity expansion is part of the effort.


KCM is also considering other measures to continually strengthen its global strategy both in terms of manufacturing and sales. Updates will be announced when they become available.

Under the business philosophy of 'user hands-on approach', KCM will continue to strive towards: further development of technologies, provision of products with better value, and an improvement of the quality and stability of its business operations in which its manufacture and sales sectors coordinate seamlessly. ■


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World's largest green hydrogen hub selects Black & Veatch as EPC provider

Black & Veatch has been engaged to provide engineering, procurement and construction (EPC) services for the Advanced Clean Energy Storage project in Delta, Utah, the US. This new development is set to be the world's largest industrial green hydrogen production and storage facility, jointly developed by Mitsubishi Power Americas and Magnum Development.

Announced in 2019, the new hydrogen hub will initially be designed to convert more than 220 MW of renewable energy daily to 100 t of green hydrogen that will be stored in two sprawling salt caverns. Storing excess renewable energy as hydrogen yields a long-term and long-duration energy storage solution, complementing battery energy storage solutions while allowing renewable energy to be deployed in times of highest demand. With hydrogen storage solutions, that may even include seasonal shifts of excess renewable energy.



Mario Azar, Black & Veatch's incoming chair and CEO (left), said that "being part of this innovative team advancing clean hydrogen as a fuel and feedstock is helping pave the way for a lower-carbon energy future that takes the energy transition farther, faster."

"Black & Veatch is committed to keeping our clients and partners ahead of the curve when it comes to managing the energy transition and meeting their decarbonisation goals," he added. "The Advanced Clean Energy Storage hydrogen hub is a transformative event in the development of green hydrogen, long-duration energy storage and decarbonisation at scale."

Drawing on its extensive expertise in building complex energy infrastructure projects, Black & Veatch for 80 years has played key roles in engineering and building projects involving hydrogen, now

widely considered to be the next frontier for carbon-free energy. These projects have varied in scope from hydrogen production via gasification to reforming and electrolysis, with end uses ranging from creation of ammonia to power generation to transportation and mobility solutions.

Mitsubishi Power, an industry leader in technology offerings, will provide the hydrogen equipment integration, including the 220 MW of electrolyzers, gas separators, rectifiers, medium-voltage transformers and distributed control system.

"Together with our innovative partners, Mitsubishi Power and Magnum Development are creating the world's first and largest industrial green hydrogen hub," said Michael Ducker, president of advanced clean energy storage and chief operating officer for the joint venture. "We are committed to advancing the development of green hydrogen, long-duration energy storage, and decarbonisation at scale and are thrilled to be working with Black & Veatch on building the critical infrastructure needed to achieve our vision towards a 100% carbon-free future."

"We're honoured to design and build the first large-scale green hydrogen production and storage facility," added Jason Rowell, Black & Veatch's leader of new energy solutions. "Mitsubishi Power, Magnum Development, the Intermountain Power Agency, the US Department of Energy and project financing partners expect the Advanced Clean Energy Storage project to meet or exceed schedule, budget, performance and reliability expectations."

With construction beginning in the first half of 2022, the new hydrogen storage hub will be adjacent to the Intermountain Power Agency's (IPA) IPP Renewed Project and support this 840-MW, hydrogen-capable gas turbine combined cycle power plant currently under construction. The IPP Renewed Project will initially run on a blend of 30% green hydrogen and 70% natural gas starting in 2025, expanding incrementally to using 100% hydrogen by 2045. ■

New CEO for Robit Group



Arto Halonen (left) has been appointed as CEO of Robit Group, effective 15 March 2022. He succeeds Tommi Lehtonen, who earlier stepped down to take up new challenges.

Mr Halonen most recently served as Robit's chief financial officer (CFO) and chief operating officer (COO), roles he held since March 2020. Prior to that, he was with Metso Minerals for about five years.

On Mr Lehtonen's departure, Harri Sjöholm, chairman of the board of directors at Robit, said, "I would like to thank Tommi both on my own and on behalf of the board of directors for his input for Robit and the company's growth exceeding net sales of €100 million. We wish Tommi all the best in his future duties."

In the meantime, Ville Peltonen has been named Robit's interim CFO, replacing Mr Halonen. Mr Peltonen is also a member of the company's management team.

Mr Peltonen started at Robit as group controller in 2020. He has been responsible for the company's global accounting and group reporting.

"It is my pleasure to have Ville as a close working partner. Ville is a precise and competent financial management expert," said Mr Halonen.

Based in Finland, Robit supplies drilling consumables for applications in underground and surface mining, construction, geotechnical and well drilling. The company's offering is divided into three product categories: top hammer, down the hole, and geotechnical.

Robit has sales and service points in eight countries, as well as an active sales network in more than 100 countries. The company's manufacturing facilities are located in Finland, South Korea, Australia and the UK. ■

Manitou opens new Candé factory for AWP

Manitou Group has officially opened its new factory in Candé, France, dedicated to the production of rough-terrain aerial work platforms (AWPs). Built in collaboration with the Legendre Group, the site covers an area of 80,000 sq m, featuring 18,000 sq m of industrial buildings and two automated production lines, a test centre and logistics facilities.

Located in the Petit Tesseau area of Candé (Maine-et-Loire), the new 'smart' factory currently employs 80 people and is an example of Manitou's digital transformation, with remote management of energy consumption and improved workplace quality for employees. The facility will also showcase the group's energy transition with the assembly of new electric models.

The new plant becomes Manitou's second platform factory, and the group's sixth factory based in the Grand-Ouest, consolidating the group's presence in this region. The existing factory in the Fosses Rouges industrial estate, also in Candé, will continue to produce industrial AWP while the new site will be entirely focused on the production of rough-terrain AWP.

This €26 million investment is part of a global plan to develop and modernise the industrial facilities on all of Manitou's production sites. It will enable the group to respond to the structural growth of this sector in Europe as well as internationally, particularly in the US.

Sylvain Jaguelin, vice president for AWP production unit at Manitou, said, "The aerial work platform market is a key opportunity for growth for the group. This modern factory gives us a very important and scalable production capacity that will accompany us in the long term. To support our development, our recruitment needs will be adjusted as the activity evolves." ■



ABOVE AND LEFT: Manitou's new factory in Candé, France, is dedicated to the production of rough-terrain aerial work platforms (AWPs).

Melvin Porter named VP of SHI



President and CEO of Link-Belt Cranes, Melvin Porter (left), has been named vice president of Link-Belt's parent company Sumitomo Heavy Industries (SHI) of Tokyo, Japan, with effect from 1 April 2022. He is currently the only officer from a US subsidiary to carry this distinction.

Founded in 1888, SHI has a long, reputable history as a heavy industries company. In 1989, SHI took sole proprietorship of Lexington, Kentucky-based Link-Belt Cranes and to date, has five main subsidiaries in the US that represent plastics, construction equipment, cryogenics and power transmission components.

"Being named to the executive team at SHI says more about our company and our product than it does about me," said Mr Porter. "I'm extremely honoured to hold this position and look forward to the continued development of not just our mobile crane strategy, but the complete umbrella of offerings provided by Sumitomo Heavy Industries."

Mr Porter is a 23-year Link-Belt Cranes veteran, joining the company in 1999 as manager for financial planning and taxes. He served as CFO and vice president of finance from 2004 to 2017, before being promoted to president and CEO in May 2017. ■



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Liebherr Echingen switches to climate-neutral HVO fuel

Liebherr-Werk Echingen GmbH in Germany – a Liebherr Group facility that manufactures mobile and crawler cranes for the global market – has been powering its machines with HVO (hydrogenated vegetable oil) fuel since September last year. All of the company's engines up to the 560 kW power class are already approved for operation with HVO.

Modern HVO is a synthetic fuel manufactured mainly from vegetable and animal oil and fat waste from the food industry, explained Liebherr. This is converted into hydrocarbons by adding hydrogen. The major benefit of HVO is that using it as a fuel instead of fossil diesel is “essentially CO₂-neutral.”

In the future, this fuel will be adopted for all Liebherr mobile and crawler cranes. One of the company's main focuses is to ensure, in partnership with its HVO suppliers and manufacturers, that no foodstuffs, particularly palm oil, are used in the production of its HVO.

According to Liebherr, the conversion from fossil diesel to HVO fuel applies to the crane acceptance procedure and test drives as well as to the initial fuelling of cranes before delivery. The company has been working for months to prepare its entire mobile and crawler crane range for use with HVO.

For this purpose, the diesel engines were first checked, certified and approved by the manufacturers. The cranes have also undergone extensive testing and trials with pure HVO by customers and in the company's own test department.

“If we consider the entire life-cycle of a crane from cradle to grave, including its production, CO₂ emissions from a five-axle crane using HVO fall by 74% compared to a crane powered by diesel. This was shown in a study and calculation carried out by business consultancy Frontier Economics,” revealed Dr Ulrich Hamme, managing director for design and development at Liebherr-Werk Echingen.

The main reduction in CO₂ emissions is during the operating phase, said Liebherr. To achieve the maximum possible CO₂ reductions, the crane must be powered permanently using pure HVO.

Alternative fuel for existing fleets

As HVO can be added to fossil diesel fuel in any ratio and used with conventional internal combustion engines, existing machines around the world can in fact be powered effectively with HVO right now, noted Liebherr. The CO₂ saving is reduced accordingly with a lower HVO content in the fuel mixture.

One of the challenges, in part, is the practicability and availability of alternative fuels. “To make HVO or other synthetic fuels attractive for crane operators, they must be available nationwide and in plentiful quantities at filling stations, as is the case today with diesel. That will not be possible from one day to the next. But Liebherr is making a start, and we are hopeful that it will have a signal effect,” said Dr Hamme.

Ulrich Heusel, production director at Liebherr-Werk Echingen, added, “Germany has included synthetic, paraffin-based fuels, which do not yet comply with EN 15940 (XTL), in its regulations relating to the quality of fuels. This is why HVO is not yet available at the filling station network. HVO is available at public filling stations for road vehicles in Finland, Sweden, Denmark, Norway, the Netherlands and Belgium as an additive for fossil diesel fuel or in pure form.”



The filling station at the Liebherr plant in Echingen has been converted to HVO fuel.

Furthermore, Liebherr has analysed all of its plant transport vehicles at the Echingen site. The results show that the fleet can also be powered by HVO with a few exceptions, so the company has therefore switched these vehicles to the climate-neutral fuel.

“As a result, we will be able to save 2.5 mil l of fossil diesel per year by switching to HVO fuel,” said Dr Heusel. “This will mean an annual reduction of around 6,500 t of CO₂.” ■

Laurent Guillaux joins Dingli as Europe general manager



Chinese aerial work platform (AWP) manufacturer Dingli has appointed Laurent Guillaux (left) as general manager for Europe.

Mr Guillaux brings over 20 years of experience in the European AWP market, acquired mostly with JLG and more recently with the French truck-mount manufacturer Klubb Group.

In his new role, Mr Guillaux will be in charge of further developing sales, distribution, service and parts support for Dingli's range of AWP's in continental Europe.

“Laurent's background and experience will be great assets to strengthen Dingli's presence in Europe,” said Susan Huang, overseas sales director at Dingli. “Our extensive range of AWP's has already attracted many customers and we will continue to demonstrate every our long-term commitment to the European region.”

“Dingli's global growth has been phenomenal over the last decade both internationally and in China where they are the undisputed leader,” added Mr Guillaux. “The company has all the fundamentals right in terms of range, manufacturing excellence and international footprint to be successful in Europe. I am proud to join the Dingli team and look forward to promoting such a strong and successful brand.” ■

New MyCrane franchisees for UK, Ireland and Qatar

MyCrane, the rapidly-growing digital crane rental platform, has appointed franchise holders for the UK, Ireland and Qatar. These new franchisees will be responsible for providing the full range of MyCrane services – which include the world's first online crane rental platform, a Marketplace and support for engineering and site surveys – in their respective markets. They are already in the process of registering local crane rental companies on the platform, and will shortly be marketing the service to customers.

“Entering the European market is an exciting moment for MyCrane, which will soon be operational in three more important countries,” said Andrei Geikalo, founder and CEO of MyCrane.

“With its burgeoning renewables sector, the UK will see a huge requirement for cranes of all sizes up to the 750 t class – not only for installation, but also for component movements, offloads and storage. Besides renewables, there is a growing nuclear sector and infrastructure projects such as HS2 and the Liverpool dock expansion.

“Similarly, we are delighted to welcome our new partner for Qatar, which remains one of the fastest growing global construction markets, owing to the vast number of infrastructure, housing, rail and many other projects currently underway.”

The UK and Ireland business is headed by managing director Mike Bryant, a former sales manager at ALE, which was acquired by Mammoet in 2020. Mr Bryant subsequently worked for global freight forwarders Deugro and DB Schenker in project management and business development roles. His franchise partners are Peter Edwards and Luke King, who have worked for the last 15 years as publishers in the heavy lift and breakbulk sector.



MyCrane founder and CEO Andrei Geikalo (left) signs a franchise agreement for Qatar with Kamal Kassab, managing director and founder of Ant Dynamics.



Mr Geikalo (2nd from left) is pictured with his new UK and Ireland franchise holders Luke King (left), Mike Bryant (2nd from right) and Peter Edwards (right).

In Qatar, MyCrane will be owned and operated by Ant Dynamics, a Doha-based provider of heavy lift and transportation engineering services. Managing director Kamal Kassab has over 18 years' experience in the heavy lift sector, working on major projects for the construction of oil and gas plants, civil works and football stadiums.

Mr Kassab said, “As a company committed to raising the standards of lifting operations in the Middle East, Ant Dynamics is pleased to operate MyCrane in Qatar. We are confident that users of the MyCrane online platform will appreciate the benefits of selecting the right crane for the right job at a fair rate.”

Ant Dynamics was founded in 2020 to provide specialised and professional engineering solutions in the heavy lift sector. The company uses the latest tools and software to provide its customers with accurate calculations related to lifting and rigging as well as high-quality lifting plans.

By operating MyCrane in Qatar, Ant Dynamics aims to further support its clients by ensuring they receive fair and comprehensive crane rental deals.

MyCrane operates on a franchise basis and enquiries are welcomed from entrepreneurs who are interested in operating the service in their home markets. ■



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31 Aug to 3 Sept 2022

World Trade Centre Metro Manila
Metro Manila, The Philippines
Website: www.worldbex.com

OS+H Asia 2022

14 to 16 Sept 2022

Suntec Singapore
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Website: www.osha-singapore.com

ConsBuild Asia 2022

2 to 4 Nov 2022

BITEC
Bangkok, Thailand
Website: www.consbuild-asia.com

Cambuild 2022

16 to 18 Nov 2022

Diamond Island Exhibition & Convention
Centre
Phnom Penh, Cambodia
Website: www.cambuildexpo.com

bauma China 2022

22 to 25 Nov 2022

Shanghai New International Expo Centre
Shanghai, China
Website: www.bauma-china.com

Infrastructure Connect!

23 to 25 Nov 2022

Jakarta International Expo
Jakarta, Indonesia
Website: www.infrastructureconnect.id

Natural Disasters Expo Asia

7 to 8 Dec 2022

Singapore Expo
Singapore
Website: www.naturaldisastersshowasia.com

bauma Conexpo India

31 Jan to 3 Feb 2023

India Expo Centre (IEC)
Greater Noida, Uttar Pradesh, India
Website: www.bcindia.com

Trenchless Asia 2023

17 to 18 May 2023

Kuala Lumpur Convention Centre
Kuala Lumpur, Malaysia
Website: www.trenchlessasia.com

// Events outside Asia

Hillhead 2022

21 to 23 Jun 2022

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Website: www.hillhead.com

bauma 2022

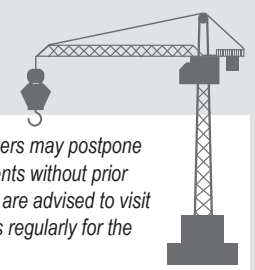
24 to 30 Oct 2022

Munich Trade Fair Centre
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17 to 19 Jan 2023

Las Vegas Convention Centre
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Website: www.worldofconcrete.com



Note: The organisers may postpone or cancel their events without prior notice, so readers are advised to visit the event websites regularly for the latest updates.

Dinolift's Karin Nars named new president of IPAF

Karin Nars of Dinolift has been named president of the International Powered Access Federation (IPAF). She succeeds Norty Turner of United Rentals, who steps down following his extended term as president that began in October 2019. Ms Nars is also the first female president at IPAF.

Mr Turner takes over from Nick Selley of AFI-Uplift in the 'ex officio' role of immediate past president on the IPAF Board, with Mr Selley stepping down from the board. In addition, JLG's Karel Huijser has been appointed as IPAF deputy president and Kai Schliephake of Partnerlift as IPAF vice president.

In her inaugural address as IPAF president, Ms Nars said, "After a trying two-year period, the world is currently facing a new challenge – the repercussions of which no-one can predict. Therefore, we should take pride in being a global organisation committed to promoting safety and cooperation.

"Our purpose from the very beginning has been to make sure that everyone who works at height, at the end of each working day, returns home safely to their family.



Karin Nars is the first female president at IPAF.

Our purpose also encourages us to work together and make a difference that goes beyond our industry. IPAF will continue to move towards greater digitalisation – especially new ways of sharing knowledge and information."

She added, "The pandemic has shown us the importance of having a strong digital presence and creating digital processes – from training and eLearning to how we interact with our partners. This work includes the further development of our ePAL app, which is a valuable tool for interaction with machine operators with important safety messaging.

"The accident reporting system is now

receiving input from more countries and in more languages; with a direct link via the ePAL app on an operator's mobile device, we can put even greater focus on the reporting of near misses and the prevention of serious accidents. This, I believe, is an excellent example of how data can be harnessed to increase awareness of work practices that compromise safety. Safety is a joint effort based on respect and openness – everyone stepping up to improve it should be heard."

On her appointment as the Federation's first female president, she said, "I take special pride in being the first woman elected president of IPAF. Lasse Godenhielm, my father, who was the president of IPAF at the turn of the millennium, always encouraged me to pursue my dreams and work hard. I never doubted I could reach my dreams because I was a woman. That's why I would like every girl and young woman who wants to work in our industry to be offered that chance and to receive the support to do so. I believe IPAF is in a good position to promote equal opportunities for all – and I aim to use my voice as president to promote such a programme." ■

Riwal becomes latest IPAF sustaining member

Riwal has become the latest sustaining member of IPAF, making it the first rental and training company on a list that includes Alimak, AON (formerly Henderson Insurance Brokers), APEX and Haulotte.

With headquarters in Dordrecht, Netherlands, Riwal was founded in 1968 and has grown into a major rental and training company specialising in working safely and efficiently at height in 16 territories, including the Middle East and India.

Romina Vanzi, IPAF's head of regional development, said, "Riwal has long been an active member of IPAF, with representation on various committees and councils, as well as CEO Pedro Torres being a member of the IPAF Board, so to have them as a sustaining member is the perfect way of consolidating our efforts to promote our shared goal of enhancing safety in powered access worldwide.

"It will be particularly beneficial for IPAF



Pedro Torres, CEO of Riwal (2nd from right), accepts the 2022 IAPA Sustainability Award.

to have a member engaged in equipment rental and training in both established and emerging markets around the globe join the growing list of IPAF sustaining members."

Sustaining member is a category of IPAF membership designed to recognise and sustain IPAF's strategic initiatives and overall contribution to improving safety and productivity in powered access worldwide.

Peter Douglas, CEO & MD of IPAF, said, "The past two years have demonstrated just how important it is to work together for the collective benefit of safety in our industry, and we've worked especially hard to emphasise the value that IPAF offers members – as a point of reference for safety and technical guidance, developing and implementing standards, advocating key industry issues to government bodies, or offering vital business intelligence and support to our members, particularly during uncertain times.

"IPAF exists to support its members, and can't progress our strategic objectives without them, including improving global incident reporting and developing our training programme and safety & technical guidance in response to what accident data is telling us. We are delighted that Riwal has decided to join Haulotte, APEX, AON and Alimak in recognising this by committing to be a sustaining member of IPAF." ■

IPAF launches ‘Don’t Fall For It!’ safety campaign

IPAF has launched a campaign emphasising the importance of working safely to avoid falls from the platform when using mobile elevating work platforms (MEWPs) to enable temporary work at height.

The IPAF Don’t Fall For It! safety campaign outlines the possible underlying causes of falls from the platform when using MEWPs, which almost always lead to serious injury or death. It offers operators and managers key advice to mitigate the most common risks and avoid accidents of this type, as identified in IPAF’s ongoing incident reporting and analysis via the www.ipafaccidentreporting.org portal.

Peter Douglas, CEO & MD of IPAF, said, “MEWPs are designed to safely conduct temporary work at height in just about every environment, but every year the most common type of accident we see reported are falls from the platform, which as you can imagine nearly always lead to serious injury or death if they occur while using machines at height.

“We are determined that our new Don’t Fall For It! targeted global safety campaign will help to instil safe working practices and remind operators and managers of some fairly basic positive steps they can take to reduce the risk of such incidents occurring. The messaging is really simple – select the correct machine for the job, don’t take risks, don’t cut corners, and wear the correct personal fall protection equipment in boom-type platforms.”

Brian Parker, IPAF’s head of safety & technical, added, “Operators can help avoid this type of accident by focusing on the principles we’ve set out as part of this campaign. If they are properly trained and familiarised on the MEWPs being used, then hopefully none of this guidance should be new, but we know that complacency breeds contempt, and that too often corners are being cut or fundamental principles of safe use ignored.

“With this safety campaign, IPAF is saying that, if you find yourself tempted to do something different to what you know is the right and proper way to work, or if you are ever asked to do something that you think just isn’t safe by a work colleague or supervisor, then ‘don’t fall for it!’ Far better to think twice and save a life – whether it is a workmate’s or your own!”

Key points of guidance in the IPAF Don’t Fall For It! global safety campaign include:

Plan thoroughly – conduct a proper MEWP site survey/assessment, select the correct machine for the work and use professionally trained operator(s) and supervisor(s).

Know your machine – operators should be trained on the machine type they are using and familiarised on the specific model. Operators should assess that the machine is suitable for the task and conditions, and adequate in terms of reach, articulation, and load-bearing capacity. Machine knowledge includes whether personal fall protection equipment (PFPE) should be used and, if so, what type to use, and how to attach it.

Clip on – If personal PFPE is required, all occupants of the platform must attach their lanyard to the correct anchor point.



Ensure movement within the platform is possible while attached, and do not move the machine or elevate the platform until and unless all occupants are attached.

Set up and manoeuvre the machine/platform effectively – occupants should never need to over-reach, unfasten PFPE, step or climb on guardrails or otherwise extend the safe working envelope of the platform. Ensure vertical MEWPs are positioned and repositioned as necessary to allow easy access to the area of work to be undertaken; operators should not overreach or stand on guardrails to access a work area instead of taking the time and effort to correctly reposition the machine.

Stay inside the platform/attached – the guardrails of the platform form the primary fall prevention and define the operational envelope of the machine being used. Always stay inside the platform. Where there is a requirement for PFPE, you must wear it. Do not exit the platform at height; unclip/exit only on completion of work when safely lowered to the ground.

IPAF offers further guidance on using MEWPs that provides more detail on specific risks and advises on safe operating procedures. ■

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The countdown begins: Conexpo prepares for 2023 edition

With the next Conexpo-Con/Agg and International Fluid Power Exposition (IFPE) being less than a year away, the global construction industry can expect a “next-level experience” when they arrive at the Las Vegas Convention Centre in March 2023, revealed AEM (Association of Equipment Manufacturers), the show organiser.

Scheduled for 14-18 March 2023 in Las Vegas, Nevada, the US, Conexpo is not only the largest construction trade show in North America but also one of the largest in the world – attracting visitors from around the globe. It takes place every three years, co-located with IFPE.

The last edition of Conexpo was held from 10 to 14 March 2020, but it had to close a day early due to the Covid-19 outbreak. Nevertheless, data from AEM reported a good quality of visitors in general, given the circumstances. Total registered attendance reached over 130,000 for the week, with cancellations from international visitors accounting for less than 1% at the conclusion of the show.

Also in 2020, the US buyer attendance increased 8% from the 2017 edition, and total buyer attendance improved by almost 5%; overall contractor and producer attendance grew by 14%; six-in-seven visitors served in a decision-making role; and visitors purchased a record-breaking 75,622 tickets for education sessions at the show, a 46% increase from the 2017 edition.

The most obvious project underway during the last show was the construction of the new West Hall and adjacent Diamond Lot on the site of the old Gold Lot. The other was the Tesla-powered people mover, now called the ‘LVCC Loop’, underground transport project being built under the LVCC. These projects have already been completed, so Conexpo and IFPE aim to make full use of both.

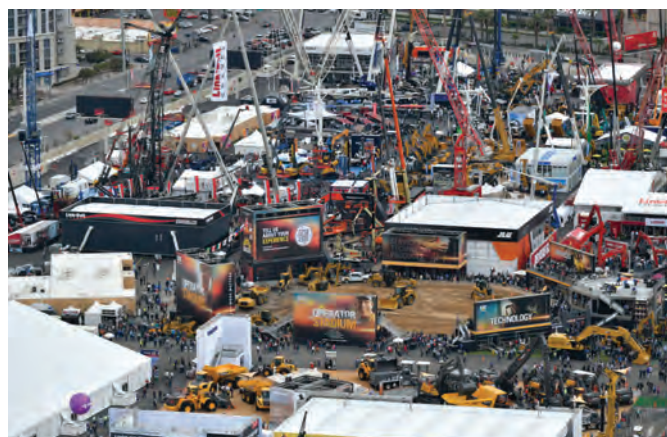
“AEM and our show committees of industry leaders are working to take advantage of everything that has changed in Las Vegas to deliver a top-notch event, delivering the latest innovations and best practices to help construction pros take their businesses and careers to the next level,” said Dana Wuesthoff, show director of Conexpo-Con/Agg 2023.

According to the Las Vegas Convention Center, the new West Hall provides an additional 1.4 mil sq ft (about 130,064 sq m) of indoor space, including 600,000 sq ft (about 55,742 sq m) of “technologically advanced” exhibit space. Conexpo will make West Hall a hub for earthmoving and materials handling displays in 2023, the largest of which include Case, K-Tec/Ashland, Hitachi and Hyundai, said AEM.

“When you attend Conexpo-Con/Agg, you are able to see an item, touch it, sit in it, sometimes operate it and discuss it with the engineers and manufacturers,” said Brian Dietz, of Bob Dietz & Sons, an excavating contractor in New York’s Hudson Valley. “When you walk up to a machine and talk to someone, you get answers that you are not going to get anywhere else. No local equipment dealer that can provide that. The event also helps you stay on top of the latest trending technology.”

The Diamond Lot, attached to the west of West Hall, will have a large variety of exhibits from Business Operations to Hauling to Portable Power to Underground Construction. According to AEM, the largest exhibitors in this area include Bauer Equipment, CZM Foundation Equipment, Trail King, and Hammer & Steel.

The LVCC Loop, which features new electric Tesla vehicles carrying attendees around the LVCC, is the other major addition



ALL IMAGES: The next edition of Conexpo-Con/Agg will return from 14 to 18 March 2023 in Las Vegas, Nevada, the US.

to the show. With stops in the South Hall (providing easy access to both floors of South Hall and IFPE exhibits), running to Central Hall (providing access to Central and North Halls) and finishing at Diamond Lot (providing access to West Hall), Conexpo and IFPE attendees can save themselves a lot of steps getting around. There is also a shuttle service carrying construction pros from West Hall to the Festival Lot – where the largest exhibits at the show are.

“In the construction business, everything we talk about is benchmarked by the last Conexpo-Con/Agg we went to,” said Bruce Barnhart, owner of Barnhart’s Custom Services, an excavating contractor in the Eastern Iowa Corridor. “It’s like everything revolves around Conexpo-Con/Agg. Even our conversations with our employees years after the show connect back to what we saw and learned at the show. Also, the hospitality by the manufacturers is a major highlight. At Conexpo-Con/Agg you have fun, and you learn.” ■

Website: www.conexpoconagg.com

Tadano developing world's first electric RT crane

Tadano has announced its plans to commercialise the world's first electric rough-terrain crane. Currently in development, the machine will be able to drive to the jobsite and carry out all lifting operations using battery/electric, rather than diesel power to deliver zero-emissions operation.

Besides the environmental benefits, the electric motor of this rough-terrain crane will emit lower noise when operating. As such, customers can gain significant advantages when working in congested urban areas with noise ordinances, allowing them to complete lifting projects at night and operate indoors.

Tadano is currently working with a variety of industry suppliers and partners and targets commercialisation of the new electric rough-terrain crane in late 2023.

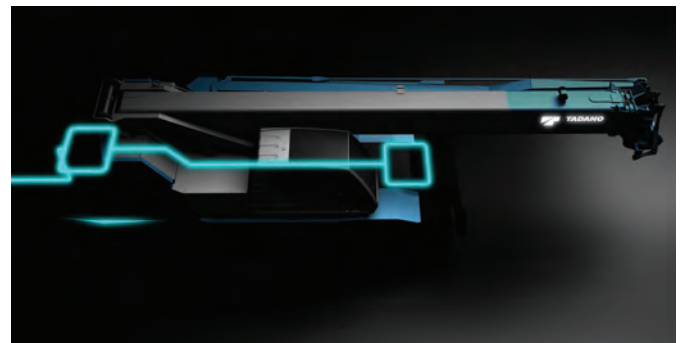
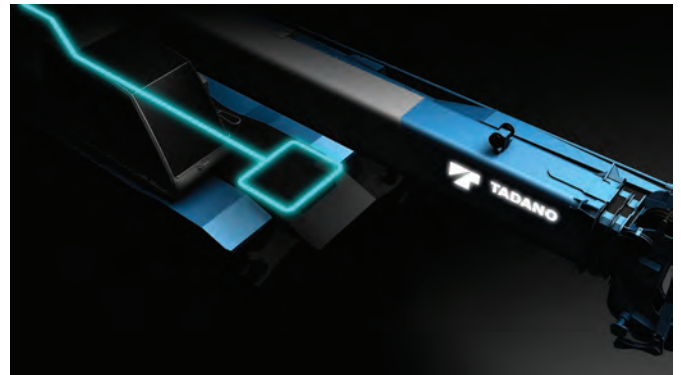
In April 2021, Tadano announced its long-term environmental targets, which include 25% reduction in CO2 emissions from business activities and 35% reduction in CO2 emissions from product use by 2030, as well as achieving net-zero carbon emissions by 2050.

Working towards these targets, the company has gathered all of its sustainable solutions under the name Tadano Green Solutions (TGS). Combined with lifting technology, the innovations introduced under TGS will contribute not only to sustainability but also to operating safety, quality and efficiency. Introducing the world's first electric powered rough-terrain crane is the next evolutionary step in meeting Tadano's environmental targets.

Under the banner of TGS, electrification of the rough-terrain crane product line is one of the key efforts for lowering product emissions. Other mainstay TGS initiatives include the Tadano E-Pack and the ability of most cranes manufactured by Tadano in Europe to be operated with reduced-emissions fuels like hydrotreated vegetable oil (HVO) without modification.



Tadano AC 4.080-1 all-terrain crane equipped with E-Pack.



TOP AND ABOVE: Tadano's new electric rough-terrain crane is currently in development, with commercialisation planned for late 2023.

LEFT: The E-Pack is one of Tadano's green solutions. It allows crane operation without starting the engine, resulting in zero emissions and low noise.

Tadano's innovative E-Pack solution is currently available in Europe, and soon it will be available in Japan. The E-Pack allows crane operation without starting the engine. This electrohydraulic system quickly connects to the crane to deliver the ultimate in zero-emission and low-noise operation. The E-Pack's intelligent electric motor control system ensures efficient power use at a lower operating cost versus diesel-powered cranes.

"In the spirit of greater harmony, Tadano contributes to a better global environment as a part of the surrounding society. We have set aggressive goals for lowering both operational and product emissions, and we will partner with industry-leading companies to attain those goals," said Toshiaki Ujiie, president, CEO and representative director of Tadano Ltd.

"In conjunction with previous product innovations to lower CO2 emissions, we are excited to introduce the first battery/electric rough-terrain crane, which will be a key driver for our goal of 35% reduction in product CO2 emissions by 2030. ■

Website: www.tadano.com

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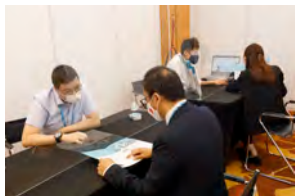


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Vermeer D550 marks new generation of maxi rig drills

Vermeer has unveiled a new generation of maxi rig drills with the introduction of the 249,475.8-kg D550 horizontal directional drill (HDD). This powerful machine features 135,581 Nm of torque, advanced telematics, and smart onboard technology and diagnostic information.

Loaded with performance features and technology, the Vermeer D550 crawler-mounted drill is suitable for installing large-diameter products, such as oil and gas pipelines, water lines and high-voltage electrical transmission lines at long distances.

“This latest generation maxi rig drill delivers more compared to older Vermeer models,” said Clint Recker, trenchless product manager at Vermeer. “In addition to the D550 drill’s class-leading torque, it can deliver a steady, ultra-slow speed control for working in challenging hard rock, as well as rotation speed for boring in challenging clay conditions. Its smart onboard technology gives the operator and service technicians greater access to information.”

Vermeer developed and integrated new HDD technology into the Vermeer D550 to deliver an optimal operational and service experience for contractors. The drill’s onboard telematics gives drill operators and service technicians access to important diagnostics information. Operationally, the D550 controls have three different auto drilling modes — rotation, thrust and speed.

The D550 ultra-slow speed technology provides precise thrust control to allow drill operators to regulate weight-on-bit pressure for optimal cutting action and maximum tooling life.

Apart from new technology, the D550 also features many mechanical enhancements, including a full travel vise, engineered hydraulic transmission and quiet engine. The maxi rig’s full travel vise can be positioned up and down the rack as needed for making/breaking tooling and optimising efficiency during casing installation.

The hydraulic circuit on the D550 delivers the peak amount of torque at high rotational speeds while system pressures remain low to help maximise component life. Also, the drill runs quiet, which helps keep jobsite sound levels down and reduces the need for sound barriers when working in urban areas.



The new Vermeer D550 HDD features 135,581 Nm of torque, advanced telematics, and smart onboard technology and diagnostic information. The machine is suitable for installing large-diameter products, such as oil and gas pipelines, water lines and high-voltage electrical transmission lines at long distances.



The D550 HDD also features many mechanical enhancements, including a full travel vise, engineered hydraulic transmission and quiet engine. The full travel vise can be positioned up and down the rack as needed for making/breaking tooling and optimising efficiency during casing installation.

Beginning with the D550, new Vermeer drills will feature simplified model numbering that represents each unit’s respective drill class. The D550

gets its name from its 550,000-pound (249,475.8-kg) operational thrust/pullback ability. ■

Website: www.vermeer.com/ap

New Classic Line pavers from Vögele feature ErgoBasic operating concept

Vögele has introduced two new Classic Line pavers, the Super 1300 (tracked) and Super 1303 (wheeled) models. Featuring a compact design, they are ideal for small to medium-sized projects, with pave widths from 0.75 to 5 m.

Both models have laydown rates of up to 350 t/hr, and are powered by 74.4-kW diesel engines that meet the European Stage 3A and US EPA Tier 3 emission standards. The pavers are equipped with the ErgoBasic operating concept, which has been developed based on the ErgoPlus 3 operating system.

In combination with the AB 340 extending screed and the compacting systems comprising tamper (T), vibrators (V) or a combination (TV), the two machines facilitate pave widths from 1.8 to 3.4 m. Cut-off shoes allow a minimum pave width of 0.75 m, while additional bolt-on extensions enable a maximum pave width of up to 5 m.

The Super 1300 and Super 1303 are just as fast, precise and intuitive to operate as the Premium Line machines, said Vögele, though ErgoBasic is limited to the basic functions required. These include clear function and status displays, control of various modes, glare-free backlighting for working at night and simple steering involving either a rotary controller or, in the case of the wheeled model, a steering wheel.

Both the ErgoBasic and ErgoPlus 3 operating systems feature the same concept and the same system of symbols, making it easy for users to switch between Classic Line and Premium Line pavers.

To go with the ErgoBasic operating concept, Vögele is also supplying the Niveltronic Basic system (optional) for automated grade and slope control on its Classic Line pavers. It is completely integrated in the machine control system, and so tailored precisely to the paver model in question.

According to Vögele, the system for automated grade and slope control can be controlled separately for each side of the screed using a compact, sturdy remote control unit. It is straightforward and intuitive to operate, ensuring paving true to line and level on any terrain. Furthermore, Niveltronic Basic can be combined with a wide variety of Vögele sensors, ranging from a variable mechanical grade sensor to non-contacting sonic sensors or a laser receiver. ■

Website: www.wirtgen-group.com



Vögele's new Super 1303 wheeled paver (left) and Super 1300 tracked paver have laydown rates of up to 350 t/hr, and pave widths from 0.75 to 5 m. Featuring a compact design, the machines are ideal for small to medium-sized projects.



SOUTHEAST ASIA CONSTRUCTION

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Dingli unveils oil-free, all-electric AWP series

Chinese aerial work platform (AWP) manufacturer Dingli has launched an oil-free, all-electric AWP series. The company said this is the first of its kind in the world and with this latest range, Dingli has officially entered the era of “no hydraulic oil.”

The new oil-free, all-electric series currently consists of six models that offer maximum working heights of 5-16 m and maximum loads of 230-450 kg. The first batch of these models is being mass-produced, revealed Dingli.

The machines use electric actuators for lifting, lowering and steering, instead of traditional hydraulic oil cylinders. As such, there are many advantages – one of which is low energy consumption. The total transmission efficiency of the direct motor drive systems can reach up to 95%, resulting in more than 30% energy saving compared with the traditional hydraulic system, explained Dingli.

The new series also has higher levels of water and dust resistance, with built-in position sensors and real-time data monitoring of the full stroke. The drive system enables temperature, load and variable torque control, thus increasing safety.



The new machines use electric actuators for lifting, lowering and steering, instead of traditional hydraulic oil cylinders.

Another advantage is easy maintenance. With no hydraulic system, it can avoid system problems like valve core stuck, oil leakage, oil change, or high- and low-temperature efficiency reduction. The machines are equipped with a maintenance-free permanent magnet synchronous motor and AGM battery, which significantly reduces maintenance costs.

Greater comfort is a further advantage,

said Dingli. The full stroke proportional control eliminates “the jitter and abrupt feeling” caused by self-gravity lowering of the hydraulic system. In addition, the new series is more environment-friendly. It features a lower noise than that with the hydraulic system. Plus, it provides zero-emissions and better environmental protection. ■

Website: <https://en.cndingli.com>

New Dingli mini scissor lift

Dingli has added a new model to its mini scissor series, the JCPT0707DCM. This lightweight, battery-powered machine offers a maximum working height of 6.5 m and maximum load of 230 kg.

With a compact design, small size and high flexibility, the JCPT0707DCM can easily fit into a standard elevator. The scissor lift measures only 1.43 m in length and 0.76 m in width.

The other Dingli mini scissor models include the JCPT0607DCM and JCPT0708DCM, featuring a maximum working height of 5.6 m and 7.6 m respectively.

When their guardrails are folded down, the overall heights of these mini scissor lifts are 1.62 m (JCPT0607DCM), 1.68 m (JCPT0707DCM) and 1.65 m (JCPT0708DCM), with an overall width of less than 0.8 m. They have a total weight of 920 kg, 1,150 kg and 1,300 kg respectively. ■



ABOVE AND RIGHT: The new Dingli JCPT0707DCM mini scissor lift has a working height of 6.5 m.

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Cat 120 GC motor grader for easy, efficient operation

The new Cat 120 GC motor grader offers the right balance of high-performance features with reduced fuel consumption, low maintenance costs and easy-to-operate controls. Excelling in low- to medium-duty applications, the machine delivers reliable, low-cost operation in a range of projects that include government and municipal work, county road maintenance, and finish grading.

Its powershift transmission and balanced machine design ensure appropriate drawbar power to the ground with the fuel-efficient Cat C4.4 engine. Adapting engine power and torque to application demands, the 120 GC has electronic throttle control to improve grading productivity.

Featuring precisely matched engine power ranges for the standard rear-wheel drive and optional all-wheel drive, the standard Eco mode operation increases fuel economy up to 5%, lowering owning costs. The hydraulic cooling fan, with optional reversing fan for high debris applications, only runs when necessary to further reduce fuel consumption.

With its familiar steering wheel and lever layout consistent with the 120, 140 and 160K models, the efficient hydraulic system provides more precise and predictable control for a consistent grade. Its transmission with torque converter eliminates the need for an inching pedal, so only throttle and brake pedals are required to simplify operation.

The drive system's no-spin differential automatically unlocks in the turn to eliminate required input from the operator. The parking brake automatically engages when the machine is in neutral and the service brake is disengaged.

Built with long-life machine structures for reliable operation, the 120 GC's standard drawbar circle moldboard boosts durability with hardened circle teeth and replaceable wear inserts protecting main component structures. This design stays factory tight to provide long-term precision grading, while the circle drive slip clutch option protects the drawbar, circle and moldboard from potential damage if the machine strikes an immovable object.

Easy to maintain, the available Circle Saver option reduces daily greasing requirements and repairs to the circle and pinion. The grader's new front axle design maximises bearing life to minimise maintenance.



ALL IMAGES: The new Cat 120 GC motor grader is ideal for low- to medium-duty applications. The machine delivers reliable, low-cost operation in a range of projects such as government and municipal work, county road maintenance, and finish grading.

A narrow machine width of 2.4-m plus cab choice of standard or low-profile to reduce overall transport height to 3.12 m improves machine transportability. For operating comfort, the cab offers an option between mechanical or air suspension seat, while the control console and steering wheel easily adjusts to the operator's preference. Pressurised to prevent debris entry, the cab's optional HVAC system circulates fresh air to keep the windows from fogging

Several options are available to enhance machine flexibility and fulfill specific customer requirements. The optional Digital Blade Slope Meter shows the operator the grade without relying on manual grade checkers. Available all-wheel drive boosts traction and efficiency,

while the increased engine power that comes with the option leads to greater performance on slopes and with poor underfoot conditions.

The Cat 120 GC offers 3.0 m, 3.7 m, and 4.3-m moldboard options to meet a range of road coverage requirements, and a newly redesigned mid-mount scarifier results in better visibility to the attachment while decreasing overall machine length. Improving machine performance, the 120 GC features a common front bolster for a choice of front lift group, counterweight, or front blade option, which aids in spreading more material faster. The rear of the machine accommodates a ripper or tow hitch option. ■

Website: www.cat.com

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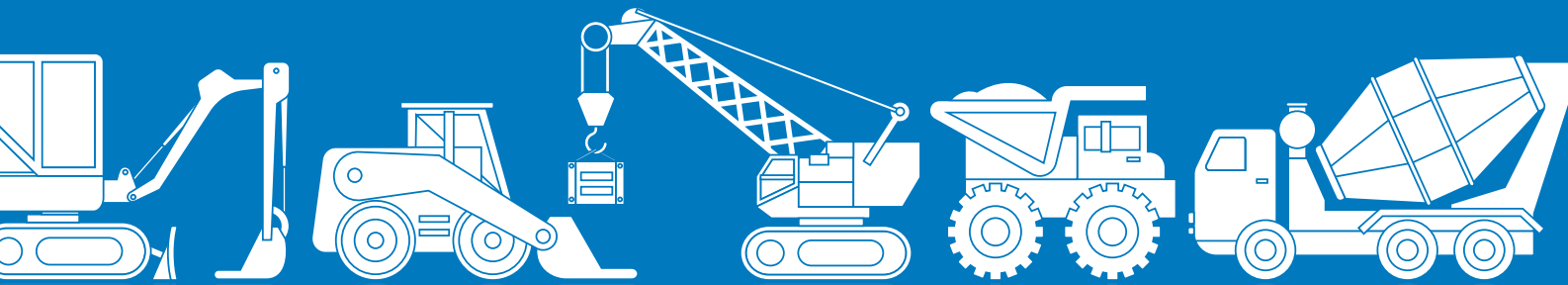
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MyCrane Selector tool goes live

The new 'MyCrane Selector' tool is now live at www.my-crane.com. It is available to the lifting industry at no cost. This universally accessible crane selection tool allows users to quickly and easily identify the ideal crane for their lift, as well as the crane's capacity and optimum configuration. It is the latest innovation from Dubai-based MyCrane, a digital disruptor in the cranes and construction space.

Following extensive development and testing, the Selector tool is already loaded with technical data about crawler cranes and mobile cranes manufactured by Liebherr, Demag/Tadano, XCMG, Sany and Grove. Further cranes and manufacturers are being added on a continuous basis.

After inputting the radius, the height of the lift and the dimensions and weight of their cargo, clients can use the Selector tool to find the perfect equipment. They can then visit the procurement portal to search for the crane they need.


The MyCrane team can also help if further engineering support is required, connecting clients with appropriate suppliers.

"Our mission is to innovate in order to make life easier for all those involved in the lifting industry, which is why we are introducing new tools such as this," explained Andrei Geikalo, CEO of MyCrane.

"Before any client can proceed with a lifting project, he/she first needs to determine which capacity crane should be used. By integrating official crane manufacturer charts, which detail the capacity of the crane in certain configurations, our Selector tool is able to identify the right equipment while also taking the customer's cargo into consideration, and the position of the crane.

"Just as we have done with our digital crane rental tool, we have improved the work process for the customer. No longer do engineers at construction and lifting companies have to refer to physical crane charts to manually calculate the right crane configuration. Now, they can simply access MyCrane to find the right crane for the task – and for free."

With MyCrane, customers can simply and quickly request a crawler, mobile or tower crane without having to rely on manual processes, such as calling suppliers or making multiple offline requests.



Selection result

Liebherr LR 1130.1
SANY SCC1500A-6
Liebherr LR 1160.1

Liebherr LTR 1200
Liebherr LR 1250.1
Liebherr LR 1250.1 unplugged

More

MYCRANE SELECTOR

Cargo weight:


Cargo height:

Cargo width:

Lifting height:

Radius:

Select




Selection result

Liebherr LTM 1200-5.1
Liebherr LTM 1230-5.1
Liebherr LTM 1250-5.1

Liebherr LTM 1300-6.2
Liebherr LTM 1350-6.1
GROVE GMK6400-1

More

ABOVE AND BELOW: The independently-developed MyCrane Selector tool identifies the ideal crane for a project, as well as the crane's capacity and optimum configuration.



Selection result

MYCRANE SELECTOR

Cargo weight, tons:


Cargo height, meters:

Cargo width, meters:

Lifting height, meters:

Radius, meters:

Select



Selection result

Remarks:

- 3 meters clearance between the load and the boom (hook + hoist wire length + rigging)
- 1 meter clearance between load and ground surface
- Beta version MYCRANE Selector tool is under continuous development

Disclaimer:

- MYCRANE is not liable for any misinformation in the Selector
- MYCRANE Selector is for reference, and information only
- Always consult a lifting engineer before executing a lift
- MYCRANE Selector is based on the general crane load charts. Check with the exact crane number when performing lifting services. Specification can vary

The service, operated in countries around the world by a network of local franchisees (with support from MyCrane's head office team in Dubai), offers cranes with a capacity of between 6 and 750 t. Enquiries are welcomed from entrepreneurs who are interested in operating the service in their home markets.

Besides the lifting services search, MyCrane features a number of other tools for the crane industry, including a Marketplace to advertise used equipment, rigging equipment, spare parts and auxiliaries, plus industry vacancies.

Consultancy services, such as engineering for heavy lift projects, are offered on a truly independent basis, meaning clients are presented with a full range of solutions and service providers from the whole of the market, and the most cost-effective solution. ■

Website: www.my-crane.com

All manufacturers who wish to share their crane charts for future integration on the MyCrane Selector tool may contact: info@my-crane.com

Ammann AFW 500 paver ideal for highway projects

The Ammann AFW 500 wheeled asphalt paver is available for most of Southeast Asia and South African market. The machine features a standard paving width of 2.55 to 4.9 m. It can work at widths up to 6.5 m with the use of mechanical extensions.

Powered by a 119-kW Cummins engine, the AFW 500 is effective at placing both binding courses and surface lifts. Its capacity and size make the paver an ideal fit for larger road projects, such as highway applications. The four-cylinder engine is liquid-cooled and meets all Tier 3 emissions standards.

Operation is kept simple with the help of an advanced dashboard and screed control panel created specifically for the AFW 500. The panel is simple to understand, and operators appreciate touches such as illuminated buttons that provide optimal visibility when working at night. Integrated lighting also enhances visibility during night shifts.

The control unit is comprised of multiple individual parts, which facilitate cost-effective replacement. A central 5-in colour display provides the operator with key information regarding the ongoing paving process. The display also enables simple troubleshooting tips and alerts the operator on maintenance needs.

The paver design, sliding seat and dashboard improve visibility during all phases of the paving process. A levelling system of the customer's choice can be connected to the control unit. The installation plug is pre-mounted and allows for quick connection to the levelling sensors and controls.

A lower discharge height reduces material spillage that can lead to mat defects. The hopper height also matches trucks of varied sizes, increasing fleet utilisation and making it easier to find outside haulers with appropriately sized vehicles.

Material is transported by two independent, reversible chain belt conveyors controlled by paddle micro-switches. Two proportional ultrasonic controls optimise material distribution by regulating flow to the screed.

An optimised auger ensures uniform material distribution, even at wide paving widths. A small auger drive gearbox prevents segregation and cooling of material beneath the drive. Standard e-hydraulic auger height adjustment



BOTH IMAGES:
Ammann AFW 500 wheeled asphalt paver features a standard paving width of 2.55 to 4.9 m. It can work at widths up to 6.5 m with the use of mechanical extensions.



reduces the risk of segregation and ensures sufficient material beneath the gearbox.

An e-hydraulic device unloads the weight of the screed, thereby enabling an increase in paving depth. This improves traction by transferring the weight of the

screed to the wheels. The raised screed position is maintained when the machine is on standby mode. Moreover, a user-friendly screed control box allows the operator to stay in control and clear layout for easy operation. ■

Website: www.ammann.com

Doka Xsafe systems ensure high safety on jobsites

The Xsafe product line from Doka comprises a number of systems, including Xsafe Platform system plus, Xsafe Edge protection Z for building edges, and Edge protection system XP as fall protection for formwork, structural shells and precast concrete components.

These systems are easy to integrate and designed to ensure excellent safety on the jobsite. According to Doka, in combination with intelligent services and in-depth consulting on safety, the company offers an all-inclusive, safe and worry-free package for the construction site.

“At Doka, the focus of all our products right from the development stage is on solutions that are not only efficient but also contribute to safety without any additional effort,” said Robert Stanek, director of components & safety at Doka. “With the Xsafe product family, we have created the perfect symbiosis with our existing products, making productive work on the construction site safer.” ■

Website: www.doka.com



ABOVE: The Edge protection Z provides safety at the edge of a building.

LEFT: The Edge protection system XP is used as fall protection for formwork, structural shells and precast concrete components.



The Xsafe Platform system plus creates a safe working environment for the construction site crew, thanks to integrated access ladders and working platforms with side railings.



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Lintec asphalt plants ‘travel’ across Inner Mongolia

Lintec’s CSM4000 and CSM5000 asphalt batching plants have been used on several major road projects in Inner Mongolia, an autonomous region in northern China. The job was carried out by local contractor Inner Mongolia Road & Bridge Group Co Ltd. The asphalt plants feature huge output capacity and ease of transport, which make them ideal for the projects.

In 2020, the CSM5000 had produced 720,000 t of asphalt for the reconstruction of 26 km of the eight-lane G65 BaoMao Expressway running south from Baotou. The asphalt plant was then relocated with ease to face a new challenge on the Jingwu Expressway in the Hexigten Banner, Chifeng area.

“The contractor from the Department of Transportation of Inner Mongolia Autonomous Region found this class-leading portability feature a key reason for their purchase,” explained Tony Liu, CEO of Lintec & Linnhoff in China. “Their main business is the construction, reconstruction and expansion of expressways in Inner Mongolia, but due to the vast territory of this region, the next jobsite can often be hundreds of kilometres away. This is why they need plants that can be easily relocated to another jobsite and place an emphasis on the rapid setup and disassembly.”

The Lintec CSM asphalt plants offer outstanding advantages with their modular structure. This is made possible by a design that fully utilises the many benefits of ISO certified sea containers, thus providing safe, efficient and economical transportation, as well as speedy dismantling and installation.

In 2021, the CSM5000 was commissioned for the third leg of the 96-km Jingwu Expressway that connects Jingpeng town with Ulan Butong Grassland. For one 28-km section of this highway, the batching plant produced an impressive 275,000 t of asphalt.

As a result of the success of this CSM5000 plant on the G65 project, Inner Mongolia Road & Bridge Group decided to purchase the CSM4000 containerised asphalt plant. This unit was used on the fourth leg of the Jingwu Expressway and ultimately produced 320,000 t of asphalt for a 30-km section of road.

The contractor’s annual asphalt production easily reaches a million tons, so a high batching accuracy is required to avoid wastage of raw materials. The CSM4000 and CSM5000 asphalt



The Lintec CSM5000 asphalt plant worked on the 26-km-long G65 BaoMao Expressway before moving on to the construction of the Jingwu Expressway.



The Lintec CSM4000 asphalt plant was subsequently procured for the construction of the Jingwu Expressway after seeing the success of the CSM5000 plant on the G65 BaoMao Expressway project.



The Lintec CSM series of asphalt plants is built in ISO certified sea containers for economical shipment and fast installation and dismantling.

plants offer an hourly output of 320 t and 400 t respectively, supported by a German-made operating system that ensures precise mixing.

“The prestigious international projects completed by Lintec asphalt plants such as the Hong Kong-Zhuhai-Macao Bridge are testimony to the superior build quality of the brand. Lintec offers timely and attentive after-sales service and places emphasis on the safety and stability of its equipment,” said Lintec & Linnhoff.

Construction of the RMB 6.063 billion (US\$952 million) Jingwu Expressway, which adopts the standard construction of a 26-m-wide expressway, began in 2019 and is scheduled for completion by October 2023.

By reducing the typical Jingpeng to Ulan Butong journey time by half and helping shorten travel time to Beijing, the expressway is expected to improve regional transportation conditions, promote the development of ecological tourism resources, and drive social and economic development. ■

Website: www.lintec-linnhoff.com

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Volvo helps boost productivity on Philippine projects

RFB Construction Company, together with Rodnet Builders, has recently brought multi-million construction projects in the Philippines to a successful close, including Mindanao's largest sports complex. In this endeavour, the contractor commissioned machinery from Volvo Construction Equipment (Volvo CE) to facilitate the heavy works in the field and on project sites.

The fleet of equipment included Volvo EC210D and EC200D crawler excavators, EW145B wheeled excavators and SD110 soil compactors. Some of the excavators were equipped with hydraulic breakers to cope with the hard rock formations, especially for the road construction.

"Productivity and uptime were crucial to keep this project on schedule and within budget, so we needed quality, durable machines with high parts availability and responsive service support," explained Roger F. Bustillo, president and CEO of RFB Construction company.

"We chose equipment from Volvo because it is stronger and easier to operate compared to other machines – and capable of handling continuous projects cost efficiently."

RFB Construction Company and Rodnet Builders' machines are required to work long hours across more than one shift a day, especially in critical areas. Over the course of the project, the Volvo excavators and soil compactors exceeded RFB Construction Company and Rodnet Builders' quality expectations.



A Volvo excavator handles the muddy terrain at RFB Construction Company's site in Bukidnon province with ease.



One of RFB Construction Company's Volvo EC200D crawler excavators.



Volvo excavators are simple to transport to and from the jobsite.

"The Volvo EW145B wheeled excavator, in particular, greatly contributed to our productivity when combined with the crawler excavator and other Volvo machines," said Roduard Michael C. Bustillo, vice president and COO of RFB Construction Company.

In addition, the contractor was equally impressed by the aftersales support from local dealer Civic Merchandizing/Topspot Heavy Equipment. "We appreciate the speedy support from the sales and service team at Civic Merchandizing/

Topspot Heavy Equipment. When the Volvo machines needed repairs, it was very quick. It is great to have the quality assured," added Rodnick C. Bustillo, vice president for equipment at the two companies.

This is not the only project in the Philippines where the high productivity and uptime of Volvo excavators and compactors have proved key to success. All across the country, Volvo machines are helping to get jobs done quickly, efficiently and cost-effectively. ■

Website: www.volvoce.com

MANITOU LAUNCHES ULTRA-COMPACT TELEHANDLER MODEL

To meet the demand for a versatile machine that is easy to use and transport, Manitou Group has introduced a very lightweight telehandler model with a transportable weight of less than 3 t, which can be loaded onto a trailer with a PTAC of 3,500 kg. This new ULM/GCT model was designed entirely by the design office at the Laillé (Ille-et-Vilaine) site in France, dedicated to producing ‘super compact’ telehandlers for the group.

The compact machine features a width of just 1.49 m and a height of 1.92 m. It has a lifting capacity of 1.25 t and 1.5 t – for a lifting height of 4.30 m. Two versions are available for Manitou dealers – the ULM 412 H and ULM 415 H for Ultra Light Manitou – and also for Gehl distributors with the GCT 3-14 and GCT 3- 14+ for Gehl Compact Telehandler.

Profitability

Targeted at a number of sectors, such as construction, agriculture and landscaping, this ultra-compact telehandler enables users to work efficiently thanks to its rapid familiarisation process and small size. It also allows artisan masons and landscapers to travel to their customers easily with a single trailer. This means machine transportation times are greatly reduced, thus increasing user productivity.

The telehandler is suitable for many applications, owing to a variety of attachments like forks carriage, pot clamp, branch cutter, Big Bag handler and snow blade. Proving its usefulness on rough-terrain, this four-wheel drive machine has an oscillating rear axle, a wide range of tyres and a high ground clearance of 29 cm.

Several innovative features help to reduce the total cost of ownership (TCO) of this model. The Stop & Start option ensures a reduction of around €10 per hour idling of the machine’s TCO (reduced machine depreciation, fuel consumption and preventive maintenance). The capacity of the hydraulic tank is also reduced by around 25%, thanks to the presence of an anti-aeration filter.

The hydraulic compensator is replaced by an electronic compensation, allowing the compensating cylinder to be dispensed with, thereby minimising hydraulic oil requirements and reducing the weight of the machine. Removing



ABOVE AND LEFT: The compact machine features a width of just 1.49 m and a height of 1.92 m.

the compensating cylinder also reduces the width of the truck, making it easier to move in tight spaces, particularly when entering farm buildings, loading straw bales, or manoeuvring on renovation sites when handling pallets of cinder blocks or bricks, for instance.

Maintenance can be optimised with facilitated access to the main components of the engine, thanks to the wide engine compartment opening. A hatch in front of the engine enables straw or dust near the radiators to be removed, and access to the fuel and hydraulic oil tanks is facilitated by their eye-level position. The Gehl and Manitou versions are connected as standard, and users can completely manage maintenance via their smartphone (with the MyManitou and MyGehl apps).

Comfort and safety

The new ULM/GCT telehandler is designed to make handling operations safer and more enjoyable. Access to the cab is easy with no added step. Inside the cab, the operator has an unobstructed 360° view to work safely.

“We worked with our design office to find an innovative solution that provides even more safety and comfort. We replaced the roof grille with a transparent, shock-resistant polycarbonate window, which complies perfectly with the requirements of the FOPS standard,” said product manager Camille Rouvrais.

The visibility improvements also apply to the operator’s lateral view. The side view is very clear due to the position of the hydraulic hoses inside the boom and the engine cover positioned low down to the right of the operator. The user can also make use of driver assistance, with a screen on the dashboard displaying all the information needed for driving in the form of pop-ups.

The joystick is positioned as standard on a floating armrest for more flexibility of use, and two vents are situated on the windshield for optimal demisting. For prolonged driving comfort, Manitou has also introduced an automatic parking brake and offers three steering modes: two-wheel steering for travelling at high speeds; four-wheel steering for manoeuvring in tight spaces; and crab mode for lateral manoeuvres.

The ULM/GCT is distinctive for its small height but paradoxically has a large ground clearance of 29 cm, enabling it to move across difficult terrain without any problem. Powered by a 35 hp engine, this ultra-compact truck provides a maximum hydraulic flow of 48 l/min. The machine is equipped with a flow sharing distributor, allowing several hydraulic movements to be carried out at the same time. With a transportable weight of between 2,550 kg and 2,900 kg depending on the configuration, the ULM/GCT can be transported on a trailer.

According to Manitou, the first deliveries will take place from the third quarter of 2022 in Europe, North America and Australia. A specific offer will be made by the group for the first 180 machines produced with the Stop & Start option, the pneumatic cloth seat, a four-year warranty and an attachment supplied in addition to the forks carriage. This offer will be effective until 31 May 2022.



ABOVE: The new telehandler model is suitable for various applications, thanks to a wide range of attachments.



LEFT AND BELOW: The machine is targeted at a number of sectors such as construction, agriculture and landscaping.



Manitou was supported in this project by the Brittany region and particularly by the European Regional Development Fund (FEDER), which helped the group to invest in research, technological development

and innovation, through the call for ‘Innovation for Industry of the Future’ projects aimed at SMEs and mid-cap companies in Brittany. ■

Website: www.manitou.com

PROTECTING BELOW GROUND STRUCTURES WITH MAPELASTIC FOUNDATION

Spaces below ground level often need to be utilised due to a lack of available building land and the high density of structures in built-up areas. Construction of below ground structures is quite common to create various types of areas, such as commercial areas, service areas, utility rooms, production areas and more.

Below ground structures, however, are always in contact with moisture in the ground and with water percolating from the ground. Thus they must be waterproofed to prevent leaks and infiltrations compromising their functionality and to guarantee their protection and durability.

One of the systems that Mapei offers for waterproofing structures below ground



ABOVE LEFT AND ABOVE: **Mapelastic Foundation** has been specifically designed for waterproofing structures below ground level. The system can be easily applied with a roller or by spray, on both horizontal and vertical surfaces, in layers of at least 2 mm thick.

LEFT: Relining the vertical surfaces with **Mapelastic Foundation**. Once cured, this cementitious mortar is resistant to soluble salts which are present in sea water or in the ground such as chlorides and sulphates.

level is Mapelastc Foundation. It is a two-component, flexible cementitious mortar designed for waterproofing concrete surfaces and masonry structures subject to positive and negative water pressure. When the two components are mixed together, they form a plastic-consistency paste that is easy to apply with a roller or by spray, on both horizontal and vertical surfaces, in layers of at least 2 mm thick.

Mapelastc Foundation is completely waterproof against positive pressure, and is also waterproof against negative pressure of up to 1.5 atm. Once cured, it is resistant to soluble salts which are present in sea water or in the ground such as chlorides and sulphates.

Mapelastc Foundation is highly flexible and remains stable under all environmental conditions. When mixed, the system is highly thixotropic, which reduces waste to a minimum during the application phase with a roller. In addition, it bonds strongly to all sound cementitious substrates.

Mapelastc Foundation is suitable for foundation walls, car parks, underground environments, basins, channels and swimming pools. The system fulfills the criteria of EN 1504-9 and EN 1504-2 standards. It is also EC1 Plus certified as it contains very low emission of volatile organic compounds.

With Mapelastc Foundation, structures can be waterproofed and protected for many years. ■

Website: www.mapei.com.sg



TOP: Mapelastc Foundation was used during the construction of Hap Seng Business Park in Malaysia, which was completed in 2020.

ABOVE AND LEFT: Mapelastc Foundation was also applied on the lift shafts and bearing walls of the Encore Melaka in Malaysia.

FAR LEFT: Mapelastc Foundation is EC1 Plus certified as the system contains very low emission of volatile organic compounds.

LIEBHERR EXPANDS CRAWLER CRANE RANGE

LR 12500-1.0

Liebherr has unveiled its latest crawler crane for the global market, the LR 12500-1.0 with a capacity of 2,500 t, which complements the company's portfolio of lattice boom cranes between the 1,350-t LR 11350 and 3,000-t LR 13000.

This new model meets the growing demand for large crawler cranes, especially in the petrochemicals industry and port handling involving enormous components for offshore applications, said Liebherr. The LR 12500-1.0 is manufactured at the company's facility in Ehingen, Germany.

To achieve high lifting capacities, the current solution has been a double boom like the PowerBoom or the widespread SX systems. Liebherr chose a completely different solution for the LR 12500-1.0 by introducing 'HighPerformanceBoom' – it features a special superstructure front section, which can be transported on a low-bed trailer at a width of 4 m.

The slewing platform is supplemented by a 3.5-m-wide rear section, which hosts the two power units. Both Liebherr six-cylinder in-line engines deliver a total of 800 kW. They have a redundant design to increase the crane's availability, and there is no separate power pack. The two main hoist winches are also on this rear section.

The intermediate sections of the HighPerformanceBoom measure 10 m in length and are reduced to an economical transport size by an improved mechanism. A separate device stabilises the lattice section during the erection process on site.

The chain is removed and transported in containers for transporting the crawler carriers, each of which weighs around 150 t. The remaining chain girder is divided and moved on two low loaders.

The 25-t ballast slabs are identical to those on the LR 13000. They have the same dimensions of a 20-ft container to ensure they can be transported economically and can be loaded using a spreader.

The LR 12500-1.0 is designed with



Belgian contractor Sarens has ordered the first unit of the new LR 12500-1.0.

a transport width of 3.5 m. Only two components of the crane have a transport width of 4 m.

The maximum hook height of around 200 m is achieved with a 100-m main boom and a 108-m luffing jib. Installed with a short length, the luffing jib also acts as a powerful WV jib. The 'vessel lifter' is ideal for the erection of long columns in petrochemical plants.

The 110-m HighPerformanceBoom can be extended to a 155-m boom using parts of the luffing jib. The ballast pallet on the

derrick boom of the LR 13000 serves as suspended ballast.

If the crane has to operate without suspended ballast in constricted conditions, it can also operate without derrick ballast in what is known as a B0 version, explained Liebherr. This principle has also been adopted from the LR 13000. The suspended ballast is infinitely adjusted with the derrick boom. The ballast radius can be extended to the maximum radius with a rigid guide.

The Belgian crane and heavy haulage contractor Sarens has ordered the first unit



LEFT: The new LR 12500-1.0 has a capacity of 2,500 t. The crane is equipped with 'HighPerformanceBoom' for maximum lifting capacity.

RIGHT: The new LR 1100.1 is designed for lifting applications in the 100-t category. The crane can be configured either with a main boom up to 62 m, or with a main boom up to 44 m in combination with a fixed jib up to 20 m.



of the new LR 12500-1.0. The company will primarily be using the crane in the renewables industry, such as for handling offshore wind turbines.

"The high lifting capacity of the LR 12500-1.0 is the outstanding feature for us. The new crane will enable us to close the gap between our crawler and ringer cranes," said managing director Carl Sarens.

"We are particularly focusing on jobs in renewables for the new 2,500-t crane. Handling offshore wind turbines at ports is also becoming a much more important business segment and the weight of components continues to rise."

With its lifting capacity, the new 2,500-t crawler crane has also been designed to cover future requirements. According to Liebherr, interest in the new LR 12500-1.0 is correspondingly high.

LR 1100.1

Another new crawler crane from Liebherr is the LR 1100.1, which is designed for lifting applications in the 100-t category. Produced at the company's facility in Nenzing, Austria, this model can be configured either with a main boom up to 62 m, or with a main boom up to 44 m in combination with a fixed jib up to 20 m.

The LR 1100.1 is powered by a 230 kW engine. Thanks to the Eco-Silent Mode, the engine speed can be reduced to a predefined level. This means that diesel consumption and noise emission

are reduced, without compromising the machine performance. The Automatic Engine Stop Control offers a further economic and environment-friendly solution. After checking certain system functions, the engine is switched off during longer work interruptions.

To enable easy relocation between jobsites, the LR 1100.1 has a transport width of 2,983 mm or 3,500 mm, depending on whether it is transported with or without crawlers. The assembly of the crane is simplified through the self-assembly system and radio remote control.

The radio remote control gives the operator a high degree of flexibility and additional safety even during operation. The crane can be operated from outside the cabin, providing a better overview of the jobsite. Depending on the application, a second person is no longer required to assist with hand signals during lifting operations. The cabin can be elevated by 2.8 m to allow for a good all-round view.

For the safe negotiation of slopes and inclines, the LR 1100.1 is fitted with Gradient Travel Aid. This control system automatically calculates the centre of gravity and warns the operator before the crane leaves the safe area. While travelling, the operator receives information about the permissible and actual gradient and the crane's overall centre of gravity at all times. If necessary, the boom angle can be altered so that the machine remains in the safe area.

LR 1160.1 unplugged

Liebherr has also launched its new electric crawler crane, the LR 1160.1 unplugged, which features a capacity of 160 t. This battery-operated machine delivers zero emissions and is extremely quiet, making it ideal for use in noise-sensitive areas.

The LR 1160.1 unplugged is manufactured at the company's Nenzing, Austria facility. The machine's electro-hydraulic drive has the same performance specifications as the conventional version, according to Liebherr. Both versions are operated in the same way, so it is especially convenient for the operators if they often have to switch between machines.

In idling mode, the sound pressure level of three unplugged cranes at a distance of 16 m is equivalent to that of a normal conversation on the jobsite at a distance of 1 m. This corresponds to a value of only 60 dB(A), said Liebherr. If it is taken into account that a crawler crane is in idling mode for 60% of the time on the jobsite, such a low noise level is an "advantage with great resonance."

The LR 1160.1 unplugged can be operated with or without cable, hence unplugged. The battery capacity is designed for eight hours of lifting operation. The crane is able to work without restrictions while plugged into a conventional electric supply with 63 A, or charged within 4.5 hours. Using a 125-A supply, the battery can be fast-charged in only 2.5 hours.

The Gradient Travel Aid on the LR 1160.1 unplugged is designed for safe negotiation of slopes and inclines. The crane's control system automatically calculates the centre of gravity and warns the operator before the crane leaves the safe area. While travelling, the operator receives information about the permissible and actual gradient and the crane's overall centre of gravity at all times. When necessary, the boom angle can be altered so that the machine remains in the safe area.

The Ground Pressure Visualisation system calculates the actual ground pressure of the machine in real time, and compares it with the specified safety limits of the relevant jobsite. This means the operator is constantly aware of whether the machine is situated in, or is approaching, a critical area.

When erecting or lowering the boom, the Boom Up-and-Down Assistant system indicates the approach to the tipping border and automatically stops operation before the operator unintentionally enters an unsafe zone.



LEFT: The new LR 1160.1 unplugged is the latest electric crawler crane from Liebherr. This model features a capacity of 160 t and can be operated with or without cable (hence unplugged). The battery capacity is designed for eight hours of lifting operation.

BELOW: The first three units of the new LR 1160.1 unplugged have been delivered to Select Plant Hire Company Ltd in the UK.



The first three LR 1160.1 unplugged cranes have been delivered to the UK, revealed Liebherr. The customer, Select Plant Hire Company Ltd, is pursuing the goal of operating more zero-emission construction sites and even plans to invest further in the LR 1160.1 unplugged this year. The company already used the Liebherr LR 1250.1 unplugged, which was

launched at the end of 2020.

With the unplugged series, Liebherr highlighted that the potential of crawler cranes to function optimally as an electric version "has become reality. It enables the best possible combination of customer benefit, environmental compatibility and efficiency." ■

Website: www.liebherr.com

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Robbins TBM overcomes challenging water diversion tunnel in China

The breakthrough of an 8-m-diameter Robbins main beam TBM at China's Yin Han Ji Wei project is not only a cause for celebration, but also a triumph of technology and perseverance. The machine overcame 17.5 km of tunnel in some of the most difficult geology ever encountered, breaking through in the first quarter of 2022. The water diversion tunnel traverses the Qinling Mountains of Shaanxi province, with up to 2,000 m of cover.

"Every day was full of challenges. We are most proud of our teamwork and unyielding spirit," said a representative for tunnel contractor China Railway Tunnel Group (CRTG). The ground, consisting of mainly quartzite and granite, was estimated to have a rock hardness of between 107 and 309 MPa UCS, with high abrasivity and a maximum quartz content of 92.6%.

"This was in my opinion the most challenging project ever completed by TBMs, and it proves TBMs are up to overcoming even the most difficult conditions," remarked Robbins president Lok Home. "I have great respect for the CRTG crew and management, and I thank them for moving TBM technology to a new level."

During tunnelling, the crew encountered over 14,000 rock bursts, some with energy as high as 4,080 kJ. "Robbins' overall equipment performance was excellent from the beginning to the end of breakthrough, and during seven years of excavation," noted the CRTG representative. "This is despite the super hard rock with high quartz content, strong rock bursts and substantial water inrushes."

Water ingress occurred a total of 69 times during the drive, with



some inflows extremely high – exceeding 20,000 cu m of water in one day from a single point. In-tunnel ambient temperatures peaked at 40°C and 90% humidity.

Throughout the challenges, the crew found ways to persevere. Rock bursting was controlled using steel slats in conjunction with the McNally crown support system, while zones of stress were predicted using a micro-seismic monitoring system.

The micro-seismic system records rock stresses in a borehole 20 m ahead of the face and predicts the potential for rock bursting following comparative analysis with similar rockburst data from other projects, as well as from nearby sections of tunnel in the Qinling Mountains.

Water ingress was controlled by dramatically increasing pumping capacity in the tunnel to 41,000 cu m per day. Systematic probing ahead of the TBM was also used to detect water, as well as rock bursting. When ingress exceeded 70% of the in-tunnel pumping capacity, the crew then carried out grout injections.

The abrasive, hard rock was another challenge, addressed by Robbins through the use of extra heavy duty (XHD) 20-in disc cutters that showed long cutter life and lower wear compared to standard 20-in discs. The crew also optimised TBM operation with at times lower production rates where needed.

“Especially with such a huge challenge, a strong cutterhead is required to ensure production. The quality of Robbins’ cutterhead has been proven. The cutterhead can still work properly after the tunnel breakthrough,” said the CRTG representative.

With TBM tunnelling complete, the route will become part of two other sections of an altogether 82-km-long tunnel that will link up the Hanjiang and Weihe Rivers in Shaanxi province. The completed tunnel, for owner Hanjiang-to-Weihe River Valley Water Diversion Project Construction Company, will secure a water supply for towns and agricultural areas in central China, while also generating hydroelectricity. ■

Website: www.robbinstbm.com



OPPOSITE: The Robbins TBM and tunnelling crew had to overcome difficult conditions including severe water inflows, abrasive rock with a maximum quartz content of 92.6%, high energy rock bursts, and more.

LEFT: The breakthrough on the project is not only a cause for celebration, but also a triumph of technology and perseverance.

TOP LEFT: Contractor CRTG praised the strength of the Robbins cutterhead after boring 17.5 km of tunnel in incredibly hard and abrasive rock up to 309 MPa UCS.

TOP RIGHT: During tunnelling, the crew encountered over 14,000 rock bursts, some with energy as high as 4,080 kJ.



Bauer builds cut-off wall for new hydropower plant in Nepal

The Arun River in Nepal flows from Tibet through the Himalayas into China. Of all Nepalese river basins, it has the largest area covered in snow and ice. A new hydroelectric power plant is currently under construction on this river, which is expected to produce up to 900 MW of electricity.

Bauer Engineering India Pvt Ltd, a subsidiary of Bauer Spezialtiefbau GmbH, was tasked by the Indian company Jaiprakash Associates Limited with the construction of a cut-off wall as part of the project Arun III HEP. The goal is to achieve a seal and reduce seepage water below the upstream cofferdam and in the left and right abutments.

The scope of service provided by Bauer includes the execution of 3,500 running meters of drilling and injection work on the cofferdam. In the granular construction soil, composed of sand, gravel, rubble and boulders, the pore injections are performed by means of tube-à-manchette and annular grouting.

“Using the pore injections, we are able to fill the pores in the very loose soil with cement slurry and thereby reduce its permeability,” explained project manager Satish Kumar. “Injections require a high degree of quality assurance and quality control. We are able to meet the strict demands thanks to our many years of experience.”

In addition to the pore injections, Bauer will also carry out rock grouting in order to fill gaps, fractures and cavities in the rock.

Due to the remote location in the Himalayas, not only the construction soil poses a challenge, but also logistics. On top of that, the schedule is very tight; this is because snow starts to melt in March, causing the water level in the river to rise and making work more difficult.

A Klemm KR 909 drill rig is being used for the drilling and injection work. The job undertaken by Bauer started in December 2021 and is scheduled to be completed by May 2022. ■

Website: www.bauer.de

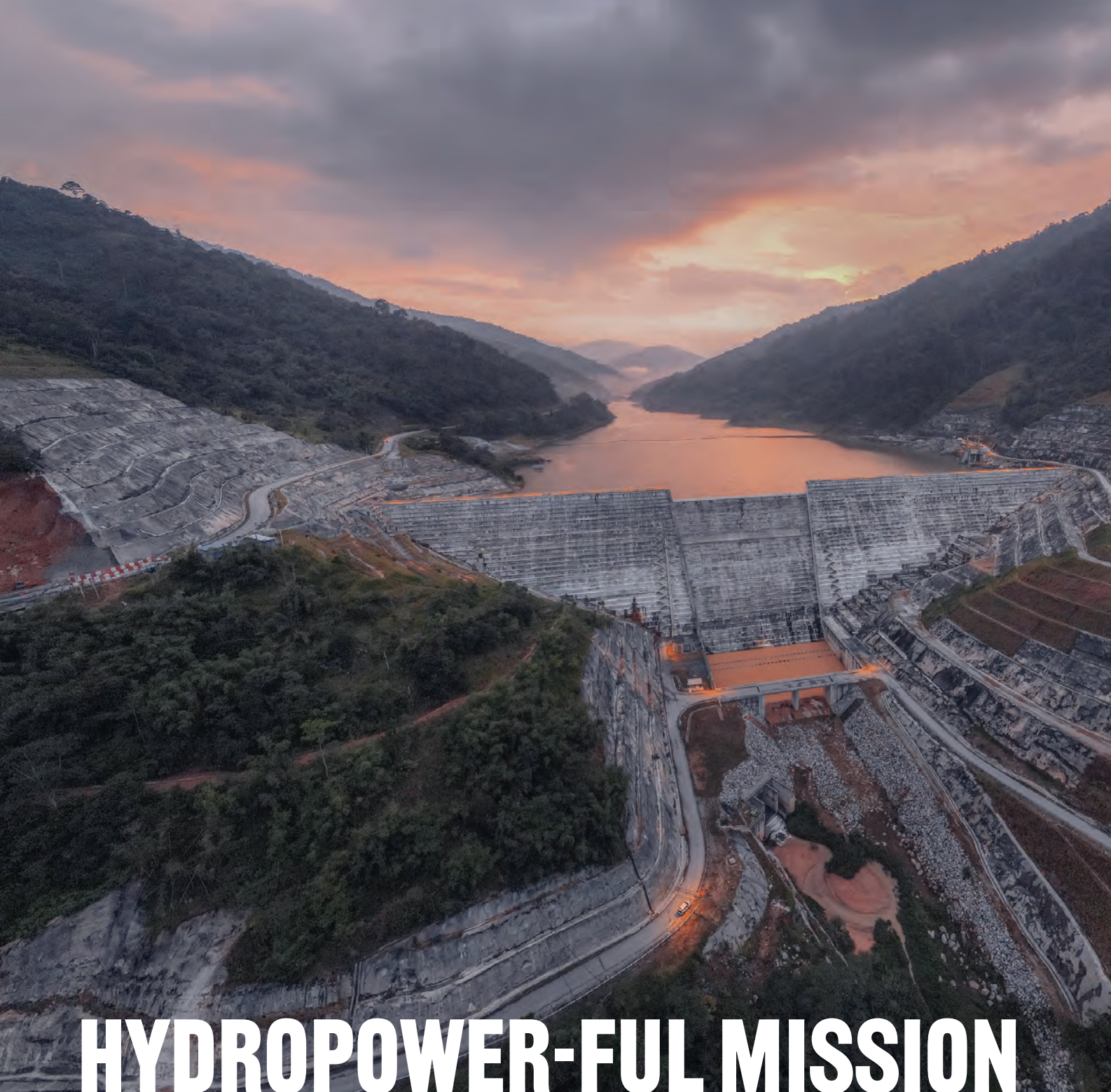


ABOVE: A Klemm KR 909 drill rig being used by Bauer to carry out drilling and injection work on the project.

LEFT AND BELOW: Due to the remote location in the Himalayas, not only the construction soil poses a challenge, but also logistics.



All images © Bauer Group

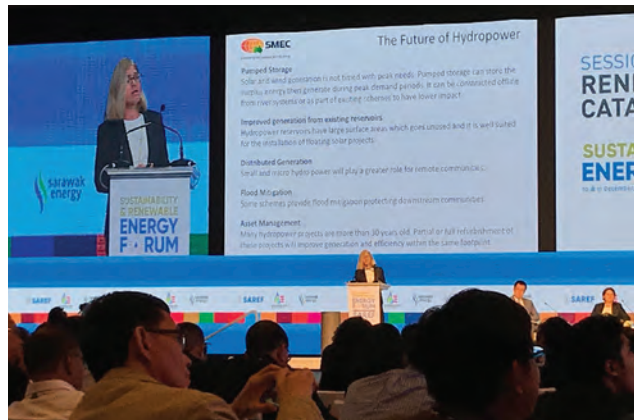


HYDROPOWER-FUL MISSION

SMEC's Karen Atkinson talks about new technologies to help build hydropower projects safely and sustainably

With its heritage founded on one of the most famous hydropower schemes in the world, the Snowy Mountains Scheme, SMEC is widely known as a specialist in hydropower – from design and engineering to construction and project management. The company's work covers small- and large-capacity power stations, between 5 kW and 8,000 MW.

Karen Atkinson, SMEC's deputy chief operating officer for Southeast Asia and the Pacific, has been part of the hydropower team delivering various iconic projects, including the Snowy 2.0 in Australia and the Ulu Jelai hydropower plant in Malaysia. She shares with Southeast Asia Construction (SEAC) several new – and upcoming – construction methods and technologies to help the industry achieve safer, more sustainable results.



ABOVE: Ms Atkinson is a civil engineer with over two decades of experience in the hydropower industry.

LEFT: Ms Atkinson delivers a presentation on hydropower at the SAREF conference in Sarawak, Malaysia.

FAR LEFT: SMEC was involved in the iconic Ulu Jelai hydropower project, located in the Cameron Highlands, Malaysia.

Improved safety with drones

“Drones have revolutionised certain aspects of developing a hydropower project,” revealed Ms Atkinson, who has been involved in the hydropower industry for more than two decades. She is also a global executive committee member at SMEC.

“Light detection and ranging (LiDAR) as a remote sensing method has become the industry standard during the early development stages of a project. Drones fitted with LiDAR system have made this service affordable for smaller hydropower projects, as fixed and rotary wing planes fitted with LiDAR system have a high initial cost which must be added to the cost of the actual area flown.”

Based in Jakarta, Indonesia, Ms Atkinson is a civil engineer. She was recently appointed to the board of the International Hydropower Association (IHA) for the East Asia and Pacific region.

“SMEC uses drones during the construction of projects for progress photography and to measure excavation and placement of material quantities,” continued Ms Atkinson. “Dam safety inspections require the dam experts to access certain parts of the dam, which are not always accessible, such as spillway chutes, steep dam slopes or vertical structure and intake towers.

“Drone photography is the perfect tool to obtain detailed information about any structural or other defects in these hard-to-reach areas, and in the process reduce the safety risk by not having people accessing these areas.”

She also mentioned that remote operated vehicles (ROVs) for underwater applications are highly specialised equipment, supplied worldwide by only a few companies. “Inspections of water conveyance tunnels of hydropower plants using ROVs is a very cost-effective method to perform a condition assessment with limited downtime of the hydropower plant due to not having to dewater and rewater the tunnels.”

Digital twin to ‘visualise project site’

Speaking about digital twin, Ms Atkinson pointed out that it will become “an integral part of the building information modelling (BIM) process. Throughout the lifecycle of an asset, a digital twin can provide better analysis for informed decisions to help improve energy savings, maintenance and performance.”

The technology can be applied to visualise the project site before construction begins. “It allows for a spatial analysis of the site, to ensure that only the necessary area is used during construction.

“A thorough spatial analysis also helps to predict safety hazards and proactively manage them. Different construction sequences can be trialled to see which one is the most efficient, thus enabling the project to stay on schedule and in turn save time and money. By identifying what equipment is to be used during construction, training can be identified and implemented before construction begins.”

She further emphasised the importance of scan-to-BIM method, a relatively new technology that digitalises the existing hydropower infrastructure. “By scanning structures such as a dam or power station, a digital twin can be created. The digital twin can enable the stakeholder to evaluate



The Ulu Jelai hydropower plant was commissioned in 2016, meeting Malaysia's electricity demand.

when mechanical components need replacing thus avoiding failures.

“By monitoring operations, improvements can be made to performance, resulting in reduced downtimes. By simulating the day-to-day operations of an existing plant, it can be determined where maintenance issues are likely to occur. This helps to predict the operational life of the plant and its components as well as its structural integrity. The improved and targeted maintenance leads to an increase in the lifespan of the asset.”

Digital twin can also be applied in the design of new hydropower plants. “From the outset, the client can communicate to the consultant what the operational outcomes are and the required data to deliver those outcomes. This data can then be built into the digital twin,” explained Ms Atkinson.

“With the use of technologies like artificial intelligence (AI), machine learning (ML) and virtual reality (VR), numerous design options can be simulated to test the generation, transmission and distribution systems. Optimising the design and construction process will help to minimise the projects’ carbon footprint and result in a more sustainable asset for the long term.”

In terms of engineering software, they are also being “improved in leaps and bounds and SMEC is certainly a user of these applications,” added Ms Atkinson. “However, hydropower projects are unique and we found that available project management packages do not allow for and capture the core aspects of our projects. SMEC has therefore developed in-house a project management and information system (PMIS) to cater for the specific needs of hydro projects during the construction phase.”

Autonomous machines ‘can reduce accidents’

Another innovation in engineering and construction is the

development of autonomous machines, which can be deployed on hydropower projects, according to Ms Atkinson.

“Large hydropower projects, particularly those with a large dam, require the transportation of huge volumes of construction materials such as soil, blasted rock and concrete. A large percentage of this work is confined to the immediate construction area and is also repetitive, but with some adjustments as the construction progresses.

“For example, SMEC is currently involved in a very large dam project where about 50 mil cu m of material have to be excavated and moved on the site, of which 25 mil cu m have to be placed as rockfill in the dam structure. This process will certainly lend itself to autonomous excavation equipment and transport vehicles, which will reduce the number of vehicle accidents due to human error.”

Ms Atkinson said such technology was used for the transport and placement of concrete from the batch plant to the dam on the recently completed Baihetan hydropower project in China. Featuring an installed capacity of 16 GW, it is dubbed the second largest hydropower plant in the world.

Use of eDNA sampling

From the ecological perspective, SMEC’s environment teams in Southeast Asia and the Pacific have been using eDNA (environmental DNA) sampling for a variety of projects in Vietnam and PNG, explained Ms Atkinson.

“eDNA is a leading academic innovation which has been sufficiently tested in the field and is now becoming a viable alternative to traditional ecology surveys. The advantage of using this technique is its power to consistently pick up more species in one-time sampling event, compared with traditional survey methods that are both costly and time-consuming.”



The Snowy 2.0 in Australia is another iconic project that SMEC is taking part in.

She highlighted that eDNA is an “efficient, non-invasive and easy-to-standardise sampling approach with great potential as a monitoring tool. It involves using advanced molecular biological equipment to determine the presence of DNA collected in samples from the environment.

“In looking for many species over targeting specific species, it is possible to identify what species are present using DNA Metabarcoding. Other DNA methods can identify if a specific species is present (qPCR, droplet PCR) or identify what a species is from a sample (DNA barcoding).”

What does the future hold?

As onshore hydropower plants continue to be in demand across Asia and worldwide, they will have to be constructed in a more sustainable way, stressed Ms Atkinson. “Hydrogen-powered construction equipment should be one of the first technologies to be used on construction sites to reduce carbon emissions. The development of low-carbon concrete will further reduce the carbon footprint of hydropower projects.

“The design for manufacture and assembly (DfMA) method, 3D printing of smaller components, precast and hybrid

construction and digital engineering will also minimise cost and construction time.”

On the future of offshore hydropower, Ms Atkinson said the potential to generate electricity by using tidal currents or the power of waves is “enormous.” Nevertheless, it is technically and economically challenging.

“Tidal power stations normally require substantial civil works to block off a bay or a channel between two landmasses and to house the turbines, so the economic viability of such projects is and will always be a key decider – and maybe is the reason why there are only a limited number of these plants in operation,” she noted.

“Many companies over the years have developed different technologies for harnessing wave power, and pilot plants and small-scale commercial plants have been constructed. However, the ocean is a technically challenging environment to work in, construct, operate and maintain such generation equipment.”

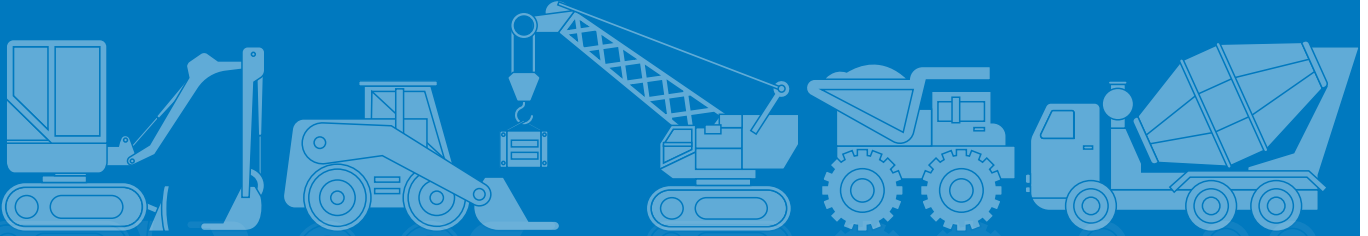
Ms Atkinson believes that developers may still prefer to invest in onshore renewable energy projects with lower risk and cost, “but I foresee that offshore hydropower will have an ongoing role to play in the renewable energy market.” ■

Website: www.smeccom

ONSHORE HYDROPOWER PLANTS WILL HAVE TO BE CONSTRUCTED IN A MORE SUSTAINABLE WAY

Hydrogen-powered construction equipment should be one of the first technologies to be used on construction sites to reduce carbon emissions. The development of low-carbon concrete will further reduce the carbon footprint of hydropower projects.

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