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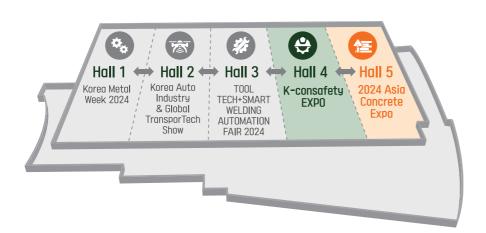
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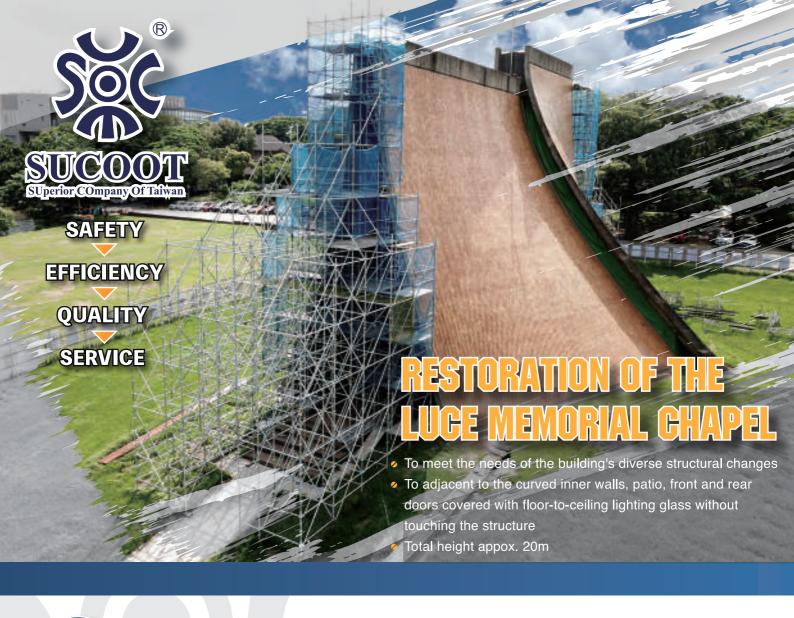
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On the cover:

The Sunkoshi Marin Diversion Multipurpose Project in Nepal (page 38)

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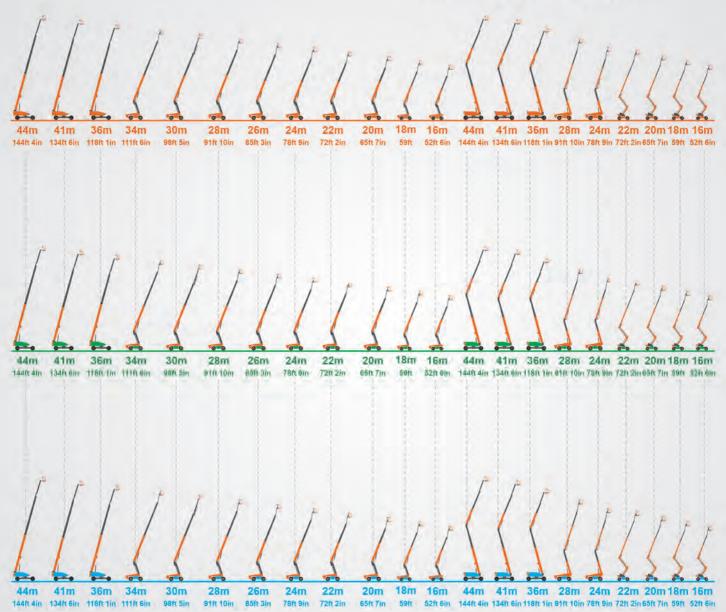








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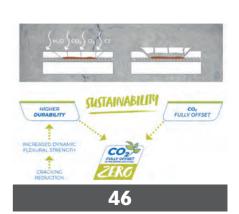






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Construction starts on Vice Presidential Palace in Indonesia's new capital city

Construction has begun on the Vice Presidential Palace in Indonesia's new capital city, Nusantara, with a groundbreaking ceremony held on 12 August. The project is one of the essential components in the country's new administrative centre.

Featuring a "tropical, performative and regenerative design," Indonesia's new Vice Presidential Palace is aimed to become "an environment-friendly and low-carbon building," according to the Nusantara Capital Authority (NCA).

This project is "part of the government's commitment to accelerating the realisation of Nusantara as a modern, green and sustainable administrative hub," said NCA. "The palace is expected to serve not only as a symbol of executive power, but also a reflection of Nusantara's vision as an environment-friendly smart city."

The project will be carried out in two phases, said Diana Kusumastuti, director general of human settlements at the Ministry of Public Works and Housing (PUPR), with the first phase scheduled for completion by August 2025. It involves the construction of the palace, office, residence and supporting facilities.



The groundbreaking ceremony of Indonesia's new Vice Presidential Palace was held on 12 August 2024. The project will be carried out in two phases.

Denzai teams up with Besterra for overseas plant demolition business

Japanese companies Denzai and Besterra have signed a strategic partnership agreement for the development of demolition business for overseas plants.

This collaboration will combine Besterra's engineering technologies (patents, know-how, etc) and construction management capabilities for dismantling plant facilities with Denzai's extensive line-up of equipment, such as ultra-large crawler cranes and special transportation equipment, as well as their procurement and planning capabilities and international mobility.

At the beginning of the partnership, Besterra will also provide its expertise in plant dismantling engineering to Denzai Huationg Pte Ltd in Singapore. Denzai Group will promote strategic business development to meet demand for dismantling and renewal of plant facilities in the region and worldwide.

The two companies have long been building a cooperative relationship. "We have been providing safe, appropriate and efficient demolition work in the Japanese domestic plant demolition market. The new strategic partnership alliance will



Denzai and Besterra teams at the agreement signing ceremony in July 2024.

enable us to cooperate in providing safe, appropriate and efficient demolition services for large-scale plant facilities overseas," said Denzai.

Work on Long Thanh International Airport in Vietnam underway

Work is currently underway on the Long Thanh International Airport in Vietnam, following its groundbreaking ceremony in August 2023. Newtecons, one of the project's contractors, has started construction on the top floor of the terminal building.

As of July 2024, the project has achieved a 20% overall completion rate, said Newtecons. The reinforced concrete works are more than 90% complete.

In the first phase, the Long Thanh Airport will have a capacity of 25 million passengers and 1.2 mil t of cargo per year. Upon full completion, the airport will feature four runways, four passenger

terminals and supporting facilities, with a capacity of 100 million passengers and 5 mil t of cargo annually.

The airport's terminal building, whose design is inspired by a lotus blossom, consists of one ground floor and three upper floors, with a total floor area of 376,451.32 sq m, a roof height of 45.55 m, and 40 remote aircraft parking stands.

This mega project brings together 10 contractors. Newtecons has worked closely with various specialised contractors in civil engineering, steel structure, MEP, BHS and terminal equipment to ensure smooth construction operations.



Kuantan Port Consortium, Northport, Malaysia Rail Link sign MOU to develop ECRL land bridge

Kuantan Port Consortium Sdn Bhd, a subsidiary of IJM Corporation Berhad, Northport (Malaysia) Bhd, a member of MMC Group, and Malaysia Rail Link Sdn Bhd (MRL) have signed a memorandum of understanding (MOU) for the development of the East Coast Rail Link (ECRL) land bridge connecting Kuantan Port to Port Klang.

The MOU outlines a comprehensive collaboration among all parties across several key areas. This includes the development of a strategic plan for establishing a land bridge connecting rail and port operations, which will facilitate efficient cargo movement between the two ports leveraging on the ECRL and reducing transit times. This partnership will also capitalise on the trade opportunities derived from the Belt and Road Initiative as well as the Halal Silk Route to bolster trade and investment links throughout Asia.

Another area of collaboration is in human capital development, which will be carried out through the exchange of technical expertise to address industry challenges and advance operational capabilities. Northport's NICE (Northport International Centre of Excellence), a training centre accredited by Jabatan Pembangunan Kemahiran and Human Resource Development Corporation (HRD Corp), will be utilised to provide comprehensive training programmes, enhancing skills and competencies across both ports.

According to MRL CEO, Dato' Sri Darwis Abdul Razak, MRL together with Kuantan Port and Northport will develop a comprehensive plan involving infrastructure requirements, operational procedures and timelines that will optimise the usage of the ECRL land bridge. This includes coordinating efforts between the parties to ensure a smooth integration of rail and port operations as well as cargo movement between Kuantan Port and Northport.

ECRL, administered and implemented by MRL, is a 665-km electrified railway link infrastructure project that connects Kota



The MOU signing ceremony was held on 15 August 2024 in Kuantan, Malaysia.

Bharu in Kelantan to Port Klang in Selangor, bridging the East Coast and West Coast of Peninsular Malaysia. This project aims to link state capitals, major urban centres, industrial hubs, ports, airports and tourism zones while interchanging with existing railway lines in Peninsular Malaysia.

The project, which is scheduled for full completion in December 2027, is designed to enhance transportation connectivity, facilitate economic development, and promote trade and tourism along the East Coast region. Primarily a cargo route, the ECRL focuses on optimising rail use with 70% capacity for freight and 30% for passengers, emphasising industrial parks, logistics hubs and transitoriented developments.

Leighton Asia to build new mixed-use development in India

Leighton Asia, a CIMIC Group company, has been awarded a contract to construct a retail mall and a hotel and serviced apartment tower in Gurgaon, India, by the Elan Group.

Located in Sector 82, the project covers 3.1 ha, with a total built up area of approximately 207,000 sq m. It comprises a retail mall with three basements, lower ground, upper ground, five retail floors, five hotel floors and 17 serviced apartment floors with a skybar and terrace.

Leighton Asia's scope of work includes earthworks, structural and civil works, electrical and plumbing works, as well as the construction of underground and overhead water tanks.

"This win further advances Leighton Asia's strong presence in the real estate sector and our growth in India. We are proud to have the Elan Group's trust and to meet their requirements," said Brad Davey, managing director of Leighton Asia.

"It is great to have Leighton Asia selected to deliver another exciting project for the Elan Group, for which we are already constructing a major residential development," added Juan Santamaria, executive chairman of CIMIC Group.

The project has a Green Rating for Integrated Habitat



Construction of the project is scheduled to commence in September 2024.

Assessment (GRIHA) 4-star rating target. Construction is planned to start in September 2024, with completion expected in the fourth quarter of 2027. ■







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Arup, Asia Infrastructure Solutions partner for HK's first smart and green mass transit system

Arup and Asia Infrastructure Solutions (AIS) joint venture has been appointed by the Highways Department of Hong Kong Government to provide investigation, design and construction consultancy services for the Smart and Green Mass Transit System project in East Kowloon.

This new transit system, a key component of Hong Kong's smart mobility initiatives, will be commissioned for the first time in Hong Kong. It will connect over 300,000 residents to nearby MTR stations and major public transport interchanges, easing traffic congestion in the area. The system is about 7 km long, including 6 km of viaducts, a 1 km tunnel and eight stations along the line, running from Choi Hung East to Yau Tong East.

The complexity of the project requires diverse expertise across design, construction, operation and maintenance and procurement, necessitating extensive site investigation works due to the challenging terrain. The joint venture (JV) will provide multidisciplinary services including engineering design, site investigation, construction of depots and systems, pedestrian linkage design, transport planning, civil engineering, environmental consultancy, technical assessment, financial assessment and project management. Additionally, the JV will assist in developing the relevant regulatory regime, introducing this new system in Hong Kong.

"The introduction of the smart and green mass transit system marks a groundbreaking endeavour in Hong Kong," said Jason Wong, director and East Asia rail business leader at Arup. "It will greatly benefit the local community by improving accessibility with sustainable and innovative transport solutions. The appointment



Representatives from Arup-AIS Joint Venture have signed an investigation, design and construction consultancy agreement for the Smart and Green Mass Transit System project in East Kowloon, Hong Kong.

has reinforced our leading role in providing multidisciplinary services and delivering excellence in transportation projects. In collaboration with AIS, we are excited to bring our rich experience in managing complex projects, cross-sector expertise and international perspectives to the project."

Ken Lee, managing director, railways (Asia) at AIS, added, "The development of this smart and green mass transit system will enhance the efficiency, cost-effectiveness and sustainability of Hong Kong's transportation networks. We are excited to participate in this project by providing management and multidisciplinary expertise to deliver exceptional service. Together with Arup, we are committed to leveraging our extensive experience and working as an integrated team to successfully manage and deliver the project." ■

Pan-United to deploy Singapore's first electric concrete mixer truck

Pan-United Corporation Ltd has unveiled Singapore's first electric concrete mixer truck, underlining its commitment to sustainability. This introduction marks a milestone in Pan-United's journey to become a carbon-neutral ready-mix concrete company by 2050.

Using an electric-powered mixer truck will reduce the carbon footprint of transporting ready-mix concrete by 45% compared to a fuel-powered truck, according to Pan-United. Moreover, using electric vehicles (EVs) in a highly dense urban environment like Singapore can reduce noise pollution significantly.

"We hope to eventually operate a substantial fleet of electric concrete mixer trucks for our day-to-day operations," said Ken Loh, CEO of Pan-United. "This step marks an exciting new venture in exploring alternative fuel technology and a deepening commitment to accomplish Pan-United's aim of being a carbonneutral ready-mix concrete company by 2050."

He added, "Pan-United has actively been exploring ways to reduce our embodied and operational carbon emissions. This includes the use of alternative fuels and electric gensets in our operations to lower our carbon footprint. We will continue to actively explore new and innovative solutions and products to decarbonise and accelerate the global climate transition."

Pan-United took delivery of the truck from Chinese equipment



Singapore's first electric concrete mixer truck painted in Pan-United's signature red and blue.

manufacturer Sany. This electric-powered truck has a sizeable 350 kWh battery, which serves up to 360 kW at peak power, and takes two hours to achieve a full charge. For comparison, a typical Category A passenger EV with a battery capacity of 78 kW takes roughly half an hour to charge fully.



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The new AC 5.250-2 combines an enormous reach with large lifting capacities that are up to 30 percent higher than previous best values in this class. That makes it the perfect choice for erecting tower cranes and for construction projects of all types.

Its transportation configuration options and sophisticated counterweight design are also exceptional and ensure that the crane can be ready for work in no time. On top of this, many of the latest Tadano features are available – examples include the IC-1 Plus and Surround View systems, as well as the start-stop function, which turns off the crane engine during work breaks at the press of a button without deactivating the control software.

HK's PolyU researchers invent soft robotic clothing for automatic thermal adaptation in extreme heat

A team led by Dr Dahua Shou, Limin endowed young scholar in advanced textiles technologies and associate professor of the school of fashion and textiles at the Hong Kong Polytechnic University (PolyU), has developed first-of-its-kind soft robotic clothing that can automatically adapt to changing ambient temperatures, helping to ensure working safety in hot environments. Their research findings have been published in the international interdisciplinary journal Advanced Science.

Thermal protective clothing is essential to safeguard individuals in extreme hightemperature environments, such as construction workers who work outdoors for extended periods and firefighters who need to be present at fires scenes. However, traditional gear has been limited by statically fixed thermal resistance, which can lead to overheating and discomfort in moderate conditions, while its heat insulation may not offer sufficient protection in extreme fire events and other high-temperature environments, explained PolyU. To address this issue, Dr Shou and his team have developed intelligent soft robotic clothing for automatic temperature adaptation and thermal insulation in hot environments, offering superior personal protection and thermal comfort across a range of temperatures.

Their research was inspired by biomimicry in nature, like the adaptive thermal regulation mechanism in pigeons, which is mainly based on structural changes, shared PolyU. Pigeons use their feathers to trap a layer of air surrounding their skin to reduce heat loss to the environment. When the temperature drops, they fluff up their feathers to trap a significant amount of still air, thus increasing thermal resistance and retaining warmth.

The protective clothing developed by the team uses soft robotic textile for dynamic adaptive thermal management. Soft actuators, designed like a human network-patterned exoskeleton and encapsulating a non-toxic, non-flammable, low-boiling-point fluid, were strategically embedded within the clothing. This thermo-stimulated system turns the fluid from a liquid into a gas when the ambient temperature rises, causing expansion of soft actuators and thickening the textile



A team at the Hong Kong Polytechnic University (PolyU), led by Dr Dahua Shou, has developed first-of-its-kind soft robotic clothing that can automatically adapt to changing ambient temperatures, helping to ensure working safety in hot environments. This innovation has many potential applications, including sustainable textile-based insulation for construction and buildings.

matrix, thereby enhancing the gap of still air and doubling the thermal resistance from 0.23 to 0.48 Km²/W. The protective clothing can also keep the inner surface temperatures at least 10°C cooler than conventional heat-resistant clothing, even when the outer surface reaches 120°C.

According to PolyU, this innovative soft robotic textile, made by thermoplastic polyurethane, is soft, resilient and durable. Notably, it is far more skin-friendly and conformable than temperature-responsive clothing embedded with shape-memory alloys and is adjustable for a wide range of protective clothing. The soft actuators have exhibited no signs of leakage after undergoing rigorous standard washing tests. The porous, spaced knitting structure of the material can also significantly reduce convective heat transfer while maintaining high moisture breathability. Not relying on thermoelectric chips or circulatory liquid cooling systems for cooling or heat conduction, the light-weighted, soft robotic clothing can effectively regulate temperature itself without any energy consumption.

Dr Shou said, "Wearing heavy firefighting gear can feel extremely stifling. When firefighters exit a fire scene and

remove their gear, they are sometimes drained nearly a pound of sweat from their boots. This has motivated me to develop a novel suit capable of adapting to various environmental temperatures while maintaining excellent breathability. Our soft robotic clothing can seamlessly adapt to different seasons and climates, multiple working and living conditions, and transitions between indoor and outdoor environments to help users experience constant thermal comfort under intense heat."

Looking forward, Dr Shou finds the innovation to have a wide range of potential applications, from activewear, winter jackets, healthcare apparel and outdoor gear, to sustainable textile-based insulation for construction and buildings, contributing to energy-saving efforts. Supported by the Innovation and Technology Commission and the Hong Kong Research Institute of Textiles and Apparel, Dr Shou and his team have also extended the thermo-adaptive concept to develop inflatable, breathable jackets and warm clothing. This soft robotic clothing is suitable for low-temperature environments or sudden temperature drops to aid those who are stranded in the wilderness to maintain normal body temperature.



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Our Commitment Shows

Obayashi opens construction-tech lab in Singapore as R&D base for Asia

Japan's Obayashi Corporation has established its overseas R&D base in Singapore for the Asian region. This new facility, named Obayashi Construction-Tech Lab Singapore (OCLS), was officially launched on 18 July 2024.

OCLS will serve as a hub for fostering and deploying nextgeneration construction productivity technologies in the Asian region, as well as for strengthening Obayashi's research and development efforts through proactive collaboration with internal and external stakeholders.

Obayashi has been actively engaged in research and technology development both domestically and internationally. Among these efforts is the launch of its Asia Digital Lab project team in 2022, also in Singapore, to gather information on the latest construction technologies in the Asian region.

In Singapore, labour-saving and productivity improvement have become major social issues in the construction industry, triggered in part by the shortage of foreign workers due to the pandemic, Obayashi explained. Construction companies and start-ups in Singapore and abroad are actively developing technologies and applying them to construction sites.

To that end, Obayashi has set up OCLS as a base for joint research and development with universities and other research institutions, construction companies, and start-ups in Asia. The focus will be on construction robotics technology, which is being actively developed and applied in the Asian region, and supporting its application to construction sites in Asia. In the future, OCLS will expand its scope to fields beyond construction robotics, actively promote the results of its research and development outside Japan, and promote the spread of its technology.

With OCLS as a starting point, Obayashi aims to solve social issues on a global scale by building a research and development ecosystem in Singapore and the rest of Asia, and accelerating the development of future-oriented technologies that transcend the boundaries of the construction industry.

OCLS offices are located at Building and Construction Authority's (BCA) Braddell Campus, making them part of the Built Environments Innovation Hub (BEIH) ecosystem. Launched in October 2023, BEIH is envisioned as a collaborative space for like-minded individuals to connect and showcase innovative technologies, exchange ideas, and transfer knowledge to accelerate the transformation of the built environment.

R&D initiatives at OCLS

OCLS will receive funding support from BCA's Productivity Innovation Project (PIP) incentive scheme to bring robots from Chinese robot maker Fang Shi Technology to Singapore. This PIP scheme co-funds technology adoption and innovations that improve productivity. Fang Shi's concrete levelling and troweling robots will be used in one of Obayashi Singapore's ongoing projects, aiming to greatly reduce the manual labour required compared to existing methods.

OCLS will also collaborate with the Singapore Centre for 3D Printing (SC3DP), located within Nanyang Technological University (NTU), to explore the application of 3D printing technology in the construction industry. Under the new master research



The new Obayashi Construction-Tech Lab Singapore (OCLS) will serve as a hub for fostering and deploying next-generation construction productivity technologies in the Asian region.



OCLS will also collaborate with the Singapore Centre for 3D Printing (SC3DP), located within Nanyang Technological University (NTU), to explore the application of 3D printing technology in the construction industry.

collaboration agreement (MRCA), OCLS and NTU Singapore will launch a joint laboratory at SC3DP. This partnership will focus on developing research initiatives that will pioneer the development of sustainable construction materials and the 3D printing of mechanical joints and multi-material components.

"NTU's partnership with Obayashi represents a significant step forward in leveraging cutting-edge 3D printing technology and NTU's deep expertise in additive manufacturing and engineering, to develop innovative solutions for industrial applications and to address critical challenges in construction, such as manpower constraints, productivity and sustainability," said Professor Lam Khin Yong, vice president (industry) of NTU Singapore and the signatory for the MRCA.

In addition, following the memorandum of understanding (MOU) that OCLS and Singapore University of Technology and Design (SUTD) signed last November, both parties plan to conduct joint research and explore collaborations in the areas of design, development and application of robotic solutions as well as artificial intelligence (AI) to enhance the design and construction process. For example, SUTD and OCLS will be mapping construction sites using sensors and AI to explore ways to make them robot-friendly. Another area of collaboration is the development of a platform or framework enabling the remote management of multiple robots on different construction sites.



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Pile Dynamics expands into Middle East with TAQELL ME

Pile Dynamics, Inc. (PDI) has expanded into the Middle East with the opening of TAQELL Middle East Operations Centre (TAQELL ME) in Abu Dhabi. This facility is an extension of TAQELL Edification Pvt Ltd Calibration Centre located in Bangalore, India, one of several authorised PDI calibration service centres worldwide. TAQELL's new operations centre helps cover the demand for PDI's equipment sales and technical support in the UAE and surrounding markets.

TAQELL, led by Dr. CR Parthasarathy, will be able to provide a comprehensive list of services including calibrations and certain PDI equipment repairs, equipment sales, training and related technical support.

"TAQELL stands for Training Academy for Quality Enhancement of Life through Learning," explained Dr. CR Parthasarathy, managing director of Sarathy Geotech and Engineering Services Pvt Ltd. "We are committed to empowering individuals to achieve their full potential and make a positive impact in their chosen fields, while also contributing to the growth and success of their organisations and communities."

TAQELL ME will serve the UAE, Qatar, Oman, KSA, Bahrain, Kuwait, Yemen and neighbouring countries. A third TAQELL Operations Centre is planned to open in Saudi Arabia in 2025.

TAQELL will offer regular online panel discussions for PDA users to share knowledge, experiences and technical challenges in the coming months. "We are excited to support growing markets internationally, such as TAQELL ME, and to help educate governing bodies on the importance of QA/QC testing in deep foundation projects," said Anna Sellountou-Rausche, director of global sales at PDI.

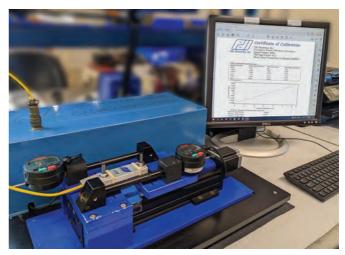
Jan De Nul wins contract for Palm Jebel Ali project in Dubai

Nakheel, a member of Dubai Holding Real Estate, has awarded an AED 810 million contract for marine works on Palm Jebel Ali to Jan De Nul Dredging Ltd. The latter will be responsible for dredging, land reclamation, beach profiling and sand placement, directly supporting the construction of villas across all fronds and will complete the marine works in just over two years.

The first eight fronds of the project are expected to be site-ready by the first quarter of 2025, allowing for the commencement of villa infrastructure and civil works.

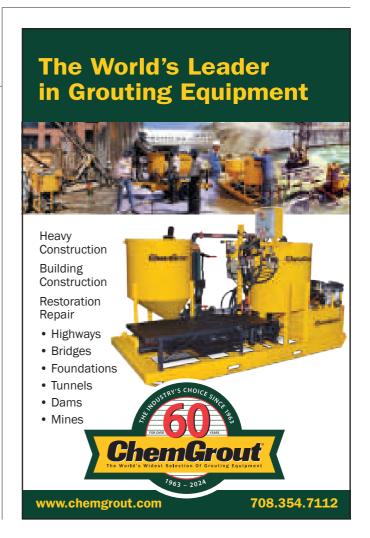
Aligned with the Dubai 2040 Urban Master Plan vision, Palm Jebel Ali is set to become a global destination featuring a wide range of luxury lifestyle amenities. The island will span 13.4 km, with 16 fronds and 91 km of beachfront. ■

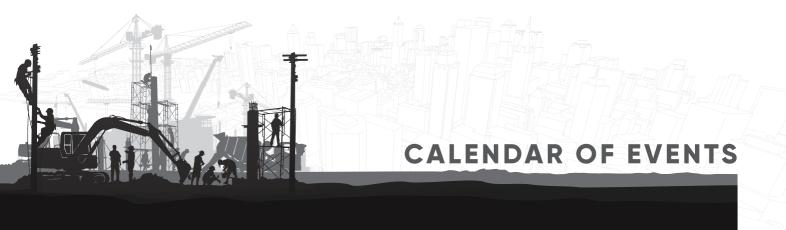




PDI manufactures quality assurance solutions for the deep foundation industry. The company supplies QA testing instrumentation globally.

PDI is a global manufacturer of quality assurance (QA) solutions for the deep foundation industry. Headquartered in Cleveland, Ohio, USA, the company supplies QA testing instrumentation globally. \blacksquare





// Events in Asia

BCT Expo (Building Construction Technology Expo)

18 to 20 Sept 2024

Impact Exhibition and Convention Centre Bangkok, Thailand Website: www.bct-construction.com

K-ConSafety Expo / Asia Concrete Expo & Smart Modular Construction Expo

16 to 18 Oct 2024

Korea International Exhibition Centre Goyang, South Korea Website: www.k-consafetyexpo.com / www.asiaconcretex.com

Philconstruct

7 to 10 Nov 2024

SMX Convention Centre Manila & World Trade Centre Metro Manila Metro Manila, The Philippines Website: www.philconstructevents.com/philconstruct-manila-2024

Smart Construction Expo

20 to 22 Nov 2024

Korea International Exhibition Centre Goyang, South Korea Website: www.smartconexpo.com/eng

bauma China

26 to 29 Nov 2024

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

bauma Conexpo India

11 to 14 Dec 2024

India Expo Centre Greater Noida, India Website: www.bcindia.com

BuildTech Asia

26 to 28 Mar 2025

Singapore Expo Singapore Website: www.buildtechasia.com

Geo Connect Asia

9 to 10 Apr 2025

Sands Expo & Convention Centre Singapore

Website: www.geoconnectasia.com

// Events outside Asia

Metalcon

30 Oct to 1 Nov 2024

Georgia World Congress Centre Atlanta, USA Website: www.metalcon.com

World of Concrete

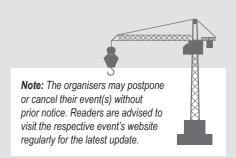
21 to 23 Jan 2025

Las Vegas Convention Centre Las Vegas, USA Website: www.worldofconcrete.com

bauma

7 to 13 Apr 2025

Munich Trade Fair Centre Munich, Germany Website: www.bauma.de





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Global AI Construction Safety and Concrete Seminar to be held in South Korea in Oct 2024

The Global AI Construction Safety and Concrete Seminar 2024 will be held on 16 October at the Korea International Exhibition Centre (KINTEX) in Goyang, South Korea. Jointly organised by Smart Construction Confluence Association, KINTEX and Korea Construction Newspaper, the event will be co-located with Asia Concrete Expo and Korea Construction & Industrial Safety Expo (K-ConSafety Expo) 2024.

"Smart safety technology comprises a major part of the Ministry of Land, Infrastructure and Transport's ambitious R&D project, promoting the development of smart construction technology. This seminar is highly anticipated as it will feature presentations from leading companies and experts in digital-based construction site safety technology," said Seongmin Jo, second president of Smart Construction Confluence Association.

At the seminar, the awards for the '1st Smart Technology Video Contest' will also be presented. Another highlight is the session on 'Smart Construction Seminar,' which will be divided into two segments: 'Smart Technologies Utilising AI' and 'Global Cutting-Edge Concrete Production and Construction'.

The 'Smart Technologies Utilising Al' segment will cover a wide range of topics, including paradigm shift in smart safety management systems; smart safety control for construction site safety management based on BIM; Al video analysis service for construction site accident prevention using synthetic data; generative Al construction GPT and quality safety management; real-time facility risk management solution using 'Meerkat' AloT intelligent sensors; dynamic risk prediction solution (S100) utilising Al; and the real-world integration of 4D BIM and control platform-based smart safety technology.

The 'Global Cutting-Edge Concrete Production and Construction' segment will also feature a variety of topics by speakers from global companies, such as Progress Group, Kraft Curing Systems, BHS Sonthofen, and Lotte Engineering & Construction, among others.

In addition, K-ConSafety Expo and Asia Concrete Expo will host a networking session. It will be attended by over 200 participants, comprising leaders from 40 global companies, 40 buyers, major exhibitors, and members of the Smart Construction Confluence Association.

The Global AI Construction Safety and Concrete Seminar is sponsored by various organisations, including the Ministry of Land, Infrastructure and Transport; Seoul Metropolitan Government; Public Procurement Service; Korea Expressway Corporation Smart Construction Division; National Railroad Corporation; Korea Land and Housing Corporation; Korea Institute of Construction Engineering and Management; Sustainable Smart City Research Centre; Korea Construction Association; Korea Mechanical Contractors Association; Korea AI Smart Home Industry Association; Korea Remodelling Association; Korean Institute of Architects; KNX Korea Association; and Smart Interior Forum.

K-ConSafety Expo, which will take place from 16 to 18 October 2024, focuses on promoting smart safety technologies in construction and workplaces to prevent accidents and reduce damages. Over 150 companies with advanced safety



The Global AI
Construction
Safety and
Concrete
Seminar will
take place on
16 October
2024 at KINTEX,
South Korea,
in conjunction
with Asia
Concrete Expo
and K-ConSafety
Expo 2024.

technologies are expected to participate. Meanwhile, Asia Concrete Expo aims to promote the latest concrete production, construction technologies and products, featuring over 100 companies from countries such as Germany, Italy and China. The event will be held concurrently with Smart Modular Construction Expo.

Website: www.k-consafetyexpo.com / www.asiaconcretex.com



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IPAF introduces online marketplace for MEWPs in Asia

The International Powered Access Federation (IPAF) has introduced its new online marketplace, serving as a one-stop solution for customers looking for mobile elevating work platforms (MEWPs) in Asia. This platform is free to use and currently includes IPAF members located in the Asian region, excluding countries in South Asia.

Through the IPAF marketplace, customers can receive multiple quotations from different MEWP rental companies and also download MEWP safety related guidance, checklist, toolbox talk and posters.

Customers only need to follow four simple steps: 1). Register as a marketplace user; 2). Select the type of MEWP they require; 3). Request quotations from multiple providers; 4). Compare and choose the best offer for their project.

IPAF is a non-profit organisation dedicated to promoting the safe and effective use of powered access equipment globally. It achieves this objective by providing technical advice and information; influencing and interpreting legislation and standards; as well as implementing safety initiatives and training programmes.

Website: https://ipaf-wopa.com/marketplace-mewp.php



IPAF Asia Conference 2024 concludes in China

The IPAF Asia Conference 2024 recently concluded in Nanjing, China, which took place on 1-2 August at the Renaissance Nanjing Olympic Centre Hotel. This two-day event brought together over 240 industry professionals from China, Singapore, Malaysia, Thailand, Hong Kong and Taiwan, to discuss the latest trends emerging across the powered access industry.

Day 1 commenced with an opening speech by the guest of honour, Hu Yuhong, deputy director general of the International Exchange and Cooperation Centre, Ministry of Emergency Management. After that, IPAF CEO Peter Douglas gave a welcome speech, setting an optimistic tone for the conference.

The morning sessions included a presentation by Tim Mo, IPAF China regional manager, who provided an overview of IPAF's 'Crushing Can Kill' campaign. His insights underscored the critical importance of accident reporting in enhancing workplace safety. Romina Vanzi, IPAF head of regional development and MCWPS, alongside Susan Xu, general manager of Sinoboom, further emphasised the significance of safety and collaboration in the industry with IPAF.

Stefano Scapin, chief business development officer APAC at COBO, delivered his presentation on leveraging safety features for competitive advantage. His session was followed by Martin Wraith, IPAF Rental+ Scheme manager, who provided a comprehensive tutorial on optimising rental businesses through established rental standards.

After the lunch and networking session, the conference resumed with a talk by Brian Parker, IPAF head of safety & technical, on the new EU machinery regulation – a crucial topic for MEWP manufacturers. Then, Roseline Zhang from Ducker Carlisle delivered a comparative analysis of the MEWP rental market in China and overseas.

A highlight of the day was the panel discussion on the challenges and opportunities in the Asia MEWP industry. Moderated by Karin



Sun from Off-Highway Research, the panel comprised industry leaders Xu Shenghui, Desmond Ong, Li Ying, and Harry Wang who delved into topics such as ensuring safe MEWP operations and responding to trends in electrification and new equipment policies.

The conference's final sessions featured Zhu Jiayu, vice president and performance manager at Zhongneng United, discussing digitalisation's role in enhancing MEWP safety. Before the conference concluded, Jeff Wang, EHS director at Century 3 (Shanghai) Inc. gave a talk on incorporating safety in construction projects. The evening was marked by a gala dinner sponsored by TVH.

"Recent safety incidents have underscored the importance of safety as the foundation for industry growth, making this conference more crucial than ever. IPAF presented the latest global accident reports, best safety practices, and practical solutions based on safety training and system certification to promote the safe and effective use of MEWPs in the region. The conference also addressed new products, applications, trends, demands, challenges, and opportunities shaping the industry," explained Mr Mo . ■





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Liebherr unveils large hydrogen-powered wheel loader

The Liebherr plant in Bischofshofen, Austria, recently celebrated two major milestones: the launch of the world's first large wheel loader with a hydrogen engine, and the opening of the first hydrogen filling station in the state of Salzburg.

According to Liebherr, the L 566 H is the world's first prototype large wheel loader with a hydrogen engine. Following extensive studies, this technology was identified as the optimal solution for operating large vehicles that are difficult to electrify without CO2 emissions.

For smaller vehicles up to about 15 t, battery-electric solutions are often suitable. However, the situation is different with larger machines with an operating weight of up to 40 t and high energy requirements. Hydrogen reciprocating piston engines prove to be ideal in this case.

These hydrogen engines are manufactured at the engine plant of Liebherr's components product segment in Bulle, Switzerland. They enable not only zero emissions of greenhouse gases and almost no nitrogen oxides, but are also highly efficient. Furthermore, the interfaces are comparable to those of a diesel engine – thermally and mechanically.

Another highlight at the launch event was a MAN truck with a hydrogen engine. This shows that hydrogen technology is not

only feasible in wheel loaders, but is already used in construction site trucks.

As part of the development, Liebherr Bischofshofen has opened its own hydrogen filling station. A strategic partner in this project is Maximator Hydrogen, the manufacturer of the new filling station and a research partner of Liebherr. Together, they are working on mobile filling facilities so that machinery can be refuelled directly at the construction sites — which is important especially for remote projects and machines that are not very mobile.

"To make progress in hydrogen research, we need to have access to hydrogen. We built this filling station to further advance







ABOVE: Liebherr Bischofshofen presents the world's first large wheel loader with a hydrogen engine.

LEFT: The official opening of the hydrogen refuelling station at Liebherr Bischofshofen facility.

BELOW: The hydrogen wheel loader being refuelled at the hydrogen filling station.

BOTTOM LEFT: The hydrogen wheel loader in action during a machine show.



our goals for decarbonising construction machinery," said Dr.-Ing. Herbert Pfab, chief technical officer at Liebherr Bischofshofen.

Another partner of Liebherr is MPREIS, which ensures the supply of green hydrogen. This is also important because only through emission-free production – using wind, hydroelectric or solar energy – can hydrogen play a key role as a sustainable and climate-friendly energy source.

Website: www.liebherr.com



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RM J110X: Rubble Master's first jaw crusher

Rubble Master (RM) has launched its first mobile jaw crusher, the RM J110X – marking the company's entry into the segment. This milestone was celebrated with a special event in Austria on 23 April 2024, attended by over 60 RM dealers and customers worldwide.

"With the jaw crusher, we are venturing into a completely new territory, but we are convinced this is the right step to take. That's because we have the support of long-standing customers, whose high demand prompted the development of this machine," said Gerald Hanisch, founder and owner of RM Group.

The introduction of this new model enables Rubble Master to provide full crusher and screen train solutions to meet the industry's evolving material processing requirements. "With the RM J110X, we are not only entering a new business field but also demonstrating once again our ability to drive innovation," continued Mr Hanisch.

The RM J110X jaw crusher is ideal for processing natural rock and heavy-duty recycling materials. The crushed material can either be used right away or serve as feed material for a following crushing step.

The new jaw crusher is versatile and can be used with almost all types of rock, regardless of how hard or abrasive the material is, said Rubble Master. It is equally effective in recycling applications, even with high levels of rebar.

The RM J110X also sets new standards in terms of modularity and offers an excellent throughput-to-weight ratio, added Rubble Master. With a range of equipment options available, users can customise the machine to suit their specific requirements.

According to Rubble Master, the natural rock sector presents significant opportunities, and the company sees great potential for the new jaw crusher in Southeast Asia, Australia, and particularly North and South America, which are important target markets.

"We are ready to turn current challenges into opportunities for growth and development. The RM J110X is proof that we remain leaders in innovation and technology even in difficult times," concluded Mr Hanisch.

Website: www.rubblemaster.com

RIGHT: The new jaw crusher from Rubble
Master, the RM J110X, is ideal for processing
natural rock and heavy-duty recycling materials.

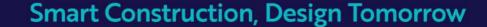






TOP: Rubble Master sees great potential for the new jaw crusher in Southeast Asia, Australia, as well as North and South America.

ABOVE: With the introduction of the RM J110X, Rubble Master can now provide full crusher and screen train solutions to meet the industry's evolving material processing requirements.





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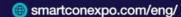
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Caterpillar helps boost job efficiency at quarries with VisionLink Productivity

Caterpillar offers VisionLink Productivity to assist quarry managers leverage data to reduce costs and focus on inefficiencies while increasing productivity and profitability. This digital platform allows quarry manager to easily make decisions, and with good insights.

VisionLink Productivity is a cloudbased, scalable application that acts as a productivity management solution on job sites. By collating information collected from every machine in the fleet via ProductLink, VisionLink Productivity provides the key business insights that users need to make the most out of the resources available to them.

With a collection of rich and accurate data recorded and uploaded, quarry owners can have a high-level overview of the production process or drill down to access insights on the exact machine or process on site.

While the machines are within the pre-configured geofence, ProductLink serves as an important platform to collect information on a product level. When this information is uploaded to VisionLink Productivity, quarry owners can go on to access process-related information (e.g. swing time, load time and roading time) within the job site. Understanding each process in detail helps to highlight

inefficiencies and bottlenecks to drive that conversation on reducing unnecessary waste daily.

Through VisionLink Productivity, quarry managers can gain greater visibility on important metrics relating to costs and output. By integrating GPS data with the onboard payload monitoring system, quarry managers can learn about cycle time and output volume in real time.

Additionally, with ProductLink constantly tracking idle time and fuel consumption on every machine, VisionLink Productivity can grant users, information relating to total fuel costs and total idle time across the job site. Better visibility on key metrics also enables users to estimate future costs accurately based on these historical data.

VisionLink Productivity further helps quarry managers drive the conversation of adopting changes to increase efficiency amongst operators. The ability to replay events with powerful visuals such as maps and graphs alongside them provides the opportunity for a detailed review of certain processes to be conducted with the operators, to strike off inefficiencies and find solutions.

What's more, the new E-Ticketing feature brings convenience, eliminating the need for manual or printed tickets generated by onboard Cat Payload systems. Users can now receive an electronic copy of the tickets via email, including detailed information on



LEFT: VisionLink Productivity is a cloud-based application that acts as a productivity management solution on job sites. This digital platform helps quarry managers leverage data to reduce costs and focus on inefficiencies while increasing productivity and profitability.

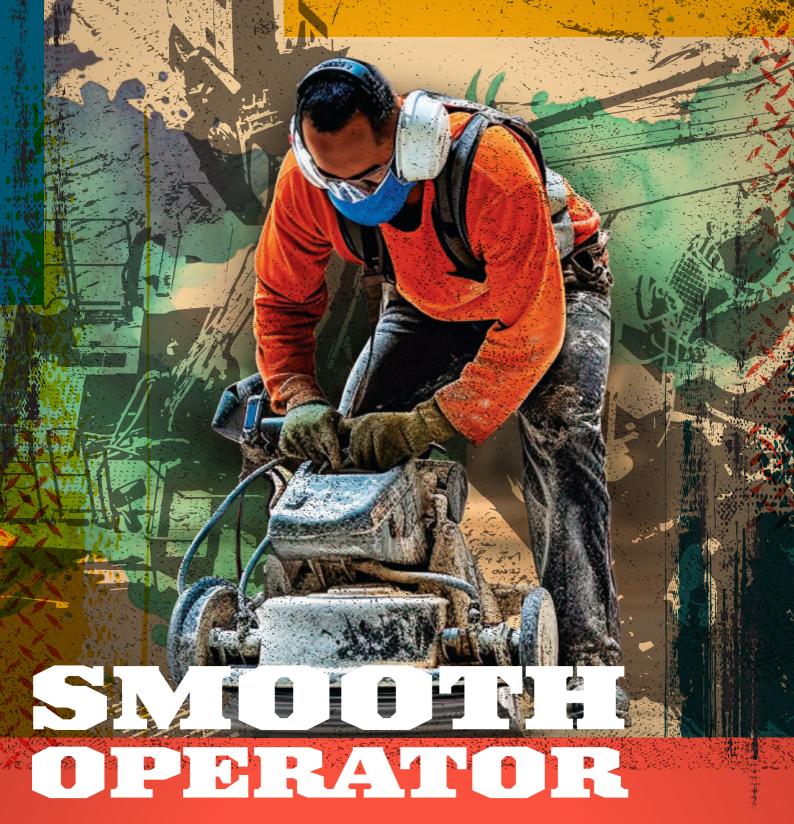
BELOW Through VisionLink Productivity, quarry managers can gain greater visibility on important metrics relating to costs and output. By integrating GPS data with the onboard payload monitoring system, quarry managers can learn about cycle time and output volume in real time.



individual buckets, total payload, truck, and material type.

These tickets can be quickly recalled using ID or number or filtering based on material type or truck name. Key performance indicators tracked by E-Ticketing include ticket count, average truck rate, pass count per ticket, and total ticket payload.

Website: www.cat.com



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bauma China 2024: Wirtgen Group to present new products and technologies for Asian market

Wirtgen Group is set to present its new products and technologies at bauma China, to be held from 26 to 29 November 2024 at the Shanghai New International Expo Centre (SNIEC) in Shanghai, China. These various solutions aim to contribute towards a smarter, safer and more sustainable road construction process chain, as well as efficient mining, quarrying and processing of resources in Asia.

Visitors at bauma China can look forward to seeing around 20 machines and plants from the Wirtgen Group. The focus will be on several new, locally manufactured models developed in collaboration between the specialists at the group's headquarters in Germany and the factory in Langfang, China: a 2-m milling machine including the Mill Assist assistance system from Wirtgen, new Super 1380i and Super 1383i compact class pavers from Vögele, and the 9- to 11-t HD 98i – HD 118i tandem rollers from Hamm. The battery-electric HD 12e compact class tandem roller will also be displayed for the first time.

In addition, the Wirtgen Group will be providing detailed insights into the application-specific core technologies of its specialised product brands. For example, experts will explain the advantages of Wirtgen levelling technology and 3D milling applications, Vögele SprayJet technology as a low-cost asphalt paving method for surface layer rehabilitation, the Navitronic Plus 3D control system, and oscillation from Hamm, which enables the achievement of particularly homogeneous, high-quality

compaction results. In the area of materials processing, Kleemann will be showing how crushing plants can be operated easily and efficiently with the aid of the Spective operating concept.

With a wide range of sustainable solutions, the Wirtgen Group supports and assists its customers in the rapid and cost-efficient realisation of the growing need for infrastructure. Visitors at bauma China will have the opportunity to gather comprehensive, first-hand information about how innovations from the Wirtgen Group can also help increase productivity, improve safety and make construction projects in China more sustainable.

The Wirtgen Group has been manufacturing machines and equipment that meet German quality standards at its factory in Langfang since 2004. Tailored to the specific needs of the local market, the models produced at this facility are designed for long life, cost-efficiency, ease-of-use, and low operating and maintenance costs. With eight locations, two service centres, and an extensive network of dealers, Wirtgen China operates a sales and service network that now serves almost all of the 22 Chinese provinces.

Website: www.wirtgen-group.com

Booth No: E1.510 (Hall 1)



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Challenging geology

Ground conditions included two major fault zones with challenging and varied geology ranging from highly jointed mudstone, sandstone and conglomerate to quartzite, granite, and more. The tunnel was bored through mostly igneous rock with maximum overburden of 1,320 m.

"The overall design of the Robbins TBM is proven, and the equipment's performance and integrity are excellent. Additionally,

its adaptability to the Himalayan geological conditions is very impressive," said Liu Fengfan, SMDMP project manager for contractor B-2/COVEC (China Overseas Engineering Group Co Ltd and China Railway No. 2 Engineering Group Co Ltd).

The TBM and its crew were able to persevere through multiple instances of the shield becoming trapped with bypass tunnels required to free it, including one instance 4 km into tunnelling that required 27 days' worth of work to free the machine from

collapsing and squeezing ground. Despite the challenges, the crew were able to more than make up the time with swift advance rates including 1,503.3 m in one month and 72.6 m in one day, both project records set in March 2024.

The success of the machine, despite adversity, is in part due to its design. The refurbished TBM was originally used at a smaller diameter on Nepal's first TBM-driven tunnel, the Bheri Babai Diversion Multipurpose Project (BBDMP). The design incorporates many of the same components of that original machine, and the process involved final assembly on location at the jobsite.

"One of the highlights is that this machine integrates the overall structure of the 5.06-m-diameter TBM from the Bheri Babai project. After upgrading to 6.4 m diameter, all new front shield components were not assembled in the factory. Instead, we adopted Onsite First Time Assembly (OFTA). This was very effective, and I find it particularly noteworthy," said Jin Haikuan, deputy project manager and TBM production manager for B-2/COVEC.

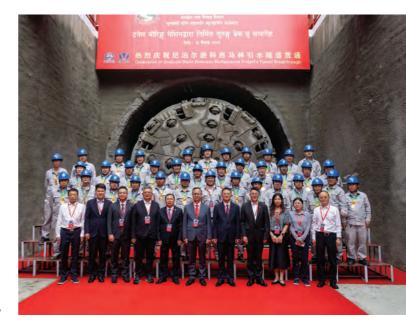
With tunnelling complete, the work of providing both power and water can begin. The tunnel is connected to a new 28.6-MW surface powerhouse on the Marin River to alleviate the shortage of power supply in the area. It will also be used for farmland irrigation in the districts of Dhanusha, Mahottari, Sarlahi, Rauthat and Bara in the Terai Plain, diverting water from the Sunkoshi River to the Marin River for the project owner, the Department of Water Resources and Irrigation under Nepal's Ministry of Energy, Water Resources & Irrigation.

The project's completion is a triumph not only for the communities benefiting, but also for the future of tunnelling in Nepal. "B-2/COVEC and Robbins have successfully introduced and spread TBM technology in Nepal and shown the advantages of it. This country needs more tunnels," said Robbins president Lok Home at the breakthrough ceremony. "To have these good performances on these first two projects is really a good thing for the country and our industry."

Website: www.robbinstbm.com



The TBM breakthrough ceremony took place on 8 May 2024.





ABOVE: The Robbins TBM and its crew overcame challenging geology to achieve swift advance rates including 1,503.3 m in one month and 72.6 m in one day, both project records set in March 2024.

LEFT: With tunnelling complete, the work of providing both power and water can begin. The tunnel is connected to a new 28.6-MW surface powerhouse on the Marin River to alleviate the shortage of power supply in the area.









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A GREENER FUTURE:

JP NELSON INAUGURATES NEW OFFICE AND INTRODUCES BATTERY ENERGY STORAGE SYSTEM



P Nelson, a leading equipment and machinery solutions provider based in Singapore, has officially inaugurated its new office and launched its battery energy storage system (BESS). A special event to celebrate this milestone was held on 30 July 2024, attended by various contractors, suppliers and manufacturers.

The new BESS will serve as a sustainable alternative to diesel-powered generators, shared JP Nelson. At the same time, the company's new office building has been designed with energy-efficient features and eco-friendly practices in mind. These green initiatives are aimed at reducing carbon emissions and enhancing energy efficiency in Singapore's construction sector.

RIGHT: Sustainable solutions like BESS are important to help combat climate change. With the increase in Singapore's carbon tax over the coming years, the BESS will bring an even greater benefit to the local market.



"This milestone signifies our commitment to driving positive change through innovation and sustainable practices," said Nelson Lim, executive chairman of JP Nelson. "With initiatives like BESS integration and transitioning to electric vehicles, JP Nelson is setting new benchmarks in the construction industry."

Speaking at the event, Mr Lim revealed JP Nelson's future direction and goals, which are aligned with Singapore's Green Plan 2030. He said the company plans to bring more electric-powered machines and equipment to the local market, helping to reshape Singapore's construction landscape towards sustainability.

"I am heartened to learn that JP Nelson plans to electrify about 30-40% of your company's local equipment in the coming two years," said Tan Kiat How, Senior Minister of State for Ministry of Digital Development and Information & Ministry of National Development, who spoke at the event as the guest of honour.

"Moving towards electrification can reduce the carbon emissions from such construction equipment by about 50%, compared to conventional diesel equivalents," noted Mr Tan, and added that "electrified construction equipment also allow for a more pleasant environment for workers and surrounding stakeholders, as they are cleaner and quieter. With automation and remote operation, electrified equipment also have the potential of creating a safer environment for workers."

Mr Tan further encouraged all construction industry stakeholders to support Singapore's efforts in raising site productivity and building a greener work environment. "After the severe disruptions caused by the pandemic, the construction industry is now undergoing exciting transformations to better position itself for the future. Global trends such as technological advancements and a heightened focus on sustainability are driving these changes."

BESS: eco-friendly, versatile yet cost-efficient

JP Nelson's new BESS, comprising the BESS 500 and BESS 300, come with a rated power of 500 kW and 300 kW respectively. These models are CE/UL/IEC certified, and are available with a grid, hybrid or synchronise operation system.

Delivering zero emissions and zero noise pollution, both models provide high energy efficiency and economical operation costs.







Their usage can be monitored remotely, making it easier for the users.

The BESS solution offers many advantages, explained JP Nelson. It is environment-friendly, reducing reliance on fossil fuels and greenhouse gas emissions. It can be used in a wide range of applications, from residential to industrial projects. It also enhances the reliability and utilisation

TOP AND ABOVE: JP Nelson has also opened its new office, which has been designed with energy-efficient features and eco-friendly practices in mind. A special event to celebrate this milestone was held on 30 July 2024.

LEFT: The new BESS was showcased at the event alongside other machines and equipment for the Singapore market, including a number of electric models. of renewable energy sources. Plus, it has economic benefits, with potential for cost savings through peak shaving and energy arbitrage.

For Singapore in particular, green energy solutions like BESS are very important to help combat climate change. "Our sea level could rise from 0.2 to 1.15 m, with \$\$100 billion needed to tackle rising sea level," noted JP Nelson, citing a government report on climate change.

"We will also have a warmer temperature, which could go up by up to 5°C (to between 34°C and 37°C), rainfall increase by 500 ml, and dry season for one month every 10 months (as opposed to every few years)."

JP Nelson further pointed out that given the increase in Singapore's carbon tax over the coming years, the BESS will bring an even greater benefit to users in the local market.

"Currently our carbon tax rate is set at \$\$25/tCO2 in 2024, and by 2030 it will go up to \$\$50-80/tCO2. This higher carbon tax means an increase in fuel price," highlighted JP Nelson. "Additionally, the phasing out of ICE (internal combustion engine) by 2040 will make BESS a more attractive option and an ideal choice for the construction industry."

Various machines for Singapore

Besides its new BESS, JP Nelson also offers a number of electric machines for the Singapore market. Among them is an electric wheel loader with a battery capacity of 282/350 kWh. The machine has a rated load capacity of 5,800 kg, bucket capacity of 2.5 to 4.5 cu m, and two-speed electric drive system.

Fitted with a spacious cabin, this electric wheel loader features a gradient angle of 30°, digging force of ≥170 kN, and travelling motor power of 120/240 kW. The machine can operate for up to 12 working hours.

Other electric models include the Zoomlion ZA20JERT electric boom lift with a working height of 22 m, and the Zoomlion ZCC850V-1EV electric crawler crane. The

TOP: Another highlight from JP Nelson is the Zoomlion ZT72J-V, dubbed the world's tallest boom lift, with a working height of up to 72.3 m.

RIGHT: VIP guests at the event, including Tan Kiat How, Senior Minister of State for Ministry of Digital Development and Information & Ministry of National Development (in the centre), had an opportunity to view the ZT72J-V boom lift.









ZCC850V-1EV is able to run for about eight hours or more, with zero emissions and a low noise level, resulting in a cleaner work environment and greater comfort for the operator.

Another highlight is the Zoomlion ZT72J-V, dubbed the world's tallest boom lift. It has a working height of up to 72.3 m, which is equivalent to about 27-storey-high HDB flats (Singapore's public housing), and a horizontal outreach of up to 32 m. The machine's X outriggers provide a larger working envelope, higher off-road ability and better stability.

JP Nelson also offers the Zoomlion ZAT1200V all-terrain crane, a 120-t-capacity, four-axle model equipped with a seven-section boom that can extend up to 66 m, and a 17.5-m fixed jib. This crane has versatile driving modes, such as all-wheel steering and crab steering.

In addition, the Zoomlion ZCT1000V is a 100-t-capacity telescopic crawler crane with a boom length of 50 m and jib length of 16 m. This model is easy to transport, requiring only one lowbed and one trailer.

Website: www.jpnelson.com.sg

TOP (LEFT AND RIGHT): JP Nelson presented its new green energy solutions to various contractors, suppliers and manufacturers at the event. These sustainable initiatives are aimed at reducing carbon emissions and enhancing energy efficiency in Singapore's construction sector.

MIDDLE: JP Nelson's electric crawler crane delivers zero emissions and a low noise level. The machine can operate for about eight hours or more.

RIGHT: JP Nelson also offers an electric wheel loader, which is equipped with a battery capacity of 282/350 kWh.





MAPEI LAUNCHES ZERO LINE: DELIVERING PROJECTS WITH OFFSET CO₂ EMISSIONS

apei has unveiled its Zero line, which comprises products with fully offset CO₂ emissions. This new range aims to reduce environmental impact without compromising on performance.

The CO₂ emissions of products from the Zero line are quantified using standardised LCA (life cycle assessment) methods. Their residual CO₂ emissions are fully offset using certified carbon credits.

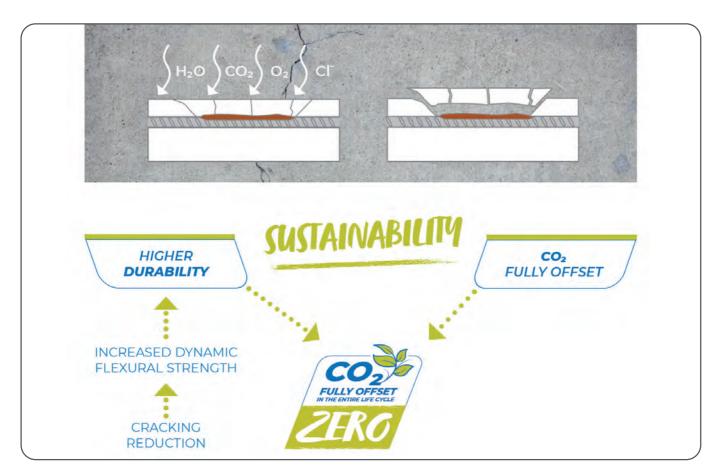
How is CO₂ measured?

 CO_2 emissions from Mapei products are expressed in kg CO_2 eq / kg of product and are calculated using standardised LCA methodology. For each product, the environmental impact is evaluated throughout every stage of its life: from extraction of the raw materials that make up the formula to their transport to the

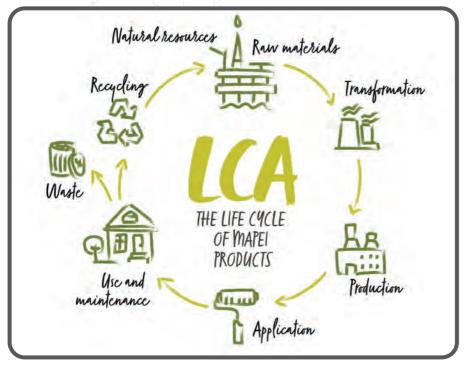
production plant, the production cycle, product packaging, waste materials, transporting the finished product to the distributor and its final disposal.

The results obtained through LCA are verified and certified by an external body by means of an EPD (environmental product declaration) published with the international EPD system. An EPD documents the environmental effect of a product throughout its life cycle and, in the construction sector, are a great help to architects, design engineers and other buyers for a better understanding of the sustainability characteristics and impact on the environment of a product.

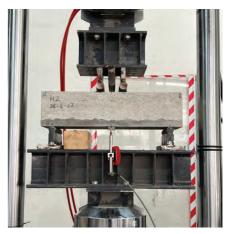
Mapei offsets the CO₂ residual emissions generated by all activities involved in the production of its products through reforestation projects and biodiversity conservation.



Buildings are subjected to dynamic stresses every day, which will eventually lead to the opening of cracks into concrete elements. These cracks not only cause structural damage, but also represent a way for aggressive agents to enter such as carbon dioxide and chlorides, which, combined with water and oxygen action, generate the beginning of corrosion phenomena. To overcome this problem, Mapei has launched its Zero line, comprising products with fully offset CO₂ emissions.



Mapei's Zero line aims to reduce environmental impact without compromising on performance. The CO_2 emissions of the products are calculated using standardised LCA (life cycle assessment) methodology. For each product, the environmental impact is evaluated throughout every stage of its life.



ABOVE: Thanks to their special formulation, Mapei's Zero repair mortars feature excellent fatigue resistance, which has been proven by tests in external laboratories. These products are designed to increase the dynamic flexural strength of repaired concrete elements, resulting in increased resistance to cracking.

BELOW: This graph shows how a mortar from the Zero line, used to repair concrete, is able to increase its dynamic flexural strength characteristics. Specifically, it can be seen that with the same number of load cycles, the dynamic flexural strength is significantly higher.

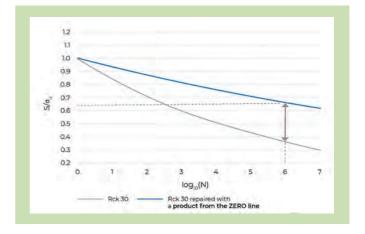
Crack resistance for higher durability

Buildings are subjected to dynamic stresses on a daily basis, which will eventually lead to the opening of cracks into concrete elements. These cracks not only cause structural damage, but also represent a way for aggressive agents to enter such as carbon dioxide and chlorides, which, combined with water and oxygen action, generate the beginning of corrosion phenomena.

Thanks to their special formulation, Mapei's Zero repair mortars feature excellent fatigue resistance, which has been proven by tests in external laboratories. These products are designed to increase the dynamic flexural strength of repaired concrete elements, resulting in increased resistance to cracking.

Among the highlights of Mapei's Zero mortars, especially for the Singapore market, include:

- Mapefer 1K Zero: one-component, anti-corrosion cementitious mortar, which is applied to steel reinforcement to prevent the formation of rust.
- Planitop Smooth & Repair R4 Zero: structural R4-class, quick-setting, thixotropic, fine-grained cementitious mortar, which is ideal for structural repairs and skimming internal and external



horizontal and vertical concrete surfaces. It is also suitable for repairing structures exposed to the air and in permanent contact with water. \blacksquare

Website: www.mapei.com.sg





Mapei's Zero line for the Singapore market currently includes: the Mapefer 1K Zero (left), one-component, anti-corrosion cementitious mortar that is applied to steel reinforcement to prevent the formation of rust; and the Planitop Smooth & Repair R4 Zero (right), structural R4-class, quick-setting, thixotropic, fine-grained cementitious mortar, which is ideal for structural repairs and skimming internal and external horizontal and vertical concrete surfaces.

BUILDING A GREENER RAILWAY IN OSAKA

ontractor Zenitaka-Gumi has been using a Volvo ECR25 Electric excavator to work on the Naniwa-suji urban rail line project in Osaka, Japan. The machine was rented from Nishio Rent-All, which is also providing full after-sales and service support.

Japan has set a goal of reducing its CO2 emissions by 60% by 2035, and zeroemission machines play an important role in promoting sustainability, both at the corporate and national levels.

For the construction of Nishi-Honmachi Station on the Naniwa-suji rail line, the ECR25 Electric has been installed as the main excavation tool for this project, including the excavation of earth and sand. Operating six days a week, five hours a day, the machine helps to deliver the project successfully, strengthening the railroad network, improving access to Kansai International Airport and Shin-Osaka Station, constructing a new station, as well as creating a new axis that will facilitate urban development along the line.

At the same time, because the project will take place in an urban landscape dotted with residential areas, safety, noise and traffic management are all important considerations, reducing CO2 emissions and noise pollution, and minimising the impact on the surrounding environment.

"The Volvo ECR25 Electric has been instrumental in optimising our processes, especially in overcoming the challenges of this city's unique landscape, and its outstanding performance and efficiency have not only contributed to the success of this project, but also to our compliance with our commitment to sustainable construction practices," said the Zenitaka Group. "Through our partnership with Volvo Construction Equipment, we are reaffirming our dedication to responsible construction, minimising environmental impact while also maximising operational efficiency."

The ECR25 Electric excavator has a



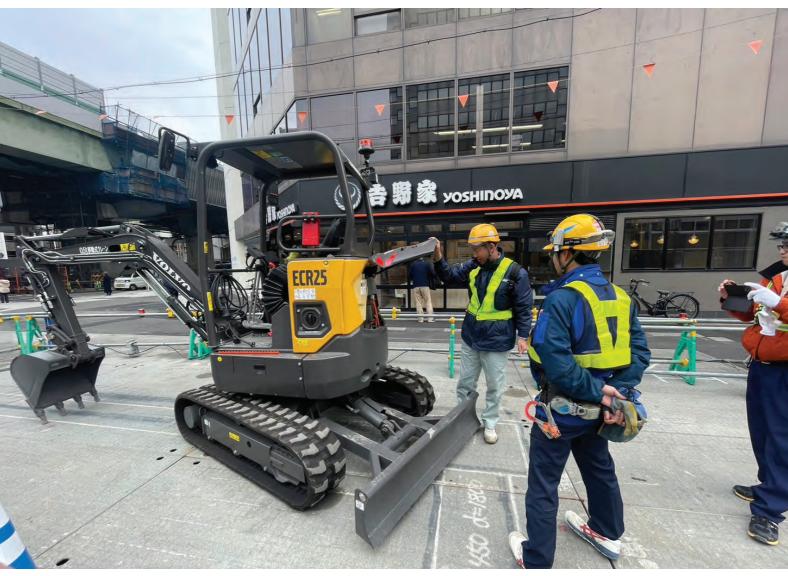
The ECR25 Electric excavator working on a railroad construction project in Osaka, Japan. The machine has a capacity of 2.6-2.8 t and a 20 kWh battery.

capacity of 2.6 to 2.8 t and a crushing force of 22.3 kN. It is equipped with an on-board charger for general charging, an external quick charger (optional for indoor/outdoor use), and a 20 kWh battery, which allows for three to four hours of work per charge. The machine comes with an on-board standard charger and an optional stand-

alone fast charger for indoor/outdoor use.

Volvo Construction Equipment (Volvo CE) is continuing towards its goal of reducing CO2 emissions by 40% by 2040. The commitment is also aligned with Volvo Group's commitment to Science Based Targets. ■

Website: www.volvoce.com



Japan has set a goal of reducing its CO2 emissions by 60% by 2035, and zero-emission machines play an important role in promoting sustainability, both at the corporate and national levels.





LEFT AND RIGHT: For the construction of Nishi-Honmachi Station on the Naniwa-suji rail line, the ECR25 Electric has been installed as the main excavation tool for this project, including the excavation of earth and sand. The machine helps to carry out the job in a sustainable manner.



A GIANT TBM FOR CHINA'S NEW MEGA PROJECT

errenknecht has built a large mixshield tunnel boring machine (TBM), featuring a diameter of 17.5 m, for the construction of a two-storey road tunnel with three lanes in both directions in the eastern Chinese city of Jinan. This mixshield technology is designed for the extreme conditions of the upcoming undercrossing of the Yellow River.

A machine of this diameter has only been used twice before in the history of tunnelling, revealed Herrenknecht. The largest one was in Hong Kong in 2015, also a Herrenknecht mixshield with a diameter of 17.63 m.

In this latest project, which was awarded to the Herrenknecht subsidiary, Herrenknecht Tunnelling Machinery (HTM) in China, the order was for a machine to cross under the Yellow River, in a geological environment with high groundwater pressure and to create just one tunnel tube for both directions of travel. Thus a large diameter was required: 17.5 m over a section of 3.3 km.

The mixshield TBM, named 'Shanhe', is scheduled to begin tunnelling in late 2024. The project aims to improve the connection between the two sides to the north and south of the river.



Adapting to the geology

To adapt to the clay, sand and silt geology and the 7.5 bar groundwater pressure under the Yellow River, a mixshield TBM was selected. The mixshield technology, developed by Herrenknecht, is an advance on conventional slurry technology. The support pressure in the excavation chamber is precisely managed using an automatically controlled air cushion. This means that heterogeneous geologies and high water pressures of more than 15 bar can be controlled safely, even with very large excavation diameters. An individual, new slurry circuit was designed especially for the TBM Shanhe.

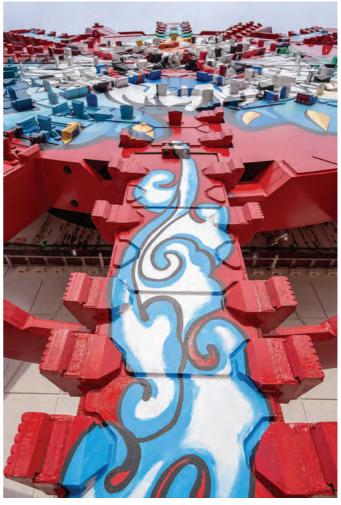
"We have also equipped the machine with our special telescopic camera in order to better monitor the tool change and the face," said Herrenknecht project manager Zhao Bin, who has already supervised several projects for clients in China. Most recently, he supervised the two TBMs that are also crossing under the Yellow River just a few kilometres away from the new construction site and building a road tunnel with two tubes (the shield diameter of these two mixshields for the Jinan Jiluo Road North Extension Tunnel project is 15.71 m).

"Thanks to its efficiency, the new single-tube tunnel supports the national strategy of ecological protection and high-quality development of the Yellow River basin," said Wang Hai, deputy general manager of the Herrenknecht office in Beijing. "It removes a bottleneck of traffic across the river and is calculated to absorb 7.4% of the traffic volume in one go."

Website: www.herrenknecht.com

TOP: Representatives from Herrenknecht at the factory acceptance ceremony. This mixshield TBM is designed for the extreme conditions of the upcoming undercrossing of the Yellow River.

RIGHT: The TBM's cutting wheel is painted with the face of a qilin, one of the four divine creatures in Chinese mythology.



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ADVANCING TECHNOLOGIES THE SPANISH WAY

Southeast Asia Construction (SEAC) recently joined a press tour in Spain – organised by ANMOPYC (the Spanish Manufacturers Association of Construction and Mining Equipment) in collaboration with ICEX (the Spanish Institute for Foreign Trade) – to meet with several Spanish equipment manufacturers and take a closer look at their innovations, as well as learn more about their global activities and future plans, especially in the Asian region.

ITA AND ANMOPYC PARTNER TO DEVELOP HYDROGEN-POWERED MACHINES

ne of the organisations SEAC visited was the Instituto Tecnológico de Aragón (ITA) in Zaragoza, Spain, which is currently working with ANMOPYC to develop zero-emission heavy equipment powered by hydrogen.

ITA is a public, non-profit technology centre attached to the Department of Presidency, Economy and Justice of the Government of Aragon, whose mission is to contribute to the technological development of companies and increase their competitiveness.

Established in 1984, ITA today has a multidisciplinary team of about 300 people, involved in five areas: clean energy, digital agribusiness, efficient and circular industry, intelligent health, and sustainable mobility. Their expertise includes materials and components, mechatronics and robotics, electrical technologies, and digital technologies.

The development of zero-emission heavy equipment using hydrogen – named 'H2MAC' – is among ITA's latest projects under sustainable mobility. It is carried out in partnership with ANMOPYC and several other companies, including FHa (the Aragon hydrogen foundation), Ballard, ZB Group, Mann+Hummel, Hidromek and the Tampere University, as part of a consortium.

The H2MAC project aims to design and demonstrate a new modular and scalable hydrogen-fuel cell electric (FCE) powertrain concept in non-road mobile machinery (NRMM) for construction and mining applications. An excavator and a crusher will be developed to integrate the new FCE powertrain and related subsystems.

During the last stage of the project (scheduled for 2027), the two machines will be tested under real working conditions for 1,000 hours in a single real-world environment.

When completed, the H2MAC project is expected to set a robust basis for the future development of NRMMs (from production lines to commercial products), as well as providing insights with respect to requirements for refuelling stations, through this simultaneous



The global trade media visited the Instituto Tecnológico de Aragón (ITA) in Zaragoza, Spain, to find out more about the H2MAC project, which involves the development of zero-emission heavy equipment using hydrogen for construction and mining applications.



Besides giving an overview of the H2MAC project, which is carried out in partnership with ANMOPYC and several other companies, ITA representatives also showcased a number of prototype machines that the organisation has worked on.

demonstration which will build confidence in hydrogen fuel cell technology and supply chain for all of the off-road industry sectors and thus accelerate their uptake. ■

Website: https://h2mac.eu

JASO DESIGNS TOWER CRANES IDEAL FOR ASIAN MARKET

uring a press event at tower crane manufacturer Jaso's facility in Idiazabal, Spain, the global trade media had an opportunity to see first-hand the company's new luffing model, the J638PA. This unit has been introduced to worldwide markets, including Asia.

The J638PA features a maximum reach of 65 m, providing greater flexibility and access to heights. With a maximum load capacity of 32 t and a maximum tip load of 7.2 t at its full reach, this tower crane has been built to handle the most demanding projects with ease.

Speaking to SEAC at the press event, Jaso said the J638PA is highly suitable for the Asian market. The crane is also designed with a strong focus on environmental responsibility. Its efficient operation and sustainable features align with the company's commitment to minimising environmental impact while maximising productivity.

In addition, the J638PA is equipped with Jaso's Optimus Line technology (including Eco Mode, Safety Pack, Smartlink, Extra Lift, Opti Cube, TC Diagnose System, and more) to ensure optimal performance, efficiency and safety, making the crane ideal for construction projects of all scales.

"Addressing technical, commercial, construction, logistical, safety and environmental considerations, this crane stands as a versatile, sustainable and technologically advanced solution," said Jaso.

High-capacity cranes for Asia

Talking about its presence in Asia, Jaso shared that it is currently active in Singapore, Hong Kong, South Korea and Taiwan, with some projects in the Philippines. The company is also open to explore other markets in the region.

Jaso's cranes have been involved in various residential projects and high-rise developments, especially those using PBU (prefabricated bathroom unit) and PPVC (prefabricated prefinished volumetric construction).

The growing trend towards PPVC projects, particularly in Asia, has led to increased demand for cranes with high lifting capacities, explained Jaso. As a response, the company developed the J1400 model.

A number of Jaso J1400 tower cranes have recently been deployed on a residential project in Singapore, which was built using the PPVC method. The cranes were used to lift heavy materials, such as PPVC modules weighing up to 35 t.

With a maximum 80-m-long jib, the J1400 can lift a maximum load of 64 t and has a tip load of 10.5 t. At 40 m reach, the crane's capacity is still 36 t. Increasing the hook height to 150 m only reduces the capacity by 1.4 t to 34.6 t, despite the extra 28-mm steel wire rope weight, said Jaso.

The J1400's counter-swing radius is 29 m when using 80 m boom, and 18.1 m with 40 m boom. With steel counterweights, it can be reduced by a further 1.8 m. The crane's tower system



The new J638PA luffing crane (on the right) seen at Jaso's facility in Idiazabal, Spain. This model has a maximum reach of 65 m, with a maximum load capacity of 32 t and a maximum tip load of 7.2 t at its full reach.



Suitable for the Asian market, the J638PA is equipped with Jaso's Optimus Line technology to ensure optimal performance, efficiency and safety. The crane can be deployed on various construction projects.



The global trade media was given a tour of Jaso's manufacturing plant and learned more about the company's operations.



Theodor Peter (Dick) Huitema, area manager at Jaso, shared with SEAC the company's current activities in the Asian market.





LEFT AND RIGHT: Jaso's J1400 tower cranes have recently been deployed on a residential project in Singapore, which was built using the PPVC (prefabricated prefinished volumetric construction) method. With a maximum 80-m-long jib, the J1400 can lift a maximum load of 64 t.

is in 5.6-m-long sections with a 2.16 x 2.16 m footprint. The hoist mechanism is 110 kW or 132 kW, and for greater safety, a secondary clamp brake is available on hoist and trolley.

Jaso added that the full crane, including the top kit, can be transported in standard 40-ft ISO shipping containers with no special flat rack or open top needed. This is facilitated by a folding counter jib design.

The mast sections, slewing table, and jacking cage are all small in size, making them easy to transport to the jobsite. During erection, there is no need to use large mobile or crawler cranes as the heaviest component of the J1400 is only 21,600 kg, which can be reduced to around 10 t if required.

Jaso further pointed out the key benefits of using PPVC and PBU in construction:

• <u>Higher efficiency.</u> The pre-assembly of volumetric units can be carried out off-site, in tandem with other activities on-site. These

off-site works at the ground level can minimise the wastage of materials, and reduce the need to hoist raw materials onto elevated blocks under construction.

- Reduced need for manpower on-site and improved site safety. By fabricating the volumetric modular units off-site in a controlled factory environment, fewer workers are required on-site, thereby improving overall site safety.
- <u>Minimised environmental impact</u>. With part of the finishes done off-site, less noise and dust is generated at construction sites, thereby minimising disamenities to surrounding residents. It also helps to improve housekeeping at construction sites.
- <u>Better construction quality.</u> Volumetric construction in a factory environment offers more uniform and better quality workmanship. The incidence of wet construction joints is also reduced, thereby improving the water tightness of wet areas. ■

Website: www.jaso.com

ENAR: 'SE ASIA PRESENTS IMMENSE POTENTIAL FOR LONG-TERM GROWTH'

ounded in 1964, Enar has been at the forefront of manufacturing and distributing light construction equipment for six decades. The company offers internal and external concrete vibration technologies, which it specialises in, as well as concrete finishing solutions (screeds, trowels and hand tools), compaction equipment (rammers, vibratory rollers and plates), and auxiliary equipment (water pumps, generators and light towers).

"Our journey began with a focus on concrete vibrators, but over the years, we have evolved our portfolio to include a comprehensive range of advanced vibratory equipment, surface preparation tools, and concrete finishing solutions," explained Enar. "This evolution highlights our commitment to innovation and addressing the diverse needs of the modern construction industry."

Since 1994, Enar has expanded internationally, setting up a direct presence in Colombia, Mexico, Uruguay, Poland, UK, Italy, South Africa, Turkey, India, Indonesia and China.

Moreover, the Zaragoza, Spain-based company has secured a significant presence in more than 100 countries through its extensive distribution network. In 2022, Enar became part of the Wacker Neuson Group, strengthening the market position of both companies.

According to Enar, auxiliary equipment is a new line recently added to its portfolio, which complements existing product lines and focuses on end users' needs. In 2019, Enar also introduced its battery-powered products, the E-Batt series, reflecting the company's move towards a more sustainable solution.

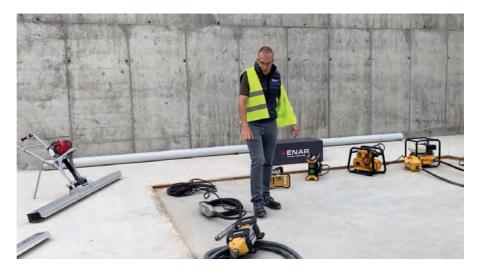
"Our focus in quality, innovation and growth and our efforts towards sustainability continue to intensify," highlighted Enar. "We are expanding our range of zero-emission solutions and actively reducing the carbon footprint of our manufacturing processes, underscoring our commitment to environmental responsibility and sustainable practices."





ABOVE AND LEFT: SEAC visited Enar's headquarters in Zaragoza, Spain, to learn more about the company's innovations and market direction.

BELOW: Jesús
Tabuenca, Enar's
research and
development
manager,
presented several
products to the
media during the
press event.



Southeast Asia focus

Over the years, Enar has also established strong business relations in Southeast Asia, especially in Indonesia and the Philippines. The company said it is expanding into more countries across the region to fortify its position in the construction sector. "Our direct presence in the region enhances our effectiveness and reach in Southeast Asia," said Enar.

Speaking to the global trade media during a recent press event, Enar shared that its focus on Southeast Asia is driven by the region's substantial population, rapid economic growth, and accelerated urbanisation and industrialisation. "This dynamic market, coupled with a young and growing workforce, presents immense potential for long-term growth. We are committed to providing innovative solutions that support and drive further development in this fast-evolving market."

Enar currently has a dedicated sales representative in Indonesia to serve the Southeast Asian market. The company is actively contributing to major infrastructure projects in the region, including the North-South Commuter Railway, Metro Manila Skyway, and Manila LRT Extension (in the Philippines), as well as the construction of 'Ibu Kota Negara' (Indonesia's new capital city in Kalimantan), East Java Multipurpose Terminal (EJMT), and Jakarta LRT expansion (in Indonesia), among others.

Enar further pointed out that "Southeast Asia's seismically active zone necessitates resilient infrastructure, and we are poised to meet these critical needs with durable and reliable construction solutions."

Website: www.enargroup.com





TOP AND ABOVE: Enar manufactures light construction equipment for the global market, specialising in concrete vibration technologies.



Enar also offers concrete finishing solutions such as trowels (above), and compaction equipment, including tamping rammers (right).



BEZARES: POWERFUL COMPONENTS FOR TRUCKS AND INDUSTRIAL VEHICLES

Bezares manufactures a wide range of auxiliary hydraulic equipment for trucks and industrial vehicles. The company's products consist of power take-offs (PTOs), hydraulic pumps, fittings, winches, power packs, complete hydraulic systems, wet kits, hydraulic adapters, as well as related accessories and parts.

Based in Toledo, Spain, Bezares was founded by Eugenio and José Bezares in 1954. Today, the company is led by Emilio Núñez Bezares (CEO) and Alejandro Núñez Bezares (CFO), employing a global workforce of over 400 people.

Throughout the years, Bezares has established itself as a market leader in Spain for hydraulic equipment, with pumps and PTOs being the company's main products, generating more than 60% of sales globally.

Bezares also exports worldwide through its subsidiaries and distribution networks in more than 100 countries. Besides Spain, the company's manufacturing plants are located in Mexico, China and India.

Asia calling

At a recent press event in Spain, Bezares talked to SEAC about its activities in the Asian region and also shared various models of PTOs and pumps targeted at this market.

Bezares has set up two joint ventures in Asia: Bezares Power Zhejiang Co Ltd in China and Bezares Alpha Drives in India, which were opened in 2016 and 2019 respectively.

According to Bezares, about 15% of its sales now comes from the Asian market. The company is present in several countries across the region, including Thailand, Malaysia, Japan, Korea, Indonesia and the Philippines, among others.

Pedro de la Puente Ampuero, business development manager for Asia and Pacific at Bezares, said the company serves both OEMs and aftermarket suppliers in Asia. He also noted that Southeast Asia currently presents an increasingly attractive market for Bezares, due to the booming infrastructure projects in the region.







TOP, ABOVE AND BELOW LEFT: Power take-offs (PTOs) and hydraulic pumps are Bezares' main products, comprising various models for global customers. They are also available widely in the Asian market, where the company has been active for many years.

In Asia, Bezares offers a number of PTO models designed for gearboxes of many major brands, such as Allison, Eaton, ZF, Toyota, Mitsubishi Fuso, Volvo, Nissan, Scania, Dong Feng, Shaanxi, Isuzu and Hino, to name a few. There are different shifts available: mechanical, electrical, vacuum and pneumatic. Some of these PTOs include:

- Lateral PTO for Isuzu MYY, MEB9 gearboxes
- Side PTO for Fuso M038 gearboxes
- Double-output PTO for Hino M009 gearboxes



Bezares manufactures auxiliary hydraulic equipment for trucks and industrial vehicles, such as power take-offs (PTOs), hydraulic pumps, fittings, winches, power packs, complete hydraulic systems, wet kits, hydraulic adapters, as well as related accessories and parts.

- Lateral PTO for Eaton 6 and 9 speed gearboxes
- Engine and driveline PTO for Hino J05E engines
- Lateral PTO for Allison 3000 and 4000 series gearboxes

Bezares also has various pumps for the Asian market, such as:

- FR2 twin-flow piston pumps, which can be used for a variety of solutions in different high-pressure applications.
- BE2 twin-flow gear pumps with side ports, one directional, which are made of high-strength cast iron.
- BEA gear pumps with reduced size, bidirectional, with side and rear ports.
- BEMD/BELD/BEXD gear pumps with side and rear ports, bi-directional, suitable for low- and medium-pressure applications.
- BELS/BEXL gear pumps with a heavy-duty body, side and rear ports.

In addition, Bezares offers vane pumps for both medium- and high-pressure applications. The medium-pressure models



SEAC recently met with the Bezares team at the company's headquarters in Toledo, Spain. From left: Pedro de la Puente Ampuero, business development manager for Asia and Pacific; Luis Eugui Ugarte, global sales manager; and Víctor Corral Pérez, product manager.

are available in single, double, and throughshaft pumps for pressures of up to 210 bar, while the high-pressure models comprise single, double, and triple vane pumps and motors for pressures of up to 300 bar.

Website: www.bezares.com

MIDI CRANES: COMPACT, LIGHTWEIGHT, TOWABLE SELF-ERECTING CRANES

ased in Zaragoza, Spain, MiDi Cranes manufactures compact, lightweight, road-towable self-erecting cranes weighing less than 3,500 kg. These units are ideal for small and mediumsized contractors, roofers, or carpenters, who need simple machines for maintenance, roofing and wood works; repairs and renovations; and other small construction jobs.

The most popular model from MiDi Cranes is currently the LS15.17RD, which was introduced last year. It reaches 15 m in height with a horizontal boom, featuring a 1,500 kg maximum load up to 6 m, and a tip load of 510 kg at 17 m.

All of the cranes are fully designed and manufactured at the company's Zaragoza facility. They can be transported on a road trailer (B+E permit) and the assembly time is only about 15 minutes.

The cranes are equipped with hydraulic stabilisers, a remote control and an electric motor. Using a PLC with touchscreen, MiDi Cranes can connect to the machines remotely from the factory. "This helps us to diagnose any issues with the cranes," said Miguel A. Marín, deputy general manager at MiDi Cranes.

"One of the mid-term projects we have is to digitalise our documentation, so that our users can access it anytime, anywhere, just with a QR Code," he added.

'The crane for the crisis'

The history of MiDi Cranes goes to back 1965 when the original company was founded. Its first design was the GT10 crane - a simple, economical and manually assembled equipment, reaching only 10 m in height with a 5 m boom

The GT10 "was a resounding success, highly appreciated by small builders, carpenters, roofers and renovators who worked in small towns throughout Spain," noted Mr Marín.

"Since then, like all lifting equipment manufacturers, our product development had been oriented towards designing and manufacturing self-erecting cranes with increasingly higher loads and capacities. We managed to achieve a 34 m boom and a maximum load of 4 tm."

But in 2008, the crisis hit. Mr Marín recalled, "The situation strongly affected this type of larger and more capable equipment, so closely linked to new housing projects. It made us rethink our continuity.

"New housing projects came to a complete standstill, and therefore the market did not require our equipment. No recovery was expected in the medium term, and the market was also saturated with this type of equipment."

"This new situation led us to leave our





TOP AND ABOVE: All of the models from MiDi Cranes are easy to transport and their assembly time is only about 15 minutes. Over the next few years, the company plans to expand into North America, Oceania and Southeast Asia.

comfort zone and sharpen our ingenuity," shared Mr Marín. "It was then, when we identified an unattended market niche that grew continuously and dynamically despite the crisis: that of the rehabilitation of small homes, which required a compact, lightweight crane that is easy to assemble and handle, and competitive in price."

In 2009, the first model of MiDi Cranes was unveiled – dubbed 'the crane for the crisis'. The range was expanded in 2010.

Global expansion

Today, MiDi Cranes' main markets include Germany, France, Belgium, Spain, Netherlands, Denmark, Czech Republic, Slovakia, Romania and the UK. Over the next few years, the company plans to expand into North America, Oceania and Southeast Asia.

"After a strong growth in the two years following the pandemic, we are experiencing a time of adjustment with a market slowdown, due to the increase in prices, interest rates and a feeling of insecurity regarding the international socio-political panorama," explained

Mr Marín. "However, the profile of our clients dedicated to rehabilitation makes our equipment become a commodity, and therefore we are confident in the evolution of the market in the medium term."

"One of the projects that we have in mind to recover is the GT10 launched in the 60s," revealed Mr Marín. "As the technology and capacities of cranes increase, they become more expensive. "We believe that it may be a good idea to return to the simple idea of small crane with more manual assembly, to achieve a cost/performance balance that allows us to enter developing markets."

MiDi Cranes currently has no intention to go back to the market for larger-capacity cranes. "In the short-medium term, we plan to continue being a specialist in tow cranes weighing less than 3,500 kg," affirmed Mr Marín. "We believe that it is a market to develop, which, without being the majority, is an attractive niche for us."

Website: www.midicranes.com







TOP AND ABOVE: SEAC had an opportunity to visit MiDi Cranes' facility in Zaragoza, Spain. The company manufactures compact, lightweight, road-towable self-erecting cranes weighing less than 3,500 kg. The machines are equipped with an electric motor.

LEFT: The cranes are ideal for small and mediumsized contractors, roofers, or carpenters, who need simple machines for maintenance, roofing and wood works; repairs and renovations; and other small construction jobs.

AUSA GOES GREENER, BECOMES PART OF OSHKOSH

he last two years have seen AUSA launchits electric range. Among them include the D101AEA and D101AEA Compact electric dumpers, which were unveiled in 2023, featuring a 1,000 kg payload and a front and high-tip skip.

These two models share the same platform, but their optimal operating conditions provide different options. The D101AEA is a narrow dumper (108 cm) that is suitable for small municipal works where there is very little room to manoeuvre, such as trenching and small landscaping jobs. Meanwhile, the D101AEA Compact is equipped with small 12-in wheel rims that reduce the overall width of the machine to just 100 cm. This enables the dumper to fit through building and residential doors, making it a perfect choice for indoor demolition work.

Both machines have a battery pack with a maximum power of 19.6 kW and a torque of 130 Nm, allowing them to tackle any terrain and match the performance of a diesel dumper. The lithium-ion batteries have a capacity of 9.3 kWh and can be charged from 20% to 80% in just two hours by plugging them directly into a 230 V mains socket, or in one hour with an external fast charger.

In addition, the D151AEG electric dumper and T164E electric telehandler were introduced in 2022, offering a payload of 1,500 kg and 1,600 kg respectively. The T164E also has a maximum lift of 4 m.

The D151AEG comes with a battery capacity of up to 12.4 kWh, a 7.6 kW electric motor with a maximum peak of 19.6 kW, and permanent 4WD with excellent all-terrain capabilities. Whenever necessary, the machine can be connected directly to the mains or a generator with the cable included in the vehicle. The battery can charge from 20% to 80% in just two hours when charging at 230 V.

The T164E electric telehandler delivers a power of 8.6 kW, with a peak of 21.2 kW, giving it strength and all-terrain capabilities for working on difficult surfaces and gradients of up to 32%. The machine can also be charged by connecting the







TOP: SEAC recently attended a press event at AUSA's facility in Barcelona, Spain, to learn more about the company's latest developments. Among them is the electric range, which includes the D151AEG, D101AEA and D101AEA Compact dumpers as well as the T164E telehandler.

ABOVE AND LEFT: The D101AEA electric dumper being charged. AUSA's entire electric range has been designed in such a way that each machine can operate for at least one intense shift.

integrated cable to the mains or a generator, going from a charge of 20% to 80% in just three hours and 15 minutes at a power of 230 V.

AUSA's entire electric range has been designed in such a way that each machine can operate for at least one intense shift.

Global presence

Headquartered in Barcelona, Spain, AUSA was originally founded in 1956 by four friends who established an organisation called Automóviles Utilitarios Sociedad Anónima (AUSA) to realise their dream: the production of a microcar under the PTV brand, whose name came from the initials of its founders' surnames. They were mass produced and 1,100 units were sold up to 1961.

It was later decided to reinvent the business and start to produce dumpers for the construction sector. In 1967, AUSA introduced the world's first all-terrain forklift, the CE 800, with a lifting capacity of 800 kg.

With the clear aim of continuing to expand the business and avoid dependence on the Iberian market, the company took a step forward and opened a subsidiary in Perpignan, France in 1969, which marked the beginning of the internationalisation of AUSA.

Today, AUSA manufactures a wide range of compact allterrain equipment aimed at the residential and civil construction industry, road networks, and for the transportation and handling of industrial and agricultural materials.

The company has more than 600 dealers worldwide and six global subsidiaries – in Madrid (Spain), the UK, Germany, France, the US and China. It has a production capacity of up to 12,000 machines per year, with 70% of the production being exported.

In the Asian region, AUSA is present across several countries. For example, its D100AHA and D350AHG dumpers have been involved in a number of residential construction projects in Singapore.

The D100AHA has a 1,000 kg payload and is only 1.10 m wide, making it ideal for minor construction work in urban areas and buildings being refurbished. Its permanent 4x4 drive allows the machine to handle the toughest terrains. The D350AHG, with a 3,500 kg payload, features a 180-degree swing skip. This machine's hydrostatic transmission ensures maximum comfort and safety.

In May 2024, the US-based Oshkosh Corporation announced that an agreement was reached to acquire AUSA. The latter will be part of the Oshkosh Access segment. Both companies began working together through a partner agreement in 2020, with AUSA manufacturing the JLG-branded SkyTrak 3013 compact telehandler.





TOP AND ABOVE: AUSA manufactures compact all-terrain equipment aimed at the residential and civil construction industry, road networks, and for the transportation and handling of industrial and agricultural materials.

Through this latest acquisition, AUSA products will enhance the JLG line of telehandlers, as well as Hinowa tracked dumpers and forklifts to strengthen the Oshkosh Access segment's portfolio of equipment.

AUSA pointed out that this major partnership will create a synergy between the two companies, "enabling us to further expand our footprint and reinforce our position in the global market." ■

Website: www.ausa.com





AUSA is also present in the Asian region. Two of the company's products, the D100AHA (left) and D350AHG dumpers, are available in the Singapore market.



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