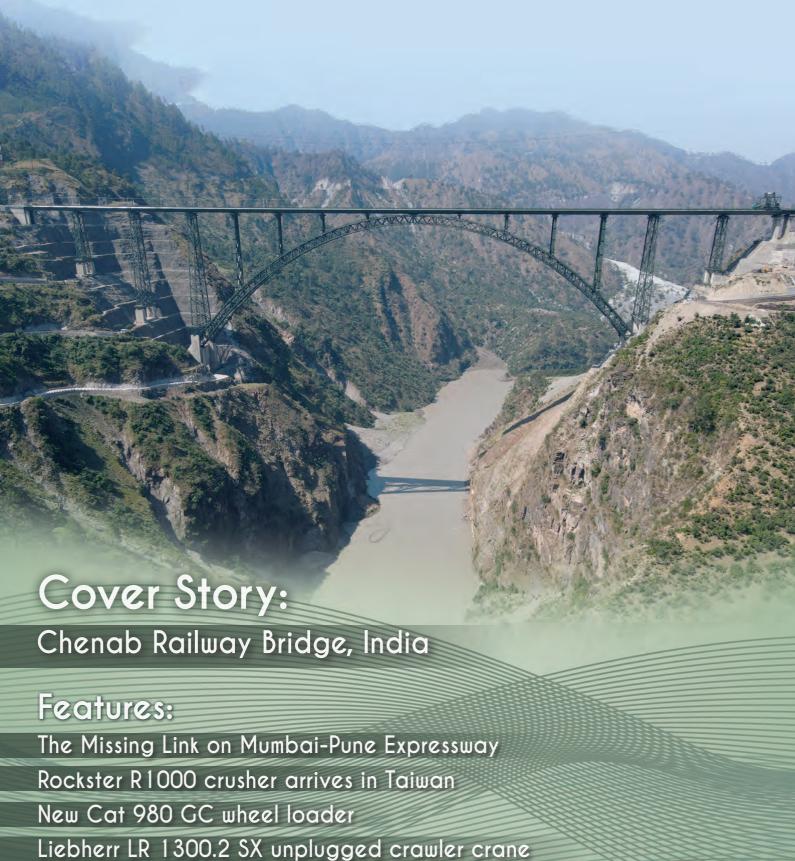
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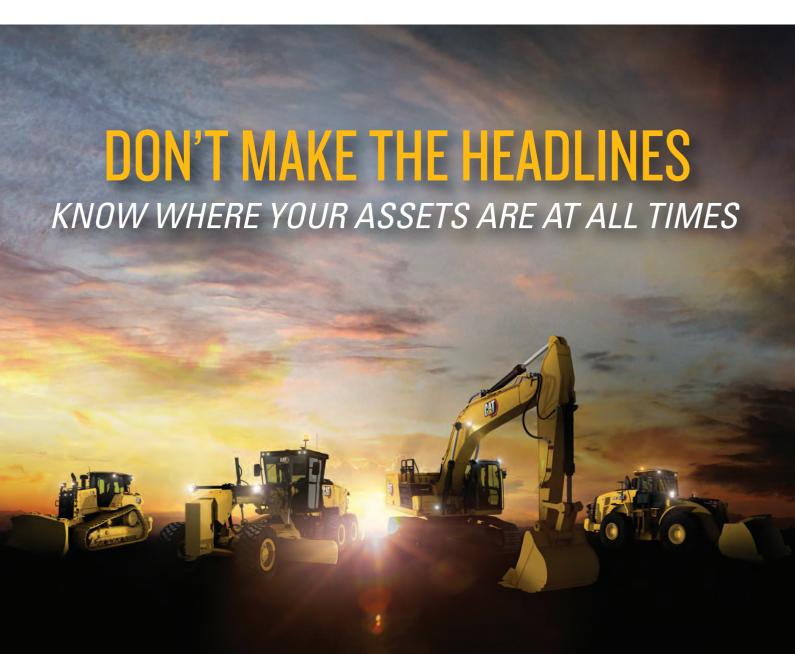












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CONTENTS

NEWS

ASIA NEWS	12
IPAF HIGHLIGHTS	22

EVENTS

CALENDAR OF EVENTS	24
INDUSTRY EVENTS	26

PRODUCTS

PRODUCT FEATURE 48





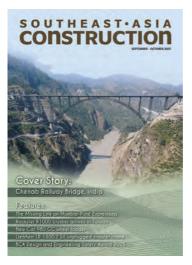












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CONTENTS







PROJECTS & OTHER FEATURES

SPECIAL FEATURE: BCA INTERNATIONAL	28
BRIDGE PROJECT	30
INDUSTRIAL PROJECT	36
FOCUS ON EAST ASIA	38
BCA DESIGN AND ENGINEERING SAFETY AWARD 2025	42



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YTL Cement and CREAM launch new facility in Malaysia to repurpose concrete aggregates

Malaysia's building materials group YTL Cement, in partnership with the Construction Research Institute of Malaysia (CREAM) — the research arm of the Construction Industry Development Board (CIDB), has launched a pilot project facility to repurpose concrete aggregates (RCA).

The use of RCA offers a practical solution for managing and repurposing construction waste, conserving natural resources and minimising environmental impact. RCA also decreases reliance on virgin materials from distant quarries, supporting a more sustainable and circular construction process. This new facility is closer to urban construction sites, reducing the need for long-distance transportation, thus lowering associated carbon emissions.

The RCA facility – strategically located on Jalan Chan Sow Lin, Kuala Lumpur – crushes and processes returned concrete into aggregates capable of replacing up to 30% of natural aggregates in new concrete mixes. Finer materials are then repurposed into road base or raw materials for brick making, thereby reducing industry reliance on virgin resources.

Operational since June 2025, the facility repurposes fresh returned concrete which accounts for an estimated 5% of Malaysia's annual 30 mil cu m concrete production into valuable reusable aggregates. The term 'repurposed' reflects YTL Cement's commitment to reducing waste, supporting circular economy principles and mitigating the long-term environmental impact of construction activities.

The opening of the RCA facility follows the memorandum of understanding (MOU) signed between CREAM and YTL Cement in 2023, which focuses on three key pillars: development of construction personnel, research and development (R&D), and facilitating the construction sector's transition towards sustainable practices.

"This initiative reflects our commitment to supporting national efforts in sustainable development. This model can be replicated in other locations with high volumes of construction activity. Most importantly, we aim to shift industry perceptions in viewing returned fresh concrete not as waste, but as a resource that can drive sustainability," said Datuk Aziyah Mohamed, director of YTL Cement.



Located closer to urban jobsites, the new pilot RCA facility was officially launched on 29 July 2025. This initiative aims to help advance sustainable construction practices in Malaysia.

"The RCA facility shows how public and private sectors can work together to accelerate innovation and realise national policy goals," said Zainora Zainal, chief executive of CIDB Malaysia on the importance of collaboration. "This is a success story from the MOU between CREAM and YTL Cement."

Ms Zainal added, "I truly hope that this will set the standard and encourage more industry players to consider using RCA in their building materials and for them to be inspired to create more such initiatives across the country. This is important as we collectively strive to advance sustainable construction practices in Malaysia for the long term in line with our National Construction Policy 2030's aspirations."

Beyond that, as part of the R&D pillar, YTL Cement and CREAM will also be working on furthering joint research and development efforts on the usage potential of RCA by-products, including aggregate fines for other building and construction purposes. These are geared towards driving greater innovation and sustainability efforts within the industry.

US, Philippines ink deal to develop Subic-Clark-Manila-Batangas freight railway

The US government, through the US Trade and Development Agency (USTDA), and the Philippines' Department of Transportation (DOTr), have signed an agreement for the development of the Subic-Clark-Manila-Batangas (SCMB) freight railway, a strategic infrastructure project designed to link three major ports in Luzon and decongest traffic at the Port of Manila.

USTDA said its technical assistance for the SCMB railway involves transport model development, port-rail integration study, and legal and institutional framework analysis, among

other areas.

DOTr Secretary Vince Dizon said the freight cargo railway aims to decentralise Manila Port and provide the additional transport capacity needed at the Batangas Port and Subic Bay, in line with President Ferdinand Marcos Jr.'s directive of ensuring uninterrupted movements of goods.

"As a freight cargo railway, the SCMB railway is seen to solve port traffic and congestion in Manila Port, while ensuring the timely movement of products to and from adjacent major transport hubs," added Mr Dizon ■





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AECOM to deliver Hong Kong Section of Hong Kong— Shenzhen Western Rail Link (Hung Shui Kiu-Qianhai)

AECOM recently announced that its joint venture with AtkinsRéalis has been awarded a consultancy agreement by Hong Kong Government's Highways Department for the Hong Kong Section of Hong Kong–Shenzhen Western Rail Link (Hung Shui Kiu-Qianhai) (HSWRL). This cross-boundary railway project, a key initiative under the Northern Metropolis Development Strategy, will significantly enhance connectivity across the Greater Bay Area, particularly between Hong Kong and Shenzhen.

HSWRL will contribute to a more sustainable urban environment while fostering economic integration, cultural exchange, improved accessibility across the region, and facilitating Hong Kong's better integration into the national development. A trip from Hung Shui Kiu to Qianhai will only take approximately 15 minutes — an improvement that supports the development of a 'one-hour living circle' in the Greater Bay Area and facilitates cross-boundary commuting.

The consultancy agreement covers investigation, design and construction for the approximately 7.3-km Hong Kong Section of the HSWRL, which will connect Hung Shui Kiu to the boundary with Shenzhen. The full railway will span around 18.1 km, including 10.8 km in Shenzhen, comprehensively integrating metro networks across the western regions of both cities. According to AECOM, to



Hong Kong's Highways Department has signed an investigation, design and construction consultancy agreement with AECOM and AtkinsRealis joint venture for the HSWRL project.

maximise efficiency, transparency and quality, the project will adopt a single common data environment (CDE) and a unified building information modelling (BIM) platform across all project stages, supporting collaboration and cost-effective, timely outcomes.

"We're proud to support Highways Department as it expands its world-class railway network for greater regional mobility," said Mark Southwell, chief executive of AECOM's global transportation business. "Our teams have delivered some of Hong Kong's most transformative railway projects, and we look forward to applying our expertise as the world's top rail and mass transit firm to realise this complex

infrastructure initiative."

The project is among the strategic transport initiatives highlighted in Hong Kong's 2023 Major Transport Infrastructure Development Blueprint. AECOM contributed to the development of this long-term vision through its involvement in the Strategic Studies on Railways and Major Roads beyond 2030, helping to shape the region's future transport network and advancing greater integration within the Greater Bay Area. In addition to this strategic support, AECOM has delivered numerous high-profile railway projects across Hong Kong, including Hong Kong West Kowloon Station, Shatin to Central Link and Tuen Mun South Extension

Gamuda wins contract for Kaohsiung Port LNG terminal in Taiwan

Malaysian contractor Gamuda Berhad has secured a contract to build a wharf and connecting roads (bridges) for the Kaohsiung Port Intercontinental LNG terminal in Taiwan.

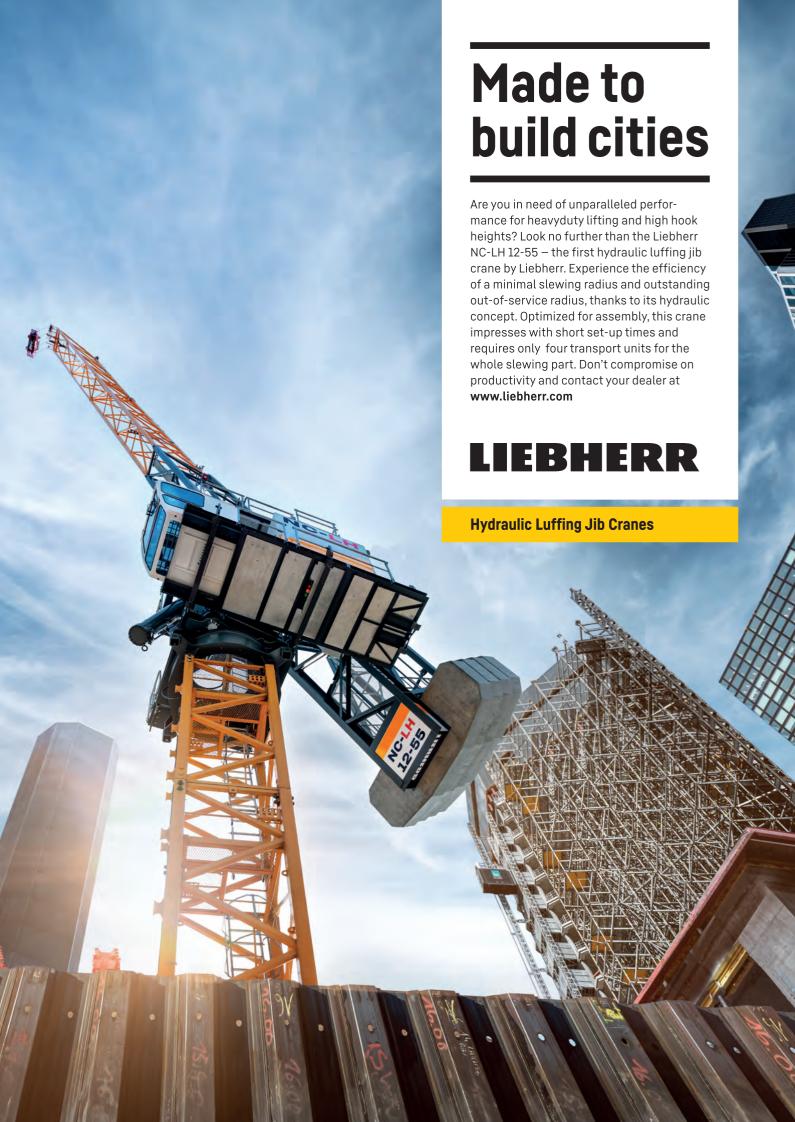
Awarded by Taiwan International Ports Corp Ltd (Kaohsiung branch), the state-owned port authority managing the Port of Kaohsiung, with a contract sum of approximately RM3.72 billion, the project will be carried out in a joint venture between Gamuda (70%) and Taiwan-based company Dong Pi Co Limited (30%).

In its statement, Gamuda said the project will involve the construction of a 2.193-km seawall (with 87 caissons), a 1.2-km connecting bridge, a 729-m wharf, a number of platforms (unloading platform, connecting platform and turning

platform), as well as caisson docks (berthing dock, mooring dock, service platform and vehicle access platform).

Scheduled for completion in five years, the project aims to establish a complete and secure process for offshore unloading and onshore receiving of LNG and to ensure the efficient import, storage and regasification of LNG for delivery to Dalin and surrounding users.

According to Gamuda, the project will also incorporate eco-friendly materials and sustainable landscaping, while ensuring safety and accessibility for rural areas in compliance with applicable laws and regulations – all aimed at achieving better social equality and creating social benefit initiatives within the local community.



Penta-Ocean awarded land reclamation contract in Singapore and Airport Tung Chung Link in Hong Kong

Penta-Ocean Construction has been awarded a \$\$299.5 million contract by JTC Corporation for land reclamation works at Northern Tuas Basin (NTB) in Singapore. Construction of the project will take approximately five years, slated for completion in July 2030.

This project will add about 172 ha new land for industrial uses as part of ongoing plans to rejuvenate the older parts of Jurong and Tuas Industrial Estates, which were developed in the 1960s and 1970s. The NTB reclamation also provides land to support future infrastructure and road network connections to Tuas South and Tuas Port, to meet the projected increased traffic demand. Penta-Ocean will carry out reclamation, dredging, drainage construction and demolition of existing structures.

In addition, Penta-Ocean has been awarded a contract for

the Airport Tung Chung Link by the Airport Authority Hong Kong, totalling approximately HK\$ 2,248.9 million. The construction period is about four years.

This project is part of a plan to develop transportation infrastructure around Hong Kong International Airport. It involves constructing a designated carriageway for the autonomous vehicles, connecting facilities near the airport with Tung Chung, a key transportation hub in the region. When completed, it is expected to enhance infrastructure development to meet future increases in airport demand.

The work will cover a total length of about 3.8 km of carriageway and includes the modification of existing seawalls as well as construction of at-grade roads, viaducts and stations/depot. ■

Denzai establishes new subsidiary in Indonesia

Japanese heavy lifting and specialised transport company Denzai has opened a new subsidiary in Indonesia. Officially founded on 28 May 2025, PT Denzai Heavylift Indonesia is located in Kebayoran Lama, Jakarta.

"Indonesia has a strong potential for sustainable economic growth supported by its young workforce, rich natural resources and strategic geographical position within Southeast Asia. In recent years, we have seen significant development in the infrastructure and energy sectors, which aligns well with Denzai's core business," said Ameer Zainul Fitrat, country manager of PT Denzai Heavylift Indonesia. "As the Indonesian market continues to expand, we believe there will be more opportunities for heavy lifting, transport and engineering solutions, especially in supporting large-scale construction and industrial projects."

Mr Fitrat added, "Our goal is to strengthen Denzai's local presence by providing safe, high-quality and reliable services to meet the needs of both local and international clients. We are optimistic that by combining our global expertise with local



Ameer Zainul Fitrat (on the left) and Tria Nisrina Mufidah of PT Denzai Heavylift Indonesia.

partnerships, we can contribute to Indonesia's growth and achieve sustainable business success."

IJM Construction secures fast-track data centre project in Johor, Malaysia

IJM Construction Sdn Bhd, a wholly owned subsidiary of IJM Corporation Berhad, has been awarded a RM1.4 billion contract for the construction of a large-scale data centre in Johor Bahru, Malaysia..

This fast-track project comprises a six-storey data centre with integrated office facilities as well as a refuse and recycling facility. With a gross floor area of approximately 62,000 sq m, IJM Construction will deliver the full civil and structural works using a precast system, columns, beams and hollow core slabs, supported by steel structures for mechanical and electrical (M&E) plant installations.

The building is designed to achieve LEED Gold and GreenRE

Platinum certifications, and includes a distinctive green wall facade with integrated irrigation. These sustainability elements complement advanced construction methods to deliver long-term operational efficiency. The project is scheduled for completion in September 2026, within a 13-month timeline.

"The rapid growth of AI, cloud services, and high density computing is driving unprecedented investment in Malaysia's digital infrastructure. Johor's position as a key regional node makes projects like this critical, and IJM is well placed to deliver the capacity and performance that operators require," said Dato' Lee Chun Fai, group CEO and managing director of IJM Corporation Berhad.



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DHI and MIT team up to advance robotic construction in Bhutan

Druk Holding and Investments (DHI) has entered into an agreement with the Center for Bits and Atoms at the US' Massachusetts Institute of Technology (MIT) to launch a pioneering robotic construction programme in Bhutan. This initiative also supports the vision of the Gelephu Mindfulness City (GMC), and advances DHI's 10X Roadmap to catalyse national transformation through technology, talent and global partnerships. The project will be operated through the Multi-Channel Innovation Fund (MCIF), a key initiative under DHI's Innovation Strategy to establish innovation as a pillar of Bhutan's economy.

The agreement, spearheaded by the Jigme Namgyel Wangchuck Super FabLab (JNWSFL) within DHI's InnoTech Department, will explore advanced robotics and engineering, blending Bhutanese traditional architecture with modern design and fabrication technologies. By collaborating closely with MIT researchers, this initiative aims to position Bhutan and GMC at the forefront of sustainable and intelligent construction systems.

The project introduces a transformative construction methodology utilising sustainable voxel-based robotic systems, originally developed at the MIT's Center for Bits and Atoms. Unlike traditional construction methods, voxel construction is modular, reversible and reconfigurable, enabling structures that adapt over time to changing needs. Swarms of mobile robots will autonomously assemble scalable building elements – from walls to entire buildings – using locally sourced and recyclable materials such as wood, rammed earth, steel and bio composites.

These technologies support real-world applications including temporary housing, public pavilions, digital infrastructure hubs and adaptive architecture tailored for Bhutan's unique terrain and cultural aesthetics. With built-in intelligence and energy-efficient designs, voxel construction reduces embodied carbon, accelerates deployment and creates dynamic infrastructure—ideally suited to the evolving needs of Bhutan's innovation economy.

The Chiba Institute of Technology in Japan will also play a key role in the project by exploring how voxel-based



ABOVE (LEFT AND RIGHT): The agreement between DHI and MIT will explore advanced robotics and engineering, blending Bhutanese traditional architecture with modern design and fabrication technologies.

BELOW (LEFT AND RIGHT): The project introduces a transformative construction methodology utilising sustainable voxel-based robotic systems, originally developed at the MIT's Center for Bits and Atoms.





construction can support adaptable innovative approaches relevant to the Gelephu Mindfulness City.

"Our agreement with MIT brings cutting-edge research and technology to Bhutan, transforming how we could design, build and imagine the cities of tomorrow. This marks a pivotal step in realising the vision of Gelephu Mindfulness City and advancing Bhutan's economic development through science, technology and innovation," said Ujjwal Deep Dahal, CEO of DHI.

"We're thrilled to have this opportunity to build on our extensive collaboration on digital fabrication with Bhutan and bring our work on voxel construction from aerospace applications to the sustainability of the built environment," said Professor Neil Gershenfeld, director of the MIT Center for Bits and Atoms.

Over the course of the two-year initiative, the first year will focus on research and development based at MIT, advancing robotic assembly and material prototyping. In the second year, the base of the collaboration will transfer to Bhutan for local deployment, on-site testing and hands-on development with Bhutanese engineers and students.

This agreement brings global expertise to Bhutan while empowering local talent to lead in next-generation construction technologies. By blending Bhutanese tradition with frontier innovation, it lays the foundation for long-term applications of voxel-based construction and a future where Bhutanese-built solutions shape sustainable cities at home and in the region.







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MTR Corp signs HK's Northern Link (Part 1) project agreement; Main and Spur lines planned to open by 2034

Hong Kong's railway operator MTR Corporation has signed the Northern Link (Part 1) project agreement with the Hong Kong Government for the financing and construction of parts of the Northern Link Main Line, while also commencing the detailed design and planning of the Northern Link Spur Line.

As the mass transportation backbone for the Northern Metropolis, the Main Line of the Northern Link is critical to the connectivity of the area and the Spur Line will provide direct connectivity between Hong Kong and Shenzhen, extending to the Huanggang Port Area. Both lines are targeted for commissioning no later than 2034.

"MTR is pushing ahead with the Northern Link projects, including proceeding with the Kwu Tung Station of East Rail Line in full speed and embarking on the preliminary works of the Main Line. The signing of the project agreement would enable us to speed up the works for both lines as a whole so as to achieve the commissioning no later than 2034," said Dr Jacob Kam, CEO of MTR Corporation.

The Kwu Tung Station on the East Rail Line under the Northern Link, along with the Main and Spur lines, will form a new railway network serving the Northern Metropolis and connecting to the mainland at Huanggang. The Main Line comprises two terminal and interchange stations, Kwu Tung and Kam Sheung Road stations that connect the East Rail Line and Tuen Ma Line respectively, and three intermediate stations at San Tin, Ngau Tam Mei and Au Tau. The Spur Line connects by the interchange San Tin Station to the Huanggang Port in Shenzhen via Chau Tau and The Loop stations.

According to MTR, by combining the Main Line and Spur Line, it can leverage the synergy between the two lines and maximise project optimisation — one of such areas being the depot in Ngau Tam Mei, which will be shared upon completion by both the Main and Spur lines. Given the statutory processes of environmental permit approval and scheme authorisation for the Main Line have already completed and its planning and design is in an advanced stage, while the statutory processes for the Spur Line is still in early





stages, MTR adopts another innovative approach to proceed with constructions of the project in two parts.

With the signing and implementation of the (Part 1) project agreement, MTR will take forward works that are authorised and close to completion in design, including the construction of Kwu Tung, Au Tau and Kam Sheung Road stations, as well as the tunnel sections from Kwu Tung to San Tin and Au Tau to Kam Sheung Road, along with related railway facilities of the Northern Link Main Line.

The construction works of the (Part 1) project agreement will be funded by financial contributions from the 'Rail plus Property' development model, said MTR. The corporation will actively engage in discussions with the government regarding

the financing and construction of the remaining works for the Main Line and Spur Line, as well as the operation and maintenance of both lines, with the aim of finalising the signing of the (Part 2) project agreement.

Since the signing of the project agreement for Kwu Tung Station on the East Rail Line in September 2023, MTR has been committed to advancing the Northern Link project. Construction of the station's main structure is nearing completion, and the transformation of the tunnel section into a platform is progressing rapidly. Additionally, one of the major advance works for the Main Line will commence this year, involving the construction of a tunnel boring machine (TBM) launching shaft in preparation for the subsequent tunnel boring works.

New dealer for Gehl equipment in Philippines

Manitou Asia has appointed Abomar Equipment Sales Corporation as the official dealer for Gehl Equipment in the Philippines. This agreement marks another important step in expanding Manitou Asia's footprint in Southeast Asia.

Under this partnership, Abomar will distribute Gehl's full range of equipment, including telehandlers, backhoe loaders, skid steer loaders and track loaders, across its nationwide network. With branches in Cebu, Cagayan de Oro, Pasig, Mandaue, Bacolod, Alae and Davao, the company brings extensive local coverage and market knowledge, making it an ideal partner to represent Gehl in the region.

"At Abomar, our mission is to elevate the Philippines' farming, ground care and land development sectors by introducing innovative, high-quality solutions. Partnering with Gehl, a globally respected brand known for its quality, affordability and commitment to true partnership, perfectly aligns with this vision," said Rafael A. Majam, president and CEO of Abomar Equipment Sales Corporation.

"With the country's growth driven by the government's 'Build Better More' initiative and rising mechanisation, we aim to meet the increasing demand for



TOP: Representatives from Manitou Asia and Abomar.

ABOVE: Gehl telehandler.

ABOVE RIGHT: **Gehl** backhoe loader.

dependable yet cost-effective equipment by offering Gehl machines that deliver real value that doesn't break the bank."

Bernd Freudenmann, vice president APAC at Manitou Group, added, "We're thrilled to welcome Abomar to the Manitou Group family. Their deep expertise in agricultural machinery and robust service network are exactly what we need as we expand our presence in the Philippines. This partnership reinforces our commitment to delivering top-tier solutions and exceptional customer experiences across the region."





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Phase 3 expansion of Singapore's Changi Water Reclamation Plant set to commence

A Binnies and AECOM joint venture has been appointed by PUB, Singapore's National Water Agency, to deliver the professional engineering services for the Phase 3 expansion of Changi Water Reclamation Plant (WRP) in the eastern region of Singapore. The plant is one of the largest used water treatment facilities in the world, with the third expansion phase further increasing its treatment capacity by up to 96 million gallons per day. Changi WRP is also a cornerstone of the Deep Tunnel Sewerage System (DTSS) and plays a critical role in PUB's used water management system.

As part of the contract awarded by PUB, Binnies Singapore, an RSK Group company, and AECOM joint venture will be delivering the preliminary design of the plant's expansion works, as well as conducting a cost-benefit analysis to determine the most effective design solution. Engineering studies will also be undertaken to take into account long-term plan for future expansions of Changi WRP, environmental studies as well as detailed design and construction supervision of the plant's expansion works.

IPAF brings Asia conference to South Korea for the first time

This year's IPAF Asia Conference was held in South Korea for the first time. It took place on 2 July at the Doubletree by Hilton Seoul Pangyo, welcoming delegates from across Asia and beyond. Attracting 180-over registrations, the event was designed to reflect IPAF's continued commitment to advancing global powered access safety standards through knowledge sharing, live safety demonstrations and regional engagement.

The day kicked off with a full-day conference, featuring thought leaders, safety practitioners, equipment specialists and policy influencers. The sessions covered key topics impacting the industry today, from best practices and regulatory updates to the integration of digital tools in enhancing access safety. Highlighted presentations included:

- Chae Chang-Yeul (KOSHA) Safety Status of Elevated Work Platforms in Korea
- Brian Parker (IPAF) IPAF Global Safety Report & Update on the Safe Use Standards ISO18893
- Bonnie Yau (HK OSHC) Raising MEWP Safety Standards: Insights from Hong Kong
- Raymond Wat (IPAF) & Brian Parker (IPAF) Open Floor Discussion: Modifications and Driving at Height
- Desmond Soh (Sinoboom) & Kang Han Fei (Manitou) Adapting to a Changing Global Market: Perspectives from Used Equipment Dealers and Manufacturers
- Kim Taewan (Woolim International) A Look into MEWP Rental in South Korea





ALL IMAGES: Scenes from this year's IPAF Asia Conference, held on 2 July in Seoul, South Korea.









- Chi Sen Gay (Trackunit) Connecting Machines to Customers: Unlocking Value with Trackunit & Al
- Romina Vanzi (IPAF), Alex Tan (Aerial Global) & Julie Kim (TVH)
- Dialogue with IPAF Members: How Can IPAF Help Elevate Your Business?

In the afternoon, delegates were treated to a live MEWP demonstration by the event's main sponsors: Sinoboom, XCMG and Hered. It offered an up-close look at equipment operations and key product features. The demonstration highlighted the importance of showcasing some of the secondary guidance devices, reinforcing the day's core message: safety is a shared responsibility.

This hands-on experience was followed by a cocktail networking session, providing an opportunity for delegates to interact, exchange insights and discuss potential partnerships in a more relaxed environment.

In line with IPAF's way to drive engagement in a fun way while also learning, two interactive activities were incorporated throughout the day:

• MEWP Safety Champion Challenge: An on-the-spot knowledge challenge where attendees answered safety questions live to test their understanding of powered access practices. Winners were



selected based on accuracy and speed.

• IPAF Passport Activity: Each participant received an IPAF Asia Conference 2025 Passport −a fun and strategic activity encouraging visits to all sponsor booths. Attendees collected stamps, and those who completed the full passport were entered into a grand prize draw. ■

A 26% decrease in powered access fatalities in 2024, IPAF accident analysis shows

IPAF's Global Safety Report 2025 reveals a notable decrease in fatalities involving powered access equipment, despite only a slight reduction in overall reported incidents. The findings are based on comprehensive analysis of incidents submitted through its global Accident Reporting Portal.

Launched during a live webinar on 22 July 2025, the IPAF Global Safety Report 2025 examines accident data spanning 2015 to 2024, with a focus on the most recent year-on-year trends. By analysing anonymised global data, IPAF aims to equip the industry with actionable insights to reduce accidents and improve safety performance across all powered access operations.

This year's report shows that in 2024, there were 15% less fatal and major incidents reported, with 170 incident reports made compared to 201 reports in 2023. There were 100 fatalities reported, down from 135 in 2023 – marking a 26% decrease. A total of 211 people were involved in incidents (12% less than in 2023), and reports came from 26 countries (the same as in 2024).

In terms of incidents resulting in deaths or major injury, overturns was the top cause of accidents in 2024, followed by entrapment and falls from the platform. Most incidents occurred on construction sites (37%), followed by the arboriculture (13%) and electrical sectors (13%). The top MEWP categories involved were 1b machines (34%), followed by 3a (26%) and 3b machines (26%).

Other key statistics from the report include:

- A 75% increase in entrapment reports and 62% increase in entrapment fatalities from 2023 to 2024.
- \bullet A 56% reduction in fatalities from overturns
- A 50% decrease in incident reports of people being hit by a falling object but a 75% increase in fatalities.

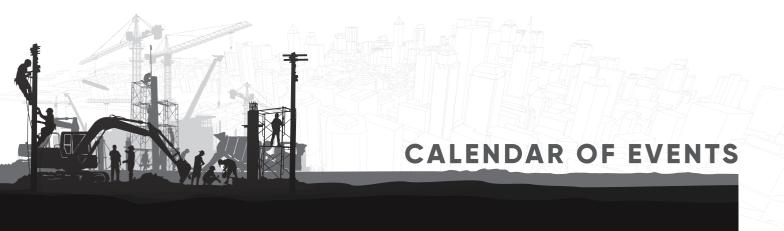
"The 26% reduction in fatalities is a positive step forward, but we must remain focused on the bigger picture," said Brian Parker, head of safety & technical at IPAF. "Every incident report reminds us that there is still work to do. While it's encouraging to see improvements, especially in overturn-related fatalities,



the sharp rise in entrapment fatalities is a clear signal that we must continue driving education, vigilance and adherence to safe working practices across all sectors. This report equips us with the critical insights needed to target our safety efforts where they are most needed."

Alana Paterson, chair of IPAF International Safety Committee and head of health, safety & environment at Taylor Woodrow, said, "Powered access continues to be one of the safest and most efficient methods for working at height. However, we still see serious, and at times, tragic incidents around the world. These serve as a stark reminder of why the work of IPAF and its committees is so vital.

"The data collected through the IPAF Accident Reporting Portal not only informs this report but also guides the focus of our collective efforts, whether that's developing guidance documents, toolbox talks, technical innovations, hire standards, or more. I encourage everyone working in this sector to report any accidents involving powered access. Accurate reporting helps ensure the data reflects reality and supports better safety for all."



// Events in Asia

BICES

23 to 26 Sept 2025

China International Exhibition Centre (Shunyi Venue) Beijing, China

Website: www.e-bices.org

CBA Expo & Concrete Expo Asia

24 to 26 Sept 2025

Bangkok International Trade and Exhibition Centre Bangkok, Thailand Website: www.cba-expo.com / www.concrete-expoasia.com

Occupational Safety Taiwan (T-Safe)

14 to 16 Oct 2025

Taichung International Exhibition Centre Taichung, Taiwan Website: www.taiwanindustryweek.com.tw/ en/intro-tsafe

Philconstruct

6 to 9 Nov 2025

SMX Convention Centre Manila & World Trade Centre Metro Manila Manila, The Philippines Website: www.philconstructevents.com

AI-Ready Data Centres APAC

3 Dec 2025

Manila, The Philippines
Website: www.arcmediaglobal.com/datacenters

Excon

9 to 13 Dec 2025

Bangalore International Exhibition Centre Bengaluru, India Website: https://excon.in

Digital Construction Asia

31 Mar to 1 Apr 2026

Sands Expo & Convention Centre Singapore Website: www.digitalconstructionasia.com

// Events outside Asia

World of Concrete

20 to 22 Jan 2026

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

Conexpo-Con/Agg

3 to 7 Mar 2026

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





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Conexpo returns in March 2026; registration now opens

The upcoming Conexpo-Con/Agg is now open for registration. Taking place on 3-7 March 2026 at the Las Vegas Convention Centre, Las Vegas, the US, the show brings together every major sector of the construction industry to explore the latest equipment, innovations, and technologies — up close and hands-on.

Drawing 2,000 exhibitors across nearly 2.9 mil sq ft, Conexpo-Con/Agg 2026 will feature a wide range of education sessions on tech, management, safety, workforce, and more. It promises an event more expansive and dynamic than ever before.

The appeal of Conexpo-Con/Agg lies in its ability to connect industry professionals with transformative opportunities, hands-on experiences and innovative solutions that make a lasting impact. Attendees value the breadth and depth of resources available at the show, as well as the chance to engage directly with peers and leading manufacturers.



A). Ground Breakers Stage

Located in the West Hall lobby, the Ground Breakers keynote stage will serve as a central forum to spotlight the construction industry's global influence. Featured sessions will explore:

- Emerging advancements in construction technology and methodology.
- Industry-shaping public policies and their implications.
- Solutions for workforce growth and overcoming labour shortages.
- Strategies for sustainability and environmentally conscious practices.
- The importance of mental health within construction professions.

B). Women in Construction: EmpowerHER Workshop

Celebrate Women in Construction Week 2026 by joining the EmpowerHER Workshop, designed to champion the aspirations of women throughout the industry. The programme includes:

- Networking opportunities that foster community and mentorship.
- Panels and keynote addresses delivered by accomplished industry voices.
- Sponsorships to advance women-led construction initiatives.

C). Small Business Workshop

Acknowledging the indispensable contribution of small businesses, the Small Business Workshop is crafted to address their unique obstacles while providing:

- Chances for small business owners to make meaningful connections.
- Actionable strategies and resources to drive immediate business growth.
- Sponsorship options to fuel the success of smaller enterprises.

D). Shop Talks and Walks Workshop

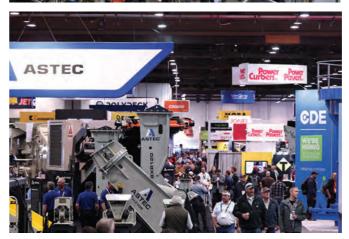
This maintenance-centric workshop equips participants with hands-on solutions for daily operational challenges. The programme will offer:

- Targeted sessions on preventive maintenance and maximising equipment effectiveness.
- Educational resources to help attendees resolve real-life industry problems. ■

Website: www.conexpoconagg.com









ALL IMAGES: Conexpo-Con/Agg is set to return on 3-7 March 2026 at the Las Vegas Convention Centre, covering nearly 2.9 mil sq ft of exhibition space. The event will feature various education sessions on tech, management, safety, workforce, and more.

NOTE: Attendees who register early will enjoy discounted pricing by using the code **NEWS30** through 5 December 2025. Early registrants also receive priority access to limited-capacity workshops, hands-on experiences and exclusive education sessions that are expected to fill quickly.



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From Singapore to the world: How BCAI collaborates with BE stakeholders globally to deliver 'greener, faster and better' projects

BCA International (BCAI), a wholly owned subsidiary of Singapore's Building and Construction Authority (BCA), provides a multitude of services in developing excellent built environment (BE) worldwide. Here, BCAI shares more about these initiatives.

'Greener, faster and better'

BCAI offers services such as overseas BCA Green Mark certifications to help overseas developments meet net zero targets; customised training on Singapore's best practices; as well as create a marketplace via the annual International Built Environment Week (IBEW) event to facilitate regional business opportunities and collaborations through knowledge exchange, latest technology showcase and business networking.

BCAI fosters strategic partnerships with overseas BE stakeholders to support their building development goals, particularly in areas of quality, sustainability, and productive methods of construction such as prefabricated prefinished volumetric construction (PPVC). This can be done through signing memorandums of understanding (MOU), with BCAI providing the expertise through collaborations with suitable Singapore firms possessing the required capabilities and proven track records.

1). Build Greener

BCAI helps international developers and build owners, especially in the tropical and sub-tropical regions, develop sustainable and super low energy buildings through the adoption of the international BCA Green Mark. BCAI works closely with Singapore green consultants and ecosystem to help overseas partners meet

their low carbon or net zero targets to facilitate green financing, spanning across 18 countries and 82 cities so far.

For example, BCAI and Singapore's GreenA Consultants helped their MOU partner Sobha Realty achieve Dubai's first Green Mark Platinum Super Low Energy certification, coupled with the Whole Life Carbon badge, for its premium residence Sobha One, reinforcing Sobha Realty's strong commitment towards its net zero targets.

2). Build Faster

BCAI supports overseas interests to improve overall construction productivity by using design for manufacturing and assembly (DfMA) methods, allowing significant savings in manpower resources, enhancing quality and ensuring faster project completion.

With Singapore's over four decades of DfMA construction experience, and 10 years of successfully adopting modular / PPVC construction methods, the country has set a world record twice for the world's tallest concrete modular building, with the latest in 2023 being a private condominium – Avenue South Residence (56 storeys), constructed by local company United Tec Construction.

Partnering Singapore's strong DfMA ecosystem and best practices, BCAI helps overseas partners realise their developmental ambitions.

3). Build Better

The BCA Construction Quality Assessment System (CONQUAS) has been implemented in Singapore since 1989 to achieve high construction workmanship quality excellence. With strong overseas interests to benchmark and raise

BCAI helps its overseas partners to:

Build Greener NET-ZERO EMISSION BY 2050





BCAI fosters strategic partnerships with overseas built environment (BE) stakeholders to support their building development goals, particularly in areas of quality, sustainability, and productive methods of construction such as PPVC.

International Built Environment Week (IBEW)







BCAI spearheads Singapore's annual International Built Environment Week (IBEW) every September to generate regional business opportunities and collaborations between local and overseas BE stakeholders.

construction workmanship quality for their projects, BCAI collaborates with Singapore consultants to help overseas BE stakeholders implement similar quality assessment systems, enabling them to reduce potential defects and improve branding. BCAI also helps promote and match Singapore's innovative technologies and solutions to transform current practices.

IBEW event

BCAI spearheads Singapore's annual International Built Environment Week

(IBEW) every September to generate regional business opportunities and collaborations between local and overseas BE stakeholders.

As a one-stop platform for regional BE players, the event features many activities to facilitate exchange of knowledge, showcase latest innovative technologies, network with like-minded peers, and much more

This year's IBEW was held on 3-5 September. The event is set to return in 2026, taking place on 2-4 September at the Marina Bay Sands, Singapore. ■



helped Sobha Realty achieve Dubai's first Green Mark Platinum Super Low Energy certification for the Sobha One development.

BCAI has



BCAI helps overseas partners improve their construction productivity by adopting DfMA methods, like PPVC. Here is Singapore's Avenue South Residence tower built using PPVC.

For more information on BCAI and how it can collaborate with your organisation(s), please contact: **Mr John Tan** (john_tan@bcai.com.sg). More details: www.bcai.com.sg (BCAI) / www.ibew.sg (IBEW)

All photos and logos: BCA International











Complex structures

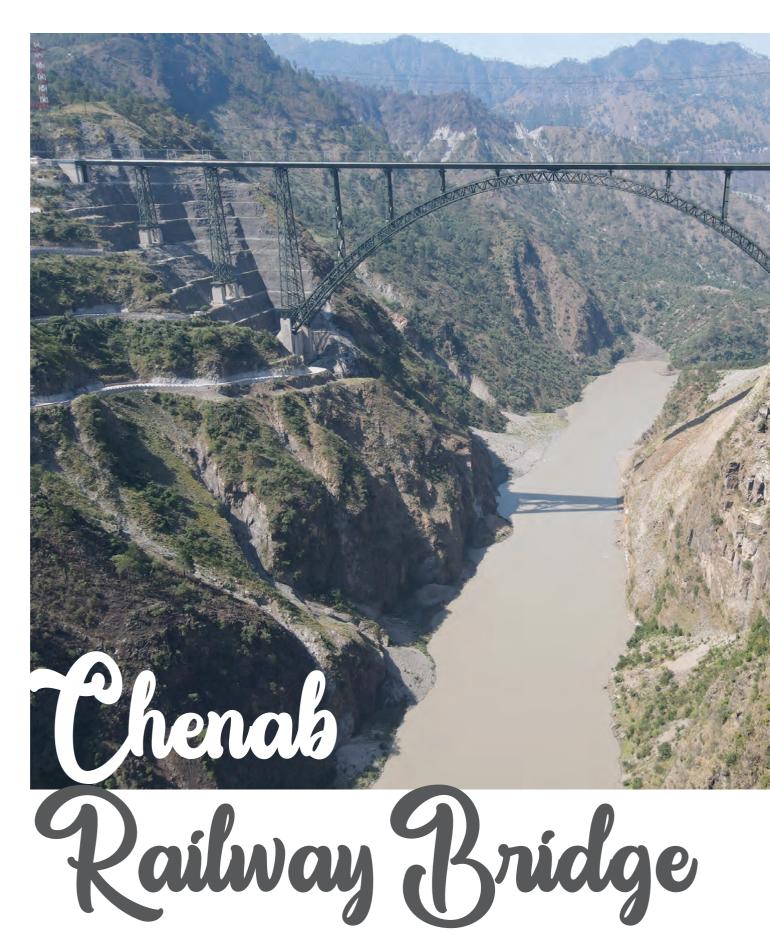
The diamond-shaped pylon, with its complex geometry and inclinations in different directions, presented a unique challenge. Doka devised a tailored solution combining the Xclimb 60 Short Track and Automatic climbing formwork SKE100 plus systems. This innovative approach allows for the efficient and precise execution of the construction process, addressing both the simpler and more intricate sections of the pylon.

The Automatic climbing formwork SKE50 plus and SKE100 plus,

Guided climbing formwork Xclimb 60, along with the Large-area formwork Top 50, ensure rapid and safe construction progress, while minimising manual handling, thereby reducing risks for onsite crews and accelerating construction timelines.

By collaborating closely with Afcons, and leveraging its engineering expertise, Doka is contributing to the successful completion of this vital infrastructure project, which will significantly enhance connectivity and safety on the Mumbai-Pune Expressway.

Website: www.doka.com/ea/index



WORLD'S HIGHEST SINGLE-ARCH RAILWAY BRIDGE



ABOVE: Connecting the Kashmir Valley to the Indian subcontinent by rail for the first time, the Chenab Railway Bridge incorporates several innovative features that set new benchmarks in bridge engineering.

TOP RIGHT: Indian Prime Minister Narendra Modi inaugurated the Chenab Railway Bridge on 6 June 2025. This 1.3-km-long bridge has been designed to withstand extreme wind speeds, earthquakes and blast loads.



lobal construction company Afcons Infrastructure has built the world's highest single-arch railway bridge, situated in the treacherous Himalayan terrain. Towering 359 m above the river and 35 m higher than the Eiffel Tower in Paris, the newly opened Chenab Railway Bridge connects the Kashmir Valley to the Indian subcontinent by rail for the first time.

This 1.3-km-long bridge is part of the Indian Government's ambitious Udhampur-Srinagar-Baramulla Rail Link (USBRL) project, which aims to connect Jammu and Kashmir to the rest of the country through an all-weather railway connectivity. The design life of the bridge is 120 years.

Engineering marvel

The Chenab Railway Bridge incorporates a number of unique features that set new benchmarks in bridge engineering, revealed Afcons. It is designed to withstand extreme wind speeds of up to 266 km/hr, making it resilient against harsh environmental conditions. In addition, it has been engineered to resist seismic forces of Zone-V, the highest-intensity earthquake zone in India.

Notably, it is also India's first railway bridge designed to resist blast loads, underscoring a new level of safety and structural fortification. The bridge has been constructed with built-in redundancy; even if a pier or trestle were to be removed, it would remain operational at a restricted speed of 30 km/hr and would not collapse under its own weight.

To deliver this iconic project, Afcons deployed some of the world's most

advanced construction technologies and equipment. The erection of piers, trestles and the steel arch segments was carried out using the world's largest-capacity crossbar cable cranes, custom-designed for the project. The pylon height of the cable crane at the Srinagar end stands at 127 m, which is significantly taller than Delhi's Qutub Minar (72 m). These innovations made construction possible in a remote and geologically complex Himalayan region.

According to Afcons, the construction of the Chenab Railway Bridge also marked several engineering firsts in Indian Railways. For the first time, phased array ultrasonic testing (PAUT) technology was used for the inspection of welds. A National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited testing laboratory was established onsite – another first – to maintain stringent quality controls for weld testing during construction.

What's more, the project saw the firstever execution of incremental launching of a deck structure on combined circular and transition curves on Indian Railways, a feat of precision engineering rarely achieved anywhere in the world, said Afcons.

"For Afcons, it represents our unwavering commitment to nation-building and our ability to reimagine infrastructure in the toughest terrains," remarked S Paramasivan, managing director of Afcons. "This bridge will inspire generations of engineers and stands as a tribute to the power of Indian engineering and teamwork."

Powering Singapore INTO A SUSTAINABLE FUTURE

Several units of battery energy storage system (BESS) from JP Nelson Equipment have been deployed on construction sites in Singapore. These include, among others, a BESS 500(S) for a project on Lok Yang Way, used by Soilbuild Construction; two units of BESS 500 in Seletar, used by Sinmix and G&W; as well as a BESS 500HD and a BESS 300 at a residential development on Jalan Rajah, used by Houston Construction.

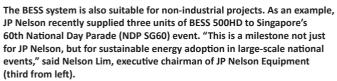
Serving as sustainable alternatives to diesel-powered generators, JP Nelson's BESS 500 and BESS 300 come with a rated power of 500 kW and 300 kW respectively. The system is environment-friendly, reducing reliance on fossil fuels and greenhouse gas emissions. It also enhances the reliability of renewable energy sources. In addition, it offers economic benefits, with potential for cost savings through peak shaving and energy arbitrage.





ABOVE AND LEFT: JP Nelson has deployed several units of its battery energy storage system (BESS) on construction sites in Singapore. This system is environment-friendly, reducing reliance on fossil fuels and greenhouse gas emissions. It also enhances the reliability of renewable energy sources.





RIGHT AND BELOW: Serving as a sustainable alternative to diesel-powered generators, the BESS system is highly versatile and can be used in a wide range of applications, from civil construction to residential and industrial developments.





The BESS system is highly versatile and can be used in a wide range of applications, from civil construction to residential and industrial developments. It is also suitable for non-industrial projects. For example, JP Nelson recently supplied three units of BESS 500HD to Singapore's 60th National Day Parade (NDP SG60) event, providing sustainable and reliable power during weekend rehearsals, preview and the actual day celebrations.

"This marks the first time in Singapore's history that BESS technology has been deployed at a national-scale public event of this magnitude, showcasing a bold step forward in the nation's commitment to sustainability and innovation," shared JP Nelson.

The BESS units played a critical role in ensuring smooth operations for various segments of the event, demonstrating not only their reliability but also the environmental benefits of transitioning towards cleaner energy technologies.

"We are deeply honoured to contribute to this historic celebration of Singapore's 60th year of independence," said Nelson Lim, executive chairman of JP Nelson Equipment. "The successful deployment of BESS 500HD at the NDP SG60 is a milestone not just for JP Nelson, but for sustainable energy adoption in large-scale national events."

"The use of BESS in such a high-profile setting highlights a pivotal shift



LEFT, BELOW, BELOW
LEFT AND BOTTOM:
JP Nelson's BESS units
played a critical role
in ensuring smooth
operations for various
segments of NDP SG60,
demonstrating not only
their reliability but
also the environmental
benefits of transitioning
towards cleaner energy
technologies.

towards greener alternatives in public infrastructure and large-scale events. It stands as a symbol of innovation, responsibility and forward thinking," concluded JP Nelson. ■

Website: www.jpnelson.com.sg









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or Taiwan-based Revival Environmental Industry, its journey to finding an ideal crusher began at IFAT 2022 in Munich, Germany, where the company first witnessed the Rockster R1000 in action.

After two years of research and equipment comparisons, representatives from Revival Environmental Industry made their way to Rockster's headquarters in Austria. Here, they met the Rockster team, explored the company's advanced technology and observed another live demonstration – this time, the tracked impactor efficiently processed asphalt and construction & demolition (C&D) waste.

The R1000 closed-circuit tracked impact crusher finally arrived in Taiwan in late November 2024. A Rockster technician, Vojo Svraka, was present to oversee the initial operation and ensure everything was set up correctly. He worked closely with the local team, providing hands-on assistance during the startup phase to guarantee a smooth integration into the workflow.

Alongside the operational setup, Mr Svraka also hosted a comprehensive workshop, covering key aspects of the crusher's operation, maintenance and troubleshooting. This training was designed to equip the team with the knowledge and skills needed to maximise the crusher's performance, increase its lifespan and ensure that the machine operates at peak efficiency for years to come. The combination of technical support and training provided a seamless transition into full operation.

Hydrostatic drive that makes a difference

Among the highlights of the Rockster R1000 are its diesel-hydraulic drive as well as the optional air blower for removal of non-minerals

from the final crusher product. One of the benefits of this diesel-hydraulic drive is that the rotor receives power from the hydrostatic pump, and the engine (in this case, Caterpillar Stage V, 9.3-I, 380-hp) stays in the optimum rpm range delivering constant and high throughput

The diesel-hydraulic drive is also easy to maintain because most of the machine operators know the hydraulic system from operating an excavator or a loader, hence do not require extra training to service the crusher. Other benefits when it comes to efficient, simple and cost-effective service and maintenance are the swiveling catwalk and the engine compartment doors that swing open upwards and enable easy access.

The Rockster R1000 is designed with a full suite of advanced features to ensure the production of high-quality, clean final products. Key features include crusher overload protection, a hydraulically adjustable magnetic separator, radio remote control, a centralised main display and an efficient dust suppression system at both the inlet and outlet. In addition, a vibrating chute safeguards the main belt by absorbing impact from crushed material exiting the chamber.

The R1000 also boasts a powerful screening system, equipped with a high-performance circular vibrating screen and a double-functional return or stockpile belt. A standout option is the integrated air blower, which effectively removes light non-mineral contaminants, delivering a cleaner and more valuable final product. For enhanced functionality, optional add-ons include a rear-mounted air compressor, a central lubrication system, a belt scale and a blow bar changing system.

Website: wwww.rockster.at





ABOVE: The Rockster R1000 impact crusher is designed with users in mind. Easy access simply means less downtime and easier service and maintenance.

LEFT: Customers from Taiwan take a closer look at the R1000 impact crusher with a screening system and air blower recycling C&D waste and producing high-quality, clean cubic final product.

 $\ensuremath{\mathsf{BELOW}}\xspace$ The R1000 during the start of operation in Taiwan, efficiently recycling construction & demolition (C&D) waste.



ENGINEERING Singapore SAFELY AND INNOVATIVELY

FOUR PROFESSIONAL ENGINEERS IN SINGAPORE HAVE WON THE BUILDING AND CONSTRUCTION AUTHORITY'S (BCA) DESIGN AND ENGINEERING SAFETY AWARD (DESA) FOR THEIR EXCEPTIONAL CONTRIBUTIONS TO FIVE LANDMARK PROJECTS THAT OVERCAME CONSTRUCTION CHALLENGES WITH SAFE, INNOVATIVE SOLUTIONS.

The award celebrates structural and geotechnical engineering ingenuity across five categories – Civil Engineering, Commercial, Industrial, Institutional and Mixed Development. Since its launch in 2008, the award has honoured engineers and their teams for innovative designs and construction solutions that ensure Singapore's built environment remains safe, resilient and future-ready.

"This year's DESA winners exemplify the pinnacle of engineering excellence – their ingenuity and technical applications have turned complex challenges into safe, enduring solutions that will serve Singapore for generations," said Engineer (Er.) Tan Chun Yong, group director (building engineering) at BCA. "Their work reminds us that behind every iconic building or infrastructure is an engineer's dedication to safety, engineering mastery and innovation. By celebrating their achievements and showcasing the projects, we hope to inspire more young talents to join the profession and shape the future of our built environment together."

T226 of Thomson-East Coast Line, Marina Bay Station (SCL Tunnels)

Building a new MRT interchange in the heart of the city is already complex — but at Marina Bay, the challenge was even greater. The Thomson-East Coast Line (TEL) tunnels had to be built 40 m underground on reclaimed land, and right next to live MRT lines on the North-South and East-West lines, and through waterlogged soil under high water pressure. To complicate matters, existing foundations and bored piles stood directly in the path of the new tunnels and had to be carefully removed without disrupting train services.

Er. Chua Tong Seng and Er. Michelle Lew of Kiso-Jiban Singapore Pte Ltd – two of the winners – worked collaboratively as qualified persons for design in civil and geotechnical engineering respectively, delivering crucial engineering solutions for the project. They applied advanced computer modelling to simulate construction and tunnelling sequences. This ensured tunnelling could be carried out safely beside operating train lines.

Both engineers also customised a purpose-built machine, shaped like a giant rectangular cutter, to carve out space for transfer beam and remove obstructing piles safely while trains continued running. In addition, they had to tackle unstable ground conditions by strengthening soft marine clay using jet grouting and introduced an innovative ground freezing system, which pumped

brine chilled to -30° C into the soil. This literally froze the wet ground into solid 'ice walls' 1.8 m thick, creating watertight barriers that allow safe and dry excavation.

Without freezing, water and soft marine clay would have made tunnelling impossible. A network of sensors, including real-time tunnel monitoring and temperature gauges, tracked ground movement continuously to keep everything within safe limits. Through their teamwork, the engineers delivered a critical interchange that now seamlessly connects three major MRT lines while ensuring passenger safety and uninterrupted service.

Pan Pacific Orchard

Er. Tan Chin Hock of DP Engineers Pte Ltd is recognised for his work on the Pan Pacific Orchard project. This hotel development brings nature into the heart of a vertical structure, made possible by the engineer's quiet genius in turning a daring architectural vision into reality. The striking 23-storey building stands on a highly constrained urban site, featuring dramatic multi-level sky terraces that demanded a complex and innovative structural system.

To maximise underground space, Er. Tan reused and rehabilitated the original basement diaphragm walls as a sustainable and economical solution. He gave them a new waterproof concrete lining, effectively recycling massive structural walls instead of demolishing them. This reduced wastage allowed excavation to be done in a 'semi top-down' manner — carefully demolishing and rebuilding while keeping the site and adjacent buildings safe and stable.

Above ground, Er. Tan introduced long-span steel trusses and precast reinforced concrete to support the hotel's four distinct sky terraces stacked vertically. By applying design for manufacturing and assembly (DfMA), many components were prefabricated off-site and assembled like a kit, improving safety and efficiency.

To enhance long-term durability, the design integrated specialised bearings (like heavy-duty joints) and partially prestressed concrete, ensuring the tall structure could safely bear the unique loads of sky terraces and greenery. The result is a structurally efficient, sustainable and safe landmark that realises an ambitious architectural vision in the heart of Orchard Road.

Another winner, Er. Kam Mun Wai of Meinhardt (Singapore) Pte Ltd, is recognised for his outstanding contributions across three projects: SGH Emergency/National Neuroscience Institute (Institutional), The GEAR (Industrial) and The Woodleigh Residences and The Woodleigh Mall (Mixed Development). These projects presented complex challenges, from deep basement excavation, long-span column-free spaces to integrated mixed-use developments. Er. Kam delivered designs that were not only safe and efficient but also balanced functionality and sustainability, demonstrating the high standards of engineering excellence that DESA celebrates.

T226 OF THOMSON-EAST COAST LINE, MARINA BAY STATION (SCL TUNNELS)

Civil Engineering Category



Qualified Person:

Er. Chua Tong Seng (QPD, Civil)

Er. Michelle Lew Geok Theng (QPD, Geo)

C&S Consultant:

Kiso-Jiban Singapore Pte Ltd

Builder:

Taisei Corporation

Developer:

Land Transport Authority

Architectural Consultant:

Aedas Pte Ltd

AE Consultant:

Arup Singapore Pte Ltd

KEY CHALLENGES

- Contract T226 involves the construction of the new Marina Bay interchange station and tunnels for TEL. In addition to the presence of MRT structures and train operations, the site is located on reclaimed land. The new tunnels are very deep, up to 40 m below ground.
- Several bored piles from existing structures that obstructed the new tunnels alignments were removed.
- The new tunnels pass through mixed-soil condition and were constructed using SCL mining. High water pressure and the uncertainty surrounding conventional ground improvement techniques for treating the partially weathered soil of Bedok Formation posed a great challenge.

- 3D FEM analyses were conducted by QPD to simulate the complex work to find the best solution. Soil improvement was carried out to strengthen the surrounding marine clay of the Rochor Member using vertical jet grout piles. In areas that could not be reached, horizontal jet grout piles were performed.
- A purpose-built rectangular open shield machine was manufactured to mine the space required for constructing transfer beams, which underpinned the existing tunnels and facilitated the removal of existing piles.
- To ensure that the SCL tunnels could be mined in dry condition, ground freezing using brine system was introduced. Frozen local soil properties were determined. Large refrigeration units with brine chilled to -30°C formed contiguous 1.8-m-diameter frozen soil columns and created impervious walls. The work was continuously monitored by temperature sensors and real-time ATM system. Once it had served its intended functions, the frozen soil was defrosted and returned to its original condition.

PAN PACIFIC ORCHARD

Commercial Category



Qualified Person:

Er. Tan Chin Hock

C&S Consultant:

DP Engineers

Builder:

Shimizu Corporation

Developer:

UOL Claymore Investment Pte Ltd

Architectural Consultant: Woha Architects Pte Ltd

KEY CHALLENGES

- Requirement for the project to be built over the former Hotel Negara, with tight site constraints.
- Its unique spatial planning enables the creation of multi-level sky terraces that necessitate a complex structural system.

- Re-usage of the existing basement diaphragm walls as earth retaining and stabilising structure (ERSS) walls in a shored, semi top-down excavation. Planned and sequenced the demolition of the existing two-level basements with the ERSS, incorporating sustainable materials such as recycled concrete aggregates (RCA) in combination with liquified soil stabilisers (LSS).
- Rehabilitated and reconditioned the existing diaphragm walls by adding a new composite, waterproofed concrete skin, thereby recycling the original basement walls.
- Employed a combination of steel structures and precast reinforced concrete structures to create a buildable structure through the adoption of design for manufacturing and assembly (DfMA) techniques.
- Directional mechanical pot bearings and steel reinforced neoprene bearings were used to ensure long-term building serviceability.
- Strategic application of partial prestressing to the reinforced concrete design to further enhance safety and long-term building serviceability.

THE GEAR

Industrial Category



Qualified Person:

Er. Kam Mun Wai

C&S Consultant:

Meinhardt (Singapore) Pte Ltd in collaboration with Kajima Design

Builder:

Kajima Overseas Asia (Singapore) Pte Ltd

Developer:

Kajima Development Pte Ltd

Architectural Consultant:

Surbana Jurong Consultants Pte Ltd in collaboration with Kajima Design

Specialist Consultants:

Kajima Design KaTRIS

KEY CHALLENGES

- Integrative architecture, minimalist design embracing wellness, sustainability and energy efficiency.
- Expressive structure with deep basement construction in poor ground condition.
- Spatial flexibility with large column-free spaces.

- Structural rationalism, innovating the skeleton-and-infill concept, to achieve a 'beamless structure' and porous building, abundant in elevated landscape and greenery.
- Creative structural form and configuration realising long span and large column-free floor plates, maximising space flexibility and headroom, built using the semi-top down method to minimise impact to adjacent buildings and services.
- Highly sustainable innovations incorporating advanced designs and technologies, creating a confluent spatial experience blended with natural breeze and sensory changes.

THE WOODLEIGH RESIDENCES AND THE WOODLEIGH MALL

Mixed Development Category



Qualified Person:

Er. Kam Mun Wai

C&S Consultant:

Meinhardt (Singapore) Pte Ltd

Builder:

Kajima Overseas Asia (Singapore) Pte Ltd and Tiong Seng Contractors (Private) Limited

Developer:

The Woodleigh Residences Pte Ltd and The Woodleigh Mall Pte Ltd

Architectural Consultant:
DP Architects Pte Ltd

KEY CHALLENGES

- Integrated mixed-use comprising residential, commercial and communal development with deep basement construction, in close proximity to sensitive structures, heritage park and underground services.
- Underground pedestrian network and bridges, connecting Woodleigh MRT Station, Bidadari Park and adjacent public housing estates.
- Fast-track strategy, embracing advanced DfMA designs and sustainable construction technologies.

- Integrative earth retaining and stabilising structures (ERSS) executed in conjunction with full top-down method to enable concurrent construction of basements and tower superstructure safely, minimising impact to adjacent structures and services.
- Highly buildable structural systems adopted for basement and podium, including prefabricated prefinished volumetric construction (PPVC) for residential units, enhancing productivity and sustainability.
- Innovative steel for long-span bridges, offering 24/7 seamless connectivity and expansive views of the park and lake for the public and residents.

SGH EMERGENCY/NATIONAL NEUROSCIENCE INSTITUTE

Institutional Category



Qualified Person:

Er. Kam Mun Wai

C&S Consultant:

Meinhardt (Singapore) Pte Ltd

Builder:

China Construction (South Pacific) Development Co Pte Ltd

Developer:

Ministry of Health Singapore

Architectural Consultant:

RDC Architects Pte Ltd

KEY CHALLENGES

- Deep basement excavation in undulating ground terrain, resulting in high unbalanced lateral pressures during construction and in permanent condition.
- Elevated hospital facility, integrating and connecting seamlessly the existing Emergency Department with the new SGH Emergency, built over busy thoroughfare.
- Fast-track construction in close proximity to sensitive building structures, with stringent safety, operational and environmental considerations.

- Robust earth retaining and stabilising structures (ERSS) in tandem with full top-down construction, enabling substructure and superstructure to be built concurrently, saving time.
- Holistic execution of DfMA systems and technologies, adopting prop-free construction strategy with extensive off-site fabrication of components, enhancing buildability, productivity and overall safety.
- Innovative structural efficiency in suspending and bridging the new facility over the thoroughfare, maintaining uninterrupted vehicular and pedestrian flow.

NEW **CAT** 980 GC WHEEL LOADER PROVIDES ECONOMICAL SOLUTION FOR VARIOUS APPLICATIONS



he new heavy-duty Cat 980 GC wheel loader offers low fuel consumption with an on-demand fan, load-sensing hydraulics, intuitive controls and Performance Series buckets. Easy to own and simple to operate, this machine is an economical solution for various applications.

"We've built the new 980 GC on a long legacy of high performance and highly reliable wheel loaders with proven components and integrated Cat machine systems," said Frank Stadelmann, Caterpillar global product application specialist.

"The loader's simple user interface, intuitive controls and excellent visibility make for comfortable and efficient operation, even with less experienced operators. New features to this model, like our Engine Idle Management System (EIMS), minimise idle RPM and fuel consumption to help deliver low owning and operating costs."

Adding to the full line of Cat medium wheel loader choices, the new 980 GC is powered by the Cat C13 engine. The engine's Cat Clean Emissions Module works in the background without



TOP, ABOVE AND OPPOSITE: Ideal for a wide range of projects, the new 980 GC wheel loader offers low fuel consumption with an on-demand fan, load-sensing hydraulics, intuitive controls and Performance Series buckets.

impacting production. The EIMS, Auto Engine Idle Shutdown, variable speed fan and load sensing hydraulics combine to offer low fuel consumption and sound levels on the machine.

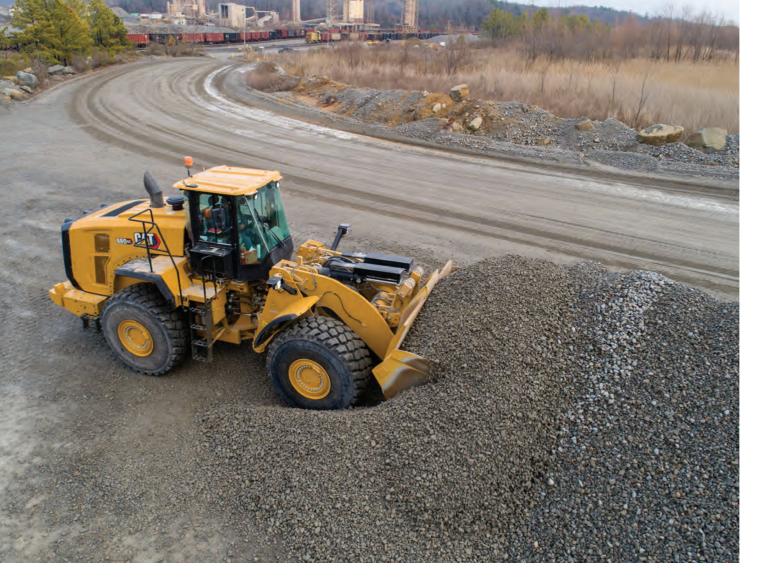
Greater efficiency

The automatic planetary powershift transmission delivers high reliability and long service life. Four forward/reverse speeds reach a maximum 39.8 km/hr speed to quickly move about the site, and the Electronic Clutch Pressure Control (ECPC) shifting system provides smooth, efficient gear changes in all operating conditions. Available ride control improves operating smoothness over rough terrain while ensuring excellent material retention and increasing efficiency, and the optional limited slip differential axle increases traction in poor underfoot conditions.

With a bucket capacity range of 4.3-5.8 cu m, easy-to-load Cat Performance Series buckets use a system-based approach to balance bucket shape with the machine's lift and tilt capacity, weight and linkage. The bucket design improves material retention and reduces dig time with build options that include general purpose, flat floor, heavy duty rock, coal and light material to meet any application.

The Cat Z-bar loader linkage with cast crossmember and tilt-lever provides strong digging efficiency and high breakout forces for superior production capabilities. Load-sensing hydraulics produce flow and pressure for the implement only when needed, improving machine productivity and resulting in low fuel consumption. The new 980 GC can be equipped with the Cat Fusion quick coupler and controls, and combined with optional third-function hydraulics,





the coupler allows use of a wide variety of work tools.

Cat VisionLink, standard for the new 980 GC, enables fleet managers to track critical loader operating parameters like machine location, hours, fuel usage, diagnostic codes and idle time to enhance productivity and lower operating costs. Also optionally available, Cat Payload weighs material while moving to the truck and lifting for on-the-go weighing (not legal for trade), so the operator can load to exact specification, load more trucks and avoid over- or under-loading. The Cat Payload for Trade option for Cat Advanced Payload allows users to integrate the scale data directly into their business processes. It is type approved by the International Organization of Legal Metrology, while retaining all the features of the standard version of Cat Advanced Payload.

Comfortable environment

Providing a comfortable working environment throughout the shift, the 980 GC's spacious cab design features easy, intuitive controls and excellent visibility. The complete user interface is designed as an intuitive system, enabling the operator to monitor machine health. Pilot-operated hydraulic controls deliver



TOP AND ABOVE: With a bucket capacity range of 4.3-5.8 cu m, easy-to-load Cat Performance Series buckets use a system-based approach to balance bucket shape with the machine's lift and tilt capacity, weight and linkage.

low-effort, comfortable operation and include a remote transmission kick-down switch for operating comfort.

Keeping safety in mind, ladders are

standard on both machine sides, providing easy access to the cab from the left-hand side and to service points from the right-hand side. Extended windows with wide,



flat, and distortion-free front windshield combined with rearview mirrors with spot mirrors offer clear visibility to the jobsite.

A rearview camera is standard, and a windshield guard option is available. Air conditioning with louvered vents allows the operator to direct airflow for optimum cooling, while the comfort cloth mechanical suspension seat features adjustable armrests, headrest and multiple variations for superior comfort.

The new loader features convenient service points, one-piece tilting hood with swing-out radiator, and sight gauges for quick and efficient daily maintenance. Hard-to-reach pins have remote, conveniently grouped grease fittings for easy preventative lubrication. An optional Cat Autolube System boasts simple, one-button control and includes fault flash function to alert the operator to issues.

Website: www.cat.com



TOP AND ABOVE: Providing a comfortable working environment throughout the shift, the 980 GC's spacious cab design features easy, intuitive controls and excellent visibility. The complete user interface is designed as an intuitive system, enabling the operator to monitor machine health.

LIEBHERR'S NEW LB 45.1, LRB 19 DRILLING RIGS AND LR 1300.2 SX UNPLUGGED CRAWLER CRANE

iebherr's new LR 1300.2 SX unplugged crawler crane is powered by a 438 kW electric motor and, depending on the application, can be operated for up to 13 hours without a mains connection (i.e. unplugged), thanks to a 392 kWh battery. Subject to the available infrastructure on the jobsite, the complete battery-charging process lasts between 4.5 and 8.5 hours.

Whether attached to the electric supply or not, the performance and range of applications remains unchanged. This 300-t crawler crane delivers zero emissions, does not produce any exhaust fumes and is extremely quiet, making it ideal for noise-sensitive environments or urban areas.

For heavy lifting applications and long boom combinations, the lifting capacities of the LR 1300.2 SX unplugged can be improved and the range of applications extended by using the derrick equipment. Fine adjustment of the suspended counterweight is possible without an auxiliary crane.

The new crawler crane can be equipped with seven different boom configurations up to a maximum boom length of 169 m. The Crane Planner 2.0 lift planning software can be used to determine and simulate the perfect boom combination for the respective construction site requirements in advance.

Liebherr has also developed its own operating mode for lifting operations on floating units. This operating mode contains load curves for different inclinations (0°, 1°, 2°, 3°) with corresponding protection via the load moment limitation. The inclination of the floating unit is monitored during the entire operation and displayed to the crane driver. If the permissible limit value is exceeded, a warning is issued. The load curves are adjusted according to the respective inclination. Additionally, it prevents the maximum boom angle from being exceeded when the load is set down.

The assistance system vertical line finder is part of the new safety concept. It enables the crane driver to avoid diagonal pull at the touch of a button — especially those caused by changes in the inclination of the floating unit as a result of the shift in the centre of gravity when lifting and setting down the load.

One highlight is the gradient travel aid for the safe negotiation of slopes. The crane's control system automatically calculates the centre of gravity and warns the operator before the crane leaves the safe area. While travelling, the operator receives real-time information about the permissible and actual gradient, and the crane's overall centre of gravity at all times. If necessary, the main boom angle can be altered so that the machine remains in the safe area.

The crane's ground pressure display shows the calculated ground pressure in real time. This means the operator is continuously aware of whether the machine is situated in, or is approaching, a critical area. The ground pressure of the LR 1300.2 SX unplugged can be reduced by up to 56% using the additional ground pressure reduction plates that are mounted at the front and rear of the crane. During lifting work, the operator can lower these plates to significantly increase the crane's ground contact area.

The boom up-and-down assistant is also part of the safety concept. When erecting or lowering the boom, this assistance system indicates the approach to the tipping border and automatically stops operation before the operator unintentionally enters an unsafe zone. The operator no longer has to move the winches of the main boom and jib separately. Controlled folding of the jib begins at the press of a button. The speed of the laying down procedure is controlled with a single joystick. The boom-up-and-down assistant chooses the safest method for laying down the boom.



LB 45.1 and LRB 19 drilling rigs

The latest generation of Liebherr LB 45.1 drilling rig is designed for all common piling methods in deep foundation work. These include Kelly drilling, continuous flight auger drilling and double rotary drilling. For applications with full or partial displacement equipment, the device can reach a drilling depth of 37 m thanks to the optional lattice boom extension. This corresponds to an increase of 6 m.

The new drilling rig has a new 450 kW diesel engine and a torque of $450 \, \text{kNm}$, with a maximum winch line pull of $420 \, \text{kN}$ and a maximum pull force of $1,000 \, \text{kN}$. The working processes of the LB $45.1 \, \text{can}$ be automated using a variety of assistance systems, thus increasing efficiency as certain work steps are completely taken over by the machine's control system.

Such examples of automated solutions include the drilling assistant to automate the concreting process during continuous flight auger drilling, slack rope monitoring to prevent undesired loosening of the rope with the help of the winch control, and automatic leader alignment to automatically align the leader to the previously set inclination angle.

The new overload protection of the Kelly winch ensures that the locked Kelly bar automatically stops the crowd winch if the maximum permissible load of the Kelly winch is exceeded. The rope length measurement of the auxiliary winch measures the length of the unwound rope, which is helpful when inserting reinforcement cages, for example. Locking of the Kelly bar's telescopic sections is made significantly easier due to the Kelly visualisation system in the LB 45.1

Thanks to the real-time display of the Kelly bar's locking recesses on the cabin monitor, the operator is permanently informed about the actual distance to the next locking recess. Colour indications inform when the bar can be locked. Furthermore, false positioning of the Kelly bar during the shake-off process is indicated through a warning signal.

In the new cabin, the focus lies on ergonomics and operating comfort. This is accomplished with an orthopaedic driver's seat, individually adjustable monitors and a cool box for food. The new refuelling position of the machine, which is easily accessible from the crawlers, also increases convenience on the jobsite.

LRB 19 rig

The new LRB 19 piling and drilling rig can be used for a wide range of applications in deep foundation work. For piling or vibrating applications, the machine is fitted with the H 6 hammer or the LV 23 and LV 23 F vibrators, all from Liebherr. Drilling with Kelly equipment, double drilling head, full displacement equipment and continuous flight auger or soil mixing are further areas of application. The name LRB 19 reflects the maximum travel distance of the sledge: 19 m.

The various attachments can be easily exchanged using the hydraulic quick connection system. All hydraulic, mechanical and electrical connections are automatically coupled. This significantly reduces the set-up time and prevents connection errors. A new hose sledge ensures that there are no more obstructive hoses during use, which makes the installation of sheet piling much simpler. When drilling, the optional pulling device can increase the pull force of the LRB 19 by 110 kN.

This new piling and drilling rig is the successor to the Liebherr LRB 16 and LRB 18 models. Powered by a 450 kW diesel engine, the LRB 19 features the BAT 180.1 rotary drive with a maximum torque of 180 kNm, as well as a low transport weight of 48.2 t including 8 t of counterweight and auxiliary winch. The compact design allows for transportation in one piece with the vibrator attached, making mobilisation between jobsites straightforward and more flexible.

The LRB 19 is also equipped with a self-assembly system for the counterweight, so no additional crane is required. The all-round platform with railings on the uppercarriage enables high accessibility and safety during maintenance work or inspections on the machine. The optimised arrangement of the LED headlights provides excellent visibility in the work area, even at night.

All Liebherr assistance systems for deep foundation applications are available for the LRB 19. The LIPOS positioning system uses the latest satellite technology to support the operator in precisely aligning the attachment tools during

drilling or piling operations. During continuous flight auger drilling, the concreting process is automated thanks to the drilling assistant. The pre-defined parameters are implemented by the control system. These can be adjusted during the drilling process, if necessary. The vibro-replacement process also runs automatically, thanks to the vibro-assistant.

Working area restriction helps the driver to monitor the rotation range, working radius or machine height (height adjustment). As soon as the driver tries to move the machine into the pre-defined restricted area, it stops automatically and thus prevents possible collisions. Other assistance systems, such as ground pressure visualisation or eco-silent mode, increase the efficiency of the machine and the comfort of the operator.

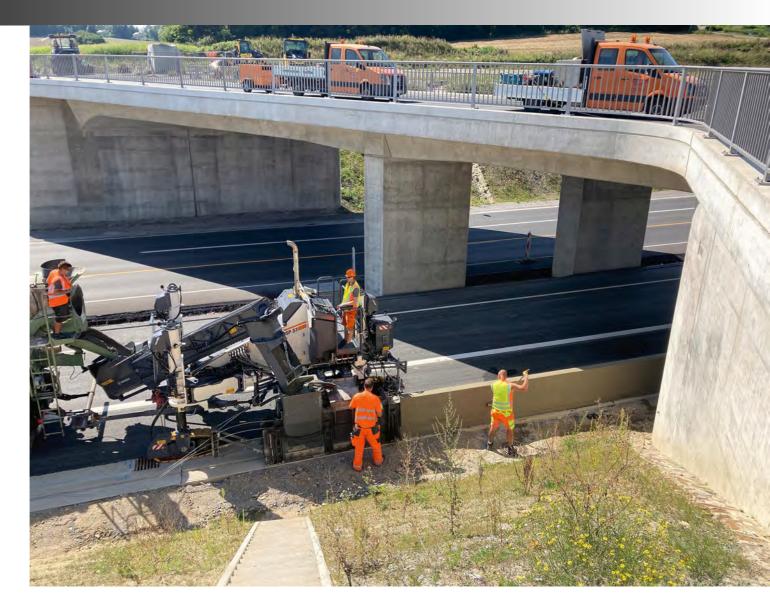
Website: www.liebherr.com

RIGHT: The new LB 45.1 drilling rig can reach greater depths, thanks to the lattice boom extension.

BELOW: The new LRB 19 piling and drilling rig features the BAT 180.1 rotary drive with a maximum torque of 180 kNm.



WIRTGEN'S NEW SP 33 SLIPFORM PAVER AND WR SERIES COLD RECYCLERS AND SOIL STABILISERS



irtgen has launched the compact SP 33 slipform paver for the construction of monolithic concrete profiles. Thanks to its modular design and a wide range of setting options, the machine can be configured for use in almost all situations encountered on jobsites. Two track units with parallelogram swing legs at the front and a laterally adjustable single track unit at the rear enable zero-clearance paving and maximum flexibility.

In offset mode, the SP 33 can pave kerb and gutter profiles, rectangular profiles, and concrete barriers up to 1.3 m in height as well as sewer and drainage channel profiles. Concrete slabs with a width of up to 2.2 m can also be paved without any problems, or

up to a width of 2.4 m in combination with a trimmer.

In Crosspave mode, the track units are turned by 90° and the SP 33 then paves transverse to the direction of travel. The slipform mould is centrally mounted under the machine, which enables the paving of concrete slabs with a width of up to 3.0 m. The quick and easy conversion from one paving mode to the other makes this machine highly versatile.

The new operating concept with event-driven graphic visualisation assists operators in their work with both paving modes. The machine control panel provides separate zones for clear and simple visualisation of the currently relevant machine information for each of the three main working phases: transport,



set-up and concrete paving.

For instance, in set-up, it visualises the set-up process on the construction site in a logical sequence that guides operating personnel through the successive set-up of individual systems such as the crawler units, the mould, the vibrators, the sensors, etc., intuitively, efficiently, and without errors.

The load-dependent engine management system identifies every working situation and the power it requires, and automatically adjusts the speed of the diesel engine accordingly without intervention on the part of the operator. This ensures that the diesel engine runs within the envelope of optimal efficiency as often as possible, resulting in low diesel fuel consumption and simultaneous reductions of CO2 and noise emissions.

The operator is also assisted by the AutoPilot 2.0 control system. In concrete paving, pavers are traditionally controlled by the scanning of a physical stringline. As an alternative, Wirtgen offers its AutoPilot 2.0 stringless paving system for all offset pavers and placer/spreaders. This completely eliminates the need for control by a physical stringline, which leads to considerable savings in terms of time and effort and increases the safety of the personnel on the construction site.



OPPOSITE: The Wirtgen SP 33 can pave a wide range of different monolithic concrete profiles, e.g. kerbs, kerb gutter profiles, rectangular profiles, concrete barriers up to 1.3 m in height, or sewers and drainage channel profiles.

TOP: The SP 33 slipform paver is also suitable for concrete slabs with a width of up to 2.2 m in offset mode and up to 3.0 m in Crosspave mode.

ABOVE: Thanks to the quick-change concept, exchanging offset and Crosspave moulds on the construction site is fast and easy.

The system controls both the height adjustment and steering of the machine. AutoPilot 2.0 also allows fast and precise paving of tight radii and

complex geometries. A GNSS signal and, depending on the configuration, various local sensors, such as an ultrasonic sensor on the machine, act as a reference.



New cold recyclers and stabilisers

Wirtgen's new WR series can be used for various applications, from cold recycling to the stabilisation of a wide range of construction materials, in processes such as soil stabilisation or consolidation in road construction. This new series will be available around the world from mid 2025.

The compact dimensions and low machine weight of the WR 200 X make it easy to transport from place to place. The WR 240 X strikes a perfect balance between machine performance and weight to assure high daily productivity. The WR 250 X is the most powerful machine of the WR series and delivers the highest productivity.

The three models have working widths of up to 2,400 mm, with engine power outputs of between 305 and 571 kW (depending on the model). The improved Duraforce milling and mixing rotor enables consistently high mixing quality and productivity under all working conditions and contributes to the minimisation of fuel consumption, CO2 emissions and wear.

The most important aspect of these new cold recyclers and stabilisers is their revised and enhanced operating concept. A new multifunction joystick, fingertip control and ergonomic height adjustment via the multifunction armrest ensure maximum ease of use. In addition to digital process monitoring, the large machine control panel features application-relevant displays and the Wirtgen Group



TOP: The new Wirtgen WR series is ideal for various applications, from cold recycling to the stabilisation of a wide range of construction materials, in processes such as soil stabilisation or consolidation in road construction.

ABOVE: In this next generation of the WR series, Wirtgen relies on a revised and improved operating concept that enables efficient and cost-effective operations.

CoPilot. This digital assistance system helps operators to exploit the full potential of their machine, provides suggested courses of action during the work in progress and offers interactive tutorials.

The tutorials help operators to familiarise themselves with the machine and its functions. Explanations of the steering modes, the features of the multifunction

joystick as well as transport and safety instructions are also provided. Operators are offered visualised recommendations for action and their effect while interacting directly with the machine. The system guides operators step by step through each scenario, detects their input commands and the machine status and then automatically proceeds to the next process step.



The AutoTrac steering assistance system steers the machine accurately on the basis of a previously calculated reference strip and a specified overlap of adjacent strips. The Automatic Reverse function enables rapid reversal of the travel direction at the press of a button.

With the Mix Assist digital assistance system, various automated functions can be individually configured and conveniently initiated simply by pressing a button. It also allows operators to set up and save a sequence of working steps as an automated process for later use when needed. When using this, the system rearranges the camera images displayed to set a focus on the currently relevant working area. This reduces the operator's workload and simultaneously improves machine productivity.

The Wirtgen Group Performance Tracker Recycling (WPT Recycling) generates seamless documentation of every project. It records all relevant, location-specific construction site parameters and documents them in a detailed field report.

WRC 240 X and WRS 240 X

Apart from the WR series, Wirtgen also introduces the WRC 240 X rock crusher. This machine crushes coarse rocks and stones as found in hard packed stone pavement layers and stony ground, and homogeneously mixes the resulting material in a single pass. With a working width of 2,320 mm and a working depth of up to 510 mm, the WRC 240 X can achieve output rates of up to 600 t/hr.



With a working width of 2,320 mm and a working depth of up to 510 mm, the WRC 240 X can achieve output rates of up to $600 \, t/hr$.

The heavy-duty crushing and mixing rotor with HT18 toolholders and tools developed especially for the crushing process delivers ideal results in stony ground. The crushing tools have extralarge, impact-resistant carbide cutting edges and holder bases with high-tensile steel wear protection. This guarantees high utilisation rates and process reliability, even in demanding applications.

In addition to crushing rocks and stones with edge-lengths of up to 300 mm and a uniaxial compressive strength of up to 200 MPa, the machine can add and mix water and binding agents into the crushed material during the same pass, e.g. to produce base layers.

Meanwhile, the operator's platform of the WR 240 X has been chosen for the

new WRS 240 X model, and a binding agent spreading unit with a container capacity of 5.5 cu m has been integrated in the machine for dust-reduced spreading of binding agents such as lime or cement.

The WRS 240 X is suitable for deployment on motorways, industrial estates and in nature reserves with strict emission regulations. Thanks to its excellent all-terrain mobility, binding agents can be spread reliably and precisely, especially on soils with poor load-bearing properties in challenging terrain. The WRS 240 X offers the further option of pushing a binding agent silo ahead of the machine. This binding agent silo can be kept permanently filled on load bearing ground.

Website: www.wirtgen.com



RTG'S NEW eRG 21 T HYBRID PILE DRIVER REDUCES EMISSIONS BY UP TO 68%



ne of the highlights at Bauer booth during bauma 2025 was the eRG 21 T hybrid pile driver from RTG Rammtechnik. The machine's drive system combines the power of a 430 kW diesel engine with the precision of an electric motor delivering up to 88 kW of additional power (standard power supply: 125 A / 400 V).

This hybrid technology ensures a constant high level of efficiency, even under strict emission regulations. Thanks to the support of the electric motor, the diesel engine operates with less power, which not only reduces noise significantly but also minimises fuel consumption. As a result, CO2 emissions can be cut by up to 68%.

The system seamlessly adjusts between diesel and electric power based on demand, optimising performance for various applications. When lower power is required, the machine can even operate in fully electro-hydraulic mode. Meanwhile, full power is available for demanding piling tasks.

The standard equipment for the eRG 21 T hybrid includes the Bauer comfort operator cabin and a modern touchscreen with B-Tronic control. Integrated power management optimises the use of the hybrid drive. The temperature-regulated fan control system with fully automatic operation has been specially developed for vibrator operation. Additionally, the machine features a basic remote control as well as retractable side flaps for automatic noise protection.

A variety of optional features allow customisation for specific requirements. An arctic kit or the extended arctic kit plus, for example, enable operation under extreme weather conditions. An optional second swivelling mechanism increases the swivel braking torque, improving machine control. The energy-efficient power (EEP) system with Eco Mode further helps reduce energy consumption. An extended remote control (operation) and automatic coupling system for the base machine (ACS I) and all attachments (ACS II) are also available.



OPPOSITE: The eRG 21 T hybrid pile driver combines the power of a diesel engine and an electric motor.

ABOVE (LEFT AND RIGHT): With the eRG 21 T hybrid, CO2 emissions can be reduced by up to 68%.

The hybrid drive has already demonstrated its reliability with the eRG 19 T hybrid, the 'smaller sister' of the eRG 21 T hybrid. Last year, it was used successfully at the Friedrich-Krause-Ufer site in Berlin, Germany. During the special foundation engineering work for a new office and commercial building, the machine executed vibration driving precisely based on a grid pattern, laying the groundwork for an excavation pit with a stable sealing horizon.

Website: www.rtg-rammtechnik.de/en

SENNEBOGEN'S NEW 6203 E TELESCOPIC CRAWLER AND 6220 E DUTY CYCLE CRANES



o meet the growing demand for large telescopic crawler cranes, Sennebogen has introduced a new model with a maximum load capacity of 200 t, the 6203 E. It is ideal for heavy precast concrete assembly, bridge and infrastructure projects, as well as construction of wind turbines.

The 6203 E is powered by a 194-kW Stage V diesel engine, which can be operated with HVO if desired. The main and auxiliary winches are driven by high-pressure regulated variable displacement hydraulic motors, which give them a pulling force of 135 kN each and rope speeds of up to 115 m/min.

The six-section pin boom can be telescoped up to $56.4~\mathrm{m}$. This pin boom telescoping system is light and stable, resulting in excellent lifting capacities even with long boom lengths. An additional pin point at 90% extension on each telescopic section further increases the rigidity of the boom.

The 6203 demonstrates its capabilities with long boom lengths, but is extremely strong with short boom lengths and at angles of up to 4 degrees. This makes the crane particularly suitable for tasks on uneven construction sites or in pick-and-carry operation.

The boom length can be extended to up to 78 m with a hydraulically adjustable jib. To keep operation as simple as possible, the most effective boom configurations are preset with 16 so-called 'extend modes'. Switching between the extend modes is possible and saves valuable time when adjusting the boom length.

The telescopic crawler undercarriage has a maximum track width of 6.0 m, which can be reduced to up to 3.5 m depending on the requirements of the construction site. The 1,000-mm double grouser track shoes offer maximum stability and minimise floor pressure. For more sensitive surfaces, durable polyamide plates can also be used as an option to prevent damage.





OPPOSITE: The new 200-t Sennebogen 6203 E telescopic crawler crane was unveiled at bauma 2025 in Munich. This model has a jib length of up to 78 m

ABOVE: Equipped with a sixsection pin boom, the 6203 E is particularly strong in pick and carry tasks and when lifting at an inclination of up to 4 degrees.

LEFT: The new 220-t Sennebogen 6220 E duty cycle crane is suitable for a wide range of applications in the heavy-duty sector. The machine also made its public debut at bauma 2025.

The 6203 E is equipped with the Maxcab large-capacity cab, which can be tilted by 20 degrees, thus offering the operator an optimum view of the load. As an option, this cab can be raised hydraulically to a viewing height of 5.70 m and tilted by 30 degrees. Cameras to the rear and to the right extend the driver's field of vision to the entire safety and working area.

A highlight in terms of driver assistance is the new SLC (Sencon load control) machine control system. To ensure greater convenience for the operator during work, a separate control system with its own screen has been integrated into the cab in accordance with automotive standards. This new system is an addition to the existing Sencon (Sennebogen control system) and provides all valuable data on the lifting process on a large, clearly organised display in addition to the load moment limitation.

The 6203 E can travel with 100% of the specified load capacity on the hook. It can also slew the specified load capacities a full 360 degrees. The crane has a transport width of just 3 m without the crawler tracks and can be transported in seven units. Once on site, the 6203 E is able to unload itself from a low loader and assemble itself in just a few steps.

6220 E duty cycle crane

Sennebogen has expanded its range of HD duty cycle cranes with the new 6220 E, featuring a load capacity of 220 t and a maximum boom length of 74.7 m in lifting mode. This model closes the gap between the 140-t 6140 E and the 300-t 6300 E.

The new 6220 E is designed for a wide range of applications in the heavy-duty sector. Customers can choose between a 563 kW



Thanks to its robust design and considerable load capacity, the 6220 E can operate under tough conditions. This duty cycle crane features a maximum boom length of 74.7 m in lifting mode.

or the larger 708 kW engine with Stage V emission compliance. Various attachments and ballast variations are available, depending on whether the machine is to be deployed as a crane or excavator.

The 6220 E can operate under tough conditions and even at inclinations of up to 4 degrees with the higher engine power and more ballast. The machine can also be equipped with extra hydraulics for various attachments and there are several winch options, ranging from 30 t or 35 t free-fall winches, an equipment with 2 x 20 t double winches, through to other winches for a variety of applications.

In addition, the duty cycle crane can be equipped with a 6-t tagline winch with 60 kN tractive force for the necessary precision during grab work. With a fairlead and dragline bucket, the machine is ideal for extraction work. In civil engineering, the robust boom design and the high load capacities make it easy to operate a hydraulic breaker, leader, vibrator or even a diaphragm wall grab.

The use of aramid guy ropes instead of steel ropes on the main boom has resulted in considerable weight savings. The 6220 E also has two slewing gears, which guarantee a high slewing torque of 585 kN.

The Maxcab large-capacity cab provides all-round comfort and can be tilted by 20 degrees, so that the operator always has an optimum view of the working area. A 2-m hydraulically elevating cab is available as an option.

The crane's boom is fitted with a height safety device to enhance safety. For safe access to all areas of the machine, the optional railings and walkways on the uppercarriage as well as the access steps themselves have also been revised. Furthermore, the assembly of the undercarriages and changing the reeving can be carried out conveniently and safely by remote control.

The new SLC machine control system is another highlight in terms of user-friendliness. This system significantly simplifies the operation of the machine, thanks to its intuitive and clear structure.

The Starlifter undercarriage has a track width of 6,400 mm and a running gear length of 9,280 mm and is equipped with 1,000 mm flat track shoes, giving it stability. For even greater stability, the undercarriage can be fitted with an additional undercarriage ballast.

The 6220 E features a transport weight of approximately 65 t, and its crawler tracks can be dismantled for transportation. They can be easily reassembled using the self-assembly system once the crane arrives at the jobsite. ■

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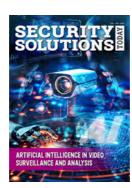


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