

# SOUTHEAST • ASIA CONSTRUCTION

JULY - AUGUST 2025



## Cover Story:

Runway rehabilitation at Soekarno-Hatta  
Int'l Airport in Jakarta, Indonesia

## Features:

Singapore's Changi Airport T5 breaks ground

Ulleung Airport project, South Korea

Mapei structural strengthening systems







Tadano hybrid all-terrain cranes

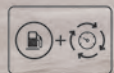
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- ◆ Construction & Infrastructure **BuildTalk Seminar**
- ◆ Concrete Consultations & Solutions through **Concrete Clinic**
- ◆ Product **Demonstrations & Showcase**
- ◆ Business **Networking** Activities
- ◆ MBAM's Contracts & Practices **Conference** 2025

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# A Sneak Peek into MBAM OneBuild 2025: Sustainable Smart Construction Solutions



MBAM OneBuild 2025, Malaysia's premier construction and infrastructure exhibition, is set to make its highly anticipated return from 27 to 29 August 2025 at the Kuala Lumpur Convention Centre (Hall 1 & 2). As the nation's leading annual event dedicated exclusively to the construction and infrastructure sectors, MBAM OneBuild continues to drive innovation, technological advancement, and industry transformation.

Renowned for bringing together key stakeholders, thought leaders, and trade professionals, the exhibition serves as a dynamic platform for exploring the latest trends, cutting-edge solutions, and best practices that are reshaping Malaysia's construction landscape. The 2025 edition promises to offer invaluable insights into the future of the industry, with a strong emphasis on digitalisation, sustainability, and the adoption of advanced technologies.

MBAM OneBuild 2025 will co-locate with OneWare 2025 – the Malaysia International Hardware Technology Exhibition in adjoining halls (Hall 7), creating a synergistic platform that is expected to feature over 300 exhibitors across 410 booths and welcome approximately 8,000 trade visitors from 21 countries and regions. This strategic collaboration offers an expanded showcase of hardware technologies and innovative construction solutions tailored to meet the evolving demands of the industry.

## Three Core Segments Driving Industry Advancement

The exhibition will be anchored by three dedicated segments. Construction & Infrastructure showcases groundbreaking solutions and technologies shaping the future of infrastructure development. Construction Hardware will feature an extensive array of essential tools, materials, and technologies crucial to modern construction processes. Meanwhile, Construction Machinery & Equipment highlights the latest state-of-the-art machinery designed to boost efficiency, productivity, and safety across construction projects.

## BuildTalk & MBAM Contracts and Practices Conference

At the heart of MBAM OneBuild 2025 is BuildTalk, a robust seminar series that dives into themes such as industrialisation, green construction, and digital transformation. These sessions allow

exhibitors and thought leaders to share knowledge and innovations with a targeted, influential audience.

Complementing this is the MBAM Contracts and Practices Conference, a highly respected professional platform where construction professionals, legal experts, and contract specialists converge to discuss practical issues, regulatory updates, and best practices in contract management and construction law. This conference is a must-attend for those navigating the complexities of project delivery and legal compliance in Malaysia's evolving construction landscape.



## Concrete Clinic and Live Demonstrations

Beyond seminars, the event offers practical, hands-on experiences such as the Concrete Clinic, a live demonstration zone spotlighting the latest advancements in concrete technology. Attendees can learn best practices in material handling, quality control, and innovative applications that ensure durability and sustainability in construction projects.

## Unparalleled Networking Opportunities

MBAM OneBuild 2025 is also a fertile ground for professional networking. With thousands of key decision-makers, buyers, and suppliers under one roof, the event facilitates meaningful connections that can spark partnerships, drive innovation, and foster long-term business growth.

With its unwavering focus on progress, technology adoption, and industry collaboration, MBAM OneBuild 2025 is poised to become a pivotal event that will help shape the future trajectory of Malaysia's construction sector. It stands as an unmissable opportunity for professionals seeking to stay ahead in an increasingly competitive and rapidly evolving market.

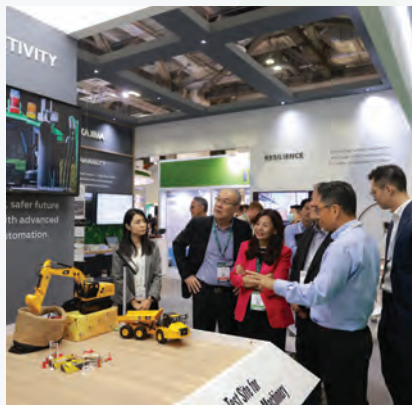
MBAM OneBuild 2025 is organised by MBAM OneBuild Sdn Bhd, a subsidiary company of Master Builders Association Malaysia, and endorsed by the Ministry of Works Malaysia and Malaysia External Trade Development Corporation (MATRADE).

Visitor registration is now open, click on <https://reg.mbamonebuild.com.my/register> to register your visit. For more information on the seminar programme, please visit our official website at <https://mbamonebuild.com.my>





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### On the cover:

Runway rehabilitation at Soekarno-Hatta International Airport in Jakarta, Indonesia  
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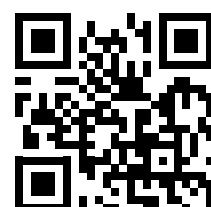
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# Aboitiz Construction completes Lagonglong Port project in Mindanao, Philippines

Philippine contractor Aboitiz Construction has completed the Lagonglong Port project for Amadi MGT Terminals, strengthening its commitment to infrastructure development and economic growth in Mindanao. The construction of this private commercial port, located in Lagonglong, Misamis Oriental, involved building dock facilities, storage areas for perishable goods, and the installation of loading and unloading equipment.

With a handling capacity of up to 3.3 mil mt of bulk cargo annually, the new port is poised to streamline logistics for transporting agricultural products and raw materials, strengthen regional trade capacity, and create employment opportunities for the local community. The berth measures 23 m in width and 250 m in length, with a seabed elevation of -21 m from mean lower low water (MLLW), allowing it to accommodate larger vessels and support efficient cargo handling operations.

The groundbreaking ceremony for the Lagonglong Port project was held in January 2024, with Aboitiz Construction appointed as its official contractor. The company said up to 300 workers were deployed during peak construction periods.

In marine works, Aboitiz Construction has also signed a partnership with DICT Bulk Terminal in October 2024 to build a new berth dedicated to cement shipments at the Davao International Container Terminal (DICT) in Panabo City, Davao del Norte. This project marks the construction of DICT's fifth berth and is targeted for completion within the year. The facility will primarily accommodate cement and cementitious materials, further supporting the region's infrastructure and development needs.

In addition to marine infrastructure capabilities, Aboitiz



**ABOVE:** Aboitiz Construction has completed the Lagonglong Port project in Mindanao, in partnership with Amadi MGT Terminals.



**LEFT:** Aboitiz Construction is also building a fifth berth at the Davao International Container Terminal, in partnership with DICT Bulk Terminal.

Construction previously completed major projects in Balamban, Cebu for Tsuneishi Heavy Industries. These included a 100-ha shipbuilding facility as well as the pier head and admin building project, which involved extensive reclamation works, a causeway and various support facilities. ■

## Leighton Asia awarded new luxury residential project in India

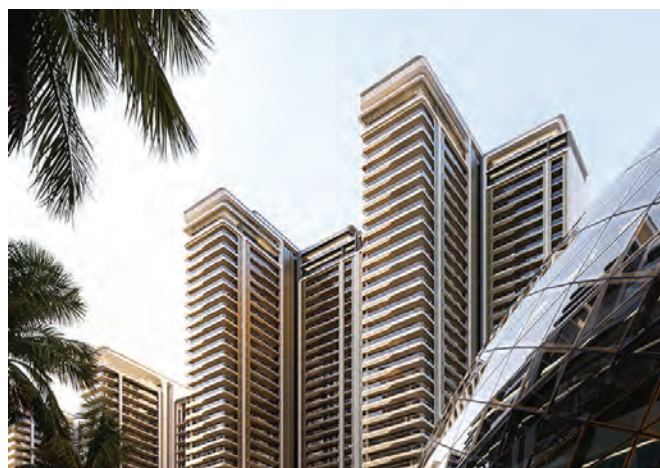
CIMIC Group company Leighton Asia has been awarded a contract by the Elan Group, one of India's leading real estate developers, to deliver a luxury residential project in Gurugram.

The project, known as Elan The Emperor, is located in the same area where Leighton Asia is currently constructing an eight-tower development, Elan The Presidential, also for the Elan Group. This new contract involves construction of 10 towers, each approximately 145 m high, across a built-up area of around 490,000 sq m.

"Securing further work for the Elan Group is a sign of Leighton Asia's commitment to safety and operational excellence. We are pleased to be providing another premium residential project for the growing population of the region," said Juan Santamaría, executive chairman of CIMIC Group.

The scope of work for this IGBC LEED Gold-targeted development includes civil and structural works and management of subcontractors. Construction is set to commence in September 2025, with completion slated for 2030.

"With more than two decades of on-the-ground experience in India, Leighton Asia takes pride in setting new benchmarks for quality and sustainability in large-scale residential projects," said



The project involves construction of 10 towers, each approximately 145 m high, across a built-up area of around 490,000 sq m.

Brad Davey, managing director of Leighton Asia. "We are proud to be undertaking this prestigious project for the Elan Group." ■



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## SJ Group strengthens Indonesian presence with new office in Jakarta

Singapore-headquartered SJ Group has opened a new consolidated office in Blok M, Jakarta, marking a significant step in unifying its operations in Indonesia and strengthening integrated, multidisciplinary collaboration under one roof.

SJ has been operating in Indonesia for over 50 years through SMEC, an SJ company that has played a pivotal role in delivering transformative infrastructure projects across transport, energy, water and urban development for both the private and public sectors. Contributing to more than 200 projects, SMEC has worked across public-private partnerships (PPPs) as well as managed large programmes across Indonesian and regional government partners.

“We’ve brought the SJ team together under one roof in Blok M, a space that reflects how we work today: connected, collaborative and future-focused. It’s a demonstration of our commitment to Indonesia, and it gives us the room to grow, create and support our clients as the country builds for the future,” said Sean Chiao, group CEO of SJ.

SJ’s ongoing initiatives in Indonesia reflect its commitment to sustainability, innovation and long-term impact. In West Java, the group is supporting the TPPAS Greater Cirebon regional waste management programme – a transformative project serving five municipalities through advanced treatment technologies, climate resilience planning and circular economy principles. In South Sulawesi, the group (through SMEC) is delivering feasibility studies for floating solar PV installations across three sites, supporting Indonesia’s energy transition and low-carbon ambitions.

With a presence built over decades, SJ continues to deliver end-to-end advisory for infrastructure, industrial and township development across the country. Notable projects include Kediri



FROM LEFT: Choon Chong Yeo, chief executive, integrated solutions at SJ; Sean Chiao, group CEO of SJ; and Dobby Prihardi Dwinanda, regional manager of SJ Indonesia.

Airport in Surabaya, one of Indonesia’s first airports delivered via PPP, where the group led feasibility studies, PPP structuring and project management. Other developments include a 58-ha integrated township in West Sumbawa, and Subang Smartpolitan in West Java, a 2,700-ha smart city development combining residential, commercial and industrial zones.

Through Mitbana, its joint venture with Mitsubishi Corporation, SJ is also shaping future-ready communities in Greater Jakarta. Mitbana is co-developing Hiera, a 108-ha mixed-use precinct in BSD City with Sinar Mas Land, and Green Bestari Park, a 51-ha transit-oriented township in Tangerang with Intiland. ■

## Doosan Enerbility wins contract to build gas-fired combined cycle power plant in Vietnam

South Korea’s Doosan Enerbility has signed a contract with Petrovietnam (PVN), Vietnam’s largest state-owned enterprise, for the construction of O Mon 4 gas-fired combined cycle power plant. The project is slated to be built by 2028, with an installed capacity of 1,155 MW.

The O Mon 4 power plant will be located about 180 km southwest of Ho Chi Minh City. Upon completion, this facility is expected to help establish a stable power supply for Vietnam’s southwest region including the Can Tho municipality.

Doosan won the contract together with its consortium partner PECC2, a local company specialising in power plant construction. Doosan’s role will be to supply the main components and handle the construction and overall commissioning process.

“This recent project win is owing to our successful delivery of numerous projects in Vietnam’s power sector, which has demonstrated our competitiveness in this field,” said Hyeonho Lee, CEO of Doosan Enerbility’s plant EPC business group.

He added, “As Vietnam has plans to additionally build gas-fired combined cycle power plants with a maximum combined



The contract signing ceremony for the O Mon 4 power plant project took place on 6 June 2025.

capacity of 37.4 GW, we will actively endeavour to secure more orders here.” ■





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# Aktio switches to Volvo machines with record Thai order

Volvo Construction Equipment (Volvo CE) and its Thai dealer, Chairatchakarn Bangkok (CHAB), have secured a major order to supply 13 EW145B Prime wheel excavators to rental company Aktio (Thailand) Co Ltd. This is the company's first purchase of Volvo machines, and currently Volvo CE's largest wheel excavator deal from a single customer in Thailand.

CHAB played a crucial role in the deal by anticipating rising demand for slightly smaller but more mobile excavators in the Thai market. With infrastructure development accelerating across the country, especially in strategic projects such as the Bangkok Mass Transit System (BTS Sky Train), highways and road construction, Aktio saw an opportunity to diversify its fleet with machines better suited to urban construction environments.

## A strategic shift in the market

This order reflects a shift from 20-t crawler excavators to more compact and versatile 14-t machines. The EW145B Prime is attracting attention for its powerful performance, easy transportability and reduced operating costs – all critical factors for rental businesses and contractors working in congested or urban jobsites, which are common in Thailand.

The Volvo EW145B Prime is suitable for a wide range of construction applications. With a high lifting and digging performance, the machine can carry out challenging tasks. The wheeled design allows for quick relocation between jobsites, minimising downtime. The optimised hydraulic system reduces fuel consumption without compromising output.

The spacious, ergonomic cab improves productivity over long shifts, ensuring operator comfort. The machine also features durable components and simplified service access, which in turn lower the total cost of ownership.

Yuichiro Abe, managing director of Aktio, said, "We're extremely pleased with how the EW145B Prime units have performed. The machines have been working well and are supporting our customers on major construction projects. In addition, the support we've received from CHAB, both in sales and after-sales, has been excellent."

Raven Chua, head of market west at Volvo CE, added, "This deal shows how Volvo CE can meet the evolving needs of rental



FROM LEFT: Aktio operator; Panipak Petcharapirat, general manager sales of CHAB; Nunnarin Petcharapirat, CEO of CHAB; Yuichiro Abe, managing director of Aktio; Wiphada Thong-om, machine sales director of CHAB; Navin Amornvech, machine sales manager of CHAB; and Khachonsak Poasing, machine salesman of CHAB.

customers in high-demand infrastructure projects. We're proud to see Aktio embracing the EW145B Prime, and even prouder of the teamwork between our dealer CHAB and the customer that made this possible."

Delivery of the 13 machines has been scheduled to match project timelines, with the first unit delivered in January 2025. ■

## New deep-water terminal to be developed in Haiphong, Vietnam

CMA CGM Group has signed a partnership agreement with Saigon Newport Corporation (SNP) to develop a new deep-water terminal in Haiphong, northern Vietnam.

The agreement covers the design, construction and operation of the Lach Huyen terminals 7&8, located in the Lach Huyen area in Haiphong. The terminal will have a capacity of 1.9 million TEUs and is scheduled to open in 2028.

The project is designed to meet the sharp increase in container volumes in northern Vietnam – one of Southeast Asia's fastest-growing economic zones. This partnership will enable CMA CGM to secure long-term capacity in a region that has become central to Asian supply chains due to its rapid industrial and logistics development.

CMA CGM has been active in Vietnam since 1989, with five offices in Ho Chi Minh City, Hanoi, Haiphong, Danang and Quy Nhon, and a team of more than 550 employees. The group operates 29 weekly services across seven ports in the country, connecting major global trade routes to an advanced intermodal network via CEVA Logistics. ■



Aktio's order reflects a shift from 20-t crawler excavators to more compact and versatile 14-t machines.



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## INNOVATIVE CONSTRUCTION



Innovative construction integrates cutting-edge technologies and advancements to optimize building processes. By utilizing AI, Building Information Modeling (BIM), and high-efficiency materials, this approach reduces resource waste, shortens timelines, and enhances project management. It revolutionizes the construction industry, improving efficiency, precision, and sustainability throughout the entire lifecycle of a project.

## SUSTAINABILITY



Planning and executing construction with consideration for long-term environmental, social, and economic impacts. This involves not only completing buildings but also emphasizing the balance between development and natural resource preservation, ensuring that the planet and communities can coexist harmoniously with a good quality of life in the future.

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# TotalEnergies, RGE sign agreement for solar power and battery energy storage project in Indonesia

TotalEnergies and RGE, through their equally-owned joint venture Singa Renewables, have entered into a co-investment agreement to develop, build and operate a solar photovoltaic (PV) power plant with battery energy storage system (BESS) in Riau province, Indonesia. This utility-scale project will be constructed in phases.

Upon completion, the project will deliver significant green energy supply for domestic consumption to power green industrial complexes in Riau province, supporting Indonesia's efforts to drive economic growth and decarbonise key sectors. It will also provide clean solar energy export to Singapore, contributing towards enhancing energy cooperation and renewable energy initiatives across the region.

"Our utility-scale project underscores TotalEnergies' commitment to supporting the region's energy transition efforts, while ensuring energy security. This project aims to drive the development of regional renewable energy infrastructure and advance the ASEAN Power Grid vision," said Helle Kristoffersen, president Asia and member of the executive committee at TotalEnergies.

"We are taking meaningful steps to advance regional connectivity and contribute to the acceleration of the energy transition in the region. Our co-investment agreement reflects our strong alignment with Indonesia's National Transformation Strategy (Asta Cita) – supporting green energy self-sufficiency and its bio-based resources industry through high value-added services," said Imelda Tanoto, managing director at RGE.



TotalEnergies' Helle Kristoffersen (left) and RGE's Imelda Tanoto (right) announced a co-investment agreement between both companies in the presence of Indonesian President Prabowo Subianto and French President Emmanuel Macron on 28 May 2025.

The project is expected to position Indonesia as a global renewables hub through the creation of skilled jobs in renewables, BESS, engineering and grid integration in Indonesia, in addition to developing the country's solar and energy storage supply chain capabilities. It also aims to support wider ASEAN ambitions for cross-border clean energy cooperation and energy integration. ■

## IJM gets green light for Malaysia's New Pantai Highway Extension project

IJM Corporation Berhad has received approval from Malaysia's Ministry of Works for the New Pantai Highway Extension (NPE Extension) and the toll restructuring for the existing New Pantai Highway (NPE). The project will be undertaken by IJM's Infrastructure Toll Division, which manages the group's highway concessions.

The 15-km fully elevated NPE Extension (including directional ramps) is designed to improve connectivity, ease congestion and enhance mobility across key corridors in Klang Valley. By offering a direct alternative to city-centre routes, the highway will help shorten travel times and reduce daily commutes for residents and businesses.

The NPE Extension, with a new toll plaza, will be fully funded by the concessionaire without any government funding, according to IJM. Construction work on the project is expected to commence in the third quarter of 2025, with the highway targeted to be operational by 2029.

The existing NPE is a 19.6-km dual carriageway developed by New Pantai Expressway Sdn Bhd, a subsidiary of IJM. It serves as a vital link between Subang Jaya and Kuala Lumpur, easing traffic congestion along key urban corridors.

The new NPE Extension will link the Pantai Dalam Toll Plaza directly to the Jalan Istana Interchange via Jalan Syed Putra, interconnecting with three major expressways – NPE, the Sungai



IJM plans to commence construction work on the NPE Extension in the third quarter of 2025, with the highway targeted to be operational by 2029.

Besi Expressway (Besraya), and the upcoming Laluan Istana-Kiara Expressway (LIKE). The project also aligns with Kuala Lumpur Traffic Master Plan 2040, which prioritises highway-to-highway connections that keep through-traffic out of the city core.

IJM said the NPE Extension will be carried out at a construction cost of approximately RM1.4 billion. The project is also expected to generate economic spillover benefits of approximately RM5.6 billion, unlocking growth for nearby developments such as Pantai Sentral Park and Bangsar South. ■



# Hong Kong's Construction Industry Council opens Centre for Future Construction

The Construction Industry Council (CIC) officially opened the 'Centre for Future Construction' (CFC) on 29 May 2025. Located on the 3/F of the Hong Kong Institute of Construction – Kowloon Bay Campus, this new facility marks a significant milestone in Hong Kong's construction industry development.

Spanning over 10,000 sq ft, the CFC features five interconnected zones: Digital Twin Hub, 4S Hub, AI Hub, Robotic Hub, and Immersive Cave. Each zone showcases advanced construction technologies such as digital twin applications, AI-powered safety solutions, robotics, and virtual reality (VR) / augmented reality (AR) immersive training tools. By fostering collaboration and providing hands-on learning opportunities, the centre aims to equip young talents with the skills and knowledge needed to excel in the evolving construction sector.

"Today marks a significant milestone in our journey to revolutionise the construction industry and prepare our future generations to embrace cutting-edge technologies," said Ir Prof. Thomas Ho, chairman of the CIC, speaking at the opening ceremony. "We hope that the Centre for Future Construction will be the beacon of innovation for the construction industry in Hong Kong, guiding the way for the talents of the construction industry."

Ir Joseph Lo, head of the Project Strategy and Governance Office at Hong Kong's Development Bureau, added, "The government is fully committed to spearheading transformative changes within our industry. In this transformative journey, the CIC has always been our closest partner. The CFC will nurture our new generation and will foster a culture of professionalism for the Hong Kong construction industry."

The ceremony was followed by an exhibition, allowing attendees to explore the CFC's innovative facilities and how the industry can collaborate with the centre and the opportunities for training initiatives.

According to Ir Albert Cheng, executive director of the CIC, the CFC is anticipated to attract over 24,000 visits annually. "These facilities will be utilised in more than 100 of our existing courses, including masterclasses, advanced diplomas, diplomas and various short-term courses, providing them with a dynamic environment to explore the future of construction." ■



Spanning over 10,000 sq ft, Hong Kong's new Centre for Future Construction (CFC) features five interconnected zones.




Prof. Jack Cheng, chairperson of Centre for Future Construction Project Steering Committee (left) and Ir Prof. Thomas Ho, chairman of the CIC (right).




Guests at the guided tour of the CFC. The centre was officially opened on 29 May 2025.




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# Lintec & Linnhoff appoints Jeffrey Ma as CTO

Lintec & Linnhoff has appointed Jeffrey Ma as chief technology officer (CTO), effective 9 June 2025. Based at the group's global headquarters in Singapore, he will report directly to group CEO Peter Chan and lead the group's global technology operations. Mr Ma will be heading the engineering operations, supply chain and operational excellence across the group's international facilities.

Mr Ma brings more than 30 years of leadership experience across several industries, including most recently one of the largest asphalt plant manufacturers in Europe. He has also held senior management roles at a range of multinational organisations and is known for his ability to lead high-performing teams, implement continuous improvement initiatives, and manage complex global operations.

"We are excited to welcome Jeffrey to Lintec & Linnhoff. His expertise in operations and international business development will play a key role in advancing our technology roadmap and supporting our growth ambitions globally," said Mr Chan.



FAR LEFT: Jeffrey Ma, Lintec & Linnhoff's new chief technology officer.

LEFT: Peter Chan, group CEO of Lintec & Linnhoff.

"I'm honoured to be joining Lintec & Linnhoff at such an exciting time for the company," said Mr Ma. "I look forward to working with the team to further enhance our technology capabilities, deliver innovative solutions for our customers, and support the company's long-term success across all markets." ■

## Imer Access enters Oceania market

Imer Access has entered Oceania through strategic partnerships with leading local distributors and rental companies. This move brings Imer's compact, high-performance spider lifts to Australia and New Zealand, delivering safer, more efficient and eco-friendly access solutions to industries such as construction, maintenance and forestry.

The journey began in early 2021 when Imer Access initiated a strategic project to explore Oceania market and commissioned a comprehensive feasibility study. Following encouraging results, company personnel visited Australia multiple times throughout 2022 to network, conduct further analysis and engage potential partners. In March 2023, the market entry was officially approved and investment committed. Key visits were made to potential partners including Access Worx and a dedicated project was launched to ensure compliance with Australian and New Zealand standards.

After multiple rounds of deliberations, Access Worx officially launched Imer spider lifts in Australia in late 2023, formalising a strategic partnership. A site visit to Imer's headquarters led to a substantial initial order bound for Melbourne, Brisbane and Sydney. Currently, Access Worx is distributing Imer Access range via its Spider Worx division across Victoria, New South Wales, Queensland and South Australia with a focus on eco-friendly lithium / hybrid models.

Expanding beyond eastern Australia, in end-2024 Imer Access stepped foot in New Zealand via a strategic partnership with Youngman Richardson & Co (YR & Co), a leading 100% NZ-owned distributor of construction, hire and agricultural equipment with over 40 years' expertise and nationwide service. YR & Co brings

extensive sales, hire, parts and support infrastructure, ideal for servicing high-performance aerial platforms. With nationwide coverage and demo capabilities, YR & Co has already delivered the IM R15DA and IM R19SA to customers across key sectors, securing the first sales in early 2025.

Building on the success achieved elsewhere in Oceania and leveraging the network and relations built in Australia, Imer Access is preparing to soon extend its footprint into Western Australia, aiming to complete its Oceania coverage. It is already in serious deliberations with potential partners.

Imer Access' current spider lift portfolio – available in diesel, petrol, lithium and hybrid options – includes:

- IM R13T – ultra-compact (1,500 kg) 13 m telescopic m/c with 6.8 m outreach; ideal for confined spaces.
- IM R15DA – 15 m double-articulated boom, with 7 m up & over and 7 m outreach; performance packed and lightweight (2,000 kg).
- sIM R18SA – 18 m single articulation, made in two versions; a light one can be transported easily with 9.3 m outreach, and a Pro version, which is a bit heavier but with 11 m outreach.
- IM R20DA – new debut at Bauma 2025, 20 m double-articulated with 10 m outreach, and 4.3-in HD display remote with 'Go-Home' function; perfect for mid-height applications.
- IM R23DA – top-range at 23 m double-articulated with 12 m outreach, and 9 m up & over; high reaches in a lightweight frame (3,000 kg). ■



BOTH IMAGES: Imer Access has entered Oceania through strategic partnerships with leading local distributors and rental companies.



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# IPAF strengthens global training standards with pilot senior instructor workshop in China

The International Powered Access Federation (IPAF) recently marked a significant milestone in its mission to uphold and align powered access training standards worldwide with a pilot senior instructor workshop held in Changsha, China on 12-13 May. This initiative brought together senior instructors from both Europe and Asia, reinforcing IPAF's commitment to delivering consistent, high-quality training across all regions.

Leading the workshop was Jur Kamsteeg, IPAF's Benelux representative and a seasoned senior instructor, who travelled to Changsha to engage with two of IPAF China's senior instructors – William Fu Weiguo, from Hongqi (Shanghai) Machinery Technology Co Ltd, and Eric Li HuaTao, from Haulotte Trading (Shanghai) Co Ltd.

This session was designed to refresh and realign the practices of IPAF's senior instructors in China with global standards, ensuring that instructor training is delivered with the same rigour and consistency everywhere in the world. The workshop covered a comprehensive review of IPAF's instructor training procedures, instructional delivery methods, assessment protocols and recent updates to training materials and best practices.

As a leading voice in IPAF's European training efforts, Mr Kamsteeg brought with him a wealth of international knowledge, sharing key insights into the latest developments in instructor



development and delivery. His facilitation of the workshop fostered an engaging, collaborative environment where both sides could openly exchange experiences, challenges and success strategies.

Mr Fu, representing Hongqi (Shanghai) Machinery Technology, has long played an important role in advancing MEWP safety training in China. His deep involvement in IPAF's development in the region made his participation in this workshop especially valuable. Similarly, Mr Li from Haulotte Trading (Shanghai) gave practical, field-based insights that enriched the

discussions and allowed for a productive exchange.

Both instructors expressed appreciation for the opportunity to participate in this senior-level knowledge-sharing session, noting the benefits of realigning with IPAF's latest global practices and exchanging notes with an international counterpart. The workshop also provided a space to discuss future improvements, challenges in regional implementation, and the evolving needs of trainees in Asia.

This workshop is the first of its kind in the region, representing a key step forward in IPAF's broader vision of harmonising training quality around the world. The success of this initiative underscores the value of international collaboration and IPAF's proactive approach to instructor development.

By supporting its global network of instructors through hands-on sessions like this, IPAF ensures that its training standards remain world-class, consistent and impactful – regardless of geography. Whether in Europe, China, or anywhere else in the world, IPAF continues to raise the bar for safety, professionalism and excellence in MEWP training.

As IPAF expands its reach across Asia, this workshop sets the tone for future regional development, affirming the Federation's belief that training quality knows no borders – and that teamwork and collaboration remain at the heart of IPAF's global success. ■



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# CALENDAR OF EVENTS

## // Events in Asia

### **MBAM OneBuild & OneWare**

**27 to 29 Aug 2025**

Kuala Lumpur Convention Centre

Kuala Lumpur, Malaysia

Website: [www.mbamonebuild.com.my](http://www.mbamonebuild.com.my) /

[www.oneware.com.my](http://www.oneware.com.my)

### **BEX Asia & IBEW**

**3 to 5 Sept 2025**

Sands Expo and Convention Centre

Singapore

Website: [www.bex-asia.com](http://www.bex-asia.com) / [www.ibew.sg](http://www.ibew.sg)

### **BCT Expo (Building Construction Technology Expo)**

**3 to 5 Sept 2025**

Impact Exhibition and Convention Centre

Bangkok, Thailand

Website: [www.bct-construction.com](http://www.bct-construction.com)

### **Construction Indonesia**

**10 to 13 Sept 2025**

Jakarta International Expo

Jakarta, Indonesia

Website: [www.constructionindo.com](http://www.constructionindo.com)

### **K-Consafety Expo**

**17 to 19 Sept 2025**

Korea International Exhibition Centre

Goyang, South Korea

Website: [www.k-consafetyexpo.com](http://www.k-consafetyexpo.com)

### **BICES**

**23 to 26 Sept 2025**

China International Exhibition Centre (Shunyi Venue)

Beijing, China

Website: [www.e-bices.org](http://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](http://www.cba-expo.com) /

[www.concrete-expoasia.com](http://www.concrete-expoasia.com)

### **Occupational Safety Taiwan**

**14 to 16 Oct 2025**

Taichung International Exhibition Centre

Taichung, Taiwan

Website: [www.taiwanindustryweek.com.tw](http://www.taiwanindustryweek.com.tw)

### **Philconstruct**

**6 to 9 Nov 2025**

SMX Convention Centre Manila &

World Trade Centre Metro Manila

Metro Manila, The Philippines

Website: [www.philconstructevents.com](http://www.philconstructevents.com)

### **AI-Ready Data Centres APAC**

**3 Dec 2025**

Manila, The Philippines

Website: [www.arcmediaglobal.com/datacenters](http://www.arcmediaglobal.com/datacenters)

### **Excon**

**9 to 13 Dec 2025**

Bangalore International Exhibition Centre

Bengaluru, India

Website: <https://excon.in>

## // Events outside Asia

### **World of Concrete**

**20 to 22 Jan 2026**

Las Vegas Convention Centre

Las Vegas, USA

Website: [www.worldofconcrete.com](http://www.worldofconcrete.com)

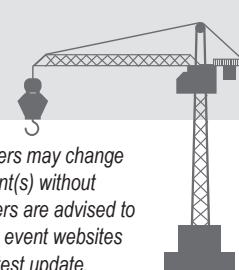
### **Conexpo-Con/Agg**

**3 to 7 Mar 2026**

Las Vegas Convention Centre

Las Vegas, USA

Website: [www.conexpoconagg.com](http://www.conexpoconagg.com)



**Note:** The organisers may change or cancel their event(s) without prior notice. Readers are advised to visit the respective event websites regularly for the latest update.



# BICES to return in September 2025

The next edition of China's Beijing International Construction Machinery, Building Material Machines and Mining Machines Exhibition & Seminar (BICES 2025) will take place from 23 to 26 September 2025 at the China International Exhibition Centre (Shunyi Venue) in Beijing.

The event's organisers [China Construction Machinery Association (CCMA), China Construction Machinery Co Ltd (CNCMC), and China Council for the Promotion of International Trade – Machinery Sub-Council (CCPIT – MSC)] held a press conference and exhibitor preparatory meeting earlier in June to give some updates.

According to Su Zimeng, chairman of CCMA, BICES 2025 will showcase the latest achievements of the construction machinery industry and present equipment and solutions tailored for a wider range of application scenarios. The event will fully reflect the industry's progress during the 14th Five-Year Plan period and is expected to attract a growing number of domestic and international users and visitors for on-site exchanges and cooperation.

Wu Peiguo, secretary general of CCMA and president of Beijing Asiamachine International Convention & Exhibition Ltd (BAICE), provided an overview of the preparations for BICES 2025, focusing on five key areas: exhibitor recruitment and thematic/featured zones, professional and international visitor organisation, concurrent conferences and events, domestic and international promotion, and on-site operations.

Mr Wu noted that so far, the number of registered exhibitors has increased by more than 10% year-on-year. In particular, there has been a rapid rise in new exhibitors across high-end, intelligent and green segments of the industrial and supply chains. The total exhibition area is likely to exceed 150,000 sq m. There will be four major thematic halls and 13 featured zones, displaying a variety of innovations achieved during the 14th Five-Year Plan period, especially those from the past two years.

In addition, over 100 concurrent conferences and events have been confirmed. Efforts to organise domestic and international user groups and professional visitors are well underway, and BICES 2025 is expected to attract around 10,000 overseas professional visitors. Approximately 200 media outlets from both China and abroad will also take part in the event, and on-site operations will be upgraded across nine major areas to ensure a better experience.

Li Jianyou, vice chairman of CCMA and chairman of Carbon P&N Working Committee, introduced the progress promotion activities of the 'Three New' – new products, new technologies and new achievements – at BICES 2025. He said a wide range of new products, technologies and achievements will be showcased at the event. Plus, the BICES organising committee will share a Three New progress report and a progress directory focused on high-end, green, intelligent and foundational strengthening directions. These will highlight key innovations in products, technologies and achievements.

Meanwhile, the BICES organising committee and the association's dual-carbon committee will accelerate the development of new quality productivity in the construction machinery industry. During the event, they will conduct a series of activities, including the release of the 'Guidelines for Construction Machinery Carbon Footprint Management System' and the 'Implementation Rules for Construction Machinery Carbon Footprint Management System.' These initiatives aim to promote



ALL IMAGES: BICES will return from 23 to 26 September 2025 at the China International Exhibition Centre (Shunyi Venue) in Beijing. The event is set to attract both local and international visitors.

the progress and application of the Three New advancements and help accelerate the industry's transition to a new stage of high-quality development. ■

Website: <http://en.e-bices.org>



# Changsha Int'l Construction Equipment Exhibition 2025 draws strong turnout, global participation

The fourth edition of Changsha International Construction Equipment Exhibition (CICEE) was held on 15-18 May 2025 at the Changsha International Convention and Exhibition Centre, Changsha, China. Themed 'High-End, Intelligent and Green – The New Generation of Construction Machinery, Emergency Equipment, Mining Equipment, Agricultural Machinery and Transport Equipment', the event brought together 1,806 exhibitors and over 300,000 visitors from more than 60 countries and regions.

Covering 300,000 sq m of exhibition space, this year's CICEE drew strong international participation. According to the organiser, diplomats from 55 countries, along with the African Union's representative in China, attended the event. Representatives from four international organisations and 38 global trade associations were also present, alongside 1,100 international trade companies from 21 countries.

The number of international buyers exceeded 5,000, said the organiser, and key topics such as China-Africa cooperation, China-Russia technical docking and the China-Malaysia mutual recognition agreement on construction machinery standards dominated discussions.

Furthermore, procurement delegations from India, Russia, Southeast Asia and Latin America took part in international matchmaking forums, where over 600 exhibitors reached business agreements. Six major manufacturers from Changsha alone signed supporting parts procurement deals worth RMB 13 billion.

## Sustainability and digital technologies

Sustainability was one of the focus areas of CICEE 2025. The organiser shared that over 60% of heavy machinery on display incorporated new energy or low-carbon technology, and 80% of booths were built using recyclable materials. Among the highlights were:

- Sany's E-Move, an all-electric unmanned concept excavator powered by electric drive + intelligent control, boosting efficiency by 40% over traditional models, ideal for mining and rescue operations.
- Zoomlion's new ZAT40000H, dubbed the world's largest (4,000-t) all-terrain crane, featuring lightweight design and energy-saving systems that reduce consumption by 20% compared to conventional models.
- Sunward's SWDM320EE electric rotary drill, which offers four hours of full-electric operation and 14 hours of hybrid runtime, with an energy regeneration rate close to 70%.
- Hydrogen-powered drones, co-developed by Xiehydro New Energy and Freed. The units deliver three-hour flight time, 50 kg payload, and reliable performance in -40°C conditions, providing new solutions for logistics and emergency response.

For the first time, CICEE 2025 featured 'New Tech & Product Release Zone', showcasing 1,500 global innovations spanning AI, 5G and digital twins. Some notable products included Zoomlion's tower crane remote control system as well as Sinoboom's TB42ERJ Plus HD aerial platform integrating a 336-V high-voltage drive system and auto-grade Inovance tech.

In the emergency equipment zone, Huanuo Sky's slope radar offers millimeter-level deformation monitoring, while Jingjia Micro's integrated satellite-terrestrial communication system



**ALL IMAGES:** The fourth edition of Changsha International Construction Equipment Exhibition (CICEE) brought together 1,806 exhibitors and over 300,000 visitors from more than 60 countries and regions.

ensures real-time data transmission for disaster relief.

In addition, a variety of industry forums, technical exchanges and business matchmaking sessions took place during CICEE 2025. Over 120 companies also joined the 'Five-Province Construction Equipment Cooperation Forum', working together on shared technology and market mechanisms. ■

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



# Thailand's CBA Expo and Concrete Expo Asia get ready for 2025 edition in September

CBA Expo 2025, the third edition of Thailand's international construction and mining technology expo and Concrete Expo Asia 2025, the second edition of Thailand's international concrete expo & conference will take place on 24-26 September 2025 at the Bangkok International Trade & Exhibition Centre (BITEC) in Bangkok. They are expected to attract over 4,000 trade buyers from Thailand and ASEAN countries, including Vietnam, Myanmar and Laos. Themed 'Towards the Future and Sustainability for the Construction and Mining Industries', the events are estimated to feature 100 exhibitors and brands from local and international markets.

Paul Chantaratim, co-founder and director of trade exhibition project at BMEX Ltd, the organiser of the events, shared that "in January 2025, Krungsri Research, Bank of Ayudhya Public Company Limited estimate that overall, the investment in construction sector should rise by 4.0-4.5% annually, driven by higher public sector spending on infrastructure megaprojects, in particular those connected to the Eastern Economic Corridor (EEC), new projects outlined in the 2025 spending plans, and the development of new business zones in strategic areas in the provinces." This industry outlook shows an increase in demand for heavy machinery in Thailand.

The organiser added that apart from the exhibition, this year's edition will provide knowledge, update the trend and learn some techniques through seminars on the mainstage and a technology presentation stage, allowing companies in the construction, mining and concrete industries to prepare for the enforcement of laws to reduce greenhouse gases and carbon credits, as well as realise their participation and contribution to reducing greenhouse gases and carbon credits, among others.

Supachai Smittiprechawong, managing director of Tun Engineering Co Ltd. one of the exhibitors, believes that the construction, mining and concrete industries will continue to grow steadily in 2025-2026 as a result of government investment in large infrastructure projects and private sector expansion in commercial and residential real estate. Overall, the



ALL IMAGES: CBA Expo and Concrete Expo Asia will return on 24-26 September 2025 at BITEC in Bangkok. The events are expected to attract over 4,000 trade buyers from Thailand and ASEAN countries, including Vietnam, Myanmar and Laos.

company believes that now is an excellent time to develop and extend its business in terms of production, distribution and partnerships to fulfil the market's expanding demand.

As a market leader in KPT brand concrete mixers and Sicoma concrete mixers, Tun Engineering is joining the exhibition to build customer trust, demonstrate its production capacity and the quality of equipment and spare parts, and provide information so that visitors can fully utilise the company's services. "As a result, our participation in this event not only demonstrates our potential, but also symbolises the company's goal to be a leader in driving the industry forward, with an emphasis on both current manufacturing techniques and consistent, high-quality equipment," said Mr Smittiprechawong.

Another exhibitor, Cobiax of Germany, will showcase the CLS technology for modern foundations. The Cobiax technology can reduce concrete usage by 35% while lowering carbon emissions by 20%. Mehmet Kelmendi, the company's managing director, stated that "our



strength that distinguishes us from our competitors is that our CLS products are specifically built globally for error-free installation and provide stability and safety.

"The product's centre bearing area simplifies construction processes. There is no need to keep a certain distance during installation, which no other comparable product can equal. Currently, construction projects in Thailand are showing interest in implementing this technology. As a result, we would want to promote this system in order to enhance confidence and knowledge in its use for construction in Thailand."

In addition, C. Thai Chemicals Co Ltd will highlight the importance of sodium silicate in global sustainability and circular economy trends. "We are committed to boosting awareness and establishing ourselves as a specialised sodium silicate manufacturer capable of meeting the demands of modern industries," said Pamornkorn Lekprichakul, CEO of C. Thai Chemicals Co Ltd.

"Furthermore, Ch. Chem Thai Co Ltd.'s success stems from its team of technical specialists that have extensive industry expertise and understanding. We can provide a complete solution, including product selection, production process control and effective sodium silicate application. Our substantial knowledge and technological resources have gained us the trust of both domestic and international clients."

Other companies participating in the CBA Expo 2025 include Siam Industrial Corporation Co Ltd, Codustry (Thailand) Co Ltd, Fujian South Highway Machinery Co Ltd [NFLG], ALmix Asia/Asphalt Equipment Pte Ltd, Indeco Ind. SpA, Commercial Vehicle Group Co Ltd, and more. ■

Website:  
[www.cba-expo.com](http://www.cba-expo.com) / [www.concrete-expoasia.com](http://www.concrete-expoasia.com)





# DL E&C COMPLETES FINAL CAISSON INSTALLATION FOR ULLEUNG AIRPORT

THE FIRST AIRPORT IN KOREA TO BE BUILT ON AN ISLAND WITH NO LAND ACCESS BY ROAD

**S**outh Korean contractor DL E&C announced on 8 May 2025 that it has completed the installation of the final caisson for Ulleung Airport, marking the completion of the runway's foundation. This milestone comes nearly three years after the first caisson was installed in May 2022. A total of 30 caissons have now been placed.

Ulleung Airport is located near Sadong Port in Ulleung County, covering a total area of 430,455 sq m. It is the first airport in Korea to be built on an island with no land access by road, shared DL E&C. Since there is no flat land on Ulleungdo to accommodate a 1,200-m runway, the airport is being constructed on reclaimed land.

DL E&C won the project in a turnkey contract, overseeing the design, procurement and construction. It became the first company in Korea to apply the 'caisson method' for airport construction, a technique in which the sea is blocked off with caissons and then filled in.

Because Ulleungdo is a volcanic island with a water depth of about 30 m, the largest caisson measures 28 m in height, 32 m in width and 38 m in length – the largest in the country, said DL E&C. It weighs up to 16,400 t, equivalent to the weight of more than 10,000 mid-sized cars.

In deep waters like those surrounding Ulleungdo, incoming waves accumulate energy as they move. This is why DL E&C developed a 'wave-dissipating caisson' inspired by a honeycomb structure. The grid-like design creates internal spaces that help disperse the impact of waves.

To further enhance resistance to wave pressure, the caissons were also designed with a curved shape. Thanks to these features, they can withstand waves as high as 22.6 m (extreme conditions expected to occur only once in 200 years).

## In the middle of East Sea

Construction in the middle of the East Sea came with many challenges. Due to their massive size, the caissons were manufactured at Yeongilman Port in Pohang and transported to the site by sea.

The task of moving the caissons to the dock was carried out by an individual pushing caisson carrier vehicle (IPCCV). This specialised vehicle moves along ground-level rails using a system of hydraulic jacks that function like a conveyor belt. A total of 96 hydraulic jacks were used, each capable of lifting up to 250 t.

The offshore transport faced near-extreme conditions. Each





All images: DL E&amp;C



**OPPOSITE:** Since there is no flat land on Ulleungdo to accommodate a 1,200-m runway, the airport is being constructed on reclaimed land.

**ABOVE:** Construction in the middle of the East Sea came with many challenges. Due to their massive size, the caissons were manufactured at Yeongilman Port and transported to the site by sea.

**LEFT:** DL E&C won the project in a turnkey contract, overseeing the design, procurement and construction. It became the first company in Korea to apply the 'caisson method' for airport construction.

caisson had to be individually towed by barge from Pohang to Ulleungdo – a journey of approximately 210 km. This is said to be the longest caisson transport operation ever conducted in Korea. The total distance covered was around 6,300 km, equivalent to eight round trips between Seoul and Busan.

To maintain the caissons' balance and prevent damage during transport, wave heights had to remain below 1.5 m for at least five consecutive days. As a result, the number of weather-permitting days averaged only 10 to 15 per month.

After each caisson was moved into position, it was

permanently installed on the seabed. To support the 16,400-t structure, 60,000 t of rubble were poured to create a stable foundation. Because the rocks varied in size and shape, divers manually filled the gaps between them to complete the base.

Construction began in July 2020 and as of 8 May, it has reached 61% completion. After completing land reclamation and runway construction – key components of the airport – the facility is slated to open in 2028. Once operational, Ulleung Airport will reduce travel time from Seoul to Ulleungdo from the current seven hours to just about one hour. ■





The Linnhoff DRX1500 DurableMix asphalt mixing plant manufactured by Gainwell Commosales. This plant is equipped with a number of innovative features, including the energy-saving double screen drum technology.

# GAINWELL DELIVERS NEXT-GENERATION LINNHOF DRX ASPHALT MIXING PLANTS MANUFACTURED IN INDIA

**G**ainwell Commosales Private Limited (GCPL), Lintec & Linnhoff's manufacturing partner in India, has delivered Linnhoff DRX DurableMix asphalt mixing plants to several key clients across India. These state-of-the-art, locally manufactured plants are now operational in West Bengal and Tamil Nadu, supporting critical infrastructure projects under the Public Works Department (PWD) and the National Highways Authority of India (NHAI).

A Linnhoff DRX1500 asphalt plant was delivered to a customer for its ongoing infrastructure development initiatives in Cooch Behar, West Bengal. This advanced plant integrates cutting-edge automation and energy-efficient technologies, enhancing road construction capabilities with superior quality and efficiency. The customer actively participates in infrastructure tenders, to

strengthen its role in the region's road development sector to put the Linnhoff DRX to good use.

A second customer purchased a Linnhoff DRX1500 asphalt plant for the construction of a 7.2 km six-lane elevated corridor on the Kona Expressway (NH117) in Kolkata. Expected to be completed by early 2026, this crucial project will alleviate congestion and improve connectivity between Vidyasagar Setu and NH16, benefiting over 100,000 daily commuters. The high-performance DRX1500 asphalt plant, known for its reliability and compliance with international environmental standards, will ensure the timely supply of top-quality asphalt, contributing to the project's success.

The Linnhoff DRX1500 incorporates a number of innovative features, including the energy-saving double screen drum technology that combines the screening and drying of aggregates in



one drum. This enables lower maintenance and operating costs for customers. There are also separate weighing systems with load cells for aggregates, filler and bitumen to ensure precision and quality in delivering hot-mix asphalt. With each DRX module pre-assembled at the factory, set-up and dismantling are far simpler, significantly reducing onsite installation times and labour costs.

Following the launch of its manufacturing partnership with Lintec & Linnhoff in 2022, Gainwell has established itself as a leader in tailored manufacturing, distribution and servicing of Linnhoff asphalt mixing and Eurotec concrete batching plants in the region. This partnership allows for purpose-built, customised solutions that address the diverse needs of the domestic market.

Surabhi Chaturvedi, head – business excellence and growth initiatives at Gainwell Commosales Pvt Ltd, commented, “Our experienced design engineers, supply chain experts and quality assurance teams are committed to integrating excellence throughout our operations. Investments in design software, ERP systems and life cycle management tools have earned us multiple quality certifications, strengthening our competitive advantage and positioning us as a trusted industry partner.”

### Local manufacturing, global quality

Gainwell’s manufacturing facility in Pune features a 100,000 sq ft machine assembly shop. This facility, a fabrication, assembly and paint processing unit, manufactures and delivers high-quality products, including the Linnhoff asphalt mixing and Lintec concrete batching plants. Supporting the ‘Make in India’ initiative and Atmanirbhar Bharat policy, the Linnhoff DRX1500 plant is primarily built using in-house or locally sourced components, leveraging Gainwell’s strong supplier network.

Tee Peow Aik, group COO of Lintec & Linnhoff Holdings, said, “The Linnhoff DRX1500, developed in partnership with Gainwell Commosales, sets a new benchmark for quality and reliability. In the near future, the Indian market can expect to reap the benefits of locally manufactured Linnhoff TSD Mobile Mix asphalt mixing plants and Eurotec Swifttec concrete batching plants as well.”

With an installed base of close to 400 Linnhoff plants in India, Gainwell is supporting many existing customers of Lintec & Linnhoff with after-sales



The DRX1500 DurableMix asphalt mixing plant is supporting ongoing infrastructure development initiatives in Cooch Behar, West Bengal.



Gainwell has established itself as a leader in tailored manufacturing, distribution and servicing of Linnhoff asphalt mixing and Eurotec concrete batching plants in the region.

services through a growing network of dealers who are integrated through its dealer management system. Today, the company is supporting some of the most

prominent names in road and infrastructure construction in the country. ■

Website:  
[www.lintec-linnhoff.com](http://www.lintec-linnhoff.com) / [www.gainwellindia.com](http://www.gainwellindia.com)





# PAVING THROUGH THE NIGHT

VÖGELE PAVERS DEPLOYED AT INDONESIA'S LARGEST AIRPORT

**T**he number of passengers and aircraft movements at Indonesia's Soekarno-Hatta International Airport in Jakarta has been increasing dynamically for years, prompting continuous modernisation and expansion of the infrastructure. Most recently, one of the three runways was due for rehabilitation. However, work could only be carried out between 11 pm and 5 am, when no planes were taking off or landing on the runway – making the task all the more challenging.

For the paving work on this runway, which measures 3.6 km long and 60 m wide, PT Roadmixindo Raya relied on two Super 1880 L pavers from Vögele. The machines worked alongside each other and paved four layers each 'hot-to-hot' at a working width of 8 m – two base layers with a thickness of 7-8 cm each, an approximately 8 cm thick binder course and a 2 cm surface layer.



### Strict requirements

The paving quality requirements were quite strict for this project. At international airports, paving requirements are based on the strict regulations of two aviation authorities, namely the International Civil Aviation Organisation (ICAO) and the Federal Aviation Administration (FAA). They define a variety of parameters ranging from the mix quality and tensile strength to the surface quality and paving precision. Equally strict requirements apply to the formation of joints.

Besides having to comply with the strict quality requirements, care also had to be taken to ensure that sufficient mix of the required quality was supplied and used. Thanks to their large material hopper, excellent laydown rate, powerful performance and robustness, the Vögele Super 1880 L pavers were ideal for the job. They paved together 'hot to hot' in a slightly staggered formation – a paving method that ensures particularly dense and stable bonding of the individual courses and provides long-term protection against the penetration of water.

The Super 1880 L pavers are equipped with a six-cylinder diesel engine featuring a rated power output of 158 kW. The paver operators were able to run the engine in Eco mode when the job required less

power. In this mode, the nominal engine speed is reduced from 2,000 rpm to 1,700 rpm, which leads to a reduction of the operating costs and noise emission levels.

Maximum productivity was another crucial factor on the airport construction site. "To make the best use of the working hours, the processes had to run smoothly. This was the only way we could keep to the schedule," said Tadjus Tamsil, director at PT Roadmixindo Raya, the contractor on the project.

One of the highlights of these Vögele pavers, according to Mr Tamsil, is the large material hopper with a capacity of 15 t. Its considerable length and low material feed height allowed each tipper truck to easily dock with the Super 1880 L and quickly offload the mix. "This meant that the trucks were able to quickly transfer their loads of mix, enabling us to maintain a high laydown rate and work continuously without interruption," he said.

Andrew Davian, project manager at PT Roadmixindo Raya, added, "The fact that the Super 1880 L also made it easy to meet the required criteria for surface quality and paving precision was an enormous relief for the paving crew during the demanding work through the night."

The AB 500 TV extending screeds used on the project also played an important

ABOVE: Two Super 1880 L pavers from Vögele paved a 3.6-km-long and 60-m-wide runway at the Soekarno-Hatta International Airport in Jakarta. The work could only be carried out between 11 pm and 5 am, when no planes were taking off or landing on this runway.

RIGHT: The large material hopper of the Super 1880 L features a capacity of 15 t, allowing fast material transfer for uninterrupted paving.







role in ensuring the high paving quality. The AB 500 has a basic width of 2.55 m and can be hydraulically extended to a width of 5.00 m. With bolt-on extensions, it can pave widths of up to 8.5 m.

“Maximum quality and perfect grade and slope control are particularly critical on a project like here at the airport. The combination of the AB 500 and the tamper bar and vibration compaction systems enabled us to achieve outstanding pre-compaction and, consequently, a very high-quality result,” said David Gouw Tama Priatna, director at PT Roadmixindo Raya.

In addition, the extending screed reached the specified temperature quickly and evenly thanks to the electric screed heating system. This consistently heats all components that come into contact with the asphalt mix and allows a homogeneous surface structure.

The intuitive ErgoBasic operating concept helped deliver precise paving results. It was developed on the basis of Vögele’s ErgoPlus operating system with the aim of being just as quick, precise and intuitive – but slimmed down to the most important paving functions.

Vögele has also developed a system for automated grade and slope control to complement the ErgoBasic operating system, namely Niveltronic Basic. This system is fully integrated into the machine



**TOP:** The Vögele pavers worked alongside each other and paved four layers each ‘hot-to-hot’ in a slightly staggered formation. The operators were able to run the engine in Eco mode when the job required less power, leading to a reduction of the operating costs and noise emission levels.

**ABOVE:** The backlit ErgoBasic paver operator’s console assists the driver when working at night.

control system and therefore tailored precisely to suit the Super 1880 L.

“ErgoBasic is a major plus point of the Vögele paver. The operating concept enables quick and simple control and makes it easier for the paving crew to

achieve precise results,” said Faisal Fuad, director at PT Roadmixindo Raya.

This south runway rehabilitation project is expected to be completed by end of August 2025. ■

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# CHANGI AIRPORT TERMINAL 5 BREAKS GROUND



**C**onstruction of Singapore's Changi Airport Terminal 5 (T5) has begun, with a groundbreaking ceremony held on 14 May 2025 to mark this significant milestone. The first phase of the terminal is expected to open in the mid-2030s, capable of handling about 50 million passengers annually.

As Asia Pacific is projected to be among the fastest growing air travel markets over the next two decades, the additional capacity at T5 will enable Singapore to ride on the long-term growth of aviation in the region and beyond.

T5 is located in Changi East, a 1,080-ha development which also includes the Changi East Industrial Zone (CEIZ) and the Changi East Urban District (CEUD). The CEIZ is aimed at augmenting Singapore's position as a leading aircraft maintenance and integrated logistics and air cargo hub in the region, while the CEUD will serve as a vibrant business and lifestyle destination located at the doorstep of T5.

According to Changi Airport Group (CAG), Changi East is



**TOP:** Changi Airport Terminal 5 (T5) is an integral part of the 1,080-ha Changi East development, the latter of which includes the Changi East Industrial Zone (CEIZ) and the Changi East Urban District (CEUD).

**ABOVE:** The groundbreaking ceremony of T5 took place on 14 May 2025, with the first phase of the terminal scheduled to open in the mid-2030s.





**LEFT: Changi East is designed to withstand extreme weather and climate change effects. The airfield has an elevation of 5.5 m above sea level, and the aircraft taxiways are sloped to allow rainwater to drain off.**

**BELOW: When its first phase opens, T5 will be able to handle about 50 million passengers annually, significantly boosting Changi Airport's capacity and operational capabilities to meet future demand.**

designed to withstand extreme weather and climate change effects. The airfield has an elevation of 5.5 m above sea level, and the aircraft taxiways are sloped to allow rainwater to drain off. The airfield drainage system is engineered to manage stormwater effectively during high tide especially with rising sea levels, and handle intense rainfall from extreme storms.

The design of T5 was proposed by a consortium led by KPF Associates, in partnership with Heatherwick Studio and architects61. The design work for T5 was paused in 2020 due to the Covid-19 pandemic and resumed in 2022.

Inspired by Singapore's unique blend of nature and city, T5's design concept is characterised by overlapping curved roofs with varying heights, shared CAG. The 'roof leaves' break the mega terminal building into smaller spaces that are more human scale. Combined with natural light and landscaping at appropriate spaces, the terminal will have the familiar cosy, yet uplifting, feel that Changi is known for.

CAG further highlighted that T5 will be a Green Mark Platinum Super Low Energy building, which is more energy-efficient. It will be powered by more clean energy to reduce the carbon footprint of Changi Airport, and be equipped with building management systems that feature innovative and efficient systems design. The terminal's rooftop solar system, which would be one of the largest in Singapore, can potentially generate enough energy to power up about 20,000 four-room HDB flats (Singapore's public housing) for a year.

For the first time, T5 will see Changi Airport house a ground transportation centre, bringing together train, bus, taxi and other transport services – enhancing the airport's connectivity to the rest of Singapore, added CAG. Plans are also in progress to extend both the Thomson-East Coast Line and the Cross Island Line to T5, to connect it to the city centre and other major hubs.

In addition, T5 will offer the possibility of enhanced air and sea connectivity, including convenient connections to neighbouring destinations via ferry services. When completed, T5 will be linked to existing terminals at Changi Airport, so that the airport can operate as a single integrated air hub.



**LEFT: As a Green Mark Platinum Super Low Energy building, T5 will be powered by more clean energy to reduce the carbon footprint of Changi Airport.**

### Substructure and airside infrastructure works

Prior to the groundbreaking ceremony, CAG awarded the contracts for substructure and airside infrastructure works at T5, valued at about S\$3.8 billion and S\$950 million respectively.

The substructure contract was awarded to a joint venture between China Communications Construction Company Limited (Singapore Branch) (CCCC) and Obayashi Singapore Pte Ltd. It comprises the construction of the foundation and basements of the T5 main passenger terminal and ground transportation centre, as well as a portion of the tunnels linking T5 and Terminal 2 (T2). The substructure site covers about 140 ha with a basement depth of up to 28 m, equivalent to about 5,200 Olympic-sized swimming pools put together.

The contract for airside infrastructure works was awarded to Hwa Seng Builder Pte Ltd. It includes the development of remote aircraft stands, connecting taxi lanes and ancillary support buildings.

"Both CCCC and Obayashi Singapore bring a wealth of experience in civil engineering, construction and project





**LEFT: T5 will be linked to existing terminals at Changi Airport, so that the airport can operate as a single integrated air hub. Within T5, all the buildings will be connected via an automated people mover system.**

**BELOW: T5's rooftop solar system is expected to be one of the largest in Singapore. The terminal will also be equipped with building management systems that feature innovative and efficient systems design.**

management, with a strong track record in delivering large-scale infrastructure projects both in Singapore and internationally," said Ong Chee Chiau, CAG's managing director for Changi East.

"Hwa Seng Builder brings valuable local expertise and deep familiarity with Changi Airport, built through the successful delivery of various past projects. Together with our partners, we will ensure that the high standards which define Changi Airport can be replicated or even surpassed in the development works of T5."

### Engineering consortium

SJ Group, Arup and Mott MacDonald are collaborating as the engineering consortium on the T5 project to deliver full engineering consultancy services for the design of the main terminal building, satellite terminal building, ground transportation centre and the primary landside roadways.

In a separate consortium comprising SJ, Arup, Mott MacDonald, as well as Changi Airport Planners and Engineers, they serve as the master civil consultants, delivering the infrastructure design at the landside and airside areas outside of the T5 buildings. These include taxiways, aircraft parking stands, roadways and drainage systems, plus the connections for utilities such as power, water, gas, fuel and telecommunications to the T5 buildings.

SAA Architects, an SJ company, is the architectural qualified persons for Headhouse 5A and Terminal 5B. Drawing on lessons learnt from the Covid-19 pandemic, T5 will be designed with the flexibility to operate as smaller sub-terminals when needed, with spaces that could be converted for the handling of contingencies, such as health testing operations or the segregation of high-risk passengers.

### Intra-terminal tunnels

A joint venture between Penta-Ocean Construction Co Ltd and Koh Brothers Building & Civil Engineering Contractor (Pte) Ltd has also secured a S\$999 million contract from CAG to build the intra-terminal tunnels at T5. Construction of the project is expected to take more than four years.

These intra-terminal tunnels will serve as underground connections within T5, supporting the efficient transfer of passengers and baggage across the terminal's concourses, while also facilitating the routing of common utilities.

The tunnel system comprises a series of sub-tunnels that will



**RIGHT: Plans are in progress to extend both the Thomson-East Coast Line and the Cross Island Line to T5, to connect it to the city centre and other major hubs.**



house key infrastructure to support efficient airport operations. They include the automated people mover system and baggage handling system, as well as a common services tunnel (CST) which will contain dry and wet utilities such as electrical power, communication systems and water services. The works also comprise a ventilation building that supports the CST, and provisions for a future underground infrastructure tunnel.

"The award of the T5's intra-terminal tunnel works marks another important development in the construction of T5 and the wider Changi East project. These tunnels will enable the smooth and efficient movement of passengers, baggage and services," explained Mr Ong.

"We are pleased to partner two highly reputable construction companies on the project – Penta-Ocean, recognised for its extensive expertise and technical proficiency in undertaking large-scale projects such as land reclamation within Singapore and internationally; and Koh Brothers, a key player in shaping Singapore's infrastructure development with a strong track record in delivering complex, large-scale projects locally." ■

All images: Changi Airport Group



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# TOWERING ABOVE SINGAPORE



Two Jaso J480PA luffing tower cranes are currently working on the construction of the new Shaw Tower, a prominent mixed-use development on Beach Road.

Spanish manufacturer Jaso has been involved in various projects across Singapore. Currently, the company's J480PA luffing tower cranes are used to help build the new Shaw Tower on Beach Road, a residential development in Telok Blangah, and medical facilities in Outram Park (along with two J380PA units).

The J480PA, which is a further evolution of the J380PA, offers high efficiency, safety and versatility. With a compact footprint of 2.16 m, the crane is ideal for jobsites with limited space. Its boom can be configured in 5-m increments, allowing for customisation based on project requirements.

The J480PA has multiple load chart options to accommodate different lifting needs:

- 12-t line (direct pull) – suitable for straightforward lifting tasks.
- 12-t line pull (two-part line) – provides a capacity of 24 t.

- Three-part line (3R) – offers a maximum capacity of 36 t.
- DP/2R configurations – capable of handling 9 t, 18 t, or 10 t, 20 t, and 30 t in DP, 2R, and 3R configurations respectively.

Equipped with IP55 motors, the J480PA operates at high speeds while maintaining durability and reliability. The slack rope safety device prevents accidents by ensuring the rope remains taut during operations.

The crane boasts a luffing speed of 1.5 minutes, increasing productivity on site. The Lebus drums allow for a maximum hook course of 874 m, resulting in efficient and smooth operations. The crane's swing radius is 6.9 m with steel counterweights, and 7.8 m with steel-framed or concrete counterweights.

There are several climbing options to suit various construction needs: external JC, floor climbing, and internal lift shaft climbing.





ALL IMAGES: The J480PA tower cranes on the Shaw Tower project. Designed with a compact footprint of 2.16 m, these cranes are ideal for jobsites with limited space. Their boom can be configured in 5-m increments, allowing for customisation based on project requirements.





ABOVE AND LEFT: Jaso's J480PA and J380PA tower cranes are deployed at a jobsite in Outram Park, helping to build new medical facilities.

BELOW: One unit of J480PA is in operation on a new residential project in Telok Blangah. This crane is equipped with Jaso's Optimus Line package, which features the latest technologies for excellent safety and control.



For high flexibility on the jobsite, the cabin can be positioned on either side of the tower. An optional luxury cabin (Horizon), launched recently at bauma, is also available.

Optimised for transport, the J480PA comes with a reduced number of transport units. The maximum component weight is reduced to 7.5 t, facilitating easier handling and assembly. A 39.5-m freestanding crane can be transported in just eight HC40 containers.

In addition, the J480PA is designed with Jaso's Optimus Line package, featuring the latest technologies for excellent safety and control:

- Safety devices and load sensors – for

comprehensive safety and control.

- Crane default diagnosis – for identifying and addressing crane issues.
- Pre-installed anti-collision system – to prevent accidents between tower cranes.
- Remote crane management – for remote monitoring and management of crane operations.
- In-cabin calibration and programming – for in-cabin calibration, setting, and load programming.
- Eco Mode – an energy-saving system that minimises power consumption.
- Secondary clamp brake option – to enhance safety with an optional secondary brake. ■

Website: [www.jaso.com](http://www.jaso.com)





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# VDMA EXPANDS INTO *Southeast Asia* WITH NEW OFFICE IN SINGAPORE

THE GERMANY-BASED MACHINERY AND EQUIPMENT MANUFACTURERS ASSOCIATION, VDMA, HAS OPENED A NEW OFFICE IN SINGAPORE TO SERVE THE SOUTHEAST ASIAN MARKET. **TIFFANY ANG**, THE NEWLY APPOINTED **REGIONAL MANAGER FOR ASEAN**, SPOKE WITH *SEAC* ON THIS LATEST MOVE, CHALLENGES FACED BY THE INDUSTRY, AND HOW THE ASSOCIATION CAN SUPPORT ITS MEMBERS IN THE REGION.

**W**ith more than 3,600 member companies, VDMA is an advisor, lobbyist, network platform, sparring partner and the voice of the mechanical and plant engineering industry across Germany and Europe. Headquartered in Frankfurt, the association has representative offices worldwide – including in Asia (located in China, India, Japan and now Singapore).

**Ms Ang, VDMA has been active in Asia for many years. What prompted the association to set up a new base in the ASEAN region?**

**Tiffany Ang (TA):** While ASEAN is among the fastest-growing markets in the world, the European mechanical and plant engineering industry has seen a decline in market share here over the last decade. For a long time, many companies have concentrated on the Chinese market and paid little attention to the Southeast Asian region.

However, the ASEAN nations present growing sales markets for machinery and equipment, attractive investment opportunities, and good prospects for diversifying sales, production and supply chains.

The VDMA Foreign Trade department recognised the expanding network of subsidiaries of our member companies in major ASEAN markets. As such, we decided to launch a new representative office in Singapore, which was officially opened on 6 January 2025 – when I also started my role.

**Can you tell us more about your responsibilities and the role of the ASEAN office?**

**TA:** With the new ASEAN office, VDMA is now better placed to help its member companies and the European mechanical and plant



**LEFT:** Tiffany Ang, VDMA's new regional manager for ASEAN, is in charge of the association's operations in the market.

**BELOW:** The VDMA team at the German Pavilion during Bauma China 2024 exhibition in Shanghai. VDMA is active in Asia, with representative offices in China, India, Japan and now Singapore.

**BOTTOM LEFT:** A tour of Putzmeister facility in Singapore. The company is one of VDMA members in ASEAN.



engineering industry establish a stronger foothold in the region and regain lost market share.

My main responsibilities are to increase the association's presence and engagement within the region. This involves reaching out to as many of our members as possible – by connecting with businesses and understanding their needs within the network, we can develop and enhance our services and offerings through events and activities across the region.



We also regularly communicate with VDMA representatives in China and India. With their experience of running the VDMA offices and our strong network across Asia, there is constant information sharing, along with facilitating connections, between members in our regions.

### What sort of services and support do you provide to your members in ASEAN?

**TA:** Currently, over 500 VDMA members are both active and/or interested in the ASEAN market. Around 30 OEMs from the construction equipment and building material plant engineering sectors run local subsidiaries in at least one of the ASEAN countries, and many of them have their Asia Pacific headquarters in the region. On top of that, more than 20 of the tier-one component suppliers for our machines operate here, some of them even with localised production.

By understanding our subsidiaries' local market and business dynamics, we will focus on identifying new business opportunities and organise initiatives such as webinars, networking sessions and knowledge sharing, etc. We also aim to provide ASEAN updates to subsidiaries via newsletters and other media channels, and are working with various associations from different trade sectors on these initiatives.

### Over the past few months, have you seen any new trends emerging in the construction equipment sector?

**TA:** In the ASEAN region, one new trend reshaping the construction sector is the growing adoption of electric vehicles (EVs). The shift is driven by the advantages of lower emissions, long-term lower operating costs, and a stronger focus on sustainability and green technologies.

Companies are investing more heavily in eco-friendly machinery and energy-efficient construction practices that align with environmental standards. This reflects a broader movement towards reducing the industry's carbon footprint and increasing long-term environmental responsibility.

Furthermore, as the market matures, companies are placing greater emphasis on after-sales support, including enhancing their business strategies and service offerings to remain competitive against markets elsewhere in Asia by delivering higher customer value and reliability.



VDMA ASEAN organised a cross-border get together in Johor Bahru, Malaysia in June 2025.



ABOVE AND BELOW: VDMA members joined a trade mission to Indonesia in 2023.





### What are the main challenge(s) faced by your members in the ASEAN region?

**TA:** ASEAN is a fragmented region, with each country having its own economic priorities, legal systems and development stages. This fragmentation makes it challenging to implement a one-size-fits-all strategy.

To succeed, VDMA works with industry players to evaluate and identify common regional interests such as improving cross-border collaboration, enhancing workforce skills, and promoting the exchange of business solutions that can benefit all markets across ASEAN.

In the construction machinery sector, the dominance of Chinese manufacturers – which are often supported with government export subsidies – pose a big challenge. We strongly advocate for fair competition and continue to demand a level playing field.

Producing in the region, our members make use of the RCEP (Regional Comprehensive Economic Partnership) FTA benefits and successfully sell their premium-quality products on the basis of superior life-cycle costs (total cost of ownership).

### Which ASEAN markets are you focusing at the moment, and what's the plan for next year?

**TA:** For 2025, VDMA focuses on Singapore, Malaysia and Thailand. These markets are strategically important due to their proximity to our Singapore office, and the fact that we already have a significant number of subsidiaries operating in these three countries. This makes it more accessible for us to conduct outreach and engage with local dynamics, leveraging our established networks and in-depth understanding of the market environments.

In the construction equipment sector, we closely follow the Philippines' current upswing in infrastructure investment and we're also looking at the Philconstruct exhibition in November this year to provide a platform for our member companies.

In 2026, we will expand our focus to Indonesia and Vietnam. Based on our survey last year, we have identified both countries as emerging markets with strong potential for expansion in the coming years. These markets are experiencing significant economic growth and infrastructure development, presenting excellent opportunities for our members.



Sennebogen is also a member of VDMA. Here is a recent visit to the company's office in Malaysia by the VDMA team.

**WITH THE NEW ASEAN OFFICE, VDMA IS NOW BETTER PLACED TO HELP ITS MEMBER COMPANIES AND THE EUROPEAN MECHANICAL AND PLANT ENGINEERING INDUSTRY ESTABLISH A STRONGER FOOTHOLD IN THE REGION AND REGAIN LOST MARKET SHARE. ”**



ABOVE AND BELOW: VDMA's Southeast Asia management meetings in Singapore, held at the ZF office in June 2023 (above) and Liebherr office in June 2025.



We will closely explore all the markets and learn from existing subsidiaries in the region, so that we can better support our

members as they look to expand their presence and operations here. ■

Website: [www.vdma.org](http://www.vdma.org)





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Liebherr's new 620 HC-L luffing jib tower crane has a jib length of 65 m and is capable of lifting up to 36 t.



# LIEBHERR'S NEW 620 HC-L LUFFING JIB CRANE AND R 920 G8-E ELECTRIC CRAWLER EXCAVATOR

**A**t bauma this year, Liebherr showcased its new generation of luffing jib tower cranes, the 440 HC-L and 620 HC-L. Designed with improved performance values and minimal out-of-service position, they are ideal for inner-city construction sites and projects with limited space.

The 620 HC-L is the newer, larger model, targeted at construction sites with more challenging requirements. It has a maximum lifting capacity of 18 t in one-fall operation and up to 36 t in two-fall operation, as well as a jib length of 65 m. The new Load-Plus function allows the lifting capacity to be increased by up to 76% for specific load charts, which greatly expands the crane's range of uses.

Thanks to its compatibility with the 24 HC 630 tower system, the 620 HC-L can achieve a freestanding height of up to 74.3 m. Using existing tower sections saves on purchase costs and increases flexibility in terms of site planning. The 440 HC-L also uses the same tower system, meaning that both HC-L cranes can be assembled with the same tower sections. This optimised tower design also makes it possible to avoid complex building tie-ins, which in turn speeds up the construction process.

With an out-of-service position of just 12 m and a minimal operating position of just 4.1 m, the 620 HC-L requires very little space. Its compact design makes site planning much easier and enables several cranes to be operated efficiently in tight conditions. Its pre-assembled components – e.g. hoist and luffing ropes come already mounted on the drum – reduce set-up time on site.

Transport costs are also optimised with only 10 transport units needed at full radius, including counter-ballast. The crane's plug & play system with central switchgear cabinet and electrical and mechanical quick connections ensures simple and time-efficient set-up.

The luffing jib is equipped with



The new 620 HC-L offers an out-of-service position of 12 m and a minimal operating position of just 4.1 m.



The R 920 G8-E is the first battery-powered electric crawler excavator developed by the Liebherr Group.





The R 920 G8-E is quiet and locally emission-free, making it ideal for use in cities or on underground jobsites.

Liebherr drives and the latest EMS-4 control unit. The 12-in display of the TC-OS platform features a clear menu structure and a configuration wizard that makes setting up the crane easier and safer. A radio control with a 3.5-in display also provides maximum flexibility for the crane operator: functions such as Load-Plus, Micromove and electric weathervaning are directly integrated and ensure convenient and safe operation from an optimal position.

Both the 440 HC-L and 620 HC-L are aimed to help tackle the rising challenges in building construction. Thanks to Load-Plus, the 440 HC-L offers an increase in jib head lifting capacity of up to 1.65 t (52%), while the 620 HC-L achieves an increase of up to 3.25 t (76%).

What's more, the HC-L series is the first to make use of aramid guying for luffing jib cranes. This lightweight material reduces weight on the jib, which noticeably increases lifting capacity. Thus significant weight is saved compared to steel rope.

#### **Liebherr's first battery-electric crawler excavator**

The R 920 G8-E is the first battery-powered electric crawler excavator from Liebherr. Produced at the group's facility in Colmar, France, this new model is particularly quiet and emission-free. It generates the same output as a diesel machine in the same category and is suitable for jobsites that require low noise levels and avoiding exhaust gas emissions, such as in cities or underground operating locations.

In addition to local, zero-emission operation, the electric drive

enables high continuous output and maximum energy efficiency on the jobsite. The R 920 G8-E has a high-voltage battery with a capacity of 188 kWh (standard) or 282 kWh (high capacity). The machine can be charged at up to 150 kW direct current or 44 kW alternating current. Depending on the application, the R 920 G8-E achieves an operating time of six to eight hours without intermediate charging. It increases to 10 hours with a one-hour intermediate charge at 150 kW.

The electrical drive ensures improved noise levels – both for the driver and in the vicinity of the machine. The R 920 G8-E crawler excavator also features a completely new driver's cab with a futuristic design. Large windows allow an excellent view and enhance safety. Furthermore, the spacious, ergonomic work station offers a wide range of convenient equipment and a large storage compartment.

The intuitive operating concept, Intusi, can be adjusted to the user's requirements and therefore makes the driver's work easier. This modern operating environment ensures a special user experience and enables efficient, productive and convenient work. With numerous integrated assistance systems such as the 3D machine controller, the weighing device or the skyview 360° camera, the R 920 G8-E is equipped for various jobsites and applications.

The R 920 G8-E with an output of 115 kW, an operating weight of 20,900 kg and a ditch cleaning bucket of 0.7 cu m was recently presented at bauma 2025. ■

Website: [www.liebherr.com](http://www.liebherr.com)





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# MAPEWRAP EQ AND FRP SYSTEMS: MAPEI'S INNOVATIVE SOLUTIONS FOR STRUCTURAL STRENGTHENING APPLICATIONS GLOBALLY

**M**apei's structural strengthening solutions feature composite materials technology, which enables the properties of each single material to be combined for better overall performance characteristics. Generally made up of a polymer resin or mortar matrix in which fibre strengthening (in carbon, glass, basalt or steel) is embedded, composite materials are characterised by high strength, low weight, durability and versatility.

Among these solutions is Mapei's fibre reinforced polymer (FRP) system. It comprises an extensive range of composite materials with an organic polymer matrix (epoxy resin), which is used to impregnate a long, continuous strengthening material made from fibres, typically carbon or glass, with high mechanical properties.

One of the projects that employed this FRP system is the popular tourist destination Casa Batlló in Barcelona, Spain. Here, Mapei was engaged to carry out structural strengthening work on the masonry, arches and vaulted ceilings of the building.

Another solution is the MapeWrap EQ system, which is designed to prevent secondary partition walls from overturning and floor slabs from collapsing, thus allowing more time to evacuate buildings in the event of an earthquake. Applied just like any normal wallpaper, this system improves dynamic stress distribution and helps contain rubble resulting from substrates breaking apart.

The MapeWrap EQ system is a combination of bi-directional reinforcement made from glass fibre mesh with a surface treatment of alkali-resistant, polyurethane-based primer, such as MapeWrap EQ Net, and a one-component, ready-mixed, water-based adhesive in polyurethane dispersion with very low emission of volatile organic compounds (VOC), such as MapeWrap EQ





adhesive. The system also forms a perfect bond with rendered substrates, as long as they are solid and compact, and have a 'containment' effect on elements typically prone to brittle fracture.

Some applications ideal for the MapeWrap EQ system include: structural reinforcement of facing walls applied on the internal and/or external face; reducing the seismic vulnerability of internal and external secondary partition walls; and reinforcement to prevent the collapse of brick-cement floors.

In addition, the MapeWrap C Uni-AX 300 SP system is suitable for strengthening reinforced concrete elements damaged by physical-mechanical action; for the confinement of axial loaded; and for seismic retrofitting of structures in earthquake zones. This system is a mono-directional carbon fibre fabric

**OPPOSITE:** Applied just like any normal wallpaper, the MapeWrap EQ system prevents secondary partition walls from overturning and floor slabs from collapsing, thus allowing more time to evacuate buildings in the event of an earthquake.

**RIGHT:** Strengthening inside a brick chimney using FRP with wrapping in MapeWrap C Uni-AX carbon fibre.

**BELOW:** Mapei supplied its MapeWrap systems for structural strengthening work on this underground carpark in Indonesia.

**BELOW RIGHT:** The MapeWrap systems being used for structural reinforcement and concrete repair works on residential apartment blocks in Selangor, Malaysia.







TOP, ABOVE AND ABOVE RIGHT: Structural strengthening work at Torre Velasca skyscraper in Milan, Italy aimed to improve the mechanical properties of the chains and tie rods in the upper floors. The Mapei FRP system was employed here, helping to ensure minimum intrusion on the architecture of the building, increased structural capacity and high durability.

characterised by a high ( $\geq 234,000$  N/sq mm) modulus of elasticity. It may be laid using two different techniques – wet system and dry system – by applying the following range of epoxy resins: MapeWrap Primer 1 SP (strengthening for the treatment of the substrate), and MapeWrap 31 SP (impregnating agent for fabrics).

The mechanical performance characteristics and durability of the MapeWrap C Uni-AX 300 SP system has been certified by the

American Institute ICC-ES under various environmental conditions. Due to its extreme light weight, the fabric from MapeWrap C Uni-AX 300 SP range is less labour intensive than conventional technologies (steel plate bonding).

Some applications ideal for the MapeWrap C Uni-AX 300 SP system include:

- Repair, maintenance and static upgrade of deteriorated structures, where it is necessary to reinforce the tensile strength





TOP, ABOVE AND ABOVE RIGHT: For this building, the MapeWrap EQ system was applied to prevent walls from brittle breaking and overturning in the case of a seismic event.

of the section.

- Confinement of axially loaded or damaged concrete elements (columns, bridge piers, or chimneys) in order to improve ductility and load bearing capacity.
- Seismic retrofitting and restoration.
- Repair of structures damaged by fire.
- Reinforcement of load bearing elements in buildings that have been restructured for architectural reasons or change of use.

The MapeWrap and FRP systems from Mapei are available globally, including in Asia. In Singapore, for example, the MapeWrap systems have been used in a number of projects related to underground construction. They have also been used for structural reinforcement and concrete repair works on apartment buildings in Malaysia, as well as for structural strengthening work on an underground carpark in Indonesia. ■

Website: [www.mapei.com/sg](http://www.mapei.com/sg)





# TADANO UNVEILS AC 4.070HL-1 AND AC 5.120H-1 HYBRID ALL-TERRAIN CRANES

**T**adano has launched two new hybrid all-terrain cranes, which feature a battery electric superstructure. The AC 4.070HL-1 is the market-ready version of the four-axle 70-t crane that was showcased as a tech demo back in 2022. Since then, the unit has undergone both testing and real-life use. The 120-t AC 5.120H-1 is the next model in the series and was recently presented at bauma 2025.

The 'Tadano Green Solutions' (TGS) environmental protection strategy has an objective of reducing the company's CO2 emissions between 2019 and 2030 by 25% worldwide. Over the same period, Tadano aims to cut CO2 emissions from the use of its products by 35%. The goal is to be completely climate neutral by 2050.

According to Tadano, an important step towards its sustainability goal is the development of the hybrid crane solutions, which generate about 60% less CO2 than diesel-powered superstructures. The company said electric crane operation offers a system efficiency of around 85%, representing more than double the energy efficiency of an efficient diesel engine.

## Flexible power options

A combination of conventional travel and fully electric on-site operation is made possible by these new hybrid models. More specifically, the carrier's diesel engine is responsible for bringing the crane to the jobsite, where the engine can then be switched off for the duration of the work once the outriggers have been deployed.



TOP AND ABOVE: Tadano's new hybrid all-terrain cranes feature a battery electric superstructure. One of the models, the 70-t AC 4.070HL-1 (pictured), is now available to the market.

Meanwhile, the high-voltage (HV) battery in the superstructure powers an electric motor, as well as the thermal management system and the superstructure cab's air conditioning. The electric motor powers the hydraulic system used for crane operation, all with zero restrictions on the corresponding performance.



The hybrid cranes can be operated both self-sufficiently with their own battery power and with the support of an external power source, such as temporary jobsite power. The latter not only extends a unit's multi-hour electric runtime, but can also relieve the load on the HV battery.

In addition, the hybrid cranes remain fully operational even when the HV battery is fully depleted and no external power supply is available. This is thanks to a generator that is driven by a power take-off on the carrier's diesel engine and that charges the HV battery and allows for continued crane operation.

### Various applications

Crane owners and rental companies benefit directly from reduced operating costs as a result of the maintenance-free electric motor and the elimination of the superstructure diesel engine. With the electric motor, there are no exhaust emissions anymore and the vibration and noise are kept to a minimum, all of which is coupled with continuous heating and air conditioning even in standby mode. Some applications suitable for the hybrid cranes include:

- Use in indoor areas (e.g. buildings in the event, manufacturing and logistics industries).
- Use in outdoor areas sensitive to exhaust and noise emissions (e.g. urban areas, hospital grounds, zoos, nature reserves, or occupied residential buildings).
- Use during quiet hours (at night, on Sundays and public holidays).

### Versatile operating modes

A). Battery-only mode: The charged HV battery supplies all the power that the electric motor needs in order to drive the crane's hydraulic pump. In this mode, the AC 4.070HL-1 can run for more than four hours with a full battery charge, while the AC 5.120H-1 can run for an entire working day under the same conditions.



ABOVE AND BELOW: The 120-t Tadano AC 5.120H-1 hybrid all-terrain crane is the latest model in the series.



TOP AND ABOVE: A combination of conventional travel and fully electric on-site operation is made possible by using the new hybrid cranes. The units can be operated both self-sufficiently with their own battery power and with the support of an external power source.

B). Battery mode assisted by external power supply: During crane operation and pauses in operation, the HV battery is continuously recharged through the external power supply connected to the CEE vehicle inlet. Depending on the selected amperage, this makes continuous electric crane operation possible.

C). External-power-supply-only mode: Even if the HV battery is depleted, the crane can continue to work through its external power connection. Since the HV battery is also charged during pauses in crane operation, it can deliver levels of performance exceeding the externally supplied energy after charging briefly.

D). Battery mode assisted by generator: The carrier's diesel engine charges the HV battery with the generator and the battery buffers the supplied power. Accordingly, the crane's hydraulic system can briefly work with peak loads that are significantly greater than the maximum continuous power supplied by the generator.

The generator can be used during travel and when stationary, and can work in three operating modes: silent mode, eco mode and power mode. Thanks to the manual regenerative braking function, the generator can run when the vehicle is coasting during travel, saving fuel as a result. This reduces the load on the retarder and boosts the crane's braking action.

E). Emergency operation: The crane can also be de-rigged with the 24-V vehicle electrical system, in which case the telescoping sections are retracted and the boom is lowered to its transport position.





Crane owners and rental companies can benefit directly from reduced operating costs as a result of the maintenance-free electric motor and the elimination of the superstructure diesel engine.

### The high-voltage system

The HV system on the AC 4.070HL-1 (up to 800 V) has been customised to perfectly match the power required by the unchanged hydraulic system. Among the highlights are:

- HV battery pack: lithium-ion NMC (nickel manganese cobalt) battery.
- Battery capacity: 70 kWh total capacity, of which approximately 80% is usable.
- Electric motor: continuous output of 115 kW, peak torque of 1,200 Nm.
- Generator: charging power >50 kW, continuous output of 85 kW, peak torque of 500 Nm.
- Onboard charger: CEE vehicle inlet, 400 VAC, 63 A, limiting to 32 A possible.
- Battery runtime: approximately 6.3 hr (load cycle 1), approximately 3.9 hr (load cycle 3).
- Charging time with onboard charger (63 A): 10% to 90% state of charge (SoC) in approximately 1 hr.
- Charging time with generator while working at jobsites: 10% to 90% SoC in approximately 1 hr.
- Charging time with generator during travel: +55% SoC in approximately 1 hr.

The thermal management system ensures that the HV battery always works at its optimal operating temperature and that it will reach its optimal service life. The result is a high residual capacity of about 80% of the new battery's SoH (state of health) even after 3,000 charging cycles. Partial charges only count towards these cycles proportionally and have a more positive effect on the battery's lifespan the longer and more frequently the SoC remains in the middle range.

The hybrid crane design was planned in such a way as to be used across models, so that Tadano's electrification for the AC 5.120H-1 is based directly on that of the AC 4.070HL-1. The front section of the five-axle crane's superstructure supports an optional second HV battery pack. This



ABOVE AND LEFT: This five-axle AC 5.120H-1 model was recently showcased at bauma 2025. With an electric motor, there are no exhaust emissions anymore and the vibration and noise are kept to a minimum.

doubling of the battery capacity to a total capacity of 140 kWh means that battery electric operation for a full working day without any external charging is possible.

Thanks to the optimised compact rear storage box next to the vehicle inlet, the

machine can easily carry the usual crane equipment. The generator drive has been optimised further and runs maintenance-free directly off the transfer case between the second and third axles. ■

Website: [www.tadano.com](http://www.tadano.com)





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# DOKA REVOLUTIONISES FORMWORK PROCESS AND ASSEMBLY WITH ADVANCED TECHNOLOGIES

To support a more productive future, Doka is investing in automation solutions for the construction sector. At bauma 2025, the company showcased its latest innovations in robotics, sensor technology and automated climbing formwork, which have been developed for safer, faster and more efficient building sites.

“The construction site of the future will be digital, safe and more productive – and with our investment in automation, we are making this transformation a reality today,” said Doka CEO Robert Hauser. The targeted use of robotics, digital control and real-time sensor technology automates physically demanding and repetitive tasks, increasing efficiency and improving site safety.

## DokaXbot Lift and DoKart 3

DokaXbot Lift is a semi-automated robot, which is part of the DokaXdek slab formwork family. Featuring intuitive ground-level operation and compensation for floor unevenness, the DokaXbot Lift now enables the precise positioning of formwork panels up to 5.7 m high, making overhead work faster and more secure.



TOP (LEFT AND RIGHT): The semi-automated DokaXbot Lift simplifies overhead work, enhancing safety and efficiency on-site.

ABOVE: DoKart 3 allows fast, flexible and safe repositioning of table forms on-site.



With automatic height adjustment and sensor-based fine positioning, construction schedules can be accelerated while workflow efficiency is improved. Automating physically demanding tasks allows site teams to focus on more specialised work while enhancing working conditions. The DokaXbot Lift solution has already proven its value on test sites and will initially be available as a rental product following bauma.

Alongside automation, Doka further streamlines slab formwork handling and with DoKart 3 enables faster and more flexible repositioning of table forms, reaching heights of up to 4.5 m without additional measures – up to 7.1 m with a stacking frame. Enhanced safety features, such as integrated working lights and an improved top construction, go hand in hand with user-friendly upgrades like digitally adjustable work heights, and remote maintenance access. DoKart 3 is expected to hit the market in 2026.

### Doka LeanForm and DokaXact Load & Pressure

Using Doka LeanForm, Doka brings industrialised production methods directly to the construction site, helping teams assemble formwork faster and with less manual effort. A mobile prefabrication platform, the Doka LeanForm Factory, allows formwork units to be prepared in a controlled environment before being lifted into place by crane. This modular approach seamlessly integrates with existing formwork systems, resulting in significant efficiency gains.

This method simplifies processes, reduces waiting times and unnecessary site movements, and allows teams to work more efficiently in all-weather conditions. Designed for large-scale and repetitive projects, such as housing developments and industrial buildings, Doka LeanForm helps construction teams complete projects faster while ensuring high-quality results.

“Doka LeanForm is transforming site productivity while improving working conditions. By optimising processes, we are supporting our customers in their core business, cast-in-place concrete construction, and helping them meet the growing demand for buildings more effectively,” said Mr Hauser. In order to fine-tune the system further, test sites are planned after bauma.

Beyond automation, real-time data is transforming the jobsite. DokaXact Pressure precisely measures fresh concrete pressure, significantly reducing errors and enhancing planning reliability. Together with DokaXact Load, which accurately monitors formwork loads, it already ensures consistent adherence to construction schedules on international construction sites.

### FormDrive system

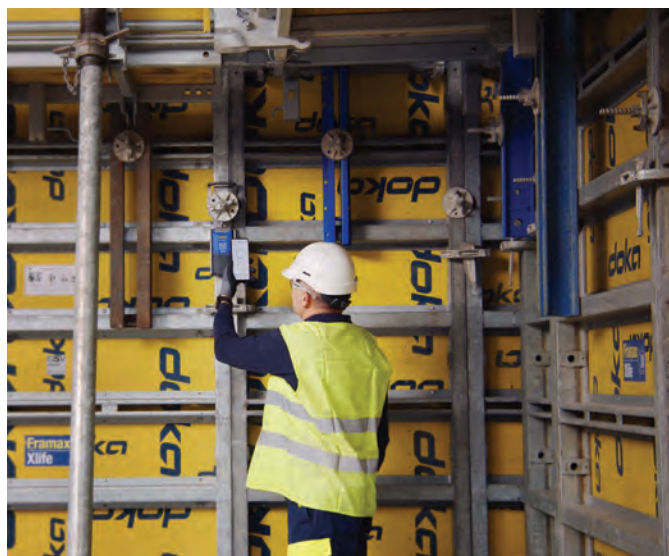
FormDrive sets a new industry standard by automating climbing and formwork removal, helping teams work faster, safer and with less manual effort. This next-generation control and drive system allows formwork to be lifted and adjusted at the touch of a button, using a digital tablet-controlled interface for real-time accuracy and control.

At its core, FormDrive features a smart control unit that automates lifting movements and wall adjustments, reducing physical strain on workers. Integrated sensors ensure precise positioning, while the system seamlessly integrates with Doka's formwork solutions, making it adaptable to various project types.

By automating climbing processes, FormDrive improves jobsite security, optimises workflows and keeps projects on schedule. For contractors, this means reduced risks, increased efficiency and a smoother construction process. FormDrive is currently in the advanced prototype phase, with successful projects completed in



Field-tested in Austria, Doka LeanForm brings industrial-style efficiency directly to the jobsite.



DokaXact Load & Pressure enables real-time insights into formwork loads and concrete pressure, resulting in safer and smarter construction.

the US. The system will be available for high-rise and infrastructure construction in selected markets, initially focusing on the US, from the second quarter of 2026 onwards.

### Doka 360 digital platform

Doka has also unveiled one of the most ambitious digital initiatives in the formwork industry to date: Doka 360. This integrated customer platform digitally connects and streamlines all key touchpoints – from planning and ordering to site operations and return logistics – along the formwork process. As a result, it frees up time, simplifies workflows and improve productivity on the jobsite.

Today, many jobsite processes remain surprisingly analogue: formwork is still ordered by phone, material availability is estimated manually, and data is scattered across emails, Excel files and paper documents. Returns must be arranged by phone and planning is done through different apps. Each solution looks different, stores data in separate virtual silos and doesn't connect.



“This is where the industry loses valuable time, wastes resources and budget. And more importantly, this is exactly where the sector struggles to gain traction regarding productivity,” explained Mr Hauser. The need for change is urgent, as McKinsey’s latest data shows that global construction productivity has only grown by 10% in the past two decades, with a decline in the last years.

The productivity gap in construction compared to the overall economy stands at a staggering US\$40 trillion. This issue is even more pronounced in developed markets like the US and Europe. “This is exactly where Doka 360 comes in,” said Mr Hauser. “For us, productivity isn’t driven by just another app, but is driven by a fully integrated digital platform that collates all the relevant information and is accessible from a single interface. It makes the formwork process more seamlessly efficient.”

With Doka 360, the goal is to simplify access to digital services and significantly accelerate and streamline the entire formwork process through a few clicks. What previously required multiple tools, manual coordination or phone calls, now happens in one central platform – with just a few clicks.

As soon as a formwork is planned in Doka 360, a complete material list is automatically generated and cross-checked against the current inventory. The order can be placed directly in the system, and its progress and estimated delivery can be tracked in real-time. Typical questions like “Do we have everything we need?” or “When will the truck arrive?” are answered before they even need to be asked. Return processes can also be managed quickly and easily without relying on paperwork or opening hours.

In addition, Doka’s smart sensor solutions such as DokaXact or Concremote are fully integrated into the platform, delivering real-time insights directly to the dashboard about, for example, when the concrete is ready for stripping. “Doka 360 doesn’t just make data visible – it turns it into actionable insights for informed decision-making on-site,” stressed Mr Hauser. “That’s where we see enormous potential to boost overall productivity as it enables jobsites to run more efficiently, safely and productively.”

Doka 360 reflects a clear strategic commitment from Doka – to develop digital solutions that simplify processes, not complicate them. “Our goal is not to look digital,” concluded Mr Hauser, “but to

add digital value where it truly matters for our customers.” A dedicated early access phase with selected partner companies in Germany and the US will begin in July 2025. The initial rollout in these markets is planned for 2026, with further countries to follow. ■

Website: [www.doka.com/ea](http://www.doka.com/ea)

RIGHT: Doka FormDrive in action on a pilot site in Boston, USA.

BELOW: The new Doka 360 integrated customer platform digitally connects and streamlines all key touchpoints – from planning and ordering to site operations and return logistics – along the formwork process.



All images: Doka

As soon as a formwork is planned in Doka 360, a complete material list is automatically generated and cross-checked against the current inventory. The order can be placed directly in the system, and its progress and estimated delivery can be tracked in real-time.



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