SOUTHEAST-ASIA CONSTRUCTION

NOVEMBER - DECEMBER 2025



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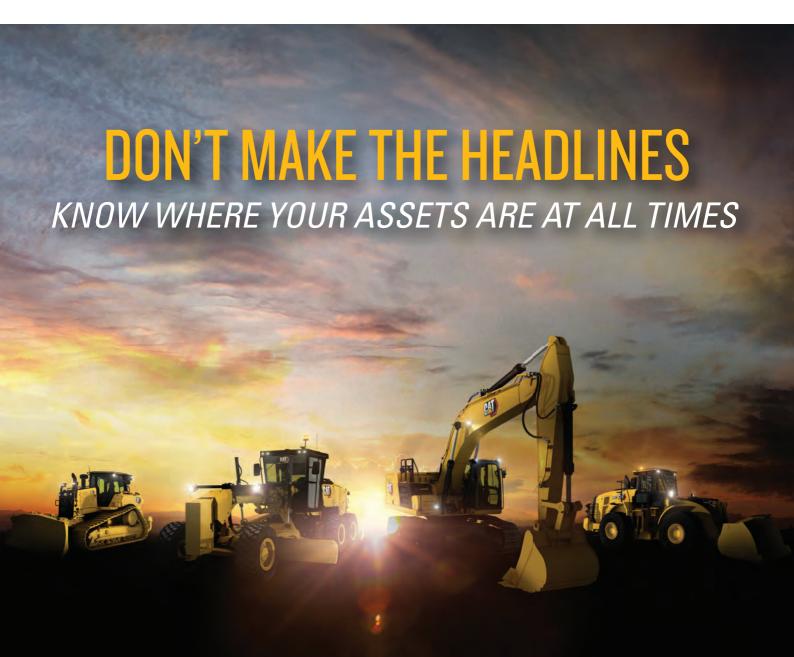












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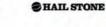






















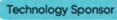






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The Incheon New Port expansion project in South Korea

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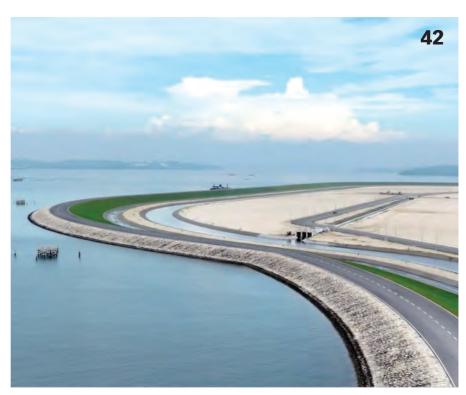


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SOUTHEAST ASIA CONSTRUCTION is published six times a year by:

Trade Link Media Pte Ltd. RCB Registration no: 199204277K
Address: 1 Paya Lebar Link, #04-01 Paya Lebar Quarter 1 (PLQ 1), Singapore 408533
Tel: +65 6842 2580 Email: info@tradelinkmedia.com.sg
Website: http://seac.tradelinkmedia.biz

The magazine is available free-of-charge to applicants in the building and construction industries who meet the publication's terms of control. For those applicants who do not qualify for free subscription, copies will be made available, subject to the acceptance by the publisher, of a subscription fee which varies according to the country of residence of the potential subscriber. Airmail (per year): Singapore - S\$70; Malaysia and Brunei - S\$120; Rest of Asia - S\$180; Japan, Australia, New Zealand, Middle East, Europe and USA - S\$220 (Inclusive of GST / Reg: M2-0108708-2).

Printed in Singapore by Fuisland Offset Printing (S) Pte Ltd.
MDDI (P) 067/08/2024 • ISSN 2345-7082 (Print) and ISSN 2345-7090 (E-Periodical)

Clause: The editor reserves the right to omit, amend or alter any press release submitted for publication. The publisher and the editor are unable to accept any liability for errors or omissions that may occur, although every effort has been taken to ensure that all information is correct at the time of going to press. No portion of this publication may be reproduced in whole or part without the written permission of the publisher.

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Vingroup inaugurates and breaks ground on six major projects across Vietnam

Vingroup recently inaugurated and broke ground on six major projects across Vietnam. These events took place on 19 August as part of the national programme to celebrate the country's 80th National Day anniversary (2 September 2025).

One of the highlights was the inauguration of the new National Exhibition and Convention Centre in Dong Anh, Hanoi. Spanning more than 900,000 sq m, the venue was built in just 10 months. It is positioned to become the largest exhibition complex in Southeast Asia and among the top 10 largest in the world. At its core is the iconic Kim Quy Exhibition Hall, which incorporates a 24,000-t steel dome, 56 m high.

The second project was the inauguration of the May Chai Bridge (Royal Bridge) and its approach roads, part of the Vinhomes Royal Island project in Hai Phong. Featuring nearly 2.2 km in length and 21 m in width with four lanes, the bridge connects Vu Yen Island with Le Thanh Tong Street, reducing travel time to the city centre to under five minutes. With its twin arch towers symbolising both soaring wings and a welcoming 'World Gateway Bridge,' the Royal Bridge is set to become a new landmark of Hai Phong.

The third project was the groundbreaking of an international-standard golf course in Quang Hanh, Quang Ninh, covering 100 ha. The fourth project marked the start of construction on the Vinhomes Industrial Park in Vung Ang, Ha Tinh, occupying nearly 965 ha — making it one of the largest in the region, with modern, synchronised infrastructure including factories, ports and logistics facilities.

The fifth project was the groundbreaking of the Phuoc Vinh Tay New Urban Area in Tay Ninh, covering 1,089.6 ha. Developed as an



To mark Vietnam's 80th National Day anniversary, Vingroup has inaugurated and broken ground on six landmark projects across the country, including the new National Exhibition and Convention Centre in Dong Anh, Hanoi.

eco-smart sustainable city, it will feature a complete ecosystem of education, healthcare, commerce and services, positioning it as one of the province's most significant future urban developments.

The sixth project was the commencement of Component Project 1: Construction of the Western North-South Expressway, Gia Nghia (Dak Nong) − Chon Thanh (Binh Phuoc) section, passing through Dong Nai province. The expressway spans 124.13 km (23.1 km in Dak Nong and 101.03 km in Binh Phuoc), designed for a full six-lane scale. Strategically, it will connect the central highlands with the southeast region, particularly Dak Nong and Binh Phuoc with Ho Chi Minh City. ■

AECOM launches AI Innovation Centre in Singapore

AECOM has established its Underground Infrastructure Al Innovation Centre in Singapore. This strategic investment, supported by the Singapore Economic Development Board (EDB), underscores the engineering firm's commitment to advance Singapore's vision for smarter, more sustainable urban development by optimising underground space.

Led by digital professionals with extensive experience in urban planning and infrastructure, the centre will focus on developing AI-powered solutions to improve data quality, enhance the mapping of underground utilities and safeguard underground space for existing and future developments. The centre will also collaborate with institutes of higher learning and engage with infrastructure industry partners and relevant agencies to leverage AECOM's digital solutions for learning and skill enhancement opportunities.

The centre is developing a suite of advanced software to automate and enhance underground utility design and survey workflows to reduce manual design checks, ensure timely regulatory approval and avoid project delays and abortive work. The digital tools are designed to systematically

assess the accuracy of existing underground data, identify critical sections with severe space congestion and propose recommendations to optimise underground space usage. Key considerations such as constructability, maintainability and end-to-end feasibility are embedded into the tools. These innovations enable AECOM to streamline its work on utility corridor studies, which traditionally rely on numerous utility plans and trial trench reports. The efficiencies gained will ultimately benefit major infrastructure developments in Singapore.

The initiative aligns with AECOM's global drive for technical excellence (TechEx), supported by programmes that deliver innovative, high-quality solutions to meet the evolving needs of its clients and the industry. By investing in AI, geographic information systems (GIS) and advanced survey technologies, AECOM's digital infrastructure delivery capabilities will be significantly enhanced. The centre will also provide training and upskilling for digital-literate professionals and talent from various disciplines, with the aim of opening career paths in digitally empowered engineering.



Linnhoff NVX NovaMax Asphalt Mixing Plant Efficiency meets Sustainability

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Mapletree to develop new flagship commercial project in Singapore's Greater Southern Waterfront

Mapletree Investments has announced plans for its new 123,000 sq m flagship commercial project in Singapore's Greater Southern Waterfront (GSW). As part of its latest HarbourFront Precinct's rejuvenation, HarbourFront Centre will be transformed into a landmark that redefines the country's southern skyline.

The new 33-storey development pairs upscale retail with premium office space at an established waterfront address with full-fledged amenities. It will comprise 26 floors of Grade A office specifications and five floors of engaging spaces for an experiential visit.

With a green tapestry cascading from the office tower into a 13,000 sq m elevated verdant park and located adjacent to a newly created stretch of waterfront promenade, tenants and visitors can enjoy views of the Singapore Strait as well as waterfront walks and activities.

Strategically located within the 24-ha HarbourFront Precinct, the new premium integrated development is flanked by VivoCity in the east, HarbourFront Towers One and Two and the new two-storey cruise and ferry terminal in the west. It is also directly connected to the HarbourFront MRT station with access to the North East and Circle Lines.

In addition, the development will be complemented with full-height glazing and refined horizontal louvres to improve passive shading for energy efficiency, while optimising the 360° panoramic views of the sea in the south, and the Southern Ridges as well as the city in the north.

To promote sustainable and green commuting via the coastal cycling network in the GSW, there will be ample bicycle parking and end-of-trip facilities. A range of sustainable elements – including a solar photovoltaic system to reduce reliance on grid energy, sustainable water management practices, a smart lighting system and electric vehicle charging stations – will also be included.

What's more, the development prioritises energy efficiency and environmental responsibility, aiming to achieve the BCA Green Mark 2021 Platinum SLE and LEED Platinum certifications.

To pave the way for the transformative works, HarbourFront Centre is slated for closure in the second half of 2026 and the new development is expected to be completed by the first half of 2031. ■



LEFT: An artist's impression of Mapletree's flagship commercial development in Singapore's Greater Southern Waterfront.

BELOW: The publicly accessible elevated verdant park will be part of the new development.



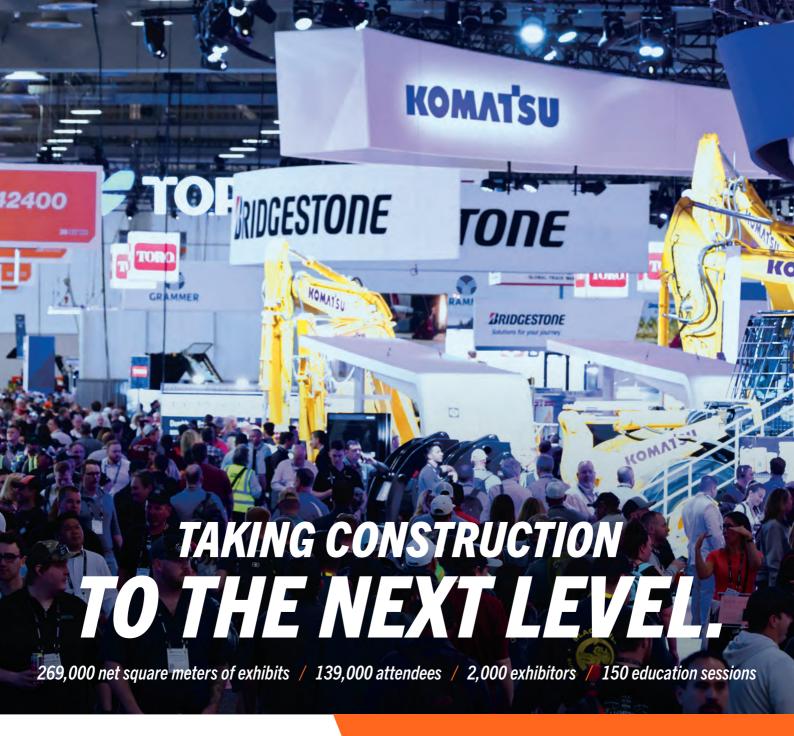
HCC secures contracts for India's Patna Metro Project

Hindustan Construction Company Limited (HCC) has been awarded two contracts by the Patna Metro Rail Corporation Limited (PMRCL) for the construction of 10.67-km underground tunnels using tunnel boring machines (TBM) and six metro stations under Phase I of the Patna Metro Rail Project.

Package PC-05 includes the design and construction of twin tunnels using a shield TBM, a cut-and-cover tunnel, an underground ramp at Mithapur, and three metro stations: Vikas Bhawan, Vidyut Bhawan and Patna Station. Meanwhile, Package PC-06 comprises an underground ramp at Rukanpura and three metro stations: Rukanpura, Raja Bazar and Patna Zoo.

Both packages also encompass architectural finishing, water supply systems, sanitary and drainage works for stations along the Danapur–Khemnichak Corridor.

With these new contracts, HCC continues to strengthen its position as a key player in India's metro infrastructure development. The company is currently executing works on Mumbai Metro Line III involving 4 km of twin tunnels and four stations, Indore Metro Phase-1 involving 5.66 km of twin tunnels by TBM and seven underground stations, as well as two packages of the Chennai Metro. In addition, HCC has delivered significant portions of the Delhi Metro, Bangalore Metro, Mumbai Metro Line I and Kolkata Metro.





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Hong Kong's MTR Northern Link project launched

On 3 October 2025, MTR Corporation held a ceremony to officially launch the Northern Link project — a major railway infrastructure in Hong Kong that will form the backbone of mass transportation in the Northern Metropolis development, connecting the East Rail Line and Tuen Ma Line, as well as establishing a rail link to Shenzhen's Huanggang Port. The event took place at the Shui Mei Road project site in Yuen Long, the location of the first large-scale tunnel boring machine (TBM) launching shaft for the Northern Link project.

Following the recent signing of the Northern Link (Part 1) project agreement, MTR is progressing at full speed with the construction works of the Northern Link Main Line, as well as the detailed planning and design for the Northern Link Spur Line. Hong Kong's Secretary for Transport and Logistics, Mable Chan, highlighted the importance of this new railway network: "The Northern Link is not only a landmark infrastructure project in the Northern Metropolis but also a transport artery connecting the population across the area, providing vital support for development."

"The Main Line of the Northern Link will become the public transport backbone for multiple new development zones in the Northern Metropolis, and, together with the existing East Rail Line and Tuen Ma line, will form a loop railway connecting the New Territories and Kowloon urban area. This will significantly enhance the railway network's coverage and resilience," she explained. "The Spur Line will connect to the new Huanggang Port, providing a convenient 'co-location arrangement' immigration clearance mode, linking Hong Kong and Shenzhen's metro networks."

Dr Rex Auyeung, chairman of MTR Corporation, added, "The Northern Metropolis is a new growth engine for Hong Kong's future economic development, and rail remains the city's efficient and reliable public transport backbone. The Northern Link will not only greatly enhance accessibility within the Northern Metropolis but also deepen Hong Kong's cross-boundary connections with the mainland.

"Among the multiple railway projects in the Northern Metropolis, construction at Kwu Tung Station on the East Rail Line and Hung Shui Kiu Station on the Tuen Ma Line is progressing well. [MTR] Corporation will adopt innovative technologies and efficient project management to drive the Northern Link project forward,



MTR Corporation held a ceremony to officially launch the Northern Link project – a major railway infrastructure in Hong Kong that will form the backbone of mass transportation in the Northern Metropolis development.

towards the target for the synchronised opening of both the Main Line and Spur Line by no later than 2034."

Out of the many railway projects MTR is currently constructing, the Northern Link is the largest in scale. The Northern Link Main Line will connect the East Rail Line and Tuen Ma Line, while the Spur Line will provide direct rail access to Shenzhen's Huanggang Port, becoming Hong Kong's third direct cross-boundary railway link. The project must overcome various challenges, including difficult geology, proximity to multiple new development areas, and proximity of the existing railway facilities when building interchange stations.

MTR and the Hong Kong Government are collaborating closely to advance the Main Line and Spur Line works, maximising synergy and simultaneously progressing the detailed planning and design for the Spur Line, aiming for the synchronised opening of both lines by no later than 2034.

Under the Northern Link (Part 1) project agreement, MTR is currently advancing certain Main Line construction works, including Kwu Tung, Au Tau and Kam Sheung Road stations; the tunnels from Kwu Tung to San Tin, and Au Tau to Kam Sheung Road and related railway facilities. The Shui Mei Road construction site marks the first TBM launching shaft, signalling the official commencement of the major works of the project.

IJM Construction awarded contract for NPE 2 project in Malaysia

IJM Construction Sdn Bhd, a wholly owned subsidiary of IJM Corporation Berhad, has secured a RM1.4 billion contract from New Pantai Expressway Sdn Bhd for the design and build of the New Pantai Highway Extension (NPE 2) project.

The fully elevated 15-km extension (including directional ramps) will connect the Pantai Dalam Toll Plaza on the existing NPE to the Jalan Istana Interchange via Jalan Syed Putra, providing a new urban link within southern Kuala Lumpur. Construction is scheduled to commence in the fourth quarter

of 2025, with completion expected in 48 months.

"This award moves the NPE Extension from planning into delivery. It also marks our third project above RM1 billion this year after the RM1.4 billion fast-track data-centre in Johor and the RM2.135 billion hyperscale data-centre development in Elmina. Together, these wins reflect IJM Construction's progress in delivering large-scale projects across industrial and infrastructure sectors," said Dato' Lee Chun Fai, group CEO and managing director of IJM Corporation.

Denzai acquires second Liebherr LR12500-1.0 crawler crane - 'world's first' in ballast wagon configuration

Denzai has acquired its second Liebherr LR12500-1.0 crawler crane. This unit is said to be the world's first in a ballast wagon (MBW) configuration, developed by Liebherr in cooperation with Cometto, made specifically for Denzai. The MBW configuration will allow Denzai to use Cometto MSPE 60-t self-propelled electronic modular trailers as the ballast wagon.

Scheduled for delivery to Japan in March 2026, the 2,500-t capacity crane will further enhance Denzai's capabilities in heavy lifting, particularly in offshore wind projects and largescale power plant construction, both in Japan and globally.

"We are excited to introduce our second Liebherr LR12500-1.0 crawler crane. This unit features the new-generation MBW ballast wagon system, for which we will use the Cometto MSPE 60 t. We extend our appreciation to the Liebherr and Cometto engineering teams for their collaboration in developing this breakthrough in heavy lifting," said Kohki Uemura, president and CEO of Denzai K.K.

"The MBW configuration enables the operation of this massive crane within confined spaces, which is necessary for Japan's offshore wind projects," Mr Uemura pointed out. "The crane's first assignment will involve port handling and preassembly work for Vestas V236-15.0 MW turbines, following delivery in March 2026."

"With the new option of using SPMTs as a ballast wagon for the LR 12500-1.0, Liebherr offers maximum flexibility and efficiency on the construction site. The SPMTs can be controlled directly via the crane's control system, eliminating the need for additional operating personnel – that solution is unique in the industry," explained Florian Ritzler, head of sales management crawler cranes at Liebherr.

"Since SPMTs are available worldwide and can be used for other tasks when not serving as a ballast wagon, customers benefit from a highly versatile and economical solution," added Mr Ritzler. "The system has already been successfully tested and enables the safe and precise movement of large ballast weights." ■





LEFT: Denzai and Liebherr representatives, with the new 2,500-t Liebherr LR12500-1.0 crawler crane.

BOTTOM LEFT:

The crane is said to be the world's first in a ballast wagon (MBW) configuration, developed by Liebherr in cooperation with Cometto, made specifically for Denzai.



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Hong Kong launches 'Best Practice Guideline for Carbon Smart Construction Site'

The Hong Kong Construction Association (HKCA) has unveiled 'Best Practice Guideline for Carbon Smart Construction Site'. This industry-first practical guide focuses on decarbonisation, assisting contractors in formulating carbon reduction strategies and optimising relevant processes. HKCA collaborated with the Business Environment Council Limited (BEC) to develop the guideline, introducing a '4M1E' framework (Man, Machinery, Materials, Methods and Environment) which categorises 36 smart low-carbon measures.

With the support of Hong Kong Government (the Development Bureau and the Environmental Protection

Department), the guideline provides a clear and sustainable development path for the industry, encouraging companies to implement them and collectively work towards the city's 2050 carbon neutrality target.

Globally, over 30% of carbon emissions are related to construction activities. In Hong Kong, some progress has been made in carbon reduction, with carbon emissions in 2020 being approximately one-fifth lower than 2005 levels. Facing the challenges of climate change, the government has set a target to reduce carbon emissions by 26-36% by 2030. As a key stakeholder in the local construction industry, HKCA actively responds to this goal, promoting industry progress by launching the guideline to help contractors adopt low-carbon technologies and operational methods, achieving a green transformation.

"The HKCA has always been committed to promoting the sustainable development of the construction industry, and the newly launched guidelines are a concrete action reflecting our commitment to developing low-carbon sites," said Simon Liu, president of HKCA. "Reflecting the perspective of contractors, the guidelines provide practical low-carbon construction solutions, covering aspects such as construction processes and material selection.

"We are pleased that the guidelines have received active support from government departments such as the Development Bureau and the Environmental Protection Department, as well as various industry stakeholders. We hope that by sharing these strategies, we can encourage the industry to adopt innovative technologies and sustainable methods, contributing jointly to Hong Kong's carbon neutrality target."

The guideline elaborates on the 36 smart low-carbon measures under the 4M1E framework, categorised by practicality, carbon reduction impact and applicable project types, making it convenient for the industry to flexibly select measures based on their specific projects. It covers several key areas:

- **A).** Manpower (Man) it encourages the use of digital management platforms and building information modelling (BIM) to optimise decision-making and processes.
- B). Machinery it promotes the application of electric construction



FROM LEFT: HKCA's president Simon Liu and honorary secretary Anthony Chan.

machinery and temporary power supply, reducing reliance on traditional diesel generators.

- **C). Materials** it advocates the use of low-carbon concrete and recycled materials
- **D). Methods** it introduces digital material management systems, prefabrication technology and mixed reality platforms to enhance efficiency and reduce waste.
- **E).** Environment it promotes the adoption of renewable energy systems and site wastewater recycling measures to reduce the impact on the surrounding environment.

Anthony Chan, honorary secretary of HKCA, explained, "The guideline is not merely a theoretical reference document, but a practical action guide. By collecting successful cases, we assigned 'carbon reduction tokens' to each measure based on its carbon reduction impact: high, medium and low impact measures received 3, 2 and 1 token respectively.

"This quantitative method not only helps contractors understand the benefits of each measure but also provides an objective and fair basis for evaluation, effectively encouraging more industry companies to actively participate and put the smart carbon reduction measures in the guideline into practice."

To further promote and recognise the implementation of strategies from the guideline, HKCA has launched the Carbon Smart Construction Site Labelling Scheme (www.hkcacarbonsmart. com). This initiative aims to commend sites that demonstrate outstanding performance in carbon reduction. The label scheme quantifies the carbon reduction impact of each measure according to the guideline and scores them with 'carbon reduction tokens': high-impact measures receive 3 tokens, medium-impact 2, and low-impact 1.

A site must accumulate at least 15 carbon reduction tokens (approximately 20% of the total tokens) to be awarded the label. The scheme is applicable to civil engineering, foundation engineering and building construction projects undertaken by HKCA members, with one application per site. Sites awarded the label will receive one year of recognition and will be reviewed annually to ensure their continued compliance with carbon smart practice standards.

The 'Best Practice Guideline for Carbon Smart Construction Site' is now available for free download on the HKCA website (www.hkca. com.hk/publications). Additionally, the Carbon Smart Construction Site Labelling Scheme has begun accepting applications (starting from 23 September 2025), with a rigorous approval process. Applicants must submit relevant information, which will undergo preliminary review by the HKCA Secretariat before being submitted to an independent judging panel comprising representatives from HKCA, the Development Bureau, the Environmental Protection Department, and third-party consultants for evaluation and final decision on label conferement.

Wika accelerates construction of IKN 1B Toll Road in East Kalimantan, Indonesia

Indonesian contractor PT Wijaya Karya (Persero) Tbk (Wika) has achieved 16.43% progress in the construction of IKN Toll Road Section 1B in East Kalimantan, as of 1 September 2025. This is 5% ahead of schedule, said the company. IKN (Ibu Kota Nusantara) is the planned new capital city of Indonesia.

A number of major works are currently underway, including the construction of Ramps 1 to 4 and excavation work on the Mainroad STA 0+000 to STA 0+500. On Ramps 1 and 2, Wika is building a special span structure with box girder that will cross the Balikpapan-Samarinda Toll Road using the form traveller method. For the Mainroad STA 0+000 to STA 0+500, excavation work has been completed and is now entering the foundation layer paving stage (LPA and LPB).

According to Wika, the company adopts various technologies to improve the effectiveness and accuracy of the project. Building information modelling (BIM) is applied from the survey stage to modelling, integrated with real-time GPS-based GNSS surveying methods, photogrammetry with drones, and the use of LIDAR for field data acquisition.

The construction of this new road also focuses on sustainability and social benefits, shared Wika's president director Agung Budi Waskito. "We are committed to implementing environmental, social and governance (ESG) principles through the use of environmentally friendly materials such as recycled plastic for fencing, construction waste management, and social and greening



The IKN
Section 1B
Toll Road
project uses
various
technologies,
and also
focuses on
sustainability
and social
benefits.

programmes around the project," he said.

In addition to ensuring sustainability, the IKN Section 1B Toll Road is expected to accelerate mobility upon completion, open up new economic opportunities and provide tangible benefits for the people of East Kalimantan. The project will serve as a vital route, reducing travel time between Balikpapan and IKN to just 50 minutes. It is also aimed to drive economic growth and strengthen connectivity among the three major cities in East Kalimantan: IKN, Balikpapan and Samarinda.

Leguan Lifts strengthens presence in Asia with new distributor in Singapore

Leguan Lifts, a Finland-based global manufacturer of highperformance spider lifts, is strengthening its presence in the Asian market with the appointment of a new distributor in Singapore, Spider Lift Asia Pte Ltd (effective June 2024), replacing Jebsen & Jessen Technology Pte Ltd.

In preparation for the transition, Leguan Lifts organised comprehensive distributor training in September 2024, covering sales, service and troubleshooting practices. This helped ensure that Spider Lift Asia is fully equipped to meet customer needs in the market.

The first customer delivery of the Leguan 225 spider lift took place in October 2024, marking the beginning of the new distributor's efforts to introduce Leguan's next-generation all-terrain series to Singapore.

"Leguan produces some of the best spider lifts in the world with unrivalled all-terrain capabilities and user-friendly joystick controls with smart features. These lifts are an excellent option for tree care companies and rental projects," said Mark Guah, owner and CEO of Spider Lift Asia.

Founded in 2009, Spider Lift Asia specialises in rental, sales and services of spider lifts in Singapore, representing multiple top European brands. The company sees strong demand in Singapore's booming infrastructure, construction and tree-care sectors.

Leguan Lifts' VP of sales and marketing, Jori Mylläri, said, "Our



Leguan Lifts has appointed Spider Lift Asia as its new distributor in Singapore, strengthening the manufacturer's presence in the Asian market.

previous distributor increasingly focused on different machinery sectors, which lead us to partner with Spider Lift Asia, a company with a stellar reputation for customer care and after-sales support. We are expanding our distribution network in the Asian market and are actively seeking for companies with a professional approach to introducing spider lifts in their own regions."

Singapore introduces new licensing scheme for building works and lift & escalator systems

Singapore's Minister for National Development, Chee Hong Tat, has announced that the Building and Construction Authority (BCA) will implement a new licensing regime from 2027 for firms that provide certification services for lift and escalator systems, as well as site supervision services for large-scale structural works from 2028.

Under the new licensing regime, modern lift and escalator systems designed and installed in accordance with SS550:2009 and SS626:2017 or later, and building projects valued above S\$75 million, will require the appointment of BCA-licensed firms to carry out such works.

This move addresses the increasing Awa complexity and sophistication of works undertaken in the built environment (BE) sector:

- Lift and escalator systems have evolved from largely mechanical equipment to complex electromechanical equipment requiring specialised expertise for proper certification.
- Large-scale building projects involve more specialist works such as complex facades, long-span composite structures and more sophisticated methods of construction requiring a broad range of competencies to supervise.

According to BCA, this new licensing regime will ensure that the industry leverages firm-level resources and expertise to meet evolving demands of increasingly complex projects and new technological developments to deliver safer and higher quality infrastructure.

"Today, building owners need to appoint qualified persons (QPs) and specialist professional engineers (SPEs) to certify that building works and equipment are safe and are built according to approved plans. But as projects grow more complex, the range of professional competencies required have grown significantly," said Mr Chee on the new scheme.

"For example, when we build higher up and deeper underground, the team of QPs supporting a project must possess a range of complementary expertise, such as advanced structural and geotechnical competencies. As we deploy more advanced technologies, such as lift and escalator systems equipped with new safety controls, our SPEs similarly need to be trained in more areas."

Higher safety and quality standards

The shift to a firm-based regime aligns with international practices and recognises that professional firms are better equipped with expertise and resources to uphold safety standards, explained BCA. Licensed firms will be able to implement proper governance and procedures to enable collaboration, coordination and retention of critical technical knowledge and skills.

Firms will also be able to invest in advanced technologies and provide structured training and specialised resources to support professionals to carry out their duties. This will ensure higher safety and quality standards, more consistent and efficient professional services, as well as better talent development and knowledge



Singapore's Minister for National Development, Chee Hong Tat, speaks at the IBEW Industry and Awards Dinner 2025.

retention in the BE sector.

While this is a shift from the current individual-based certification system, BCA said individual professionals can continue to provide services independently for projects outside these scopes, i.e. older lift and escalators systems certified based on codes before SS550:2009 and SS626:2017 and projects not exceeding S\$75 million.

To be licensed by BCA, firms must first be accredited by the Singapore Accreditation Council (SAC). To support this transition, SAC had earlier launched the accreditation scheme for lift and escalator certification firms in April 2025. This provides greater assurance that lift and escalator inspections are being carried out by accredited firms that

possess the technical competence, qualifications and management systems necessary to perform thorough safety assessments in line with internationally recognised standards. BCA is also working with SAC on a similar scheme for site supervision firms for supervision of building works, targeting readiness in 2026.

To facilitate the transition, the mandatory accreditation and licensing of firms is targeted to be implemented in 2027 for firms involved in the certification of lifts and escalators, and 2028 for firms undertaking the supervision of structural works. BCA encourages developers and building owners to engage accredited firms ahead of the mandatory implementation of this firm-based regime.

Corenet X updates

BCA further shared that the current regulatory approval for building works has been redesigned under Corenet X. This move transforms the separate and individual agency submissions to a customercentric one, and brings together the various agencies to collaborate and jointly review the submission.

In addition, the eligibility window for the additional buyer's stamp duty remission for projects submitted on Corenet X will be extended to 30 September 2026 for larger projects (≥ 30,000 sq m GFA), and to 30 September 2027 for smaller projects (< 30,000 sq m GFA). This extension will allow developers additional time to adapt to the new processes and technologies.

Regulatory agencies have also made several enhancements to Corenet X to address the industry's feedback on navigating the multiple agencies' processes, forms and requirements, including:

- Streamlining manual project information collection on applications.
- Providing visibility on agency clearance statuses through the implementation of project dashboards.
- Allowing concurrent submissions to both the design gateway and piling gateway.
- Allowing concurrent demolition and new erection applications.
- Agencies can begin Corenet X submission processing immediately upon receipt of proof of payment, rather than waiting for payment verification to complete (to be implemented in the fourth quarter of 2025).

PT Sarana Multi Infrastruktur to finance road construction project in Bali, Indonesia

PT Sarana Multi Infrastruktur (Persero) (PT SMI) has announced that it will provide a IDR 2.83 trillion loan for a road construction project in Badung Regency, Bali, Indonesia. This financing agreement was signed on 30 October 2025 by PT SMI and the Badung Regency Government.

"As a finance institution supporting sustainable development, we always continue to strengthen our commitment to finance regional projects including strategic projects which have longterm economic, social and environmental impacts. Through this partnership, PT SMI is also helping to promote regional development, strengthen local revenue and enhance Badung's competitiveness as an international tourist destination," said Reynaldi Hermansjah, president director of PT SMI.

The funding is part of the road infrastructure development acceleration programme championed by the Badung Regency Government in the Regional Medium-Term Development Plan (RPJMD 2025-2029), with a total project value reaching IDR 15 trillion.

"By signing this MOU, we are ensuring that infrastructure development in Badung is not just a political promise, but a real development strategy that will have a cross-generational impact. The road built today is a fast track to a more prosperous, connected and world-class future for Badung," said Badung Regent, I Wayan Adi Arnawa.

With the regional loan scheme from PT SMI, the construction



The signing ceremony was held on 30 October 2025.

project for nine strategic road sections featuring a total length of 11.8 km in North Kuta and South Kuta can start soon. When completed, this road project will eventually generate several social and economic impacts, including improved community welfare through job creation, increased mobility and reduced congestion; increase in hotel and restaurant tax revenue; and also reduction in travel time and transportation costs for tourists, boosting the productivity of the tourism and service sectors.

ADB approves US\$190 mil loan for Indore Metro Rail Project in India

The Asian Development Bank (ADB) has approved a US190 million loan to support the development of the Indore Metro Rail Project, a transformative initiative aimed at enhancing urban mobility, reducing pollution, and promoting inclusive growth in the largest city of Madhya Pradesh, India.

The project will finance the construction of an 8.62-km underground metro line with seven stations, connecting congested areas of Indore to the airport. Designed with modern features, the metro will incorporate accessibility elements for the elderly, women, children and persons with disabilities, including ramps, lifts, CCTV surveillance and emergency response systems.

According to ADB, the metro line is expected to significantly reduce greenhouse gas emissions - by an estimated 12,414 t of carbon dioxide equivalent annually - and improve air quality in one of India's fastest-growing urban centres.

This initiative includes multimodal integration with existing bus and feeder services, improving access to educational institutions and markets, added ADB. Commercial spaces at select stations will be allocated to women entrepreneurs and self-help groups, while safety audits and ridership data will guide future improvements.

A multimodal integration study will also be conducted to optimise connectivity between metro, airport, railway and bus systems. ADB's support includes planning that benefits women and girls, with internship and training programmes to build capacity



The Indore Metro Rail Project is expected to significantly reduce greenhouse gas emissions - by an estimated 12,414 t of carbon dioxide equivalent annually - and improve air quality in one of India's fastestgrowing urban centres.

among women in the transport sector and collaboration with existing transit-oriented development (TOD) technical assistance to enhance Indore's TOD planning and policy.

The Madhya Pradesh Metro Rail Corporation Limited (MPMRCL) will implement the project, with operations expected to begin by January 2030.

Lintec & Linnhoff merges Lintec-Ixon into its global network

Lintec & Linnhoff has officially completed its integration with Lintec-Ixon in Brazil, which will now be known as Lintec & Linnhoff Brasil Ltda, marking a key milestone in the group's growth strategy and further strengthening its position in Latin America.

Lintec-Ixon has been an independent and important part of the group for many years, manufacturing continuous asphalt mixing plants for local and global markets, as well as concrete batching plants for the local market. It is currently one of the top five suppliers of plants to Latin America's construction, infrastructure and road building industries, with over 300 units delivered since 2014. Up to 30% of its Brazil plant's production is exported and marketed under the Lintec brand to key markets, including Africa, Southeast Asia and Oceania. This integration is a natural evolution of the group and represents a new chapter for the future.

"Together, we're creating a stronger foundation to serve customers, with faster support, better coordination and expanded opportunities for all stakeholders. Lintec & Linnhoff and Lintec Ixon will henceforth operate as a unified organisation, combining resources, technologies and talent to deliver even greater value," said Peter Isaac Chan, group CEO of Lintec & Linnhoff. "Customers will benefit from closer collaboration, faster response times, enhanced service support and expanded product offerings.

"Plans are in place to substantially expand manufacturing, including a doubling of current build capacity and an expansion to include local production of the CSD range of containerised plants. Employees of both companies will gain new opportunities for development, innovation and growth as the company builds a stronger and more resilient business."

Arthur Cotrim, managing director at Lintec & Linnhoff Brasil, added, "Our partnership with the Lintec brand dates back to 2014, and since then, we've seen strong sales and growing exports, so it makes sense to deepen our collaboration through this merger. We want to increase our export sales beyond 30% and boost our domestic production capabilities to meet ongoing demand for reliable,



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

LEFT: Arthur Cotrim, managing director of Lintec & Linnhoff Brasil.

BELOW: Lintec & Linnhoff Brasil factory employees in Santa Rosa, Rio Grande do Sul. The plant's production is also exported to key markets like Africa, Southeast Asia and Oceania.





Lintec & Linnhoff and Lintec & Linnhoff Brasil executives seeing off a Lintec CDP asphalt plant at the factory in Santa Rosa.

productive and cost-effective plants that help construction projects complete on time and on budget."

Headquartered in Singapore, Lintec & Linnhoff is a global leader in asphalt and concrete plant manufacturing. With over a century of heritage, the company combines German engineering with a reputation for innovation, reliability and customer service. Its flagship Lintec containerised asphalt and concrete plants, and Linnhoff

asphalt mixing plants, are renowned worldwide for quality, performance, sustainability and efficiency.

With the integration now complete, Lintec & Linnhoff is focused on accelerating growth in Latin America and beyond. By combining global expertise with local market insight, the company aims to deliver innovative, high-quality solutions that empower customers, support employees and reinforce its industry leadership.

Hitachi Construction Machinery rebrands as Landcros

Hitachi Construction Machinery (HCM) has announced its transformation and rebranding to Landcros, effective April 2027.

According to HCM, 'Landcros' expresses the company's determination to deliver innovative solutions to customers around the world in the construction and mining industries. "This evolution builds on our trusted dealer network, the foundation of our success," it stated. "Together, we will shape a new customer journey that unites AI, data, design and human ingenuity, building a more sustainable world."

HCM shared that its vision started to take form with the unveiling of Landcros One at Bauma 2025, a prototype that redefines what a machine can be: autonomous, remotely operated and designed to engage the next generation through intuitive, gamified ergonomics, integrating reliable technology partners into a seamless user experience.

"We aim to cultivate 'Landcros' into a brand that will make our customers feel that they made the right choice when selecting our machinery or services, our shareholders confident about their decision to invest in the company, and our employees feel that their work is meaningful," said Masafumi Senzaki, HCM president and executive officer, COO.





ABOVE AND LEFT: Hitachi Construction Machinery will rebrand as Landcros, effective April 2027.

Terex to merge with REV Group; plans to exit Aerials segment

Terex Corporation and REV Group have entered into a definitive merger agreement to form a leading specialty equipment manufacturer. This merger will create a diversified leader in emergency, waste, utilities, environmental and materials processing equipment with attractive end markets characterised by low cyclicality, resilient demand and long-term growth profiles.

At the same time, Terex announced that it will initiate a process to exit its Aerials segment, including the assessment of a potential sale or spin-off.

Upon closing of the merger, which is expected in the first half of 2026, Terex CEO Simon Meester will serve as president and CEO of the combined company. The board will consist of 12 directors, of which seven will be from the Terex board and five from the REV Group board.

"This transaction represents a transformative step for both companies. By combining our complementary portfolios and leveraging our collective strengths, we are creating a large-scale, diversified industrial leader well-positioned to capitalise on long-term secular growth trends," said Mr Meester.

"The transaction will unlock significant value for both Terex and REV Group shareholders and creates exciting opportunities for our team members and customers by strengthening our ability to invest in the combined business, innovate and deliver quality solutions."

"Joining forces with Terex is a natural evolution of our strategy of building a stronger, more profitable and scaled company by bringing together two highly respected organisations with shared values and a commitment to innovation, operational excellence and customer success," added Mark Skonieczny, CEO of REV Group.

The benefits of this merger include:

- Complementary portfolio of specialty equipment businesses. As a combined company, Terex and REV Group will offer a diversified portfolio of emergency, waste, utilities, environmental and material processing equipment with attractive end markets characterised by low cyclicality, resilient demand and long-term growth.
- Financial strength and flexibility. Together, Terex and REV Group will operate from a position of enhanced financial strength with an attractive leverage position, low capital intensity and significant free cash-flow to fuel growth. This strong financial foundation will support continued investment in growth while maintaining discipline and flexibility.
- Enhanced scale and growth profile. The transaction will enhance the combined company's overall growth profile, creating a more diversified platform with multiple avenues for expansion. By combining complementary capabilities, the business is positioned for stronger, more sustainable growth over the long term.
- Compelling value creation through synergies. The transaction will unlock significant value-creating synergies that enhance competitiveness and reduce operating costs with US\$75 million of run-rate value in 2028 and approximately 50% achieved 12 months after closing. ■

Bookings open for IPAF Summit & IAPAs 2026 in Istanbul, Turkey

The countdown has officially begun for one of the powered access industry's most anticipated events – the IPAF Summit & International Awards for Powered Access (IAPAs) 2026, taking place in Istanbul, Turkey, on 21-22 April 2026.

The IPAF Summit & IAPAs is a global gathering that attracts 500+ attendees from across the powered access sector. The 2026 edition promises to be another unforgettable event, featuring top-level industry insights, international networking, and the return of the ever-popular Mark Durden-Smith as conference and awards host.

Following four consecutive sell-out events in London (2022), Berlin (2023), Copenhagen (2024) and Dublin (2025), early booking is strongly advised to avoid disappointment. An early bird rate is available until Friday 5 December 2025.

Event highlights:

- Tuesday 21 April 2026: The IPAF & IAPA welcome reception
- Wednesday 22 April 2026: The day begins with the IPAF AGM, followed by the IPAF Summit a forum featuring insights from leading voices in the industry, plus multiple opportunities for faceto-face networking. The day concludes with the International Awards for Powered Access (IAPAs), celebrating excellence, innovation and best practice across the sector.







TOP AND ABOVE: The IPAF Summit & IAPAs 2025 took place in Dublin, Ireland. Next year, the event will be held in Istanbul, Turkey, on 21-22 April.

Organised jointly by IPAF and Access International, the free-toenter IAPAs recognise outstanding achievement in the powered access industry, from safety and sustainability to innovative products and projects.

The IAPAs 2026 opened for entries in September 2025 – there are 13 award categories:

- Access Rental Company of the Year
- The Sustainability Award
- The EDI Award
- Contribution to Safe Working at Height
- Innovative Technology Prize
- Digital Development Award
- IPAF/Access International Lifetime Achievement Award

Product Categories:

- Product of the Year Mast climbing work platforms & hoists
- Product of the Year Scissor lifts & vertical mast platforms
- Product of the Year Self-propelled booms & atrium lifts
- Product of the Year Vehicle and Trailer Mounted

IPAF member companies and individuals only:

- IPAF Training Instructor of the Year
- IPAF Training Centre of the Year.

Book your tickets via the website: https://iapa-summit.info An early bird rate is available until **Friday 5 December 2025**.



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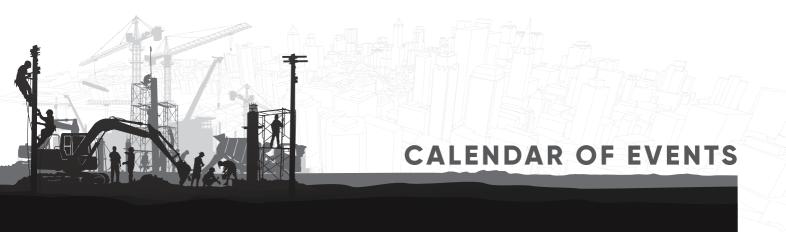
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// Events in Asia

AI-Ready Data Centres APAC

3 Dec 2025

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

Excon

9 to 13 Dec 2025

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

Digital Construction Asia

31 Mar to 1 Apr 2026

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

Trenchless Asia

10 to 11 June 2026

Queen Sirikit National Convention Centre Thailand Website: www.trenchlessasia.com

MBAM OneBuild & OneWare

5 to 7 Aug 2026

Kuala Lumpur Convention Centre Kuala Lumpur, Malaysia Website: www.mbamonebuild.com.my / www.oneware.com.my

BEX Asia & IBEW

2 to 4 Sept 2026

Sands Expo and Convention Centre Singapore Website: www.bex-asia.com / www.ibew.sg

Construction Indonesia

9 to 12 Sept 2026

Jakarta International Expo Jakarta, Indonesia Website: www.constructionindo.com

BCT Expo (Building Construction Technology Expo)

16 to 18 Sept 2026

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

CBA Expo & Concrete Expo Asia

23 to 25 Sept 2026

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

Bauma Conexpo India

28 Sept to 1 Oct 2026

www.concrete-expoasia.com

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

Bauma China

24 to 27 Nov 2026

Shanghai New International Expo Centre Shanghai, China

Website: www.bauma-china.com

// Events outside Asia

World of Concrete

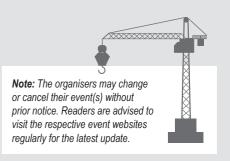
20 to 22 Jan 2026

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

Conexpo-Con/Agg

3 to 7 Mar 2026

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



World of Concrete returns in Jan 2026, featuring more new products and expanded educational programmes

World of Concrete (WOC), the world's largest concrete construction and masonry trade event for the last 50+ years, unveils the largest-ever showcase of innovative products, enhanced educational programming and strengthened industry networking opportunities. The enhancements to this year's content and experience are designed to revolutionise the experience at the most essential gathering of contractors, builders, business owners and craftsmen.

The next edition of WOC will return on 20-22 January 2026 (education: 19-22 January) at the Las Vegas Convention Centre, Nevada, the US. The show floor will feature more than 200 first-time exhibiting companies, bringing new perspectives, innovative building and repair solutions brought to life by emerging technologies. Product expansion now includes nearly 100 total categories such as composite materials, resurfacing agents, mixers, pavers, pumps, ready mix and many others.

In addition, there will be comprehensive education programmes and learning experience in the event's history, surpassing 150 sessions. Topics will cover technical applications, best practices for business, project management and critical safety protocols for every skill level and industry role. Besides new programming, WOC is also bringing back several of the most popular technical seminar series, industry certifications with exams, interactive workshops, featured education sessions, redesigned surveying development and industry training courses.

Key educational highlights:

- Over 150 sessions of core, in-depth learning opportunities for every concrete and masonry professional.
- **60+ brand-new topics** added to this year's programme, addressing current industry challenges and emerging trends.
- Bilingual Learning Environment, with Wordly available for certain education sessions, with captioning and translation capabilities allowing attendees to read live captions or listen to audio in dozens of languages using their own devices.

New educational sessions include:

- **A).** Economic Forecast with Ed Sullivan and Pierre Villere, navigating economic volatility with strategic insights from distinguished economists revealing critical market projections and sector-specific intelligence.
- **B).** Engineering: Designing for Constructability. A comprehensive programme for engineers, architects and designers focused on improving concrete construction efficiency through strategic design choices.
- **C).** Engineering: Bridging the Gap Between General Contractor & Engineer. A revolutionary workshop addressing collaboration challenges and improving construction productivity through enhanced communication.
- D). The Future is Bright and Blended: Ensuring the Performance of Concrete Mixtures. This industry panel provides a comprehensive overview of blended cements currently available for use in concrete, combining technical guidance with real-world applications. Attendees will gain insights into current cement types and specifications, practical approaches to trial batching and mixture optimisation, and valuable lessons learned from large-scale construction projects.







ALL IMAGES: World of Concrete will return on 20-22 January 2026 at the Las Vegas Convention Centre, offering more product categories and expanded educational sessions.

The programme begins with updates on blended cement standards and specifications, followed by strategies for trial batching and performance optimisation in ready-mixed concrete. Case studies from major construction projects highlight practical challenges, solutions and proven applications in the field. Interactive polling will engage participants throughout the session, gauging audience knowledge and experience. The programme concludes with a moderated panel discussion featuring all presenters, offering an opportunity for deeper dialogue and audience-driven Q&A.

- **E).** Women at Work: Tools, Allies & Strategies for Career Growth Strategies in Construction. An empowering session combining research and practical advice for career advancement, diversity and industry leadership.
- **F). Robotic & High Tolerance Floors.** A cutting-edge seminar addressing the growing robotic material handling industry and high-precision flooring specifications.

Early bird registration is now open with special pricing available through 12 December 2025. ■

Website: www.worldofconcrete.com

Korea International Construction and Industrial Safety Expo closes 2025 edition with 'record-breaking result'

The 2025 Korea International Construction and Industrial Safety Expo (K-Consafety Expo) has closed with a record-breaking result, announced the organisers. The event was held from 17 to 19 September at the Korea International Exhibition Centre (Kintex) in Goyang, South Korea.

Launched in 2019 and now in its seventh edition, K-Consafety Expo is co-organised by Kintex and My Center, with support from the Ministry of Employment and Labour; Ministry of Land, Infrastructure and Transport; Gyeonggi Province; and Korea Occupational Safety and Health Agency. According to the organisers, it is the nation's only specialised exhibition integrating construction and safety technologies.

Reflecting the government's policy priorities and rising social interest in construction safety following recent accidents, this year's edition achieved the largest scale in its history. It drew a total of 184 exhibitors and over 10,000 visitors from the construction industry, marking a 15% increase in exhibitors and a 39% increase in visitors compared to last year. In particular, the concurrent hosting with the Korea Safety Expo, organised by the Ministry of the Interior and Safety, resulted in a combined participation of 560 companies across both events.

K-Consafety Expo 2025 also introduced a Special Underground Safety Pavilion, jointly organised with the Korea Underground Safety Association, in response to growing public concern over sinkholes and ground safety. The 30-booth pavilion featured technologies for ground subsidence prevention and monitoring, including GeoST's ground displacement monitoring system and Smart Iris' AloT-based measurement management technology. The new technology presentation by certified companies of the Korea Underground Safety Association provided valuable solutions for clients and contractors seeking advanced underground safety measures.

More than 20 conferences and sessions – including the Smart Construction Seminar, Smart Construction Tech Day and Hyundai Construction Innovation Day – created a vibrant platform for technology exchange. The fourth Construction Safety Leaders Forum, which gathered over 100 leaders from government agencies and construction companies, featured in-depth presentations and discussions on 2025 Construction Industry Occupational Accident Prevention Policies. In addition, the Gyeonggi Province Occupational Safety Contest Award Ceremony and regional construction safety training programmes further strengthened the event as a hub for networking and collaboration.

The highlight of the event was the mainstreaming of Aldriven smart construction safety solutions. Technologies once considered emerging – such as Al, big data, robotics and drones – are now ready for on-site deployment. Exhibitors showcased groundbreaking solutions, including:

- AloT-integrated construction safety control systems (Huren, Upleat, RiskZero, Asiana IDT).
- Korea's first exoskeleton-type wearable safety robot for construction workers (FRT Robotics).
- Smart safety helmets powered by advanced fusion technology (Asguard).





ALL IMAGES: K-Consafety Expo 2025 drew a total of 184 exhibitors and over 10,000 visitors from the construction industry, marking a 15% increase in exhibitors and a 39% increase in visitors compared to last year.

- Drone and Al-based facility inspection solutions (Velonex).
- Other notable products included the world's smallest and lightest 1.5-m safety block (International Safety Products) and ultra-light functional waterproof safety shoes (K2 Safety).

To promote construction safety solutions and market expansion for related companies, Kintex and five major construction safety associations co-hosted the K-Consafety Awards. Winners included:

- Innovation Technology Award: TiltPro for its safety rotation link
- ESG & Sustainable Growth Award: K2 Safety for its heat illness prevention campaign, presented by the Construction Safety Executives Association

Kintex CEO Jae-Yul Lee stated, "Construction remains the industry with the highest share of occupational accidents. We are now entering an era of smart construction management leveraging advanced technology for accident prevention. Through this expo, Kintex will continue to lead the way in promoting state-of-the-art construction safety solutions."

The next K-Consafety Expo is scheduled to take place from 14 to 16 October 2026, with exhibitor applications opening in October this year. ■

Website: www.k-consafetyexpo.com

CBA Expo and Concrete Expo Asia 2025 conclude, generating 'over THB 110 mil' in trade transactions

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 and conference, were held on 24-26 September at BITEC Bangna in Bangkok.

According to the events' organiser, BMEX Ltd, the overall number of visitors exceeded 2,325, with 88% of them coming from Thailand and the rest from abroad including Myanmar, Singapore, Indonesia, the Philippines, China, and others. Over 100 brands of machinery, tools, equipment, spare parts and technologies were showcased at both events. There were also equipment demonstrations and seminars on a variety of topics.

The events generated more than THB 110 million in negotiated sales, shared BMEX, demonstrating the construction industry's sustained expansion from late this year into next year, despite the overall economic downturn. "This is because the industry has adapted and transformed, utilising efficient machinery and technology to cut prices, time, labour and other expenses while maintaining high-quality work," said the organiser. "And this is one of the reasons why the construction, mining and concrete machinery and technology businesses continue to do well."

BMEX is also optimistic about the future expansion of the construction, mining and concrete industries, as well as the ongoing development of breakthrough machinery technologies. As a result, CBA Expo and Concrete Expo Asia are set to return in 2026, taking place on 23-25 September at BITEC Bangna. The events will continue to support growth in Thailand and the region's construction, mining and concrete industries by showcasing leading machinery brands.

Website: www.cba-expo.com / www.concrete-expoasia.com













ALL IMAGES: CBA Expo and Concrete Expo Asia 2025, held on 24-26 September in Bangkok, attracted visitors from Thailand and abroad such as Myanmar, Singapore, Indonesia, the Philippines, China, and others. The events generated more than THB 110 million in negotiated sales.

Building Singapore:

THE NEXT 60 YEARS AND BEYOND

With the construction industry facing increasing challenges in today's fast-paced environment, *Southeast Asia Construction (SEAC)* met with **Obayashi Singapore**, one of the country's leading contractors, to find out about new methods, materials and technologies that will shape the future of worksites.

Singapore celebrates its 60th birthday this year, and so does Obayashi Singapore. The Japanese company opened its local office in 1965, and since then, it has been involved in building some of the country's most iconic landmarks – from Jewel Changi and Mandai Bird Paradise to the upcoming New Science Centre.

At the recent International Built Environment Week (IBEW) and BEX Asia 2025, Obayashi unveiled a bold new chapter for the next decades of construction, driven by advanced robotics and automation, climate-positive materials, and remote-controlled technology.

'Overcoming challenges is crucial'

"Singapore's construction industry will face several significant challenges moving forward. One of the primary concerns is sustainability; the industry must innovate to reduce carbon emissions, adopt green building practices and meet stricter environmental regulations," explained Patrick Chia, director at Obayashi Singapore, in an interview with SEAC during BEX Asia.

"Climate resilience also poses a challenge, requiring infrastructure that can withstand extreme weather conditions and rising sea levels. Additionally, ageing workforce and manpower shortage remain critical issues. The industry needs to invest in automation, upskilling and attracting younger talent to maintain productivity and quality.

"Technological integration, such as building information modelling (BIM) and smart construction techniques, is essential but requires significant investment and adoption. Lastly, managing costs amidst rising material and labour prices while maintaining safety and quality standards will be an ongoing balancing act. Overcoming these challenges will be crucial for a sustainable and resilient future of the industry in Singapore."

Mr Chia shared the similar traits between Japan and Singapore – which will provide a conducive environment for Japanese construction innovations to be developed and adapted to Singapore's local setting.

Both markets "emphasise the adoption of advanced construction technologies such as BIM, modular construction and prefabrication to improve efficiency and reduce costs. The two countries also prioritise sustainable development, incorporating eco-friendly materials, energy-efficient designs, and green building standards like LEED and BCA Green Mark."



Patrick Chia, director at Obayashi Singapore, talked to SEAC about the future of Singapore's construction industry.



Obayashi booth at BEX Asia 2025 showcased advanced robotics and automation, climate-positive materials, and remote-controlled technology.

"Moreover, rapid urban growth drives significant infrastructure projects in both countries, including high-rise buildings, transportation networks and smart city initiatives," added Mr Chia.

"Another similarity is that strict building codes, safety regulations and quality assurance practices are integral to project planning and execution in these countries. Plus, they both invest in training and developing a highly skilled construction workforce to meet the demands of modern urban projects in the light of an increasing ageing population."

Game-changing technologies

One of the latest innovations at BEX Asia was a remote-controlled excavator, showcased as part of 'Obayashi SG60 Vision' exhibition. The company presented a live demo of the technology, operated in real-time from BCA Academy Braddell Campus.

Mr Chia highlighted numerous advantages of employing this technology, which can help tackle some of the industry's biggest challenges. "Obayashi's system can be fitted into most modern excavators, making it a universal system that is easily adaptable and deployable," he said. "Once the system is set up, the operation is similar to a traditional excavator, therefore the training and adoption rate can be very high. It can also be adapted to different types of machines, such as dozers or wheel loaders.

"The system enhances safety by using additional cameras and sensors, which improves the visibility and situational awareness of operators. Compared to autonomous systems which require additional safety clearance from relevant authorities, this remotecontrolled system is in line with Singapore's safety regulations."

"The system is best deployed in harsh and dangerous conditions so that the human operators can be isolated from on-site safety hazards," continued Mr Chia. "On top of that, the remote-controlled system can be installed anywhere with connectivity – this allows for better working conditions for the operators as well as centralisation. We foresee future potential to centralise operators so that we can optimise the human resource that is becoming scarce."

In Japan, Obayashi has deployed its remote-controlled machines on various projects. The company also plans to trial this technology in Singapore.

"After 60 years, Singapore has come to a stage where many of its buildings need to be demolished. This is when a remote-controlled machine should step in, as the operator can carry out the demolition work safely from a distance," said Mr Chia.

Separately, Obayashi has deployed its autonomous tower crane and machine guided crawler crane on HDB's Construction Transformation Project in Tengah. These solutions aim to increase productivity, improve safety and reduce reliance on manpower.

Al is being used in the autonomous tower crane integrated with Skyjuster. This will enable HDB to build flats faster and safely, compared to traditional construction methods. The crawler crane is equipped with GNSS, LiDAR and boom sensors to improve safety on the jobsite.

Furthermore, Obayashi has introduced its 3D printing technology in Singapore. This advanced method allows for more expressive designs in construction, enhances safety and construction quality, minimises labour requirements, and shortens the project schedule.

According to Obayashi, unlike traditional methods which can take days to produce and are limited to only a few structural shapes, the 3D printer's flexible control over the thickness of layered materials produces previously challenging designs — instantly.





ABOVE: Obayashi's remote-controlled technology can be installed anywhere with connectivity, resulting in better working conditions for the operators as well as centralisation.

LEFT: The system enhances safety by using additional cameras and sensors, which improves the visibility and situational awareness of operators.





In Japan, Obayashi has used its remotecontrolled machines on various projects. This technology is ideal for harsh and dangerous conditions so that the human operators can

be isolated from on-site safety hazards.

ABOVE AND LEFT:

"We are proud to share that we are one of the first companies in Singapore to have developed and commercialised our 3D printing technology," said Mr Chia. "Coupled with our in-house structural design, BCA has approved our 3D printing technology and design to be used for a structural element. This will be showcased at our Tengah project in collaboration with HDB."

For the Tengah project, Obayashi is creating a 3D-printed Botanic Arbor — a self-supporting, flowing structure that blends smoothly with the surrounding greenery. It is scheduled to be completed later this year. Mr Chia expects it to become "the first 3D-printed structural element in Singapore."

In Japan, Obayashi has employed its 3D printing technology to create outdoor benches, a ticket booth, precast components for installation underwater, and a 3dpod building.

Mr Chia pointed out that "if we want to use technology, we must grow with technology. We believe that technology must be shared, because ultimately, we will not only upgrade ourselves but the entire industry."

Greening construction sites

On green construction materials, Obayashi has developed Clean-Crete (low-carbon concrete). It replaces most of the cement with industrial by-products that generate less CO2 (e.g. ground granulated blast furnace slag and fly ash), reducing CO2 emissions by up to 80% compared to ordinary concrete.

Clean-Crete has been adopted in approximately 120 building and civil engineering projects across Japan, with a cumulative placement volume of about 443,000 cu m and an estimated CO2 emissions reduction of roughly 100,000 t, shared Obayashi.

The product has the same workability as ordinary concrete and meets the same construction standards and regulations. "It is fully mature in Japan. We will be working with Singapore's authorities, testing labs and universities to certify its use in the local market," said Mr Chia.

Clean-Crete N is an advanced version of Clean-Crete that makes achieving carbon negativity during production possible. Carbon emissions can be reduced by up to 120% approximately.

In addition, Obayashi is piloting the use of green steel in collaboration with Lendlease at the Comcentre redevelopment project.





ABOVE AND LEFT: Obayashi has deployed its autonomous tower crane and machine guided crawler crane in Singapore. These solutions aim to increase productivity, improve safety and reduce reliance on manpower.

BELOW: Obayashi's low-carbon concrete, known as Clean-Crete, replaces most of the cement with industrial by-products that generate less CO2 (e.g. ground granulated blast furnace slag and fly ash).



On construction sites, all of Obayashi's projects deploy battery energy storage systems (BESS) to power heavy equipment such as tower cranes and passenger hoists. "Overall savings in fossil fuel is more than 60%," revealed Mr Chia. "This is currently a more feasible solution compared to electric-powered machines that have not been tested in the field."

When it comes to electric machines, "it is important for us to consider the whole

process – where do we get the power from, what happens to the batteries at the end of their service life, etc. – before deciding to go ahead with it."

Mr Chia added that Obayashi will also be piloting the use of green hydrogen fuel cells to replace fossil fuel generators in one of its projects at New Science Centre. "This will further reduce our carbon footprint as part of our commitment to sustainability."

The importance of collaboration

As a leading contractor in Singapore, Obayashi plays a key role in supporting its local partners in their digital and sustainability journey. For example, the company organises study trips overseas (e.g. Japan) for its partners to "witness the benefits of embracing technology beyond what's existing in Singapore," shared Mr Chia.

"We utilise common platforms such as Autodesk and Glodon consistently across all projects so that our subcontractors can invest in technology with assurance of continuity. We also incorporate them into our subcontracts, in order to create a level playing field for all subcontractors who tender for Obayashi's projects."

In recent years, the Singapore government has been encouraging the adoption of collaborative contracting in delivering construction projects, both in public and private sectors. Such an approach allows the project owner and its main partners (architects, consultants and contractors) to cooperate closely towards common goals. Obayashi sees this effort as a positive change that will benefit the industry.

"Collaborative contracting fosters transparency and early involvement of all stakeholders, enabling better planning, risk management and cost control," explained Mr Chia. "It is also building trust and open communication channels with clients, consultants and suppliers, leading to smoother project execution and problemsolving. Early collaboration helps identify potential conflicts or scope changes upfront, minimising disputes, claims and rework during construction.

"In addition, coordinated workflows and sharing of real-time information create efficiencies, shorten project timelines and optimise resource utilisation. Collaborative environments further encourage innovative solutions, sustainable practices and value engineering that benefit all parties. What's more, successful collaborative projects can lay the foundation for repeat business and stronger relationships with clients and partners."

Mr Chia emphasised, however, that collaborative contracting will only work "when all partners can bring value to the table. Every party should contribute and help to de-risk the project."

Attracting the next generation

With the shortage of skilled professionals in construction, Obayashi has been investing in making the industry a dynamic and





ABOVE: Obayashi is moving away from the traditional methods of construction, as the company strives to make the industry a dynamic and rewarding choice for the young generation.

LEFT AND BELOW: Obayashi has introduced its 3D printing technology in Singapore. The method allows for more expressive designs in construction, enhances safety and quality, minimises labour requirements, and shortens the project schedule.

rewarding choice for the young generation.

The company offers scholarships, internships, mentorship programmes and management skills training. "Our HR performance appraisal system ensures clear growth pathways. We have been nominated as Employer of the Year by the SPH for both 2024 and 2025," said Mr Chia.

"We have to attract young people to rejuvenate the industry," he stressed. "For the past 10 years, the average age of our workforce has decreased from about 50 to 24-25 now. A lot of our programmes are currently designed to attract young people into the company. From there, we try to retain their interests with technology like BIM, robotics, AI."

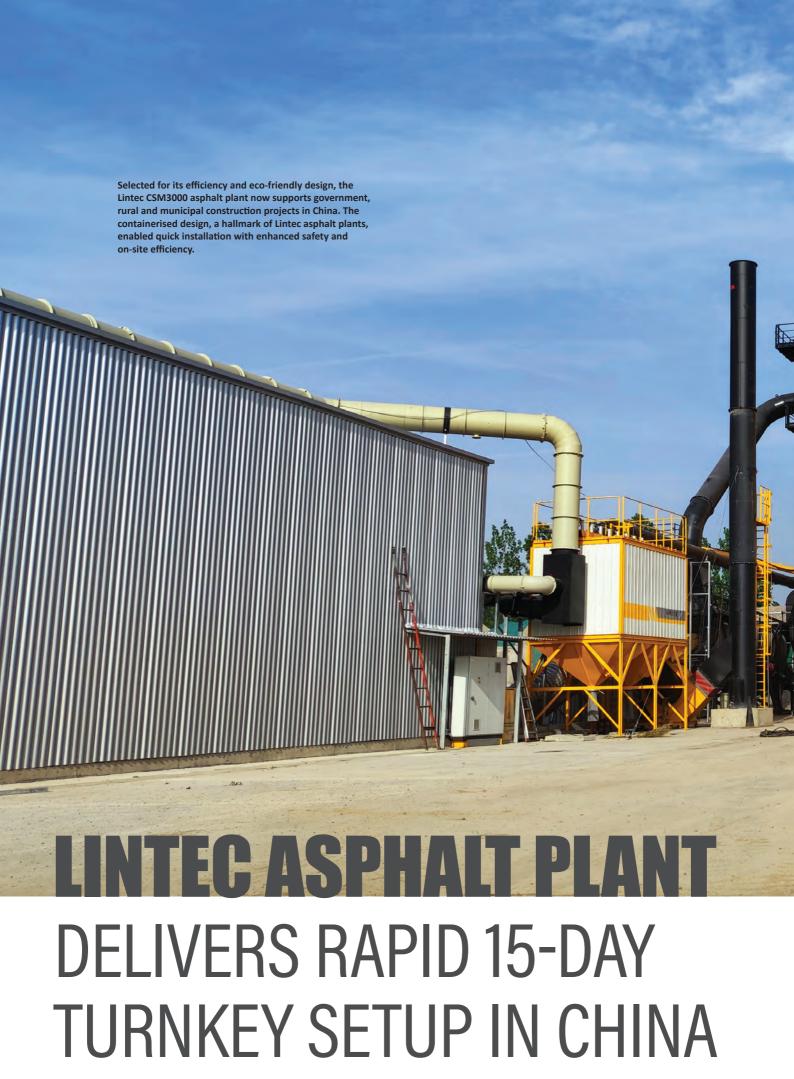
Obayashi is moving away from the traditional methods of construction. The introduction of its remote-controlled machines at BEX Asia is part of this initiative. Mr Chia described the transformation as "gamification of technology", which enables young professionals to work on "real-world projects remotely yet competently. We need to make the job more fun for them."

To Obayashi, there are three key factors that determine the company's success:



people, leadership and technology. "It starts with people, then leadership," affirmed Mr Chia. "With these two, you are able to decide on the technology you want to implement."

He reiterated, "Once we have the right people, we can work together to take the company forward."





intec & Linnhoff has successfully commissioned its Lintec CSM3000 containerised asphalt mixing plant in just 15 days at the Hubei Dangyang Highway Maintenance Centre, China, demonstrating the company's capability to deliver fast, efficient and high-performance solutions.

Selected for its excellent environmental credentials and high productivity, the Lintec CSM3000 is now fully operational, supporting a range of government-backed infrastructure projects, rural road construction and municipal works.

Delivered as a complete turnkey project, the Lintec & Linnhoff team oversaw every stage of the process, from plant transportation and installation to commissioning and operator training. All equipment components arrived on site on 1 April, and installation was completed efficiently and systematically by the company's engineering team.

Commissioning was finalised on 14 April, with asphalt production beginning the following day. With a rated capacity of 240 t/hr, the plant has already delivered nearly 10,000 t of

high-quality asphalt mix. The containerised design, a signature feature of Lintec asphalt plants, played a key role in enabling a swift and efficient setup, helping to minimise installation time while maximising safety and on-site efficiency.

"Due to stricter environmental requirements, our previous plant was no longer suitable, so we sought a modern, eco-friendly asphalt mixing solution. After evaluating several brands, we selected the Lintec CSM3000. We were amazed by how quickly it became operational," said Mr Liu, plant manager of Dangyang Yuyang Highway Maintenance Limited Liability Company.

"From installation and commissioning to training, the professionalism of the Lintec & Linnhoff team left a deep impression on us. Their engineers demonstrated not only superb technical ability, but also a dedicated work ethic."

Kang Zhijiao, general manager, southern region sales Lintec & Linnhoff, added, "This project demonstrates the advantages of our containerised technology and turnkey capabilities. Our efficient processes help customers reduce downtime and accelerate project delivery. We are proud to support Dangyang's infrastructure development with our reliable and sustainable asphalt mixing solutions."

Website: www.lintec-linnhoff.com



ABOVE AND BELOW: With a 240 t/hr capacity, the CSM3000 plant has already produced nearly 10,000 t of premium asphalt mix. Delivered as a complete turnkey project, the Lintec & Linnhoff team oversaw every stage of the process, from plant transportation and installation to commissioning and operator training.





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Incheon New Port Expansion

INCHEON NEW PORT, LOCATED JUST 40 KM WEST OF SEOUL IN SOUTH KOREA, IS UNDERGOING A MAJOR EXPANSION AS PART OF THE INCHEON NEW PORT STAGE 1-2 PROJECT. THIS DEVELOPMENT AIMS TO INCREASE THE PORT'S CAPACITY AND UPGRADE ITS FACILITIES TO ACCOMMODATE GROWING CARGO VOLUMES AND LARGER CONTAINER SHIPS. SCHEDULED TO BE COMPLETED BY 2025, THE NEW CONTAINER TERMINAL IS EXPECTED TO BOOST THE PORT'S HANDLING CAPACITY TO FIVE MILLION TEUS BY 2030.

wan-Ak Co Ltd was appointed to carry out the dredging work and construction of the lower structure of Incheon New Port's Stage 1-2 container wharf. Founded in 1998, the South Korean company specialises in a range of construction services, including underwater construction, dredging, reinforced concrete work, earthworks, scaffolding dismantling and boring grouting.

Sitting atop a barge in the Yellow Sea, Gwan-Ak's Sennebogen 6300E plays an important role in building the container wharf. This towering offshore crane is engineered to lift and manoeuvre heavy materials with precision, enabling rapid assembly to maximise operational efficiency.

Upon completion of the dredging phase, the crane's precise load handling capabilities are utilised. From offshore, the duty cycle



RIGHT: A Sennebogen 6300E duty cycle crane with a lifting capacity of up to 300 t being used in the expansion project. When completed, this new development will increase the port's capacity and upgrade its facilities to accommodate growing cargo volumes and larger container ships.

crane lifts and positions heavy-duty concrete framework mould used to create the port apron. Once in their designated positions, the moulds are then assembled and filled with concrete. The crane operates for eight hours a day, with work sometimes dependent on weather conditions.

The Sennebogen 6300E duty cycle crane offers a high lifting capacity of up to 300 t. This makes lifting the large concrete moulds a straightforward task. Its hydraulic lifting system and advanced control mechanisms ensure heavy materials are accurately and efficiently placed.

Sennebogen sales and service partner, Kilwoo Co Ltd, recommended the Sennebogen 6300E to Gwan-Ak due to its load-bearing capacity and operational compatibility with the project's requirements, along with the manufacturer's track record.

Mounted on a barge and equipped with a 2.5-m pedestal mount and 46.7-m-long boom, the Sennebogen 6300E is Gwan-Ak's first crane purchase for its own use. It was delivered in 2023 and assembled in South Korea. This marks a change from the country's usual practice, where offshore cranes are typically 20 to 30 years old, second-hand and often sourced from Japan.

"Sennebogen duty cycle cranes are renowned for their high performance and reliability. With safe working loads of up to 300 t, the Sennebogen 6300 E is especially well-suited for heavy lifting operations," said JH Choi, sales manager at Kilwoo Co Ltd. "Additionally, the customer appreciates its easy maintenance and accessibility of spare parts."

Website: www.sennebogen.com



FROM LEFT: TY Jang, operator of Sennebogen 6300E and JH Choi, sales manager at Kilwoo Co Ltd.













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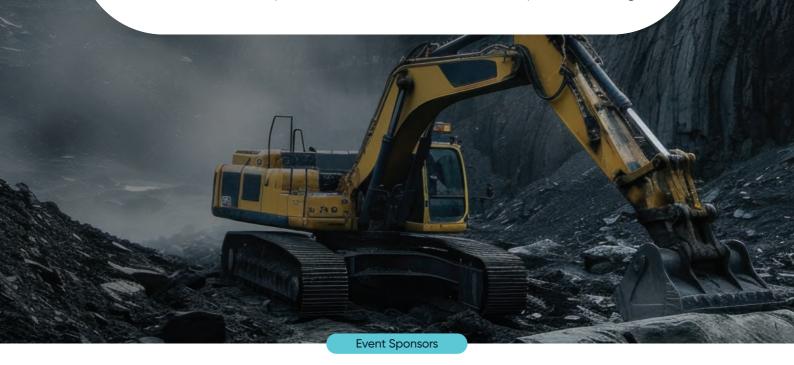
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BUILDING SINGAPORE'S FIRST POLDER



singapore has reclaimed about 800 ha of land at the north-western tip of Pulau Tekong, with the completion of main construction works for the country's first polder, announced the Housing & Development Board (HDB) and national water agency PUB in a joint press release. This reclaimed land will be used for military training purposes, freeing up space on the mainland for other uses, such as developing new homes and amenities for the residents.

The completion of main construction works for the polder via the empoldering method marks the first time Singapore has reclaimed land below the mean sea level. Compared to the traditional land reclamation method of infilling with sand to reclaim land above sea level, the empoldering method uses less sand. This has resulted in close to 50% of savings in sand used for the reclamation.

Using this method, a tract of dry land below the surrounding sea level has been



TOP: A 10-km-long coastal dike protects the low-lying polder land from the sea. Natural materials are used on both sides of the coastal dike.

ABOVE: The natural rock layer covering the seaward side of the coastal dike's wall sensitively integrates the polder's coastline with its natural surroundings.

created by constructing a coastal dike and a network of drains and water pumping systems, as well as a stormwater collection pond. Together, these features protect the area from rising sea levels and more intense rainfall due to climate change:

Robust coastal dike

The 10-km-long coastal dike runs along the perimeter of the polder and protects the low-lying polder land from the sea. It stands at up to 6 m above mean sea level at its highest point, and allows for the polder land to lie about 1.2 m below mean sea level. The coastal dike height can be raised if needed, to adapt to future increase in sea levels.

This coastal dike was the first key infrastructure to be completed, as it was necessary to fully enclose the area being reclaimed to manage water levels within the polder. A road that runs along the entire crest of the coastal dike has also been built to facilitate maintenance works. This road, together with another 21 km of roads constructed within the polder land, allow vehicles to safely navigate the polder.

To ensure its robustness and prevent erosion of its sand core, the coastal dike is constructed with a variety of materials and structures:

A). Cement bentonite inner wall

Within the coastal dike is a cement bentonite wall, which forms a barrier to keep any seepage of seawater through the coastal dike to a minimum. Any seawater seepage is collected in a seepage drain and pumped out of the polder. This prevents seawater from entering the freshwater drainage network on the polder and helps to maintain the salinity levels in the stormwater collection pond

B). Nature-based solutions

The seaward side of the coastal dike is covered with a layer of natural rock which is effective in absorbing wave-impact to ensure the coastal dike remains robust, and also cost-effective for both construction and maintenance. Additionally, the naturalistic look of the rock enables the polder's coastline to blend in more sensitively with its natural surroundings.

Meanwhile, the landward side of the coastal dike slope has been designed with a verdant covering. This helps to reduce ambient heat and beautify the landscape. The selected Bermuda grass has a deepreaching root system which allows it to hold the soil firmly together. This mitigates the erosion of the coastal dike during rain, or in the unlikely event



ABOVE: During dry weather, water is recirculated by pumping water from the stormwater collection pond to the polder drainage network (pictured) to prevent stagnation.

BELOW: Multiple outlet structures run through the coastal dike and help channel excess water from the polder out into the sea.





Cofferdams were installed to keep the construction areas of the outlet structures sufficiently dry, before the coastal dike was built over the completed outlet structures.

of water from large waves flowing over the top of the coastal dike and into the polder land. The Bermuda grass is also a hardy plant which grows well in Singapore's hot tropical climate and can tolerate a saline environment.

Comprehensive water management system

Due to Singapore's high rainfall and the polder's low-lying nature below mean sea level, managing stormwater runoff requires special attention. The polder's water management system comprises a stormwater collection pond, two pumping stations, and an extensive 45 km of drainage network with more than 30 water control, inlet and outlet structures with gates to manage rainfall.

During dry weather, water is recirculated by pumping water from the stormwater collection pond to the polder drainage network to prevent stagnation.

The outlet structures run through the coastal dike and help to channel excess water (collected within the polder) out to the sea. As these outlet structures had to be built on-location, they required a dry environment to construct. However, this posed a challenge as the structures had to lie below mean sea level, and had to be constructed first before the corresponding segment of the coastal dike could be built.

To overcome the challenge, temporary water-retaining structures (cofferdams) were installed to keep the construction areas of these outlet structures sufficiently dry, before the coastal dike was built over the completed outlet structures.

The polder's cofferdams were made primarily of steel sheet piles, which were driven up to 26 m deep into the ground to ensure they were strong enough to keep seawater out of the construction area. Temporary pumps were also deployed to pump stormwater out of the area, until the drainage pumping station was ready for operation. After the outlet structures and coastal dike were completed and able to keep the seawater out of the polder, the cofferdams were removed.

The drainage system on the polder is monitored and operated by PUB through the fully automated Supervisory Control and Data Acquisition (SCADA) system at the operation control centre located within the drainage pumping station. The system is directly connected to PUB's joint operations centre to allow for remote monitoring. PUB has also installed more than 170 CCTVs and over 260 sensors to monitor the dike as well as the water quality and water level within the drainage network.

Stormwater collection pond & water pumping stations

When it rains, runoff within the polder and the Pulau Tekong catchment area is conveyed to the 116-ha stormwater collection



A cement bentonite wall in the coastal dike minimises seawater seepage. (This drawing image is not drawn to scale).



The seepage drain on the landward side of the coastal dike.



Bermuda grass covers the landward side of the coastal dike to mitigate erosion, while beautifying the landscape.



When it rains, runoff within the polder and the Pulau Tekong catchment area is conveyed to the 116-ha stormwater collection pond (pictured) to mitigate flooding within the polder.

pond to mitigate flooding within the polder. Once the water level in the stormwater collection pond reaches a pre-set operating level, excess water is channelled to the drainage pumping station to be pumped out into the sea. This stormwater collection pond is designed to hold up to 5 mil cu m of water, equivalent to 2,000 Olympic-sized swimming pools.

The central pumping station located next to the stormwater collection pond circulates water in the drains to ensure good water quality, while the drainage pumping station located next to the coastal dike helps to pump excess rainwater into the sea when the stormwater collection pond is full.

Reducing sand use

Over 10 mil cu m of clayey soil, enough to fill about 4,000 Olympicsized swimming pools, was dredged from the construction of the polder's stormwater collection pond. This presented HDB the opportunity to further reduce the use of sand by repurposing some of the clayey soil as infilling material for the polder land.

Due to the high water content of the soil, improvement works to strengthen the soil had to be carried out first, to ensure minimal land settlement. For example, after infilling an area with a layer of clayey soil, prefabricated vertical drains (PVDs) were inserted at regular intervals into the soil to create drainage paths. The soil was then overlaid with a layer of sand to compress it and force the water in the soil to drain upwards through the PVDs. The process transformed the soft soil into sturdy usable land, ready for development.

In designing the coastal dike and its safety provisions, HDB and PUB drew on the deep experience of the Netherlands, which has the world's highest standards for dike safety, to ensure the longterm viability and safety of the polder land.

Prefabricated vertical drains (PVDs) were inserted to drain water out of the clayey soil. The process transformed the soft soil into sturdy usable land, ready for development.

All images: HDB (unless stated otherwise)





AFCONS 'TRANSFORMS' MALDIVES WITH TWO MAJOR PROJECTS

India-based contractor Afcons Infrastructure is playing a key role in reshaping the Maldives through two transformative projects – the recently completed Addu City Development Project and the ongoing Greater Malé Connectivity Project (GMCP).

he Addu City Development Project includes 111 km of roads, a detour link road of 1.4 km comprising two ocean bridges, 106 km of drainage works, 160 km of street lighting, 376 CCTV cameras, 41 km of utility duct and 38 pumping stations across Hithadhoo, Maradhoo, Maradhoo-Feydhoo, Feydhoo, Hulhudhoo and Meedhoo. It has significantly improved mobility, public safety and brought relief to residents from frequent flooding, among others.

Meanwhile, the Greater Malé Connectivity Project (GMCP) is progressing on a fast track, with Afcons completing the challenging piling works and achieving an overall work completion of 60% (as of July 2025). A total of 264 piles were installed across 68 locations, including 75 marine piles, 85 shallow piles and 104 land piles. One of these marine piles reached a depth of 120 m – one of the world's deepest.

Touted as the largest infrastructure project in the Maldives, the GMCP will link Malé, Villingili, Gulhifalhu and Thilafushi through a 6.74-km network comprising three navigation bridges (each with a 140-m main span), deep and shallow water marine viaducts, and at-grade roads. Segment erection is underway, with each precast segment measuring 8.32 m in height, 25.37 m in width, and weighing 240 t — among the tallest ever cast globally.

"Both the Addu City and GMCP projects are very challenging. The execution of these projects reflects our commitment to building resilient and future-ready infrastructure," said S Paramasivan, managing director of Afcons. "From easing urban challenges in Addu City to connecting key islands through GMCP, we are proud to be shaping a new era



ABOVE: Currently under construction, the Greater Male Connectivity Project (GMCP) will link Malé, Villingili, Gulhifalhu and Thilafushi through a 6.74-km network comprising three navigation bridges, deep and shallow water marine viaducts, and at-grade roads.

OPPOSITE: A detour link road of 1.4 km, part of the Addu City Development Project which has recently been completed.

of connectivity and development in the Maldives."

S.M. Viswamurthy, project director of GMCP at Afcons, added, "The scale and complexity of the GMCP are unlike anything the Maldives has witnessed before. The situation was more complex

as construction material and machinery had to be sourced from outside Maldives. Completing the piling works under such challenging marine and geotechnical conditions marks a major milestone and enables us to fast-track the next phases of construction."



NEW OCTOPLUS 30 TRACKED PLATFORM FROM TADANO

ith a maximum working height of 29.6 m, Tadano's new Octoplus 30 tracked platform (Oil & Steel Series) positions itself at the top of its class, offering a reach that allows access to elevated points even in complex environments.

The unit's 16-m maximum outreach ensures efficient operation when direct access is not possible, while the 280-kg maximum load capacity enables multiple operators to work at height with equipment — without compromising on safety.

RIGHT AND BELOW: Tadano's new Octoplus 30 tracked platform is suitable for various applications, such as construction, urban maintenance, industrial installations and specialised operations.







 ${\tt ABOVE\ AND\ BELOW:}\ \textbf{The\ Octoplus\ 30\ tracked\ platform\ has\ a\ maximum\ working\ height\ of\ 29.6\ m.}$





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NEW **VÖGELE** ROAD PAVERS AND MATERIAL FEEDERS OF DASH 5 GENERATION



ögele's new Super 1803-5 X-Tier, unveiled at bauma 2025, is the first wheeled paver of the Dash 5 generation. Equipped with the Dash 5 extending screeds AB 500 and AB 600, the machine features operating widths of between 2.55 m and 8.25 m.

This Universal Class representative of the new generation combines the advantages of a wheeled paver – high manoeuvrability and mobility during relocation – with the advantages of the Dash 5 machines: greater ease of operation, automated processes, shorter set-up times, and low noise and exhaust emissions.

With the enhanced operating concept ErgoPlus 5, Vögele offers a better overview, more convenience and storage options, improved ergonomics and an optional touch display for digital applications. The new Paver Access Control (PAC) function makes it easy to switch the Super 1803-5 X on and off from the ground.

In addition, the Light Package Plus option ensures greater safety and reduced set-up times on night-time construction sites. With automatic functions such as Grade Assist for paving roof and transverse pavement profiles, the automatic steering and width control system AutoTrac or the Smart Pave digital control system,

the new paver makes life easier for users – and increases efficiency and quality at the same time.

Compared to the Dash 3 predecessor, Vögele has also reduced fuel consumption, CO2 and noise emissions. The new four-cylinder diesel engine consumes significantly less fuel with the same output. The optimised EcoPlus low-emissions package is the main contributor to this. The speed-controlled fan has been adapted so that it calculates the rotational speed even more precisely and, together with other measures, minimises noise emissions.

Mini Class paver

The new-generation Mini Class paver, the Super 800-5 P-Tier, is equipped with the extending screeds AB 200 and AB 220. The machine has operating widths of between 0.5 m and 3.5 m, making it ideal for narrow construction sites.

A major advantage of this new mini paver is the optimised material hopper. Firstly, both hopper walls can now be adjusted hydraulically, allowing the best possible position to be set based on the material feed. The asymmetrical setting, for example for working along a wall, can be implemented on both sides at the touch of a button. The hopper walls can also be folded in two, giving the operator an unrestricted view to the front.

Vögele has further optimised the operator's platform, so the Super 800-5 P offers an even better view of all areas relevant for the work. As before, the new ErgoBasic paver operator's console can be moved horizontally. Its angle can now be adjusted in four stages and ergonomically adapted to the height of the operator. The ErgoBasic 5 operating concept follows the operating logic of the larger machines, but has been specially adapted to the mini paver.

For the first time, the operator's console incorporates a display that allows the operator to view the machine's operating data. In addition, Vögele has fully integrated the operation of the Auto Grade Basic system for Automated Grade and Slope Control into the machine control system. This means that screed operators can now control the Super 800-5 P compactly via a console, just like the large Vögele pavers.

New material feeders

Vögele has also brought its material feeders up to Dash 5 level. The MT 3000-5 Standard and the MT 3000-5 Offset with swivelling conveyor belt are designed with the new ErgoPlus 5 operating concept, numerous additional convenient features and the optimised PaveDock Assistant truck communication system. Thanks to the new Dash 5 control technology, these material feeders can be integrated into the digital solutions from Vögele in future.

Both models provide a conveying capacity of up to 1,200 t/hr and can pick up the full load of mix from a lorry within 60 seconds. The clever material conveying concept with large receiving hopper and effective conveyor belt heating enables fast unloading and gentle conveying of the mix. Cooling and segregation are reliably prevented. The material feeders are maintenance-friendly and easy to transport. The drive-on angle and receiving hopper have been specially optimised for transport by a low-bed trailer.

Website: www.wirtgen.com







LIEBHERR'S LTM 1150-5.4E, LTM 1150-5.4 AND LTM 1055-3.3 MOBILE CRANES



LTM 1150-5.4E with electric drive

Unveiled at bauma 2025, the new Liebherr LTM 1150-5.4E mobile crane with electric drive meets the requirements of 'zero emissions construction sites', combining sustainability with maximum efficiency. This 150-t crane is equipped with a telescopic boom of up to 66-m long.

On and off-road, a 400-kW combustion engine with Stage 5 exhaust emission provides for powerful drive. The motor is fully compatible with hydrogenated vegetable oil (HVO) and, compared to diesel fuel, reduces operational CO2 emissions by up to 90%.

In crane operation, the choice between combustion engine or electric motor allows flexible use. The latter reduces both air and noise emissions to a minimum and is ideal for 'zero emissions areas, as well as noise-sensitive areas.

The newly developed drive features a 111-kW electric motor, which guarantees unlimited crane operation, offering virtually the same performance as the six-cylinder combustion engine. For the transfer of power to the consumers in the crane superstructure, the electric drive uses the existing gear shafts from the transfer gearbox in the chassis to the pump transfer gearbox in the superstructure.

The electric version complements the conventional model of the LTM 1150-5.4 with a water-cooled high-speed electric motor, a distributor gear, a battery and the necessary control technology. The electric motor's distributor gear is integrated cleverly between the chassis transfer gearbox and the gear shafts to the superstructure. As such, the operator can switch flexibly between diesel-hydraulic power and electro-hydraulic power.

The drive concept of the LTM 1150-5.4E is based on the Liebherr LTC 1050-3.1E compact crane, albeit with an important upgrade: an integrated battery pack. This concept brings two key advantages. Firstly, the crane can be operated autonomously for around four hours without a power connection thanks to its battery. Secondly, even a low connected load, around 16 or 32 Amps, is enough to unleash the crane's full power since the battery acts as an efficient buffer.

The crane draws high current strengths for peaks in performance from the battery, which is constantly recharged via the site's power source. Charging takes place via the CEE high-current plug with 16, 32 or 64 Amps and up to 44 kW of power or via a modern CCS plug for fast charging at up to 80 kW.

ABOVE: The new LTM 1150-5.4E is Liebherr's first electrically driven mobile crane with battery. It is equipped with a telescopic boom of up to 66-m long.

RIGHT: The electric motor powers the gear shaft to the pump transfer gearbox in the superstructure via a distributor gear. The battery pack is attached to the rear of the vehicle.





The 99-kWh battery is securely installed in a box weighing around 1.5 t at the rear of the crane. To enable driving on public roads, the ballast plates have been adapted accordingly – a carefully thought-out concept for maximum flexibility and efficiency on the construction site.

With the telescopic boom extended to its maximum length, the LTM 1150-5.4E can lift 9.1 t, making it suitable for erecting tower cranes and radio masts. On the construction site, this five-axle mobile crane can be immediately ready for use, since it already carries 9 t of ballast with a total weight of 60 t. So, it can carry out many jobs without requiring additional vehicles for the transport of ballast.

LTM 1150-5.4

The LTM 1150-5.4 mobile crane from Liebherr, formerly known as the LTM 1150-5.3, is equipped with the new Liccon3 control system as well as new driver assistance systems to increase driving safety on the road. This 150-t crane has a telescopic boom with a maximum length of 66 m.

The third generation of the Liccon control system (Liebherr computed control) — Liccon3 — features a completely new software and programming language, faster data bus, significantly more memory and higher computing power. Proven hardware components, like the mobile operating and BTT display unit, have been adopted.

The touchscreen function on the large display in the superstructure cab means that it is now even easier and more comfortable to control. The way in which the information is shown has also been revised and simplified. In addition, Liccon3 cranes are prepared for telemetry and fleet management as standard. In the future, crane contractors will be able to view and evaluate all the relevant data using the MyLiebherr customer portal.

The new driver's cabin features a modern design and various enhancements. These include the new multifunction steering wheel, side roller blind on the driver's door, improved instruments and modules as well as new displays. Additional convenience is offered by options such as a central locking system with remote key and the 'Coming and Leaving Home' function.

A new, automatic heating and air-conditioning system in both the driver's cab and the crane operator's cab ensures a high level of comfort. A sun sensor detects strong sunshine and automatically adjusts the heating settings. The lighting packages for the crane cab, the superstructure, the rear of the vehicle, the front headlights, the telescopic boom and the lattice fly jib have been optimised and can be operated with LEDs.

Like the LTM 1150-5.4E, with the telescopic boom extended to its maximum length, the LTM 1150-5.4 still lifts 9.1 t. This efficient five-axle mobile crane can also be ready for use quickly on the jobsite, as it already carries 9 t of ballast with a total weight of 60 t.

The LTM 1150-5.4 has other technical features that boost efficiency, comfort and safety. Road safety benefits from new intelligent assistance systems: the Blind Spot Information System (BSIS) and the Moving Off Information System (MOIS) support the driver and increase protection for road users such as pedestrians and cyclists.

In addition, the LTM 1150-5.4 will be prepared for the use of RemoteDrive as standard – a radio remote control with which the crane can be moved from the outside, providing a huge advantage for confined jobsites. To improve comfort and reliability, there are new options that have already been tried and tested on other models. These comprise a central lubrication system for the chassis and a digital tyre pressure indicator, resulting in excellent maintenance and availability of the crane.

LTM 1055-3.3

The new LTM 1055-3.3 sets completely new standards in terms of mobility on public roads. With its low overall weight, the crane offers an optimum solution for regions and projects where road licences and restrictions play a role.

Thanks to its innovative design, the LTM 1055-3.3 is also much easier to use on roads and bridges with limited load-bearing capacities. The crane combines high performance with maximum flexibility, enabling efficient operation, especially in markets with strict regulations on vehicle weights and axle loads.

The lower axle loads ensure more flexibility and greater economy in daily use. This eliminates the need for costly authorisations, escort vehicles and restrictions on the permitted driving time in many markets.

While its predecessor (the LTM 1055-3.2) can carry up to 5.5 t of ballast with a 12-t axle load, the new LTM 1055-3.3 can carry up to 9 t. This is about 80% of the maximum ballast, meaning that most crane jobs can be performed without additional ballast transport.

By simply removing the counterweight – which the crane does itself – axle loads of below 9 t and a total weight of approximately 26 t can be achieved. The LTM 1055-3.3 also features the new Liccon3 control system and a significantly lighter construction with the same boom length.

The lightweight design of the LTM 1055-3.3 has the added advantage of high mobility and high lifting capacities, particularly for medium and large working radii: the low weight of the

telescopic boom enables high loads to be lifted in the working area, where the tilting of the crane is the limiting factor.

In the ballast configuration for 12 t of axle load, the LTM 1055-3.3 outperforms other three-axle models from a radius of around 8 m. From a radius of 20 m, it is even on a par with four-axle mobile cranes.

The new LTM 1055-3.3 becomes even stronger with the standard variable support base VarioBase Plus, especially in the working areas above the rear outriggers. The support base is wider here than at the front, as the rear sliding beams have a two-stage design.

With its 40-m telescopic boom and 15-m double folding jib, this 55-t crane can reach lifting heights of up to 54 m and radii of up to 46 m. A 1.9-m assembly jib has been newly developed, which can be angled to 50°. It is ideal for assembly work in industrial halls where space is limited.

Like the LTM 1150-5.4, the LTM 1055-3-3 is equipped with new intelligent assistance systems: the Blind Spot Information System (BSIS) and the Moving Off Information System (MOIS) support the driver and increase protection for road users such as pedestrians and cyclists.

In addition, the LTM 1055-3.3 will be prepared for the use of RemoteDrive as standard. New options, including a central lubrication system for the chassis and a digital tyre pressure indicator, are also available. ■

Website: www.liebherr.com



MANDAI RAINFOREST RESORT BY BANYAN TREE

Commercial Buildings



Developer:

Mandai Wildlife Group

Builder:

Lum Chang Building Contractors Pte Ltd

Architect:

WOW Architects Pte Ltd

Civil & Structural: Ramboll Pte Ltd

Mechanical & Electrical:

Arup Singapore Pte Ltd

Quantity Surveyor:

Asia Infrastructure Solutions Singapore Pte Ltd



ADVANCED MANUFACTURING AND ASSEMBLY (AMA)

- Extensive off-site fabrication of various structural, architectural and MEP elements, such as spiral staircases, elevated walkways and wellness pods. These elements were designed and coordinated in 3D BIM, then constructed at the factory, disassembled and reassembled on-site to shorten the build time and minimise disruptions to surrounding environment.
- Salvaged tree barks and branches from the site were repurposed as moulds for off-form precast concrete walls, allowing the facade to capture natural textures. By integrating the texture directly during casting, separate architectural finishing works were eliminated, accelerating the façade construction cycle by 50%.

DIGITALISATION

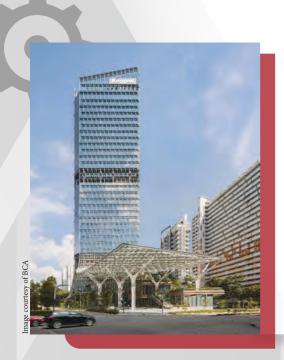
- Lum Chang developed a 6D BIM, which included asset information models that were handed over to the client (Mandai Wildlife Group).
- There was also the implementation of BIM-to-Field workflows, monitoring and progress tracking with the use of drones, and the use of Autodesk BIM 360 Docs for structured exchange of models between consultants, contractors and subcontractors.

MANPOWER TRANSFORMATION

- Provided comprehensive training and mentorship programme for migrant workers, training for subcontractors.
- Implemented mindful business practices, such as providing feedback channels for open communication, using virtual meetings and digital tools for more efficient meetings. ■

KEPPEL SOUTH CENTRAL

Commercial Buildings



Developer:

Keppel Ltd

Builder:

Obayashi Singapore Private Limited

Architect:

Architects 61 Pte Ltd in collaboration with NBBJ

Architecture PLLC

Civil & Structural:

Meinhardt (Singapore) Pte Ltd

Mechanical & Electrical:

Alpha Consulting Engineering Pte Ltd

Quantity Surveyor:

AECOM Cost Consulting and Project Management

(Singapore) Pte Ltd



SUSTAINABILITY

- The building obtained Green Mark (GM) Platinum Super Low Energy (SLE) with the Health & Wellbeing (HW) and Resilience (RE) badges. They set up innovative chillers for enhanced system efficiency and achieved a high green plot ratio of 9.68.
- Under the facilities management (FM) section, they also obtained Intelligence (IN) and Maintainability (Mt) badges. The team engaged the FM team early during design meetings to plan for more efficient FM and to design for robotics & automation.

ADVANCED MANUFACTURING AND ASSEMBLY (AMA)

- Value engineering to convert from reinforced concrete structure to a steel composite structure, which is lighter and resulted in a more optimised foundation system.
- The use of permanent steel formwork for column joints reduced floor cycle from 7 to 5.5 days.
- Extensive adoption of plant, vertical and horizontal prefabricated MEP modules helped to achieve up to 89% manhours reduction in mechanical & electrical trade productivities.

DIGITALISATION

- The team adopted integrated digital delivery (IDD) across the whole ecosystem, from design to construction as well as FM, for enhanced collaboration, coordination and productivity.
 - Utilisation of digital platforms (such as Autodesk Construction Cloud, Novade, DroneDeploy) to integrate through all stages of project lifecycle from design, fabrication, construction and FM operations.
 - Adoption of digital solutions and tools to improve collaboration and productivity, fabrication and installation quality, and shorten decision-making process.
 - Up to 60% reduction in time spent during the design stage due to digitalisation of collaboration and design confirmation.

PUNGGOL DIGITAL DISTRICT

Mixed-Use Buildings



Developer:

JTC Corporation

Builder:

Woh Hup (Pte) Ltd

Architect:

Woha Architects Pte Ltd

Civil & Structural:

KTP Consultants Pte Ltd

Mechanical & Electrical:

Beca Carter Hollings & Ferner Pte Ltd

Quantity Surveyor:

AECOM Cost Consulting and Project Management (Singapore) Pte Ltd



ADVANCED MANUFACTURING AND ASSEMBLY (AMA)

- Adoption of mass engineered timber (MET) this resulted in up to 40% savings in time/productivity compared to reinforced concrete design.
- Adoption of multiple productive mechanical, electrical & plumbing (MEP) practices all of which achieved >25% productivity improvement at the trade level.

DIGITALISATION

- Establishment of a full building information modelling (BIM) approach use of digital mock-ups and VR simulations, progress tracking using drone-based photogrammetry and 360-degree site inspections. Increased digital integration in fabrication and safety with QR-coded precast tracking and facial recognition site access.
- The team was able to process monthly payment claims in up to 29% less time. Sixty percent more BIM-based drawings were produced, site progress reporting was 17% more productive, and the team achieved over 21% productivity gains in coordination, documentation and claims (equivalent to 75 man-days saved across teams).

VALUE CHAIN TRANSFORMATION

- Pioneered the adoption of the Public Sector Standard Conditions of Contract (PSSCOC) Option Module for collaborative contracting
- First mega project to adopt virtual temporary occupation permit (TOP).

36 TUAS ROAD

Industrial Buildings



Developer:

Perpetual (Asia) Limited (in its capacity of trustee as Boustead Real Estate)

Design and Build:

Precise Development Pte Ltd

Architectural QP:

ID Architects Pte Ltd

Design Architect + C&S Consultant:

Thymn Pte Ltd



SUSTAINABILITY

- The building achieved GM Platinum SLE certification, attaining HW, RE and Whole Life Carbon (CN) badges. This was made possible through the adoption of 5-tick unitary air-conditioning systems and the use of SGBP 4-tick low carbon concrete for more than 80% of applicable superstructure.
- Under FM, the project also attained the IN and Mt badges, made possible through close collaboration with the FM team during construction and the adoption of advanced FM solutions, including automated fault reporting, digital handover and data-rich asset modelling.

ADVANCED MANUFACTURING AND ASSEMBLY (AMA)

- The team executed on-site unrolling of metal roof panels, eliminating the need for lapping joints. This not only enhanced waterproofing performance but also improved panel handling productivity by 30%, and reduced transportation costs.
- Metal staircases were adopted for external staircase, reducing on-site welding and alignment work. The metal staircases were designed using advanced 3D modelling to detect clashes early and ensure precise coordination with other trades. This enabled accurate dimensions, high-quality off-site prefabrication, and streamlined installation (minimised on-site welding, shortened the assembly timeline, and achieved cost savings by limiting mobile crane use to just one day).

NEW CMPB

Institutional Buildings



Developer:

Ministry of Defence/ Defence Science and Technology Agency

Builder:

Tiong Seng Contractors Pte Ltd

Architect:

DP Architects Pte Ltd

Civil & Structural:

Meinhardt (Singapore) Pte Ltd

Mechanical & Electrical:

Meinhardt (Singapore) Pte Ltd

Quantity Surveyor:

AECOM Cost Consulting and Project Management (Singapore) Pte Ltd



SUSTAINABILITY

- In developing CMPB, the team tapped computational fluid dynamics simulations to help determine optimal building placements to allow seasonal winds to flow through between buildings to ventilate and cool the place. Green roofs and green facades and solar shading elements were strategically implemented into building structures to further cut down heat coming onto the buildings.
- High-efficiency mechanical & electrical (M&E) systems paired with automated monitoring and control in building management system were also deployed, which track consumption and optimise building energy efficiency and performance.
- •These efforts allowed the project to achieve significant savings in energy and water consumption, and attain the BCA Green Mark Platinum Super Low Energy certification:
 - Total energy savings of 7.2 GWh/yr (equivalent to consumption of 1,650 four-room HDB apartments).
 - Total water savings of 24,750 cu m/yr (equivalent to consumption of 135 four-room HDB apartments).
 - Total carbon emission reduction of 2,970 t/yr (equivalent to planting 119,000 new trees).

INNOVATION & PRODUCTIVITY

- Use of building information modelling (BIM) and integrated digital delivery (IDD) tools to conceptualise, design and build digitally before actual physical construction, eliminating errors and reducing waste of resources for unnecessary reworks.
 - E.g. for first-of-its-kind suspended complex steel structure, reduced manpower requirements by close to 30% and saved cost by up to 20%.
- Virtual reality simulations to augment decision-making process.
- Robots to install glass facade / perform LiDAR scanning.
- One of the first projects under the institutional category to adopt BCA's virtual temporary occupation permit (TOP) inspection, resulting in more than 30% savings in man-effort compared to traditional physical inspections. ■

BAYSHORE STATION

Infrastructure



Developer:
Land Transport Authority
Builder:
T310 Woh Hup-STEC JV
Architect:
SAA Architects Pte Ltd
Civil & Structural:
Arup Singapore Pte Ltd

Mechanical & Electrical: WSP Consultancy Pte Ltd



ADVANCED MANUFACTURING AND ASSEMBLY (AMA)

- Site excavated soil was reused for station backfilling works, which reduced the number of trips required by earthmoving trucks.
- Extensive adoption of precast components (walls, slabs, staircases) which is uncommon for MRT projects. The adoption of precast components led to a 30% reduction in manpower as compared to casting in-situ.

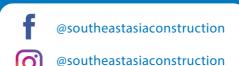
VALUE CHAIN TRANSFORMATION

- Involved consultants and subcontractors early to provide specialised inputs on design at the tender stage to reduce rework and develop a more complete design.
- Recognised the individuals and teams who exemplified the importance of safety to boost morale and further ingrain a culture of safety. ■



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PERFORMANCE



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