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SEPTEMBER - OCTOBER 2022

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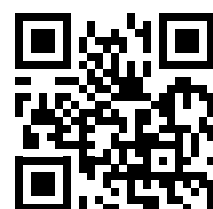
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# Park Peninsula: New waterfront development in HK

Hong Kong's Kai Tak Runway Private Development Company Limited has unveiled Park Peninsula, a new mixed-used development located on the waterfront area of the former Kai Tak Airport runway.

The project is part of the company's effort to transform Kowloon East into Hong Kong's second central business district (CBD), in line with the government's goal of 'Energizing Kowloon East'.

Kai Tak Runway is a non-profit private company formed by nine property developers, namely Chinachem Group, China Overseas, Empire Group Holdings, Far East Consortium, Henderson Land, K. Wah Group, New World Development, Sun Hung Kai Properties and Wheelock Properties.

## 'Floating on Victoria Harbour'

With approximately 450,000 sq m of green and leisure areas – including Metro Park, Kai Tak Sky Garden, Kai Tak Cruise Terminal Park, Kai Tak Runway Park and Kai Tak Sports Park, to name a few – Park Peninsula will be Hong Kong's largest green area, which is 2.3 times larger than Victoria Park, according to Kai Tak Runway.

Closely located to the approximately 2.4-km-long Kai Tak River, the development will feature an approximately 11-km-long waterfront promenade and approximately 13-km-long shared-use path for pedestrians and cyclists bridging the Kwun Tong Typhoon Shelter and the adjoining areas for the public.



The development will integrate leisure and entertainment, sports, hotel, tourism, commercial and residential elements.

With a world-class waterfront, adjoined by three shore-lines, Park Peninsula "further reinforces the unique setting of the only green area floating on the Victoria Harbour," said the developer.

This new development is situated next to the Kai Tak Water Sports Centre. With over 5.75 mil sq ft of commercial gross floor area in Park Peninsula, plus the adjoining commercial area neighbouring Kai Tak MTR Station, the entire area features the longest 'underground shopping street', the biggest retail complex 'SOGO in Twin Towers' and the largest outdoor multi-purpose Kai Tak Sports Park.

Besides the major shopping malls in Kai Tak City Centre, the 'Waterfront Promenade on the Runway' will also feature various leisure, dining and retail shops. The Kai Tak Cruise Terminal and the commercial

area adjacent to Park Peninsula help drive Hong Kong's economic development by providing job opportunities and hosting an array of world-class entertainment events.

Furthermore, Park Peninsula will be equipped with a 'multi-modal' environment-friendly linkage system extending in all directions, providing elevated walkways with travellers, cross-harbour pedestrian and cyclist bridge to connect the development and the two core hubs of Kwun Tong and Kowloon Bay, with the additional support of networks of buses, minibuses and other transportation facilities.

Runway Park Pier is also planned to become the pick-up and drop-off point for water taxis connecting Central, West Kowloon, East Tsim Sha Tsui, Hung Hom and Kai Tak, offering convenient, fast and direct transportation services. ■

## Megawide wins contract for residential project in Cavite, the Philippines

Philippine contractor Megawide Construction has signed a contract with PHirst Park Homes (PPHI) to supply and build 1,664 housing units using precast materials in PPHI General Trias. This is the second partnership for the two companies in Cavite province; Megawide also supplied and built PPHI Tanza in 2018.

The contract will further expand Megawide's precast order book and strengthen its presence in the horizontal housing segment. For more efficiency and faster turnover, the company is also set to build an onsite precast moulding and concrete batching plant to manufacture precast housing components for the project.

"Our continued presence in this segment is part of our commitment to help address the perennial housing problem in the country. Apart from seeing strong long-term prospects in this segment, it also gives us an opportunity to improve the quality of affordable horizontal housing through our value-engineering capabilities and innovative techniques," said Edgar Saavedra,

chairman and CEO of Megawide.

Megawide's proprietary precast technology enables speed to market with its quick turnaround time. The product's consistency also reduces long-term costs by limiting manpower needs and minimising rework. These are on top of environmental and social benefits such as significantly reducing noise and dust pollution during construction.

"With our precast technology, backed by a fully-integrated logistics system, we can turn over more units and help clients realise higher revenue in a shorter time compared with conventional methods," said Markus Hennig, Megawide's executive vice president for business units.

"We are also encouraging more developers, whether on the affordable or upscale side, to adopt this technology as the standard. With faster turnaround times and excellent engineering value, we can help address the immense housing backlog faster and ensure quality construction for Filipino homes." ■



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# Project management consultant appointed for MRT3 line

Malaysia's Mass Rapid Transit Corporation Sdn Bhd (MRT Corp) has appointed a joint venture of HSS Integrated Sdn Bhd and HSS Engineering Sdn Bhd as project management consultant (PMC) for the MRT3 Circle Line project. The contract is valued at RM997.9 million.

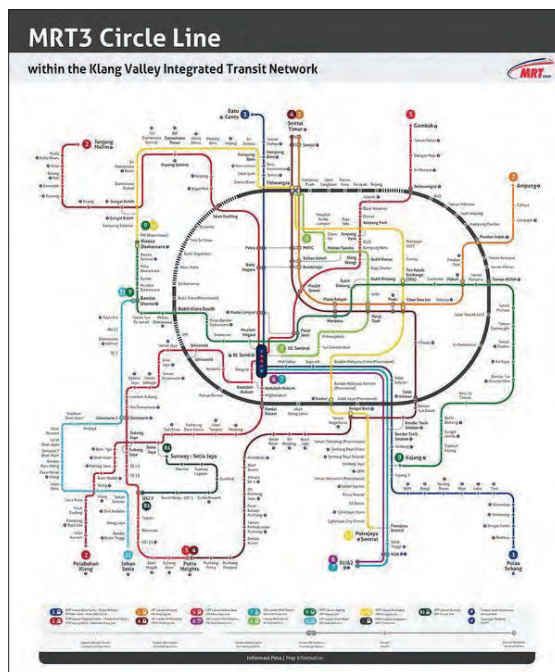
The open tender process for PMC saw the participation of 13 companies, through five consortiums, revealed MRT Corp. Apart from technical and commercial submissions, the bidders also had to submit a proposal for economic enhancement programmes and a response to various implementation and engineering solutions.

The rigorous and multi-pronged evaluation is to ensure that the PMC has the relevant experience and demonstrated capabilities to undertake a transformational approach in delivering this major national infrastructure project, said MRT Corp.

Datuk Mohd Zarif Hashim, CEO of MRT Corp, added, "Besides assisting MRT Corp, we also expect the PMC to serve the needs of the civil and system work package contractors, so that we can work together effectively to deliver the project."

"All parties' interests must be aligned to deliver the common objectives. The responsibility to synchronise construction work activities has been tasked to the PMC. The PMC will be given targets and KPIs, with a penalty for not meeting them."

According to MRT Corp, the open tender process for the MRT3 Circle Line project is "on track and progressing well." The tender will be divided into five main packages, comprising one project management consultant (PMC) package, three civil main contractor (CMC) packages, and one systems turnkey contractor



The MRT3 Circle Line (shown in black line) is the critical final piece to complete Kuala Lumpur's urban rail network.

(STC) package.

"MRT Corp expects the construction cost of the MRT3 project to be competitive and comparable to the cost of MRT Putrajaya Line project. This open tender exercise is intended to attract the most competitive bids," said Mr Hashim.

Due to an overwhelming response, MRT Corp has extended the deadline for technical submission for CMC302 and CMC303 packages from 2 August 2022 to 30 September 2022. Based on this extension, the full tender submissions will now be due on 30 September 2022.

The deadline for CMC301 full tender submission remains unchanged on 30 August 2022.

"The new approach in project delivery and contracting strategy is a culmination of a decade's worth of experience of MRT Corp as the asset owner and project developer. We believe this approach will be a growth impetus for the construction and rail

industries. Local companies, particularly Bumiputera-owned, now have an opportunity to be in an ecosystem, where expertise, skills and technology can be cross-fertilised," said Mr Hashim.

He further highlighted that MRT3 is "beyond a construction project, it is an opportunity to rejuvenate the economy, and upskill the talent and capabilities of Keluarga Malaysia [Malaysia Family]."

The MRT3 Circle Line is the critical final piece to complete Kuala Lumpur's urban rail network. Its proposed 51-km alignment will run along the perimeter of the Kuala Lumpur city and be connected to MRT, LRT, KTM and Monorail lines through 10 interchange stations. Once completed, the urban rail network will further encourage public transport usage in Kuala Lumpur. ■

## K11 Select Art Mall to be built in Fujian, China

Hong Kong-based K11 Group has formed a partnership with Xiamen Metro Transit-Oriented Investment and Development Company Limited to develop the K11 Select Art Mall in Fujian (pictured), located in the Xiamen Wuyuan Bay Wetland Park TOD project, China.

Featuring a total gross floor area (GFA) of approximately 6,350,000 sq ft, K11 Select is a five-storey building occupying approximately 1,020,000 sq ft. It is scheduled for opening in late 2025 to early 2026.

The project has adopted the concept of transit-oriented development (TOD), making public transportation its core, with a mix of commercial buildings, residential buildings, hotel and diversified mixed land use. According to K11 Group, the Amoy Transit Rail will play a core role in the entire development, connecting every area seamlessly. ■



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# One Bangkok recycles ALC waste into Q-CON sound barriers

One Bangkok, Thailand's largest integrated development in the central business district of Bangkok, together with SCG and Quality Construction Products Public Company Limited (Q-CON) have signed a Memorandum of Understanding (MOU) to collaborate on the recycling of autoclaved lightweight concrete (ALC) waste into Q-CON sound barriers for underpass entrance to the project.

This partnership supports One Bangkok's ambition to achieve 'zero waste to landfill' goals to maximise resource efficiency, reduce environmental impact, and raise the bar on construction industry standards in Thailand towards a sustainable future.

Panote Sirivadhanabhakdi, group CEO of Frasers Property Limited, said, "In line with Frasers Property's commitment to be a net-zero carbon corporation by 2050, the development of One Bangkok is conceived to set new standards in terms of design, quality and sustainability for well-balanced living in Thailand.

"We look for strategic partnerships with industry leaders who share our vision to create long-term value through sustainable construction practices using circular economy principles. The latest collaboration with SCG and Q-CON, our long-term business partners, is another testament to our unwavering determination to pursue that vision."

Nithi Patarachoke, president, cement-building materials business at SCG, added, "We are committed to sustainable development and have applied circular economy principles to the construction industry as part of solving environmental issues such as the overexploitation of natural resources, energy shortage, management of construction waste and greenhouse gas emissions in which SCG aims to reach the net-zero greenhouse gas emissions target by 2050.

"Our focus is to optimise resource consumption and recycle unused materials with the 'Turn Waste to Value' concept. We want to reduce material waste as well as create added value to waste materials from construction, as witnessed in the previous partnership with One Bangkok."

This latest partnership is also said to be the first large-scale use of recycled ALC waste into Q-CON sound barriers in a real estate development project. The process encompasses crushing ALC waste (from



LEFT: The autoclaved lightweight concrete (ALC) waste is crushed into aggregate to be re-used as a mixture in the production of Q-CON sound barriers.

BELOW LEFT: The Q-CON sound barriers will be used in the underpass entrance to One Bangkok.

BELOW: The MOU signing ceremony between One Bangkok, SCG and Q-CON.



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Spanning a total land area of 166,400 sq m, One Bangkok features a mix of commercial, residential, retail and recreational uses, with an investment value of over THB120 billion. When fully completed, the project will include five premium Grade A office towers, four distinct retail precincts, five luxury and lifestyle hotels and three luxury residential towers designed with people-centric, sustainable and smart city living concepts.

One Bangkok aims to be the first project in Thailand to receive the highest certified LEED platinum for Neighbourhood Development, and the WELL Building Standard for health and well-being of all occupants, setting a new benchmark for green and sustainable development in Thailand. The first phase is scheduled for opening in the fourth quarter of 2023. ■

the construction of One Bangkok) into aggregate to be re-used as a mixture in the production of Q-CON sound barriers for use in the underpass entrance to the project.

The total volume of ALC used in building One Bangkok accounted for over 1.6 million blocks, equivalent to a total weight of over 10,000 t, with standard wastage allowed for 1.8-2%. This means that, with the ALC recycling process in place, up to 200 t of ALC waste can be recycled and reused, both in the form of substitute of sand filtration in wastewater treatment and material for producing Q-CON sound barriers for use as cladding in underpass entrance covering a total area of over 1,850 sq m.

Narongvate Vajanapanich, managing director, Q-CON, cement-building materials business, SCG, said, "Q-CON is Thailand's leading manufacturer of autoclaved aerated concrete blocks who strives to

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# Additional S\$20 mil for Singapore's built environment

Singapore's government has extended the Built Environment Technology Alliance (BETA) programme into Phase 2 with an additional S\$20 million of BETA Catalyst Funding to support industry-led Research & Innovation (R&I) efforts from progressive and committed BE alliances.

Introduced in 2020, Phase 1 of the BETA programme was led by progressive, needle-moving built environment (BE) sector firms that were ready to commit resources and pursue promising technological advancements in key construction domains.

An example is a project undertaken by the Construction Technology Innovation Laboratory (CTIL) that was launched by Woh Hup (Private Limited) and the Singapore Institute of Technology (SIT) in January 2021. The project, 'Innovative Construction Technologies for Deep Foundation and Excavation', seeks to develop an ensemble of underground construction technologies.

This CTIL project, which comprises three sub-projects, is carried out by Woh Hup in collaboration with its three value-chain partners – NatSteel Holdings Pte Ltd, TTJ Design & Engineering Pte Ltd and SEN SG Pte Ltd.

"CTIL addresses a critical, yet relatively under-researched segment of the construction industry. This is a segment that will be increasingly important as Singapore intensifies its land use, and as we try to maximise the potential of underground space, already heavily utilised for underground roads and MRT networks," said Singapore's Senior Minister of State for Communications and Information and National Development, Tan Kiat How.

"We are constantly exploring innovative solutions that can translate into improvements in the construction process. We have partnered SIT in several research projects prior to setting up CTIL but there are limitations to what we can achieve on our own," said Woh Hup's executive director, Yong De-Rhong.

"This project exemplifies a long-term collaborative model for R&I, that will show the way forward for the rest of the industry," added Kelvin Wong, CEO of Building & Construction Authority (BCA). "Woh Hup recognises that transformation requires the success of all players, as each construction project is dependent on the collective expertise of a long and complex value-chain of partners and today's research project agreement (RPA)



The CTIL research project agreement signing ceremony took place on 13 July 2022.



The 'Innovative Construction Technologies for Deep Foundation and Excavation' project seeks to develop an ensemble of underground construction technologies.

signing ceremony formalises their mutual partnerships on this project."

BCA explained that progressive firms that make significant investments in R&I can build long-term capabilities and a competitive advantage. "For example, this project is expected to deliver savings in a critical and relatively under-researched segment of underground civil engineering works as well as improve productivity and on-site safety. The construction cost associated with basement works can range between 4.5% and 20% of a project's total development cost."

In public infrastructure projects, the cost of underground works can easily exceed 50% of the total cost, added BCA. "The research being carried out could have a deep impact on the BE sector by transforming the way we build."

## The CTIL project

CTIL focuses on applied research for emerging and innovative technologies for building structure and sub-structures. Woh Hup has committed S\$2 million to set up the facility and support its overall operations and projects over five years.

The 'Innovative Construction Technologies for Deep Foundation and Excavation' project combines research in inter-related areas to bring about a

systems-level productivity improvement across three sub-projects that features one industry collaborator working on each.

One of the sub-projects is 'Innovative Earth Retaining and Stabilising Structures (ERSS): Post-tensioned Waler System', with SEN SG Pte Ltd as industry collaborator. The ERSS makes use of an innovative configuration to reduce the need for intermediate supporting structures, thus increasing working space and resulting in improved site productivity. This initiative is expected to result in 25-30% cost savings in civil and structure works.

Building on proprietary technology developed in South Korea, the project will also customise the ERSS to suit local conditions, with enhanced safety and built-in redundancy.

Another sub-project is 'High Performance Plunge-in King Post for Top-Down Building Construction', with TTJ Design & Engineering Pte Ltd as industry collaborator. This sub-project will develop high performance steel (HPS) king posts that are up to 57% lighter than conventional king posts, and proposes solutions to automate the manufacture of HPS king posts. The reduction in weight and time-savings during the manufacturing process is expected to result in 10-12% cost-savings from fabrication to installation.

A cost-effective and simple-to-use smart positioning system will also be developed to guide the installation of king posts. This is anticipated to reduce installation time by approximately 20 days and save up to 1,000 man hours for a mid-sized project using 100 king posts.

The third sub-project is 'Economic Corrosion-Resistant Concrete for Deep Foundation Elements with B600 Rebar', with NatSteel Holdings Pte Ltd as industry collaborator. Through investigating various additive proportions, this sub-project aims to develop an optimal and cost-effective novel concrete that is crack and corrosion resistant, enabling the use of Grade 600 reinforced concrete. Such an initiative will also simulate the design performance of the concrete under different underground conditions, for use in deep foundation works.

If Grade 600 reinforced concrete is successful, this could result in up to 20% reduction in steel tonnage, leading to a 15-20% improvement in construction productivity. ■

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# The Line: The city of the future in Neom

Saudi Arabia has unveiled the designs of 'The Line', dubbed the city of the future in Neom. It features 200 m wide, 170 km long and 500 m above sea level, aimed to accommodate up to nine million residents and will be built on a footprint of 34 sq km.

The designs embody "how urban communities will be in the future in an environment free from roads, cars and emissions," said Neom. It will run on 100% renewable energy and prioritise people's health and well-being over transportation and infrastructure as in traditional cities. It puts nature ahead of development and will contribute to preserving 95% of Neom's land.

The Line will reduce the infrastructure footprint and create "never-before-seen" efficiencies in city functions," added Neom. Its ideal climate all year round will ensure that residents can enjoy surrounding nature when walking around. They will also have access to all facilities in The Line within a five-minute walk, in addition to a high-speed rail with an end-to-end transit of 20 minutes.

In January last year, His Royal Highness (HRH) Mohammed bin Salman, crown prince and chairman of the Neom board of directors, launched the initial idea and vision of The Line, which redefines the concept of urban development and what cities of the future should look like.

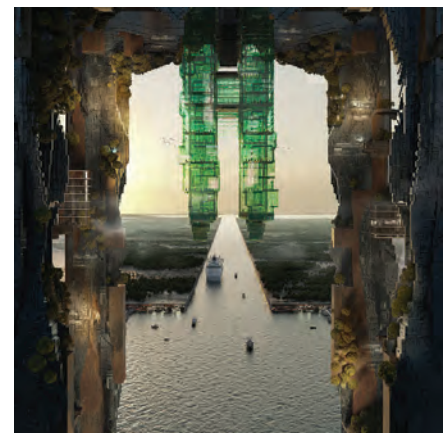
"At The Line's launch last year, we committed to a civilizational revolution that puts humans first based on a radical change in urban planning," he said. "The designs revealed today for the city's vertically layered communities will challenge the traditional flat, horizontal cities and create a model for nature preservation and enhanced human liveability. The Line will tackle the challenges facing humanity in urban life today and will shine a light on alternative ways to live."

"We cannot ignore the liveability and environmental crises facing our world's cities, and Neom is at the forefront of delivering new and imaginative solutions to address these issues," continued HRH. "Neom is leading a team of the brightest minds in architecture, engineering and construction to make the idea of building upwards a reality.

"Neom will be a place for all people from across the globe to make their mark on the world in creative and innovative ways. Neom remains one of the most



ALL IMAGES: The Line is 200 m wide, 170 km long and 500 m above sea level. It plans to run on 100% renewable energy. According to Neom, advanced construction technologies and manufacturing processes will be adopted for the project.



All images © Neom

important projects of Saudi Vision 2030, and our commitment to delivering The Line on behalf of the nation remains resolute."

The Line offers a new approach to urban design, explained Neom. The idea of layering city functions vertically while giving people the possibility of moving seamlessly in three dimensions (up, down or across) to access them is a concept referred to as Zero Gravity Urbanism.

Different from just tall buildings, this concept layers public parks and pedestrian areas, schools, homes and places for work, so that people can move effortlessly to reach all daily needs within five minutes. The Line will also have an outer mirror

facade that provides its unique character, blending with nature.

According to Neom, the development will involve a team of world-renowned architects and engineers. The city's design will be completely digitised, and the construction industrialised to a large degree by significantly advancing construction technologies and manufacturing processes.

The announcement of The Line's designs is a continuation of Neom's progress in the development of its flagship projects such as Oxagon, its reimaged manufacturing and innovation city; and Trojena, its global mountain tourism destination that will offer the Arabian Gulf's first outdoor skiing; as well as the launch of two of Neom's subsidiaries: Enowa, its energy, water and hydrogen company; and the Neom Tech & Digital Company. ■

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# Lintec & Linnhoff focuses on global presence with new event strategy

Lintec & Linnhoff has announced a new strategy to focus its events and marketing efforts on participating in as many local and regional shows as possible. The company has expanded its business to multiple markets in recent years and wants to ensure it is well represented in key regions such as the Middle East, Africa, Latin America, Asia and Australia. As a result, it will shift the focus away from global exhibitions, including this year's bauma 2022 in Munich, Germany, where the company will not be present.

"As Covid restrictions ease and events return to our calendar, we've seen a really positive response from shows in the Middle East, South Asia and Asia Pacific. It underlines how important it is for us to strengthen our connection with our customers at regional and local levels. We still see value in global trade shows such as bauma, but we also want to invest in reaching our customers within their home markets. This means customers will be seeing us at plenty more shows all over the world in the coming months!" explained Christabel Chan, global business manager at Lintec & Linnhoff.

So far, 2022 has been a busy year for Lintec & Linnhoff in terms of exhibitions. In March, the company joined the Big 5 Saudi show in Riyadh, Saudi Arabia to promote its Lintec, Linnhoff and Eurotec asphalt and concrete plants to the Middle East. In collaboration with local partner Medco, the company enjoyed a productive event, fielding multiple enquiries for its Lintec asphalt plants, Eurotec concrete plants and Linnhoff asphalt plants.

Just a few weeks later, Lintec & Linnhoff was present at Excon India, which took place from 17 to 21 May. At this show the company made a significant announcement, launching its new partnership with Gainwell Engineering Pvt Ltd and Gainwell Commosales Pvt Ltd. Under the terms of the new partnership, the company will now build in India its Linnhoff DRX DurableMix and TSD MobileMix asphalt plants, as well as its Eurotec Swiftac SWT concrete plant. Gainwell will also handle all distribution and aftersales service in India, Nepal and Bhutan.

At the same time as Excon India, Lintec & Linnhoff also participated in the National Roads & Traffic Expo in Sydney, Australia, which was held from 18 to 19 May. The company saw increased interest in its asphalt and concrete plants in the country as it celebrated the sale of a Lintec CDP5001M continuous asphalt plant to KEE Group in Perth earlier in the year.

May proved to be the busiest month of the year for Lintec & Linnhoff thus far, with a further trade show appearance, this time through dealer Almadina at Libya Build which ran from 30 May to 2 June. The following month saw another dealer appearance in the region, this time with Rsquared Trade participating in the Big 5 Construct Egypt which took place from 25 to 27 June, again to promote the Lintec, Linnhoff and Eurotec asphalt and concrete plants and concrete cooling systems. A Lintec CSD2500B asphalt plant was recently sold in Egypt, renewing local interest in the company's asphalt and concrete plants.

For the last six months of 2022, Lintec & Linnhoff will continue its focus on meeting with customers at a local level. First up will be the M&T Expo Brazil, which is running between 30 August and 2 September. Here, the company will promote its popular Lintec CSD containerised and CDP continuous series of asphalt plants.



Lintec & Linnhoff announced its new partnership with Gainwell at Excon India 2022.

Later in September, the focus remains in Latin America as Mexican dealer TRACSA showcases the company's products at AMAAC 2022, to be held from 21 to 23 September in Mexico. Again, the popular Lintec CDP continuous asphalt plant and CSD containerised asphalt plants will be promoted. These two series of Lintec asphalt plants have worked on a number of key projects, like the improvement of the access road in Iguazu Falls, Brazil (CSD2500B), Pan-American Highway in Guatemala (CDP14001M) and many other road and highway projects.

Heading back to Asia in October, Lintec & Linnhoff will be taking part in the 11th Malaysian Road Conference in Kuala Lumpur, Malaysia. Between 11 and 13 October, the company will be on-site to promote its Lintec and Linnhoff asphalt plants to local road industry contractors and practitioners. It has sold many Lintec and Linnhoff asphalt plants as well as Eurotec concrete plants in Malaysia for several high profile projects. These include the Chan Sow Lin, Merdeka 118 tower and Pan Borneo Highway.

As the year rolls into its final two months, there will be no slowdown in activity. First up is Philconstruct Manila in the Philippines, taking place between 3 and 6 November. Here, Lintec & Linnhoff will promote its full range of asphalt and concrete plants in one of its strongest markets.

During the third week of November, it is back to Latin America, for CILA 2022, running from 20 to 25 November in Uruguay where the growing market has huge potential. Again, the Lintec CDP continuous asphalt plant and CSD containerised asphalt plants will be the focus of promotions.

Finally, the year closes out for the company with Big 5 Dubai, from 5 to 8 December. After a successful show at the same event in 2021, Lintec & Linnhoff will once again promote its Lintec, Linnhoff and Eurotec asphalt and concrete plants and concrete cooling system to the Middle East region.

"Our relationship with customers is built on quality, trust and service. An important part of that is understanding their needs and providing equipment solutions that help them improve their operations. Local events and exhibitions are hugely valuable for us in facilitating conversions. 2022 has been hugely successful and we are already looking forward to 2023," concluded Ms Chan. ■

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# CALENDAR OF EVENTS

## // Events in Asia

### Occupational Safety + Health Exhibition for Asia (OS+H Asia)

**14 to 16 Sept 2022**

Suntec Singapore  
Singapore  
Website: [www.osha-singapore.com](http://www.osha-singapore.com)

### Building Construction Technology Expo (BCT Expo)

**21 to 23 Sept 2022**

Impact Exhibition and Convention Centre  
Bangkok, Thailand  
Website: [www.bct-construction.com](http://www.bct-construction.com)

### Korea International Construction & Industrial Safety Expo (K-Con Safety Expo)

**19 to 21 Oct 2022**

Korea International Exhibition Centre (KINTEX)  
Goyang, South Korea  
Website: [www.k-consafetyexpo.com](http://www.k-consafetyexpo.com)

### ConsBuild Asia

**29 to 30 Nov 2022**

Bangkok International Trade & Exhibition Centre (BITEC)  
Bangkok, Thailand  
Website: [www.consbuild-asia.com](http://www.consbuild-asia.com)

### bauma China

**22 to 25 Nov 2022**

Shanghai New International Expo Centre (SNIEC)  
Shanghai, China  
Website: [www.bauma-china.com](http://www.bauma-china.com)

## Infrastructure Connect!

**23 to 25 Nov 2022**

Jakarta International Expo (JIExpo)  
Jakarta, Indonesia  
Website: [www.infrastructureconnect.id](http://www.infrastructureconnect.id)

## Natural Disasters Expo Asia

**7 to 8 Dec 2022**

Singapore Expo  
Singapore  
Website: [www.naturaldisastersshowasia.com](http://www.naturaldisastersshowasia.com)

## bauma Conexpo India

**31 Jan to 3 Feb 2023**

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

## Trenchless Asia

**17 to 18 May 2023**

Kuala Lumpur Convention Centre  
Kuala Lumpur, Malaysia  
Website: [www.trenchlessasia.com](http://www.trenchlessasia.com)

## // Events outside Asia

### bauma

**24 to 30 Oct 2022**

Munich Trade Fair Centre  
Munich, Germany  
Website: [www.bauma.de](http://www.bauma.de)

### World of Concrete

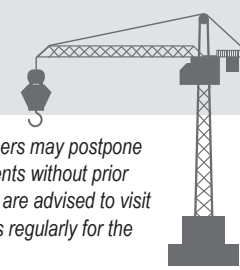
**17 to 19 Jan 2023**

Las Vegas Convention Centre  
Las Vegas, Nevada, USA  
Website: [www.worldofconcrete.com](http://www.worldofconcrete.com)

### Conexpo-Con/Agg

**14 to 18 Mar 2023**

Las Vegas Convention Centre  
Las Vegas, Nevada, USA  
Website: [www.conexpoconagg.com](http://www.conexpoconagg.com)



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

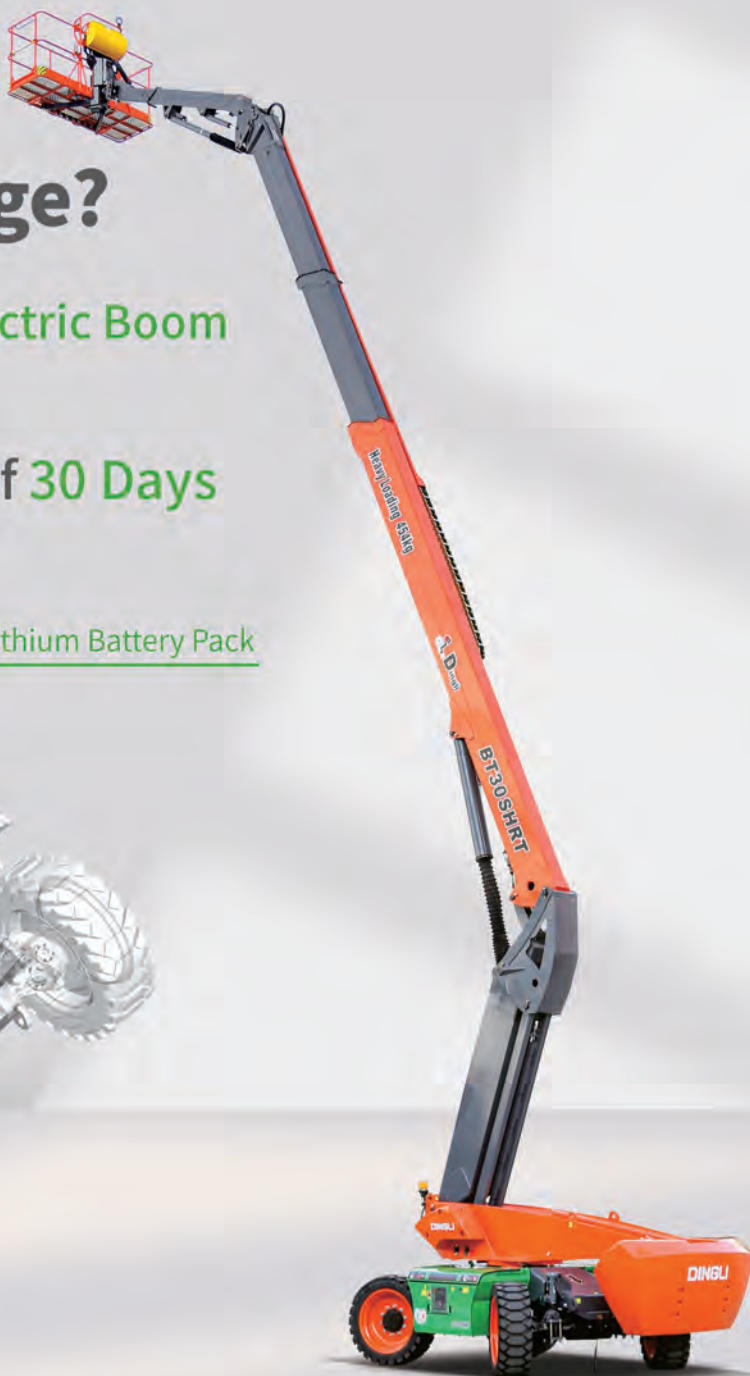
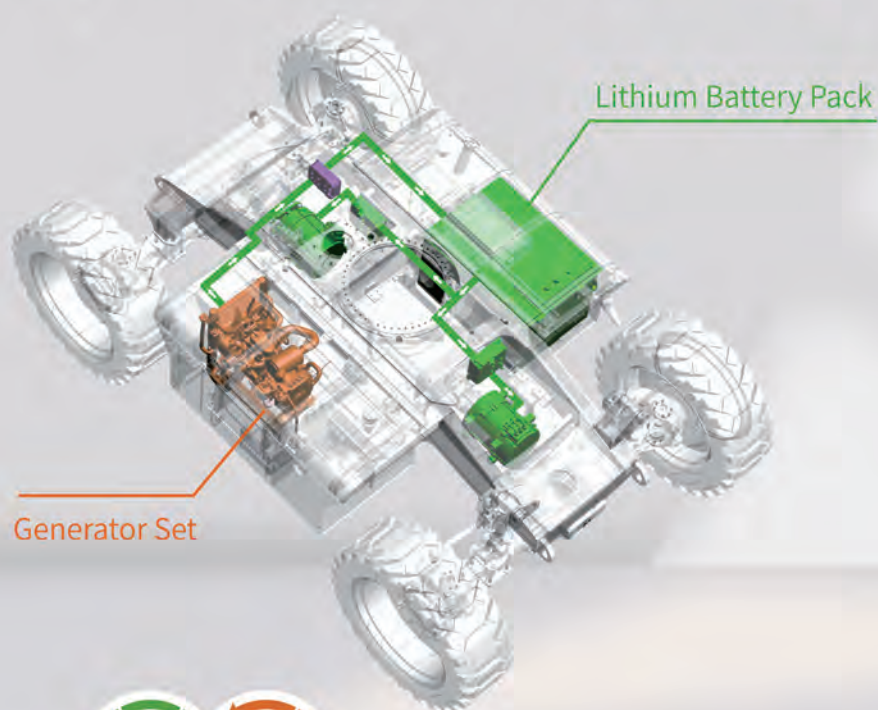
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# 'Falls from platform, electrocution and platform overturns are most common type of incidents'

Falls from the platform, electrocution and platform overturns are the most common type of incidents leading to serious injuries and deaths over the past 10 years, according to the latest Global Safety Report, compiled by the International Powered Access Federation (IPAF) from analysis of anonymised data collected via IPAF's Accident Reporting Portal ([www.ipafaccidentreporting.org](http://www.ipafaccidentreporting.org)).

Launched via a webinar on 30 June, the IPAF Global Safety Report 2022 analyses the latest data collected via the IPAF portal covering the 2012-2021 period, and comparing year-on-year and three-year trends to identify how well the industry is doing in tackling the key causes of accidents involving powered access.

In this year's report, IPAF is able to look back over a full 10-year's worth of data, as the federation began gathering incident reports in 2012. Data from the whole 2012-2021 range indicates 4,374 reports, including 4,462 lost-time incidents (LTIs) and 585 fatalities. Reports were gathered from 41 countries across the 10-year period.

In terms of incidents leading to one or more fatalities, across the full 10 years of available data there have been three causes as the most common type of incidents: falls from the platform, electrocutions and overturns. These are followed by entrapment; with MEWP inoperable mechanical/technical issues having risen to fifth place; hit by vehicle or machine in sixth position and hit by falling object in seventh.

Looking at just 2021, there were 603 reports from 28 countries, with 628 people involved, resulting in 109 fatalities. This is a slight reduction in the number of fatalities during 2020, when there were 126. The country that submitted the most reports in 2021 was the UK, accounting for 60.8% of reports received. The US submitted 18.7% of the reports and South Korea 4.9% – a significant increase on previous years.

The sector from which most incidents were reported was the powered access rental industry with 43%, followed by construction with 29% of incidents. Facilities management accounted for just under a tenth of all reports (9.8%).



"It is quite a landmark that IPAF's accident reporting has been going for 10 years; currently we are receiving around 600 reports a year from more than 40 countries worldwide – a leap forward from where we were in the early days," said Brian Parker, IPAF head of safety and technical.

"This report is the first to have been able to look back and analyse data across the full 10-year period, identifying some significant trends. In addition to a focus on falls from the platform, which was the number one cause of serious injuries and deaths over that period, we have also used the report to highlight some of the specific trends identified when conducting rental activity – delivery, collection, loading and unloading MEWPs, manoeuvres in depots, demonstrations on site, cleaning and maintenance of machines.

"Given what the data is telling us, reducing falls from the platform is the key priority of IPAF's Don't Fall For It! global safety campaign this year – and we hope this can make a measurable impact in terms of driving down these incidents in our industry. Also, by highlighting the risks and incidents associated with rental activity, we hope this will assist in making those activities safer, giving something back to our members in the rental industry who have been enthusiastic supporters of IPAF's accident reporting since day one."

Looking at 2021 data, reports by machine category show mobile boom-type MEWPs (3b) were the most common type of equipment involved in incidents, accounting for 29% of reports. Then came mobile vertical-type (3a) machines at just under a quarter of reports (23.7%), followed by static boom-type (1b) MEWPs on 21.5%.

"We use this detailed database to inform all the work we do at IPAF – including updating our globally recognised training and forming the basis of our worldwide safety campaigns, such as the current Don't Fall For It! initiative aimed at reducing falls from the platform," said Peter Douglas, CEO and managing director of IPAF.

"What this report shows is that we need to challenge ourselves as an industry: Is there more we could be doing as to reduce these numbers? We hope that powered access stakeholders around the world read the report, to understand the key trends and benchmark their own safety programmes. By working collaboratively, the industry can continue to develop solutions to the most pressing safety issues identified in the report.

"We need to see more reporting from across all sectors of our industry and from as many countries as possible; not least via the ePAL app that provides quick and easy on-the-spot incident reporting. We hope this empowers operators to report all accidents, as well as minor and near-miss incidents, which often go under-reported."

Mark Keily, QHSE director at Sunbelt Rentals and chair of IPAF's International Safety Committee (ISC), which helps to verify and analysis the anonymised incident reports and to produce the Global Safety Report each year, added, "While numbers going up can be a result of better reporting, it is still a concern to note that the main causes of serious injury and death when using powered access machines haven't really changed much in the past 10 years.

"As well as verifying and analysing data, the ISC commits to periodically review IPAF safety and technical guidance to ensure it is up to date and reflects what the latest trends are telling us, beginning with the IPAF H1: Fall protection in MEWPs guidance.

"The IPAF Global Safety Report is never going to have all the answers that our industry requires, but it does clearly set out key areas of concern that should then allow industry stakeholders to review their own working practices to ensure they have adequate control measures in place." ■



# CICEE

## 2023 Changsha International Construction Equipment Exhibition

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China Changsha International Convention and Exhibition Center

# Bauma 2022 to highlight digitalisation and sustainability

The world's largest trade show for the construction industry is getting ready for its next edition from 24 to 30 October 2022. This year, bauma is expected to attract over 3,000 international exhibitors on a total exhibition area of 614,000 sq m – covering 200,000 sq m of hall space and 414,000 sq m of outdoor area.

Held every three years, bauma broke all records in 2019 with more than 3,600 exhibitors from 63 countries and regions, and more than 620,000 visitors from over 200 countries.

According to the show organiser Messe München, bauma 2022 will focus on five key topics: 'Mining – sustainable, efficient, reliable'; 'The way to zero emission'; 'Construction methods and materials of tomorrow'; 'Digital construction site'; and 'The way to autonomous machines'. In addition, there will be three supporting programmes, namely bauma Forum, Think Big! and Science Hub.

The bauma Forum programme will take place at the bauma Innovation Hall LAB0. Each day, it will highlight one of the main topics of bauma from different perspectives, such as those of industry, universities and start-ups.

The daily sessions at the forum will consist of: keynote, short presentations and panel discussion on the respective main topic; presentations from universities; 10-minute start-up presentations; 30-minute exhibitor presentations; and presentation of the Innovation Award contenders on the first day.

The Think Big! programme will be located at the ICM Foyer of bauma, from Monday to Friday. This is an initiative of VDMA (the German Engineering Federation) and its members, together with Messe München and other partners.

As an out-of-school learning location, Think Big! aims to inspire young generation on technological career perspectives through several activities, which include: providing the opportunity for discussions with experts, professional orientation, contacts for internships and educational partnerships; conveying fun with technology, as the companies and supporters present themselves with exciting hands-on activities, games and information on technical training and study transitions; giving insights in shows with workshop Live! Trainees at work, where young trainees are working on heavy machinery; as well as offering participatory actions from companies like Liebherr-International, Fritzmeier Systems, Kiesel, Wacker Neuson, Komatsu, Geda, bbw, Zeppelin, Bauer, Hawe Hydraulik, HDB, Landbautechnik Bundesverband, TUM Ulm, TU Dresden and other technical universities.



ALL IMAGES: This year's bauma is expected to attract over 3,000 international exhibitors on a total exhibition area of 614,000 sq m.



The other programme, Science Hub, will also be located at the bauma Innovation Hall LAB0. It will provide information on current questions: What is the status of research and science? What topics are influencing the industry? What specifically is in the pipeline?

At the Science Hub, 10 universities will present together, partly in cooperation with each other. The international exhibition from universities and scientific institutes from different disciplines will also bring everyone up to date on the latest status of research. Furthermore, current research results will be delivered on the topics of construction machines, construction material systems and mining technology. ■

Website: [www.bauma.de](http://www.bauma.de)



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## THE AC 7.450-1

The Tadano AC 7.450-1 is in a class of its own: With a carrier length of 15.99 m and an outrigger base of 8.45 m, it is as compact as a six-axle crane, and yet is as powerful as some eight-axle cranes. In fact, the AC 7.450-1 can reach lifting capacities of up to 23.7 tonnes when its 80 m main boom is fully extended, and that is without even using the SSL system. Bring in SSL, and the lifting capacity goes up to an unbeatable 37.3 tonnes. In addition, Tadano is using a new Sideways Superlift design for the first time ever in the AC 7.450-1 – one that makes handling and setup easier. The system can be extended with an 81 m luffing jib, and the sections of this jib can also be used to assemble fixed extensions.

# Registration now open for Conexpo and IFPE 2023

Registration is now open for Conexpo-Con/Agg and the International Fluid Power Exposition (IFPE), running from 14 to 18 March 2023 at the Las Vegas Convention Centre and Las Vegas Festival Grounds in Las Vegas, Nevada, the US.

North America’s largest construction trade show will feature more than 1,800 exhibitors across over 2.7 mil sq ft, showcasing the most advanced equipment and construction industry innovations.

“We are thrilled to return to Las Vegas in March of 2023 to bring the construction industry together. If you’re a construction professional, you won’t want to miss this opportunity to see the industry in action and learn new ways to take your business to the next level,” said Conexpo-Con/Agg show director Dana Wuesthoff.

“No other show brings together as many segments of the construction and aggregates industries in one place. Be sure to register early so you can take advantage of the best badge and travel rates.”

When attendees register at either [conexpoconagg.com](http://conexpoconagg.com) or [ifpe.com](http://ifpe.com), they can set up their badge, education selections, and hotel accommodations all in one place.

The Festival Lot returns for 2023 as the biggest outdoor display area, featuring earthmoving and lifting (aerial and crane) equipment. It is better connected to the rest of the show via the brand-new West Hall and Diamond Lot, which were under construction during the 2020 show.

Also complete for the upcoming show, the Tesla-powered LVCC Loop, an underground tunnel hosting Tesla vehicles running in a loop from the Diamond Lot to the Central Hall and the South Hall, home of IFPE.

“IFPE is the heart and soul of the equipment manufacturing industry,” said IFPE show director John Rozum. “Because we feature the fluid power, power transmission and motion control technology that makes everything in the industry move.”

“In addition to that, IFPE education sessions and Fluid Power Workshops qualify for Professional Development Hours.”

## Educational sessions

With 170+ sessions covering everything from aggregates to technology solutions, the comprehensive education at Conexpo-Con/Agg is the leading source for those in the industry to obtain cutting-edge information for today’s business challenges and opportunities.

There are several education packages to choose from while registering for the show, from single sessions to multi-day passes. New this year are a ‘Business Bootcamp’ and a ‘Leadership Series’ that include recommended sessions on ‘Strategic Decision Making for Increased Margins’, ‘Financial Essentials for Non-Financial Leaders’, and ‘How to be a Construction Leader Worth Following’, among other tailored courses. ■

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

**Note:** Attendees can receive a 40% discount on show admission with the following codes (from now until 28 October 2022) – use **MEDIA40** to visit Conexpo-Con/Agg, or **PR40** for IFPE.



ALL IMAGES: Conexpo and IFPE will return from 14 to 18 March 2023 at the Las Vegas Convention Centre and Las Vegas Festival Grounds in Las Vegas, the US.



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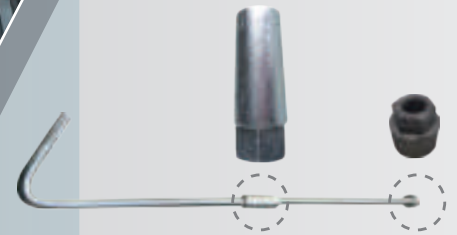
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# World of Concrete launches ‘Work Truck Live!’ programme

World of Concrete (WOC), the annual global event dedicated to the commercial concrete and masonry construction industries, has revealed Work Truck Live! – an all-new experiential initiative designed to showcase the innovations in a contractor’s most important asset, trucks.

Set to debut at the 17-19 January 2023 event held at the Las Vegas Convention Centre, the dedicated exhibit area in Central Hall, presented by Modern WorkTruck Solutions, will highlight innovations in the design and configuration of work trucks and innovative accessories that will help contractors increase safety and productivity.

Work Truck Live! is aimed to bring attention to industry-leading companies that manufacture chassis and supply up-fitting accessories, as well as develop technologies with which contractors can customise their vehicles to the job at hand.

Modern WorkTruck Solutions – a media brand of Highlands Publications, a multi-media publishing company based in Birmingham, Alabama, the US, whose editorial team focuses on the fleet-based work truck market – will contribute expertise to the interactive area and educational programme.

Attendees will benefit from the initiative’s curated selection of manufacturers of chassis, trailers and accessory vehicle products, easily accessible to event participants in the Central Hall of the Las Vegas Convention Centre.

“We could not be more excited to introduce Work Truck Live! at the next edition of World of Concrete,” said Kevin Archibald, senior show manager of World of Concrete. “Work Truck Live! is such an important initiative, as powerful and efficient work trucks are the backbone of our community’s everyday efforts.

“The manufacturers that make our attendees’ lives easier, more productive, and increasingly enjoyable through the development of new technology innovations and products now have a dedicated platform at World of Concrete to showcase the latest must-have additions to work truck fleets.”

In addition to Work Truck Live!, WOC is debuting a Ride and Drive experience that provides attendees the rare opportunity to test-drive select Class 1 – Class 7 vehicles. Approved drivers and passengers can experience the feel of the vehicle in a closed, short loop located near the Las Vegas Convention Centre. This programme will take place on Tuesday and Wednesday during WOC.

“Between Work Truck Live! and the Ride and Drive programme, there is no better place for our community to discover the best



ALL IMAGES: The last edition of WOC was held from 18 to 20 January 2022. The next event, to be held from 17 to 19 January 2023, will feature ‘Work Truck Live!’ interactive programme.



vehicles and supporting technology and accessories available on the market than World of Concrete,” said Russell Haddock, president of Highlands Publications.

“We are honoured to partner with World of Concrete to gather a wide range of vehicles for all types of concrete and masonry construction professionals, offering the hard-to-come-by seat time in various styles of work trucks that attendees may be considering for use in their fleets.”

WOC will feature a technical session as part of the event’s educational programming featuring editors from Modern WorkTruck Solutions. They will explore timely topics contractors should know and consider when searching for and specifying new work trucks. The full educational agenda will be announced soon. ■

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

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# Bigger, more competitive Global Operator Challenge

Caterpillar invites machine operators around the globe to put their skills and precision to the test in the 2022-2023 Global Operator Challenge. The competition allows men and women to prove their excellence in safely and efficiently operating Cat machinery.

“More than 70 Cat dealers will host local, one-of-a-kind competitions, celebrating equipment operators and enabling them to showcase their exceptional skills in fun and dynamic ways,” said Tony Fassino, group president of Construction Industries. “Whether their expertise lies in digging a trench, moving aggregates or managing demolition, our Global Operator Challenge will be demanding for even the most experienced operators.”

In the 2019-2020 challenge, 67 Cat dealers hosted local competitions, and operators from 30 countries participated. The 2022-2023 competition will be Caterpillar’s largest construction industry event of its kind, incorporating a wider range of construction machines in nearly 40 countries.

There will be three different challenges on three separate pieces of equipment. Scoring is based on the operator’s skills, efficiency, as well as his or her competence in using integrated technology to enhance the machine’s performance.

“I’ve been operating Cat machines for more than 15 years,” said Jaus Neigum, owner of Industrial Backhoe Ltd in Medicine Hat, Alberta, Canada and the 2019-2020 Global Operator Challenge champion. “Having the opportunity to demonstrate my skills and compete against peers from around the world was one of the most rewarding experiences in my career. And, if you’re a business owner like me, I encourage you to put forward your best operators, because this competition is going to be even bigger and better than the last one.”

Qualifiers from the local dealer events will then move to regional semi-final competitions in October 2022 in Japan (all-expense-paid trip for two). Nine finalists will emerge from the regional semi-finals around the world and participate in the final



competition in March 2023, to be held at Caterpillar’s outdoor Festival Grounds exhibit during Conexpo-Con/Agg in Las Vegas, the US. The winner will receive an all-expense-paid trip for two to a Caterpillar facility worldwide. ■

Website: [www.cat.com/operatorchallenge](http://www.cat.com/operatorchallenge)



ALL IMAGES: Caterpillar invites machine operators around the globe to participate in the 2022-2023 Global Operator Challenge. This will be the company’s largest construction industry event of its kind.

# Hillhead 2022: Back with a bang

Celebrating its 40th anniversary this year, Hillhead 2022 welcomed almost 18,500 visitors and 604 exhibitors across the three show days – from 21 to 23 June.

Held at Tarmac’s Hillhead Quarry, near Buxton, Derbyshire, in the UK, the exhibition once again cemented its status as the world’s biggest working quarry event for the mineral products, construction and recycling sectors.

“It was very much back to face-to-face business at Hillhead 2022,” said The QMJ Group, the show organiser, “as exhibitors and visitors alike took the opportunity to reconnect with their industry peers, take the pulse of what is happening, and marvel at the plethora of live machinery action that took place in the four dedicated demonstration areas.”

Following the trials and tribulations of the past 18 months for the events sector, and a gap of four years since the last Hillhead show, this year’s event was “very well received, with every square metre of exhibit space – including a reconfigured Quarry Face demo area, new-look extended Registration pavilion, and revised layout at the top of the showground – completely sold out before its official opening.”

According to The QMJ Group, Hillhead recorded the busiest ever opening day in its 40-year history, with a total of 8,283 visitors attending on day one. And the consensus among the exhibitors and visitors at this year’s show was that they were thrilled to be back at a leading in-person event such as Hillhead.

“Despite the supply issues affecting the industry as we emerge from the pandemic, Hillhead 2022 was our largest and most successful edition yet,” said event director Richard Bradbury.

“More than 600 exhibitors showcased their latest products, innovations and technology, collectively offering more choice for the quarrying, construction and recycling sectors than ever before. Some 18,500 unique visitors attended the show and were entertained by a record number of live demonstrations.

“Above all else, Hillhead 2022 has proved there is no substitute for face-to-face events for keeping up to date with the industry, building positive relationships, and doing business. We look forward to welcoming you all again in 2024 with our provisional dates set for 25–27 June.” ■

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



ALL IMAGES: Hillhead 2022 attracted almost 18,500 visitors and 604 exhibitors across the three show days – from 21 to 23 June.



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# Wirtgen cross application miner for infrastructure projects

The 260 SX(i) cross application miner is the first model in a new machine category from Wirtgen. It is suitable for various applications such as construction of roads, tunnels or harbours, railway projects and pipeline laying. The machine is capable of cutting all types of rock.

Appropriate cutting drums for both hard and soft rock are available for the 260 SX(i). In most cases, the extracted material is offloaded directly to road-legal construction site trucks with the machine's integrated discharge conveyor.

Aside from performance, a particular focus in the development of the new cross application miner was set on assuring high machine utilisation rates, as infrastructure projects often have to fulfil critical deadlines.

The 260 SX(i) excavates stone and rock by means of a cutting process. The machine cuts, crushes and discharges the material in a single operation to a width of 2.75 m and a depth of up to 650 mm.

The process is almost vibration-free and causes only very little dust and noise pollution. Thus it can be employed in the immediate vicinity of buildings or buried utility pipes and cables.

The 260 SX(i) cuts routes with a final profile and therefore saves the costs otherwise required for the processing of additionally excavated material and levelling.

Powered by a 30-l, high-torque diesel engine with a rated power output of over 1,000 hp, the new machine always has sufficient reserves for the extraction of rock by cutting. The material can be directly offloaded into transport vehicles or deposited by either sidecasting or cut-to-ground.

The new Level Pro Active levelling system ensures a consistently precise cutting depth. Its functions have been expanded with ergonomically designed control panels that make controlling the system intuitive and simple. A turning radius of under 9 m and the good manoeuvrability enable rapid turning manoeuvres, even in confined spaces.

In addition, the 260 SX(i) is fitted with a dust-proofed positive pressure operator's cabin with a fresh air filtering system, which effectively prevents dust from entering the operator's workplace. For safety, the cabin features an integrated, certified ROPS/FOPS system.

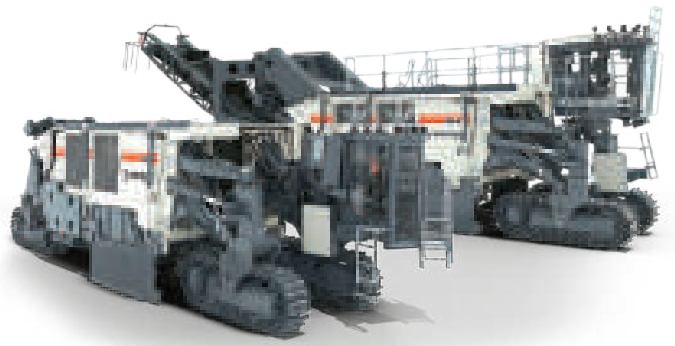
At night, safe operation is also assured by bright illumination of all relevant working areas on and around the machine. The high-powered lighting system of the 260 SX(i) comprises LED floodlights for the working areas, lamps on the discharge conveyor and brightly illuminated access ladders and walkways.

The operator's cabin with all-round glazing is swivel-mounted on the front left chassis column and provides an optimal all-round view of the working area and the material loading procedure.

During the cutting process, the 260 SX(i) produces precise, level surfaces that can be used directly as roads for construction vehicles or as foundations for routing work. Existing profiles copied by scanning the level of an existing surface using sensors installed on the side plate can serve as a reference for levelling.

New profiling is also possible with this new cross application miner, for example, on the basis of a 3D terrain model. Depending on the application, construction work can begin as soon as the desired profile has been produced.

In road construction, for instance, the surface cut by the machine provides an ideal base for the subsequent paving of surface layers. During the cutting process, the machine enables the production of stable embankments with a predefined bank



ALL IMAGES: **The 260 SX(i) cross application miner can cut, crush and discharge the material in a single operation to a width of 2.75 m and a depth of up to 650 mm.**

sloping angle – improving safety and minimising the need for additional excavation.

As for tunnel construction, building new tunnels or lowering the floors of existing tunnels often involve working in confined spaces and parallel to continuing rail traffic. Blasting is rarely a viable option for loosening the rock. Here, the cross application miner comes handy. It enables the precise removal of floors with minimal vibration and the lowering of the tunnel profile to the desired level.

The height of the miner can be reduced for working in tunnels by mounting the operator's cabin directly above the front left track unit. In this configuration, the machine also works using the cut-to-ground method, without a discharge conveyor and conveyor frame. This means that the 260 SX(i) can be an excellent option for narrow tunnelling situations. ■

Website [www.wirtgen-group.com](http://www.wirtgen-group.com)

The product will be showcased at bauma 2022 in October.  
Booth no: FS.1011

# Dingli offers hybrid boom series

Chinese manufacturer Dingli has introduced an advanced version of its electric boom lifts, called the Range Extended series. It comes with a 'mobile charger' that can generate electricity when there is no external power supply on site.

This new hybrid boom series has been developed based on the same platform as the company's existing electric range. It offers maximum working heights from 22 to 34 m and a maximum load of 454 kg, with an 80-V/420-Ah lithium battery pack.

The built-in universal range extender – or the mobile charger – enables the machine to generate electricity by itself when there are no external charging facilities on site. Combined with a tank of fuel, it charges the lithium battery pack and the machine can work up to 30 days.

The Range Extended boom series has two modes of auxiliary power supply. In manual mode, users can switch between pure electric or range extension mode; in automatic mode, the range extender



Combined with a tank of fuel, the built-in universal range extender charges the lithium battery pack when there is no external power supply on site.

automatically charges the machine when the power is below 30%, and stops generating power when it is above 90%.

Dingli said if charging facilities are

available on site, the machine can be charged at any time and there is no need for the range extender option. ■

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

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# Liebherr introduces LTM 1110-5.2 mobile crane

The Liebherr LTM 1110-5.1 mobile crane has been renamed the LTM 1110 5.2, equipped with three new features – the crane control system, the driver’s cab and the gearbox. This five-axle, 110-t crane is a best-seller with its powerful 60-m telescopic boom and variable axle loads for maximum mobility all over the world.

The Liccon3 is the third generation of the Liccon (Liebherr computed control) control system, designed with a new software package and programming language as well as a faster databus, significantly more storage space and more computing power.

“During the development of the new control system, it was important to us that crane operators, who are familiar with Liebherr cranes, would be able to get used to the new control system quickly and easily,” said Nikolaus Münch, head of control system department at Liebherr in Ehingen.

“At the same time, we must be future-proof as the progress currently being made in microelectronics is immense. Complex applications, such as VarioBase, which require a great deal of performance data, can now be developed more frequently in the future. The current Liccon2 control system is reaching the limits of its capacity.”

The similarities with the current control system are wide-ranging. Hardware components, such as the BTT remote control terminal, have been included. The touchscreen function on the new 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.

Furthermore, Liccon3 cranes are prepared for telemetry and fleet management systems as standard. In the future, crane contractors will be able to view and evaluate all the relevant data using the MyLiebherr customer portal.

Liebherr has also developed the modern design of the new driver’s cab in collaboration with designer Jürgen R. Schmid, Design Tech, Ammerbuch (Germany). It was rewarded with the renowned American Good Design Award 2020 in the ‘Transportation’ category.

The modern design features premium materials and timeless lines, plus numerous improvements for the crane driver. These include the new multifunction steering wheel, side roller blind on the driver’s door, improved instruments and modules as well as new displays. Several options, such as the central locking system with remote key, the cool box and tyre pressure monitoring system, provide additional comfort.

A new, advanced automatic heating and climate control system in both the driver’s and operator’s cabs guarantees comfortable working conditions. A sun sensor detects strong sunshine and automatically adjusts the heating settings. In addition to the standard radio with hands-free facility, a double DIN radio with extended functions is available as an option.



LEFT: The new LTM 1110-5.2 mobile crane (formerly the LTM 1110-5.1) features the latest crane technology with a new look.

BELOW LEFT: The crane has a multifunction steering wheel, improved instruments and keypads as well as new displays.

BELOW: Large display in the superstructure cab makes operation easier and more comfortable.



The lighting packages for the crane cabs, the superstructure, the rear of the vehicle, the front headlights and the telescopic boom and lattice jibs have been improved and now feature LEDs.

The innovative DynamicPerform clutch module delivers almost zero wear starting and manoeuvring for the modular ZF TraXon gearbox without overheating. The new clutch module transmits the engine power via an oil-cooled plate pack that runs in oil. The friction heat generated when starting is dissipated in the clutch oil and supplied to the vehicle’s cooling system via an oil/water heat exchanger.

Due to the higher energy and power consumption, together with a calculation model, permanent and almost wear-free manoeuvring is made possible. An implemented clutch protection function also prevents overheating of the clutch and the associated increased wear or destruction of the clutch in extreme load cases. This, in turn, prevents downtimes and helps to significantly extend the service life of the drivetrain.

Liebherr was ZF’s partner in the development of the TraXon DynamicPerform and its integration in the drivetrain of mobile cranes. “As a result of the close collaboration with ZF and a very intensive phase of testing, the new gearbox version is now ready for widespread use. The cooling performance of the DynamicPerform clutch module has been significantly increased yet again by means of improvements to various hardware components,” said Josef Schick, head of testing department at Liebherr. ■

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

The product will be showcased at bauma 2022 in October.  
Booth no: FM.809-810 / 812-813, A4.326, B5.439 and C1.425

# Hyundai unveils hydrogen-powered concept excavator

Hyundai Construction Equipment (HCE) has developed the HW155H concept wheeled excavator, powered by a hydrogen fuel cell. This 14-t machine will offer eight hours of operation with a 20-minute refuelling time, according to the company.

HCE started development of a hydrogen fuel cell-powered driveline in 2020, having signed a Memorandum of Understanding with Hyundai Motors and Hyundai Mobis at its Mabuk Research Centre in Yongin-si, Gyeonggi-do, South Korea. The three companies committed to develop a hydrogen fuel cell to power forklifts and medium/large excavators over the coming years.

Unlike a conventional wheeled excavator, where a diesel engine drives a hydraulic pump to power the machine, the hydrogen excavator has a fuel cell mounted in the rear of the upperstructure that creates electrical energy. This is used to power the hydraulic pump, to drive the machine in the normal way.

The fuel cell relies on a chemical reaction between the stored hydrogen and oxygen that is present in the air. The fuel cell stack generates electrical energy from this reaction, with an inverter converting this energy into usable electrical power.

The only emission from the fuel cell stack is water, a combination of the hydrogen and oxygen. When the hydrogen is produced using renewable energy, such as offshore wind, this creates an incredibly low-carbon powertrain.

The hydrogen is stored on the right-hand side of the excavator, opposite the operator's cab, in high-pressure tanks. This technology is already in use in the passenger bus and commercial vehicle business. Hyundai has been supplying fuel cell-powered road trucks to customers in Switzerland for the last two years. These trucks run on green hydrogen created from hydropower or renewable energy, resulting in a zero-carbon driveline.

"The development of the first excavator powered by hydrogen is very exciting, as we work towards a carbon-free world," said Gert Peeters, product manager at HCE Europe. "Over the coming months, HCE will continue to develop and further refine this technology and thereby pursue our goal to lead the transition into a zero-carbon future."

"While great progress has already been made in the development of electric vehicle technology, there is a risk that we overlook hydrogen as a practical, immediate solution to reduce emissions and improve air quality."

Mr Peeters continued, "Our projections show that fuel-powered vehicles will be more cost-effective than battery-electric or diesel-powered vehicles in the future."

"We at Hyundai Construction Equipment are convinced that hydrogen will be at the forefront of renewable energies in the long term. We want to exploit this potential and make it available to users in practice-oriented solutions." ■

Website: [www.hyundai-ce.com/en](http://www.hyundai-ce.com/en)



Hyundai HW155H concept excavator.



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The product will be showcased at bauma 2022 in October.  
Booth no: FM.813A

# Goldhofer debuts new air-suspension trailer

Goldhofer has introduced a new air-suspension trailer, the Trailstar. It offers transportation companies maximum flexibility and excellent quality engineering combined with minimum deadweight. The new design allows optimal use of loading area length and loading centre of gravity.

This innovative three- to five-axle air-suspension trailer adopts the many advantages of the Stepstar line for the trailer sector as part of Goldhofer's response to today's growing demand for flexible transportation solutions. Like the Stepstar, the Trailstar comes with various intelligent details, including a practical load securing system, form-fit pocket stakes and the practical ramp system for an extremely low approach angle to accommodate low-floor vehicles.

The new trailer also features 10 t lashing points on the full length of the loading deck. As an optional extra, a very wide, deep and long excavator boom recess is available for transporting excavators with large excavator arms.

"Like all vehicles in the Star family, it has an optimum payload-to-deadweight ratio. Plus, the four- and five-axle versions feature self-tracking steering for even greater manoeuvrability," said Markus Albrecht, product line manager for the Star family at Goldhofer.

Furthermore, the flexible trailer has Wader container latches for transporting 10-ft construction containers. The Trailstar is also available with the new Goldhofer CargoPlus tyres for 10- or 12-t axle load, offering a loading height of only 780 mm (-60/+140mm).

With its expanded product portfolio in the Stepstar family plus the new Trailstar, Goldhofer enables haulage companies in the construction and forwarding sectors to transport universal loads economically, reliably, quickly and safely.

## Other innovations

Goldhofer will also introduce a completely new vehicle concept – the FT series – at the upcoming bauma. With a focus on outstanding operational flexibility, it combines simple handling with the versatility needed to meet a wide variety of transportation needs. The company said it will not be revealing further details until the event.

"With our FT series, all customers will get exactly the transportation solution they need. What's more, a retrofit-friendly design is the key to extremely flexible and future-proof working, so that customers can configure their fleets on a variable basis for many years to come," said Matthias Ruppel, CEO of Goldhofer.

In addition, Goldhofer's Blades plus trailing dolly has been highly successful as a blade carrier for the wind power industry. Driven by the wind, the concept has now been optimised and extended for use in the construction industry in general, for example for transporting concrete beams, structural components or entire bridge elements. For this purpose, the air-suspension trailing dolly is used in combination with a two-axle front dolly with a turntable.



At bauma, Goldhofer will showcase the new Trailstar along with other innovations, including a completely new vehicle concept – the FT series.

The Goldhofer FTV 850 blade carrier for extra-long and heavy turbine blades is mounted on a four-axle, self-propelled PST/SL-E split combination (1/2+1/2) widened to 4,010 mm. This solution is designed for maximum stability and safety – even on the most challenging routes.

Another highlight is the ADDrive 2.0 heavy-duty module, which can be used as a towed or self-propelled unit. It boasts a number of modifications, especially for highly complex and ultra-heavy transports. Its larger hydraulic pumps and additional drive axles mean increased tractive power and higher speeds. For maximum flexibility, the ADDronic synchronisation software allows several ADDrive modules to be used in combination with THP or PST modules.

Goldhofer will also showcase a further model from the Stepstar line, the new force-steered Stepstar Z, as well as the CargoPlus low-profile tyre, which is an ideal solution for avoiding detours. Developed in collaboration with HBI Tires & Wheels, this innovative tyre delivers decisive savings in centimetres for the same axle load. ■

Website: [www.goldhofer.de](http://www.goldhofer.de)

The products will be showcased at bauma 2022 in October.  
Booth no: FN.823

# New Manitou AL/MLA articulated loaders

With 12 new models, Manitou has extended its range of articulated loaders, which now comprises 22 models in total – all available under the Gehl AL (Articulated Loader) and Manitou MLA (Manitou Loader Articulated) brands.

These new machines offer a load capacity ranging from 700 kg to 1.5 t for a lifting height of between 2.50 m (for a short arm) and 3.07 m (for a long arm). In order to deliver a level of performance adapted to each model, series 2 and 3 models are powered by a 25 hp stage V engine, and series 4 and 5 with 48 hp.

The complete range makes it possible to respond to a wide variety of demands, with the largest of the articulated loaders providing a nominal load capacity of up to 3.3 t. This depth of range is aimed at many applications thanks to a wide selection of attachments comprising more than 100 products, such as buckets, forks and bale clamps, as well as levellers and augers.

The AL/MLA loaders can be used in different sectors, including construction (with specifically designed models, AL 320/MLA 3-25 H-C and AL 420/MLA 4-50 H-C for 'Construction'). All machines are equipped with hydrostatic transmission for enhanced performance. The Manitou MLA 2-25H and Gehl AL 230 models have a hydraulic motor on each wheel to make them even more manoeuvrable in any environment.

Manitou has designed the new machines to be more ergonomic

and even more slim-line than previous ones. The engine hoods have been shortened and the engine positioned lengthwise to the chassis to reduce the size of series 3 and 4 models. The minimum width is 1.10 m. The chassis has also been revised to reduce the length of the machines. The low height of between 2.14 m and 2.29 m for the biggest models allows them to be manoeuvred easily in tight spaces.

To facilitate the movement of the loaders between various jobsites, certain models are transportable on a 3,500 kg PTAC trailer, which can be used with a basic BE license. The weight ranges from 1.5 t for series 2 to 2.6 t for series 5 models. This advantage allows Manitou to adapt to the constraints of rental companies and tradespeople, who have to move their handling equipment frequently within a short time frame.

Like all machines from Manitou, the AL/MLA articulated loaders are connected, sending information directly on the MyGehl and MyManitou smartphone applications. Thanks to the EasyManager solution (web portal and mobile app), fleet managers can remotely monitor the activity of every machine and thereby optimise their fleet management.

Maintenance operations can be carried out easily, with access to the engine and battery at the rear of the machine. This simplified maintenance enables users to reduce their TCO. ■

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



Manitou MLA 4-50 H (above) and AL 230 (right) articulated loaders.



The products will be showcased at bauma 2022 in October.  
Booth no: FS.908/1



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# Numerous innovations from Bauer Maschinen Group

The Bauer BG 23 H is a compact drilling rig with H-kinematics. The unit can be completely mobilised and loaded using a wireless remote control. With this model, the mast is stored on the machine in transport position, and the counterweight can be removed by the machine itself if necessary. This facilitates rapid and easy mobilisation from one construction site to another.

The BG 23 H's complex undercarriage allows for a transport width of just 2.5 m and a transport height of just 3.1 m when the rotary drive is dismantled. This makes it easier to pass through narrow entrances and gates, as often found on urban construction sites.

Using an expansion kit, the BG 23 H is able to operate on construction sites with a working height of less than 9 m. In Kelly operation, a powerful capacity of 235 kNm is available for installing the casings, and with the Crowd Plus assistant it is possible to activate a retraction force of up to 400 kN for retracting the casings.

The Bauer BG 45 drilling rig features V-kinematics, where the mast is shifted to the front in transport position. The machine offers a high level of rigidity for difficult applications and excellent versatility in the mobilisation phase. As a result, a transport weight of around 35 t for the heaviest individual components can be achieved with high efficiency.

Bauer's ValueLine equipment is specially optimised for Kelly drilling. The BG 36 is the latest development in this line. EEP technology is now the standard for the upper end of the ValueLine range of equipment.

For the toughest applications with large drilling diameters of up to 3 m and drilling depths of up to 115 m, the V-kinematics provide a solid and robust foundation with large bearing width. The feed cylinder with a length of 8.5 m and a retraction force up to 50 t enables the use of long casings as well.

The B-Tronic system has also arrived for the special Kelly equipment. Apart from the large-scale display of drilling data and equipment parameters, the drilling assistant system allows for low-fatigue work during long drilling processes.

The adaptive Kelly speed assistant is available for the new BG 36. This system enables fully automated, safe, fast and gentle extension and retraction of the heavy Kelly bars with up to five thrusts in places.

In addition, Bauer has developed the eBG 33 electric drilling rig, which enables locally CO<sub>2</sub>-free operation. Apart from standard drilling methods, high-performance methods (e.g. soil mixing and double-head drilling methods) are possible as well as use with a trench cutter. At the upcoming bauma, Bauer will be introducing the next generation of electric drilling rigs in the top torque class.

From RTG Rammtechnik GmbH, the RG 21 T has a newly developed BCM 5 cutting and mixing unit. Highlights include the



The BG 23 H drilling rig (above) and the BE 300-C desanding plant (below).



expanded cutting width and an increased performance capacity. This results in a highly efficient CSM unit with low noise emissions and an excellent CO<sub>2</sub> footprint. The RG 21 T is equipped with the latest B-Tronic version and can be operated entirely using 'Operate' remote control.

The RG 19 T is the first hybrid model in the telescoping leader segment. The system capacity is achieved with a diesel engine and an additional electric drive, which significantly reduces the CO<sub>2</sub> and noise emissions. All RTG models on the BS55RS and BS65RS base carrier can be offered with this hybrid technology in the future. The fitted vibrator has the SilentVibro package and the sheet pile assistant, increasing occupational safety and enhancing productivity.

In the Klemm family, the KR 606-3 mini drilling rig is equipped with full anchor kinematics, perfectly suited for use in cramped urban conditions. The power packs are available in a diesel version or electrohydraulic version.

With an operating weight of less than 10 t and a total width of 1.8 m, the Klemm KR 800-3G is the smallest universal drilling rig with anchor kinematics and rollover. Its smart feed function with divisible feed is designed for low-headroom applications.

The Klemm KR 805-3GW is a drilling rig for probe drilling involving near-surface geothermal heat. This makes it possible to reach drilling depths of up to 200 m using the double-head drilling method. A crane and drill string manipulator as well as a hydraulic pulling mechanism in the clamping and breaking device are included on this equipment weighing nearly 20 t.

The Klemm KR 806-3E features proven technology from the KR 806-3GS, yet as an electrohydraulic, emission-free variant. The intelligent control system enables the use of batteries as a booster for drilling operation to reduce the required electricity load.

The BE 300-C from Bauer MAT Slurry Handling Systems is deemed the most compact desanding plant of its capacity class worldwide. In two stages, the plant separates solids up to a particle size of  $d_{50} = 30 \mu\text{m}$  (known as the cut point) from rinsing fluid (known as slurry). Other innovations include: the CMS 30 mixer (used for colloidal mixing of solids smaller than 1 mm with liquids), which can process up to three solids, two liquids and two additives; the battery-powered HP 30 hose pump; and the AVS 550-D grouting station, a plant that produces and pumps out materials such as cement slurry for anchor grouting. ■

Website: [www.bauer.de](http://www.bauer.de)

The products will be showcased at bauma 2022 in October.  
Booth no: FN.520

# Tadano harmonises GTC crane model names

After harmonising the global nomenclature of its all-terrain cranes (AC) and lattice boom crawler cranes (CC) in the second half of 2021, Tadano continues its OneTadano strategy by announcing a global harmonisation of the nomenclature of its telescopic boom crawler cranes (GTC).

Tadano will begin to harmonise all its GTC crane model names worldwide by adapting to the nomenclature used in the American market. Accordingly, model names in the US will not change. The following model nomenclature updates for products sold outside the American market will take place later this year:

- The Tadano GTC-350EX will change to GTC-350
- The Tadano GTC-500EX will change to GTC-550
- The Tadano GTC-600EX will change to GTC-700
- The Tadano GTC-800EX will change to GTC-900
- The Tadano GTC-1200EX will change to GTC-1300
- The Tadano GTC-1800EX will change to GTC-2000 (immediately)

## 'Popular crane'

The Tadano GTC-1800EX telescopic boom crawler crane is popular with customers worldwide, and the high demand it generated ensured that the model would become an immediate success the moment it became available in November 2020, revealed Tadano.

One of the largest telescopic boom crawler cranes in the market, the Tadano GTC-1800EX features fully self-rigging operation and a powerful maximum load moment of 585 tonne-meters. With its strong load chart and lifting capabilities, the GTX-1800EX delivers the lifting capacity of 200-tonne class cranes in multiple configurations.

Due to the great success and positive customer feedback, Tadano has now announced that it will be upgrading the crane to the 200-tonne class. "Customers kept telling us that their experience in the field showed that in several configurations, the GTC-1800EX had a performance potential that far exceeded its class," said product manager Vincent Stenger. "Therefore, we are renaming the model to the GTC-2000 for all markets to better align with the crane's lifting capacities."

For existing GTC-1800EX models in the field, Tadano will offer customers a kit to upgrade these cranes to the GTC-2000. The field kit comes complete with upgraded software that also provides new load charts for 0- and 180-degree operation. In addition, it includes new crane documentation, manuals, decals and nameplate. ■

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

Tadano GTC-2000 telescopic boom crawler crane (formerly the GTC-1800EX).



The GTC-2000 will be showcased at bauma 2022 in October.  
Booth no: FS.1205/1305

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# MY CRANE

# Haulotte upgrades Compact range of electric scissors

Haulotte has upgraded its Compact range of electric scissor lifts. The five new rugged models have been redesigned to ensure a maximum utilisation rate, increased safety and simplified maintenance.

The machines provide working heights from 8 to 14 m, with load capacities from 250 to 450 kg. They can be used for indoor and outdoor applications, except for the Compact 10N and Compact 14 (Compact 2632 E and Compact 3947 E in North America).

These slab electric scissors are versatile and suitable for a wide range of applications, such as industrial maintenance, finishing works, or during the construction phase. All sensitive elements have been well integrated and protected in order to operate without difficulty in cumbersome and dirty environments. At the front of the machine, the steering cylinder and the various sensors are positioned inside the chassis to avoid any damage.

At the rear, the ladder, the asynchronous motors (AC), the platform and charger sockets are fully built into the counterweight which serves as a bumper and prevents costly and time-consuming repairs. To simplify transport, lateral and longitudinal forklift pockets are available.

On the scissor stack, the cable and hose routing have been carefully designed. The crossbrace tubes provide rigidity to the platform when working at height. Two vertical reinforcement bars help to absorb impacts and limit deformation over time. All models feature easily foldable guardrails as standard, which remain in the footprint of the chassis when folded.

The Compact scissors can climb slopes up to 25% and lift up to 450 kg (three people) depending on the model. Full height travel is possible for maximum productivity. The Compact 8N, 10 and 12 models (Compact 2032 E, 2647 E and 3247 E in North America) operate indoors and outdoors without height or load restrictions.

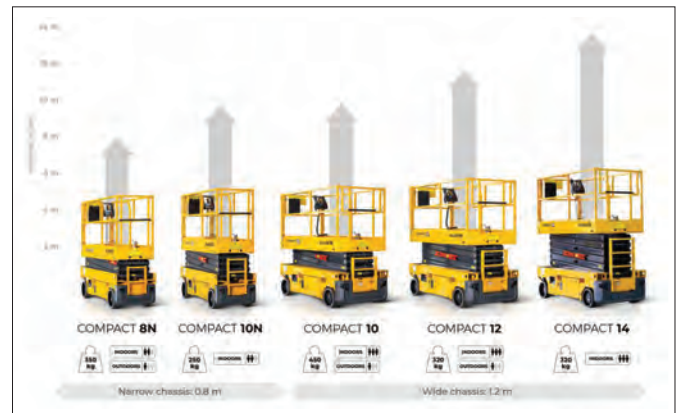
Two chassis widths are available: the models with a narrow chassis of 0.8 m offer greater manoeuvrability, while the wide models (1.2 m chassis) have a larger working area. The switch from hydraulic drive to asynchronous motors has significantly improved the energy efficiency of the machine.

The new Compact scissors can be equipped with the Sherpal telematics solution to increase their utilisation rate. This system enables machines to be located in real time and share their operational status. An alert is sent when a dangerous behaviour is identified (overload, deactivation of safety functions, etc), thus reducing the risk of accidents.

Haulotte's telematics system also allows owners to know the actual use of machines in the field. By setting time slots and work zones per site, fleet managers can easily detect out-of-contract use.

The electric transmission (AC motors) ensures smooth operation all the way up to the work area. The proportional movements allow precise manoeuvres. The intuitive upper control box is equipped with an ergonomic joystick and a drive speed selector.

In order to protect drivers effectively, the Compact scissors can be fitted with a new secondary guarding system. The device is integrated into the upper control box and detects the driver's position and movements in real time using LiDAR technology. A



ALL IMAGES: The new Compact electric scissor lifts from Haulotte have working heights of 8-14 m, with load capacities of 250-450 kg.

warning light and audio announcements, available in 13 languages, inform the operator of the system's status. In dangerous situations, the machine stops immediately and restricts forward movements.

For simple maintenance, the machine components are easily accessible, the electrical and hydraulic elements have been separated, and the routing of hoses has been carefully designed to avoid the risk of friction and leaks. The asynchronous motors require no routine maintenance.

To improve the performance and lifespan of the battery, the Compact scissors are equipped with Haulotte Activ'Energy Management. The intelligent CAN Bus charger constantly monitors battery parameters to ensure optimal charging. It also incorporates dedicated charging cycles for battery maintenance (desulfation, equalisation, etc). To reduce maintenance costs and efforts, the system can be fitted with centralised watering solutions, either manual or automatic.

The Compact scissors embed a number of diagnostic solutions to facilitate troubleshooting and reduce downtime. The Haulotte Activ'Screen on-board diagnostic tool gives access to machine parameters and delivers key information about the machine's status in real time. The Sherpal telematics solution allows remote diagnosis of machines. It considerably reduces downtime by providing access to fault codes and recommending actions. ■

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

# Astec portable high-frequency screen plant

Astec Industries' Materials Solutions Group has designed and launched its new portable high-frequency screen plant, the PTSC2818VM. The company said the plant's innovative design and size is the first of its kind for the industry, featuring an 8-ft-wide high-frequency screen.

The new PTSC plant is equipped with a 2.4 x 5.5 m top deck and a 2.4 x 3.7 m bottom deck. The screen design has externally-mounted vibrators at the ends of the tappets for a more aggressive screening action. This innovative design creates a higher G-force and reduces heat load from material to motors as compared to single, centre-mounted vibrators. It also allows for easier maintenance and adjustments.

The screen is equipped with hydraulic operating angle adjustment, a fines collection hopper, top- and bottom-deck discharge chutes and an aggregate spreader.

Similar to other PTSC plants, the



The PTSC2818VM plant's innovative design and size is believed to be the first of its kind for the industry, featuring an 8-ft-wide high-frequency screen.

2818VM features a nominal 137.16 x 1,158.2 cm delivery conveyor with hydraulic drive and full-length skirtboards. The chassis is fitted with manually-operating support legs, outriggers for additional support and folding walkways along the screen.

The new portable plant is available with a variety of options, including steel screen cloth, vinyl dust cover, hydraulic levelling jacks, immersion heaters for hydraulic reservoirs, starters for three off-plant conveyors and more. ■

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

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# WHEN TECHNOLOGY MATTERS

The construction industry has faced disruptions during the Covid-19 lockdowns and continues to face a shortage of labour. To help overcome this, DPR Construction is leveraging virtual design and construction (VDC) methods to navigate workflow constraints resulting from disruptions.



© Sweeya Tangudu

A DPR team member on site capturing information which will be used with other VDC applications.

VDC, by nature, is extremely compatible with a remote working environment. DPR's teams are virtually building projects using cloud-based solutions like BIM Track and Autodesk BIM 360 in conjunction with web platforms like StructionSite to seamlessly collaborate, share ideas and create content to navigate constraints posed by the disruptions.

"The information and value represented in the model sums up why VDC should be used on every project – especially during the design and preconstruction phases," said Richard Kimber, DPR's managing director for Singapore and Southeast Asia.

"Any successful construction project is built on layers of well thought-out planning for every scope of work. Leveraging data from the model to inform workflow planning inevitably leads to other adjustments in work methods to keep projects going."

VDC services like design coordination are enabled by a data-rich building information model (BIM) and applied design integration processes, which DPR uses to identify and resolve issues before construction begins.

"In early design phases, better collaboration and information enables project teams to make more informed decisions about design intent and constructability. When issues are addressed at this stage of the project, it leads to better predictability, productivity and quality," explained DPR.

"Many assume that design coordination happens by default on projects set up for a high level of collaboration, like integrated project delivery or design-build. While it happens more often on these types of projects, silos can still exist in execution."

DPR added that throughout the industry, preconstruction budgets for

design integration and preconstruction services traditionally are on the lighter side, whereas the construction budgets can be inflated with design contingency, mainly due to unforeseen issues that could be resolved during the preconstruction phase, without the added cost impact, delays or rework during operations.

Through applications of VDC and clash detection, DPR has identified over thousands of issues ranging from existing conditions, to design specifications, to maintenance access, to constructability, to traditional trade coordination issues. Using the BIM Track platform, DPR can analyse issues by location, system priority, impact and other sets of criteria to calculate the priority in which design issues should be addressed and resolved.

Assigning and tracking issue accountability for all project team members translates to more agile issue

resolution, said DPR. It also helps promote 'right behaviours' through the ability to track progress and overall project team performance using data points, such as average time to resolve issues and issue accountability.

With this information, along with historical data about the company's core markets, DPR can inform owners and designers of typical design challenges and equip them with the added knowledge to make better and more informed decisions.

### From US to Singapore

On a recent life sciences project in the US, DPR converted an existing 261,000-sq-ft office into a multipurpose facility including labs, clean rooms and clinical spaces over the span of 15 months.

The project stipulated liquidated damages, which made coordination even more critical to ensuring successful delivery. During the coordination process, more than 2,000 issues were identified and resolved by the project team, resulting in only 150 RFIs and no impacts to schedule.

After completing coordination, DPR reviewed six major roadblocks and assessed the averted impact to the project. "The results were eye opening," said DPR. "If not for VDC coordination and early trade engagement, the project would have hit a 14-week delay."

When comparing associated costs for the six roadblocks to the cost for coordination services, DPR found a 200% ROI. The benefits of model-based coordination have been fully embraced by the team as a best practice moving forward.

When comparing the two numbers, DPR is finding while more preconstruction budget is needed to properly apply VDC services in the preconstruction phase, rework during physical construction is significantly reduced and project teams can easily recoup the upfront investment. In most cases the project realises ROIs that generate more than tangible cost savings, as well as qualitative value due to timely coordination effort.

Likewise, in an ongoing design-to-build project in Singapore, the DPR team is seeing the advantages of using VDC:

- The project's design was completed in VDC prior to creation of drawings. By doing so, DPR could share information with trade partners more quickly – weeks earlier as compared to the traditional way of preparing 2D drawings.
- During the tender stage, VDC aided



Richard Kimber, DPR's managing director for Singapore and Southeast Asia.

© DPR Construction

**The information and value represented in the model sums up why VDC should be used on every project – especially during the design and preconstruction phases.**



A DPR team member works on a project using VDC software.

© DPR Construction

the procurement team in determining the accuracy of trade partner quantity take-offs and assumptions. Normally, it is a challenge to quantify mechanical, electrical and plumbing (MEP) services based on 2D drawings since these do not show routing and vertical movement of services across floors. If DPR saw major variances, these were highlighted to the trade partner, resulting in lower tender returns.

- The project had a low floor-to-floor height with more than nine layers of services that had to be routed within a technical floor. Without VDC, DPR would have needed to factor in tolerance for site installation and not have been able to easily coordinate within the tight ceiling space.
- On a weekly basis, the DPR team uses a LiDAR scanner to capture any services that may not have been installed in the right location. Any deviations are quickly rectified, if needed. If not, the design



Through applications of VDC and clash detection, DPR has identified over thousands of issues ranging from existing conditions, to design specifications, to maintenance access, to constructability, to traditional trade coordination issues.



Both images © Global Switch.



ABOVE AND LEFT: DPR was previously commissioned to provide BIM/VDC services for a major data centre project in Singapore.

is quickly amended in the BIM model to notify subsequent installations. This process alone saved the project hundreds of thousands of dollars in likely late rework.

“There is an objective and quantifiable return on investment by using VDC,” highlighted Mr Kimber. “By making slight adjustments to how the project teams such as owners, designers, contractor and trade partners integrate early, it is possible to influence and mitigate the impact of design changes later down the road during construction.”

DPR Construction is a forward-thinking general contractor and construction manager specialising in technically complex and sustainable projects for the advanced technology, life sciences, healthcare, higher education and commercial markets. Its portfolio of work ranges from large-scale new construction to small tenant improvements and special projects.

The company has leveraged on the use of technologies to deliver more predictable outcomes through applications of VDC and prefabrication. DPR consistently ranks among the top building contractors and employs approximately 9,000 professionals across its family of companies.

DPR’s Asia Pacific operations bring global, technical and construction expertise to the region. The company is a BCA-registered contractor. ■

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



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# MYCRANE: REVOLUTIONISING CRANE RENTAL INDUSTRY

THE WORLD'S FIRST ONLINE CRANE RENTAL PLATFORM, MYCRANE, HAS EXPANDED ITS OPERATIONS INTO SINGAPORE, THAILAND AND INDONESIA. SEAC TALKS TO CEO AND FOUNDER OF MYCRANE, ANDREI GEIKALO, ABOUT THE BENEFITS OF DIGITALISATION IN CRANE RENTAL BUSINESS, THE GROWTH OF THE PLATFORM GLOBALLY AND ITS UPCOMING DEVELOPMENTS FOR THE INDUSTRY.

## 1 Mr Geikalo, you've spent many years in the crane industry. How did MyCrane come about?

**Andrei Geikalo (AG):** MyCrane is the culmination of our management team's long experience in the cranes and construction industry. During our careers, we discovered that the industry is crying out for change, and would benefit significantly from the digitalisation that is taking place in all other areas of business and personal life.

I myself spent many years working at Mammoet, the global engineering and heavy lift specialist, initially as an engineer before rising to commercial director. Naturally I have had a lot of experience in the world of cranes – though I must admit my love of these machines started way before, in my university days where I studied construction equipment and machinery.

The global pandemic provided an opportunity for me to take stock, stop doing 'business as usual' and launch MyCrane.

## 2 What has growth been like for MyCrane since its launch last year?

**AG:** Our progress has been remarkable. In less than a year, we already announced the appointment of franchisees, and therefore the start of operations, in the UAE, Oman, Qatar, India, Kazakhstan, Uzbekistan, the UK, Republic of Ireland, and three countries in Southeast Asia: Singapore, Thailand and Indonesia. Further global expansion will be announced in the coming months.

In terms of operations, we continue to receive unsolicited communications from people all around the world, confirming



Mr Geikalo launched MyCrane in mid-2021.

our belief that such a service is needed. Similarly, feedback from MyCrane users has been overwhelmingly positive.

On a personal level, I was honoured to be invited to speak at the Cranes and Transport Middle East (CATME) conference in Dubai earlier this year, which provided an opportunity to present the benefits of digitalisation in the construction industry to a larger audience.

## 3 With MyCrane's rapid success, how is it changing the construction industry?

**AG:** The starting point is to acknowledge that the crane rental process is outdated and complicated for all parties.

MyCrane is digitalising the crane rental industry. This sounds like a simple thing to do – but what does it mean in practical terms? Most importantly, it means the customer does not have waste

time contacting multiple crane rental companies, making phone calls, chasing response to RFPs, clarifying quotations that are not clear, and so on.

For the first time, customers can log on to a digital platform, MyCrane, and submit the details of their lifting requirements. Then, registered crane companies respond with their proposals, allowing the customer to quickly and easily accept their chosen commercial offer (all online). No more phone calls, no more trying to work out if quotations are directly comparable.

Other benefits for the customer include the possibility to save costs on procurement process, faster results and the ability to get a complete overview of available crane options in the market.

Our service is free to use for both customers and crane rental companies (MyCrane charges a small commission when a project is confirmed using the platform).

The world's first digital platform for the search and selection of lifting services



MyCrane users can submit details of their lifting requirements on the platform free of charge.



Allan Taylor (right) is the new franchise holder for Singapore, Thailand and Indonesia. He manages MyCrane operations in these three countries.

**MYCRANE IS DIGITALISING THE CRANE RENTAL INDUSTRY. THIS SOUNDS LIKE A SIMPLE THING TO DO – BUT WHAT DOES IT MEAN IN PRACTICAL TERMS? MOST IMPORTANTLY, IT MEANS THE CUSTOMER DOES NOT HAVE WASTE TIME CONTACTING MULTIPLE CRANE RENTAL COMPANIES, MAKING PHONE CALLS, CHASING RESPONSE TO RFPS, CLARIFYING QUOTATIONS THAT ARE NOT CLEAR, AND SO ON.**

**4 Digital services are soon becoming a norm in all sectors. Could you share some unique features of MyCrane that differentiate it from others?**

**AG:** MyCrane is the only platform solely focussed on cranes, and the only one of its kind available worldwide (as we believe the cranes industry is too complex to integrate in a more general platform).

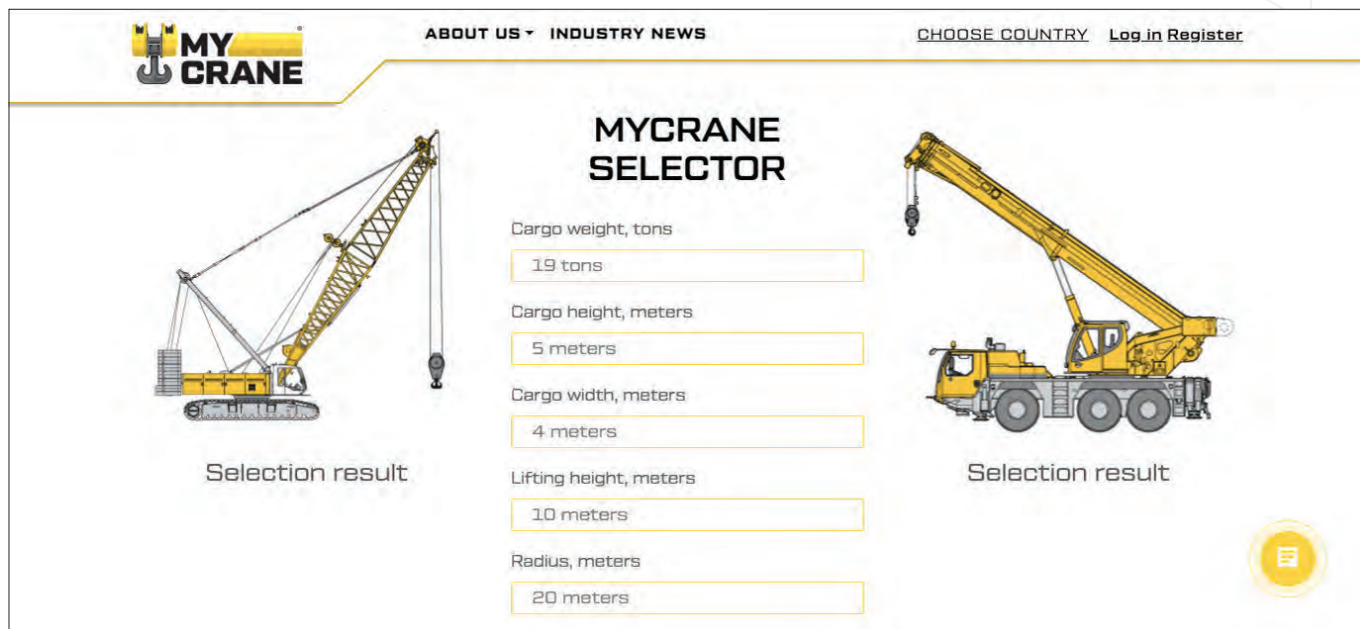
Another unique feature is our Selector tool – the first of its kind to be offered free on a non-commercial basis – to help users find the right crane for their lift. We launched this tool after discovering that many companies are still using crane charts, which are no longer required in 2022.

We have also introduced a ranking system for crane rental providers, which provides an essential benchmarking service to customers and helps to drive up standards in the market.

We are integrating blockchain technology in our payment module to offer all users of the platform access to fact-based data on payment behaviour. This will address the payment issues we are facing in the industry.

**5 MyCrane recently signed a franchise agreement for three Southeast Asian countries. Do you see emerging trends in this region, and what challenges are you facing?**

**AG:** The Asian market is now one of the world's fast-growing regions with a strong requirement for power, especially renewables. We also see a change in people's behaviour in the region. There is increasing demand for transparency, and for business to be undertaken in a more ethical way. MyCrane is the perfect tool to help these companies.



Prices are still under pressure in the region, which is holding back innovation. MyCrane can bring technology to all parties, without having them to invest in this technology. Everyone can benefit from digitalisation to optimise their business.

The challenges we face in Asia are more or less the same we see everywhere else in the world. After all, there are people who still prefer to pick up the phone to call a taxi company!

Fortunately, the vast majority of people we speak to in this industry are extremely positive about the MyCrane services and the efficiencies it enables.

**6 As MyCrane operates on a franchise basis, what kind of support do you provide to your franchisees globally?**

**AG:** Our most important function is to provide our franchisees with the platform they need to operate their business, namely the MyCrane website. Besides the crane rental service, franchisees are also able to access and offer the full range of MyCrane services I referred to earlier, plus engineering support and our Marketplace which can be used to advertise various types of equipment for sale and career vacancies.

Our operations are run out of our headquarters in Dubai, where our newly-appointed COO Piet Kraaijeveld is based. One of Piet’s main roles is to support our franchisees, drawing on his long industry experience which has seen him work for major companies on three continents.

In Southeast Asia, we have franchise opportunities available in other countries such as Malaysia, Philippines, Vietnam and China, and we would be delighted to hear from entrepreneurs who may be interested in operating our service in their home market.

**7 The MyCrane platform is already packed with innovative features. Are there new developments that you plan to introduce in the near future?**

**AG:** In terms of design, we will shortly refresh the look of the MyCrane website, and as regards technology we are about to conclude discussions with a UK-based payment platform. This partnership will enable us to seamlessly take payment from the customer, splitting the payment between the crane rental provider and MyCrane (to pay our commission fee).



TOP: The MyCrane Selector tool helps identify the right crane. ABOVE: Mr Geikalo speaking at the CATME conference in Dubai earlier this year.

As I mentioned, we have already introduced the world’s first free-to-use Selector tool which enables users to find the perfect crane for their proposed lift. It is already populated with cranes by leading manufacturers such as Liebherr, Demag/Tadano, XCMG, Sany and Grove, and more manufacturers are being added on an ongoing basis.

Most of our products are developed in-house with our IT team, however MyCrane is open to engaging in new partnerships to bring already successful digital products to the crane industry.

Most recently, we also announced the addition of a number of new cranes to the platform, including boom trucks, crane manipulators/crane arm, man lifts, mini cranes, cherry pickers, aerial platforms and hydraulic gantry systems.

This is in addition to crawler, mobile or tower cranes, which were already available. We now offer cranes with a capacity of between 100 kg and 750 t and, by the end of the year, all types of cranes will be available on the MyCrane platform. ■

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



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© Deep Dive Dubai

The latest addition to the city's thriving sports and adventure activities scene, Deep Dive Dubai is the place to be for all aqua enthusiasts. Opened in July 2021, it has a 60-m-deep pool that is certified by Guinness World Records as the world's deepest swimming pool for diving.

The pool, part of the new Deep Dive Dubai attraction, has stolen the record from Poland's Deepspot, which has a depth of over 45 m. It also holds 14.6 mil l of freshwater, enough to fill six Olympic-sized swimming pools.

This new recreational centre is located in Dubai's Nad Al Sheba neighbourhood and features a sunken city (complete with an abandoned streetscape, an apartment, garage and arcade) that divers of all levels can explore, guided by mood lighting and ambient music.

The building's facade is styled like an enormous oyster to honour the United Arab Emirate's (UAE) pearl diving legacy and the Emirati pioneer's bravery. With an onsite dive and gift shop, a restaurant and meeting spaces that can accommodate up to 100 guests, Deep Dive Dubai also promises to become a dynamic new venue for events.

### 'Deep' waterproofing

Mapei was involved in the construction of the project by supplying products for waterproofing the substructure of the building, as well as completing the water features and the indoor and outdoor facilities.

Moisture sensitivity tests were conducted in Mapei laboratories, resulting in adhesives of a certain class being recommended. Keraflex and Keraflex Maxi S1 were chosen as the most suitable adhesives for bonding stone coverings in common areas and outdoor areas.

For the installation of mosaic tiles on marine plywood in the changing rooms, Keralastic T two-component, polyurethane adhesive was selected due to the nature of the substrate. The mosaic tiles in the pool were bonded with Kerapoxy adhesive.

# DEEP DIVE DUBAI



OPPOSITE: The new 60-m-deep pool in the Deep Dive Dubai complex is the world's deepest swimming pool for diving.

TOP AND ABOVE: Mapei was involved in the construction of the project by supplying products for waterproofing the substructure of the building, as well as completing the water features and the indoor and outdoor facilities.



© Deep Dive Dubai

The special white and yellow gold coloured glass mosaic called for an attractive and high-quality finish, so Mapei proposed a special system made up of Kerapoxy Design decorative, acid resistant epoxy grout, and Mapeglitter metallic coloured glitter, to grout joints. As for the other areas of the pool, joints were grouted with Kerapoxy epoxy grout.

A few viewing galleries of the pool are located deep below the ground level and needed perfect waterproofing. The challenge of these operations, which had to be completed below ground level, were successfully met by using Mapeplan TU S, a synthetic waterproofing membrane manufactured by Polyglass (a Mapei Group's subsidiary), and Idrostop PVC BEC 32 ME, a PVC waterstop distributed on the UAE market by Mapei Construction Chemicals. ■

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



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Article courtesy of Mapei Realta 88

TOP AND ABOVE: The pool, hosted in a building styled like an enormous oyster, holds 14.6 mil l of freshwater, enough to fill six Olympic-sized swimming pools.

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# The airport at the top of the world

Sitting at 3,600 m altitude, Lhasa Gonggar Airport is one of the highest altitude airports in the world, serving as the largest and most important aviation hub in China's Tibet Autonomous Region.

Opened in 2021, Terminal 3 at Lhasa Gonggar Airport is part of the overall reconstruction and extension of the 4E level airport, which became operational in 1965. With a floor area of 88,000 sq m, the new terminal adds 21 extra gates for boarding and deplaning, enabling the airport to serve nine million passengers per year by 2025.

Arup was engaged to provide a full stage structural, mechanical, electrical and public health engineering (SMEP) design for the newly built terminal, and technical review for the ancillary buildings.



### Lotus-shaped roof

The design of Terminal 3 pays homage to Tibetan culture and ethnic identity, revealed Arup. “To realise the complex lotus-shaped steel roof, we extensively used computational design technologies to determine the most efficient spatial truss configuration and delivered a construction-friendly design.”

Arup developed an innovative dual directional spherical bearing connection to reduce the member dimensions of the tree columns under the high temperature variation of Lhasa, retaining

the architectural intent of a light and elegant roof.

Arup also adopted its in-house developed smart design tools for parametric modelling, automated optimisation and BIM approaches to reduce steel tonnage and facilitate construction while ensuring torsional rigidity and resistance during an earthquake.



TOP AND ABOVE: Featuring a lotus-shaped roof, the design of Lhasa Gonggar Airport Terminal 3 pays homage to Tibetan culture and ethnic identity. Arup provided a full stage structural, mechanical, electrical and public health engineering (SMEP) design for the new terminal, and technical review for the ancillary buildings.



### Challenging site

The location of Lhasa presents formidable challenges for construction work, explained Arup. “During the design stage, we fully considered the availability of local materials and construction feasibility of the complex steel roof as well as special conditions due to the high altitude, such as sun radiation and large daily temperature variation.”

Given the remote and high-altitude project site, Arup put forward detailed specifications to locally source concrete aggregates, and made careful calculations of concrete shrinkage and creep of the long structure under the severe temperature variation in the plateau.



TOP, MIDDLE, ABOVE AND LEFT: Given the remote and high-altitude project site, Arup put forward detailed specifications to locally source concrete aggregates, and made careful calculations of concrete shrinkage and creep of the long structure under the severe temperature variation in the plateau.



**ABOVE AND BELOW:** With a floor area of 88,000 sq m, the new terminal adds 21 extra gates for boarding and deplaning, enabling the airport to serve nine million passengers per year by 2025.



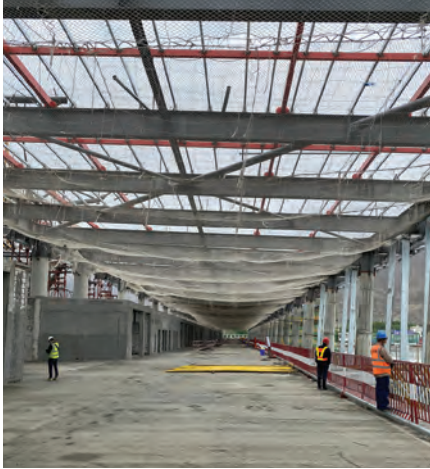
## Sustainable design

In order to achieve energy efficiency, Arup designed a lighting system that makes full use of the high-altitude natural sunlight in the highland of Lhasa - which is known as 'Sunlight City'.

"Our design makes use of the outdoor fresh air in summer, supplemented by the air-conditioning system, to minimise the use of chillers and water pumps while achieving indoor comfort," said Arup.

In addition, Arup's integrated SMEP design approach has tackled many challenges in a creative and cost-effective way. "For example, considering the snowfall load on the roof in winter, a gutter de-icing system is designed in the roof gutter for easy removal of the snow during extreme weather conditions."

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

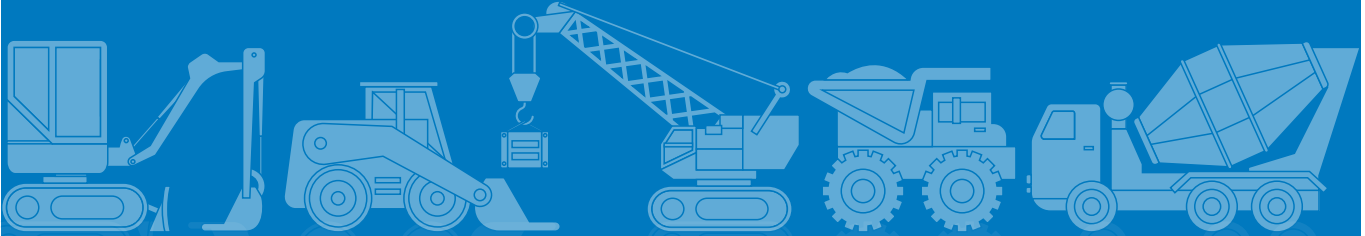


ABOVE AND BELOW: For energy efficiency, Arup designed a lighting system that makes full use of the high-altitude natural sunlight in the highland of Lhasa.



TOP AND ABOVE: Arup also developed an innovative dual directional spherical bearing connection to reduce the member dimensions of the tree columns under the high temperature variation of Lhasa, retaining the architectural intent of a light and elegant roof.

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