

INTERNATIONAL

# CRANES

AND SPECIALIZED TRANSPORT

SEPTEMBER 2022

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KHL Group publication

**bauma**



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ON SITE  
**Unusual installation**

TECHNICAL  
**Offset centre  
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PREVIEW  
**TopLift 2022**

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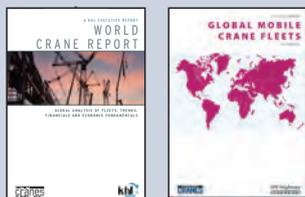
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## EDITOR'S VIEW



A highlight of this issue of *ICST* is the *IC* Tower Index of tower crane-owning companies around the world. Part of the reason for mentioning it is that it helps paint a positive picture of the tower crane sector around the world. Growth has been strong in the last year among many of the participating companies, ranked according to the total capability of all the cranes in their fleets. See for yourself on page 15.

As a tower crane special issue we've also got a big feature on new equipment and how it is being used, starting on page 49. Some of the tower crane news is in the Bauma show guide, see below.

Another highlight and something to look forward to is the upcoming Bauma exhibition in Munich, Germany, later next month. We have about ten pages of what's new and what will be shown by some of the 3,300+ exhibitors at the world's biggest construction equipment exhibition. See what's going on in our extensive feature starting on page 18.

I'd also like to draw your attention to our technical feature written by Keith Anderson. It offers a practical guide to using spreader beams on loads where the centre of gravity is offset. I hope it is useful and helpful to many of you. For me this type of article is great because it addresses points I, for one, may not otherwise look elsewhere for answers. See page 61.

I write this at the end of the school summer holidays which seems to mark the end of summer. Let's hope soaring energy prices, war and rampantly spiralling inflation don't make the next few months what could be seen as "now is the winter of our discontent" to sort-of quote Shakespeare. The quote is widely used like this, in the media and further afield to mean a miserable time ahead.

Instead, however, what about the meaning of the quote as the winter being the end of misery and already looking towards a brighter future. Maybe next year, by the end of the seasonal winter. I know it might be easier said than done at the moment but it is worth a try to be positive, if possible, plus it will only be winter in half of the world at a time.

## ALEX DAHM

Editor



Correspondence is welcome and should be sent to:  
The editor, *International Cranes and Specialized Transport*,  
Southfields, Southview Road, Wadhurst, East Sussex TN5 6TP, UK



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UNITED KINGDOM OFFICE  
**KHL Group**  
Southfields, Southview Road,  
Wadhurst, East Sussex TN5 6TP, UK.  
T: +44 (0)1892 784088 | F: +44 (0)1892 784086  
www.khl.com/ic

USA OFFICE  
**KHL Group Americas LLC**  
14269 N 87th St. 205  
Scottsdale, AZ 85260, USA.  
+1480 6590578 | americas@khl.com

SOUTH AMERICA OFFICE  
**KHL Group Americas LLC**  
Av. Manquehue Sur 520,  
of 205, Las Condes, Santiago, Chile.  
+56 9 77987493 | cristian.peters@khl.com

CHINA OFFICE  
**Beijing Representative Office,**  
Room 769, Poly Plaza, No.14,  
South Dong Zhi Men Street, Dong Cheng District,  
Beijing, PR China 100027.  
+86 10 6553 6676 | cathy.yao@khl.com

GERMANY/AUSTRIA/SWITZERLAND/SPAIN/  
UAE/REST OF THE WORLD  
**Mike Posener**, Sales manager  
+353 (0)86 0431219 | mike.posener@khl.com  
UK/NORDIC NATIONS  
**John Austin**, Marketplace/Classified advertising  
+44 (0)1892 786245 | john.austin@khl.com  
THE NETHERLANDS **Arthur Schavemaker**  
+31 (0)547 275005 | arthur@kenter.nl  
FRANCE/BELGIUM/LUXEMBOURG  
**Hamilton Pearman**  
+33 (0)145930858 | hpearman@wanadoo.fr  
ITALY **Fabio Poteštá**  
+39 010 5704948 | info@mediapointsrl.it

KOREA **Simon Kelly**  
+44 (0) 1892 786223 | simon.kelly@khl.com  
TURKEY **Emre Apa**  
+90 532 2343616 | emre.apa@apayayincilik.com.tr  
CHINA **Cathy Yao**  
+86 (0)10 65536676 | cathy.yao@khl.com  
JAPAN **Michihiro Kawahara**  
+81 (0)3 32123671 | kawahara@rayden.jp  
USA/CANADA **Matt Burk**  
+1 312 4963314 | matt.burk@khl.com  
USA/CANADA **Bev O'Dell**  
+1 816 8861858 | bev.odell@khl.com  
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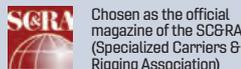
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ON THE COVER



**Liebherr 280 HC-L 16/28 luffer on the 220 metre Hekla tower in La Défense, Paris, France. Tower cranes are widely featured throughout this issue.**

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TOWERS**



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An almost unprecedented increase this year in the IC Tower Index as the annual ranking of the world's largest tower crane-owning companies are revealed. *Alex Dahm* reports.

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**bauma**

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KHL TEAM

EDITOR & EDITORIAL MANAGER **Alex Dahm** [alex.dahm@khl.com](mailto:alex.dahm@khl.com) | +44 (0)1892 786206  
 DEPUTY EDITOR **Niamh Marriott** [niamh.marriott@khl.com](mailto:niamh.marriott@khl.com) | +44 (0)1892 786208  
 EDITORIAL DIRECTOR **Murray Pollok**  
 NEWS WRITER **Leila Stæed**  
 GROUP EDITORS **Lindsey Anderson, Andy Brown, Steve Ducker, Mike Hayes, Cristián Peters, D. Ann Shiffer, Belinda Smart, Euan Youdale**  
 WORLDWIDE CONTRIBUTORS **John Bowman**, Australia; **Graham Brent**, USA; **Marco van Daal**, Aruba; **Heinz-Gert Kessel**, Germany; **Richard Krabbendam**, Netherlands; **Tim Maughan**, Japan; **Brent Stacey**, Australia; **David Weston**, UK

SC&RA CORRESPONDENTS  
**Mike Chalmers, Tim Hillegonds**  
 SALES MANAGER **Mike Posener** [mike.posener@khl.com](mailto:mike.posener@khl.com) | +353 (0)86 043 1219  
 MARKETPLACE SALES **John Austin** [john.austin@khl.com](mailto:john.austin@khl.com) | +44 (0)1892 786245  
 EVENTS & CREATIVE DIRECTOR **Saara Rootes** | [saara.rootes@khl.com](mailto:saara.rootes@khl.com)  
 DIGITAL & PRINT PRODUCTION MANAGER (KHL GLOBAL) **Charlotte Kemp** | [charlotte.kemp@khl.com](mailto:charlotte.kemp@khl.com)  
 PRODUCTION ADMINISTRATION ASSISTANT **Samantha Head**  
 GROUP DESIGN MANAGER **Jeff Gilbert**

GROUP DESIGNER **Jade Hudson**  
 EVENTS DESIGN MANAGER **Gary Brinklow**  
 CREATIVE DESIGNER **Kate Brown**  
 DIGITAL MEDIA DIRECTOR **Peter Watkinson** | [peter.watkinson@khl.com](mailto:peter.watkinson@khl.com)  
 HEAD OF FINANCE & HR **Alison Fitness** | [alison.fitness@khl.com](mailto:alison.fitness@khl.com)  
 FINANCE MANAGER **Yasmin Youmi** | [yasminyyoumi@khl.com](mailto:yasminyyoumi@khl.com)  
 CREDIT CONTROL **Carole Couzens** [carole.couzens@khl.com](mailto:carole.couzens@khl.com) | +44 (0)1892 786250  
 HEAD OF DATA AND AUDIENCE DEVELOPMENT **James Taylor** | [james.taylor@khl.com](mailto:james.taylor@khl.com)

AUDIENCE DEVELOPMENT DEPUTY MANAGER **Anna Philo** | [anna.philo@khl.com](mailto:anna.philo@khl.com)  
 FACILITIES & HR MANAGER **Phillippa Smith** [phillippa.smith@khl.com](mailto:phillippa.smith@khl.com) | +44 (0)1892 786201  
 CHIEF EXECUTIVE OFFICER **James King**  
 CHIEF FINANCIAL OFFICER **Paul Baker**  
 CHIEF OPERATING OFFICER **Trevor Pease**



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# Punch Flybrid energy storage for Falcon cranes

Falcon has invested in Punch Flybrid energy storage units and some Stage V diesel generators for the Falcon Power division of the Falcon Group which includes Falcon Tower Crane Services, in the UK.

Primarily for the tower crane division, the new Punch Flybrid systems use flywheel technology used in Formula 1 motor racing to supply extra electrical power to complement the output from the diesel generator at moments of peak demand during lifting operations.

Falcon explained, "In applications with dynamic duty cycles, generator sets

are sized for the dynamic load response. For example, the start-up current of machinery such as tower cranes, far exceed the standard running current.

Without a Punch Flybrid system, a larger generator would be required to cover the start-up current. While this is required initially, the generator would then be used at a much lower capacity during normal operation, which can be costly for the client in both monetary and emissions terms."



Installing a punch Flybrid energy storage unit on a HS2 railway construction site at Little Missenden in the UK

When used in conjunction with the Punch Flybrid unit, a smaller generator can be specified thereby saving fuel and reducing engine exhaust emissions.

Falcon said it more than halves the carbon dioxide emissions produced.

The first unit was put to work mid-August on part of the UK's HS2 rail project at Little Missenden.

Commenting on the move Andrew Teanby, Falcon Power general manager, said, "With a Punch Flybrid system, we are proving to our customers that there is a significant, real term, cost saving to this system, while reducing their CO<sub>2</sub> emissions by over half."

*See more on tower cranes on pages 15 and 49.*

## Electric crawler crane new from Sennebogen

German manufacturer Sennebogen has announced a fully electrically powered crawler crane.

The 653 E Electro Battery is a 50 tonne capacity machine with a telescopic boom. It will be launched at the Bauma construction equipment exhibition in Munich, Germany, this October.

As the first electric model in Sennebogen's range it was developed in collaboration with Dutch Sennebogen dealer Van den Heuvel. "Through the close contact of Van den Heuvel with Dutch crane rental and construction companies, valuable market requirements from the progressive Dutch market were brought into the development partnership." *See more in the Bauma show guide starting on p18.*

HIGHLIGHTS

» **EURO AUCTIONS** will dispose of the 19-unit **M&M CRANE HIRE** fleet on 14 September at an auction near Leeds, UK.

Directors of the mobile crane rental company are retiring. The assets will go in an unreserved sale. All terrain cranes in the sale include a 2021 Liebherr LTM 1060-3.1 with just 482 hours on the clock and a 130 tonne capacity Tadano

ATF130G-5 from 2017.

Further M&M Liebherr mobiles in the sale include 40, 45, 50, 55 and 90 tonne capacity models from 2012 to 2019.

Other Tadanos in the sale are five units of the 40 tonne capacity ATF40G-2 and a 2010 TS-75ML truck crane. Completing the crane line up are four Terex AC 40-2L all terrains from 2015 and 2016.

To support its manatee care and rehabilitation programme, ZOOTAMPA has purchased a new Shuttlelift SCD09 carrydeck crane, replacing an older Shuttlelift crane in service for more than 20 years.

ZooTampa has looked after more than 500 injured, sick or orphaned manatees, returning more than 280 of them back to the wild. The old 8.5 US ton Shuttlelift 3330E was used to carefully handle the stretchers containing these vulnerable creatures whenever they needed medical care and rehabilitation.

The new crane has daily duties elsewhere in the zoo. Molly Lippincott, curator, said, "We need to weigh the animals pretty regularly to monitor whether they're gaining enough weight – they should eat about 16 per cent of their body weight daily," Lippincott said. "On average, manatees weigh about 1,500 pounds [680 kg], and can move pretty quickly when they want, so it's important that we do what's best for both them and us. We would not be able to function as a hospital without this crane."



## New 230 tonne Liebherr for BCS

BCS Crane Hire Ltd in Ireland has taken delivery of a new Liebherr LTM 1230-5.1. Adding the 230 tonne capacity five axle wheeled mobile telescopic crane is part of the company's ongoing programme of fleet renewal. All its cranes are Liebherrs.

BCS directors William and Ciaran Cussen, said, "The LTM 1230-5.1 is a great addition to our fleet. It is a very versatile machine and with the ever changing demands in the industry it will fit in perfectly."

In addition to the VarioBallast and VarioBase Plus systems on the crane, the new BCS crane has got full radio remote control operation, plus a winch camera and one on the head of the boom to show the load and the immediate area around it.



BCS Crane Hire's new Liebherr LTM 1230-5.1 wheeled mobile telescopic crane

# New EU regulations are "unworkable"

Crane manufacturers and rental companies have reacted with disbelief to a clause in the draft new European Machinery Regulations that requires all mobile machinery to be designed to prevent contact with overhead power lines – or where the risk cannot be avoided – designed to ensure that all hazards "of an electrical nature" are prevented.

Industry experts said such requirements are impossible to deliver, writes Graham Anderson.

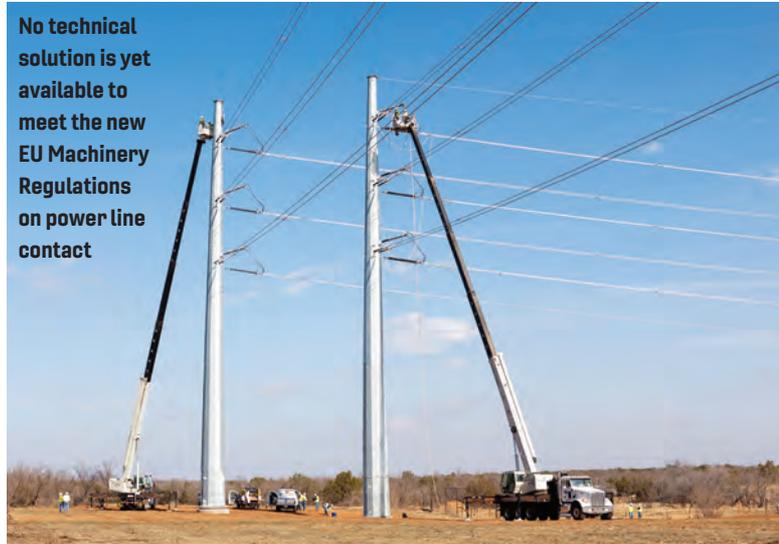
When finally agreed, the European Machinery Regulations will update the existing Machinery Directive from 2006.\*

This is one of the main pieces of legislation governing the harmonisation of health and safety requirements for machinery throughout the EU and is intended to promote the free movement of machinery within the single market as well as ensuring a high level of protection for workers and the general public.

The new disagreement concerns a proposal hidden away in the depths of the regulations – to be precise in Annex III, Part 3, point 3.5.4.

The current version of the regulations states: "When the

No technical solution is yet available to meet the new EU Machinery Regulations on power line contact



risk of contact or electric arc with an energised overhead power line to the persons operating machinery incurred by the contact cannot be fully avoided, mobile machinery or related product shall be designed and constructed so as to prevent any electrical hazards in the event of contact with an energised power line.

Klaus Meissner, chairman of CEN TC147/WG11 – the committee responsible for the EN13000 product safety standard for mobile cranes – said, "Neither remote control of mobile cranes, their isolation, nor grounding of the equipment

as a whole can prevent all hazards when contacting electrical power lines or arcing.

"Using the cabin as shelter would require blocking the doors in case of contact to power lines or arcing, which in itself bears the risk that persons could not leave the cabin in case of subsequent fire."

As currently drafted, the regulations would effectively forbid the production or import of any new cranes or mobile machinery as no technical solutions exist that would allow the regulations' requirements to be met.

[Full story on IGST website.](#)



» ATLAS CRANE SERVICE, a full-service crane rental company primarily serving the wind energy industry in the USA, has been acquired by Ares Management.

Founded in 2009 and headquartered in Aurora, Illinois, Atlas said it offers turnkey maintenance, repair and overhaul services to more than 250 customers.

The Atlas executive management team, led by CEO Zach Prentis, will stay on.

"The investment by Ares marks an exciting next chapter for Atlas, our employees and our customers as we seek to accelerate the growth of our business and capabilities," said Prentis. "Ares brings meaningful resources

and deep experience in the renewables industry, which we believe will support our strategic expansion in the growing wind sector.

"Our team is energised by the future opportunities for Atlas and we remain steadfast in our commitment to supporting renewable energy generation across the US."

HIGHLIGHTS



# ITC tower crane conference call for papers

Submissions are invited for proposals to speak at the 2023 International Tower Cranes (ITC) conference, which will be held in Barcelona, Spain, on 13 and 14 June next year.

The conference will focus on the international tower crane market, looking at trends in technology, fleet management, major projects and the business of tower cranes.

Proposed topics should be of interest to owners and users of tower cranes, including rental companies and contractors. Topics should provide detailed information that will help companies become safer, more efficient and more profitable.

The most recent ITC, held in

Nice, France in December 2021, included the following topics:

- Choosing the right tower crane;
- Tower cranes on the Grand Paris Express project;
- Remote operation and automation of cranes;
- New technology and tower crane design;
- Using wind data to increase productivity;
- Collision avoidance systems;
- Flat top towers and infrastructure projects.

Presentations from the 2021 ITC event can be viewed online at [khl-itc.com](http://khl-itc.com)

*Please submit proposals to: Alex Dahm, editor, International Cranes and Specialized Transport, [alex.dahm@khl.com](mailto:alex.dahm@khl.com)*

Scandinavian rental company **NORDIC CRANE** has taken delivery of five new Grove all-terrain cranes – all five-axle units – to supplement its regional fleet. Four are based in Norway and one in Sweden. There are two 150 tonne capacity GMK5150L-1s and three 250 tonne capacity GMK5250XL-1s. The crane in Sweden is one of the 250 tonners.

Eirik Kynningsrud, general manager at Nordic Crane, said, “We’ve had good experiences with Grove cranes in the past and like the capabilities of the cranes. These latest models will be well-suited to the types of projects we have.”



## Cautiously optimistic

There’s quite a lot of positive movement on our price share index this month with many companies reporting Q2 results. For example, Palfinger shows an 8.12 per cent increase of its share price since last month. Global crane manufacturer Manitowoc recently reported second-quarter net income of \$15.1 million. Its second-quarter orders were \$434.0 million, a 19.2 % decrease from the prior year. The company said that orders were unfavorably impacted by \$22.6 million from changes in foreign currency exchange rates.

“Our second quarter results reflect our diligent cost management amid challenging macroeconomic conditions. While our backlog remains elevated due to continued supply chain constraints, order intake began to trend down. Ongoing global economic uncertainty is causing customers to remain cautious,” said Aaron Ravenscroft, president and CEO of Manitowoc.

On the transport side, specialized transportation service provider Daseke reported a revenue increase of 19.1 % to \$481.3 million, compared to \$404.0 million in the second quarter of 2021. “Benefitting from continued strength in the industrial-facing freight markets we service, we are pleased to report another solid quarter of financial results,” said Jonathan Shepko, Daseke CEO.

### SEPTEMBER /C SHARE INDEX

STOCK CURRENCY	PRICE AT START	PRICE AT END	PRICE CHANGE	% CHANGE	PRICE 12 MTHS AGO	12 MTH % CHANGE
<b>/C Share Index*</b>	<b>79.26</b>	<b>75.96</b>	<b>-3.29</b>	<b>-4.16</b>	<b>113.47</b>	<b>-30.15</b>
<b>Legacy /C Share Index**</b>	<b>253.73</b>	<b>265.42</b>	<b>11.68</b>	<b>4.60</b>	<b>334.21</b>	<b>-24.08</b>
Dow Jones Industrial Average	32,037	33,999	1962.14	6.12	34,894	-8.19
FTSE 100	7,275	7,553	277.34	3.81	7,046	3.25
Nikkei 225	27,915	28,930	1015.67	3.64	27,013	3.34
Hitachi Construction Machinery	YEN 2,967	3,020	53.00	1.79	2,980	-0.44
Konecranes	€ 25.49	25.11	-0.38	-1.49	34.21	-25.49
Kobe Steel	YEN 615	613	-2.00	-0.33	645	-4.65
Liugong	CNY 6.49	6.21	-0.28	-4.31	8.18	-20.66
Manitowoc	US\$ 10.83	10.65	-0.18	-1.66	23.15	-53.22
Palfinger	€ 23.40	25.30	1.90	8.12	35.20	-33.52
Sany Heavy Industry	CNY 17.91	16.26	-1.65	-9.21	28.04	-36.13
Tadano	YEN 983	982	-1.00	-0.10	1,115	-11.84
Terex	US\$ 31.32	36.91	5.59	17.85	48.52	-35.45
XCMG	CNY 5.68	5.37	-0.31	-5.46	6.43	-11.66
Yongmao Holding	SGD 0.71	0.71	0.00	0.00	0.90	-21.11
Zoomlion	CNY 6.21	6.02	-0.19	-3.06	8.09	-23.24

\*/C Share Index, 1 Jan 2011 = 100

\*\*Legacy /C Share Index, end April 2002 (week 17) = 100

### EXCHANGE RATES – VALUE OF US\$

CURRENCY	VALUE AT START	VALUE AT END	VALUE CHANGE	% CHANGE	VALUE 12 MTHS AGO	12 MTH % CHANGE
CNY	6.769	6.816	0.05	-0.69	6.50	4.16
€	0.986	0.995	0.01	-0.86	0.86	15.20
Yen	137.618	137.042	-0.58	0.42	109.61	25.55
UK£	0.838	0.845	0.01	-0.83	0.73	14.25

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## Manitex International up, posts loss

Manufacturer Manitex International reported a hike in sales but posted a loss in the second quarter of 2022.

Net sales increased 15.9 per cent to US\$69.6 million, up from \$60.0 million in Q2 2021 and the net loss was \$2.1 million. Adjusted net income for the second quarter of 2022 was \$1.1 million.

The adjusted EBITDA increased to \$5.2 million, or 7.4 % of net sales compared to \$4.2 million, or 7.1 % of net sales, in Q2 2021.

“We reported stronger net sales, a healthy increase in backlog and margins that are trending higher and continue to progress towards previously stated financial objectives,” said Michael Coffey, Manitex CEO.

# First Potain flat top in USA

Compass Equipment has purchased the first MDT 489 M25 flat top crane in North America. The company, now owned by Uperio, sent the crane to work at the Las Vegas Strip.

“We have a lot of trust in Potain products and the company’s support to use them effectively,” said Kelly Hadland, Compass Equipment CEO. “It was an easy decision to purchase this new MDT 489, and we have high hopes for the crane.”

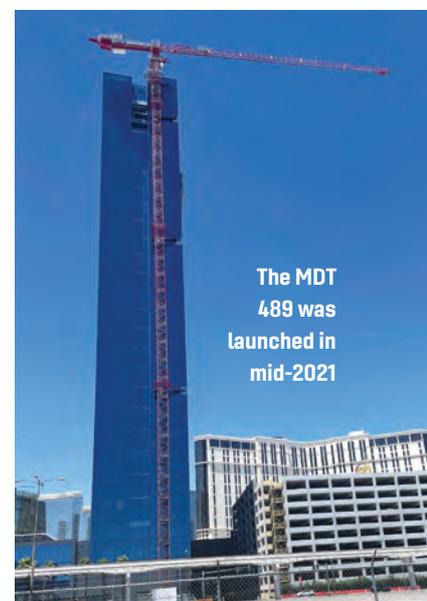
“We continue to invest in the Potain line-up because this crane builds with K800 mast system we already have in our

fleet for larger Potain models. With the K800 tower system, this crane has a free-standing height of 221.8 feet [67.6 metres] HUH with full jib.”

The MDT 489 was launched in mid-2021. The M25 version lifts 25 tonnes and can have a jib up to 79.8 metres.

“We are particularly excited about how this crane combines great capacity for large construction projects with a compact configuration that enables us to operate on restricted jobsites,” Kelly Hadland explained.

*See more on tower cranes in the feature starting on page 49.*



The MDT 489 was launched in mid-2021

## All terrain crane for Welte-Furrer

Swiss crane service provider Welte-Furrer has taken delivery of a Tadano AC 7.450-1 all terrain wheeled mobile crane.

The company chose the

model for its compact design and low transport weight, which it said is useful in tight work sites and urban environments. It can also carry out a range of heavy lifts without additional accessories. The company also said it can be set up quickly and features the Tadano surround view camera system.

Welte-Furrer will be using its new Tadano AC 7.450-1 primarily to erect tower cranes and install prefabricated concrete elements.

**The Welte-Furrer team receiving the German company’s new 450 tonne capacity AC 7.450-1 all terrain crane from Tadano**

Fleet manager Amos Dubacher said, “The AC 7.450-1 represents the latest state of the art in every sense of the word. And this gives it a series of advantages that no other crane in this class can offer.”

Welte-Furrer has six locations in Switzerland with a fleet offering capacity up to 600 tonnes. These include not only the new AC 7.450-1, but also eight additional Tadano and Demag cranes in the form of a TC 2800-1 lattice boom truck crane, an AC 200-1, two AC 350-6s and two AC 250-5s, plus recently overhauled AC 55 and AC 60 city class cranes.



Online crane rental platform MYCRANE has four new types of lifting device added to it for short-term rentals. Boom trucks, hydraulic gantry systems, mini cranes and aerial platforms have been added. It will see the company offer a business-to-consumer (B2C) service for the first time, it said.

Andrei Geikalo, MyCrane founder and CEO, said, “From the start of our operations in mid-2021, feedback from customers has consistently been that we should add all types of crane to the MyCrane platform.”

“When business or consumer clients use MyCrane to compare the offers of crane rental companies easily and quickly, they will now find a much larger selection of machines available for hire. We plan to add all remaining lifting-related equipment to the platform by the end of 2022.”

MyCrane is already operational in several markets, including the UK, UAE, India and Singapore, among others.



» **LIEBHERR** is expanding its heavy lift offshore crane series with an 800 tonne capacity model to work with large offshore wind industry components on ships. The crane is fully electrically powered, enabling a reduction of CO<sub>2</sub> emissions on heavy lift vessels.

Larger wind turbines means heavier

components, hence a bigger crane. Handling larger components also requires a longer outreach.

The new crane was developed in response to a shortfall in the supply of large enough cranes for the wind industry.

All drive components are installed inside the crane which helps integrate it into the design of the ship.

HIGHLIGHTS

# Largest ever crawler crane for Ecuador

In a milestone for the Ecuadorian crane market, Trex, a company of the Ferreycorp Corporation and a specialist in lifting equipment, introduced the first and largest crawler crane in the country to Consorcio Noroccidental Atlas (CNA). It is a joint-venture operation between Transportes Noroccidental and Grúas Atlas.

The crane, a 600 tonne capacity Tadano CC 2800-1 NT lattice boom crawler crane, offers a reach of 175 metres in its maximum configuration. It will be used primarily in the

construction of wind energy and other renewable energy projects in Ecuador.

“This powerful equipment will engage in projects that promote the development of Ecuador and create local jobs– from CNA, we are committed to support the growth of our country,” said Edgar Andrade, general director at CNA.

“With the addition of the



**Tadano dealer Trex handing over the new 600 tonne crawler crane to Consorcio Noroccidental Atlas (CNA). It is a joint-venture operation between Transportes Noroccidental and Grúas Atlas**



**The CNA said the crane will be used in projects that promote the development of Ecuador**

CC 2800-1 NT, CNA has now the most significant fleet of specialized transport and lifting equipment to make possible key projects nationwide,” Edgar Andrade continued.

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**Components:** hall A4, booth 326 · **Mixing technology:** hall C1, booth 425  
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An almost  
unprecedented  
increase this year  
in the *IC Tower*  
Index. **ALEX**  
**DAHM** reports



Only once before has the *IC Tower Index* experienced a bigger rise from one year to the next. In 2017 the Index was up by 29 per cent, the only year it has been higher than this year's hefty 27 % increase. Looking at the Index totals instead of percentages, today's total, of 8,029,698 tonne-metres, is well over double the total in 2017, showing just how far the index has come in the last five years.

### RISING AT THE TOP

Just taking the top five companies, it is clear this is where the biggest increase is found – with the Index up 37 % from 4,541,242 in 2021 to 6,231,069 this year.

So, in the top 20 almost everything is up – more cranes (up by a healthy 5 %) and more depots (ok, just one more than last year). The number of employees is the only decrease, by around 500 people, to 18,073.

There are 1,205 more cranes this year among the top 20 companies than in 2021. Perhaps more were fleet additions this year »

# Leaps and bounds

RANK 2022 2021	COMPANY	Country	No. of towers	Largest tower (make and model)	Largest tower (tonnes)	IC Tower Index 2022
1 ▼ 2	<b>NFT</b>	Abu Dhabi, UAE	3,250	Yongmao STL 4200	100	<b>2968300</b>
2 ▲ 1	<b>Shanghai Panyuan Machinery Rental</b>	China	10,405	Zoomlion D2500-120	120	<b>2,092,191</b>
3 ▶ 3	<b>Liebherr Tower Crane Division</b>	Germany	1,623	Liebherr 4000 HC 100	100	<b>456,700</b>
4 ▶ 4	<b>Uperio (including Compass Equipment)</b>	France	2,122	Potain MDT 809 M25	25	<b>374,000</b>
5 ▶ 5	<b>Tat Hong Equipment Service</b>	China	1,180	Yongmao STT2200	80	<b>339,878</b>
6 ▲ 7	<b>Wolffkran</b>	Switzerland	851	Wolff 1250 B	60	<b>232,517</b>
7 ▼ 6	<b>Morrow Equipment</b>	USA	563	Liebherr 710 HC-L 32/64	64	<b>208,879</b>
8 ▶ 8	<b>Maxim Crane Works</b>	USA	334	Wolff 1250 B	60	<b>151,854</b>
9 ▶ 9	<b>Van der Spek</b>	Netherlands	544	Liebherr 1000 EC-H 20/40 Litronic	40	<b>147,400</b>
10 ▶ 10	<b>Neremat</b>	Belgium	489	Potain MD689	40	<b>143,000</b>
11 ▶ 11	<b>Sante Crane &amp; Equipment</b>	Singapore	243	Yongmao STT1830	64	<b>112,994</b>
12 ▲ 13	<b>Shinwoo Development Co Ltd</b>	Korea	205	Comansa 21LC1400	50	<b>103,531</b>
13 ▼ 12	<b>Marr Contracting</b>	Australia	72	Favelle Favco M2480D	330	<b>101,786</b>
14 ▶ 14	<b>Falcon Tower Crane Services</b>	United Kingdom	448	Jaso J780PA.64	64	<b>98,415</b>
15 ▶ 15	<b>Select Plant Hire</b>	UK	184	Comedil CTL 1600-66	66	<b>91,016</b>

RANK 2022	2021	COMPANY	Country	No. of towers	Largest tower (make and model)	Largest tower (tonnes)	IC Tower Index 2022
16	▲18	<b>BKL Baukran Logistik</b>	Germany	522	Linden Comansa 21LC1050	50	<b>85,310</b>
17	►17	<b>Tiong Woon</b>	Singapore	147	Yongmao STT1830	64	<b>82,836.00</b>
18	▲22	<b>Favelle Favco</b>	Malaysia	176	Favelle Favco M1280D	150	<b>82,591</b>
19	►19	<b>Wasel</b>	Germany	455	Liebherr 630 EC-H 40	40	<b>78,500</b>
20	▼16	<b>Wilbert TowerCranes</b>	Germany	295	Wilbert WT 3000 e.tronic	200	<b>78,000</b>
21	►21	<b>Jaso Tower Cranes</b>	Spain	300	Jaso J560	24	<b>75,000</b>
22	NEW	<b>Virtanen (Lambertsson)</b>	Finland	138	Yongmao STT 1330-64	64	<b>56,465</b>
23	▼20	<b>Bigge Crane and Rigging</b>	USA	99	Comedil CTT 721-40 HD23	40	<b>47,435</b>
24	▲27	<b>Stafford Crane Group</b>	USA	95	Potain MD 1400	50	<b>45,600</b>
25	▼23	<b>Locabens</b>	Brazil	305	Potain MD560 M40	40	<b>42,900</b>

rather than replacements. Having said that, recent years have typically seen increases around double that number.

## WHERE ARE THEY?

In terms of ranking, first there has been a swap at the top where last year's number two, NFT from Abu Dhabi, has replaced China's Panguan Machinery Rental in first place. In addition to its usual extensive fleet renewal and expansion programme, NFT attributes its massive increase largely to the acquisition of some very large Yongmao heavy lift tower cranes with high maximum load moment ratings, from which the Index is calculated. The switch took place even though the new number two also expanded its capability, by 10.5 %, over the previous year.

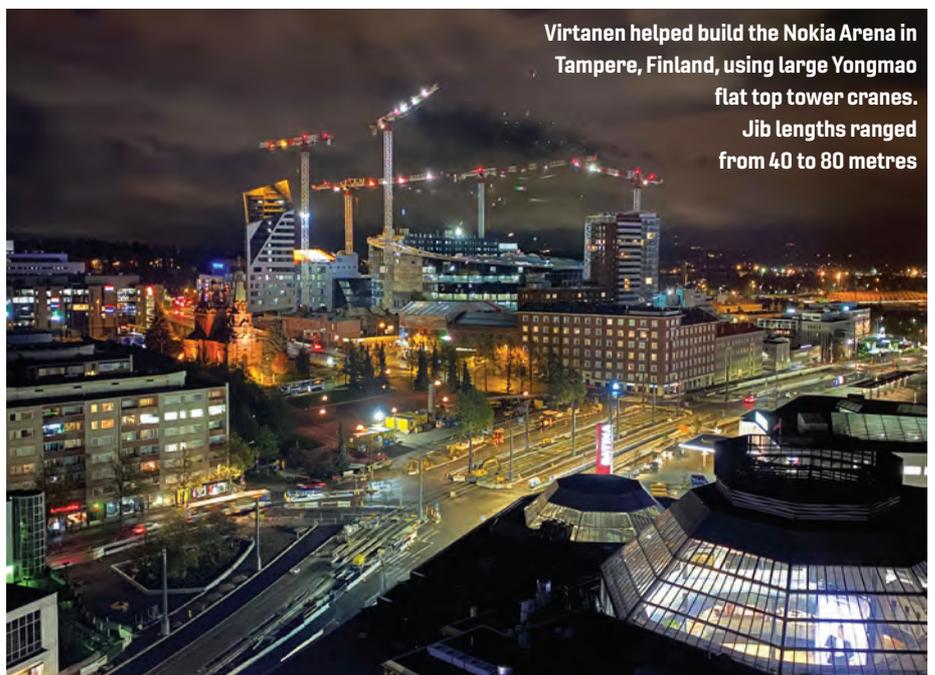
More consistency with the next three positions in the table as Liebherr, Uperio and Tat Hong follow in the same order and places as last year (and, for that matter, the year before too). Liebherr has a smaller fleet than last year while Uperio, with two acquisitions in the last 12 months, has increased its capability by 11 %. Neither made a big enough addition to alter their rankings.

The next change in the table is at 6th place, now occupied by Wolffkran having moved up one and exchanged with Morrow Equipment, now 7th. The change is partly due to a 1.5 % increase in capability at Wolffkran but mostly because of a 14.4 % reduction at Morrow.

## OUTSIDE THE TOP TEN

Moving down the table, from 8th to 11th place the companies are unchanged from last year (and the same as the year before too). And that is even with increases in fleet capability of as much as 8 %, in the case of Neremat from Belgium. It replaced smaller cranes with larger ones in its 489-unit fleet and closed yards in Hong Kong and the Netherlands.

We welcome new entry Virtanen which is



Virtanen helped build the Nokia Arena in Tampere, Finland, using large Yongmao flat top tower cranes. Jib lengths ranged from 40 to 80 metres

## IC TOWER INDEX

Companies are ranked by their IC Tower Index, calculated as the total maximum load moment rating, in tonne-metres, of all tower cranes in a fleet. Like last year we have included 25 companies in the IC Tower Index table but the calculations are all still done on the top 20, for consistency. All companies in the list, plus other prospective ones, have the opportunity to supply fleet information and other data. Where companies supply the full data the figure used is calculated by them. In cases of insolvency, acquisition or lack of sufficiently up to date information, companies are withdrawn from the table.

While we make great effort to ensure the accuracy of information provided, it cannot be guaranteed and *International Cranes and Specialized Transport* and its publisher, KHL Group, accept no liability for inaccuracies or omissions.

The IC Tower Crane Index will next be updated in the middle of 2023. If you'd like your company considered please contact ICST for an application form.

the Finnish tower crane arm of Lambertsson Tower Crane, in 22nd place, and Blue Hat Crane from the USA, in 35th place.

Two companies are missing this year, one of which is Compass Equipment from the USA, since June part of Uperio. In May Uperio also announced its acquisition of tower crane

rental house LaurentKeller in France.

It is interesting to note the companies in the top 20 with lower totals than last year are Liebherr, Morrow, Wasel and Wilbert. All the others have posted larger fleet capability totals. What do the people at these companies know that others don't? ■



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# Show in sight

By the time you read this the start of the great Bauma exhibition will be imminent or already upon us.

ICST brings you an extensive selection of what's new and on show in Munich this October

## bauma

**WHERE:** Messe München trade-fair centre, Munich, Germany

**WHEN:** Monday 24 to Sunday 30 October 2022

**HOURS:** Monday to Friday 09.30 to 18.30

Saturday 08.30 to 18.30, Sunday 09.30 to 16.30

**DETAILS:** [www.bauma.de](http://www.bauma.de)



Finally, the long-awaited Bauma construction show is coming up fast in Munich, Germany.

After delay and postponement due to the global pandemic, it is time to see more than 3,000 exhibitors show off their latest offerings, in person, to a crowd with pent up demand and full wallets.

Cranes and transport are of course the two most important elements (other than the people) of a construction project and the same goes for the Bauma exhibition. While it is at a different time of year and some exhibitors have declined to attend, signs are good for it to be a great show.

## WHEELED MOBILE CRANES

### GROVE

Starting with wheeled mobile cranes Grove is showing its new GMK6400-1 all terrain crane. The updated 400 tonner "retains the much-loved features of the original and adds notable new technologies for a stronger overall offering," manufacturer Manitowoc said.

It will be on show in public for the first time. Andreas Cremer, Manitowoc vice president of product

management for all terrain cranes, comments, "The GMK6400-1's predecessor, the GMK6400, was hugely successful and broke the mould for what was possible with a six-axle crane in terms of lifting power. So, with the new and upgraded model, we've kept that power that customers love and added more speed and flexibility. Visitors to Bauma 2022 will get to see that for themselves and fully appreciate the expanded capabilities of the new crane."

Like its predecessor it has a 60 metre main boom but changes to the new one include increased hydraulic oil flow for faster operation and smoother movements. Also now included is the Crane Control System (CCS) and the Maxbase variable outrigger positioning system.

A tip height of 136 metres can be reached using the maximum number of jib extensions. For a stronger chart

the new model is also compatible with the Mega Wing Lift. It is a self-rigging attachment deployable in less than 20 minutes, the manufacturer said. Capacity can be increased by as much as 400 per cent on the luffing jib, Grove said, and by up to 70 % in a main-boom only configuration.

More new Groves are expected to make their debut in Munich at the stand number FS 1202 in the outdoor area south.

### LIEBHERR

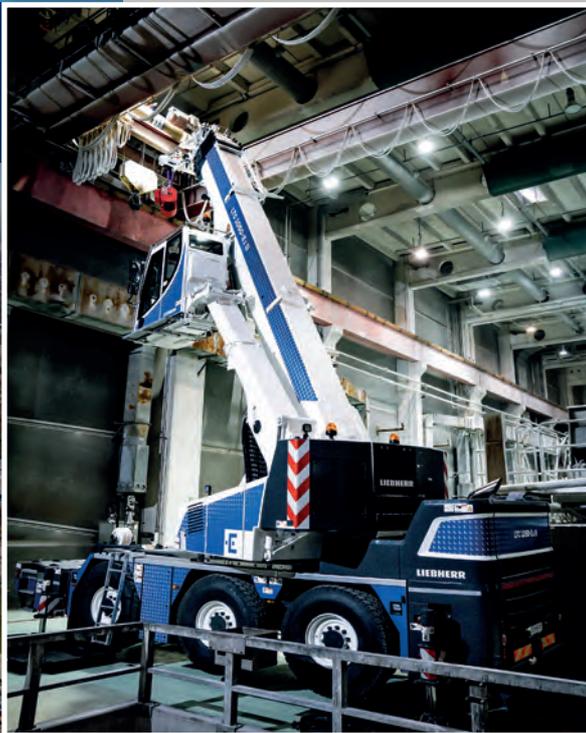
New from Liebherr is an electric power option for its 50 tonne capacity LTC 1050-3.1 compact wheeled mobile telescopic crane. It has an electric motor in addition to the conventional diesel drive allowing crane movements to be executed using electricity. The new version helps reduce carbon dioxide emissions and satisfies the requirements for operation on Zero Emission construction sites.

It was unveiled at a special preview on 5



The new Grove GMK6400-1 "can take on jobs that usually require a seven-axle (or even eight-axle) crane but inside a smaller overall footprint," manufacturer Manitowoc said

Full performance is available from the electric version of Liebherr's 50 tonne capacity compact mobile crane



Liebherr says the changes to its 110 tonne capacity 5 axle LTM 1110-5.2 make it a simpler, safer and more comfortable crane

Expect to see more, as-yet unannounced, new Liebherr cranes at the show.

Since unveiling its LTM 1110-5.1 wheeled mobile telescopic crane at the Bauma in 2019 Liebherr has updated it to LTM 1110-5.2 with the addition of three new features. The 110 tonne capacity all terrain has the new driver cabin, a prototype of which was also shown at the last Bauma. It also has the new LICCON3 crane control system and the recently announced ZF TraXon DynamicPerform gearbox. An oil-cooled multi-disc clutch is also new.

Testing is complete and it is ready for series production. Introduction of the LTM 1110-5.2 is the first example of the new Liebherr standard crane design, to be seen on other upcoming new models.

**TADANO**

For Tadano since the last Bauma in 2019 it has been a time of major change. In that time the Japanese manufacturer has launched a dozen cranes and associated products. The list includes: the AC 2.040-1, AC 4.070L-1, AC 4.080-1, AC 5.1201 and AC 7.450-1 all terrains; the HK 4.050-1, and HK 4.070-1 truck mounted cranes; plus a telescopic boom crawler crane entering production in Zweibrücken, Germany, the GTC-2000.

In addition, three rough terrain models from the GR series have been introduced to the European market since April 2021.

Commenting on the company's presence at this year's show Jens Ennen, Tadano Faun GmbH and Tadano Demag GmbH CEO, said, "We'll be taking advantage of this year's Bauma to show an international public



April at the Liebherr-Werk Ehingen factory in Germany. Under electric power the crane can operate with zero emissions of greenhouse gases at the point of use. Full performance is also available in electric mode, Liebherr said. A further benefit of the electric option is reduced noise which helps at night or in noise sensitive areas.

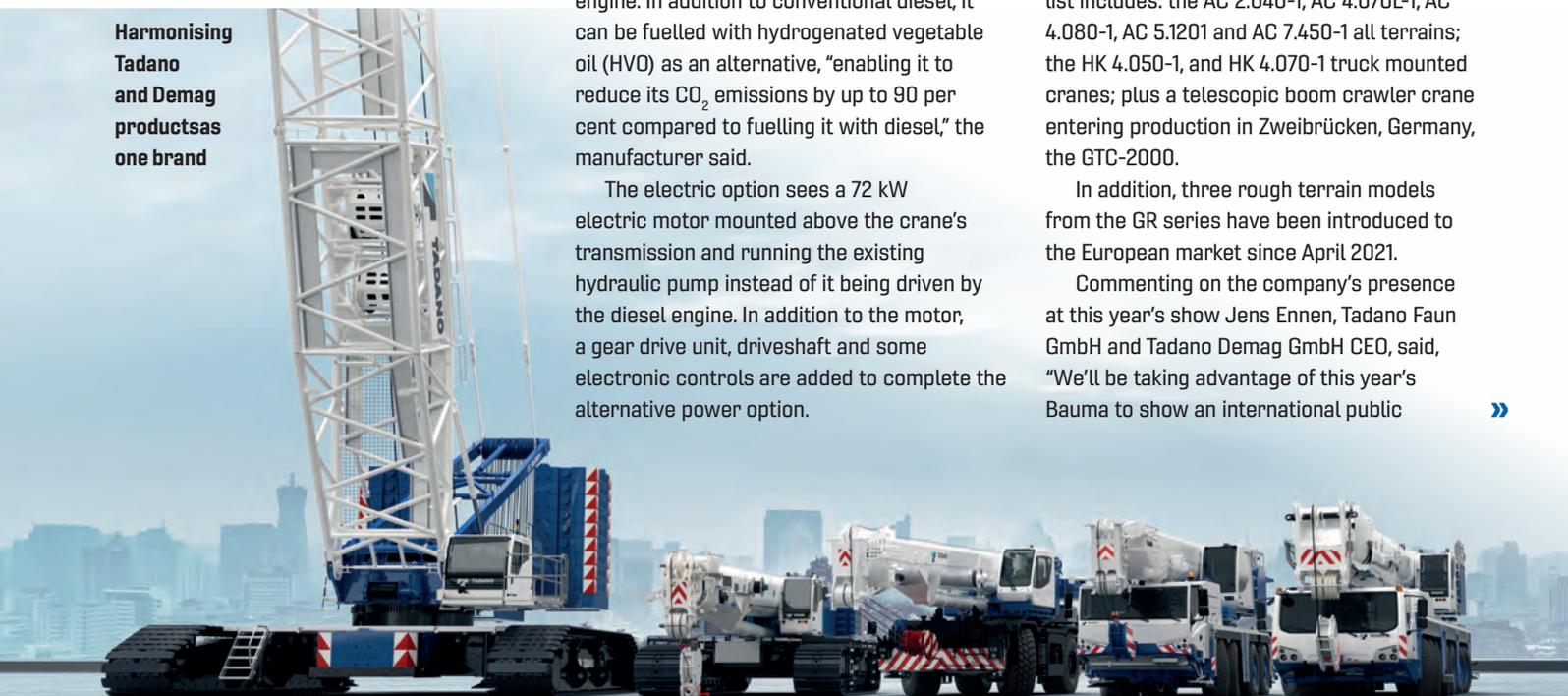
Ulrich Hamme, Liebherr-Werk Ehingen technical director, said, "We want to be able to

offer our customers full crane performance even with the alternative electric power unit. The LTC 1050-3.1 still has a conventional internal combustion engine, powered by diesel or HVO, for driving on roads and for crane operations. However, as an alternative it also has an electric power unit for crane operations so that it generates 'zero emission.' That means that all the familiar usage properties of the crane will be retained, regardless of whether the crane operations are powered by its zero emission electric motor or its internal combustion engine."

For travel to and from site the LTC 1050-3.1 has a 243 kW, six-cylinder EU Stage 5 Liebherr engine. In addition to conventional diesel, it can be fuelled with hydrogenated vegetable oil (HVO) as an alternative, "enabling it to reduce its CO<sub>2</sub> emissions by up to 90 per cent compared to fuelling it with diesel," the manufacturer said.

The electric option sees a 72 kW electric motor mounted above the crane's transmission and running the existing hydraulic pump instead of it being driven by the diesel engine. In addition to the motor, a gear drive unit, driveshaft and some electronic controls are added to complete the alternative power option.

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Link-Belt said the cab design for its rough terrain cranes has been well received in the field

everything we've achieved in the past few years and the enormous progress we've made in a number of areas that benefit our customers. Tadano is excited to welcome visitors to our booth at Bauma for them to witness the numerous innovations in terms of products and solutions."

Tadano's latest all terrain, the AC 2.040-1, is described as a world first in two ways: it is the first AT crane jointly developed by Tadano's Lauf and Zweibrücken locations in Germany and it is the very first member of the future Tadano AC family.

"That's why this market launch is really special for us – after all, the new AC 2.040-1 is the first crane to combine the best of our two worlds with the know-how from Zweibrücken and Lauf," all terrain crane product line VP, Dr Frank Schröder, proudly points out.

"All future models will share the same DNA with a standardised crane control system, cab, on board diagnostics, telematics, and many other technologies," Schröder said.

Tadano said it is on schedule to fulfill its 2021 announcement of a schedule to launch 15 new cranes in the next few years. "Our OneTadano transformation process is going as planned, and it's something we'll get the chance to show everyone at bauma," points out Jens Ennen, who has the numbers to back up his statement: Nearly all the products on display did not even exist yet at the time of bauma 2019, and several models and solutions will be celebrating their world debut at Bauma 2022.

### LINK-BELT CRANES

Link-Belt Cranes will show its newest rough terrain crane, the 75 tonne capacity 85|RT. It has a full power, five-section formed boom extending from 11.6 to 43.3 metres. A two-piece SmartFly jib is available, 10.7 to 17.7 metres long and with manual offsets at 0, 15, 30 and 45 degrees. The US manufacturer's V-CALC (Variable Confined Area Lifting

Capacities) system features virtually infinite outrigger configurations with real-time 360 degree charts. Powered by a Cummins Tier 4F QSB 6.7 270 hp (201 kW) diesel engine, it drives via a six-speed transmission.

## CRAWLER CRANES

### LIEBHERR

A major star of the show will be the 2,500 tonne capacity lattice boom crawler crane new from Liebherr-Werk Ehingen in Germany.

The LR 12500-1.0 fits in the upper end of the product range between the 1,350 tonne capacity LR 11350 and the 3,000 tonne capacity LR 13000.

It has several distinctive design differences from other Liebherr models. The boom is wider and gives the same stability as using the double lattice PowerBoom or the SX boom, the manufacturer said. It is called HighPerformanceBoom. Its maximum length is 100 metres but it can be extended using sections from the luffing jib to 155 metres.

Erection of larger wind turbines will be another common application for this new giant.

The crane's maximum tip height of around 200 metres is achieved with 100 metre main boom and 108 metre luffing jib.

The crane's superstructure is much narrower than existing models and the two main hoist winches sit on top of it instead of in between. The back mast is mounted at the front of the superstructure immediately behind the

Liebherr's new 2,500 tonne capacity crawler crane

foot of the boom.

Easy transport is a key element of the new design. Largest is the 4 metre wide superstructure front section which can be transported on a low bed trailer. Other components come in at 3.5 metres wide or less, the manufacturer said.

The narrow rear section of the superstructure houses a pair of engines. The Liebherr straight six diesels offer a combined output of 800 kW. Redundancy in the design means should one engine fail the crane can be operated, at reduced speed, to bring it to a safe position.

### SUMITOMO

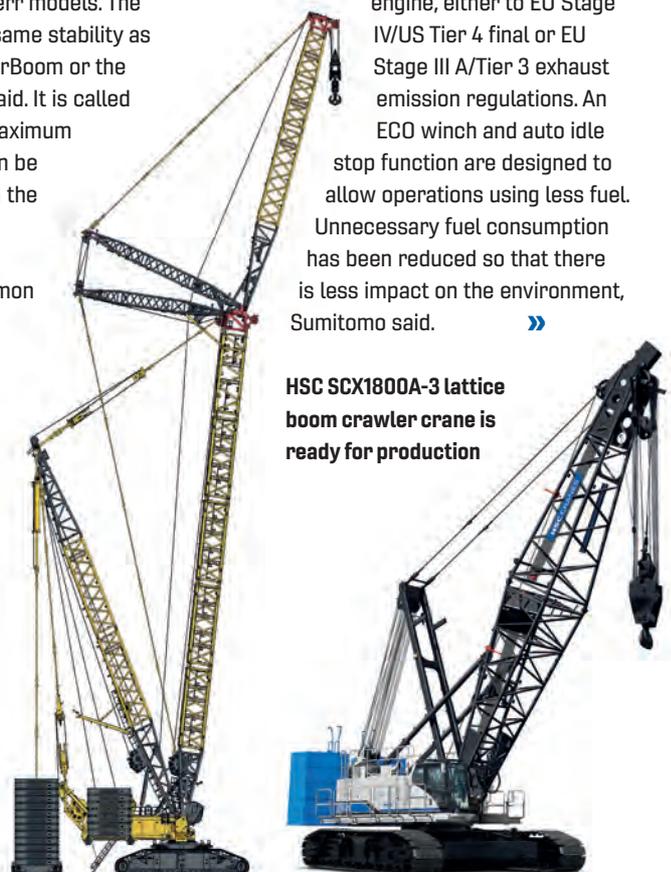
Sumitomo Heavy Industries Construction Cranes (HSC) will show its new 175 tonne capacity lattice boom crawler crane model SCX1800A-3. It can have a main boom up to 84 metres long and the engine meets EU Stage V exhaust emission regulations.

Maximum main boom and crane jib combination is 75 + 31 metres. It is designed to offer "outstanding work capabilities within a refined compact body combined with superb transportation and assembly system."

While the name suggests 180 tonnes capacity, this is available with the addition of special equipment. A heavy-duty top gives 180 tonnes at 4.1 metres radius with a 12 metre main boom. Standard is 160 tonnes at 4.5 metres radius.

Power is from a Cummins QSB6.7 diesel engine, either to EU Stage IV/US Tier 4 final or EU Stage III A/Tier 3 exhaust emission regulations. An ECO winch and auto idle stop function are designed to allow operations using less fuel. Unnecessary fuel consumption has been reduced so that there is less impact on the environment, Sumitomo said. »

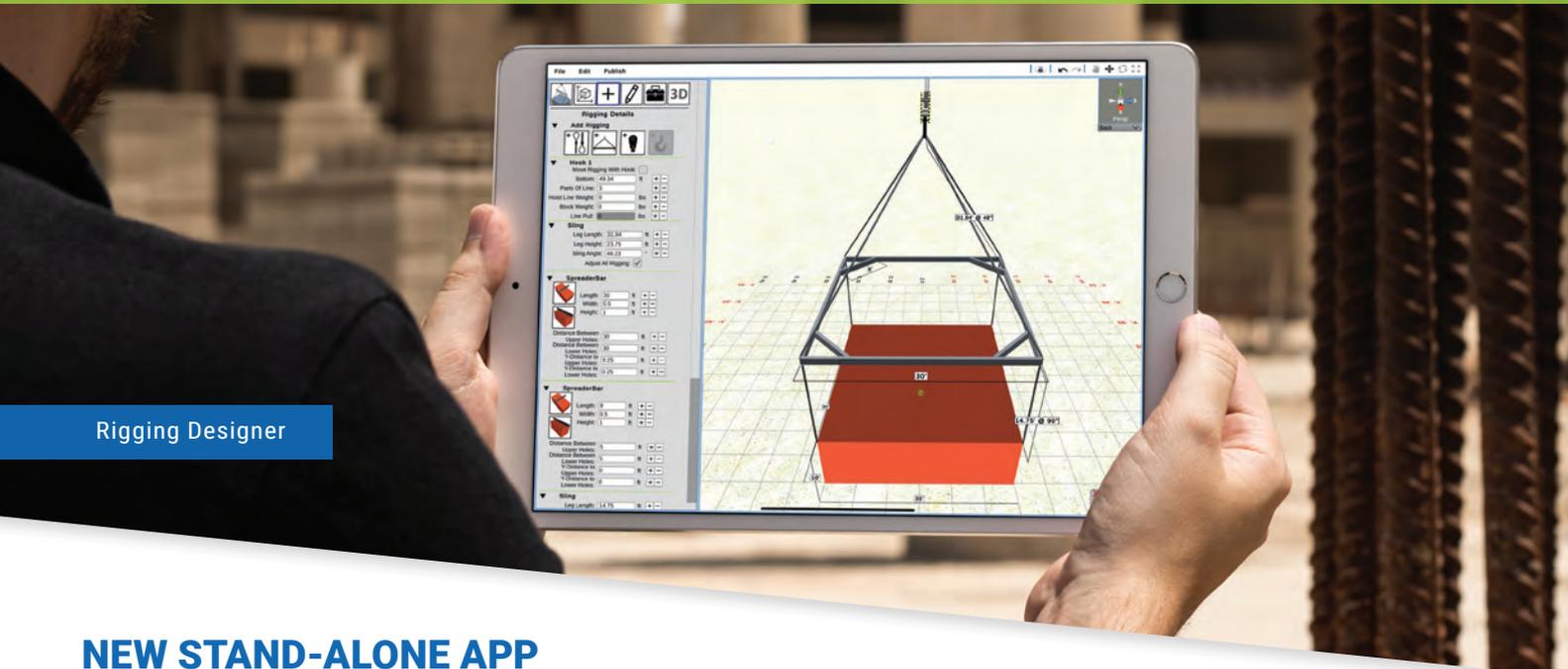
HSC SCX1800A-3 lattice boom crawler crane is ready for production



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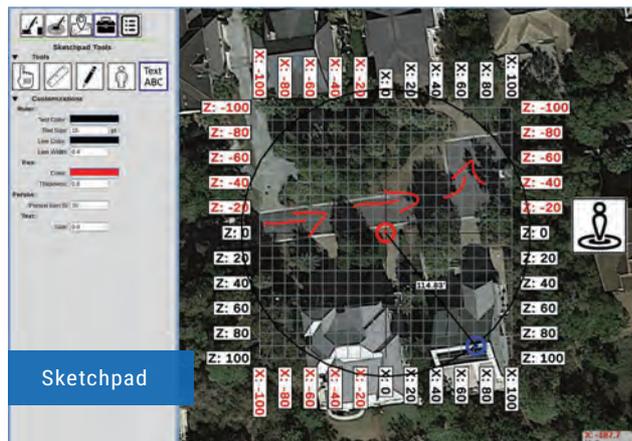
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Further to the common drive for sustainability and electrification, the Japanese manufacturer will reveal an electric lattice boom crawler crane, the 80 tonne capacity battery-driven SCX800A-3.

**SENNEBOGEN**

Sennebogen will show the last development of its 200 tonne capacity 5500 G series lattice boom crawler crane. All the company's crawler cranes have been updated to G-Series spec which includes the latest engine (EU Stage V) and large-diameter piping and valves for maximum efficiency in

operation with reduced exhaust emission and improved fuel consumption. The reinforced boom and increased ballast capacity has allowed payload to be increased by between 15 and 50 per cent over the E series, depending on the configuration.

At the forefront of a move to electric power, Liebherr-Werk Nenzing has two recently announced lattice boom crawlers, the LR 1130.1 unplugged and the LR 1160.1 unplugged. Their electro-hydraulic drives are designed to give the same performance as a conventional diesel-hydraulic model. Battery capacity is designed to allow an

average lifting operating time of eight hours. Performance can be increased by 20 to 60 per cent using additional batteries.

A new safety system on these cranes is Gradient Travel Aid, a function to help safely negotiate slopes and inclines. It works by calculating and monitoring the crane's centre of gravity, warning the operator before the crane leaves a safe area.

Talking of electric cranes, Dutch manufacturer PVE's E-crane division will have the new 80 tonne capacity battery-powered lattice boom crawler crane on show.

Then in the telescopic boom crawler crane sector manufacturer Sennebogen will launch its first fully electrically powered crawler crane at the show. The 653 E Electro Battery is a 50 tonne capacity machine with a telescopic boom.

Combining the benefits of electric power with those of a telescopic crawler crane "means you work completely emission-free and remain maximally flexible thanks to the Dual Power Management System," Sennebogen said.

As the first electric model in Sennebogen's range, it was developed in collaboration with Dutch Sennebogen dealer Van den Heuvel.

The new crane's 210 kW-h battery pack carried onboard allows autonomous operation in battery-only mode, or it can be plugged into the mains electricity grid via a cable. When plugged in the machine runs from this site power with any excess going to top-up the traction battery.

Another new telescopic boom crawler crane on show from Sennebogen will be the crawler mounted 100 tonne capacity

Look out for the new fully electric 50 tonne capacity Sennebogen 653 E Electro Battery at the show



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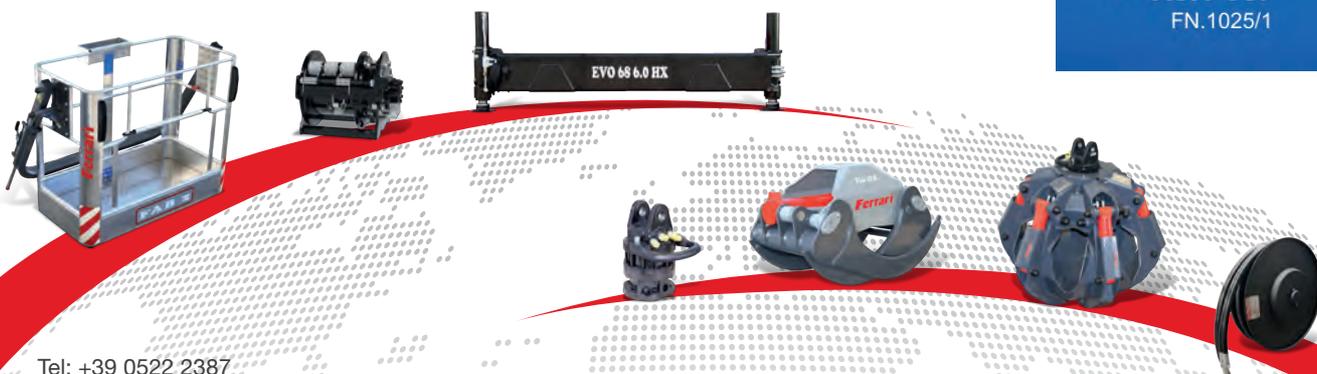
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This new LCH300 hydraulic luffing jib crane from Comansa in Spain



## TOWER CRANES

### COMANSA

Among other new products Spanish tower crane manufacturer Comansa will present its new LCH300 hydraulic luffing jib crane. The company's first hydraulic model lifts 16 tonnes and offers a maximum jib of 60 metres, extendable from 25 metres in 5 metre increments. It can be assembled on 2.5 x 2.5-metre tower sections. The minimum working radius is 4 metres and when out of service it is 9 metres. Hoist winch options are 65 kW or the standard 50 kW unit.

### JASO

Also from Spain, Jaso is launching two new models. The flat top J235.12 lifts 12 tonnes and offers a tip load of 2.6 tonnes at its maximum 65 metre radius. Maximum freestanding height is 55.9 metres on the 1.75 metre tower system. Jaso will also show a first impression of the new 24 tonne capacity low top J390.



6103E. It has a diesel engine.

With models from 16 to 130 tonnes, Sennebogen said it offers the largest selection of telescopic boom crawler cranes in the world. The recently launched 6103E has a boom length of 62 metres and strong pick and carry capability, according to the manufacturer, especially on rough terrain.

Jaso will launch two models, the flat top J235.12 and the Low Top J390. Pictured is the J200.12 flat top similar to the new 235

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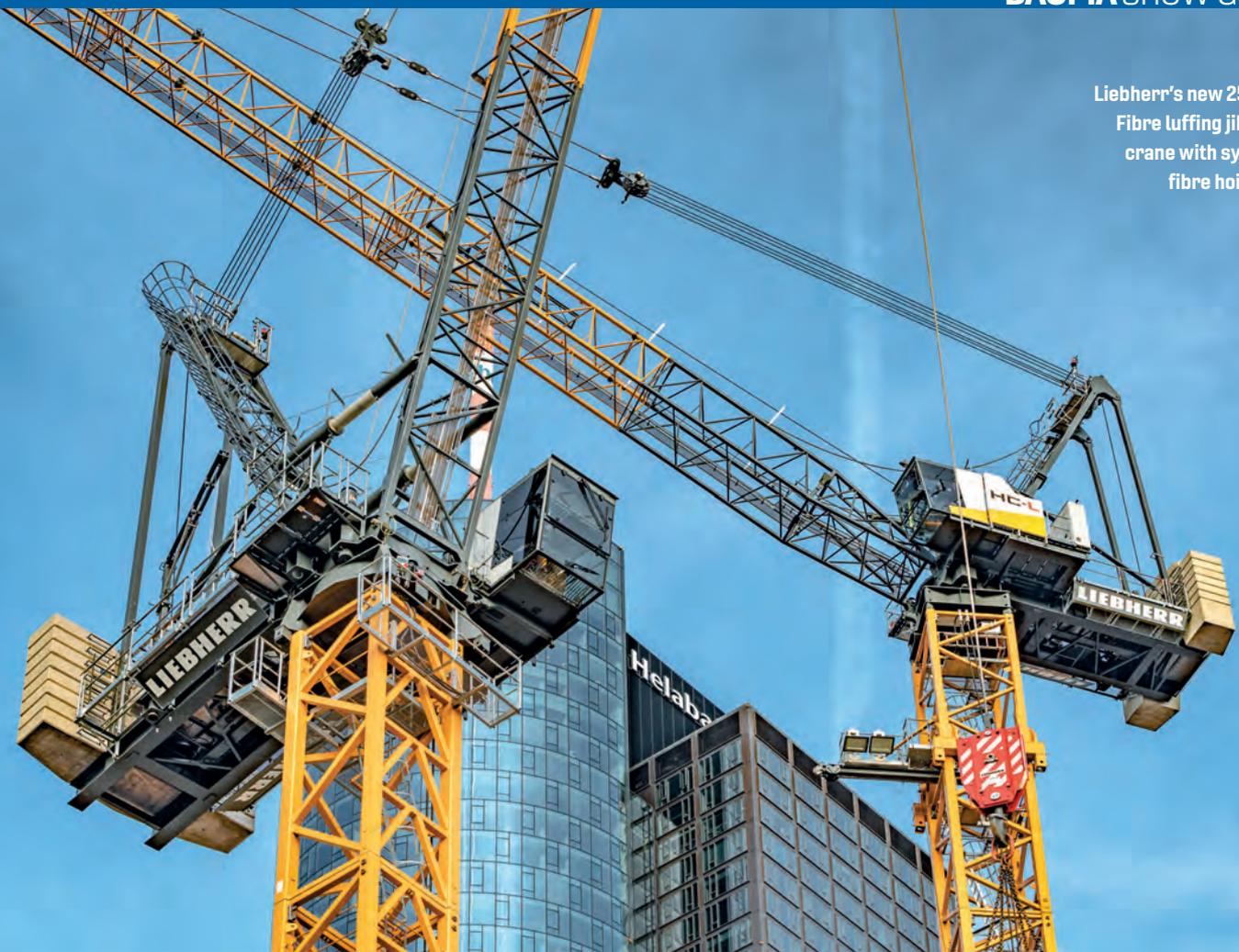


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Liebherr's new 258 HC-L Fibre luffing jib tower crane with synthetic fibre hoist rope



It offers a tip load of 3.8 tonnes at 75 metres and boom length can be altered in 5 metre extension increments.

**LIEBHERR**

Tower cranes designed specifically to make the most of the benefits of using synthetic fibre hoist ropes are a key part of the offer from Liebherr. The 10 tonne luffing jib model 258 HC-L 10/18 Fibre is new and already tested ready for sale.

It has a 25 mm synthetic fibre hoist rope, jointly developed with Austrian rope specialist Teufelberger and is ideal for the construction of high buildings in metropolitan areas, Liebherr said. Capacity at the end of its 60 metre maximum jib is 2.5 tonnes. Its counterpart with a conventional steel hoist rope does 1.9 tonnes.

In the range of conventional saddle jib cranes with tower heads, Liebherr is launching its most powerful model, the 40 tonne capacity 1188 EC-H 40 Fibre. At the end of an 80 metre jib it will lift 13.1 tonnes, 2 tonnes more than its steel rope version.

Two new fibre rope flat tops will also be ready to go: the 520 EC-B 20 Fibre and the 370 EC-B 16 Fibre. The former lifts 2.9 tonnes at the end of its longest, 83 metre, jib. Its maximum is 20 tonnes.

At the end of its maximum 78 metre jib, the

16 tonne capacity 370 EC-B 16 Fibre lifts 2.5 tonnes. A 12 tonne version is already available.

**MANITOWOC**

Manufacturer Manitowoc will display five Potain tower cranes, two of which are new models. The MDT 489 from 2021 and the Igo T 99 will be shown in public for the first time



and the Hup M 28-22 will also be on show. All the manufacturer said before the show was that the two new models would be a luffer and a flat top.

Thibaut Le Besnerais, vice president for brand and product management, tower cranes, at Manitowoc, said, "There is so much focus on infrastructure right now that we want to show how Potain offers solutions for all applications. One of our key goals at Bauma is to highlight how the right combination of cranes and customer support can help drive the sector forward."

Two versions of the MDT 489 flat top are available, with 20 to 25 tonnes capacity. Both can have a maximum 80 metre jib. Easy transport is key and all components, other than the slewing mechanism, can be transported in standard shipping containers. The upper (slewing) section of the MDT 489 ships in nine containers – as many as five fewer than needed for a typical crane of this size, the company said.

Potain's self-erecting Igo T 99, announced in 2021, will be at an international show for the first time. It lifts 6 tonnes, offers a 48 metre reach and the maximum height under hook is 38.5 metres.

**The recently announced Potain MDT 489 tower crane**

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A site in the Middle East with eight Raimondi cranes. Expect to see new models at the show

**RAIMONDI CRANES**

Long-established Italian tower crane manufacturer Raimondi Cranes will announce new machines and a new accessory. "We are extremely excited to showcase our new range of products," said Cristian Badin, Raimondi Cranes commercial director. "This edition of

The FX 21 Clear crane family is new from Wolffkran



PHOTO: NICOLAS GROSSMOND

Bauma will also be our opportunity to present the Raimondi of the future; over the past year we have been working to reinvigorate both our core values and mission, as well as our product line."

**WOLFFKRAN**

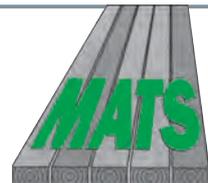
A new concept to be announced by tower crane manufacturer Wolffkran is the FX 21 Clear range. The Wolff FX 7021 is the largest

model in this new family. It is three flat top models in the 141 to 200 tonne-metre class: FX 6021 Clear, FX 6521 Clear and FX 7021 Clear. All have a tip load capacity of 2.1 tonnes.

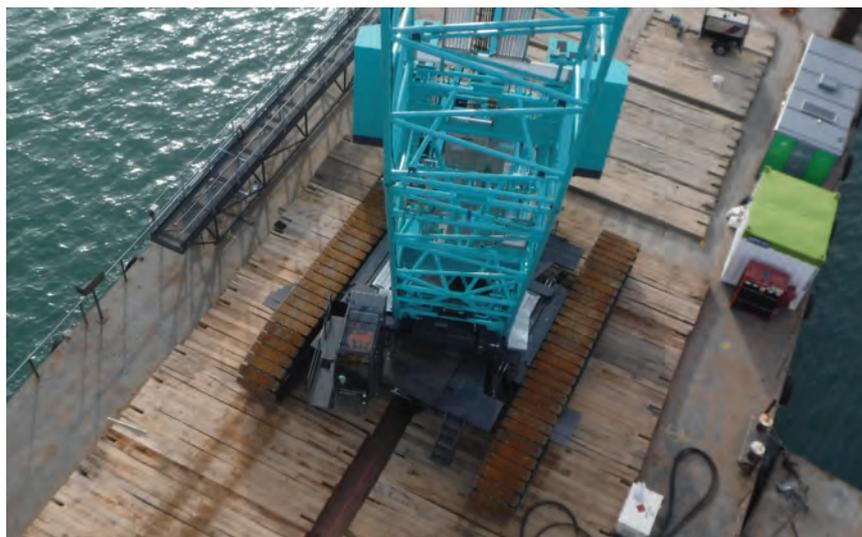
Also on display will be an 8076 Compact, the company's first trolley jib crane in the 800 tonne-metre class. Also new will be the 235 B luffer and two new tower sections: the 6 x 6 metre TV 60 and the reinforced 1.5 x 1.5 metre TV 15.



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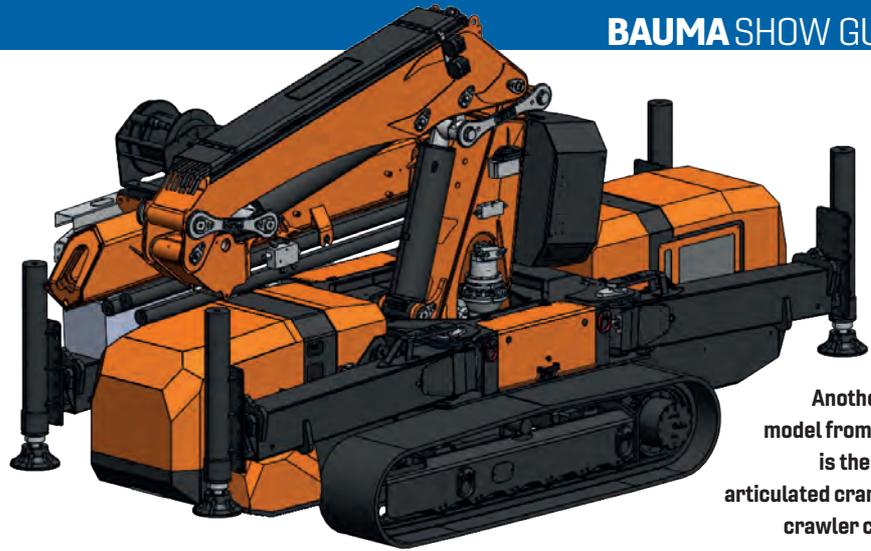
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## OTHER CRANES AND LIFTING EQUIPMENT

### ENERPAC

For industrial lifting, a highlight of the Enerpac stand will be the new SBL600 telescopic hydraulic gantry lifting system. The SBL600 Super Boom Lift hydraulic gantry has a three-stage telescopic hydraulic cylinder with rectangular boom. First stage lifting capacity is 674 tonnes and 416 tonnes for the third stage. Its maximum lifting height of 10.6 metres is ideal for placing gas turbine generators and power transformers in power plants, Enerpac said. The new model fits in the range between the SBL500 and the SBL900 lifting gantries.

“Ease of transportation is another key benefit of the new gantry. Its foldable boom allows for shipping on standard flatbed trucks without special permitting and routing. In addition, with the self-weight at less than 9,100 kg, the SBL600 allows for transport of two legs on a single road truck trailer,” said Jeremy Stubbs, Enerpac Heavy Lifting



Another new model from Jekko is the JF235 articulated crane on a crawler carrier

Technology commercial director.

Also on show will be the ML40 Mini Lift Gantry, the SCJ-Series of 50 tonne cube jacks and a JS-250 Jack-Up. Strand Jacks and the multi-point lifting EVO system will also be shown, plus tools and lifting accessories.

### HIDROKON

Turkish loader crane manufacturer Hidrokon has been making knuckle boom cranes since 1993 and this will be its fifth Bauma.

Its new product range launching at the show is designed and manufactured in configurations to compete with the global brands in the sector, the company said. The three loader cranes on show will be models HK 30E8, HK 65E8+ J12E4 and HK 110E8+J12E6. The latter is a broad application model with its high reverse angle capability in the fly jib. HK 65 E8 + J12E4 is a 65 tone-metre model designed to maximised available payload on the truck where it is mounted.



Hidrokon HK 110 E8+J12E6 loader crane

### JEKKO CRANES

Jekko Cranes from Italy will announce its flagship model, the

Enerpac's new SBL600 telescopic hydraulic gantry lifting system

electric SPX328. With a width of less than 800 millimetres, this mini crawler crane can drive through standard doorways. It lifts 2.8 tonnes and vertical reach is 8 metres. Power is from lithium-ion batteries. All necessary elements needed to operate the crane, including outrigger mats, hook, block and runner can be carried on board.

### PALFINGER

A highlight for Palfinger will be the ZF eWorX. »



Alternative drive and power will be a focus for Palfinger loader cranes

Palfinger, ZF and Mercedes-Benz Trucks jointly developed a system to allow hydraulic cranes and other products to be installed on electric trucks. The module, compatible with all commercial vehicles, electrically powers Palfinger's entire product range. Ordinarily the hydraulic pumps for loader cranes are powered by a mechanical power take off (PTO) from the transmission at the back of the truck's diesel engine. The aim of this latest development is to efficiently electrify PTOs to operate the hydraulic equipment.

**ORMIG**

Fellow Italian manufacturer Ormig has expanded its indoor range of electric wheeled industrial cranes with three new models. The 15iE, 35iE and 100iE cover lifting capacities from 15 to 100 tonnes with the versatility of modular counterweights and small dimensions, the company said.

Among the attributes of the iE models is its tight turning radius. The company's patented steering axle allows the cranes to turn basically in their own length while always keeping four contact points on the ground for maximum stability in pick and carry operation.



Ormig's new 100iE industrial crane



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Goldhofer's latest FTV 850 blade lifter will one of several new models on display

## TRANSPORT AND MOVING EQUIPMENT

### GOLDHOFER

Expect a highlight of the Goldhofer stand to be the FT Series, what the German manufacturer describes as a completely new vehicle concept. "It combines simple handling with the versatility needed to meet a wide variety of transportation needs," the company said with no more details available until the show starts.

Trailstar is another newbie. It is a three- to five-axle air-suspension trailer designed to optimise the use of the loading area and centre of gravity, plus offer superb manoeuvrability, the company said. Also new will be the Stepstar Z trailer which has power steering.

Goldhofer started building wind turbine blade haulers in 2013 with the FTV 300. Today, more than 60 units in different versions are in use around the world. In the last decade wind turbine blades have grown longer and heavier and the Goldhofer FTV has grown with them. Among the many transport solutions Goldhofer will show in Munich will be the FTV 850 blade lifter with a variable width PST/SL-E 1/2 + 1/2 split combination trailer.

**Crawler track machines 2.9 metres wide and 5 metres long can be accommodated, Nootboom said**

### NOOTEBOOM

Dutch manufacturer Nootboom has a new semi trailer with hydraulic widening for sale in Europe. The OSD-73-04(S) is designed for transporting large construction and other machines weighing up to 47 tonnes. Crawler track machines up to 2.9 metres wide and 5

metres long can be accommodated.

It is a four axle trailer available with a single extendable load deck and two of the axles are self-steering. Hydraulic widening was added to meet increasing demand for this convenient feature. It allows the width of the load area to be increased from 2,540





**The SPMT PowerHoss 330 will be a focal point of the Scheuerle TII stand**

to 3,210 mm. Control is via a push button and is infinitely variable. It can also be altered independently on each side.

**SCHUEERLE**

Scheuerle has always offered SPMT PowerHoss modules with two and four axles; however, a version with six axles now complements the series. While the two and

four-axle versions offer payloads of up to 85 and 174.9 tonnes per module, respectively, the new six-axle vehicle accommodates up to 330 tonnes of payload.

In addition, individual modules can be operated according to the plug-and-play principle either mechanically or electronically in a loose coupling mode as well as being coupled to one another both laterally or longitudinally to meet even higher payload requirements, Scheuerle explained.

A vehicle combination of four PowerHoss

330s can move loads with a unit weight of up to 1,320 tonnes.

A new over the road trailer in the 60 to 120 tonne payload class is the EuroCompact U7. It is an extra strong version aimed at moving construction machinery, transformers and other heavy equipment. Its 285/70 R 19.5 tyres and an axle spacing of 1,500 millimetres, allow it axle loads of up to 13.4 tonnes on-road (up to 80 km/h) and 17.4 tonnes off-road (up to 10 km/h) depending on the local legislation.



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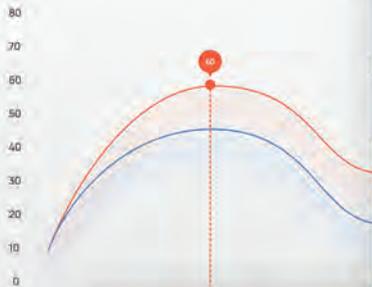
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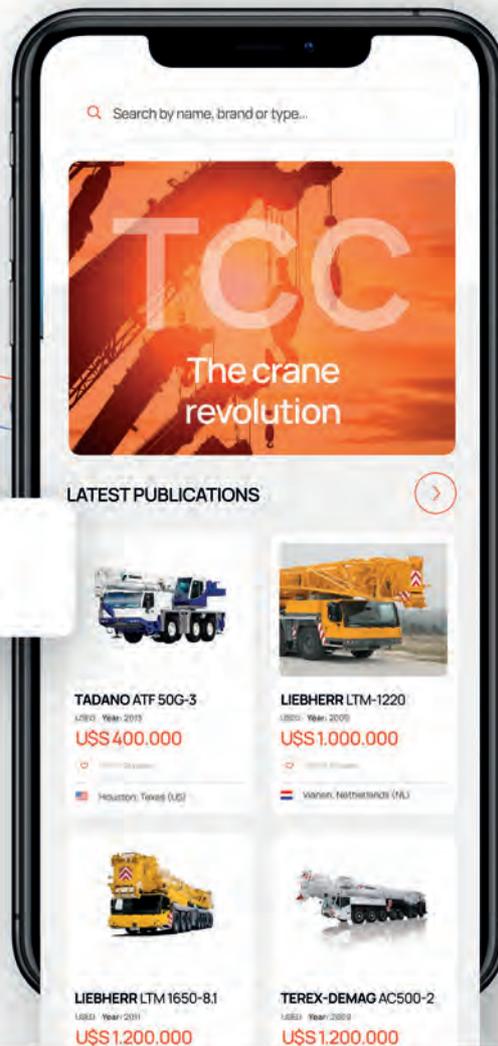
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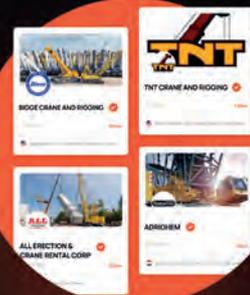
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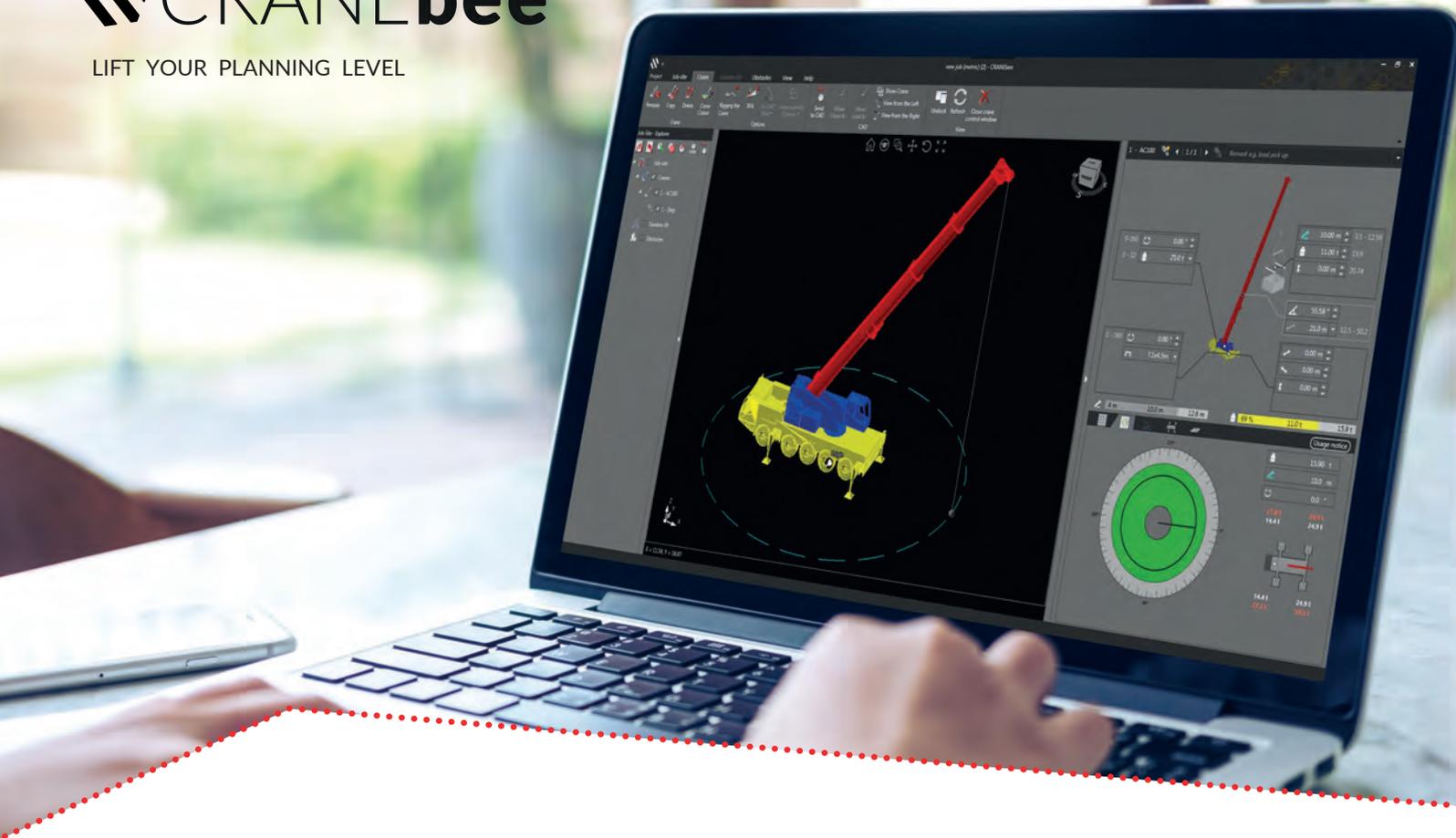


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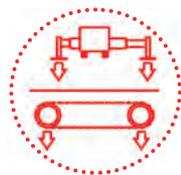
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## TECH, TOOLS AND SERVICES

Electrification will become more and more important on construction sites, as climate targets for emission reduction will continue to be imposed on the construction sector around the world. Demand will grow for energy to supply all-electric and hybrid construction machines with local emissions-free power.

### LIEBHERR

Enter Liebherr's new battery-based energy storage system, Liduro Power Port (LPO). It offers an efficient solution for the mobile supply of machines with a wide range of power and load peaks, Liebherr says.

LPO will be available in power ranges up to 120 kW-h. It can supplement an insufficient grid connection or be used as an isolated grid when there's no available grid connection. Used as a supplement it allows reduced

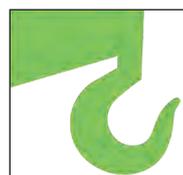


dimensioning of the grid connection power as the LPO handles the peaks in demand.

### BKL

Tower crane rental specialist BKL from Germany is marking its 15th time as a Bauma »

**Liduro Power Port (LPO) from Liebherr**



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MyCrane founder Andrei Geikalo

exhibitor with a new stand. In addition to its top slewing tower and wheeled mobile crane offering for rental and sale, the company will also host the self erecting cranes of Luigi Cattaneo from Italy. Since 1994 BKL has been operating these cranes. The company has 300 staff at six locations.

**MYCRANE**

Service provider MyCrane will show the benefits of its crane rental platform to which it recently added four new types of equipment, including boom trucks, hydraulic gantry systems, mini cranes and aerial platforms. "From the start of our operations in mid-2021, feedback from customers has consistently been that we should add all types of cranes to the MyCrane platform," said founder Andrei Geikalo.

MyCrane is a free-to-use, digital crane rental service, allowing users to post their lifting requirements free of charge online. Crane rental companies then respond with their commercial offers.



KHL Group stand: B5.401

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The temporary structural steel (in red and pale grey) linking the new and the old bridges ready for the tandem move

A complex project in Germany was completed using an approach never before seen for this type of bridge replacement.

**ALEX DAHM** reports



**Kees Kompier, Felbermayr Engineered Solutions divisional manager, left, with Roel Arts, technical manager**

# Uncharted territory

**S**pecialist contractor Felbermayr won an order to replace an old river bridge with a new one in Germany. It was a railway bridge over the river Peene near the town of Demmin in the north east of the country.

Replacing the old bridge in Mecklenburg-West Pomerania, was a key element in the modernisation of the rail link between the capital Berlin and the city of Stralsund.

Replacing the steel girder bridge, however, was described by the Austrian heavy lift and transport specialist as being a Herculean task requiring a corresponding amount of

engineering creativity from the Felbermayr team. "This project was extremely complex, as we had to tread complete new paths. At the end, we found a unique solution never before seen in the world for this type of bridge replacement," said Kees Kompier, Felbermayr engineering division manager.

## NEW AND NOVEL

To build or replace a bridge over a waterway it is typical to use a series of pontoons across the water. In this way the old bridge is floated out to make way for the new, pre-assembled »



The bridge was replaced in one move using slide bearings, SPMT, hydraulic pushing technology and strand jacks modified to form a pulling system

bridge of a similar construction to the old one, to be floated in. "This procedure," Kompier explains, "was not practical for this project. We therefore drew up an innovative concept in which we did not have to use conventional technology. Furthermore, it is then possible to remove the old bridge and install the new one in one go."

Kompier makes it sound easy but the reality was a complex engineering feat. A high capacity jack up system was used to raise the height of the old bridge to match the level of the new one from where it would be brought in over land on the river's north bank.

At 54 metres long the old bridge was much shorter than the 84 metre new one. The new one, weighing 770 tonnes, was moved in on self propelled modular transporter and placed in line – in tandem – with the old one, on the north bank of the river. The ends of the new and old bridges were up close to each other.

## THE EXCITING BIT

Temporary steel structural sections were then welded into place to rigidly join the ends of the new and old bridges together. It was now one giant bridge almost 140 metres long. On the north bank, hydraulic strand jacks were used to pull the complete, 1,050 tonne, structure over some slide bearings on the north side of the river. At the same time an hydraulic pushing system, operating from the south side, moved the giant bridge in 5.7 metre increments across the river.

The push and pull operation continued until the old bridge was far enough over the south side to be placed onto SPMT modules using a fabricated transport frame. With that part complete the final installation of the new bridge seemed rather routine, according to the company.

Having cut the new and old bridges apart the new one was installed on its abutments

using a hydraulic heavy load lift system. Next came the rail track across the bridge and it was all running again by the beginning of July, just a couple of months since the work had started in April.

"I'm really proud of having managed to implement this solution successfully along with my team from Felbermayr Engineered Solutions. We found the most intelligent and time saving solution possible," said Kees Kompier.

Felbermayr has 2,600 employees working out of 75 sites in 19 European countries. Annual turnover was €552 million in 2021. ■

"This project was extremely complex. We found a unique solution never before seen in the world for this type of bridge replacement."

**KEES KOMPIER, Felbermayr manager**

The blue slide frames and shoes carrying the full weight of the bridge as it was moved in 5.7 metre steps across the river



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# Global reach

**T**ower cranes can move, lift and lower all sorts of components used on the construction site, and the sizes of loads, and therefore the cranes themselves, continue to grow and exceed previous performances. Today tower cranes, formerly known as European style electric tower cranes, can be found on construction sites large and small around the world.

When looking at the state of the tower crane market globally, a spokesperson for German crane rental and sales company BKL told ICST the company is still seeing a consistently high demand for tower cranes, both to rent and to buy, across Germany and other parts of Europe.

This year, tower crane rental is experiencing virtually the same high level of capacity utilisation at all BKL locations and across all lifting classes, beyond seasonal requirements. BKL says this is due to the ongoing dynamic housing segment on the German market.

BKL's fleet currently includes more than 500 tower cranes, following its recent addition of bottom-slewing cranes for the 2022 season, plus a focus on larger, fast erecting cranes around 80 tonne-metres.

## COVERING ALL BASES

The company invested in new types of crane, such as the Liebherr 125 K with a 55 metre radius, 41.5 metre hook height and maximum load capacity of 8 tonnes, plus the Potain Igo T99, with its capacity of 6 tonnes, 48-metre

Tower cranes continue to reign as the kings of construction sites all over the world, taking heavy loads to new heights in new locations. **NIAMH MARRIOTT** reports

radius and hook height of 56.5 metres. The Liebherr 120 KR.1 on crawler tracks has also been available at BKL since late 2020.

In 2022, to meet the high demand in the pre-alpine region and as far as Austria, BKL is continuing to expand the local rental fleet at its Rosenheim site with a number of self erecting cranes from manufacturer System Cattaneo in Italy.

Furthermore, during the first half of 2022, BKL took delivery of various other bottom slewing cranes in all categories, including Liebherr 34 K, 53 K and 81 K.1, to replace machines that were sold.

## EUROPEAN DEMAND

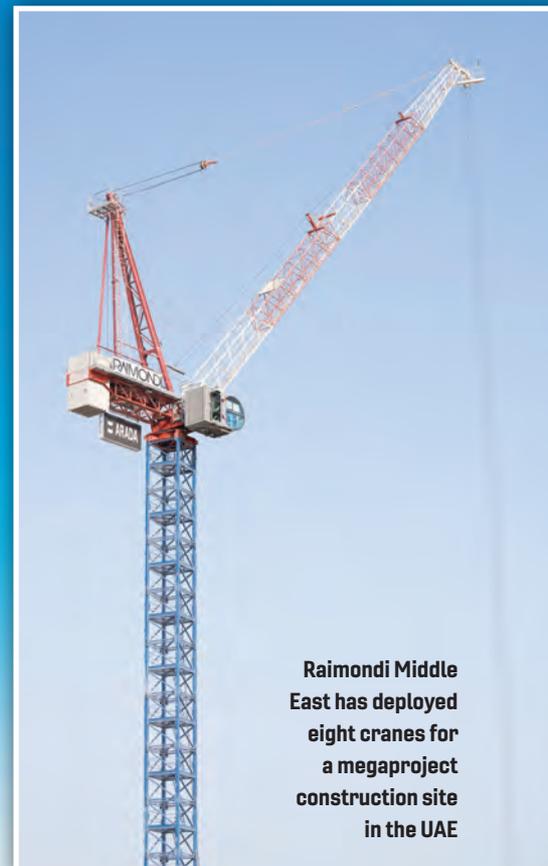
BKL purchased several new types of crane in the top-slewing crane segment in 2021, adding the Potain MDT models 189 and 219, plus the TLS 75 14T SR from Grúas Sáez in the 200 to 300 tonne-metre category of its fleet. The crane specialist also

**Emil Egger used a Tadano AC 7.450-1 to erect tower cranes in Switzerland**

invested in several large Sáez crane models, TLS 80 24T and 20T. This year has also seen the arrival of five machines in each of the 130, 200, 300 and 500 tonne-metre categories of BKL's tower crane rental pool.

Apart from new portals, BKL now offers a specially constructed assembly and crane platform with a load capacity of 20 tonnes in its accessories segment. Fitted with ramps

"Global partnerships, now much more commonplace in the industry, can use the advantages of dual locations and markets..."



**Raimondi Middle East has deployed eight cranes for a megaproject construction site in the UAE**



and removable fall protection, it is ideal for positioning machines but also for many other construction and industrial applications.

BKL represents two manufacturers of tower cranes as the exclusive distributor in Germany and Austria. Since 1994, the crane specialist's fleet has included self erecting models made by Luigi Cattaneo in Italy, selling them under the BKL System Cattaneo brand as of 2012. In March 2022, BKL became the official sales partner for tower cranes produced by Spanish manufacturer Grúas Sáez and will present its product portfolio in the near future.

## COMING SOON

In early September 2022, BKL will be unveiling the first bottom-slewing crane of the new Sáez generation in Germany at the Nordbau exhibition in Neumünster. Ready for the digital transformation of the construction site, the H 32 fast erecting crane offers a 32 metre radius, maximum hook height of 21 metres and a maximum load capacity of 4 tonnes – optimal specifications for small to medium sites. The crane can be moved on axles from different manufacturers to help ensure efficient transport.

## WINDS OF CHANGE

As a crucial pillar industry for wind power development, the field of wind power installation has never been short of innovation and breakthroughs, says a spokesperson for Chinese manufacturer XCMG.

After the launch of all terrain cranes led by the XCA1600, and the crawler cranes led by XGC12000, recently, XCMG introduced its XGL1800 luffing tower crane for wind power projects with the largest capacity in China. The crane exceeds 170 metres in freestanding hoisting height, reaches 138 tonnes in maximum hoisting weight and exceeds 1,800 tonne-metres in maximum overall load moment, the manufacturer said.

## MIDDLE EAST MOVES

Elsewhere in the world, tower cranes continue to dominate, for example, in the Middle East.

Raimondi Middle East deployed eight cranes for the construction of Tiraz, a cluster of eight residential buildings located within the fast-growing Aljada megaproject in Sharjah, UAE.

Two Raimondi luffing jib cranes, five flat top cranes, and one hammerhead have been



Raimondi cranes on site in the UAE

deployed to work on the project. The cranes include four MRT294-16tn, one MRT223-12t, one ER240-28t and two LR213-14t.

"This latest machine rental represents a milestone in our relationship with the UAE developer. With the installation of these eight additional Raimondi cranes, the total number of cranes currently operating at various sections of the city within a city is 31. This makes Aljada the biggest jobsite in the region for us," says Wael Hasan, commercial director, Raimondi Middle East.

Scheduled to remain onsite for 18 months, the cranes are building a complex of 920 smart houses alongside health clubs, swimming pools, play areas, and various green spaces.

"This is the first time we deploy luffing jib cranes for the construction of Aljada megacity," Hasan adds, noting the rationale for having a diverse array of machines onsite.

"Raimondi tower cranes offer us excellent lifting capabilities, while the LR213s give us the advantage to ensure

site productivity by avoiding over sail of surrounding properties thanks to the reduced slewing radius," Hasan says.

This machine configuration involved



To assemble the top slewing crane, Liebherr used a LTM 1450-8.1 mobile crane

## WORKING WITH THE CITY LIMITS

In Cologne, Germany, BKL erected a Liebherr 340 EC-B 16 with a hook height of more than 60 metres, a 78 metre boom and a 2.1 tonne capacity at the end of it. With a maximum capacity of 16 tonnes, the crane is working on the DomCarré.

For the assembly of the top-slewing crane, the crane team relied on a Liebherr LTM 1450-8.1 mobile crane. Limited space in Cologne's old town meant teamwork and utmost precision were required to navigate the 8-axle mobile crane and the trucks with the construction crane parts to the crane site.

BKL's team of tower crane assemblers and a mobile crane driver first erected the tower and the counter-jib on a 6-metre undercarriage. The crane experts used the full length of a narrow alley to pre-assemble the jib of the construction crane on the ground, after which the driver of the 450 tonne mobile crane could finally lift the component between the rows of houses.





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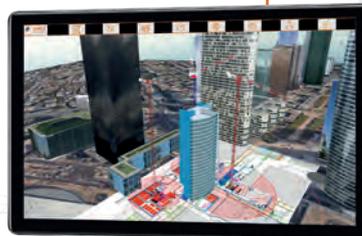
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Zoomlion and Wilbert co-developed the W220-10S flat top tower crane

strategic planning and took into consideration the upcoming adjacent jobsites. All the cranes are freestanding at heights between 42 and 48 metres, with jib lengths ranging from 43 to 50 metres.

**DESERT DEVELOPMENT**

In Dubai, General Construction Company (GCC) is working project with 14 Terex luffing jib tower cranes, including a CTL140-10 and CTL260-18.

The work is for Jewel of the Creek, a 1 million square metre mixed use development in the Port Saeed area of Deira. It is a mix of residential, commercial, hospitality and recreational structures. There will also be a large space for leisure with event halls, ports and recreation centre, and the longest swimming pool in Dubai.

The complex rises partly on land, and partially on a man-made island with an inner creek with a promenade, a waterfront

**MOVERS AND SHAKERS**

Specialist tower crane provider Bennetts Cranes has appointed **NIC HUTCHINSON** as director of operations, strengthening its operational capabilities for large capacity cranes and complex developments in the UK.

Hutchinson worked at Wolffkran for more than 20 years, in roles that included national operations manager and head of operations. His wealth of knowledge extends to large capacity crane models and operations for substantial commercial and residential construction projects.

Bennetts Cranes is based in Gloucestershire in the south west of the UK and it delivers cranes for residential and commercial projects across the country. Bennetts' fleet includes modern luffing jib, saddle job and remote controlled tower cranes. It is the UK's exclusive Raimondi agent.



promenade and marina on the Creekside.

The humid Dubai climate proved a challenge for workers but not the cranes. Emam Al Sayed, head of mechanical at GCC, says, "Here the weather is very hot and humid and can reach up to 51 degrees, but

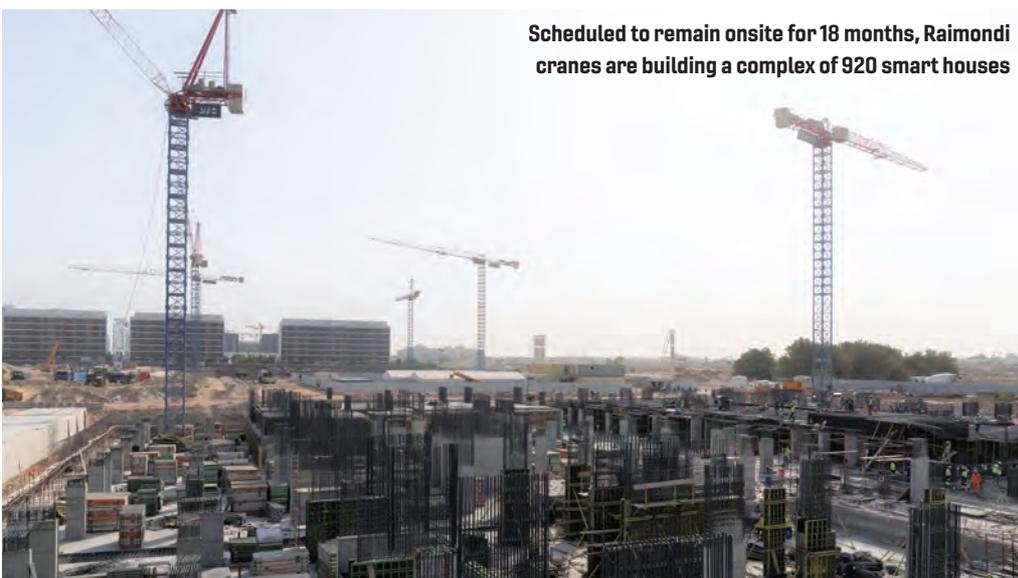
the Terex cranes continued to work perfectly regardless."

Confined space also created issues on site. "All the cranes are of luffing jib type, from CTL 140-10 with its 10 tonne capacity, to the CTL 260-18 with its 18 tonne capacity, they are the ideal solution thanks to their high strength capacity, short counter jib, and versatility which allows them to be assembled in a small area which was necessary on this site with such cramped areas of operation," he continues.

"These cranes are very versatile," says Al Sayed, "and with quite light components so you can use a small crane for installation. They have a short counter jib helping in manoeuvrability. To manage the activity of so many cranes in a restricted area, the anti-collision system AMCS installed on the cranes helps to control the movement of each crane in relation with the others."

The cranes are installed mainly free standing with tower heights up to 110 metres or with in-shaft installation and feature at least a 50 metre jib.

Scheduled to remain onsite for 18 months, Raimondi cranes are building a complex of 920 smart houses



This project would not have been possible without the close relationship that Terex Tower Cranes and GCC have, says Al Sayed, proving the benefits of collaboration.

## CHINESE CONSTRUCTION

China is constantly using tower cranes on a wide range of sites. One project featuring Potain cranes is the reconstruction and expansion of Nanning Wuwei International Airport in Guangxi.

With an accelerated construction timetable the contractor on the project, China Construction Eighth Bureau, wanted several cranes onsite. The contractor opted for nine Potain MCT 275 K12 cranes. With a capacity of 12 tonnes they have the strength to handle precast modules, while their 70 metre jib allows them to cover wider areas.

At the Bauma 2022 trade show, Manitowoc will introduce two Potain tower cranes – a luffing jib model and a flat top. Check out our Bauma show guide this month for more information on this.

## WORKING TOGETHER

Global partnerships, now much more commonplace in the industry, can use the advantages of dual locations and markets. Zoomlion and Wilbert's first tower crane,



The crane needed to reach a height of 100 metres



## ERECTING TOWER CRANES

In the Swiss area of Dübendorf (Zürich), a high-rise construction site needed a crane with enormous reach that would be able to erect tower cranes with a height of up to 100 metres, that was also a compact design. Emil Egger chose a Tadano AC 7.450-1 for the task.

The seven axle wheeled mobile model has a compact outrigger system. "We were able to adjust it perfectly to fit with the columns at the parking garage where we positioned the crane – on the roof, mind you. Without the outrigger system's extraordinary flexibility, we would have had some serious problems trying to put the crane in a workable position," says project manager Beat Greuter.

In addition, the AC 7.450-1 was also able to shine at the work site due to yet another advantage: its Surround View camera system. "When we got to the work site, we noticed that there were pallets everywhere. I basically had no way to clearly see where something was in the way, and if I hadn't had the camera system, I honestly wouldn't have been able to position the crane without a signalperson," adds crane operator Max Frei.

➔ To watch a video of the project see: <https://youtu.be/xw0wo8V0-zY>

co-developed by China and Germany, has now launched in Europe. The W220-10S is the first flat top tower crane jointly developed by the two companies.

"We hope to highlight this win-win approach to co-operation, that it's about inclusiveness, friendship, rules, co-innovation and sharing, and want to work with our global partners to bring better products and services to all customers," adds a Zoomlion spokesperson.

They add that the W220-10S was developed to feature adjustments for the European market to deliver all-round upgrades of safety, intelligence, convenience, economic efficiency and customisation.

Dr Michael Meding, general manager at Zoomlion Wilbert, noted that the new tower crane is the first localised product jointly developed by the Chinese and German teams, and its design and production have fully taken advantage of both companies.

## IN PARTNERSHIP

Zoomlion acquired Wilbert in November 2018. It is not the first partnership in Zoomlion's history. In 2008 it acquired Italy's CIFA, a concrete machinery manufacturer. In 2011 it acquired rights to Jost flat top tower crane technology from Germany. In 2015 Zoomlion worked with the MAZ truck group in Belarus and started manufacturing truck cranes and sanitation sweepers. In 2021, the revenue of its companies overseas grew by 30 per cent.

As the projects get bigger and more complicated, and sites demand more and bigger tower cranes to complete lifts, working together seems like a smart idea.



In Dubai, General Construction Company is working project with 14 Terex luffing jib tower cranes

## SHOW STOPPER

Spectacular scenery and oversized stage designs are the trademark of the Bregenz Festival in Austria. For the performance of Puccini's opera Madame Butterfly, a Liebherr flat-top crane 150 EC-B 8 Litronic installed as much as 300 tonnes of material on a structure in Lake Constance. The new stage set will be used for 26 performances in 2022 and 2023.





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# Delivery for world's largest wind farm

UK-based Allelys Heavy Haulage delivered and installed four transformers, each weighing 255 tonnes, for the Dogger Bank wind farm, in the North Sea.

The transformers, each 9.5 x 4.9 x 4.9 metres (LWH), were received in two shipments at Albert Dock in Hull, UK, where they were lifted using Allelys' Liebherr LG 1550 lattice boom truck crane onto 10 axles of self propelled modular transporter (SPMT) and shunted to a storage location for transshipment to Allelys' 350 tonne capacity Goldhofer girder frame trailer.

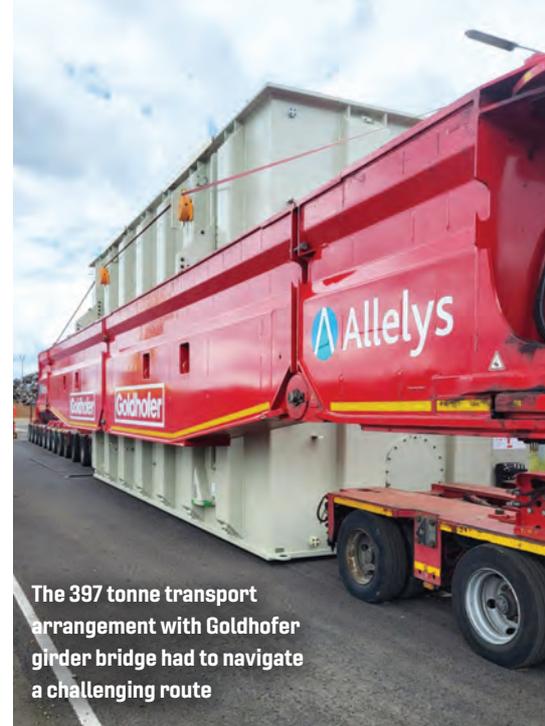
They were transported over four consecutive weekends to Creyke Beck electricity substation.

The combination, 70 metres long and weighing 397 tonnes, had to navigate a challenging route. It included three structures that required bridge inspections and AIPs (approval in principle) to be submitted to obtain technical approval.

The significant road works and road layout changes at Jock's Lodge also posed a challenge, however, the team identified and established a new route in advance of the project start date.

On site the units were also installed using a jacking and skidding system. They were jacked up, the skid gear was positioned underneath and then skidded into position in four separate bunds. Allelys used turntables to rotate three of the four transformers and a two-directional skid for the final unit.

"We were involved at every stage of the project from completing letter drops,



The 397 tonne transport arrangement with Goldhofer girder bridge had to navigate a challenging route

organising street furniture removal and temporary traffic management, through to project management and engineering support," said Zac Smout, senior project manager at Allelys.

## MONTEJO ON THE MOVE IN COLOMBIA AND ECUADOR

Transportes Montejo from Colombia is working on wind energy projects there and in neighbouring Ecuador. The specialized transport and lifting company combines both sets of skills and equipment to transport and install wind turbine components, often in remote areas at high altitude.

Montejo handles the complete transport and construction of the turbines, typically now with a total height around 172 metres.

Pictured is its 2021 Goldhofer FTV550 blade lifter at work in Ecuador pulled by a Mercedes tractor. On the current 12-turbine project, at Huascachaca, the blades are 72.8 metres long.

Longest so far have been 80 metres, on a project in Colombia. Montejo has three projects underway there, Alpha & Beta (90 units), Wimpechi (41 units) and Wesp (4 units). It recently completed the Guajira project of ten turbines.

Berard moved the PT-305 boat and several other military vehicles in the museum



## Historic WWII vessel hauled

While museums may appear to be static, they are constantly evolving, writes D. Ann Shiffler. Curators are always looking at ways to keep museum exhibits interesting. In addition, many artifacts need to be periodically restored. Such was the case for the National World War II Museum in New Orleans, USA. It holds more than 250,000 artifacts, including war documents, weapons and vessels.

One is the PT-305 boat, also known as the USS Sudden Jerk. It is 78 feet long and weighs 43 US tons. (Fully armed and loaded it clocked in at 56 tons.)

"In 2016, the Berard team moved her from the museum to Lake Pontchartrain,

where she was available for rides," said Brett Berard, vice president of operations at Berard Transportation. "She is now back at the main museum campus for tours."

To move the historic vessel this time, Berard used 8 axle lines Goldhofer PST-SLE.

A barge and tugboat were donated by Canal Barge company for the 9-mile journey from the Industrial Canal to the Port of New Orleans cruise terminal where PT-305 was transferred back to the SPMT via a Manitowoc 4100 ringer crane on a barge provided by Stewart Construction. Versabar provided the spreader bar lift system used to lift the boat from the barge to the SPMT.

Goldhofer FTV550 blade lifter on the move in Ecuador



Ainscough Crane Hire has committed to using HVO fuel for its fleet



# Ainscough's new trucks run on HVO

UK-based Ainscough Crane Hire has invested in 18 new Scania trucks.

The three-axle Scania 660 SXT tractors were delivered as part of an ongoing investment programme. Lighter in weight than previous trucks, the more aerodynamically-designed models help reduce fuel consumption in line with Ainscough's goal of becoming carbon neutral, the company said.

The new trucks will also use the HVO (hydrogenated vegetable oil) fuel bunkers at all the company's depots following a recent switch to the diesel alternative.

As the trucks have one fuel tank, Scania

was able to add additional storage space where the second fuel tank would otherwise sit. The space allows drivers to stow away PPE and safety gear as opposed to carrying it.

Chris Britton, general manager for heavy cranes and transport at Ainscough Crane Hire, said, "The main difference we have with this model is that we have a single fuel tank, because we can now take advantage of the HVO bunkers at all our depots across the UK.

"With Scania we have made certain adaptations to this model. We've changed the layout of our toolboxes so that we can access equipment and kit from the roadside." ■

## TRICKY TRANSPORT JOB FOR KREBS

Krebs Korrosionsschutz transported five 325 tonne MAN diesel engines out of a warehouse to the edge of the pier at Cuxport deep water terminal in Germany.

The Krebs teams assembled a self-propelled heavy duty platform trailer for this task in the form of a 12-axle variant with a 372 kW power pack.

The smaller size of the warehouse doorway was a challenge.

The loading height in the driving position of the combined module and load was over 8.07 metres and the clearance height of the door was 8.1 metres, a miniscule gap to fit.

"We had precise transport technology like the 3,000 mm-wide and 8-fold tyred ModulMax," said Krebs supervisor Jörg Neuhäusel, explaining the demanding boundary conditions.

The electronic steering ensured millimetre precision and the 4.5 metre wide combination steered safely through after which a pontoon crane was waiting abeam to lift the engines into the hold of the freight ship.



Each engine weighed 325 tonnes

# Korean and Kuwaiti companies move together

Kuwait-headquartered Gulf Maritime and Hansaeng Express from Korea worked together to deliver a heavy and oversize electrical transformer for the Ministry of Electricity in Kuwait.

The shipment was a 173 tonne transformer measuring 10 x 4.6 x 5.2 metres. Both companies are members of the Worldwide Project Consortium which described the project as very challenging. The transformer was received at Shuaiba port and transported 125 km before being placed on its foundation.

It made the journey on a 12 axle modular

Off the ship and onto its 12 axle trailer prior to the 125 km journey in Kuwait

trailer. Load dimensions meant a longer and less direct route had to be devised to avoid low bridges. The transport had to travel against the traffic for some sections. At one point some sandy ground on a service road



had to be compacted and levelled to stop the trailer from getting stuck.

A special permit and a police escort were required. Pilot vehicles escorted the main trailer and an accompanying low bed trailer carried a grader and forklift truck used to remove road obstacles as they went along. ■

Hooked up to the heavy tractor the transformer on its modular trailer is ready to go



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**Grove GMK5165-1 | Toronto**



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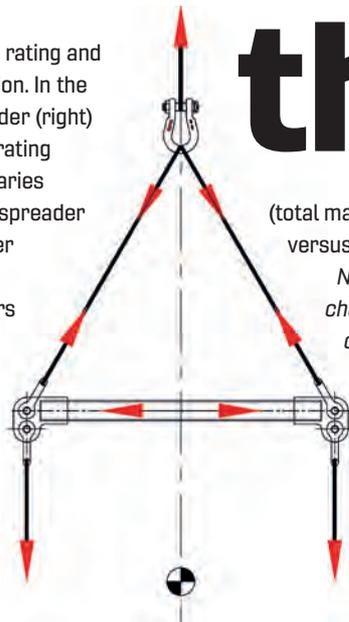
Selecting spreader bars for a lifting project when the centre of gravity is offset requires careful calculation.

**KEITH ANDERSON** explains how to go about it

**M**anufacturers of proprietary spreader bars do not normally provide ratings for asymmetrical lifting arrangements as shown in the lead photo, so how do you assess whether the spreader you have in mind has the required capacity?

All items of rigging have a rating and spreader bars are no exception. In the case of a conventional spreader (right) with an adjustable span, the rating or working load limit (WLL) varies according to the span of the spreader and the inclination of its upper suspension.

Luckily, spreader designers and manufacturers will have done all the hard work and made it easy for the user by providing rating charts for a few different sling angles showing WLL



**Conventional spreader with an adjustable span**

# What about the offset?

(total maximum load that may be lifted) versus span.

*N.B. When reading these charts make sure you know the convention being used, it may be to the horizontal, the vertical or be the included angle (ISA), depending on where you are in the world.*

It is then simply a question of referencing the chart appropriate to the inclination of the upper

slings to be used and looking up the capacity at the intended span. If in between standard chart angles, use the more conservative chart, i.e. that for the next "flattest" angle. If the capacity exceeds the load to be suspended, you are good to go.

This is great if the C of G is central, but what if it is not? There are many instances, like those shown above and below, where odd length inclined sling lengths are required in single or cascaded spreader rigging arrangements to accommodate an offset C of G or share load unequally.



## ABOUT THE AUTHOR

**KEITH ANDERSON** has been engaged in rigging engineering since 1979. He is a UK Chartered Engineer and Fellow of the Institution of Mechanical Engineers. For 18 years he managed Bechtel's rigging engineering group in the USA and was Bechtel's chief rigging engineer for which he was recognised as a Bechtel Distinguished Engineer.

Keith is an advocate for professionalism in rigging engineering and lift planning and is active in education through training and speaking to industry groups. He also serves as a Committee Member for the ASME P30 Lift Planning Standard.

Keith has authored two industry standard books, *Rigging Engineering Basics*, now in its second edition, and *Rigging Engineering Calculations*. He was an advisor and a contributor to the ASME accredited *Fundamentals of Rigging Engineering* course developed by Industrial Training International.

Now semi-retired and back in the UK, Keith continues to support the elevation of standards of excellence and safety in rigging engineering.

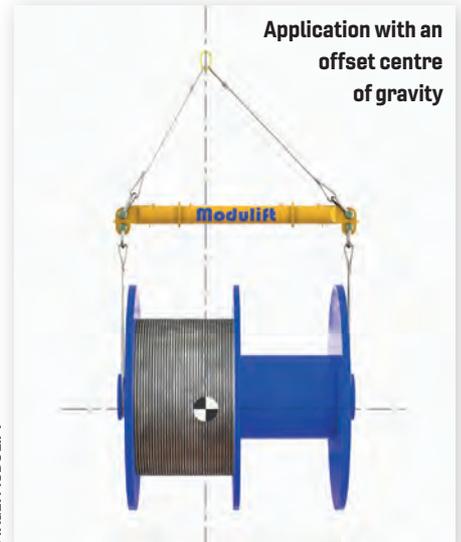
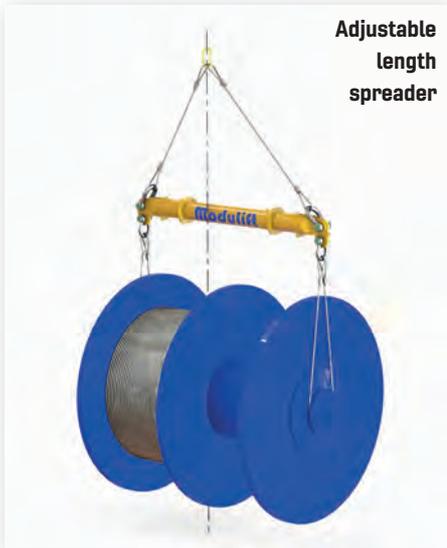


IMAGE: MODULIFT

There are no charts for odd-length inclined slings, so how can a spreader be selected? Can the user simply use a chart that assumes a central load?

Offset sling lengths will result in the angle (to the horizontal) being greater at the heavy end and the angle at the lighter end being less than would be the case if the leg lengths were equal (at the shorter length). Does the user have to go with a chart appropriate to the lesser angle?

To answer these questions, it is a good idea



Adjustable length spreader

IMAGE: MODULIFT

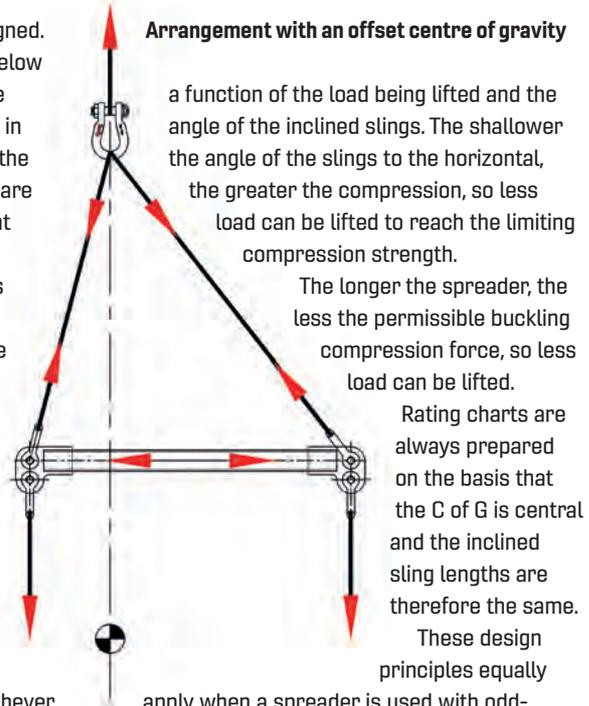
to review how the spreader is designed.

In the type of spreader shown below left, at each end of the spreader the lines of action of the tension forces in the vertical and inclined slings and the compression force in the spreader are designed to meet at a common point on the axis of the spreader, so long as the spreader is horizontal. In this way, the spreader is subjected to pure compression regardless of the inclination of the upper slings.

The only bending in the spreader is that due to its self-weight, and that is usually negligible except in the case of very large and heavy spreaders.

The capacity of the spreader is limited by:

- The compressive strength of the spreader in direct compression or in buckling, whichever is the lesser. At shorter spans, direct compression governs, whereas at longer spans buckling is the limiting condition. Once into the buckling zone, capacity reduces with increase in span.
- The structural capacity of the ends and any associated fittings.
- The compression force in the spreader is



a function of the load being lifted and the angle of the inclined slings. The shallower the angle of the slings to the horizontal, the greater the compression, so less load can be lifted to reach the limiting compression strength.

The longer the spreader, the less the permissible buckling compression force, so less load can be lifted.

Rating charts are always prepared on the basis that the C of G is central and the inclined sling lengths are therefore the same.

These design principles equally

apply when a spreader is used with odd-length inclined slings; i.e. it has to meet two criteria, adequate compressive strength in the compression member and adequate structural strength in the end caps and fittings. How do we check this?

*NOTE: When using odd length slings, I suggest that you start by selecting a pair of inclined slings whose length is equal or*



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$$H = \frac{Wt}{Y} \left( \frac{X1 \times X2}{SPAN} \right)$$

$$X1 = \left( \frac{SPAN}{2} - d \right)$$

$$X2 = \left( \frac{SPAN}{2} + d \right)$$

Substituting

$$H = \frac{Wt}{SPAN \times Y} \left( \frac{SPAN^2}{4} - d^2 \right)$$

**Calculations above are for Check 1: Compression capacity**

greater than the span of the spreader. Draw a line vertically through the C of G; rotate the sling and shackle at the heavy end until the upper eye meets the vertical line you drew. From that point measure the distance to the suspension point at the light end of the spreader. Deduct the length of the sling and shackle from that figure and that gives you the additional length you need to provide. You should preferably use a few shackles or a link plate or, if you must, a turnbuckle. You might be lucky enough to find a longer sling whose length is suitable; I do advocate using chain hoists as adjustable length (primary support) slings. Additional length should always be added above the spreader, not below it, as you want the spreader to remain essentially horizontal in use.

**CHECK 1: COMPRESSION CAPACITY**

First, how are the compression forces affected when the C of G is offset? Assume that the offset "d" (drawing above right) is accommodated by increasing the length of the inclined sling at the lighter end. The inclined sling at the heavy end remains the same length.

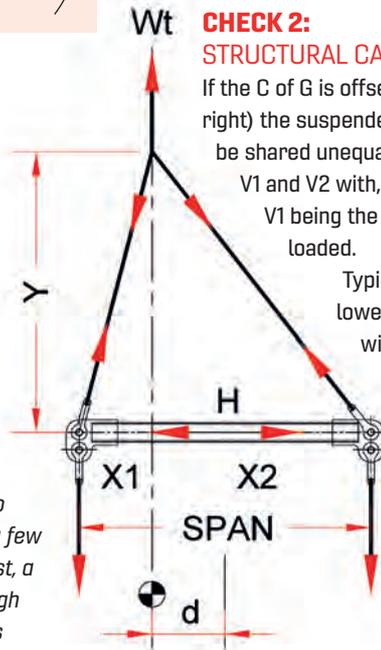
Now complete the calculations as per the equations above, at the top of the page.

"Wt" and "SPAN" are constants, "Y" is a minimum when "d" is a minimum, so it can be seen that "H", the compressive force, is a maximum when the offset "d" is zero. i.e. when the C of G is central.

It can be concluded that, assuming offset of the C of G is dealt with by adding length to the "light" end inclined sling, the compressive force reduces when the C of G is offset.

The conclusion is that if a spreader has adequate rated capacity to lift the required load at the intended span when the C of G is central, then it has the compressive capacity to lift that same load if the C of G is

offset, so long as the offset is managed by increasing the length of the lighter loaded inclined sling.

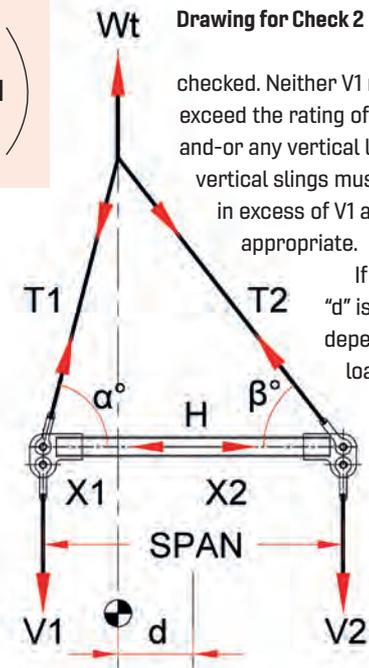


**CHECK 2: STRUCTURAL CAPACITY**

If the C of G is offset, (drawing right) the suspended load will be shared unequally between V1 and V2 with, in this case, V1 being the more heavily loaded.

Typically, the lower shackles will each be rated at 50 per cent of the nominal rating of the spreader, although this must be

**Drawing for Check 1**



**Drawing for Check 2**

checked. Neither V1 nor V2 may exceed the rating of these shackles and-or any vertical link plates. The vertical slings must be rated in excess of V1 and V2 as appropriate.

If the offset "d" is significant, dependent on the load to be lifted, it is well possible that V1 or V2 may exceed the capacity of the lower shackles in the spreader you hoped to use. If so, it will be necessary

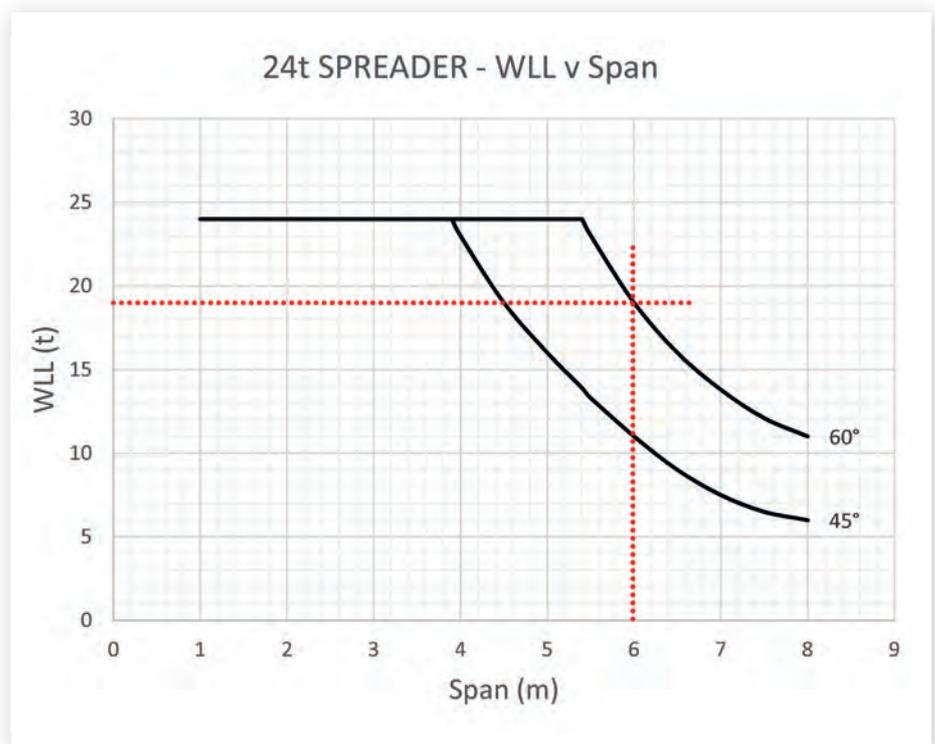
to look at a more highly rated spreader.

Similarly, the inclined slings, shackles and any associated link plates must be rated in excess of the tensions T1 and T2 as appropriate. The inclined sling angles should be determined by drawing the arrangement or trigonometrically. If these forces are all within the rating (WLL) of the rigging, then all is good structurally.

$$V_1 = Wt \left( \frac{X_2}{SPAN} \right)$$

$$V_2 = Wt \left( \frac{X_1}{SPAN} \right)$$

**The first calculation for Check 2**



$$T1 = \frac{V1}{\sin \alpha} \quad T2 = \frac{V2}{\sin \beta}$$

The second calculation for Check 2

**CHECK 3: CLEARANCES**

Finally, verify that there are no clearance issues between the rigging (e.g. sling eye) and the end cap at the lighter loaded end with the shallower angle sling.

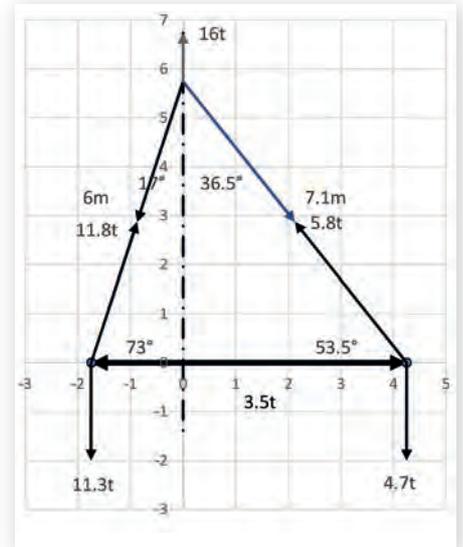
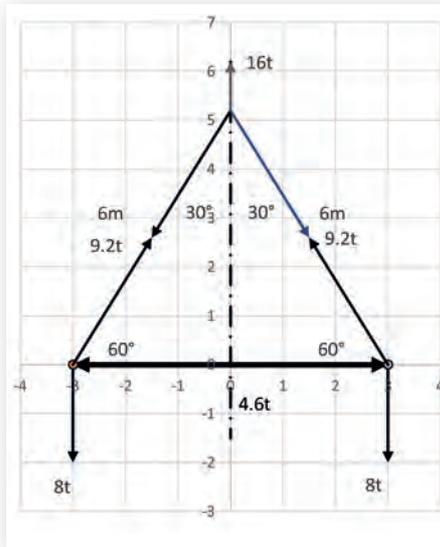
Example: Consider a 16 tonne load to be lifted with a spreader with a span of 6 metres. The C of G is offset 1.25 metres.

There is a 24 tonne spreader available with ratings at 60° and 45° to the horizontal – see graph on previous page showing WLL against span. The spreader has 12 tonne lower shackles and 17 tonne upper shackles. Can it be used?

First examine the situation as if the C of G is central. Here I choose 6 metre inclined lengths so the more advantageous 60° rating chart can be used. At a 6 metre span it has a WLL of 19 tonnes.

The two vertical tension forces are 8 tonnes each, the inclined tensions 9.2 tonnes and the compressive force is 4.6 tonnes.

The actual case, however, is that the C of



Example diagrams for Check 3: Clearances, showing no C of G offset (left) and a 1.25 metre offset

G is offset by 1.25 metres to the left. I retain the 6 metre sling at the left (heavy) end and add 1.1 metres to the suspension length at the RH (light) end to compensate. The two vertical tension forces are now 11.3 tonnes (LH) and 4.7 tonnes (RH), the inclined tension is 11.8 tonnes (LH) and 5.8 tonnes (RH) and the compressive force is 3.5 tonnes.

The compression is less than the compression force in the central example, which was adequate, so it is plainly within

capacity in compression.

The maximum vertical force at 11.3 tonnes is less than the 12 tonne WLL of the lower shackles and the maximum inclined force at 11.8 tonnes is less than the 17 tonne WLL of the upper shackles, so structurally it is OK.

The clearance at the RH end should be checked, but with an inclination of 53.5° it should check out as there is a chart for 45°.

CONCLUSION: The 24 tonne spreader can be used. ■

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## ENTRY 1

### LIFT TO HAUL

EQUIPMENT USER: Schmidbauer  
EQUIPMENT USED: Tadano Demag  
CC 8800-1 crawler crane  
LOCATION: Germany

German crane specialist Schmidbauer used Tadano Demag cranes to lift and load onto self propelled modular transporter (SPMT), and then transport, a 700 tonne refinery column from the Port of Kelheim to the Bayernoil factory in Neustadt an der Donau. It was one of the heaviest loads to have ever been transported on roads in Germany.

To lift the load onto a 44 axle SPMT for transport, a Demag CC 8800-1 crawler was assisted by ATF 220G-5 and AC 500-2 all terrains. [Watch a video of this lift: https://youtu.be/lzZKy732hUc](https://youtu.be/lzZKy732hUc)



## ENTRY 2

### WORLD FIRST

EQUIPMENT USER: Mammoet  
EQUIPMENT USED: PTC 200-DS  
LOCATION: United Arab Emirates

At the heart of Bluewaters, an island destination in Dubai, UAE, the Ain Dubai observation wheel stands more than 250 metres tall. The wheel comprises a 240 metre rim, rotating hub and fixed spindles mounted on four support legs. For the installation, Mammoet paired one of the world's biggest cranes – its PTC 200-DS – a 5,000 tonne ring crane, with a 3,000 tonne crawler crane.



# Prime

Our annual competition is back with ten new terrific entries, all of which have featured in the magazine over the last year. *ICST* reports

## ENTRY 3

### WATCH TOWER

EQUIPMENT USER: Marr Contracting  
EQUIPMENT USED: Favco M310D luffer, Favco M1280D luffer  
LOCATION: Australia

Two tower cranes, a Favco M310D luffer and a much larger M1280D Favco luffer, were used by Marr Contracting to dismantle the 233 metre television transmission tower in Sydney, Australia. The tower was decommissioned in 2021 and not structurally sound enough to attach lateral supports.

"We had to get the crane hook height above 233 metres without expensive structures," said Simon Marr, Marr's MD.



## ENTRY 4

### TESTING TIMES

EQUIPMENT USER: Liftek  
EQUIPMENT USED: Sapura 3500 deck crane,  
Liftek water bags  
LOCATION: Taiwan

A water bag load test of 2,420 tonnes was completed by Liftek, one of the biggest ever conducted. The load test was to verify and certify the revolving capacity of a Sapura 3500 deck crane, owned and operated by Sapura Energy, prior to it being deployed at the Yulin Offshore wind farm project in Taiwan.



## ENTRY 5

### MODERN MOVES

EQUIPMENT USER: Gruppo Irgenre  
EQUIPMENT USED: 5x Potain MCT 88,  
2x MDT 189  
LOCATION: Italy

Italian real estate developer Gruppo Irgenre used seven Potain tower cranes, five MCT 88 flat top city cranes and two MDT 189 flat tops, from dealer Edilcom Gru, to help construct a tourist hub in Pompeii, Italy. The 200,000 square metre Maximall Pompeii complex, close to the archeological site, will include 200 shops and 20 restaurants.



# projects

To choose your winner, pick your preferred lift by completing and submitting the form over the page or by voting online via the TopLift 2022 story at: [www.internationalcranes.media](http://www.internationalcranes.media)

## ENTRY 6

### BIG REACTIONS

EQUIPMENT USER: Sarens  
EQUIPMENT USED: 5,000 tonne capacity SGC-250  
LOCATION: United Kingdom

On of the world's biggest cranes, nicknamed Big Carl, has been in action again at Hinkley Point C nuclear power station in Somerset, UK. The 5,000 tonne capacity Sarens SGC-250 placed the first steel ring section onto the second reactor building, 11 months after the same operation on the first reactor. The 575 tonne prefabricated ring, which is 47 metres in diameter and 17 metres high, forms part of a reinforced cylinder around the nuclear reactor.



## ENTRY 9



### GAS GIANT

EQUIPMENT USER: Saudi Aramco  
EQUIPMENT USED: Terex AC 350  
LOCATION: Saudi Arabia

Saudi Aramco removed the flare tip assembly at the company's Khursaniyah Gas Plant using a 350 tonne capacity Terex AC 350 wheeled mobile telescopic crane. The weight of the flare tip assembly was around 5 tonnes and the working radius was 22 metres. A requirement to operate at high elevation saw the main boom set at 56 metres, plus a 37.5 metre fixed jib.

## ENTRY 7

### BUILDING BRIDGES

EQUIPMENT USER: Cebu Link Joint Venture  
EQUIPMENT USED: Comansa 21LC660  
LOCATION: Philippines

Two Comansa 21LC660 flat top tower cranes helped construct a cable-stayed bridge which will join two islands in the Philippines. The bridge, named the Cebu-Cordova Link Expressway, will join popular tourist destination Cebu City, the second largest city in the country, with Mactan Island, where the international airport is located. Both tower cranes were struck by lightning during construction work but no operators were harmed.



## ENTRY 10

### CHINESE EXCELLENCE

EQUIPMENT USER: Sinopec Lifting & Transportation Co  
EQUIPMENT USED: XCMG XGC88000  
LOCATION: China

The heaviest and tallest separation tower on the Quanzhou Guoheng Chemical Project in China was installed using a giant 4,000 tonne capacity crawler crane from Chinese manufacturer XCMG. It was the third and final lift on this project for the XGC88000 lattice boom crawler crane owned by the Sinopec Lifting & Transportation Company.



## ENTRY 8

### PARISIAN PERFECTION

EQUIPMENT USER: Liebherr  
EQUIPMENT USED: 1000 EC-H 40 Litronic high-top cranes  
LOCATION: France

In the capital city of France, four additional Métro lines, 68 new stations and 200 kilometres of new track are being constructed, effectively doubling the size of the current track. Nicknamed "Grand Paris", it is the largest construction site in Europe and forms part of a project that aims to double the current public transport network by 2030.



# 2022 voting form



Simply pick your favourite lift from the entries, and e-mail or post your choice. Alternatively you can also vote online via the relevant news story on: [www.internationalcranes.media](http://www.internationalcranes.media)

**ENTRY 1**

**LIFT TO HAUL**



EQUIPMENT USER:  
Schmidbauer

**ENTRY 2**

**WORLD FIRST**



EQUIPMENT USER:  
Mammoet

**ENTRY 5**

**MODERN MOVES**



EQUIPMENT USER:  
Gruppo Irgenre

**ENTRY 8**

**PARISIAN PERFECTION**



EQUIPMENT USER:  
Liebherr

**ENTRY 3**

**WATCH TOWER**



EQUIPMENT USER:  
Marr Contracting

**ENTRY 6**

**BIG REACTIONS**



EQUIPMENT USER:  
Sarens

**ENTRY 9**

**GAS GIANT**



EQUIPMENT USER:  
Saudi Aramco

**ENTRY 4**

**TESTING TIMES**



EQUIPMENT USER:  
Liftek

**ENTRY 7**

**BUILDING BRIDGES**



EQUIPMENT USER:  
Cebu Link Joint Venture

**ENTRY 10**

**CHINESE EXCELLENCE**



EQUIPMENT USER:  
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NOTE: To ensure a fair competition all entry forms must be completed in full. Employees of the companies entered in TopLift 2022 are not eligible to vote.

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# Embracing the value of contech for survival

**B**ased on a recent industry survey conducted by GlobalData, only 34 per cent of construction companies anticipated increasing spending on technology as they come out of the Covid pandemic. According to the McKinsey Global Institute, however, digital innovation and transformation can provide companies significant improvements in productivity (around 15 %) and reduce costs (around 6 %).

That said, despite being historically slow at implementing cutting-edge technologies, construction industry leaders, by most appearances, are beginning to embrace digital transformation on some level.

As for what that actually means, digital transformation in construction is the integration of digital technology into all areas of a construction company – even extending to cultural changes that might challenge certain norms but will allow organisations to differentiate. As a result, identifying and using technology in new or improved ways provides a major competitive advantage.

Of course, true digital transformation requires finding the right contech (construction technology) for your organisation's needs in collaboration with key stakeholders. In addition, leaders need to understand that finding and implementing contech solutions that drive innovation requires a thoroughly collaborative process.

Looking ahead, from contech innovation, advancement in technology

modelling, developments in drones and more, companies around the world are scrambling to match these new technologies to their needs. One giant area of innovation to keep an eye on is technology for safety.

## RISE OF THE MACHINES

The construction industry is experiencing a rise of machines capable of identifying safety issues and eliminating threats. Wearable innovations like work boots can alert others if a person has fallen, while material-moving "mules" transport heavy or hazardous materials. We're also seeing rapid advancements in cloud computing, virtual reality, robot technology (building scaffolding or laying bricks) as well as artificial intelligence and 3D printing which all result in lower safety risks and increased operational efficiency. Environmental sensors can detect noise, heat and wind at construction sites and provide health warnings or evacuation notices in an emergency.

While modular and prefabricated construction is not new, it's something governments, investors, manufacturers, developers and builders are giving a closer look. The modular construction market is forecast to explode to almost US\$110 billion by 2025 – driven by a lack of skilled labour and an increase in cost-cutting technology.

Digital transformation and advancements in digital tools will likely have a profound impact on modular construction and facilitating the design of modules and optimising delivery logistics will make this an attractive option for investors and consumers.

## MOVE QUICKLY

Tech trends in the construction industry are, and will continue to be, both exciting and transformative. Before innovating, however, remember due diligence and evaluate whether these solutions meet your business needs, and understand how they will drive value.

Factors that will influence those decisions are likely familiar: an aging workforce, outdated manual processes, pricing pressures, supply chain issues, green initiatives and even overall decreases in productivity as a result of these factors and other unforeseen(s) – like pandemics.

Companies that embrace digital transformation in some or many ways will undoubtedly see the benefits, and quickly, in areas like: improved site safety, client collaboration, more streamlined processes, greater appeal to younger workers and reduced waste and costs.

On the flipside, organisations that drag their feet in the adoption of contech are at risk of certain additional realities, including: higher construction costs, poor quality talent, reduced customer confidence and environmental compliance issues.

Ultimately, construction leaders need to move quickly if they want to remain competitive in this new tech-driven era. Failing to see the value could possibly also be a greater failure to survive overall. ■

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While the US market will take some time to catch up with Europe, as of press time, Liebherr had just sold its first unplugged 275 US ton crawler crane in the USA (not pictured)

Liebherr rolled out the world's first battery-powered crawler crane, the LR 1250.1 unplugged, in December 2020

What lies ahead for battery-powered cranes? **MIKE CHALMERS** takes an inside look

# Plugging into the future

**W**ith the 2022 SC&RA Crane & Rigging Workshop just around the corner (3 to 5 October, in Texas, USA), Association members are looking forward to a number of education sessions at the event designed to leave them with a wealth of information to consider, or take back and apply directly to their own operations.

That said, members need only reference the 2021 Workshop in Chicago to remember one such impactful session titled Electric Crawler Cranes: The Unplugged Series, presented by representatives of manufacturer Liebherr. It was intended to educate the audience on all-things electric cranes while also expounding on Liebherr's own emission-free crane.



Nearly a year later, SC&RA caught up with one of the session's presenters, Wolfgang Herzog, vice president sales south east and Caribbean, at Liebherr USA. He had a lot to say about how electric power is moving into the construction industry across the world and what SC&RA members might expect moving forward as the industry adjusts to an ever-changing world and evolves alongside an ever-expanding inventory of modernised equipment.

In his 2021 presentation one of the topics Herzog and his colleague highlighted was the fact that more and more cities around the world are moving towards

**Wolfgang Herzog, VP sales, south east and Caribbean, at Liebherr USA**

lower emissions standards and, overall, more efficient and climate-friendly approaches to work.

"The so-called C40 cities are growing in number worldwide," he pointed out. "They are very well networked among themselves and pursue two goals: on the one hand they want to improve the air quality and thus the quality of life for all city dwellers, in the short and medium term and, on the other hand, they want to have a long-term effect on the climate changes influenced by humans."

(The C40 Cities Climate Leadership Group is a collection of 97 cities around the world that represents one twelfth of the world's population and one quarter of the total global economy.)

In addition, Herzog indicated, one can't overlook the Paris Agreement – the international climate protection contract which boasts the signatures of 195 countries globally and has influenced companies like Liebherr. "From our perspective as a crawler crane manufacturer, the targeted decarbonisation can be achieved by means of electrified drives."

And thus, understandably, Liebherr has endeavoured to reach the European market with its latest electric offering, and the world's »

first battery-powered crawler crane, the LR 1250.1 unplugged, which officially rolled out in December 2020.

Herzog explained, "In Europe, there are some countries whose governments are intensively tackling and implementing climate protection targets. In some cases, they are creating investment incentives and, in others, they are defining so-called 'zero emission construction sites' in their tenders."

In the meantime, he added, there are also more and more investors who explicitly require or favour zero emission construction sites. "This was the reason behind why we initially focused on Europe. However, even in the USA, we recognise certain similarities – where individual states are accelerating climate protection agendas."

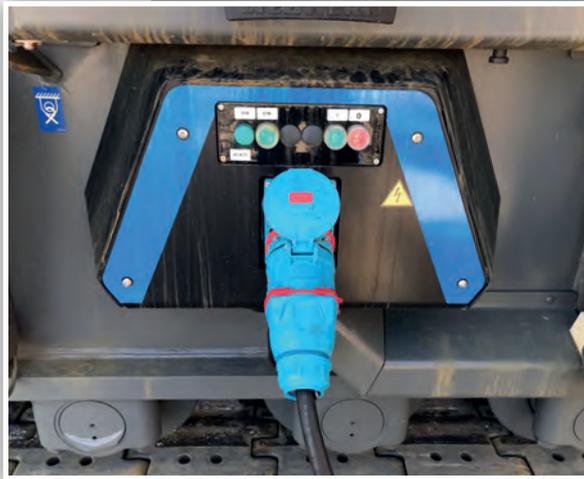
**AHEAD OF THE CURVE**

Despite the changing tides in the USA, however, Herzog noted that acceptance of electric construction machinery (crawler cranes, drill rigs, impact pile-driving rigs) is still not as high as it is in Europe – mainly because high-voltage jobsite electricity is not as readily available compared to other parts of the world and demand for battery-electric machines in the USA is not yet as high as in Europe. That said, Liebherr does have one of its battery-powered crawler cranes on display at its Newport News (Virginia) facility and, at the time of this writing, it had just sold its first unplugged 275 US ton crawler in the USA.

"As mentioned, our electric machinery is facing the same uphill battles that Tesla faced as it fought for acceptance," he said. "Another challenge is that a battery-powered machine has higher initial investment costs due to the added cost of the battery – though it should be recognised that the only difference between a traditional diesel-powered machine and the 'unplugged' machine is that the diesel engine is replaced with an electric one and a battery pack is added. Handling, controls, load chart, etc., are exactly the same."

Change being what it is, Herzog sees such impediments as merely temporary. "We anticipate, at some point, world-wide legislation requiring 'zero-emission' jobsites, and every construction equipment manufacturer will have to find a solution for their equipment," he said. "At Liebherr, we're ahead of this curve with our battery-electric concept, which is a proven technology from the automobile sector."

As for owning an electric crane, in



Liebherr initially focused its electric crane on the European market, but recognises that, in the USA, more and more states are accelerating a climate-protection agenda

**Herzog noted that, while battery prices are still rather high, that will change, and with it, so too will outlooks and opinions on electric construction equipment, especially in the USA**

expect to see in coming years as the industry moves towards modernised equipment and more environmentally sustainable methodologies, Herzog foresees a relatively smooth transition from diesel to battery-electric drive. "The acceptance of this drive has long been beyond discussion," he said. "At this point, it should be mentioned that, in our view, the world's largest and most successful main driver of battery-electric concepts is based in the USA, with Tesla."

Herzog's advice to construction and transport companies, including SC&RA members, regarding how the future of equipment is unfolding related to this ever-emerging topic and what they should both expect and adapt to within the market is, if nothing else, pragmatic.

"Given the high gas prices in Europe, our Liebherr diesel engines are traditionally extremely fuel efficient – and changing over to electric engines is just the next step," he established. "That said, Liebherr expects more and more environmental regulations in the future across the world as well as within the US, which will eventually require crane owners, drill rig and impact pile-driving rig owners to look for new technologies in the market in order to bid on jobs in highly populated areas."

Pointing back to his presentation at last year's Crane & Rigging Workshop, Herzog reiterated that battery prices are still rather high, but that will change, and with it, so too will outlooks and opinions on electric construction equipment, especially in the States. "Additionally," he pointed out, "with gas prices in a consistent state of flux in the US, electric-powered construction machines will also, ultimately, become much more economically feasible."

addition to fuel savings and the economic benefits therein, Herzog pointed to plenty of additional benefits. "I would also mention that electric drives require less maintenance and service due to their design, as the number of moving parts within the unit is significantly lower compared to machines with internal combustion engines," he stated.

"Also, a major advantage, appreciated especially in populated areas and large cities, is the extremely low noise generated by battery-electric equipment. Another advantage that crane operators keep telling us about is the control system – because it's no different from the controls of diesel units."

**NEXT STEP**

As the construction and transport industries around the world continue to evolve, Herzog rates the potential and long-term value of electric construction machinery very highly. "When you ask our customers this question, the answers are very similar, depending on the country," he maintained. "There seem to be certain analogies here with electric cars. In Norway, for example, which has the highest percentage of newly registered electric cars in Europe, many of our customers are deeply convinced that the future of the crawler crane will be one hundred per cent electric. We hear similar comments from Sweden, Denmark and the UK."

As for SC&RA members and what they can

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8 a.m. – 5 p.m.

#### IPAF INNOVATE WORKSHOP

Hyatt Regency O'Hare Hotel – International Ballroom

6 p.m. – 8 p.m.

#### IPAF NETWORKING EVENT

Hyatt Regency O'Hare Hotel – Ventenas Penthouse

### SEPTEMBER 29

#### ALH CONFERENCE

Loews Chicago O'Hare Hotel

7:55 a.m. – 8:55 a.m.

Breakfast, registration and coffee

8:55 a.m.

ALH Conference starts

Keynote and morning sessions

10:05 a.m. – 10:30 a.m.

Morning coffee and networking

10:30 a.m. – noon

Late morning sessions

Noon – 1:30 p.m.

Lunch & networking

1:30 p.m. – 3 p.m.

Afternoon sessions

3 p.m. – 3:30 p.m.

Afternoon coffee and networking

3:30 p.m. – 4:30 p.m.

Late afternoon sessions

4:30 p.m. – 6 p.m.

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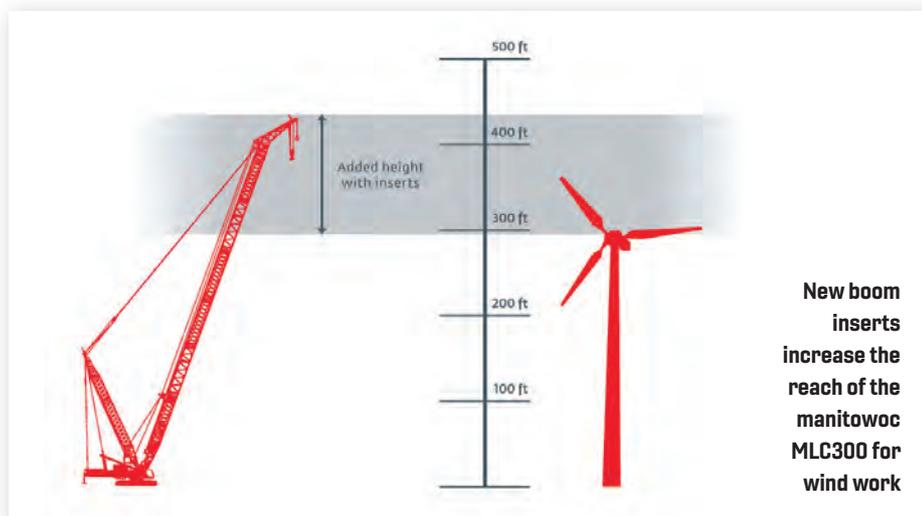
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# Boom inserts for wind turbine work

Crane manufacturer Manitowoc's crawler crane division has expanded the range of boom insert options to increase the reach of its MLC300 lattice boom model.

The new Wide Boom Plus kit for the 300 tonner will lengthen the boom to 429.8 feet (131 metres) when used in combination with the VPC-Max counterweight system and extended upper boom points. A prime target application is wind turbine erection.

The height of land-based wind turbines has increased nearly 60 per cent in the last two decades, reaching an average of 90 metres in 2020 in the USA, the company said. Wind turbines are taller in other parts of the world and are expected to keep growing, hence the new boom inserts.

Brennan Seelinger, Manitowoc product manager for crawler cranes, said wind turbine work above 90 metres currently requires a 400 tonne capacity or larger crane, which can result in higher costs for operation and transportation.

"Our new boom inserts will open up more jobs for our crawler crane owners," Seelinger said. "They will increase utilisation of our MLC300 crane with added flexibility. Where before crane operators would need to bring in a larger crane, now they're able to employ their MLC300 with boom inserts and take advantage of increased reach from its smaller footprint."

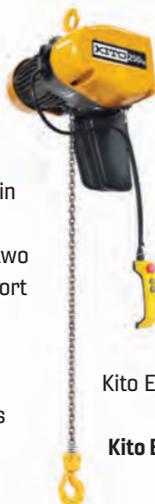
■ For more information see: [www.manitowoc.com](http://www.manitowoc.com)

# Customised lifting solution to help maximise safety

Kito Europe partnered with Carl Stahl has designed a crane system for Germany-based Hentschel Harteloxal's expanded production area. The company operates plants for anodising and electroplating metals for further use in mechanical engineering.

The production area has expanded to two large halls equipped with different transport methods to move the metal parts and immerse them into the coating basins.

An efficient crane system had to be installed to precisely sink the components into the basins. There had to be as much



free space as possible on the floor. On the ceiling, the space for suspensions was also limited, as the challenge was to fit the crane among the sprinkler lines and an existing crane while still fulfilling the desired operation.

Stahl recommended combining a Kito Erikkila Prosystem light crane with a Kito EQ electric chain hoist for maximum benefit. The Kito Erikkila crane tracks were chosen with

■ Kito EQ electric chain hoist

## DRIVER APP FOR FLEET MANAGEMENT

UK-based TruTac, part of the Microlise Group, has launched a driver app. Formerly known as TruChecks, the app started life a decade ago as a facility for drivers to conduct paperless, walkaround vehicle checks.

Now called the TruTac app, it includes much closer integration with the company's other software products.

Operators and drivers using TruTac's systems, such as TruAnalysis, TruTime, and TruDocuments Premium, can now access all such systems directly through the app. Data is sent from walkaround checks straight through to the TruFleet system for ease of fleet maintenance planning and to minimise vehicle downtime.

Its improved user interface includes clearer notifications, an accident reporting system, updated traffic reports page, and a new light and dark mode.

The app is available on both Android and Apple platforms.

"It's fully configurable and scalable according to the modules the company has live," explained Jemma James, TruTac managing director. "There's access to the document library, uploading documents, requesting holidays and a whole host of other integrated features."

"Because of the changes in technology on both the Apple and Android platforms, rather than tweak the app, we wanted to make a completely new one. It now has additional security features, greater configuration and more functionality."

There is also an option to display tachograph analysis.

■ For more info see: [www.trutac.co.uk](http://www.trutac.co.uk)

The app has an improved user interface



different bridge spans and asymmetrical overhangs to fit into the production hall and under the existing crane system. Now the metal parts can be dipped precisely into the coating basins, and they can be easily positioned in the drying area afterwards. The chain hoist has a load capacity of 250 kg.

Other safety features of the standard version are the electromagnetic pull-rotor brake, electronic thermal motor protection and overload protection.

■ For more information see: [www.kito.net](http://www.kito.net)

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### SPEAKERS



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Construction  
Consulting IHS Markit



**Doug Rusch**  
Rouse Services



**Chris Sleight**  
Off-Highway Research



**Alex Woodrow**  
KGP Commercial  
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**Ken Taylor**  
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■ Please send picture of the month entries and all other back page-related information to *International Cranes and Specialized Transport*, KHL Group, Southfields, Southview Road, Wadhurst, East Sussex TN5 6TP, United Kingdom, or by email to alex.dahm@khl.com. Entries for Picture of the month should include: the month and year taken, the place, type of crane, owner and project, plus any other relevant information.



## PICTURE OF THE MONTH

Copenhagen core: A Liebherr top slewing hammerhead tower crane carefully lifts a core component for a new building on a construction project in the centre of Copenhagen, Denmark. Taken by David Marriott on a recent visit to the capital.

## OBITUARY

## FIL FILIPOV, 1946 – 2022

With regret we report the death **FIL FILIPOV**. Filipov, who lost a short battle with cancer at the age of 75, was a unique figure in the industry. He was involved with many of the famous names in manufacturing, among them Atlas, Case, Demag, Terex and International Harvester.

Filipov was famous both for his appetite for acquisitions and his uncompromising approach to company turnarounds, exemplified by his 'First 100 days' approach to struggling businesses. His *Filosofies* website – named after the autobiography he published in 2000 – lists 24 companies in whose acquisition he played a part.

Born in Bulgaria in 1946, he escaped from the communist country at the age of 17. After a period in a Greek refugee camp he emigrated to the USA. His first job, in 1966, was in Chicago as an hourly worker at International Harvester. Before long his management and leadership qualities, coupled with personal charm, led to a series of increasingly senior positions.



By the early 90s he was vice president, construction equipment Europe at J.I. Case, before joining Terex Cranes in 1993, where he stayed for ten years, leaving as chief executive and succeeded by his son, Steve.

Even later in his career, on leaving Terex, he embarked on some serious new ventures, restructuring Tatra trucks in the Czech Republic, buying German manufacturer Atlas Maschinenbau in 2010 and, in 2017, buying the French forging business TIM S.A.

He is survived by his son Steve, and by his wife of 35 years, Véronique.

## PEOPLE NEWS



■ Construction Plant-hire Association chief executive **KEVIN MINTON** will

step down from his position early next year.

Minton has been at CPA for 15 years, joining in 2007 as technical and safety manager, before becoming director in 2014, and CPA chief executive in 2018.

Minton said, "I have had

the privileges of leading this association, and a great team of professional and dedicated staff, since 2018; and of being part of Colin Wood's team for 11 years before that. The time is right now for a change, and I will be pleased to hand control to a new chief executive who can lead the association on challenges the sector will face in the near future, such as rising costs of doing business, a widespread skills shortage and decarbonisation."

Commenting on the news

CPA president Brian Jones said, "It has been a pleasure to work with Kevin over the past 15 years, and we wish him well for his retirement. Thanks to his efforts and those of the CPA team, the association is in a stronger place than ever before. We continue to develop our support for members and to put construction plant hire at the forefront of policy makers' minds. Membership is growing, and CPA Council is looking forward to new challenges and opportunities."

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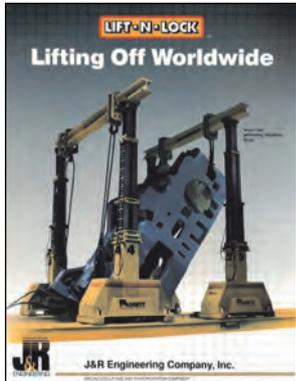
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