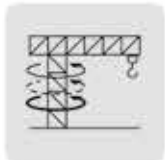


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A LITTLE QUIET ON THE TOWER CRANE FRONT

With many manufacturers scheduling new product launches to coincide with Bauma years, it can be fairly quiet for new introductions for the following year or two. Since Bauma last year, that has been true for tower crane manufacturers which have also been affected by the downturn in the European tower crane market over the past few years, together with weak utilisation and rental rates. Having said that, there have been a few new crane launches, acquisitions and some amazing applications from all over the world.

Here are some of the more interesting new tower crane launches, particularly interesting for customers looking for luffing jib tower cranes.

ARTIC CRANE

The first is the eight tonne City Luffer CL180 from Artic Crane. Located in Lindås, Sweden, Artic Crane was established in 2007 with a focus on the design and manufacture of articulated tower cranes, based on a concept that had previously existed but gone out of production. The first CL180 has been delivered to UK distributor and crane rental company City Lifting which has championed the brand since the first articulated jib crane - the Raptor 84 - was launched in 2009.

There are now 42 Raptors in operation, seven mini flat top City Lifter cranes and two City Luffer luffing jib tower cranes. The whole Raptor project has been driven by the oversailing airspace problems in countries such as the UK, especially in City centres where the buildings are tightly packed and sometimes with a small footprint.

"The high quality of the cranes plus the self-levelling provided by the articulated jib system makes for very safe cranes both in service and out of service conditions," says City Lifting's Trevor Jepson. "Many of these cranes are involved in

refurbishment projects - now described as re-purposing."

Originally a way of providing new buildings behind attractive existing facades to maintain the uniformity, aesthetics and history of neighbourhoods, re-purposing has become a way of reducing embodied carbon. More and more modern commercial buildings are being rebuilt while retaining the original foundations and a large percentage of the structure.

Artic Crane and City Lifting provide many different ways of incorporating a working crane into these existing structures without major excavation and concrete and steel bases. Roof mounting or installing through floors or existing lift shafts are all possibilities.

Lately, Raptor cranes have been used for slip forming central cores on newbuilds. Being light enough, they can be directly mounted on the rising slipform and have a powerful winch with a large hoist drum to comfortably spool the long ropes required with only three rope layers on the drum. Because the crane is dedicated to the slipform works it has no downtime being tied in or jacked up which can take a long time and can be delayed waiting for a weather window. The geometry of the articulated jib also makes it much easier to work alongside larger luffing jib cranes,

Artic Crane's City Luffer CL180 luffing jib tower crane



as the Raptor remains below the larger crane. This means the cranes are working independently and not always waiting for the other crane to move out of the way.

NEW CITY LUFFER

Artic Crane's new City Luffer CL180 was installed on its first job in early July on a very tightly restricted job site in Wilson Street in the City of London. The tower was installed in the building's

existing lift shaft and uses the same 1.7 metre square tower system as that used on Artic Crane's 184 and 185 Raptor cranes.

The crane can handle its maximum capacity at a radius of 26 metres, and take 2,000kg out to 50 metres. It has a lockable slewing and jib for a 5.7 metre out of service radius. Higher free standing heights can be achieved if the crane is put into free slew mode, but with a larger out of service radius. The CL180 has twin brakes, motors and gearboxes on all motions/functions to provide full redundancy of safety systems, while an additional safety PLC monitors all safety functions. ABB inverters help provide smoother, more accurate and operator friendly controls.

The City Luffer also has numerous practical features as standard, including a small single fall hook block with low wind resistance to fit into narrow spaces, allowing the use of glass vacuum lifters and other equipment without needing to use a balance beam. A 2.5 metre minimum radius means it can lift within 1.7 metres of the tower. There is a standard jib mounted camera and floodlights and Kevlar jib tie bars to reduce jib weight while being easier to handle for the crane erectors.

ENERGY SAVING AND NEW CAB

All of Artic Crane's newer models have energy recovery from lowering movements, which can be used to power hoisting movements or the general electrical load on site. This is particularly useful with the City Luffer, as generally the hoisting and luffing movements are lowering and hoisting at the same time to keep the load level when changing radius. The energy being dumped by one movement is powering the other movement rather than being converted into wasted heat as in some other makes of crane.

The latest Arctic cab on the City Luffer has an AC heat pump to provide the heating and



The new, larger City Luffer cab



cooling functions. The internal unit is fitted under the operator's seat and controlled by a single integrated control panel with simple, old fashioned rotary knobs rather than touch screens. Different measuring points around the cab provide full climate control. The whole system is easy to use, quiet in operation and, says Jepson, just feels nicer with the cooler air rising rather than blowing down from above.

"When combined with a heated seat for cold mornings and a window defrosting heater, the cab is very comfortable," he adds. "A BCS jib mounted camera is factory-fitted as standard, giving the driver a better oversight of the lifting operations than the lifting team on the ground. Although the operator is working to instructions from the team, he may see something they haven't and communicate with them."

All operators' cabs can be fitted with the iRaptor operator rescue system, which provides a simple, reliable way of getting the operator to the ground in a medical emergency. All the rescue equipment is stored on the crane, and a rescue can be carried out by one trained person and a willing helper to get the casualty into the stretcher. Other methods can involve getting the equipment up the crane first, need a lot more trained people and can be quite complicated, which can be difficult to carry out under distressing situations.

NEW TEREX LUFFER

Terex Tower Cranes - under Raimondi ownership since last November - has launched the CTL 712-45, a new 45 tonne luffing jib tower crane.



The crane features a 70 metre jib with a jib tip capacity of 5.8 tonnes, while the 134kW hoist has a maximum single line speed of 226 metres a minute. The crane can be erected on the HD23 tower to a freestanding height of 63.4 metres in standard configuration with an under hook height of up to 131.2 metres.

The CTL 712-45 also includes T-Line auto-levelling, which maintains consistent load height during jib luffing, while T-Torque inverter technology provides smooth, operator adjustable slewing with optimised torque control.

Terex says that installation is faster, thanks to the use of standardised pins and bolts, fewer cables and connections, while primary assembly can be completed at ground level, boosting safety and ease of installation. The crane includes improved machinery enclosures and integrated handrail/guardrails to minimise the risk of falling objects and protection for personnel during operation, maintenance and assembly or disassembly phases.

POTAIN'S NEW LUFFER

Late last year, Potain launched a new luffing jib tower crane, the 25 tonne MCR 505 J25. The crane has a maximum capacity of 25 tonnes, with jib lengths ranging from 30 to 60 metres, or 17 tonnes with the 65 metre jib, which also offers a jib tip capacity of 4.7 tonnes.

The crane is relatively compact with a 7.92 metre back mast and a 15 metre out of service radius. Maximum free standing height is 77.2 metres



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TOWER CRANES

A Potain topless crane in Serbia



Refurbishment of the Gravagna viaduct in Italy



Potain MCR 505 J25

using a combination of C809 and KMT850 tower sections. The MCR 505 J25 features frequency controlled drives and Potain's VISU+ monitoring/display system, providing performance data and controls. The crane supports both 50Hz and 60Hz power supplies and includes adaptive power control to reduce energy consumption.

NEW RAIMONDI FLAT TOP

Italian tower crane manufacturer Raimondi launched the T87 flat top tower crane earlier this year, with a three or five tonne maximum capacity, extending its T Series range and replacing the MRT85.

The crane shares modular mechanical and structural components with other models in the T Series, and the first 10 units have already been delivered and erected on sites in Italy and France.

The five tonne version offers a maximum jib tip capacity of 1.38 tonnes at 51 metres in UltraLift two/four fall configuration and a maximum hoist speed of 79 metres a minute with a 22 kW hoist. The three tonne unit has 1.43 tonnes jib tip capacity at 51 metres with a hoist speed of 82 metres a minute. The cranes are also equipped

with Raimondi's ConCore control system, which is designed to simplify commissioning and troubleshooting.

The crane has a lightweight overall design, with the heaviest single component weighing less than three tonnes, and an eight metre counter jib. This allows the complete 51 metre jib, including counterweights, to be transported using two articulated trucks. The cranes are aimed at small to medium sized construction projects, particularly where transport, access and space constraints are an important factor.

O'ROURKE INVESTS IN MORITSCH CRANES

As well as new products, there have been a few company ownership changes, including Ray O'Rourke buying into Italian tower crane manufacturer Moritsch Cranes through Oisin Capital - the Jersey, UK based investment office of the O'Rourke family, who also own UK contractor Laing O'Rourke. The two companies say that the investment is "aimed at supporting a joint research and development programme to expand Moritsch's tower crane range into larger models". The size of the investment has not been disclosed.

Moritsch Cranes was established in 2015 by Mariano Moritsch, the son of the late Ferruccio Moritsch, the founder of Gru Comedil in 1962 and Recom Cranes in 2004. Comedil was acquired by Terex in 1999, with Recom selling its luffing jib tower cranes through Terex Comedil, which at the time was managed by Martina Moritsch. The Recom business was fully acquired by Terex in 2012.

The relationship between the Moritsch and O'Rourke families dates back to 1993, when Ray

O'Rourke met Ferruccio Moritsch while taking Laing O'Rourke's Select Plant into crane rental. The relationship continued following Terex's acquisition of Comedil, with Select Plant taking on the Terex Comedil/Terex cranes distribution for the UK.

Oisin stated that its investment aligns with its wider investment activity in construction-related sectors linked to its work in the UK and Australia through the Laing O'Rourke group, which includes Select Plant Hire.

Mariano Moritsch added: "I am honoured, after almost 35 years of experience in the tower crane market, to be part of such an intriguing challenge with the O'Rourke family, to develop a new paradigm in the lifting industry, and to guarantee a bright future for Moritsch cranes. The two companies will keep on investing in research and development to enlarge the range of tower cranes towards bigger and bigger units."



Mariano Moritsch

FALCON TAKES GUY CRANE HIRE

Last summer in the UK, Falcon Tower Crane Services acquired Guy Crane Hire in Northern England and purchased a new facility near Manchester. Based between Burnley and Leeds, Guy Crane Hire was incorporated in 2002, and runs a fleet of self-erecting tower cranes, a few regular tower cranes, aluminium truck cranes and telehandlers. The company is also the Vicario self-erecting tower crane dealer for the UK. ■



A Raimondi T87 erected over Lake Garda, Italy



A Potain Lift Solutions project in Finland

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The TGM erecting the Comansa flat top



The TGM mini luffer being erected using the Hoeflon mini crane

SMALL, LARGE AND LARGEST

Replacing old coolers for modern heat pumps can be tricky on multi-storey buildings in city centres due to the lack of space to set up a crane. A particular challenge was One Churchill Place - Barclays Bank's 156 metre/32 storey global headquarters in Canary Wharf, London - which is surrounded by water on three sides with limited road access. Its height and location ruled out mobile cranes, while the lack of space, time and cost ruled out very large crawler cranes.

The best overall solution, devised by City Lifting over three years which included numerous site visits and a lot of planning, was to erect a tower crane on the roof of the building and lift the two new heat pumps from a barge on the River Thames. Although the units weighed 6,500kg, they had to be lifted as complete units for warranty and compliance issues.

MINI CRAWLER CRANE FIRST...

The first crane to go up to the roof was one of City Lifting's Hoeflon C10e spider cranes. To get it up to the roof it had to be stripped down, removing the boom, outriggers and counterweight in order for it to fit into the goods elevator/lift to the top floor. The boom, however, was too long for the lift and had to go in on a special trolley frame that fitted diagonally from floor to ceiling. A hole was then cut in the roof of the building, and the Hoeflon was lifted onto the roof using a portable aluminium gantry system and then re-assembled.

MINI LUFFER NEXT...

Next up in the lift were all the components of City Lifting's TGM mini luffing jib tower crane, which was lifted through the hole in the roof using the Hoeflon, and assembled with the Hoeflon and TGM's self-erecting system. The largest part of the TGM was too large for the lift, so it was altered by TGM to split into two parts.

The crane to carry out the heat pump lifts - a Comansa 11 LC 160 flat top tower crane - was then transported by barge and lifted to the roof by the TGM crane. City Lifting had to make use of a much older Comansa base rather than the newer single piece base, as the TGM could only manage 3,000kg. City Lifting also had new central ballast weights made, weighing 2,500kg each so that the crane could be ballasted on the roof. All parts of the Comansa were reduced to less than 3,000kg, and the jib was installed in the usual Comansa method of one section at a time, directly from the barge.

The easiest part of the whole job was lifting and



Positioning the new heat pumps on the roof



Moving the new heat pumps by barge

placing the heat pumps and lifting down the old units, with everything arriving and leaving by barge, a new experience for City Lifting. The process was reversed for the dismantling of the cranes and the whole project was completed and cleared - including all the temporary grillages - in just a week. ■



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Trident has erected this 100 tonne capacity Yongmao STL4200/100 at Tilbury in the UK



A significant lift during the erection operation was the 62t superstructure

GIANT YONGMAO TOWERS OVER TILBURY

Trident Lifting Solutions has installed what is claimed to be the biggest electrically operated luffing jib tower crane in Europe on a site at Tilbury in the UK. Nick Johnson visited Trident to find out more.

As it celebrates its 10th anniversary, Trident Lifting Solutions has established a heavy lifting division, become the UK distributor for the Chinese crane maker Yongmao and started adding mega tower cranes to its fleet. Its new flagship crane is the Yongmao STL4200/100 with a maximum capacity of 100 tonnes in two fall operation at a 40 metre radius and can take 23 tonnes to its maximum radius of 90 metres. It is arguably the largest electrically powered luffing jib tower crane in Europe.

THE STARSHIP INSTALLATION

Valued at £5.3 million, the big Yongmao is known within Trident as 'The Starship'. It represents a huge leap up in size from the company's fleet of 85

standard tower cranes, mainly modern Comansa luffers, for which the company is a UK distributor. The STL4200/100 was installed in February this year at Tilbury, Essex, on the River Thames east of London, where it is playing a vital role in the construction of Viridor's big Thameside Energy Recovery Facility, being built by green energy specialist contractor Kanadevia Inova. The new waste infrastructure project will have the capacity to process more than 350,000 tonnes of non-recyclable waste each year, generating 40Mwe - enough energy to power the equivalent of 93,000 homes.

The STL4200/100 has the capacity needed to lift and place heavy mechanical equipment and

structural steel across the new facility, which is scheduled to become operational by 2028. Whilst there are higher capacity luffing jib tower cranes, the Yongmao appeals to clients like Viridor and project managers such as Kanadevia, who want emission free cranes, rather than cranes with high altitude diesel engines.

FAMILY COMPANY

Based in Fushun, in the Liaoning Province of China, Yongmao is a family company and was founded in 1996. Over the last 30 years it has become a significant producer of tower cranes, many of which have proved popular for the construction of nuclear power stations in China. It has also sold well in Singapore.



The STL4200/100 has been erected on a large concrete foundation

Explore Transport was tasked with delivering the 4x4 metre tower sections





With its first STL4200/100 performing well, Trident has ordered more big Yongmaos



This Yongmao appeals to contractors who want a fully electric machine

Yongmao claims to have been the first Chinese tower crane manufacturer to break into international markets, including the EU and USA, supplying its first crane in Europe to a Belgian customer in 2003.

While some flat top Yongmao cranes arrived in the UK during 2006, the arrival of the big STL4200/100 luffer represents the start of a new era for both the manufacturer and Trident Lifting Solutions.

TRANSPORTATION ISSUES

Trident personnel, including its directors, technicians and managing director Chris Conway, visited the ultra-modern Yongmao factory in Fushun to familiarise themselves with the new crane before it shipped. Getting the big machine from China to the UK was then a major logistical feat led by service manager Louise Jackson. It required 11 vessels to ship the 700 tonnes of crane components taking 12 weeks to reach the Port of Felixstowe in Suffolk.

Explore Transport was then contracted to move the massive four metre square tower sections and other components over the 75 miles from Felixstowe to the site in Tilbury via the A12 and other roads with a police escort. At Tilbury the STL4200/100 has been erected on a large reinforced concrete foundation base. Yongmao factory based experts worked alongside the Trident erection team whilst following highly detailed and well-illustrated technical documentation.

1,000 TONNE ERECTION CRANE

The main crane used to erect the Yongmao was a 1,000 tonne Terex/Demag AC1000-9 telescopic crane from Baldwins Crane Hire. The crane was rigged with a 29 metre main boom and superlift system, topped by a 16 metre inline lattice section and a 48 metre luffing jib. This configuration provided a maximum lift height of 120 metres.

Baldwins also supplied a 150 tonne Grove GMK5150 XL support crane to help rig its bigger brother and for unloading and assembly of the tower crane components. The erection and load testing took seven days, including one day when the winds exceeded 20mph, stopping the big Demag from working.



The tower crane's 80 metre jib weighed 84 tonnes

A significant lift during the installation was the 62 tonne slewing unit, complete with the central part of the upper platform carrying the cab and control panels. The largest and most impressive lift however, was the tower crane's fully assembled 80 metre lattice jib, which weighed 84 tonnes.

According to the technical director Sean Filby of Trident, the STL4200/100 has been working well since then, saying: "There have been no issues throughout its deployment."

This positive performance, along with the growth in future large waste infrastructure projects, has inspired Trident to order a bigger Yongmao electric luffer, the 200 tonne STL4600/100, which is scheduled to arrive next year to work on a carbon capture facility in North West of England.

MORE YONGMAO'S

Also being imported for another infrastructure project are two STL2400C cranes - both able to lift up to 100 tonnes - to add extra versatility to its initial STL4200/100 for future jobs.

Trident has certainly come a long way over the past decade. It was founded in 2016 by tower crane professionals Chris Conway and Graeme Boyle, initially to supply specialist lifting staff and provide contract lifting services. But before long, a tower crane rental fleet started.

In 2023, Trident Lifting Solutions was acquired by the Staton Group to complement its remediation, groundworks and RC frames contracting

activities. Chris Conway and Graeme Boyle continue to manage the business which has offices in Harrow and a yard near Peterborough. Its fleet of Comansa tower cranes now includes three of the latest Comansa LCH300 hydraulic luffers.

Speaking of the Yongmao STL4200/100 purchase for the Tilbury job, Staton Group chief executive Stan Nikudinski said: "This project was a chance to showcase what we do best. The demand for this scale of luffing tower crane is growing rapidly and 'The Starship' places us at the forefront of the industry." ■



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