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# Busy time for booms

The year leading up to a Bauma exhibition usually tends to be rather quiet when it comes to product launches, with many manufacturers saving up to make a big splash on the world's biggest equipment exhibition. This however has not been the case with boom lifts helped by specialist shows earlier in the year such as the ARA, Intermat and Vertikal Days. These new models continue the major developments unveiled in 2014 which covered product launches at both ends of the working height scale.

In 2014 we saw the introduction at the top end of two new 'super' booms - the 185ft JLG 1850SJ which began shipping mid-2014 and the Genie SX-180 with deliveries beginning this year. Last year also saw Genie finally entering the low weight, 12 metre working height sector with its Z33/18 weighing in at 3,640kg.

This sector was originally established by Niftylift around the 1990s with its Height Rider which was further refined in the early days with the addition of a telescopic boom and better traction so that it rapidly became and remains a highly popular rental machine, dominating this market sector with the several variants, including a 4x4 unit.

#### **Revolutionary' Manitou**

This spring saw the launch of another new small articulated boom

- the Manitou Man'Go 12. One of the major launches at this year's Intermat show in Paris, it was built up to be a 'revolutionary and groundbreaking 12 to 14 metre aerial lift' but unfortunately didn't quite live up to the hype - not many machines would have. It is however a solid, rugged-looking platform with a working height of 11.91 metres and features a short riser, a two section telescopic boom and unusual in this sector, a 1.5 metre jib with 130 degrees of articulation.

At the launch Manitou stressed its smooth controls and the solid feel in the basket. It also said that it was a tonne lighter and 100mm narrower than its competitors. Weighing in at 4.1 tonnes and with a width of 1.8 metres, the only 'competitor' it has those advantages over is the ATN Zebra 12 which just so happens to have 300mm more working





JLG 1850SJ at the World Trade Centre, New York

height and almost two metres more outreach. Overall length of the Manitou is 5.5 metres or 4.5 metres with jib tucked under for transport.

The Man'Go12 will also have to compete with the Niftylift HR 12 4x4 and JLG 340 AJ as well as the ATN. It does use an unusual design with a chassis mounted Kubota diesel and in a major departure for Manitou, hydraulic wheel drive motors rather than traditional drive axles. Outreach at 6.69 metres beats both the Niftylift and JLG and platform capacity is 230kg including platform rotator. Designed specifically with the rental industry in mind, the Man'Go is simple to operate and maintain so will probably

find success particularly with existing Manitou users. Delivery is scheduled for early next year.

#### **JLG additions**

Moving up the working height range JLG launched three booms - one articulated (the 45ft 450AJ) and two straight (the 40ft 400S and the 46ft 460SJ) - at the ARA show in New Orleans at the end of February. The company says that it is listening to its customers more and as a result building lifts that are durable and easy to service, while improving operator productivity, which all contribute to a lower total cost of ownership and better return on investment. These new platforms are also designed for



JLG launched three booms earlier in the year - one articulated (the 45ft 450AJ) and two straight (the 40ft 400S and the 46ft 460SJ shown above)



the world market so they are easily transportable, can be driven into shipping containers and even have options for oversized tyres that can be flipped to ship.

The new booms offer higher capacities, more outreach, lower overall weight, new cast drive axles, Dura Tough covers, faster function speeds and modular power tracks, while engine speed constantly adapts to power demand to reduce noise and fuel consumption.

Platform capacities for the two larger platforms are unrestricted at 250kg for the 450AJ and 272kg for the 460SJ, while the 400S essentially the 460 without a jib - is capable of lifting 454kg restricted. Outreach is 8.2, 12.8 and 10.7 metres respectively. JLG claims these figures are 10 to 40 percent more than most similarly sized competitive booms. With almost half as many hydraulic hoses and improved routing compared to previous models, in order to reduce potential leak points. The MDI display has full language text and not just fault codes, which should simplify troubleshooting and service calls.

#### New MEC60J

Another boom launch early in the year was the 60ft MEC 60J telescopic boom which, according to the company, has been designed as a simpler and easier to transport model to current machines available from the major suppliers. The



Skyjack unveiled its new, long awaited 82 and 86ft telescopic boom lifts - the SJ82T and SJ86TJ - one with jib and one without

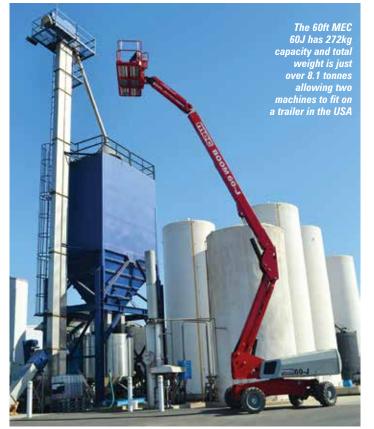
longer riser and standard 1.8 metre articulated jib allow the machine to reach its full height with a two section boom, eliminating the need for chain or cable extension. The new lift has a 2.4 metre by one metre platform with 272kg capacity, while total weight is just over 8.1 tonnes allowing two machines to fit on a trailer in the USA.

The company says that its lighter weight and simpler design enable it to bring the machine in at a price that it claims is a good 10 percent below most other machines on the market, without compromising margins. Not many of these 60Js will be seen for a while however as MEC agreed an exclusivity deal with NES Rentals for the whole of this year, having been involved with the machine's design.

#### Skyjack launches 86ft

At the same event Skyjack unveiled its new, long awaited 82 and 86ft telescopic boom lifts - the SJ82T and SJ86TJ - one with jib and one without. Both employ a mechanical rising boom support linkage - similar that that used on most other machines in the sector -which moves the machine's centre of gravity forward as the boom is elevated, to improve forward reach and maintain stability without adding weight. The SJ86TJ weighs in at 17,150kg.

The new machines feature dual platform capacity ratings of 454kg and 227kg on the SJ82T and 341kg and 227kg on the SJ86TJ. If neither is selected, the unit defaults to the higher capacity, but stops when it reaches the maximum outreach,





#### boom lifts



relay-based control systems.

Most popular of the two is expected

below is with other products already

to be the SJ86TJ because of its

articulating jib, so the comparison

available including the articulated

Niftylift HR28.

requiring the operator to choose one or the other. In Europe this will be integrated into the platform overload system. Most of the rest of the machine shares the same principles as the company's other boom lifts including 4x4 axle-type drive and

#### So how does Skyjack SJ86TJ stack up?

	Skyjack	JLG	Genie	Manitou	Niftylift
Model	SJ86TJ	860SJ	S85	280TJ	HR28
Work height	28.2m	28.2m	27.9m	27.75m	28.0m
Outreach	23.5m	22.9m	23.3m	21.45m	18.5m
U/R Platform Cap	227kg	230kg	227kg	240kg	280kg
Max capacity	341kg	230kg	227kg	350kg	280kg
Platform	2.44x0.91m	2.44x0.91	2.44x0.91	2.3 x0.9	2.4x0.9m
Jib articulation	125°	130°	135°	140°	150°
OA Length	10.6m*	11.6m*	11.6m*	8.04m*	7.3m*
Power	Diesel	Diesel	Diesel	Diesel	Diesel/ Hybrid
Drive	4x4	4x4	4x4	4x4	4x4
GVW	17.1t	17.2t	17.2t	16.5t	14.65t
Tailswing	1.42m	1.42m	1.42m	1.8m	1.4m

\* With jib tucked under



#### boom lifts

#### Genie SX-150

Another major launch early in the year was the 150ft Genie SX-150 which is based on, but uses fewer boom sections than the 180ft SX-180 but retains its innovative three metre articulating and rotating jib. Platform capacity is an unrestricted 340kg and it offers more than 24 metres of outreach - 21 metres at an up and over height of 36 metres. Overall weight is a manageable 23 tonnes which is about two tonnes lighter than the SX-180 - and it can reach its full 48 metres working height in less than three minutes.



Most manufacturers now have their own versions of secondary guarding with Snorkel even including this feature as standard on every boom it sells over 40ft

#### So how does Genie SX-150 stack up?

	Genie SX-150	JLG 1500SJ	Genie SX-180
Working height	48.3m	47.7m	56.86m
Outreach	24.38m	24.38m	24.38m
Max platform capacity	340kg	450kg	340kg
Unrestricted capacity	340kg	230kg	340kg
Jib/articulation/ rotation	3.05m/135º/60º	4.6-7.6m/120°	3.05m/135º/60º
Stowed width	2.49m	2.49m	2.49m
Working width	5.03m	3.81m	5.03m
Transport length	13.0m	13.11m	12.98m
GVW	23t	22t	24.9t

Other features include a standard 7.5kW on-board generator to power tools including welders. The boom uses the same chassis as the SX-180 and ZX-135 and is powered by a Deutz Tier 4 final engine without the need for regen or Diesel Particulate Filter. The rotating jib offers 60 degrees of horizontal movement -30 degrees either side of the main boom. The machine's hydraulic system principally comprises hydraulic pipes rather than hoses and it has a four stage hydraulic filtration system.

Genie says the product was designed with the service engineer in mind, so all manifolds are fully accessible, while the usual swing out engine tray provides easy access for maintenance. The boom features easy to reach hydraulic filters, with a drop-in, in-tank filter for easy cleaning and replacement, as well as bulk-head hydraulic lines so hoses can be removed and replaced in one piece. A boom extend system features a cylinder and wire rope cartridge for fast service or replacement.

Apart from the working height, the SX-150 matches the performance of the SX-180. Compared to the well-established 150ft JLG 1500SJ it offers a little more height, more unrestricted platform capacity and of course the jib rotation. However, it is more than 1.2 metres wider when working, while the JLG has a 450kg capacity at up to 41 metres height and 19 metres outreach, with the versatility of a 7.6 metre telescopic jib.

Most European rental customers began of the receiving deliveries of the first Genie SX-150 this summer. One interesting feature of the boom lift is its four programmable platform height settings - 150ft, 135ft, 120ft and 100ft - in order to make it more rental versatile, maximising utilisation and available rates. Although were this unit to go out at a 100 or 120ft machine, its overall width and weight might just prove tricky in some applications.

The SX-150 features the company's universal standard factory-installed

telematics-ready connector and Track and Trace Fleet Management Module from Trackunit. The system offers the benefits of a wide range of remote reporting and other functions, such as hourmeter reporting, location, machine utilisation, and security abilities such as geo-fencing, alarms by movement and remote machinery disabling.

Heavy construction, big plant maintenance, telecommunications, oil & gas/refineries, chemical maintenance, large utility applications, wind farms, bridge inspections and stadium work are among the many applications suited to these new mega booms. However, are these very large booms that much better than a truck mounted platform? There are many who are unsure about the safety of driving large booms at heights - one of their key advantages - while their bulkier dimensions narrow the gap with truck mounts.

As a general comparison, we took the new and highly popular 48 metre, two axle Palfinger P480, together with the 48 metre Ruthmann T480, they are the largest platforms currently available on two axle trucks.

These new truck mounts are relatively compact machines for their height - the Palfinger is just 900mm higher than the Genie SX-150 - yet it is surprisingly more than three metres shorter in transport mode! The SX-180 also is more than five tonnes heavier and needs to be transported to site. Once on site the Genie has a 1.5 metre narrower overall working width, but is trounced by the P480s 600kg platform capacity. True, the boom can move around site but the truck's superior outreach (seven metres greater) may go some way in reducing the number of set-ups needed when carrying out many types of work.

How the Genie SX-150 compares with a similar working height truck mounted platform

	150ft Genie SX-150	48m truck mount e.g. Palfinger P480
Max working height	48m	48m
Max platform capacity	340kg	600kg
Max outreach	24.38m	31.5m
Below ground reach	-0.61m	-10.0m
Height x width x length	3.05 x 2.49 x 13m (transport jib tucked)	3.93 x 2.5 x 9.9m
Weight	23.0 tonnes	17.6 tonnes
Overall working width	5.03m	6.5m
Approximate cost	£200k	£420k
Rental cost	£2,250 per week + transport	£1,000 a day
Jib articulation	135 degrees	240 degrees



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#### boom lifts





a potential hazard the platform functions stop and the light turns to flashing amber, warning the operator of a potential risk. To re-enable the platform and continue the operator resets the machine's dead-man foot pedal.

The PCS flashing amber then turns to a flashing red and a constant audible alarm sounds to remind the operator that he is working close to a potential entrapment hazard, warning those on the ground and giving him time to assess the risk which may involve moving the platform into a different position.

When in the final work position, with the machine stationary the PCS system automatically reverts to flashing amber. When the job has been completed the operator lowers the boom in the usual way and as it moves away from the potential danger the alarm stops and the light changes back to green - as the system automatically resets itself. The sensor distance is set between 500 and 800mm which Nationwide says is the optimum for protection and preventing the alarm from going off during normal work activities.

In the unlikely event of a trapping situation after all this warning, the SkySiren system acts in the normal way raising the alarm with a strobe light and klaxton.

Mark Keily, Nationwide's quality, health, safety and environment director said: "SkySiren PCS is unique in that it provides two levels of protection. The PCS system is designed to prevent a trapping and crushing incident happening in the first place. SkySiren then provides the proven safety back-up."

#### Win a LEGO boom lift from IAPS Group

IAPS Group is offering one lucky Cranes & Access reader the chance to win a limited edition LEGO boom lift set. The articulated boom is the first in a new powered access platform range of limited edition LEGO kits. Created for IAPS - which comprises APS, IPS and PSR - by certified professional LEGO design agency Bright Bricks, the poseable articulated self-propelled boom is in IAPS corporate colours and features the company's decals. The 226 piece limited edition set is aimed at LEGO enthusiasts aged

14 and over. To win one of these LEGO cherry pickers, answer the following question:

What are the three main divisions of IAPS Group?

Send your answer, along with your name, email address and telephone number to competitions@ iapsgroup.com The winner will be announced on 15th December and the LEGO prize will be delivered in time for Christmas.



Although the purchase price of the truck mount is around double the price of the boom the overall Return On Investment is quite similar. Admittedly the truck mount needs a driver, although having someone totally familiar with its operation is a benefit with such large equipment particularly if they are only being used on relatively short term rentals. Also the large platform capacity of the Palfinger means that even with the dedicated operator there is still plenty of space and capacity for another two or three men and tools. For rental periods of less than a week - the truck mount naturally wins - that is after all what it is designed for, but for longer hire periods a big boom would certainly be the most cost effective option.

#### Safety

Safety is an increasingly important aspect of using a boom lift and one which is even more important when using booms with platform heights of more than 30 metres. Walking the proposed work route before going up in the platform is absolutely essential as even the smallest changes in ground level - especially a curb or pothole - can have a huge catapult effect on the platform, to the point where even if well harnessed can result in injury.

Most manufacturers now have their own versions of secondary

guarding with Snorkel even including this feature as standard on every boom it sells over 40ft on a global basis. However, UK rental company Nationwide Platforms has recently developed an additional secondary guarding system which it says offers dual protection against trapping and crushing incidents while operating a boom lift.

SkySiren PCS (Pre Crushing Sensor) - developed by Lavendon group company BlueSky - combines its regular SkySiren device with a new system using ultrasound sensing modules to detect potential hazards, which its designers have dubbed 'intelligent secondary guarding'. The system uses three sensor units, two at the back of the basket and one over the control panel, incorporating eight individual ultrasonic sensors which generate high frequency sound waves to scan the work environment behind and above the operator, working in a similar way to reversing sensors on a car in order to warn the operator of objects as they are approached, rather than as a result of him being pressed into the safety switch bar by the hazard.

A light on top of the control panel sensor box gives the operator a visual status of the system. If no hazard is detected the light is green, however when the boom lift is within a defined distance of

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#### New model



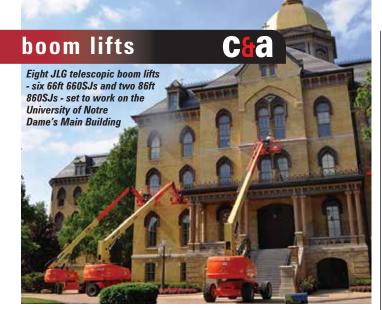
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## Notre Dame restoration

Working mainly at night, eight JLG telescopic boom lifts - six 66ft 660SJs and two 86ft 860SJs - set to work on the University of Notre Dame's Main Building on a 10 week contract to restore the exterior of the historic building. The contract includes replacing failed window and mortar sealant joints, repairing cracked and damaged bricks, pointing, replacing decorative ornamental metal features, painting soffits, cornices, window trim and power-washing the building's exterior.

The Main Building was constructed in 1879 and supports the famous Golden Dome, which was added in 1882 and which today defines the campus skyline. The five-story structure serves as headquarters for the university administration.

"With the building in use every day it was decided that with all the noise, dust and water it made more sense to work at night," said Tony Polotto, senior project manager, facilities design and operations at Notre Dame. "The crew mobilises at 5pm and works until two or three o clock in the morning. "However some of the work is being carried out through the quieter summer months when we can work 24 hours a day."

The JLGs provide the working height and reach needed to carry out the job. In addition, the jib and platform rotation makes it easier to access those hard-to-reach areas of the building. The university rarely uses scaffolding, even though almost 90 percent of the projects on campus require working at height.

"Scaffolding is very expensive, time-consuming to put up and take down, and typically damages landscaping," he said. "Boom lifts can be in and out quickly, completing a task and leaving the grounds as we found it. They are

especially helpful when we repair our slate roofs - the workers can carry out the repairs and move around the entire roof, leaving no damage in their wake."

Power tool usage on the work is high, so the onboard generators are essential features. A power cable and an air/water line are routed from the base-mounted generator through the boom's power track to outlets in the platform. This option allows the use of both air and electric power tools and power washers to be used without trailing cables and hoses or separate generators.



The Main Building was constructed in 1879 and supports the famous Golden Dome, which was added in 1882 and which today defines the campus skyline

### Skyjack at Laughton Place

Skyjack recently worked with Sussex-based rental company Winner Plant to provide a brand new 63ft SJ63 AJ articulated boom lift to help the British Charity The Landmark Trust and its local contractor Traditional Buildings, to restore several sections of brickwork with traditional lime mortar at Laughton Place, a 16th century historic site located between the South Downs and Ashdown



A new 63ft SJ63 AJ articulated boom was used to restore several sections of brickwork with traditional lime mortar at Laughton Place, a 16th century historic site.

Forest, East Sussex, England. The Trust owns and operates a variety of historical buildings in the UK and other parts of Europe, carefully restoring each property before renting it out to visitors.

"Our charity prides itself on keeping traditional building skills and techniques alive but this attention to detail comes at a price," said Ed Percival of The Landmark Trust. "We have to prioritise the buildings that need our help the most so we were grateful that Skyjack could step in and lend a hand at Laughton Place."

"This project was complex, there were many things to consider before we started the work," added Ben Muriel, director of Traditional Buildings. "The height of Laughton Place, coupled with its remote location and jutting buttresses, meant we needed to find the precise machine for the job."

### Making work easier

In Austria, Strasswalchen-based rental company Rachbauer supplied Inocom Construction with a 135ft Genie ZX-135/70 articulated boom lift for a high precision task at a cement plant near Salzburg. Working in conjunction with a 220 tonne All-Terrain crane, the boom lift helped complete the steel framework covering a 43 metre high drying tower facility within a tight three and a half week deadline. The construction of the frame - once clad - is intended to protect the facility from the elements.

The choice of the Genie ZX-135/70 followed an onsite visit and a detailed job plan helped by using the latest planning software. Its 43 metre maximum working height, and 18 metres of outreach were the main features that made the machine right for the task.

"The ZX-135/70 is ideal for reaching difficult areas, notably around corners and over deep ledges," said owner Christian Rachbauer. "When it is necessary to move the machine its full height drive function saved time for Inocom and helped reduce costs. Work got off to a great start and everything went according to plan. As the crane hoisted each individual element of the frame, the twoman team in the platform equipped with electric power drills progressed rapidly. The entire job was completed without a hitch a couple of days ahead of schedule".

Working in conjunction with a 220 tonne All-Terrain crane, the boom lift helped complete the steel framework covering a 43 metre high drying tower facility



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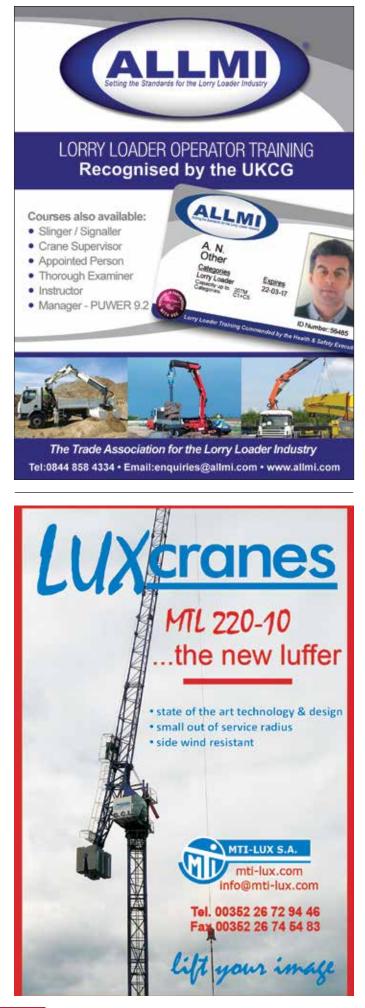
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## Renovation within reach

The problem of painting the clock tower on Hayes Hall at the State University of New York, Buffalo was solved with a 185ft JLG 1850SJ boom lift. The platform gave contractor Shades of Color the outreach and height needed to get over the lower surrounding buildings and other obstructions that prevented using other types of access equipment.

The white belfry and clock tower atop Hayes Hall has been an area landmark since it was installed in 1928. Sprucing it up and its



the State University of New York, Buffalo was solved with a 185ft JLG 1850SJ boom lift

restoration of the gold finial topper is part of a \$21 million renovation of the building that houses the University's School of Architecture and Planning, and part of a \$50 million refurb of the school's 154 acres South Campus.

The painted spire on the top of the clock tower is around 47 metres high but reaching it is more difficult as it is set back from the face of the building. Access is further compromised by steel girders that brace exterior walls while structural alterations go on inside and out.

Shades of Color lift operator and painter John Stoll said: "Some crew members were initially nervous about the height, but the stability of the 1850SJ was reassuring. It is very smooth and not much different from a 60 footer."

With the 1850SJ positioned safely away from the primary structure and



the foundation supports, Stoll is able to extend the boom and utilise the machine's full working envelope. The company uses the machines with a crew of two, several large buckets of paint, paint rollers, brushes and accessories to minimise the number of times they extend and retract the boom.

The vast working envelope and the jib access of the 1850SJ proved critical for another reason. Because the bell tower has to be coated with primer plus two coats of paint a machine with a smaller working area would require repositioning more frequently. In a congested jobsite, more moving means less working.

The painted spire on the top of the clock tower is around 47 metres high but reaching it is more difficult as it is set back from the face of the building.

### **Ca** boom lifts **The thrill is back**<sup>"On this type of project, the more project, the more project with the more project of the more o</sup>

After 18 months planning and preparation the 'The Oath of Karenan' - one of the three highest roller coasters Europe has ever seen - roared into action at the Hansa Park on Germany's Baltic coast. Erection of the new generation hyper roller coaster was helped by a 180ft Genie SX-180 and 85ft S-85 boom lift.

Designed and built by Gerstlauer Amusement Rides the attraction's main tower is 79 metres high, while its start lift is 73 metre high. Taking about three and a half minutes to complete the 1,235 metre ride including a passage in the dark - it reaches speeds of up 79 mph. To erect and bolt the complex steel

To erect and bolt the complex steel framework and intricate tracks in



time for the grand opening, Gerstlauer needed access equipment with good reach and height as well as being able to work in confined spaces. "On this type of project, the more progress we make, the more complex the job gets, as we work among a growing forest of pillars and overhead beams," said project manager Franz Maier.

With up to 57 metres of working height and an outreach of 24.4 metres, rental specialists Rieckermann & Sohn recommended the Genie SX-180 provided by Schickling Rental. The on-board generator and power to the platform made the unit particularly suited to the job.

The S-85 worked on the lower framework, where its 28 metre working height and 23.3 metres of outreach proved ideal. The machines worked in conjunction with a number of mobile cranes which lifted the ride's heavy steel components into position. Gerstlauer's operators found the boom's compact dimensions and manoeuvrability a great alternative to truck mounted platforms.

"These machines are self-propelled so there is no need for a driver which, by comparison, makes them an extremely cost-efficient solution," said Maier. The big machines' 340kg platform capacity was also an advantage that provided sufficient space for two men to work comfortably with their heavy 50Nm wrenches, chain hoists and up to 50kg of additional material."



Erection of the new generation hyper roller coaster was helped by a 180ft Genie SX-180 and 85ft S-85 boom lift