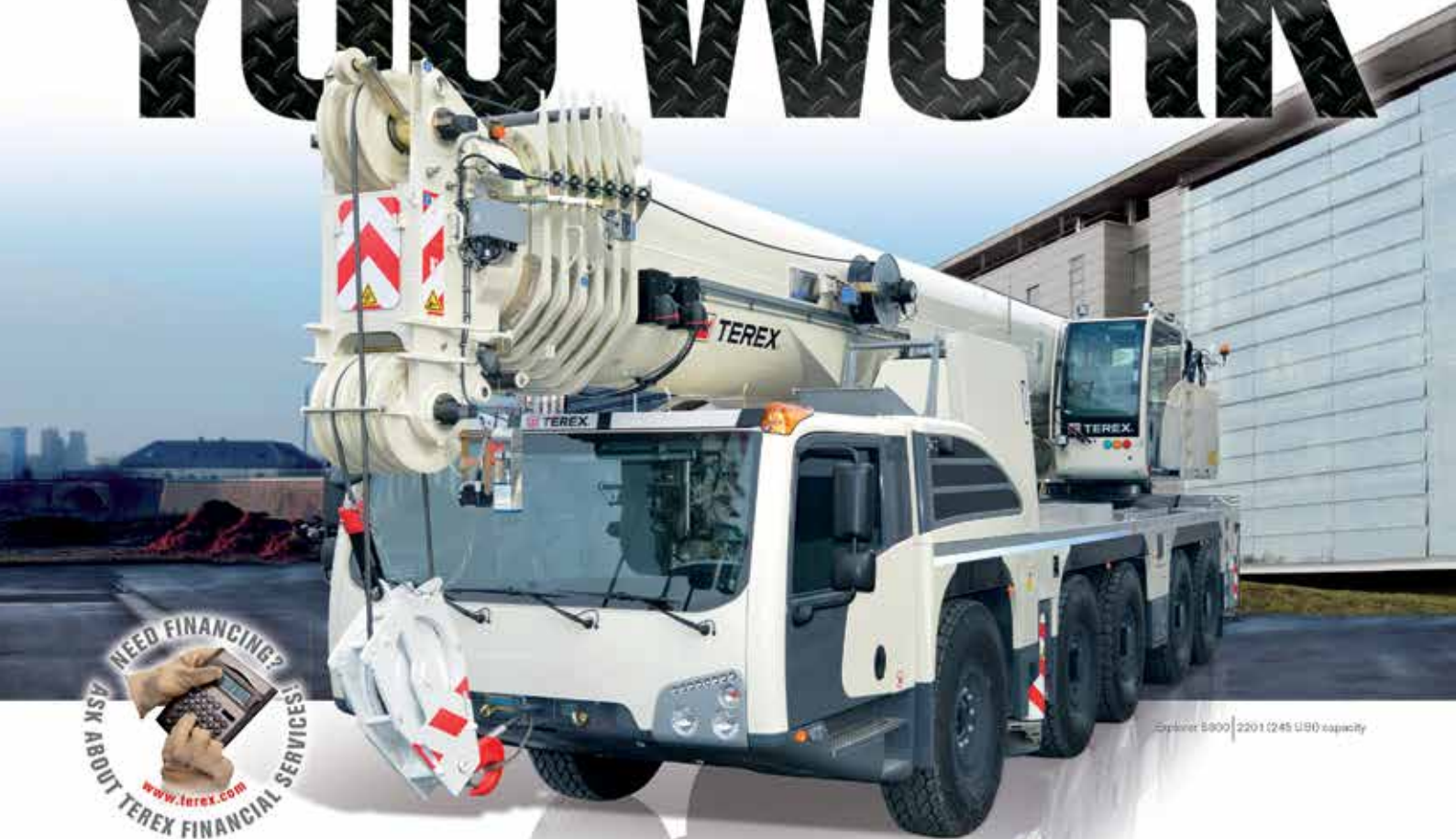


BUILT FOR THE WAY YOU WORK



Capacity 5000 | 2201 (245 US) capacity

Terex all terrain cranes are suited for worldwide operation on a variety of construction sites and in many different industries. Their reliability and versatility are the keys to their success.

Designed with you in mind:

- ▶ Large lifting capacities and long boom reaches to handle a wide variety of jobs
- ▶ Fast setup times and easy servicing so that your crane will be ready for work right away
- ▶ Great mobility and outstanding maneuverability to get you to the jobsite quickly and efficiently



Contact us to learn how we can work for you.

www.terex.com/cranes



Challenger 3160



AC 350/6



AC 1000

Ask about our full range of all terrain cranes.



TEREX®

WORKS FOR YOU.™

Tough time for small ATs?

Wherever you look in the UK and in some other parts of northern Europe, there appears to be a record number of cranes at work. However despite a vast improvement in the construction related workload over the past year or two, rental rates for most lifting equipment - while slowly improving - are still way below a sensible or even sustainable level. Many point out that they are the same or even lower than 20 years ago!

Without discussing the reasons for low rates, the net result is a poor return on investment (ROI) which means that many companies cannot afford to re-invest to replace older equipment. Some companies even struggle to properly maintain their fleets. This falling ROI is just one factor that has forced many mobile crane rental companies to look to the larger capacity All Terrain cranes that command better returns, and where the cost of the operator is a smaller percentage of the rate.

Generally the bigger capacity the better, but certainly returns improve when capacities reach the 100 tonne and above mark. The high price tag for All Terrain cranes and low rental rates may well be the reason for the growth in popularity of less costly alternative lifting equipment, such as loader cranes and telehandlers. This growth has certainly hit smaller capacity All Terrain sales and is making rental companies and users question - perhaps for the first time - why they buy and use certain types



The truck or trailer (shown) mounted aluminium crane is particularly useful when reach and low capacity is needed



There are always different machine options available - here a mobile self erecting tower crane sets up in a busy London street - the lift would have required a much larger capacity AT crane set up much further away

of equipment for particular jobs.

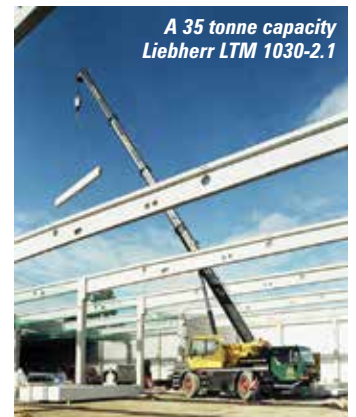
There are some very good All Terrain crane alternatives available depending on the lifting requirements, particularly where the lift is a combination of reach and relatively low weight (say less than a tonne). This long reach, low capacity work is typical of many housing and small industrial sites for placing items such as roof trusses, false chimney stacks and steel beams. There is also industrial type lifting in a confined space where a compact and manoeuvrable device is essential. One of the applications featured on page 24 required 16 office containers to be stacked inside an industrial building with very little headroom above the upper level. The crane provider opted to use its 40 tonne City crane and 15 tonne boom nose mounted 'runner' with double hook and lifting chains to handle the six metre long, 2.5 tonne containers at a radius of around 10 metres. An alternative installation method may have used a smaller, cheaper, mid sized telehandler. Of course if you have access to a small AT then that is what you would probably use - but is it time for users and in particular rental companies to offer a wider range of less traditional equipment giving customers more - possibly better and cheaper - options?

There are several other examples of alternative lifting equipment which

for specific tasks are either the only way of getting the work done or offer a more cost effective/quicker/safer solution.

Mobile self-erecting tower cranes and tracked spider cranes are two excellent examples of equipment that may not have the ultimate nominal lifting capacity, but through their design are able manoeuvre closer to the load and therefore complete the task with less disruption, as well as being quicker and cheaper?

One alternative for the small All Terrain crane that is becoming more popular - particularly in Germany, Austria and the UK - is the truck or trailer mounted aluminium crane. There are only a few manufacturers that now make this product including Paus - which has two trailer cranes - and Böcker which has a wider range of both truck



A 35 tonne capacity Liebherr LTM 1030-2.1

all terrain cranes C&a

Böcker AK 32/1500



Paus Starworker 1000



Grove GMK 2035E



Böcker AK 44/4000



Tadano ATF 40G-2



Unic spider crane



mounted and trailer units. While common for some time in Teutonic regions of Europe, only a rare few individuals and companies in the UK sensed their potential for certain applications, so this type of crane has generally been ignored. Now that Kranlyft has become the Böcker distributor for the UK, this is changing as it manages to attract much more interest and as a result the product has started to sell in reasonable numbers.

For decades German-based Böcker has been making both trailer and truck mounted cranes using its aluminium boom technology. The six models of truck cranes have capacities from 1,200kg to 6,000kg and tip heights ranging from 28 to 41 metres. These are mounted on commercial chassis with Gross Vehicle Weights from 7.5 to 26 tonnes. The five trailer cranes have payloads from 800 to 1,800kg with maximum extension lengths from 25 to 34 metres.

As mentioned earlier, one of the problems for a small All Terrain is that it is relatively expensive to buy. However it is also very expensive

to run and maintain. Not using a commercially available chassis means that parts and maintenance are particularly expensive - for example tyres can cost between £1,200 and £2,000 each.

A crane such as the Böcker which - even when fully loaded up with options - is cheaper to buy and more importantly, significantly less costly to run and maintain. And despite its lower nominal lifting capacity, can still carry out a significant proportion of the All Terrains duties.

At last month's Vertikal Days at Haydock Park, Kranlyft exhibited a four tonne capacity AK 44/4000 mounted on a 15.5 GVW Mercedes Atego chassis. The fully equipped demonstration unit - with optional hydraulic luffing jib and 250kg access platform - was purchased at the show by Bedford-based crane rental company NMT Cranes, its first ever truck mounted aluminium crane in its fleet. Even though its maximum capacity is about a tenth of a two axle All Terrain, it can compete against 35-40 tonne ATs particularly when lifting at height or long reach. The AK 44/4000 has

a maximum extended boom length of 44 metres, a 35 metre maximum lift radius where it can lift 250kg, or 500kg at 30 metres, 1,000kg at 22 metres and 2,000kg at 14 metres. Its maximum four tonnes can be lifted at 8.2 metres.

Looking at the chart above comparing the AK 44/4000 with three 40 tonne ATs - the Terex AC 40/2 L, Grove GMK 2035E and Tadano Faun ATF 40G-2 and the 35 tonne Liebherr LTM 1030-2.1, it can be seen that the Böcker is physically similar in size. However at 15.5 GVW it is significantly lighter than the two axle, 24 tonne maximum All Terrains, resulting in lower fuel consumption and general less wear and tear on the drive train components, all of which are designed for long distance high mileage travel. What is also clear is that the Böcker has nowhere near the lifting capacity close in, but from around 22 metres it performs well and offers enough capacity/reach for the types of jobs that these smaller crane are often used. The Böcker also has a fully variable outrigger control system which is not yet

available on most small All Terrain cranes and a boon on challenging and narrow construction sites. The position of each outrigger is monitored by the PLC controls and the lifting envelope is automatically calculated depending on the footprint.

The Böcker also has the option of the two person - 250kg capacity - work platform which is either rigid or can have 30 degree left and right rotation. This gives crane operators the option of converting the crane into a platform with a very useful 40 plus metres working height. This can be an invaluable option for many contracts when lifting and placing loads at height and if using a small AT it would need the additional expense of renting in a sizeable access platform.

This is not an article forecasting the end of the small - 30-40 tonne capacity - All Terrain crane. Far from it - there are still many lifting jobs that can only be done with a sizeable capacity but small and compact crane that is manoeuvrable and good on poor ground conditions etc.... What it does highlight however is that there are other options that can offer both the crane rental company and the end user some significant benefits. So don't automatically select a small AT for the job, look at the alternatives which may well manage the lift just as well, but perhaps quicker, with less disruption and possibly be more cost effective.

The Böcker AK 44/4000 truck crane v small capacity AT cranes

| | Böcker AK 44/4000 | Liebherr LTM1030-2.1 | Terex AC 40/2 L | Grove GMK 2035E | Tadano Faun ATF 40G-2 |
|--|-------------------|----------------------|----------------------|----------------------|-----------------------|
| *Capacity @ 35m | 250kg | 400kg @ 36m | 550kg @ 34m | - | - |
| *Capacity @ 30m | 500kg | 1,000kg | 950kg | 800kg | 600kg |
| *Capacity @ 22m | 1,000kg | 1,300kg | 1,350kg | 1,400kg | 1,200kg |
| *Capacity @ 14m | 2,000kg | 3,500kg | 3,600kg | 3,900kg | 3,400kg |
| *Capacity @ 8m | 4,000kg @ 8.2m | 9,100kg | 9,400kg | 9,400kg | 8,600kg |
| Max capacity @ with 12t per axle counterweight | 4,000kg @ 8.2m | 33.4 @ 3m over rear | 35.0t @ 3m over rear | 33.5t@3.1m over rear | 31.3t @ 3.0m |
| Max system length | 44 metres | 45m | 45.4 m | 46 metres | 47 m |
| Overall length | 10,550mm | 10,310mm | 10,689mm | 10,215 | 11,031 |
| Overall width | 2,550mm | 2,550mm | 2,550 | 2,550mm | 2,550mm |
| Overall height | 3,940mm | 3,495m | 3,320mm | 3,523mm | 3,551mm |

*with road going (max 12 tonnes per axle) counterweight installed

Terex AC 40



Experience the Progress.

Liebherr crawler cranes (LR series).

- Superior lifting capacities, on-line load chart calculation
- Great variety of boom configurations
- Quick and easy assembly
- Easy and cost-effective transportation
- Narrow working track for limited space



Liebherr-Werk Nenzing GmbH
Dr. Hans Liebherr Straße 1
A-6710 Nenzing
Tel.: +43 50809 41-473
E-mail: crawler.crane@liebherr.com
www.facebook.com/LiebherrConstruction
www.liebherr.co.uk

LIEBHERR

The Group



INSIST ON A TEAM MEMBER

It pays to insist on a TEAM card to ensure the safe operation and efficiency of your lifting equipment



WHEN IT COMES TO OVERHEAD LIFTING, DON'T LEAVE IT TO CHANCE. INSIST ON THE BEST.

TEAM card holders are fully approved to check the safe operation of general lifting gear, manual lifting machines, powered lifting machines and runways and light crane structures.

To see what it takes to become a TEAM card holder, simply scan the code or visit www.leeaint.com



Crane work of art

An old sea port crane has been installed on the quay of the River Limmat in the old town of Zürich as a temporary work of art. The 30 metre high crane weighing 90 tonnes was voted the winner of the "Zürich Transit Maritim" project competition organised by the Commission for Art in the City. The retired crane was dismantled in Rostock and shipped to Zurich where two Liebherr cranes - a 130 tonne LTM 1130-5.1 and a 70 tonne LTM 1070-4.2 - from Feldmann unloaded and erected it on the quay. The heaviest lift was the port crane's pillar which weighs 27 tonnes, well within the capability of the LTM 1130-5.1. After this the LTM 1070-4.2 was brought in for a tandem lift to install the 35 metre long, eight tonne boom.

The LTM 1130 and LTM 1070 installing the old sea port crane



Lifting in a precast concrete beam using the lattice spreader

Quicker bridge lifts with new spreader

Australian crane rental company Universal Cranes used a 450 tonne, seven axle Grove GMK7450 All Terrain for a bridge lift in Central Queensland using its own specially designed lattice spreader.

The crane unloaded and installed 22 precast concrete beams - each measuring 33 metres long and weighing 74 tonnes - over a two week period on the 64 metre long Bruce Highway Bridge near Calliope after being transported to the site from its base in Brisbane 450km away. The crane was fully rigged with its Mega Wing superlift system in less than four hours and was able to reposition in less than two hours thanks to its carrier allowing travel while partially rigged.

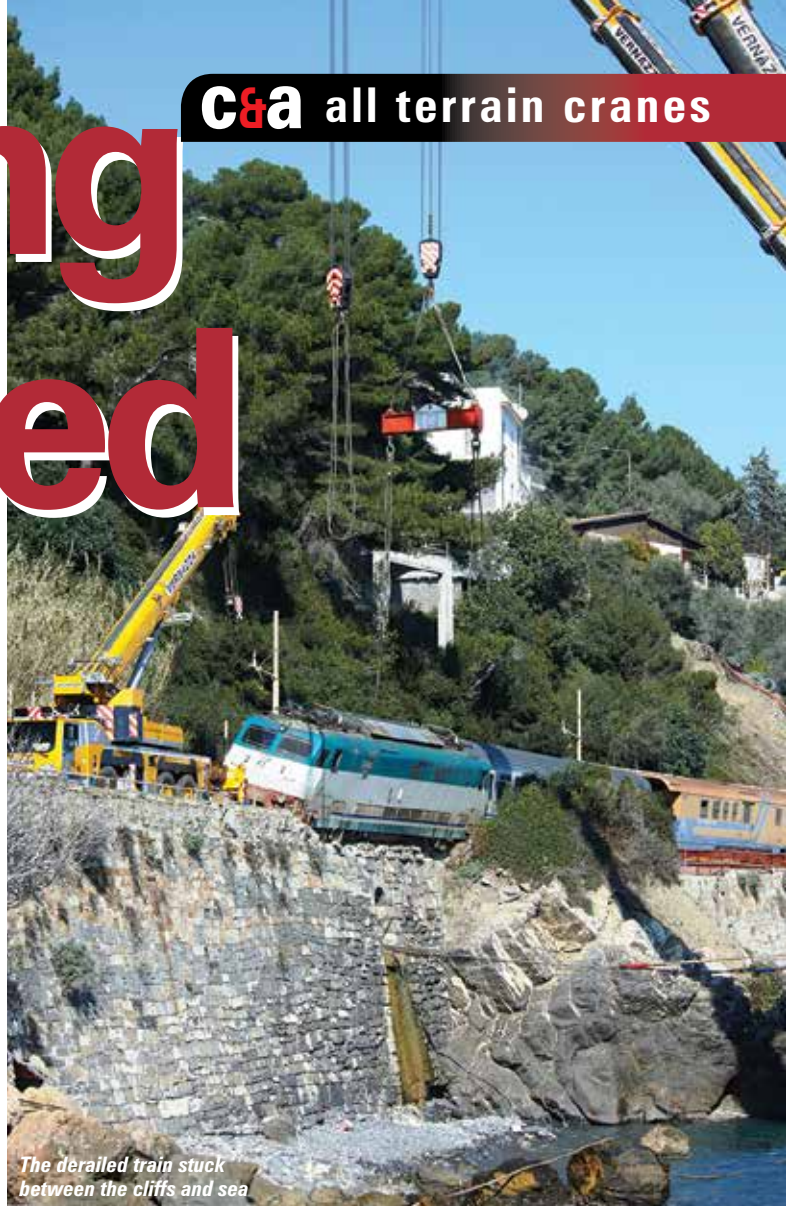
Universal Cranes used a specially-designed, purpose-built lattice spreader to lift the large loads with sling angles as low as five degrees against the beam inserts, reducing stress on each insert while perfectly balancing the load. The unique set up also reduced rigging time as the crew could quickly and easily sling the beam.

Rescuing a derailed train

Recovering a derailed train can be challenging at the best of times however when it happens on a stretch of line squeezed between the sea and cliffs it is a logistical nightmare. This was the scenario when an Intercity 660 train and carriages derailed on its way to the Italian town of Andora due to a landslide near the cliffs of Capo Mimosa on the south western Ligurian coast. Fortunately there were no injuries, however recovering the train was a major headache for Italian Railway Network Ferroviaria Italiana, which brought in specialist lifting company Vernazza Autogrù to carry out the work.

"After an initial survey we set to work on a range of feasible proposals for recovering the train intact, trying to keep the complexity and cost to a minimum," said Diego Vernazza, one of the owners of Vernazza Autogrù. "The plan we adopted required minimum preliminary work near the cliff and on the tracks, safety and time were the two main priorities, however we were at the mercy of certain key variables including the weather and sea currents".

The solution was to build a 90 metre long, 27 metre wide crane barge with an overall capacity of 11,700 tonnes. The plan was to use the barge to transport the cranes to a position close to the cliff and then act as a dock from which to carry out the lift. The two cranes selected for the main lifting duties were a seven axle 450 tonne Grove GMK7450 and a 700 tonne, nine axle Terex AC700. A 100 tonne four axle Terex AC100/4L was also used, along with a small cab down Rough



The derailed train stuck between the cliffs and sea



The solution involved a 90 metre long, 27 metre wide barge with a capacity of 11,700 tonnes

The barge and cranes in position



A 100 tonne Terex AC100/4L was lifted from the barge next to the train



The AC100 helps stabilise the train



Almost ready to lift

Terrain for routine material handling duties. The barge had to be extensively modified for the work.

"We had to reinforce the basic structure of the floating dock in order to support the weight of the cranes and add a compartmental balancing module for levelling. Once the barge was properly reinforced and modified, we secured the AC 700 and GMK7450 in place as an integral part of the barge. These two cranes carried out most of the heavy lifting. After this we got the official Italian Marine Registry ("Registro Italiano Navale") certification needed for the navigation phase and for the subsequent lifting activities," added Vernazza.

"While the barge was being fitted out in the port of Genoa we sent an initial operations team to Andora to secure the train and create the attachment points needed to lift it. At the same time, a team of divers surveyed the seabed using a hi-tech depth-finder to identify

any critical points. With the aid of a diving team and two tugboats, the barge was towed into position and moored in a spot almost touching the base of the cliff. At this point we started the complex part of the operation. We lifted the AC 100/4L from the barge on to the railway line where it was used to stabilise the train as it was lifted."

After the slings were installed on the locomotive the two barge mounted cranes - both fitted with superlift systems - were ready to tandem lift the 90 tonne train back on the tracks. However during the derailment, the locomotive buffers had penetrated deep into the first carriage solidly jamming the two together. After making several unsuccessful attempts to separate them with cutting gear, the team used multiple 35 tonne air-cushions to help extract the locomotive from the carriage. When everything was ready, the train was lifted back on to the tracks to return to the rail yard.



The nine axle Terex AC 700 and the seven axle Grove GMK7450 carried out the tandem lift of the train and carriages

FOCUS ON THE NEXT GENERATION



Big tasks need a strong partner: Palfinger products prove their strength every day, without exception. They deliver the very highest reliability regarding performance, quality and service — for the lifetime of the product. "Lifetime Excellence" — Our promise toward the utmost success for your company.

PALFINGER

LIFETIME EXCELLENCE

WWW.PALFINGER.COM

Cold boxes lifted

Two 400 tonne Liebherr LTM 1400-7.1 cranes from partner companies Kran Saller in Deggendorf and Kranverleih Saller in Winhöring completed a tandem lift of two cold boxes at the Port of Passau on the River Danube.

The refrigeration chambers are used at very low temperatures, for example in air separation systems or gas treatment systems. Each chamber weighed more than 150 tonnes and measured 28 metres long, eight metres wide and five metres high and were lifted from a low loader on to a freighter for onward shipment. The Port of Passau plays a major role in goods handling at the point at which Bavaria, Bohemia and Austria meet.



Terex AC 40 City working with very little headroom

Stacking challenge

Sometimes the simple jobs can be the most difficult - particularly when working in restricted conditions. Stacking containerised offices is usually an everyday task, but when this is carried out indoors with very little space to manoeuvre, it is far more difficult. When faced with stacking 16 containers at a logistics warehouse near Ingolstadt in southern Germany, crane rental company Schmidbauer chose a compact Terex AC 40 City for the job.

With an overall height of less than three metres and a chassis length of 7.34 metres, the crane is ideal for work in restricted spaces. The three-axle unit also has independent rear-axle steering and a 7.8 to 31.2 metre main boom and a maximum load of up to 34.4 tonnes.

To perform the lifts the Schmidbauer team used the 15 tonne boom nose mounted 'runner' with double hook and lifting chains to handle the six metre long, 2.5 tonne containers at a radius of around 10 metres. In this configuration the upper containers were able to be placed without interfering with the ceiling or any lighting fixtures or pipes. The job was successfully completed in 10 hours.

"There weren't any viable alternatives - no other crane had the design characteristics required to handle the job," said Christian Schlagbauer, Schmidbauer's Ingolstadt branch manager. "Without the AC 40 City crane, we simply wouldn't have been able to take on the project. In addition to the lack of space, the project had to be carried out on a single Saturday in order not to disturb the production work at the warehouse. The AC 40 City's ease of mobilisation and fast assembly proved invaluable and the team was able to drive the crane to the jobsite and set it up in just 30 minutes."

Floating building tandem lift

Three Grove All Terrain cranes installed the foundation of an unusual floating building - a new tourist information and exhibition centre - on the river Mosel in Schengen, Luxembourg. Two of the cranes - a 300 tonne GMK6300L and 220 tonne GMK6220L - completed a complicated tandem lift, placing the 64 tonne base of the building which measured 34 metres long and six metres wide. A GMK3055 was also on site for support. All three cranes were supplied by local rental company Megalift which worked closely with the local Manitowoc dealer MobilKranTechnik to find a solution for the project.

The cranes were carefully positioned for the lift on a residential road next to the sloping riverbank. The GMK6300L used

its 80 metre main boom while the GMK6220L used its 72 metre boom to lift the foundation from a truck and slew it through 180

degrees to face the river. Having travelled 60km from Megalift's headquarters in Colmar Berg to the job site, the three cranes took half a day to set up and spent two days on the project. River traffic was halted during the lift, but despite the large load and the difficulties in preparing the narrow riverbank, the job was completed with time to spare.

"Grove cranes are easy to

manoeuvre, quick to set-up and make light work of even demanding lifts," said Uwe Döring, general manager of MobilKran Technik. "It was extremely important that the two cranes worked together to lift the load smoothly. The cranes caused minimum disruption to the surrounding area, performed the lift very efficiently and were on their way to the next job site in no time."

The GMK6300L and GMK6220L unloading and placing the 64 tonne foundation base





“The GMK6400 has put me in another market to compete in and won me more jobs.”

Ben Daugherty — Greiner Industries

The strongest, most innovative six-axle crane on the market, the Grove GMK6400 allows customers like Greiner Industries to be more productive and win more jobs.

- MEGATRAK™ - the only fully independent suspension system in the industry
- MegaDrive™ hybrid drive system - for precise maneuvering on the jobsite
- Self-rigging MegaWingLift™ - up to a 70% capacity increase in minutes
- 259 ft (79 m) luffing jib - increases the reach and versatility of the crane
- Fuel Saver option - save up to 1.3 gal (5 l) of fuel per hour

➤ To learn how the GMK6400 can help you win more jobs, contact your dealer or visit:
www.manitowoccranes.com/GMK6400