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Fold up cranes

Fast self erecting tower cranes have long been popular in continental Europe and rarely taken seriously in the UK or Ireland, nor interestingly, in the USA. Times though, they are a changin' as more builders discover the benefits of having a crane on site for the duration of a project.

It is interesting to note how the same jobs are carried out with different equipment in different countries. When it comes to low to medium rise building sites, Germany for example is devoted to the small tower crane and takes very few telehandlers. In France meanwhile, such tower cranes are also very widely used but telehandlers are also very popular. In the UK, mobile cranes have been widely used to place roof trusses and unload vehicles etc. while manual handling has also been far more prevalent. The fact that a strong crane hire industry has existed here since the war has almost certainly influenced this state of affairs. In recent times however the telehandler has taken over much of the higher heavier lifting and increasingly the lighter duty work, as manual handling regulations call a halt to brute force and ignorance.

We spoke to the four main importers of small tower cranes, all of whom agreed that the use of small self erecting cranes is beginning to gather pace in the UK and even more rapidly in Ireland. The changing attitude towards self erectors can be attributed to a number of factors. The growing availability of rental units, kick started by the likes of Potain UK and Vanson, is certainly a key factor as is the influence of the HSE and new regulations. The HSE has been running initiatives to enforce manual handling rules that make the hod carrier a career of the past. It has also waged a campaign to reduce the number of accidents from site traffic, which has, in some instances lead to a stance against the excessive use of site vehicles such as dumpers and telehandlers.

This self Propelled 4x4 chassis, from MontaRent in Holland can travel on site fully erected.



Liebherr MK100 demonstrates its up and over capability in a busy street.

Site Congestion is a factor

Another influence on this state of affairs is the fact that buildings are getting higher and being built closer together as the government pushes for higher density when considering planning applications. More brown-field sites are also being used for housing and office development. As a result sites are now often too congested for many mobile cranes to operate, without considerable disruption. Increasingly this also applies to telehandlers and other site vehicles.

The advantages of using a tower crane, even on smaller sites is that a crane is permanently on hand, not only to unload vehicles but also to place materials directly into storage areas or immediately at the point where they are required. Modern self erecting cranes are very quiet and clean and occupy a very small area, particularly given their working range. A builder or contractor can easily have a number of his employees trained to operate the crane, so that when not using it they can be employed elsewhere. Modern wireless remote controls also mean that no additional banksmen

or slingers are required, aiding both safety and efficiency.

As is often the case the biggest brake on the widespread adoption of such tools is the typical British builders focus on the cost of equipment without relating it to the savings. Few things get a small contractor more riled up than to see a piece of equipment that might be costing £500 a week sitting idle. The fact that this might be due to its high efficiency is often lost on him, along with the fact that he might be saving a fortune every week on crane hire, dumpers and telehandlers, along with their drivers and lost time while tradesmen manhandle materials.

One of the company's we spoke with quoted an example of moving a few pallets of bricks to upper stories or on to scaffolds. A traditional hod carrier climbing a ladder with a quantity of bricks over his shoulder, as in the old days, would not only have taken hours but would have cost as much in a day or two as a crane costs for the whole week. A crane takes minutes to move the bricks and is then free for other duties.



Liebherr trailer mounted tower, using suspended fork attachment.

Interesting anecdotal evidence and sales statistics suggest that contractors in Ireland have grasped the economic benefits of this far more rapidly than those in the UK!

Why self erectors?

The folding self erecting crane is not only easy to use, but also is a lot less expensive to deliver and set up on site, than larger tower cranes. Most models can be delivered with a single



The Potain Igo 13 demonstrates just how fast the smallest self erectors can set up.

vehicle and then fully set up and be ready to go within four hours. The smallest ones much faster than this.

Once erected there is no need to have a self erecting tower crane re-certified, since it is a single complete unit, more akin to a mobile or crawler crane than a traditional tower. An operator can be trained up to handle these small cranes on a four day CITB course for pedestrian controlled cranes, which includes slinger/banksman training along with the rigours and requirements of being an "Appointed person". A builder can have half a dozen of his men trained up to operate such cranes at a very reasonable cost.

Choose your Base

The floor space required for a self erector is tiny in comparison with mobile cranes, often taking up a space of less than three by three metres. even those units which can lift over a tonne at 40 metres will easily fit into two small parking spaces! The size of the base does vary though, depending on the type of chassis you select.

The majority of self erecting tower cranes are supplied as stationary or standard models with screw jacks, a removable concrete or steel ballast and a set of axles to move the crane on to a low loader or to relocate on site. Compact, simple and inexpensive, these bases are ideal for medium to long term jobs.

The next step up are trailer mounted models with one or two axles and a tow hitch, allowing the crane to be towed from site to site.

However, many such trailers are limited to a maximum speed somewhere in the region of 15 miles an hour due to the lack of any suspension. So unless the crane is to be used for short jobs around a relatively small locality, the extra cost and complexity is simply not worth it.

Some manufacturers produce a high speed trailer chassis with full suspension, that can be towed behind a truck or tractor at speeds of up to 50 mph. These units invariably have a steel counterweight that stays in place during transport, and can be equipped with hydraulic jacks. They set up extremely quickly and are perfect for shorter term jobs. If there is a need to relocate the crane on a frequent basis, such as on very large sites, there are two options available.

1) A self-propelled two or four wheel drive chassis with hydraulic jacks,.

That can move on site even with the crane in its fully erected position, as long, of course as the ground conditions are reasonable.

Or

2) Crawler mounted models, they can be very easily moved around

a site, even when the ground conditions are poor.

The final alternative is a truck or carrier mounted unit. Such a crane is closer to a mobile hydraulic crane than the basic self erector. In the UK this type of crane has become popular at the top end of the market where Spierings and Liebherr are the two main suppliers. These cranes are at their best on very short term jobs, often lasting no more than a day, often within larger cities. They are ideal for jobs requiring a long outreach over a high building from a narrow street. In such applications nothing can touch them. We will be taking a closer look at this type of tower crane in a later issue.

Smaller truck mounted units have been used for many years in Holland but have never taken off elsewhere, the advantages over a telescopic or traditional self erector simply do not justify the extra cost and complexity.

One thing is for certain, if you are a contractor that operates smaller sites, then you should investigate the self erecting tower crane for your next project, the savings and convenience might surprise you.

This three storey development is an ideal project for a self erecting tower crane.



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Ladybird fly high

Getting started in the competitive UK rental business, whether in cranes, access or in general plant, is not easy. One of the best ways is to spot a previously unexploited niche and then go for it. This is just what Chris Bird did three years ago when he founded Ladybird Crane Hire in Rubery, on the outskirts of Birmingham. His plan was to specialise in the hire of self-erecting tower cranes.

As with many good ideas it came about almost by chance. It was whilst undertaking the development of a small hotel extension on a difficult sloping site with awkward access, and where the use of the usual telehandler was out of the question, that one of his employees suggested the use of a small tower crane. The employee had seen them used in Holland and thought it would be perfect solution.

After a quick trip to Holland a second-hand Potain HD30 self-erecting crane was purchased and it performed well. It was only when others builders saw it and started asking to hire it from Bird that he realised the potential business opportunity. Chris bought two more cranes and founded Ladybird Crane Hire. Having proved the point, and with steadily increasing

demand, his next major step was to purchase Potain UK's entire rental fleet of 18 cranes when it was put up for sale.

In the space of two years the business grew steadily and more cranes were purchased. The purchase of the first new Potain Igo 50 model at the start of this year increased the Ladybird fleet to 50 units.

Bird had seen the IGO 50 at its Bauma launch and instantly spotted its potential. The first unit has, since its arrival, been working on a long-term rental to Hertfordshire-based T&B (Contractors) Ltd for the construction of a new school building near Elstree. It was chosen because it's the quietest and most compact method of materials handling and as work taking place during the term time, disruption to the school environment had to be minimized. In this application both the noise and the available space precluded the use of telehandlers.

"In fact the Igo 50, with up to four tonnes lift capacity, and a jib-end capacity of 1.1 tonne at 40 metres, has the most useful specification for general building works. So much so, that we have ordered another four units" explains Chris Bird. "Ladybird's customer base has progressed. In the beginning we

Ladybird's new Igo 50 the first in the UK, and has been on a school extension since it arrived. Ladybird has since ordered five more.



served only the larger domestic and commercial property developers and contractors but now small builders are becoming aware of the benefits in convenience, safety, productivity and general materials handling efficiency. It is a very affordable solution, contributing to cleaner and tidier building sites, and reducing waste. Our utilisation levels of around 80 per cent demonstrate the potential of this product."

As the business has grown so Ladybird's geographic area of activity has expanded. The company initially targeted the Midlands and south of

England but demand is now coming from as far afield as the north of England and Scotland. Bird's intention is to continue building the fleet, and extending the area of coverage as the concept becomes even more widely accepted.

Comparing the UK with the rest of Europe, Bird believes that the construction industry is neglecting an opportunity: "It's just a question of education," he says. "The outlook for self-erectors in the UK is very bright. In comparison with the Continent, the ultimate potential is relatively untapped.

Wanted: Europe's best tower crane operator

Liebherr Biberach is organising a competition to find Europe's best tower crane operator.

The contestants have to complete a course of four stations with the new quick self erecting crane model 42 K.1. The challenge is to place a one tonne concrete tub precisely within several specific points. At the final station, a ball must be placed in a box from a height of five meters through a tube.

The qualifying rounds will be held at various fairs and open days of Liebherr customers or subsidiaries, the final will take place in Biberach /Germany in the autumn. Details and the list of the regional qualifiers will be shown under the point "Kranfahrer-Cup" on the Liebherr-homepage.

Smooth as silk

With their long horizontal jibs and relatively slim towers, the folding self erecting crane can be prone to flex and deflection which is undesirable for both the load control as well as placing undue stress on the cranes structure. Vanson cranes claims that one of its strengths is its soft start feature on all crane functions. Essentially the Vanson crane has fully proportional controls rather than the stepped controls fitted to some other cranes. Vanson achieve this with the use of a motor control device that not only provides super smooth functions, but also saves energy and leads to quieter operation, particularly at lower speeds.

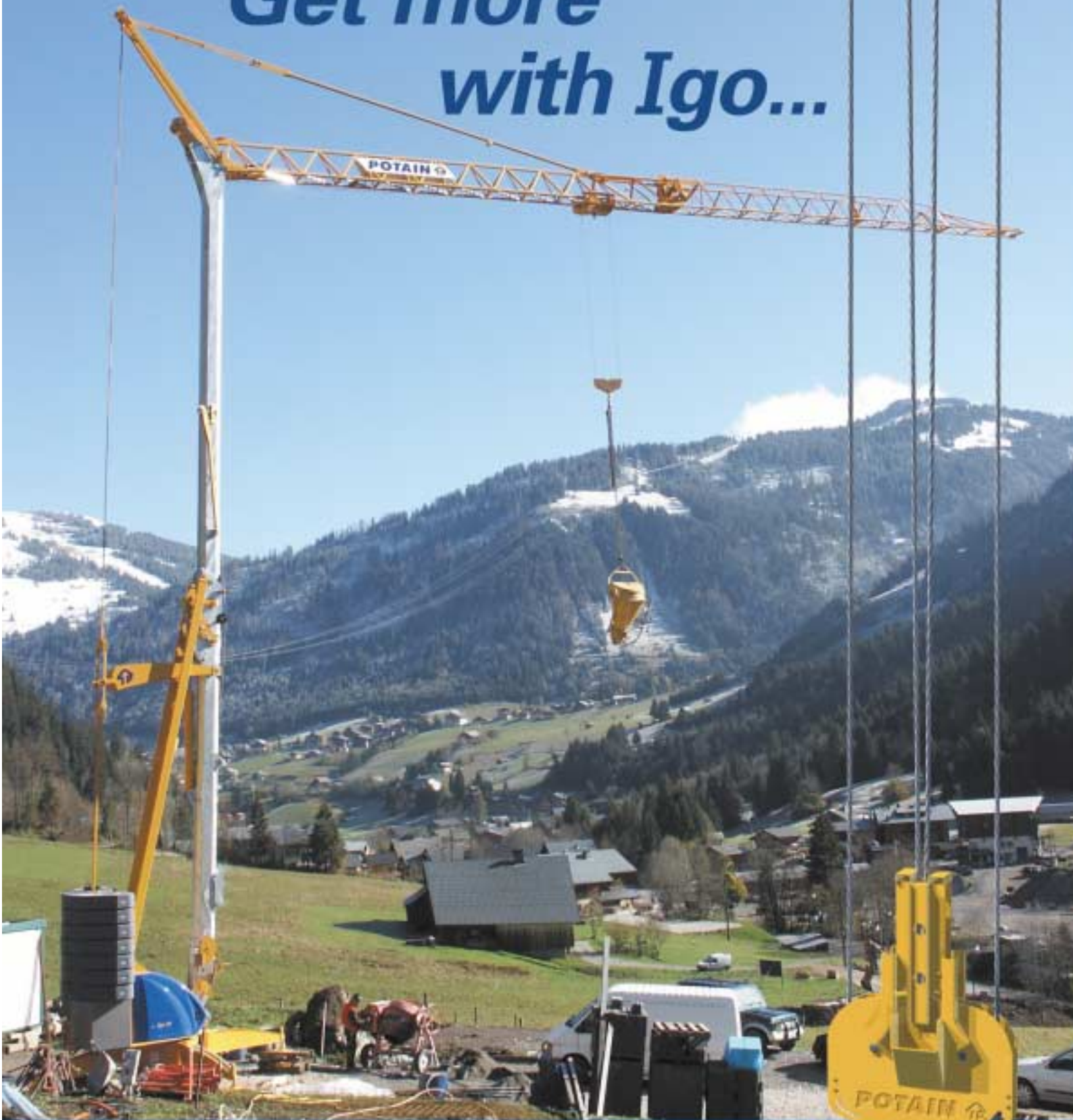
The company recently supplied one of its VC30 cranes for use on a housing development in Bury St Edmunds. Vanson won the order thanks to the soft start feature as well as a competitive price.

The VC 30 is able to set up completely unaided thanks to its on board ballast handling derrick, with a compact base and 30 metres outreach it is ideal for a wide range of housing sites. An additional feature for congested sites, is its ability to fold the jib in half when full outreach is not required, or for avoiding any chance of violating adjoining airspace.

The Vanson VC30 was chosen for this siter in Bury St Edmunds thanks to its smooth start controls.



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