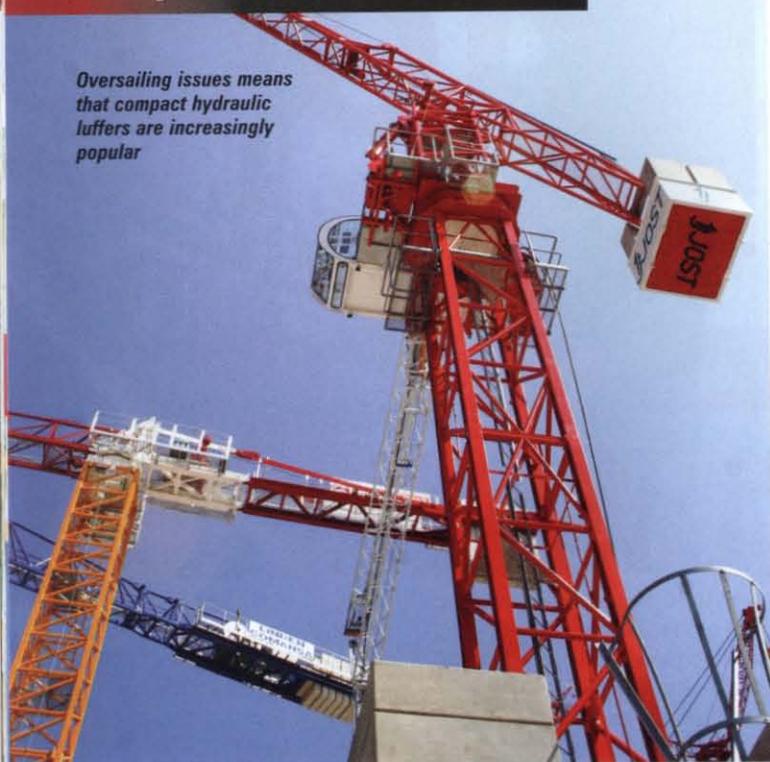


Oversailing issues means that compact hydraulic luffers are increasingly popular



reduce fuel consumption by more than 50 percent - using a compact 400kW main electric motor powered by a lithium ion battery pack. Regenerative braking channels energy back into the batteries extending life and mobile range although this can be supplemented by a small diesel engine which powers a generator further topping up the batteries and powering the auxiliary hydraulics that drive the rear axle for extra grunt in challenging ground conditions. The crane can also use a mains AC power cable.

However its most striking feature is the single cab used for both road travel and lifting operations. During the mast erection process the cab rotates and transforms from a two seat road cab, into a one man crane cab. The prototype City Boy should be demonstrated over the next few months, in spite of financial challenges within the group. The

combination of improved performance in a more compact package, with environmentally friendly credentials may now convince more users to adopt the concept - price permitting.

#### City tower cranes

Over-sailing/trespass laws in some countries, such as the UK, mean that luffing jib cranes are essential for most confined city sites. As small infill sites have become more prevalent, the focus on out-of-service dimensions has grown. This has spurred the development of a range of compact city cranes, that are easy to erect and that offer a small out of service radius. The Jost range of compact luffers that use a hydraulic cylinder rather than cables to luff the jib offered contractors a very small out of service radius as well as avoiding the risk of the jib blowing back over the rear.

However, more recently the old



Sperings City Boy

concept (first launched in 1961) of the articulated or folding jib crane has been resurrected by Swedish company Artic Crane. Working with London-based crane company City Lifting, the 84 tonne/metre Raptor 84 has an out of service radius of just four metres. The first two cranes are already working in London with a third due shortly.

For city work, the small out-of-service radius is not its only advantage. The design also allows loads to be lifted very close to the tower - a real positive if the only location for the crane is within the building's footprint. However, with such a small out-of-service radius and a two tonne capacity at a 32 metre radius, it is often possible to find a position outside of the building but still within the site. While these cranes naturally appeal to countries where over-sailing is an issue, they are also handy when working alongside railways or roads where slewing over traffic with a load may not be permitted. Even if it is allowed, it is always better to avoid such practices if possible.

#### Spider cranes

If the user definition of a city crane is one that can access and work in restricted areas then the ultimate city lifter has to be the spider crane. The world market is dominated by two Japanese manufacturers - Maeda and Unic - which have obviously gained a lot of experience developing cranes specifically for the congested cities of their home market. The cranes are compact enough to work from the pavement, from inside the building, from a roof top or other elevated locations, where disruption can be entirely eliminated.

The spiders initially gained popularity in Europe installing glazing on multi-storey buildings but are now the first choice for any lifting application with limited access or to replace manual handling with jobs such as internal steelwork or escalator installation/replacement. It is also true that a little lateral thinking is also needed to maximise the spider's potential.

There are numerous cases of spider cranes eliminating huge traffic



Two spider cranes solve a lifting problem at Addenbrookes Hospital, Cambridge



Compact spider cranes can access areas other cranes cannot reach

disruption and reducing costs by being able to track through a building to lift a load negating the need for a big crane to reach over the building.

One such job at Addenbrookes Hospital in Cambridge required a lift in an enclosed courtyard. The contractors' solution was a fully rigged 500 tonne mobile complete with road closure and major disruption, just to lift a couple of tonnes. JT Cranes' solution was to supply two spider cranes - a Unic 506 and 706 - which accessed the inner courtyard through a tunnel, the 706 then lifted the smaller crane onto a roof to carry out the lift.

Although not as compact as a spider when travelling, the mini crawler crane offers a useful alternative particularly as its lack of stabilisers results in a smaller working footprint. Its pick and carry facility is also a worthwhile benefit.

The growing awareness of small cranes has also given a boost to the small pick & carry cranes which are enjoying a revival, particularly in the