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Alternative access

Since the early days of development, the mast climbing work platform (MCWP) has struggled to find its place in the powered access rental market. C&A reports.

According to Mike Pitt of US-firm, Mast Climbing Platforms, the first mast climbing work platform (MCWP) was produced by Alimak back in 1958 - the original Jacob's ladder. Although not a great success at the time, it was at least the first platform that climbed a mast under power to enable men and materials to reach their place of work. A stagnant period followed until Hek, Malmqvist and Access Engineering produced their own versions in the early 1970s giving the MCWP a new lease of life.

Responsible for introducing the first units to the UK market was Yorkshire-based firm, Satellite Systems, which subsequently became BET and then Powerclimber. At this point in the company's history the firm crossed the Atlantic to North America where the fundamentals of the product were allegedly copied by the Canadians with the primary design functions of handling two full pallets of bricks and a four-tonne load capacity. These specifications have remained at the core of Canadian MCWP design to this day. According to Mr Pitt, it was also in Canada in 1991 that the first self-contained internal combustion powered MCWPs were developed. This was driven largely by the poor availability of three phase power supplies in North America.

One of the original North American producers was Fraco Products of Quebec, whose units were closely followed by those of Hydro-Mobile in 1994, Klimer in 2001 and Bennu in 2002. All of these units had self-contained power sources and were initially slower than the European-built alternatives, but offered greater lift capacities. Today, these producers have different models to cater for the many different markets, but almost all are still operated from the unit's self-contained power source.

The European-style electric machines have also increased in both unit numbers and in the number of manufacturers producing them, each developing new markets and new distributors. Among the products are a number of ultra-lightweight units, pioneered by some of the Italian producers for what was originally seen as a small niche market. Companies such as Safi and Electroelsa claim that they have even found a good market for this style of product in North America.

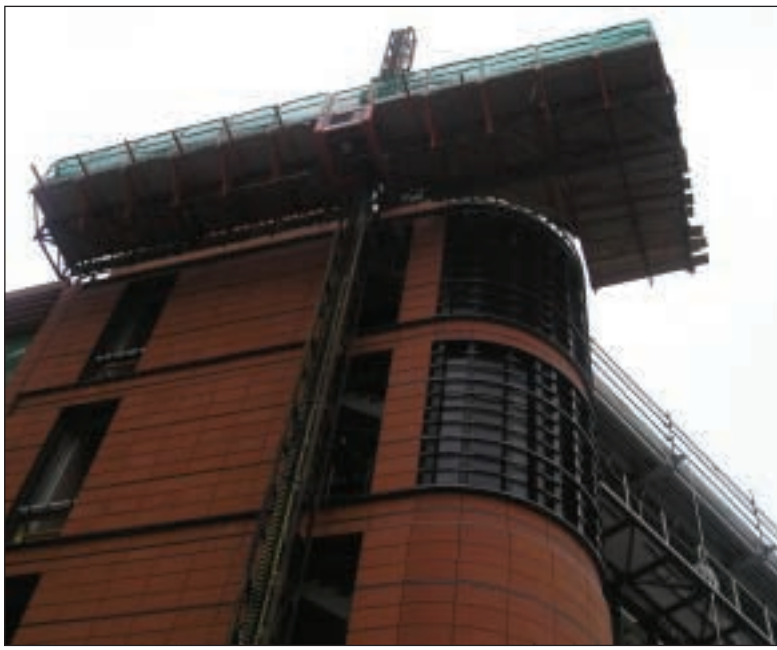
In the 1980s, it was initially European units that were imported into North America following the demise of Access Engineering, while a number of local rental companies that had units in their fleets, such as Access Solutions, American Mastclimbers, Dunlop and Safeworks, turned their hands to producing their own versions.

UK rental

In the UK, the mast climber rental market has been subject to significant change since it first emerged in the early 1980s. Many powered access rental firms purchased units at this time thinking that they could operate them alongside scissor lifts and booms. Virtually all of these companies failed to convince contractors that the MCWP was an efficient alternative to façade scaffold. It became clear that MCWPs were closer in concept to façade scaffold than they were to powered access lifts.

As the provision of MCWPs diminished in the UK, one company, Mastclimbers ltd, set up shop in Scotland and started to expand by offering mast climbers on a full "turn key" contracting service along the lines of the better contract scaffold firms. As other providers continued to drop out, Mastclimbers at one point exceeded a 90 percent share of the market, having absorbed the SGB fleet (which included an equity injection) and then later the Ashtead fleet.

Of the 16 managers at Mastclimbers, 12 are university trained graduates, and the firm has worked with Strathclyde University to establish an engineering course in MCWP logistics. It was also involved in establishing the first CITB/IPAF (Construction Industry Training Board/ International Powered Access Federation) approved training centre for mast climbing work platforms in Europe.



The Fraco product, which is made in Canada, is quite different from European-style mast climbers.

"at least 20 percent of today's traditional façade scaffold could be profitably replaced with mast climbers, equating to a rental market of around £140 million"

Today, new companies are entering the mast climber rental market as it begins to gather pace. At least four companies now cover the UK market place. But why the general hesitation? Well, perhaps one reason is the level of service that a rental firm is required to provide alongside the mast climber product compared with traditional powered access platforms. With access platforms, it's a case of simple asset rental supported by back up and after sales service, but, if a company is to be successful at hiring out MCWPs, on the other hand, it also has a number of extra requirements to consider. A skilled design service has to be offered, as well as application engineering and full delivery and erection logistics. If a contractor is to make the change from using contract scaffolding, then it is important that the service provided by the new technology is every bit as hassle free as the one he/she is moving from.

Ownership

It has been known for some contractors to buy their own mast climbing equipment, but generally, the hassle of owning, storing and erecting the equipment, not to mention the planning and application engineering that is required on all but the simplest of jobs, is enough to put most off of owning their own equipment.

For those contractors who do change from facade scaffold to MCWPs, however, the returns are certainly there to be reaped. According to Mastclimbers' founder Andrew Reid, at least 20 percent of today's traditional façade scaffold could be profitably replaced with mast climbers, equating to a rental market of around £140 million. At present though, according to Mr Reid, the market is closer to £10 million.
No wonder companies are looking to enter the field.

Time savings

The prime benefits of MCWP use are gained from mid-term rental contracts where the time and expense of scaffold erection forms a relatively high percentage of the total contract cost. To give an idea of the potential savings on such a contract, Mr Reid explains that the scaffolding for a 10- to 12-storey block on four sides can take up to four to five weeks to erect and three to four weeks to dismantle. To cover the same building with MCWPs would take about a week to both erect and dismantle, saving around seven weeks on a contract and a considerable cost.

Greener access

The problem seems to be that in the UK, many sub-contractors do not have the incentive to use a more efficient method of access, or, to save time on a contract. Yet mast climbers can provide many other advantages, such as energy savings and congestion easing – the delivery and removal of a complete façade scaffold system for a whole building normally requires dozens of trucks and numerous site visits that block streets, obstruct traffic and of course add to the cities pollution levels.

Safer access

Another plus for the MCWP is the safety aspect. A number of studies over the years have shown that the number of accidents that occur during the erection and dismantling of scaffolding are far more numerous than those using powered access. Accidents involving scaffold collapsing or falling parts are also far more common, despite falling numbers in recent years. The number of accidents involving MCWPs in the UK, on the other hand, could be counted on it! The fact remains, however, that the UK MCWP population remains at around 1,000 units, lower than it was 10 years ago.

Companies are slowly returning to mast climber rental in the UK, albeit with a different offering, with at least four companies now covering the market place.

Despite the slow conversion rates in the UK over the past ten years, there is a new optimism. "The future for the MCWP looks bright," says Mike Pitt. "Andrew Reid recently sold his remaining shares in Mastclimbers to his partner SGB in the UK (see separate news story), which already has mast climbing fleets in a number of other countries around the world. Intervect, the Alliance of Hek, Alimak and Cimar, will of course continue its international success with the electric units. While, more and more manufacturers are producing equipment in Italy, Spain, and Eastern Europe, all developing their own sectors of the market."

"The North American manufacturers may face some new opportunities from the weak US$ with over 1500 units being produced each year for the US. Competition will also increase from foreign markets," says Mr Pitt, "but product support, pricing and distribution will remain key issues for success."

So surely, will education, training and knowledge will continue to improve through associations like the International Powered Access Federation (IPAF), which recently expanded its training program for MCWPs to North America and is expanding fast in continental Europe. According to Mr Pitt, an international committee could soon be formed to co-ordinate the globalisation and harmonisation of standards and procedures for this 'stand-alone' sector of the powered access industry.

"Most of the world markets are growing and developing just as quickly as contractors are being educated in the safe use of the equipment," says Mr Pitt. "What is really needed though is more experienced people coming into the industry, more people taking on the responsibility of education and training, and for those that are already in the business to make sure that they do things right."

Scaffolding for a 10- to 12-storey block on four sides can take up to four to five weeks to erect and up to four weeks to dismantle. To cover the same building with MCWPs would take about a week.

new kid on the block

Just under 18 months ago a new company was established in London under the name, Universal Sky Platforms. Its start up assets included the Fraco mast climbing work platform distribution rights for the UK and Ireland and in its first year carried out a number of high-profile specialised jobs for contractors such as Laing O'Rourke, Bouyges, and McAlpine.

The Canada-produced Fraco product is quite different from the European-style mast climber. For one thing, they are diesel powered rather than electric, which Sean O'Sullivan, managing director and joint owner of Universal Sky Platforms, claims makes the installation a lot less complicated and avoids the use of trailing cables, power supplies and additional kit such as boosters.

The other big difference is the mast capability. A single Fraco mast is capable of supporting platform lengths of up to 13 metres and lift capacities of 4,000 kilograms, while a twin mast set up can provide lift capacities of up to 8,000 kilograms, a 37-metre decks and platform widths of up to 7.7 metres.

Other possibilities provided by the heavy-duty mast include a split platform, two level applications and much greater platform cantilevers. This makes the unit ideal for tackling special application obstacles, such as the steep profiling of curved buildings.

Universal has already built up a fleet of around 25 units in the London area, but this only confirms Mastclimbers' Andrew Reid's view that mast climbing work platforms have hardly made a dent on the ultimate market potential (see article starting on page 17).

Mr O'Sullivan told C&A that Universal plans to build a strong business based on quality and safety and on strict adherence to HSE rules and recommendations. The company also said it will not be making a mad rush for growth, but will head for steady, solid, year-on-year expansion. As part of its entry into the UK market, the company has joined both the CPA and IPAF.

Universal Sky Platforms is 51 percent owned by the Gavin group, after a recent buy-in to the business, and 49 percent owned by Mr O'Sullivan and partner Tony Zaccaria, one of North America's most experienced mast climbing consultants.

MPG Facades Ltd is currently using a 14-metre freestanding Fraco ACT twin mast installation with 37-metre long work platform on an insulated render contract at the Royal Quay site in Becton.

Vertical access

Intervect Deutschland has provided all vertical access for construction of a 107-metre high grain mill in Ulm, Germany. In addition to an Alimak rack and pinion hoist used for access to the forms during concrete slip forming and a HEK transport platform used to deliver various materials, Intervect supplied several HEK mast climbing work platforms for the installation of aluminium façade panelling on the building.

Faced with serious space restrictions on one side of the mill tower due an imposing existing structure, Intervect was forced to employ a two-tonne capacity, six-metre platform length HEK MSL mast climber, as it was the only MSL unit capable of fitting in the narrow space. Installation was made all the more tricky as the platform had to be assembled on the ground and then lowered 30 metres into the gap by crane. The unit will be dismantled in the same way.

The 1.2-metre wide platform left clearance of less than 100 millimetres.

On the opposite side of the mill, no space restrictions meant that Intervect could opt for the more economical choice of a 1.6-tonne capacity HEK MSM Super work platform in single mast configuration. The company was also responsible for all access technical calculations, engineering, installation services and maintenance for the job, which is scheduled for completion by the end of the year.

First seen at the recent SAIE exhibition in Bologna Italy, Spanish producer, Camac, has produced a compact rack and pinion hoist designed for residential lift shaft work that fits into shafts as small as 1.5 x 1.5 metres.

SGB acquires Mastclimbers

SGB acquired a majority shareholding in Mastclimbers in 2001, growing it from a regional base in Scotland into a national supplier serving the broader UK market. Today, Mastclimbers operates the UK's largest fleet of rental platforms, with over 750 units and a range of services that extend from project feasibility and design to site erection and dismantling.

Steve Shine, managing director of SGB UK commented: "We see the use of mastclimbing platforms continuing to increase, particularly in high rise residential and commercial construction where there is growing pressure on build and maintenance cycle times without compromise to the safe movement of men and materials."

Mastclimbers' founder Andrew Reid will continue to be involved in the development of the business in a consultancy capacity. Cameron Reid, previously Mastclimbers' operations director, has been appointed managing director in succession to his father.

*Mastclimbers was also recently awarded its fourth successive Inner City 100 award, which was presented to Andrew Reid by the Chancellor of the Exchequer, Gordon Brown and John Snow, Secretary of the US Treasury, at a recent ceremony at Downing Street in London.

Leaning tower of Singapore

HEK rapidly supplied several of its MSM Super MCWPs, to main contractor, Samsung Corporation, for work on this 35,000 metre squared building in the financial district of Singapore recently, when it was realised that during construction, the 30-storey structure developed a very slight lean. Access was needed to allow engineers to carry out extensive structural testing and analysis to ensure that the building retained design load bearing capacity.

To access the 125-metre high exterior facades of the steel and glass building, HEK supplied the platforms in both single and twin mast configuration. Under these configurations, a maximum deck length of 20 metres was provided with payload capacities of 4 tonnes for twin mast and 2.3 tonnes for single mast. HEK says that the MSM units are ideal for the removal and installation of façade elements because of the units' large open work platforms, while on-board power supplies allow the use of power tools and other equipment. The two units were supplied to Samsung Corporation through CME, Singapore's largest rental supplier of HEK mast climbing work platforms.

Italian company SAFEM turned to two of its Geda MCP 750/1500 mast climbing platforms when it was asked to provide total access to an office building for façade work in Bozen, Italy. The fact that a car park ramp ran down one side of the building meant that on one of the two units (pictured), one mast tower was in contact with the ground at a completely different level from the opposite mast, taking full advantage of the unit's 1.5-metre modular tower sections. Geda's MCP 750/1500 platform is available as a single or twin mast version and can provide a total platform length of 23 .6 metres. Maximum erection height is 100 metres.