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The 37m working height Dingli 3730HRT



The Almac Bibi 1090 Primo - the Bibi 33BL Primo in North America - can level 20 degrees longitudinally and 15 degrees laterally

STILL PLENTY OF DEVELOPMENTS

Given the enduring design of a scissor lift - a simple chassis, scissor stack and a deck - there have been a surprising number of developments over the past year, with many of the new products coming from Chinese manufacturers now taking a larger slice of the global scissor lift market.

The scissor lift as we know it today was developed in the Los Angeles basin area back in the early 1970s, with Californian companies - UpRight and Mark Lift - taking the lead in terms of innovations and new product development. They were joined by MEC in Mayville, Wisconsin, Economy Manufacturing in Illinois and then Skyjack in Canada. In the 1980s new ideas and concepts were popping up almost every year, but by the time the new millennium arrived the pace of development had slowed as the sector reached a level of maturity.

Europe did not really contribute a great deal to the regular scissor lifts, however the heavy duty, high-capacity scissor lift concept was developed by Holland Lift in the Netherlands, with a few small German companies joining in. In China, Dingli saw an opportunity to enter this market where growing demand continuously outstripped production capacity, especially as high rise warehousing came to the fore. The surprising success and acceptance of the Chinese producers led to Holland Lift sadly deciding to stop trading.

Direct electric drive on scissors was originally seen on an Italian Iteco - now Imer - scissor lift, although JLG took the concept into the mainstream market. Now most scissor lifts are electric drive, including a large percentage of Rough Terrain models. The latest move is to take the all-electric idea a step further by eliminating hydraulics entirely. JLG has been out in front on this, but companies such as Dingli have taken the idea and run with it, taking it into the mainstream market, currently on smaller models, although most slab electric models have a no-oil version.

In terms of a new concept there is the self-levelling tracked scissor lift pioneered by Italian company Almac, which began as a niche but is growing in popularity.

DINGLI GOES HIGHER

The largest and most recent new scissor lift to be unveiled is the 115ft Dingli 3730HRT with deliveries due to begin later this year. Already in prototype testing, the 37 metre working height scissor lift has been developed in partnership with UK rental company Hire Safe Solutions and



The large scissor lift was dominated by companies such as Holland Lift with its 110ft HL-340 D30

is aimed at the next generation of high rack/high bay warehouses which are now exceeding 30 metres, with some due to go as high as 50 metres. Hire Safe Solutions has also ordered the first units of a batch of 20 to arrive in Europe before the year end.

This sector of the market was defined and dominated by companies such as Holland Lift, LiftLux, H.A.B and PB Lift. Holland Lift unveiled its first ultra-high narrow aisle machine, the 103ft high/1.4 metre wide HL-330 E14 4WDS/N with its 33 metre working height, 8.4 metre extended platform and 600kg capacity, with an overall weight of 24 tonnes in 2015, along with the 110ft HL-340 D30 with a 35 metre working height.

Sadly, substantial component price increases, supply chain issues and increased competition

SCISSOR LIFTS



The Dingli 3750HRT has a 37 metre working height and 750kg maximum platform capacity



LGMG has launched a new all electric 65ft Rough Terrain scissor lift the SR2024E

resulted in Holland Lift closing its doors last August. The company had always struggled with production capacity and was never able to keep pace with existing demand, let alone the growing demand over the years, resulting in continually long lead times. The arrival of Dingli with a rapidly growing range of models that were competitively priced and available with short delivery time was the final nail in the coffin.

The new Dingli 3750HRT has a 750kg maximum platform capacity and boasts a 7.46 metre long by 2.8 metre wide platform, which can be extended with a 2.25 metre power rollout deck extension taking the platform length to 9.71 metres. The unit has four wheel drive, four wheel steer and levelling jacks, although it can also be driven at full height on firm level ground. Overall stowed dimensions are eight metres by three metres with an overall height of 4.2 metres although it is a little weighty at 39.5 tonnes. Power choices include diesel, all electric or hybrid.

LGMG'S BIG ELECTRIC SCISSOR

Next to the 115ft Dingli everything appears small, however LGMG's latest unit, the 65ft SR2024E is in its own right a big scissor lift and the largest in the manufacturer's range having a working height of 21.7 metres, a 750kg platform capacity and 7.3 metre fully extended deck. Weighing 14.6 tonnes it is 2.49 metres wide and has a 4.62 by 2.3 metre platform. As is the recent requirement, the unit can drive at full height but can also be levelled with the standard auto-levelling jacks. The overall length is just under five metres with the entrance ladder in place, while the overall height is 3.72 metres with the guardrails up and 2.83 metres when folded. The four wheel drive system uses an axle type transmission with standard oscillating axle, while

power comes from a choice of standard lead acid wet batteries or a Lithium battery pack.

SELF-LEVELLING SCISSORS

The emergence of self-levelling tracked scissiors is beginning to gain momentum in a number of countries. Tracked scissor lifts have been around for many years - either small scissiors on rubber tracks which were popular in Japan, or larger tracked scissiors which were a speciality of Dutch manufacturers such as Omega and Holland Lift, sold mainly in the Netherlands and Germany to greenhouse contractors working on reclaimed land.

This sector changed in 2014 when Almac launched a compact six metre tracked scissor - the Bibi 630-L - which featured side to side levelling of up to 250mm. Platform capacity was 200kg and used a 220 volt power unit for indoor use, and a Honda engine for outdoors.

The Dynamic self-levelling Bibilift followed a year or so later capable of levelling 20 degrees longitudinally and 15 degrees side to side. The current range of crawler scissiors include the HE line with levelling jacks and the self-levelling BL line with working heights to 10 metres. AlmaCrawler's tracked scissor lifts sell for a substantial premium over wheeled alternatives

and yet have proved a popular rental item in a number of countries including Australia where demand has surprised everyone involved. The country is currently the manufacturers largest market, but interest is brewing in North America and parts of Europe.

The latest addition to the range is the Almac Bibi 1090 Primo, known as the Bibi 33BL Primo in North America. The Primo features a removable



The Almac Bibi 1090 Primo - the Bibi 33BL Primo in North America - has 14 degrees side to side

HOLLAND LIFT was founded at the end of 1983 by consulting engineer Martin Haak and began production in 1984, its first units were sold to Hoogovens steel works, and its first production model the 41ft 125EV. The company was acquired by MBB in 1993 and Terex in 1998. Terex almost sold the business to Haulotte in 2001, but Roger Tracey of Stoneham Equipment stepped in and acquired the business in 2002 with the two directors, Menno Koel and Pieter Boogert taking up part of the equity. In 2007, the pair obtained private equity funding to acquire the company from Tracey. In 2010, Koel acquired Boogert's shares, and acquired the assets of Belgian boom and trailer lift manufacturer SkyHigh in 2012. In 2013 ProDelta Investments, which through Riwal was Holland Lift's largest customer, acquired the company and owned it until last year's liquidation.

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lithium battery pack and direct electric drive chassis. Working height is 10 metres and maximum drive height is 6.5 metres with a 300kg/two person capacity on the 1.8 x 1.3 metre platform. The unit has dynamic automatic levelling with 15 to 20 degrees longitudinally and 14 degrees side to side. The overall width ranges from 1.46 to 1.64 metres, with the unit's stowed height increasing when the tracks are extended. Total weight is 2,880kg.

Ebbe Christensen, president of US distributor Ruthmann ReachMaster said: "The Bibi's lithium battery pack can easily be removed and taken to a charging station, or be replaced with a fully charged battery, offering virtually infinite use of the unit. It can also be charged on the unit with a standard extension cord, but you can also leave the lift on site and take the battery to somewhere with a socket."

GOMAN ENTERS THE MARKET

Chinese specialist aerial lift manufacturer Goman launched two new tracked self-levelling scissor lifts at the American Rental Show in mid-February - the 20ft S05C and the 28ft S08C. The smaller model has a working height of 8.2 metres, with a platform capacity of 230kg, while the larger unit has a 10.5 metre working height with 113kg. Goman was established in 2003 to build spider lifts and has tended to focus on the North American market since 2017. The product range includes spider lifts to 52 metres, insulated spider lifts to 23 metres along with trailer lifts and a self-levelling tracked boom lifts.

The smaller S05C has an overall length of less than two metres, and an overall width of 1.24 metres which can be extended hydraulically to 1.44 metres via the track support arms, which also varies the overall height from 2.26 metres in the wide format or 2.57 metres when narrow and the guardrails fold to a 1.93 metre transport height. The platform is 1.64 metres long - or 2.35 metres with the deck extension - while the platform width is 1.18 metres. Total weight is 2,025kg.

The lift can level by up to 20 degrees longitudinally and up to 13 degrees side to side. Power comes from a lithium ion battery pack with additional diesel or petrol/gas engine for bi-energy. Gradeability with either power source is 30 percent.



The 10.5 metre working height Goman S08C

Goman	S05C	S08C
Working height	8.2m	10.5m
Platform capacity	230kg	113kg
Overall width - low	1.44m	1.69m
Overall width - high	1.24m	1.51m
Overall length	1.98m	2.52m
Transport height	1.93m	1.82m
Gross weight	2,025kg	2,510kg

The S08C has an overall length of 2.52 metre, and an overall width of 1.51 metres which can be extended hydraulically to 1.69 metres via the track support arms which also vary the overall height from 2.33 metres in the wide format or 2.67 metres when narrow.

SCISSOR LIFTS



Goman has two new tracked self-levelling scissor lifts - the 20ft S05C and the 28ft S08C

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SCISSOR LIFTS

The guardrails fold to a 1.82 metres transport height when wide and 2.16 metres when narrow. The platform is 2.3 metres long - or 3.2 metres with the deck extension - while the platform width is 1.11 metres. The overall weight is 2,510kg.

The lift can level by up to 15 degrees longitudinally and up to 12 degrees side to side. Power options and gradeability are the same as its smaller sibling.

PATENT PROBLEMS

Goman's auto levelling system as well as that from Chinese manufacturer Hered are similar to AlmaCrawler's system. Almac holds a wide ranging patent for the overall levelling concept for a self-levelling scissor lift and could choose to take legal action to defend its patent. However, Teupen has already challenged the patent on the basis that it had introduced a parallelogram mechanism that retracts the tracks while also lifting the machine well before Almac's patent application.

All-encompassing patents, however, can be difficult to defend. They invariably, as in this case, include some areas of prior art, such as the design for a parallelogram adjustment mechanism for the tracks, a concept that significantly predates Almac's patent. However, the overall levelling mechanism for a tracked scissor lift is original to Almac. The legal ball is in Almac's court.

LEVELLING VARIATIONS

One aerial lift company with its own unique version of a self-levelling platform is Spanish manufacturer Mecaplus. The company started out in the tree pruning business and developed its first self-levelling platforms to help improve safety and efficiency in that sector. Earlier this year it delivered the first of a new dynamic self-levelling scissor lift, the 34ft T12SL to access rental company Alquilaplant in Chapineria east of Madrid for field testing and evaluation.



The Mecaplus T12SL can level by up to 12.3 degrees end to end to cope with a ground differential of 454mm



The Mecaplus T12SL front axle

With a working height of up to 12.3 metres, the T12SL has standard four wheel drive and can level by up to 12.3 degrees end to end to cope with a ground differential of 454mm. It can also level up to 20 degrees side to side for a 637mm differential - all without the need for levelling jacks. This is achieved by mounting each rear wheel on a long, vertically telescoping box section extended or retracted by a hydraulic cylinder, combined with an oscillating front axle with long throw levelling cylinders. The unit automatically levels the machine as it drives, even at full height.

Platform capacity on the 2.39 metres by 1.6 metre deck is 400kg and a 1.3 metre roll out extension takes the overall platform length to 3.75 metres.

The machine has an overall stowed length of 2.75 metres over the entrance steps, which can be removed for shipping. The overall width is 1.75 metres and overall stowed height 2.7 metres - 1.9 metres with guardrails folded. The overall weight is 3,900kg. A choice of power is available including all electric or Bi-energy/Hybrid using a Kubota Stage V diesel.

NEXT GENERATION 32/33FT

There have been several ultra narrow 32/33ft scissor lifts launched over the past year - from

MEC and Dingli - which can drive at full height, eliminating the levelling jacks found on some models in this class. Both are very similar and offer excellent performance compared to existing models, but it comes with a significant overall weight penalty in the region of 30 percent!

MEC's 32ft 3232SE scissor lift has a working height of 11.6 metres indoors or 9.1 metres outside and a platform capacity of 250kg with two people or one person when outside. Overall weight is 3,240kg.

The Dingli JCPT1208AC has a slightly higher working height of 12 metres indoors and 9.2 metres outdoor and is drivable at full height with the same 250kg capacity, however it is also 90kg lighter at 3,150kg. Like the MEC it has a standard 900mm roll out deck extension providing a 3.1 metre long by 810mm wide extended work area compared to the MEC's 3.2 metre by 740mm deck.

The overall length of the MEC is 2.3 metres with the platform entry ladder stowed or 2.5 metres with it in place, whereas the Dingli is slightly longer at 2.48 metres with a stowed height of just over two metres with guardrails folded. The MEC has an overall stowed height of 2.4 metres with the guardrails up, or two metres when folded.

MEC's power comes from an AGM maintenance free battery pack driving dual direct drive AC wheel motors. Its patented Leak Containment System is also standard equipment. The Dingli is powered by a standard 24volt/240Ah battery pack with AC lift motor and twin AC direct drive wheel motors on the front axle.



Mecaplus delivered its first new 12.3 metre working height T12SL earlier this year



MEC's 11.6 metre working height 3232SE

The 12 metre Dingli JCPT1208AC can drive at full height and has a 250kg capacity



The stowed Dingli JCPT1208AC



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OIL FREE LGMG SCISSOR

LGMG has launched the 'oil free' 26ft S0808PE, with direct AC electric motor wheel drive, electric steering and a linear actuator lift cylinder, completely eliminating the need for hydraulic oil. As with the standard hydraulic drive S0808II, it can drive at full height indoors with a working height of 9.8 metres and 230kg platform capacity. Outside the maximum working height is reduced to eight metres.

Preliminary specifications indicate an overall width of 830mm, overall length of 2.44 metres and stowed height of 2.36 metres although the standard folding guardrails reduce that to 1.99 metres. A 900mm roll out deck extension has a maximum capacity of 120kg and total weight is about 2,230kg.



The LGMG 'oil free' 26ft S0808PE

JLG ES4046 EURO

JLG has launched a European version of its 40ft ES4046 electric drive slab electric scissor lift which offers a working height of 13.9 metres indoor or 10.75 metres when working outside. It can drive at both working heights and has a maximum platform capacity of 350kg indoors and 250kg outdoors. Overall width is 1.17 metres, while the platform is 955mm wide, leaving 87mm on each side between platform guardrail and chassis edge. Overall length is 2.71 metres and it weighs 2,826kg, while the overall stowed height is 2.53 with guardrails up and 1.99 metres when folded.

The front wheel direct AC drive motors help give the machine a 40 percent improvement in the number of cycles between charges. Options include JLG's ClearSky Smart Fleet, two-way

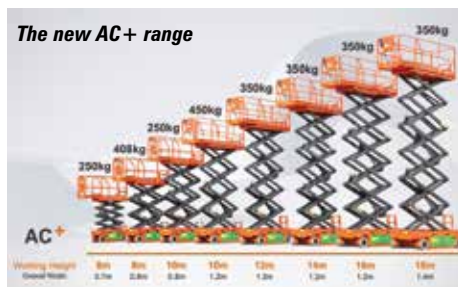


The CE version of the ES4046

fleet management and communication platform, CleanGuard leak containment system, a 900 Watt inverter to charge tools and SkySense secondary guarding system. The 912mm roll out deck is standard.

DINGLI AC+ SCISSOR LIFTS

Dingli has carried out a major upgrade to its current AC series. The new AC+ line up comprises eight models from 19ft to 46ft, with four overall widths - 760mm, 830mm, 1.2 metres and 1.4 metres - and platform capacities ranging from 250kg to 450kg. The nomenclature is also greatly simplified, with the JCPT prefix dropped so that for example, the JCPT1612AC becomes the S1612AC+.



The AC+ range includes higher platform capacities for each width and height along with numerous other significant improvements including electric actuator steering in place of the hydraulic cylinder, leaving platform lift as the only hydraulically operated function on the machine. The new range also comes with a 'Three-Year Comprehensive Warranty'.

Other features of the AC+ range include:

- New side and rear fork pockets located at the top of the chassis for improved stability when lifting and moving the machine.
- A new high capacity lithium iron phosphate battery pack with a five year warranty.
- A new control box with a high resolution dot matrix display and new silicone function buttons.
- A new non marking tyre compound said to reduce tyre wear by 30 percent, while reducing rolling resistance by six percent.
- A new four in one integrated ECU motor controller, said to optimise the electric circuit layout and improve output efficiency.
- A more accurate real time load sensing system.
- A gravity driven regenerative lift function, putting power back into the battery pack.
- An optional leak containment system.

Key specifications of the new models

Model Number	Platform Height	Work Height	Overall Width	Platform Capacity	Overall Length	Overall Weight
S0807AC+	19ft	7.8m	760mm	250kg	1.83m	1,630kg
S0808AC+	20ft	8m	830mm	408kg	2.48m	2,160kg
S1008AC+	26ft	9.9m	830mm	250kg	2.48m	2,230kg
S1012AC+	26ft	9.9m	1.15m	450kg	2.48m	2,750kg
S1212AC+	33ft	12m	1.19m	350kg	2.48m	3,060kg
S1412AC+	40ft	14m	1.19m	350kg	2.48m	3,210kg
S1612AC+	46ft	15.7m	1.25m	350kg	2.84m	3,390kg
S1614AC+	46ft	15.7m	1.39m	350kg	2.84m	3,500kg

Fork pockets side and rear on top of the chassis improve stability



Dingli has also introduced a growing range of 'Hydraulic oil-free' models which use electric actuators to elevate the platform as well as steer, entirely eliminating the hydraulics.

FIVE YEAR WARRANTY FOR HAULOTTE

On the subject of longer warranties Haulotte has extended its full warranty period on its slab electric scissor lift range from two to five years or 1,500 hours. In addition to the above launches, there have been a fair few new micro scissor lift launches this year which are covered in the last issue - see C&A 26.3 page 20.

THE FIRST MANITOU SCISSOR LIFTS

Manitou has started producing its first scissor lifts at its plant in India, the first model to go into production is the 19ft SE0808, with a working height of 7.8 metres, a platform capacity of 230kg, an overall width of 815mm and an overall length of 1.85 metres, with an all up weight of 1,500kg. In other words, a classic 19ft compact scissor lift with AC electric wheel motor drive, integrated diagnostics with a full colour display screen, standard 900mm roll out deck extension and full height swing gate entrance.

Other models will include the 26ft/815mm wide SE1008 with 230kg platform capacity, the 32ft/1.17 metre SE1212 and later a 40ft model, both with 350kg platform capacities. See the feature on a visit to Manitou India - page 36



The 19ft SE0808's built in India ready for shipping

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MANITOU'S INDIAN SCISSORS

All eyes have been on the Manitou Group with the launch of its first scissor lifts in February of this year. Cranes & Access Assistant Editor, Imogen Campion visited the company's manufacturing facility in Greater Noida, India where the new scissor lifts have now gone into production.

Since the launch of its slab electric scissor lift line earlier this year, Manitou has been busy. Its facility in Greater Noida has taken on 40 new employees to accommodate the additional production line, which will initially build a range of four units with working heights from eight to 14 metres.

The prototype lifts made their debut at Excon 2023 in Bangalore last December, but details were minimal. Since then, production of the 19ft SE0808 - 7.8 metres working height 810mm overall width - has begun and is currently the only model in production with the potential to build 12 units a day - all of them being shipped to Europe.

Although the new lifts are being manufactured in India there are no plans for them to be sold locally. Head of scissor lift production Rajat Tandon said: "This is mostly because the market for the machines is not yet there, it is still evolving. The other products built in the plant include backhoe loaders which are now a staple product in India, while telehandlers are now growing in popularity, albeit at a steady pace."

"This year, the scissors will only be sold and marketed in Europe in order for them to be monitored. This is not a machine that we have manufactured before, we previously purchased models (Genie compact RTs) from another supplier," he added. "The next phase of the plan is to launch them in the North American market next year, while the third phase of the plan includes India, but it is still in the works."

Production of the 26ft SE1008 which is also a narrow model but boasts a 10 metre working height, is currently set to start at the end of the year. The 32ft SE1212 - with 12 metre working height and 1.17 metre overall width - and the 40ft SE1412 are planned for next year.

Platform capacities are 230kg on the narrower machines and 350kg on the wider model, while all units use AC direct electric wheel motor drive and will include integrated diagnostics with a colour display screen, standard 900mm roll out deck extension and a full height swing gate entrance.

The SE0808, SE1008 and SE1212 have overall widths of 810mm, 820mm and 1.17 metres wide respectively and overall lengths are 1.85, 2.42 and 2.43 metres, while overall weights are 1,500kg, 2,200kg and 2,880kg. Details of the 14 metre lift have not yet been released.

"The design of the scissors was a collaboration between the Indian and French teams, with the majority of the electrics and hydraulic system design handled in France, but the transition of this work to India is now underway. All software and electronics will continue to be made in France, while the hydraulics and mechanical design happens in India, but we are starting to look at the electrical side," said Tandon.

In terms of the actual manufacture, all fabrications and metal components are local, but initially around 30 percent of the machine is imported. "We are looking at further localising the machine after monitoring its performance



so as of right now, sourcing all the components locally is not necessary," added Tandon.

The company is planning to expand the facility to also accommodate its telehandler line, as demand increases additional space is not only needed for manufacturing, but also for testing and other processes.

TELEHANDLERS GAINING GRADUALLY

Telehandler assembly kicked off in 2019 and runs alongside the new scissor lift line in the same building. I spoke to Sandeep Agarwal, head of telehandler production, who said: "We are making five models here, but can make seven depending on the colour, we sell red within India but yellow and red outside of India."

The largest model currently in production is the

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17.4 metre/4,000kg MX 1740 while the smallest is the 7.6 metre/4,000kg capacity MXT 840. The models were unveiled in Phuket, Thailand in 2019, the first time the company had launched a product outside of Europe or the US.

The MXT 840 and MXT 1740 are designed to meet the requirements of developing markets in terms of telehandler adoption and as such are tailored to the local working environment. "Most components, around 90 percent, are locally sourced with 25 percent of the machines we produce staying in India and the rest exported," adds Agarwal.

Both models feature similar booms and chassis components to their European counterparts. However, they employ a high boom mounting and simpler controls and electrics, while the covers, mudguards and dashboards are all steel, rather than the composite materials on European built models. The engines come from Kirloskar for the Indian models, while export units are fitted with Perkins. As a result, the Indian built models cost considerably less than their western equivalents, with that gap potentially widening if production volumes in India exceed current projections.

STATE OF THE ART PARTS FACILITY

I also had a tour of the all-new spare parts facility, with manager Anand Maheshwari and assistant manager Ashutosh Sharma. The building, completed in September, is located a 10 minute drive away from the main plant and at 10,500 square metres is four and a half times larger than the former parts warehouse.

The facility, one of seven Manitou parts stores worldwide, stocks parts weighing from 500g to four tonnes. "45 percent of spare parts shipped from our warehouse go to India and 55 percent overseas," said Maheshwari. "We are also focused on the environment and have cut plastic

consumption by 45 percent this year, by using shredded, recycled cardboard boxes for packing."

The building is 15 metres high with a shelf height of 8.5 metres, plans are underway to introduce autonomous mobile stock pickers in 2026, similar to those used at Manitou's Ancenis facility in France. Shelf heights could also be raised with both initiatives helping improve productivity while putting off a further expansion for eight to 10 years.

"We have also taken on some global activities from France," says Maheshwari, "for example we are now managing global reports and the time cycle of the warehouses and have further plans to take on more over the next couple of years." ■



Visiting the spare parts facility



(L-R) Anand Maheshwari, Ashutosh Sharma and Srishti Tikha

CASE STUDY

EUSTON STATION, LONDON

When Premier Modular needed to employ aerial work platforms on a modular build project at Euston Station in London it approached Brilliant Ideas for a solution to spread the ground loadings.

The platforms - two articulated boom lifts, a 135ft Genie Z135/70 and a 34ft LG 340AJ articulated boom and a 26ft Genie 2669RT Rough Terrain scissor lift - needed a 75 metre long stable base for them to travel along the building façade. The three the machines have overall widths ranging from 1.79 to 2.5 metres with overall weights of 3,243kg, 4,400kg and 20,366kg.

The solution was to create a 75 metre long track with 354 Alimats interlocking extra-long modules which are available in three lengths - 1.74, 3.48 and 2.175 metres - plus 164 Ethafoam sheets.

For the Genie 2669RT and the JLG 340AJ the 3.48 metre by 580mm interlocking pads were laid at an angle, with a separate layer of 1.74 metre by 580mm interlocking pads to cope with the additional width of the Genie Z135/70.

Brilliant Ideas managing director Dan Westgate said: "With scissor lifts, there are two very different load cases to be considered in the tracking and operating condition. You do get a much higher load in the operating condition when the lift is fully elevated as the load is concentrated at one end of the machine. This is also the case when the deck is extended. Some of the enquiries we receive misunderstand this and the loads are calculated incorrectly."

BUT WHY AT AN ANGLE?

"The track was laid with the modules at an angle to ensure load spread occurs across the interlock as it spreads perpendicular to the direction of travel. This will also mitigate any rippling that could occur if the system was installed straight - if the system is rippling then the tracking load is not being spread. For the operating loads which are significantly higher than tracking loads we introduced an additional layer, so the system works like outrigger mats. The temporary works design for this particular project required an additional layer of 2.175 metre long modules for the operating condition for the large aerial work platforms."

The mats were installed by the Brilliant Ideas team with the whole project completed in a week including providing the solution, installation and completing a comprehensive Pre-Qualification Questionnaire (PQQ).

