

A pipe dream?

We should all have heard and know about the increasing legislation and Working at Height requirements but how does it actually affect subcontractors when working day in, day out on a large development?

Here we follow specialist building services contractor Kylemore Services on a prestigious contract in the heart of London and find out its thoughts on access equipment.

Watermark Place is a Thames-side office development close to the City of London being built by main contractor Sir Robert McAlpine. The 12 storey, three basement building has been hailed 'an exemplar of sustainable urban design' and was awarded the Institute of Civil Engineers London Merit Award 2009 as one of the most outstanding examples of civil engineering excellence in the capital.

Comprising three interconnecting buildings, the project for Oxford One Investment provides 60,000 square metres of office space near Canon Street Station. Innovative features include triple-skinned facades, motorised sun-tracking louvers and an oak façade which supports brise-soleils to minimise sun gain.

The building includes a 350 square metre photovoltaic array, enough to power the building which during construction used temporary renewable energy generated via wind turbines and a solar thermal unit. 55 percent of aggregates used are recycled, all timber is sustainably sourced and organic paints are being used. Even 83 percent of site waste has been recycled.

A plumbers tale

John Anderson of specialist services contractor Kylemore Services is the man on site responsible for carrying



John Anderson of Kylemore Services

out all the plumbing, drainage and copper services on the contract. But how has his normal working practices been altered on such a prestigious contract, if at all?

"All the installation work early in the contract used 19ft scissor lifts, which have their good and bad points," said Anderson, "but what has transformed the speed and ease of working are these self propelled personnel lifts which have been absolutely brilliant." The machines in question are Bravi Leonardo's which have a 4.9 metre working height and dual extendible platforms to 1.71 metres with a 180kg - one person plus tools - capacity.

"These platforms are small enough to replace steps and light enough (450kg) to move between floors in the materials lifts," says Anderson. "A set of 10 tread steps - if we were allowed to use them - takes up more floor area and therefore would be harder to use. The Bravi is so small and manoeuvrable - with the drive motors over the wheels it can turn in its own length - allowing



it to drive into tight corners and then has a stable base to carry out the work which would be impossible with steps or a larger platform."

Push around or self propelled?

Kylemore did look at push around platforms but decided against them. "There was no point, the hire price was similar but they didn't have the extendible platform which allows you to get right under the fitting. Not being able to drive between work places means having to descend, get out, push to the next position, climb in and ascend again, too much time is wasted," he says.

Prior to adopting self propelled platforms, Anderson used mobile towers to do the work. "It would

take two men between 30-60 minutes to build a six metre tower to work on the end of a pipe or plug a valve off," he says. "Now we must save 80 percent of this time doing the same 'one-off' job using the Bravi and about 50 percent if there was a whole floor area of fittings that needed checking."

Anderson says that the main contractor does not allow steps or ladders on the site without permits and to get a permit he has to prove that the ladder or step is the last resort and there is no other way of doing the job.

"From a Health and Safety point of view, the Bravi is ideal. We had to re-write the method statements because previously we were only using scissor lifts in certain areas whereas now we can use self propelled lifts everywhere. They are a quicker and safer method of low level access."

The harnesses dilemma

One unusual site requirement is that all platform operators must wear a harness on all lifts, including scissors. This goes against all scissor platform training and is considered dangerous by some, but it is a requirement on the McAlpine site. The harness can be clipped into the platform's mid rail.

"The problem of wearing a harness is that all the method statements need to be rewritten to include a rescue system," said Anderson. "If a man falls out of a machine and lands on the floor, you can carry him away. If a man falls and is hanging from the basket you need



Once driven into position, the machine can raise its platform to the correct level

to have a rescue system to get him down quickly - less than 20 minutes. Some mechanical methods of lowering platforms to the ground can take a long time. Done correctly, you would need another two man capacity machine on site to rescue in the time available."

One man two man

The initial sections of pipework installation on the development was a two man job because of the six metre lengths being used. During this time, each plumber had his own platform. The checking and testing of the fittings is a one man job, each man working from his own platform.

On Watermark Place all the pipe work has been installed using the 'press fit' copper pipe system which is easier and quicker to install and has very few joint failures. Tube sizes range from 15mm to 105mm and the joints are fitted using a hand-held, 110V or battery powered five tonne press. In the whole building, there have so far only been two leaks from the thousands of joints that have been made.

At its peak, Kylemore had 40 plumbers on site with 10 machines. With most pipe work now installed, numbers have reduced to 10 plumbers with three Bravis. To install some of the fittings, Kylemore needed a working height of six metres and so used 19ft Genie GS1932 scissor lifts. Anderson says that this 'lack of working height is the Bravi's only downfall - another two metres would be ideal'.

"Another two metres would be ideal".

We understand that the manufacturer is looking into providing a bolt-on extension kit for the Leonardo that would give the extra two metres. The kit which would replace the existing guard rails could be used for the higher level work before replacing with the standard rails for lower level work. Sounds a bit fiddly and time consuming, but could be useful if there was only a small amount of higher level work to carry out.

Watermark Place, like many modern office and retail developments, uses raised floors such as the Kingspan

system and therefore floor loading has to be taken into consideration. "Obviously all of the platforms can work on the main concrete floors without problems, however on the raised floors even the 19ft scissors are too heavy," says Anderson.

Floor loadings critical

A fully loaded Leonardo weighs just 630kg, resulting in a maximum floor loading per wheel of less than two kN per square metre, well below the Kingspan maximum loading for its Medium grade (3.0kN) and Heavy grade (4.5kN) floors. The Leonardo's small wheels were a concern, but Anderson says: "We move the machines around over many different surfaces and have not had a problem. Occasionally the machine may ground when moving on and off access ramps. Bravi supplies loading wheels but we have never needed them because the machine is light enough for two

men to easily push. We occasionally lock the steering wheels, particularly when going over metal plates covering holes in the floor which allows the machine to steer in a straight line. In other circumstances the steering is accurate."



The whole development uses the 'press fit' system which uses a battery or 110V powered hand-held press

The Bravi can easily travel through standard doorways



HOLLAND LIFT

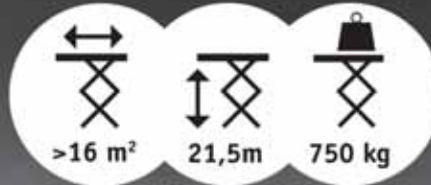
Star performance ...

Lifting capacity 750 kgs

Large platform 7,00 x 2,30m

Max. working height 21,50m

The new
B-195DL



Holland Lift International B.V.

Tel: +31 (0) 229 285555

Fax: +31 (0) 229 285550

E-mail: info@hollandlift.com



www.hollandlift.com



The smaller and lighter Bravi has no trouble going moving around the site and in the lifts



The ability to drive through a standard height doorway without lowering the handrail is also a benefit. "We often have a problem with scissors on site because although they have a quick release pin system to collapse the handrails, these pins are often missing - taken by other operators who have lost the pins - and replaced by bolts. With the handrails up they are 50mm too high and with bolts fitted it is a time consuming hassle to fold the handrails," says Anderson. "Another downside is that they are too heavy to go in the permanent goods hoist and they have to be moved in the temporary hoist." The operators charge the machines overnight and this provides more than enough charge for the typical eight hour shifts. "If for some reason the battery fails, we realised that the machine can still be used vertically while being charged although it can't be driven."

Worth the £30 a week premium

"From a cost point of view the Bravi is probably £30 per week more expensive to hire than a push-around, however, with labour costs being our largest expenditure, the time saved with a self propelled machine is more than worth it," says Anderson.

"There is just no way that we could do the work in this building quickly and safely without a self propelled platform. No other equipment could get into position so easily and quickly. Several hire companies have asked why we wanted the Leonardo machines when we could have 19ft scissors for the same money. All I can say is that they don't go on sites and see the problems that exist for contractors such as us. We could not have done much of the work with a 19ft scissor - it is too big and too heavy. The way forward is the self propelled personnel lift and I couldn't recommend them more."

The Bravi can be transported in the back of a Transit van



**QUALITY CREATES SAFTY –
MOBA CONTROL SYSTEM
FOR AERIAL WORK PLATFORMS.**

Remote control unit **Platform slope sensor**

MRW **Controller** **Control panel**

**New mobile slope sensor
special for aerial work platforms**

- ▶ 1-axis-sensor
- ▶ Operates with two completely independent (and redundant) channels
- ▶ Compact, flat design
- ▶ Rugged design with approved sealing, for mobile use
- ▶ Optimised for immunity to vibration and acceleration
- ▶ Quick measurements – optimal automatic levelling
- ▶ Does not contain mercury
- ▶ Isolation complies with DIN/VDE standard 0682-742
- ▶ Protection class IP67
- ▶ Zero point adjustment via infrared interface with remote control unit
- ▶ Competitively priced

MOBA
MOBILE AUTOMATION

it's MOBA
www.moba.de

MOBA Mobile Automation AG • Germany
65555 Limburg • Phone: +49 6431 9577-123