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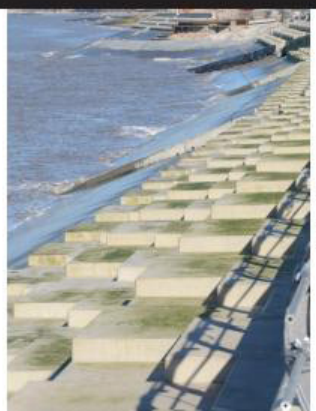
PSS Magazine

8

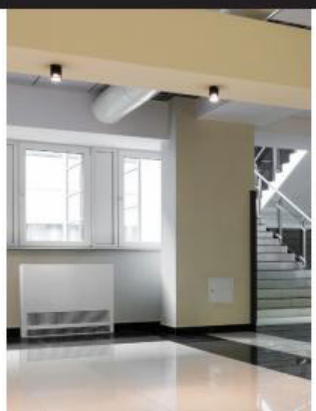
ADVANCED TALL-BUILDING PROTECTION FOR 'THE CHEESEGRATER'

INSIDE THIS ISSUE:

9
SUSTAINABILITY IN STOCKHOLM REAPS BREEAM RETAIL AWARD



13
NEW DEFENCES HOLD BACK STORMY SEAS



26
QRL PUTS SAFETY FIRST WITH LST RADIATOR LAUNCH

THE ARGUMENT FOR AUTOMATED PARKING SYSTEMS IS STACKING UP!

Jason Petsch, Director of Skyline Parking discusses the urgent need for APS in the UK

The rise of the machines

Despite their futuristic appearance, Automated Parking Systems (APS) are by no means a new concept. Indeed, the earliest reference to something akin to an automated parking system was the Garage Rue de Ponthieu constructed in 1905. The system consisted of a lift in the center of the structure to move cars up one or two floors where attendants on the floors would park the cars.

It's hard to imagine that car parking was such a problem anywhere in 1905 that anything resembling an automated parking system would be required. However, by 1900, mass production of cars was already underway in many European countries and the United States.

Rather than being disturbed by their rapidly increasing numbers, urban residents in the early 1900s viewed cars as a welcome development that would make cities better places to live. Cars were even considered as environmentally friendly and preferable to horses, their food and particularly their by-products!

A variety of types and styles of APS enjoyed wide popularity in the U.S. from the 1920s through the 1960s, however, very few were constructed over the next 40 years.

While interest in APS waned in the U.S., from the 1970s onwards more advanced systems were being developed in Europe, Asia and South America. Perhaps no country more enthusiastically embraced the APS than Japan; particularly Tokyo – with an acute shortage of land it has for many years looked at ways in which to maximise the number of cars that could be stored at any one time. In the late 1990s, Japan produced more than 100,000 automated parking spaces per year to accommodate a rapid increase in motorisation driven by its rising economy.

An age-old solution to modern day problems

Today, in a world with an estimated 1.2 billion cars, there is an increasing demand for smarter parking solutions. With the number of cars worldwide set increase to somewhere in the region of 2.5 billion by 2050, this demand and the pressure for solutions is only increasingly. No wonder that APS is back in the spotlight, and indeed seeing something of a renaissance.

Ironically, one of the drivers for looking again at APS is their positive environmental benefits - although its no longer a matter of keeping horses out of cities! APS offers numerous environmental advantages compared to multi-story parking garages and can reduce CO_2 emissions by 85% or more by eliminating the need for cars to drive and idle while searching for parking spaces.

Of course, a more powerful driver still is profitability (here, happily co-existing with carbon reductions). For parking garage development, an APS offers developers the ability to offer more parking, in less space. Construction of an APS typically requires less building materials, much less excavation volume, a shorter construction time and reduced construction disruption. Whether commercial or residential, changing the equation in this way presents has clear advantage of being able to either make a development viable in the first place or to allow for a greater volume of saleable units elsewhere in the development.

The case for APS gains even more traction as space becomes even more of a premium in towns and cities. In the US, it is estimated that surface car parks take up land of around 4,700 sq miles – that's roughly about the same size of Jamaica or Qatar! Clearly, land is plentiful in much of the US, however, in Europe, Japan and in US cities like New York and Boston, where land is at a premium, maximising every last piece of inner city land is vital. Again, as the density of urban development increases, so too does the pressure to find smarter parking solutions.

Alongside, the environmental and planning considerations, APS also offers ancilliary benefits such as security, an attractive offering for drivers in urban environments. Today, the perception of risk is matched by the statistics - according to the Home Office around 20% of all car crimes take place in car parks. With APS offering the equivalent of automated valet parking experience, there is an added assurance.

Indeed, a whole range of factors are coming together to make the case for alternatives such as APS more compelling than ever. Why then is it that automated parking has so far struggled to deliver on its potential, and not been more widely adopted in the UK's towns and cities?

Why hasn't APS taken off?

Perhaps the obvious answer is that it's comparatively expensive. There's no

denying that capital outlay costs can be high when compared to other parking solutions. However, when you consider that less space taken on car parking allows for greater returns elsewhere, for example, more residential units – then the higher initial costs can be easily offset or even used to drive a higher overall return.

Aside from the financial barrier there is also the issue of consumer acceptance, and the argument that people are simply not yet used to or ready for this kind of technology. Here too, we may be reaching a tipping point as smarter technology and automation comes to permeate ever aspects of society – with motoring no exception. From cruise control to 'park assist', we are increasingly getting used to the idea of a near future in which our cars drive and park themselves. People are now more accepting and trusting of the idea of automotive automation. The idea of automation stepping in completely when you park is not as alien as it once may have been.

While the tide is turning, this trust will still take some time to build and it is important to acknowledge that APS set backs in recent years have somewhat dented consumer confidence. Both here in the UK and overseas automated parking systems have been plagued by problems such as cars taking far too long to be retrieved, the wrong cars being returned, trapped vehicles, with some systems even reportedly causing damage. It's disheartening to hear about these failed projects, as it doesn't help with what should be a relatively straightforward argument in favour of APS.

The frustrating part is that the technology is there; it's just not always been adopted in the correct way. The key thing to note is that there are a range of approaches and differing design philosophies and there are successful and reliable systems in operation, which are those that deploy appropriate technologies that are fit for purpose.

Conveyor belt technology

Designs for APS do differ, but most consist of a combination of automated ramps, slabs, lifts and shelves, using a computerised system that parks and delivers a car like a high-tech vending machine. Yet beyond this approach is an alternative conveyor belt option, which sidesteps many of the issues plaguing APS in the past, and which offers real cause for excitement that APS is more than fit to help take on the challenges of today's urban environments.

The advantages of roller conveyor belt systems for automated parking applications come from their simplicity and efficiency. Without wasted motions and movement, conveyor belt systems tend to be much faster than other types of transport technologies used in APS. They also tend to utilise common "off-the-shelf" components, which leads to increased reliability, durability and parts availability as well as lower costs and inventory.

Compared to other car parking transport systems, the conveyor belt is very simple, and has a minimum number of moving parts. It is also extremely fast moving cars since there is virtually no wasted motion and therefore is also very safe. Other systems typically waste up to 50% of their motion and operation time since they must extend or retract arms to pick up or place a car. Furthermore, unlike with other systems, the conveyor belt does not require the car be physically lifted up to be moved: the car always sits on its tires on the conveyor belt and is not touched in any other way.

While other transport systems might use fancy robotics and be more intriguing and fun to watch, the conveyor belt system offers unsurpassed reliability, durability and performance. To steal from Apple, this is APS "that just works". And just like smartphones, or any new innovation, APS is a technology that needs a range of factors to come into play before hitting the mainstream. Technology that just works, the right market forces, the right level of consumer education. APS isn't there yet, but as several projects in the UK have been greenlit with an APS at their heart, I think we've reached a tipping point. It's a technology that's time has come.

www.skyline-parking.co.uk