

## PARKSAFE MULTI-STOREY CAR PARK

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<b>Organisation</b>	<b>Parksafe Car park</b>
<b>Trigger</b>	<ul style="list-style-type: none"> <li>Disgust at the attitude of airport car park staff to the break in of his vehicle.</li> </ul>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>To develop a way that vehicles could be protected in a car park that would not rely entirely upon CCTV or the vigilance of attendants.</li> </ul>
<b>Tools/techniques</b>	<ul style="list-style-type: none"> <li>Surveys of numbers and attitudes of potential users.</li> <li>Uses customer problems to generate new solutions.</li> </ul>
<b>Enablers</b>	<ul style="list-style-type: none"> <li>Personal enthusiasm.</li> <li>Support of Derby County Council.</li> <li>Advances in technology.</li> </ul>
<b>Tensions</b>	<ul style="list-style-type: none"> <li>Lack of a track record deterred clients from buying the system.</li> <li>Parksafe believes that a special award is deserved for its service rather than the standard Secured By Design Accreditation.</li> </ul>
<b>Impact</b>	<ul style="list-style-type: none"> <li>The car park established in Derby has had no crime over the last two years; previously 171 thefts had taken place.</li> <li>Featured on BBC Crimebeat.</li> </ul>
<b>Lessons</b>	<ul style="list-style-type: none"> <li>Enthusiasm ensures progress.</li> <li>A focus on customer satisfaction is key.</li> <li>Innovative car parks may not welcome Secured by Design Accreditation.</li> </ul>

### Synopsis

This case study concerns an inexpensive security system that has transformed a multi-storey car park in Derby from being a gathering point for vagrants, car criminals and drug addicts to being crime free. The system, which results from the personal enthusiasm and ingenuity of its creator, is based upon a floor-mounted sensor that detects movement of the vehicle. The sensors, along with panic buttons every 5 metres, are connected to 190 CCTV cameras and monitored via a control system. The system is manned by one person, who is alerted when any of the sensors, panic buttons or assistance buttons are activated. In the case of a crime being committed, the operator can intercept directly or via the PA system, as well as close all exits to the car park. Parksafe's commitment to safety and customer service has led to a loyal following of customers and police, as well as awards and media attention.

## **Background to Parksafe Multi-storey Car Park**

Parksafe is a 24-hour multi-storey car park on Bold Lane, near the shopping centre in Derby. Developed in partnership with Derby City Council, its 440 parking bays, covering 10 floors are targeted at short-stay shoppers and people who want to park over night. Customers pay an extra 20p per hour for an 'assured' car park, where the cost of theft of a vehicle or from a vehicle is covered by Parksafe, as long as it is properly secured. Before the introduction of Parksafe, the car park was frequented by beggars, vagrants, car criminals and drug users. Two years previously, the Council had redecorated it, installed 16 CCTV cameras and employed a patrolling officer. This had the effect of reducing crime and abuse for 6 months, but crime returned with a vengeance (Wigley, 1999), with 171 incidents recorded over the year, mainly concerning theft from vehicles. In addition, the level of usage was low and the Council's efforts appeared to have failed to halt the decline.

The designer who transformed the car park and developed the Parksafe concept is Ken Wigley, an agricultural engineer. In 1990, Ken Wigley returned to find his car window smashed and the radio-cassette stolen whilst parked in an airport car park. He says:

"I was horrified, but my horror turned to disgust at the attitude of the office staff when I went to report it. The attendant couldn't have cared less and simply pointed to a notice at the entrance which said that vehicles were left at the owner's risk" (Wigley, 1999).

This case, based on an interview with Ken Wigley and survey data, was recommended by David Smith, Holden McAllister Partnership, who is evaluating the Secured Car Park Scheme.

## **Design Process**

### **The Concept**

With all the advances in technology, Ken Wigley believed that it must be possible to design a system that did not rely upon CCTV or the vigilance of the attendants. Being an agricultural engineer, he had worked on harvesters that shut down cutting blades on detecting a metal object that would otherwise damage them. These devices could detect something as small as a beer can and could potentially detect a car. Applying this principle to car theft, Ken Wigley set about designing a sensor to detect whether a car was moved.

### **Prototyping the Sensor**

The sensor designed by Ken Wigley produces a frequency, which is set to level zero once the car is in place and programmed to report any changes caused by vertical or horizontal movement (see figure 1).



*Figure 1: Sensor*

For five years, Ken Wigley used his own funds to test the prototype on cars of family and friends parked in driveways and on farms. Based on the findings, the coil and the frequency of the signals were adjusted to prevent false tripping due to lightning strikes, mobile phones or changes in wind conditions. The sensor was also adjusted to take account of different car suspensions. It was eventually set to detect horizontal or vertical movement of the car on the basis that, according to the police, in 99% of cases, criminals actually get into a car to remove a car radio or break into a locked glove compartment. Criminals often gain access to the car by using a metal instrument applied to the corner of a side window, which causes the glass to shatter.

The feedback from family and friends was positive. Many were apparently “gob-smacked”. They believed that “it is reassuring that you know what’s happening to your car when you are in the house”.

### **Finding a Sponsor**

Having developed a product that was ready to be tested, Ken Wigley spent another two years discussing its trial with city councils, the majority of whom were reluctant to back an idea that did not have a track record and might therefore fail. Engineers at Derby City Council liked the idea, and were keen to try it out, but did not have the necessary funds. The Council and Ken Wigley therefore entered into a partnership where Parksafes stood most of the installation costs, in return for a percentage of the income over a period of years.

The site at Bold Lane was chosen by the Council, due to its high crime levels. Ken Wigley does not target such areas himself, as his main concern is that the location will attract trade during the day and night. The multi-storey on Bold Lane did have such potential, although it was a little further away from the city centre than some other car parks.

## Overall System

The sensor, the keystone of the design, was incorporated into an integrated system. On arrival at the car park, a bar coded ticket is issued at the spitter (each ticket has a unique code). On removal of the ticket, the entrance barrier lifts up and then specially designed entrance gates fold back. As well as being attractive and letting in the light, the steel gates (see figure 2) are also functional in that they open in four seconds.



*Figure 2: Gates to the car park*

Once parked in the bay, the driver of the car activates the sensor to prevent the car being moved undetected by inserting the ticket and the bay number into a machine called a bay controller. This, in turn, reads the unique code on the ticket and transmits the information to the main computer. On returning, the driver pays at the Pay on Foot machine, which reads the bar code and disarms the sensor.

At the exit, the driver inserts the ticket into a ticket gobbler, which verifies the code and lifts the barrier leading to the exit gate. Pedestrians gain access to the car park only on inserting their ticket into a barcode reader at the entrance points, thus restricting access to legitimate users.

Within the car park, there are panic buttons located on every pillar to provide protection against personal attack (see figure 3).



*Figure 3: Panic alarm*

If an emergency button is pressed, or the sensors activated, the CCTV camera alerts the operator in the control room.

Every bay is detailed on a computer-mapping screen, from which the operator can monitor the status of every individual car, pedestrian access, entrance/exit gates and pay machines. All the electronic information is collated at the supervisory unit and automatically transmitted to the eight desktop computers, which allow the operator to monitor only the important data. The operator controls pedestrian access and gates from the panel and, in an emergency, locks exit points, and alerts criminals and customers using the PA system. The PA can also be used to instruct customers who are perhaps aggressive or drunk, thus preventing trouble.

### **Guarantee & Service**

Two years ago, Parksafes started offering customers a guarantee that costs of repair or replacement would be met by Parksafes regarding 'from theft of or theft from the vehicle while secured in the car park'. This is in direct contrast to car parks that state 'vehicles left at owner's own risk' and is part of providing a quality service, as Ken Wigley explains:

"I am concerned that nothing should happen to someone's car. We offer a real service and pay if something happens".

In order to prevent fraudulent claims against Parksafes, Ken Wigley had the CCTV cameras strategically placed to scan cars for damage on entry to the car park.

Ken Wigley's commitment to customer service is demonstrated by the fact that, following a complaint from a customer about a small scratch on his car caused by a car door being opened carelessly, he designed foam barriers to hang between the bays, which prevent damage to the neighbouring car (see figure 4).



*Figure 4: Foam barriers protect neighbouring cars from damage*

Ken Wigley believes that such service deserves a special award, and is therefore reluctant to be grouped with other car parks within the standard Secured By Design Accreditation system. There is reluctance to introduce a two-tier system for Secured By Design, as this generates problems.

### **Impact**

There are a few who are critical of Parksafe, saying that it is 'over the top', yet crime has been reduced to zero and feedback from customers is extremely positive. Indeed, an independent survey showed that 97% felt safe in the car park and 100% that their vehicle and its contents were secure. Nearly everyone that parked there felt that paying an extra 20p per hour was worth it and/or good value for money.

The car park is well used, despite being further away from the shops than some of the other car parks. Indeed, Ken Wigley estimates that the investment in the car park should be paid off after five years with real profits coming after 10 years. A second Parksafe is planned in Lancaster City Centre and Ken Wigley remains hopeful of other Councils coming forward; his aim is to have a Parksafe in every city. He also plans to sell the detector system to private owners who park their cars in driveways. Of around 23 million cars, 60% apparently park on driveways. No one has yet tried to copy the approach and, even if they did, Ken Wigley has patented the products and concept.

Parksafe has been featured on Crimebeat and was the overall winner of the 1998 Quality in Action Award.

## Lessons learned

The value of the Parksafes system is that an integrated system of measures deters and prevents would-be offenders from committing a crime. The system also contains an innovative product in the form of the sensor. Such devices are fully researched and tested, using crime data and customer feedback. Indeed, Ken Wigley is a great believer in the importance of being customer-focused. Thus, many of his designs directly address problems experienced by car park users. Such commitment to customer care is something that customers are clearly prepared to pay extra for.

It should be noted, however, that Ken Wigley has had to work hard to attract support from city councils, which, he believes, are often unwilling to take risks. He attributes his success to common sense, enthusiasm and determination:

“From my contracting job, I got the expertise to design systems. All you need is common sense, enthusiasm and bloody-mindedness. I just don’t give up” (Wigley 2001).

It would appear individuals and perhaps small companies that produce innovative, design-led solutions to crime issues would benefit from support, as they do not have access to the same resources as larger companies.

## References, Further Reading and Related Case Studies

Greater Manchester Police (2001) *Parks and Public Open Spaces*. Architectural Liaison Unit, Community Affairs Branch, Manchester.

Parksafes (1998) *Company Brochure*. Derby.

Wigley, K. (1999) Parksafes – A Security Benchmark in Off-Street Car Parking. *Parking News*. Issue No. 180, pp18-20.

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## Classification Index

Ekblom's crime classification	Misappropriation (theft), misbehaviour (violence against the person).
BCS crime classification	Theft, violence against the person
DAC	Customer care
Primary motivation	Meet the need for people to be protected from car crime.
Type of designer	Agricultural engineer
Approach	Invention
Sector	Automotive
Location	Car park
Author	Caroline Davey

DAC Parksafe