

Improving the quality of city centre parking: will the consumer pay?

Like many towns and cities, Cambridge faces the challenge of retaining good, central area access without destroying the very character of its urban fabric. Challenging enough when you consider the needs of its residents and the historical city's medieval street pattern – hardly designed to cater for modern traffic levels. Add 4 million visitors each year to the equation, over half of whom come by car, and the magnitude of this challenge becomes clear. Alan Sidell, the City's Head of Transport Services, talks to Robert Bain about recent improvements initiated by the car parks service in Cambridge.

ENHANCING THE VISITOR EXPERIENCE

Across the country, city tourism officials talk grandly about enhancing 'the visitor experience', but many of us forget that the first exposure to that experience may be some dark, dingy, 1960's multi-storey car park and all that is associated with what is, commonly, a fairly hostile, dull grey, reinforced concrete environment. Alan Sidell has been working hard to change that.

FIRST PRIORITY: CRIME REDUCTION

Cambridge City Council started to focus attention on its car parks some eight years ago, driven by safety and personal security concerns. Reducing crime and reducing the fear of crime became the objectives.

About the same time, a structural engineer's review of the Council's multi-storey car parks suggested that, although the concrete structures were sound, there was some evidence of deterioration due to chloride attack and carbonation of the steel – particularly at the Council's Park Street facility (its oldest car park). Sidell seized the opportunity to specify the use of white anti-carbonation coating on the car park's walls and ceilings. Despite internal lighting remaining comparable with the other

multi-storey facilities, the improvement to the look and feel of the interior at Park Street 'was phenomenal'.

A national debate was simultaneously taking place about crime in car parks, and the chance to bid for Home Office funding for CCTV cameras presented itself. Another opportunity seized by Sidell, however his application contained a unique feature – the bid was supported by an evaluation proposal prepared by a lecturer at Cambridge University's Institute of Criminology. The Council continues to monitor the impact of City centre safety initiatives today, through consumer surveys and face-to-face interviews.

Having secured funding, Sidell sought to introduce some innovative technology to his CCTV system. The multitude of structural columns in multi-storey car park decks presents difficulties for fixed, pan, tilt and zoom (PTZ) cameras in terms of blind spots.

In response, the Council installed

cameras running along tracks; a technology borrowed from the world of sports television coverage, effectively allowing monitoring staff to 'see around' the columns. Although individually expensive, this had the additional advantage of requiring fewer camera installations (in terms of coverage, the track-based technology is equivalent to five, traditional PTZ cameras) and it is easier for supervisory staff to monitor. Furthermore, as the Council pays cable companies for image transmission on a per-camera basis, running costs were reduced.

All CCTV images from inside car parks and around the City centre are relayed to the Council's monitoring/control unit; staffed 24-hours a day, 365 days a year. The alternative of monitoring being undertaken by car park attendants was discounted as the integrated solution allows for seamless tracking of people's movements from the street into the car parks and vice versa.

Car Park	Lion Yard	Park Street	Queen Anne	Grafton East	Grafton West	Total
No. Spaces	970	450	640	895	280	3,235
Payment System	Pay on Foot		Pay on Display (Pay on Foot from July)			
No. Payment Units	4	4	15	23	8	
Condition	Refurbishment under Grand Arcade	Good	Refurbishment to be completed	Good	Fair	
CCTV	Exit only	✓	✓	✓	✗	
Help Points	✗	✓	✗	✗	✗	
Stairwell Mirrors	✓	Being installed	✓	✓	✗	
Internal Finish	Poor	Excellent	Poor	Poor	Poor	

Table 1: City Centre, Multi-Storey Car Parks in Cambridge



A migration from pay-and-display to pay-on-foot technology is taking place at all the multi-storey car parks. This will ease the introduction of differential pricing which will better match supply to demand.

Other car park security-related initiatives embraced by the Council include security patrols in radio contact with CCTV control centre staff, the placement of convex mirrors in stairwells, and Help Points linked to cashier pay stations for voice communication and monitored by CCTV. Various consultation exercises and consumer opinion surveys conducted over the last couple of years have demonstrated considerable support for these initiatives although CCTV remains the favoured response to safety concerns – by some margin.

MANAGING SUPPLY AND DEMAND

The City Council operates 14 car parks, levying charges at 11 of them. Five large multi-storey car parks in the City centre account for 85% of all available off-street parking space. These multi-storey car parks are described in Table 1.

The Council is moving its multi-storey car parks to Pay-on-Foot technology as its preferred platform, in part because of the flexibility this provides in terms of being able to employ – and fine-tune as required – differential charging structures (see below).

PRICING AS A POLICY INSTRUMENT

On-street parking in Cambridge is managed by the City Council on behalf of

the County Council. Although all revenue from on-street parking accrues to the County Council, on-street charges are established jointly by the two authorities. As there is no private-sector parking provider in Cambridge, this means that a joint committee controls the pricing for all of the public car parking in the City – a very powerful and flexible policy instrument [so powerful, the author feels, that it justifies this sort of monopoly].

The joint committee ensures that it remains more attractive to park off-street rather than on-street. It also ensures that it is cheaper for two adults and three children to use park-and-ride (see later) than to park a car in the City centre for three hours or more. In general, pricing is used to discourage long-term parking in the City centre, prioritising short-stays (see Figure 1). This is reflected in the average turnover per space per day (3.7 cars/space/day for Lion Yard, for example).

Pricing differentials exist among the multi-storey car parks; the more expensive charges being levied by those nearest to central destinations. Differentials also operate by time-of-day and day-of-the-week. These differentials were recently revisited in response to:

- A need to better match parking demand and supply, both in a spatial and temporal sense;
- A need to address problems associated with queuing at car park entrances at peak times (such as blocking-back onto bus routes causing delays and service reliability problems);
- A comprehensive study which suggested that users would be willing to pay a premium to enjoy enhanced levels of service (see the Detailed Parking Study in Cambridge).

PARK AND RIDE

The only increase in the future supply of public parking space in Cambridge will be associated with its popular park and ride services. Award-winning and hugely successful, largely because of the foresight and determination of the County Council, park and ride took off around six years ago and, today, carries over one million passengers/year. Across that period, parking figures recorded at the City's central car parks have also increased providing comfort to retailers that, despite parking price hikes and management intervention, visitor numbers continue to rise.

The five park and ride sites boast parking attendants, waiting facilities, cycle racks/lockers, toilets, drinks machines and information displays. A

total of 4,200 parking spaces have been provided and the scheme employs low floor, accessible buses running frequent services into central Cambridge.

Alan Sidell firmly believes that park and ride makes a significant contribution to effective traffic demand management in and around Cambridge, particularly through price co-ordination with the City centre car parks. Park and ride focuses on commuters and long-stay visitors leaving the central facilities to cater for short-stays.

FOCUSED ON THE BIG PICTURE

The results from the parking study recently commissioned by Cambridge City Council (described later) support the aspirations of the car parks service in a number of directions. The popularity of Sunday trading, for example, has prompted the Council to consider moving from a fixed, all-day charge for off-street parking on Sundays to time-related charges. This is difficult to achieve with pay-and-display technology as it can be confusing for users to pay different charges on different days for the same duration of stay. So the move to time-related charges is driving a migration from pay-and-display to pay-on-foot technology at all of the multi-storey car parks.

Time-related charging on Sundays will earn the Council additional revenue and estimates suggest that this additional revenue will more than cover the capital cost of new ticketing equipment (within four years), increased staff requirements and support for park and ride services on Sundays.

Changing the charging structure for off-street parking on Sundays is a good illustration of the need to retain sight of the 'big picture' in terms of parking policy across the City as a whole. For example, on-street parking is currently not charged for and some existing waiting restrictions do not operate on Sundays. Those issues will have to be addressed to ensure that the new pricing regime has its desired impact.

FUTURE DEVELOPMENTS

The results from the parking study and a Best Value review recently conducted by the Council suggest that these are exciting times for the car parks service. A major retailing redevelopment will see Lion Yard replaced by a brand new multi-storey car park which, on the basis of experience, will have all of the desired security-related features built-in.

The Council acknowledges that better parking information could be provided to users to help them make their choice between City centre parking and park and ride. Plans for variable message signs to be positioned at strategic locations on the outskirts of the City are designed to help in that respect.

Alternative payment mechanisms – perhaps including Smartcards – are also being investigated as the new pay-on-foot technology can be retrofitted to accommodate such advances.

However the most exciting development (and the one really driving all of the other initiatives) is the general acceptance that today's town and city centre car park users are willing to pay for service quality improvements which can then be introduced at no net cost to the City Council. No doubt other local authorities will watch developments in Cambridge with considerable interest.

Acknowledgement

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Sources of further information:

British Parking Association:
www.britishparking.co.uk
European Parking Association:
www.europeanparking.com
Parking/pricing resource:
www.vtpi.org/tdm/
tdm11.htm#_Toc5666147
Urban transport policy resource:
www.env.leeds.ac.uk/meeg/konsult.htm

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BENCHMARKING PARKING SERVICES

In 1999, TRL Limited (Transport Research Laboratory) launched its Parking Benchmarking Initiative. Alongside the Steering Group (comprising selected members), TRL designed the Initiative to provide local authorities with appropriate parking-related performance indicators. The Initiative helps authorities to compare their scheme against those of others around the country – commonly as part of Best Value reviews.

To date, 23 local authorities have subscribed to the Initiative, making it the largest parking benchmarking venture in the UK. This year's subscription costs are currently under review, but will probably differentiate between those

authorities operating decriminalised parking enforcement schemes and those which do not – reflecting the level of information required/requested. A report is produced annually (with electronic updates throughout the year) giving members an opportunity to compare results and be put in touch with each other, through TRL, in order to discuss particular common issues.

The initiative is comprised of three modules. Module A involves an annual questionnaire dealing mainly with operational data including revenue generated and costs such as staff salaries, number of penalty notices issued and complaints. Module B, launched this year, aims to collect and compile attitudinal information through surveys of motorists, residents, businesses and so forth. Although Module C is still at early stages of planning, it is envisaged that it will look at broader parking issues such as parking activity and signage. As some of the collected information will be commercially sensitive, the anonymity of all members is considered paramount.

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DETAILED PARKING STUDY IN CAMBRIDGE

In June 2001, Cambridge City Council appointed transport consultants to undertake a Best Value review of its off-street parking service. Despite the significant and well-publicised success of the Council's policies to encourage access to the City by means other than the private car, it remains an important access mode. The Council's objectives for the parking service provided a challenging backdrop to the review. They were:

- To provide car access to the City centre for those who need it;
- To support the vitality and viability of the City centre;
- To provide a high quality of customer service;
- To minimise queuing to protect the environment and reduce congestion;
- To run a cost effective and profitable service.

In common with many local authorities in the UK, existing pricing structures did not fully enable all these (in some senses conflicting) objectives to be met. In particular, there was often a significant imbalance of demand and supply, which left Council assets significantly under-utilised at quiet periods



but resulted in long queues for scarce parking spaces at peak times. Additionally, quality standards were poor in some car parks, giving rise to an unpleasant first impression of the City to many visitors and to vehicle and personal security concerns.

In order to develop a strategy to overcome these problems, the consultants set out to gain a detailed understanding of customers' requirements and preferences. Stated Preference (SP) techniques were used to quantify and explore the value of car park quality and convenience attributes. These techniques were accompanied by extensive qualitative surveys of users and non-users of the car parks, and through public focus groups and workshops with key stakeholders.

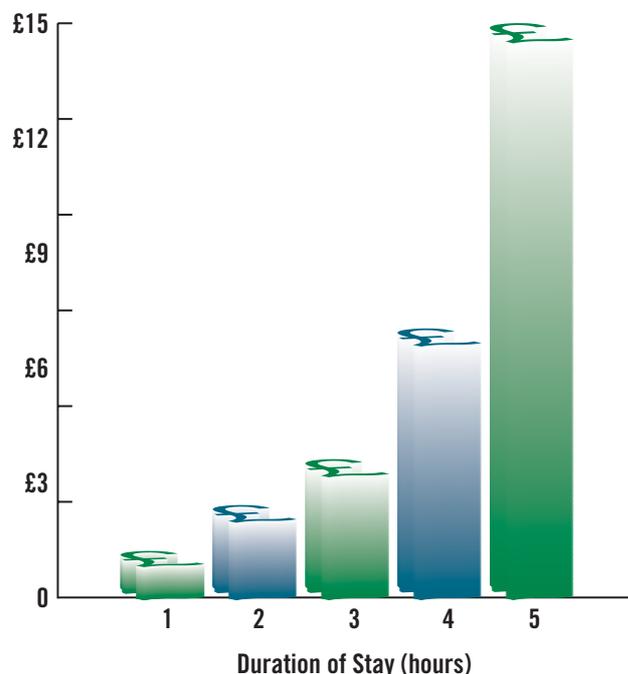
Key findings from the survey were that:

- Car park users were willing to pay for quality improvements.

Cambridge currently has several car

Help Points are linked to cashier pay stations for voice communication and monitored by CCTV. The Council's monitoring/control unit is staffed 24-hours a day, 365 days a year.

Figure 1: Off-Street Parking Charges



parks that fall below desirable standards of security and internal environment. The Council had set in place a programme of improvements but capital costs are high (over £1.5 million in total) and could be difficult to justify in the absence of enhanced contributions from users.

The Stated Preference surveys revealed that, on average, existing users were willing to pay around 10% on top of existing parking charges to benefit from quality and security improvements. This is sufficient, providing pricing policies are suitably amended, to enable the capital investment to take place without a net draw on Council resources. Similar findings may be applicable elsewhere and this provides the potential for town or city-wide car park improvement programmes to be put in place that are financially self-sustaining without reducing overall parking demand.

- *Prudent, empirically-supported pricing structures can make better use of assets.*
In common with many cities,

Cambridge has some central car parks at which demand is consistently high and others that are more peripheral but quieter.

Customers, if given appropriate information, will trade between parking price and convenience and thus appropriately lower prices at more distant sites will ensure that they are better used while pressure on central car parks is reduced.

- *Price elasticity of demand for parking in Cambridge is low.*

Small, incremental changes in price as typified by an annual increase will have very little effect in managing demand. In order to achieve a significant change in demand at peak or off-peak times, a step-change in pricing is required.

It is possible, however, to make this change entirely within the objectives of the parking service. Identifying the price level at which demand for spaces will be just less than supply will eliminate queuing but will not significantly reduce the number of City centre visitors.

- *Total revenue can be significantly increased.*

A more responsive pricing structure enables this to be achieved while still effectively managing demand. This provides an opportunity for enhancing alternative means of access to the City centre (notably park and ride, providing an alternative parking location for existing car park users).

The potential thus exists for an overall increase in the number of City centre visitors, due to the increased choice in access mode being made available.

- *Most existing car park users will still visit the City centre.*

Survey responses suggested that this would happen, even when respondents were unable or unwilling to continue parking at their current City centre site. A major concern, especially amongst retailers, was that increased car parking charges would significantly reduce the number of City centre visitors.

Careful management of demand would minimise this, and new or

every parking solution...



improved alternative modes would assist, but in any event, over 75% of respondents said that they would find an alternative means to access the City centre if they were unwilling to pay an increased parking fee.

As a result of the study, the following measures have been put in place:

- A programme of investment in quality improvements has started, based on the ability to recoup the funding requirement from increased revenue.
- Car park charges have been varied among sites, with fees at central locations at up to twice the level of more peripheral car parks.
- Car park charges have been varied by day of week. Demand, and hence prices, on Sundays is approximately the same as on weekdays, but is significantly higher on Saturdays and charges have been set to reflect this.
- Consideration will be given to setting weekday charges lower in the mornings than the afternoons to reflect the demand profile and provide a lower-



cost alternative to encourage better use at quieter times.

Results of these changes are now being monitored and are predicted to include:

- Elimination of queuing at car park entrances
- Increased revenues from the car park service
- Increases in quality standards at no net cost to the City Council
- Enhanced alternative access modes

In summary, the recognition that car park users are willing to pay for quality enhancements and that prices can be altered to reflect differing levels of demand can assist with meeting the objectives for car parking in Cambridge. Many other towns and cities could benefit from a similar objectives-led review of prices and quality.

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The Council's cameras run along tracks, a technology borrowed from the world of sports television, which effectively allows monitoring staff to see round corners.



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