Notes to Presentation

Car Park Design
A User’s Perspective

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(The Ten Commandments)

Liam Keilthy
Parking Consultants Ltd
Introduction

Over many years in the car park management and consultancy business I have assembled a structured approach to the assessment and evaluation of car park design schemes. The structure takes the viewpoint of the ultimate users of the car park – the parkers – in preference to that of the design team or the developer. The purpose is to highlight issues for the design team, which are capable of remedy at the design stage only.

I call this structure the Ten Commandments

1. The Car Park Must Be Easy To Locate In The Immediate Road Network.

For their own reasons local council planners and traffic engineers delight in requiring that the entrances to public car parks be located down narrow alleys or at the rear of the complex they are designed to service. While I understand that the planners want to avoid queues from car park entrances over-flowing onto busy traffic routes, there needs to be a recognition that if people cannot find the entrance they are going to spend lots of time searching for the entrance or seeking on-street parking – adding to stress, wear and tear on the car, increased accident rates etc.

If the entrance cannot be accommodated on the main street, then excellent signage and public lighting is required to ensure that drivers can locate the entrance with minimal fuss and inconvenience.

2. The Car Park Entrance Must Be Easy To See In The Streetscape.

Too often car park entrances are set into the façade of a line of shops along a street, with the entrance sign lost in a clutter of other retail signage. Design teams must consider and, where possible, create the car park entrance as a landmark in the streetscape, so that drivers unfamiliar with the area do not over-shoot and have to circle around a second time to gain access to their primary destination.

Good signs on both sides of a street set well in advance of the actual car park entrance should be provided, along with clear ‘spaces/full’ signs that can be read well in advance of the car park entrance.

3. The Car Park Entrance Should Be Easy To Enter From The Public Road.

The detailed design of the entrance is very important to the success of a car park as well as the health and safety of pedestrians on footpaths, cyclists and other road users in the immediate vicinity of the car park entrance.
The car park entrance is frequently the first point of contact between the potential customers – the parker – and the shopping centre, hospital, office complex and should be designed with the same attention to detail as is devoted to the main pedestrian access points to these facilities. Lighting levels at the entrance must be high to ease the transition from the natural light to artificial illumination inside the car park. 350 lux is recommended for modern car parks.

The car park control system should be simple to use and ‘obvious’ to the first time user. As most modern public car parks are controlled by Pay on Foot barrier systems, most drivers will be familiar with the technology. However there are variations between systems, e.g. does the system print a ticket automatically or does the driver have to push a button first?

The car park entrance scheme needs to include good signage including

- Name of the Car Park
- Welcome
- Terms and Conditions
- Tariff
- Operating Hours
- Height and Other Restrictions
- Operating Instructions

In a pay car park a contract is created between the driver and the car park operator once the ticket is pulled. It is vital therefore that the terms and conditions under which the contract operates are clear before the car enters the car park.

4. The Car Park Must Be Easy To Navigate With A Clear ‘Footprint’

Drivers entering a car park for the first time or on an infrequent basis must be able to immediately grasp how the car park navigation system is intended to operate. This allows them to concentrate on driving and safely navigating the many hazards that characterise the interior of a busy car park – pedestrians, children, animals, buggies, shopping trolleys, bins, signs, columns, ramps etc.

Excellent signage and floor marking is essential to this objective. An avoidance of clutter on walls, columns and ceilings will help. There should be no traffic crossing points and dead-ends are to be avoided where ever possible.

Internal telematics can be a great assistance in larger car parks to advise circulating cars of space availability on alternative levels or in alternative sections of the car park.

Internal ramps need detailed design to minimise banging of car bottoms or tops on structural members and also possibly openings in curtain walls to optimise
lines of sight for drivers and for pedestrians in the vicinity of ramp tops or bottoms.

Coded zones and levels help to orient the driver as do features which carry from one level to another, e.g. pedestrian lobbies, fire stairs, large openings in external walls etc.

5. Public Car Parks Should Be Easy To Park In

If circulation routes are cramped or columns are poorly positioned or designed, if service ducts or structural features intrude into the parking space they make the task of manoeuvring a vehicle into the parking space unnecessarily stressful and difficult.

Spaces should be clearly marked. Ideally double lines between spaces and lines carried up walls, to help drivers position their vehicle centrally within the intended space, helps everyone. Spaces for short stay parkers should not be less than 2.4m x 4.8m, and increasingly they will need to be 2.5m x 5.0m to accommodate the increasing numbers of SUVs and larger cars. There is also increasing scope to allocate spaces specifically for smaller cars, that account for an increasing % of all private cars on the road. These could be shorter and narrower.

Wider spaces for parents with children and for disabled drivers are important. They need to be 3.6 m x 4.8m.

Where space permits design teams should look at providing diagonal –60-deg. – space in preference to 90 deg. spaces as customers love the ease of access provided by the diagonal spaces.

Where spaces are provided under ramps these should be clearly marked and customers advised not to reverse in and to watch their heads when exiting vehicles.

6. Car Parks Must Be Easy To Walk Through For Pedestrians

Every parking event involves a minimum of two pedestrian trips within the car park – from the car to the destination and back from the destination to the car. If the car park control system is Pay & Display or disk parking this number increases immediately. It is therefore essential that walking routes are well thought out, carefully designed and built, superbly sign-posted and above all else safe for the users.

There must be zero tripping hazards e.g. plinths or raised footpaths. There must be clear segregation of pedestrian routes and vehicular routes. There must be obvious straight-line routes to the primary destinations —shopping centre lobbies
etc. to avoid pedestrians taking short cuts through parked cars and across vehicular circulation routes.

Lift and stair lobbies must be clearly visible or very well sign posted from all points within the car park. There should be clear lines of sight with no structural intrusions, e.g. lift shafts or fire escapes that might be viewed by customers as potential locations for vandals to hide behind. Where possible essential columns should be cylindrical rather than square for the same reason.

Lighting levels in short-stay car parks need to be a minimum of 100 lux, with no black spots and where possible double cover, so that when a lamb fails a dark area is not created. Car parks benefit from music played over quality public address systems. A communications system should be considered so that distressed or lost customers can communicate with the car park office with ease.

**7. The Car Park Must Be Easy To Find In The Street Network**

Pedestrians who leave a car park need to be able to relocate the car park access points during all operating hours. External signage designed for pedestrians is essential. It is also helpful if, as pedestrians depart from the car park they are reminded of where they are, e.g. Dawson Street Exit, Exit to Roches Stores, and on which level they have parked their cars. All lift lobbies should have large numbers indicating where the pedestrian is.

**8. Car Parks Must Be Easy To Operate As Customers**

It is essential that the payment system is simple to grasp and to operate. If a pay on foot system is employed, then pay stations must be located in easy to find locations on main return routes, and not hidden under flights of stairs or only on alternate floors or on certain levels. There must be sufficient pay stations to accommodate all but the busiest rush, so that vulnerable people do not get nervous while waiting to pay. Lobbies should be large, bright and overlooked by manned offices or CCTV. There must be a system to permit manual payment of tickets.

Pedestrian lifts must be of sufficient capacity to comfortably cater for busy period and to allow for shopping trolleys, baby buggies, wheelchairs etc. They must have phone or intercom links to the office. Doors should be of glass or have large glass panels, to allow people to assess the risks if any of entering confined spaces.

**9. Car Parks Must Be Easy To Leave**

Ideally hunting routes should take drivers past as many of the spaces in the car park as possible, to maximise the probability of quickly find an empty space. Conversely, departing traffic should be taken by the shortest possible route to the
exit. The exit routes should be clearly marked and intuitive where possible – the footprint should be consistent.

Exit to the public road and directions on turns should be well sign posted – Left for Belfast, South for Dublin etc. For safety purposes, lines of sight should be well designed to avoid conflicts between pedestrians, cyclists and other road users and the traffic from the car park. Lighting levels need to be high to ease the transition from artificial to natural light.

Remember that car park is the last part of the shopping centre, hospital, or office complex that the driver and his/her party will see.

10. Modern Car Parks Must Be Easy To Operate And Manage

All modern car parks need excellent drainage systems to deal with windblown rain, car borne rain and water used for cleaning. They require high quality offices for staff and systems – PC management stations, cashier stations, electricity panels, safes, intercoms, first aid, canteen, toilets, phones, lockers, documentation, storage – both wet and dry etc.

Good quality CCTV can help staff manage the car park efficiently. Reliable car park barrier systems are essential to the smooth operation of the facility as well as the effective capture of all revenues due.

Conclusion

Bringing an experienced professional car park operator or consultant into the design process from the first day will pay off handsomely, with reduced costs and a vastly improved final product.

Liam Keilthy was for many years CEO of Park Rite Ltd and today provides his expertise to a broad range of customers through his consultancy practice Parking Consultants Ltd.

Contact: liamkeilthy@eircom.net