

Cycle & Pedestrian Routes within Car Parks

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Background

There is an increasing number of examples of cycle and pedestrian routes that pass through car parks in the UK, with a wide range of designs and approaches. Routes through car parks are relatively common and appear to operate with few significant safety concerns.

This note aims to highlight the key issues that need to be considered when designing a cycle route within a car park and to illustrate how routes have been achieved in practice.

It is applicable both to

- the design of a new car park to ensure that cyclists and pedestrians are properly accommodated, and
- alterations to an existing car park to improve provision for cyclists and pedestrians or to accommodate a through movement.

Review of Existing Situation

Designing and assessing the impact of improved provision for cyclists and pedestrians within a car park will need to take account of how the existing situation operates or, in the case of new-build, the proposed design. For example, a station car park generates a very different pattern of movements from one at a supermarket or a recreation ground.

Any car park also generates pedestrian movement associated with the parking, but with varying degrees of provision for them. There will also be existing cycle movements to access cycle parking provided for the land uses that the car park itself serves.

The first step is to develop an appreciation of the current operation of the car park, including pedestrian and cycle movements. This initial assessment will include a wide range of factors, notably:

- Characteristics of vehicular movement: times of day, turnover of spaces, length of stay.
- Size of car park
- Type of land uses served
- Vehicle speeds
- Level and type of pedestrian use: ages, families, shopping trolleys
- Current provision for pedestrians
- Level and type of cycle use
- Current provision for cyclists
- Presence of CCTV surveillance
- Design of entries and exits
- Connecting into suitable routes outside the car park

Car Park Design

A car park layout should be simple and clear to understand to assist drivers, cyclists and pedestrians. Designing car parks can be expected to take into account:

- vehicle and pedestrian access (note that a cycle is a vehicle)
- personal safety
- vehicle security
- appropriate materials and landscaping

- the amenity of adjacent areas

Car parks are generally not public highway and as such are not subject to national design guidance or standards, such as the Traffic Signs Regulations and General Directions or Highways (Traffic Calming) Regulations. However, in as much as this guidance attempts to promote best practice and given that designers will still need to exercise a duty of care, many of the principles of good design are likely to be applicable within a car park.

This means that more innovative options, such as shared use zebra crossings and non-standard traffic calming, are easier to implement and need no special authorisation as they are not on the public highway. In other words the designer of the car park has greater flexibility in the features they choose to incorporate.

The characteristics of vehicular and pedestrian movement in car parks are very different to those on the public highway. Whilst the speeds designed for in a car park are much lower, designers also need to be aware of the higher potential for unpredictable movements by pedestrians and the high level of cars reversing.

It is likely that a car park will have been designed to maximise the number of parking spaces within the land available, so taking space from the car park will generally entail loss of car parking. Where space is at a premium, segregated provision for pedestrians and cyclists may be all the more important due to the heavier usage of the car park.

Changes to be Accommodated

If changes are being considered for an existing or proposed car park, the reasons for these changes need to be clearly identified, as a combination of:

- Improving provision for existing movements
- Creating new accesses into the car park for pedestrians / cyclists
- Designating a route through part of the car park for pedestrians / cyclists not accessing the land uses served by the car park

An assessment will then be required of how this is expected to change the existing situation. To do this consideration will need to be given to:

- Desire lines for additional cycling / walking trips
- Level of cycling / walking and times of day
- Types of cyclist
- Types of pedestrian
- Relative safety of alternative options

Design Principles

As with other urban mixed-use situations, designs should allow for cycling and walking to be included within car parks and in many cases few additional measures should be required. The introduction of additional cyclists requires that drivers are aware of their presence, since existing levels of cycling may be low and cyclists will generally be travelling faster than pedestrians. Good design should ensure that drivers can expect and will look out for cyclists and pedestrians using a designated route, whether this is shared with cars or segregated.

Local Transport Note 2/08 details five core principles which summarise the desirable design requirements for cyclists and pedestrians:

- Convenience
- Accessibility
- Safety
- Comfort
- Attractiveness

These criteria apply to routes through car parks as much as elsewhere.

In the case of a car park, specific consideration should be given to:

- Location and type of cycle parking
- Legibility of the designated route for cyclists
- Personal security
- Whether a shared use route segregated from motor traffic is likely to be appropriate
- Prevention of segregated routes being restricted by parked cars overhanging the sides.
- Potential conflict with cars manoeuvring into / out of parking spaces
- Unpredictability of pedestrian movements, some with shopping trolleys
- Where barriers are installed at entries or exits, provision of appropriate cycle bypasses.

Option Design and Assessment

The broad design options to be considered include:

- Sharing the aisle with cars with minimal markings
- A cycle lane marked out within the aisles used by cars, possibly with coloured surfacing
- A shared use route segregated from motor traffic, with pedestrians and cyclists either sharing space or segregated

Photos to illustrate good practice for each of these options are included in the Appendix.

There are some general design tools that may be useful in developing an acceptable route. These are similar to measures applicable in other urban mixed-use environments and include:

- Vehicle speed control (i.e. self-enforcing measures that keep vehicle speeds low)
- Route segregation (physical kerbs or by surface markings/colour)
- Signing and surface markings (marked out routes, surface colour, etc)
- Crossing designs (zebra, toucan, parallel, speed table etc)
- Exit / entry point design (protected access points, bollards, etc)

Where cyclists may be directed along car park aisles that access car parking stalls, particular consideration should be given to the amount of manoeuvring, and particularly reversing, likely to be occurring at any one time.

Where a car park aisle is one-way, the first option to consider should be to direct cyclists along the one-way system used by cars. If this results in substantial extra distance, or if there is an established existing but unregulated contraflow cycling movement, consideration should be given to a formalised contraflow arrangement. In such cases drivers will not be expecting contraflow cyclists, so any scheme will need to be carefully designed and a contraflow lane is preferred as a means of highlighting the two-way use by cyclists.

Where a cycle route segregated from cars is provided, the presence of cyclists must be highlighted at crossing points and provision of a raised table is preferred. Segregated paths must be wide

enough for the expected cycle and pedestrian use and not be overhung by parked cars. A route segregated from car traffic is likely to be more appropriate in busy situations with high levels of car and pedestrian activity.

Where a cycle route is retrofitted into an existing car park, a risk assessment will need to be undertaken of the preferred option(s). For each hazard, this will need to identify:

- Risk
- Risk level
- Mitigation measures
- Risk level after mitigation
- Recommended actions

Examples of risks that may need to be considered in a car park situation include:

- Conflict with reversing cars
- Conflict at car park entrance / exit
- Proximity to car doors
- Locations where cycle / pedestrian route crosses traffic route
- Unpredictability of pedestrian movements
- Locations with restricted visibility
- Any sections with contraflow cycling
- Parked cars obstructing cycle route
- Personal security at times when the car park is lightly used

This would supplement any Safety Audit of the preferred scheme undertaken by the local authority as part of the design process.

Conclusions

Experience shows that it is usually straightforward to incorporate a route for cyclists and pedestrians through a car park and they can operate safely with cars.

In developing proposals the following principles should be followed:

- A car park layout should be simple and clear to understand to assist drivers, cyclists and pedestrians.
- Designs should allow for cycling and walking to be included safely within car parks and in many cases few additional measures should be required.
- Good design should ensure that drivers can expect and will look out for cyclists and pedestrians using a designated route, whether this is shared with cars or segregated.
- The design tools for developing an acceptable route are similar to measures applicable in other urban mixed-use environments.
- The designer of a car park has greater flexibility in the features they choose to incorporate than for on highway schemes.
- If changes are being considered for an existing or proposed car park, the reasons for these changes need to be clearly identified and their likely effects assessed.
- The choice of provision will take account of the current operation of the car park, considering a wide range of factors.
- A route segregated from car traffic is likely to be more appropriate in busy situations with high levels of car and pedestrian activity.
- A risk assessment should be undertaken of the preferred option(s).

Appendix: Examples of Cycle Routes in Car Parks

A – Shared with Cars



B – Segregated from cars





IKEA, Eastwood, Nottingham



Park and Ride car park, Newmarket Rd, Cambridge



ASDA, West Bridgford, Nottingham



Weymouth, Dorset



**Haddenham, Buckinghamshire
(retrofitted, parking moved)**



Weymouth, Dorset

C – Contraflow Cycling

