

Traffic Advisory Leaflet 5/02
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Key elements of cycle parking provision

Introduction

This leaflet aims to provide best practice on cycle parking provision, management and location. It draws on a report produced by Dave Holladay of Transportation Management Solutions, for Southampton City Council. The Department for Transport is grateful to Southampton City Council for allowing reproduction of material from the report.

Provision of good quality cycle parking is a key element in encouraging people to cycle more. In a study by the Automobile Association entitled *Cycling Motorists*, 86% of cyclists interviewed considered that there was insufficient cycle parking in public spaces, and equally high numbers said that they would cycle more if secure cycle parking was available. Surveys of cycling to workplaces (Manchester Airport) and rail stations (Centro) have identified secure cycle parking as the most important factor in making the decision to travel by bicycle.

In the absence of formal parking provision, cyclists often use railings and other fixed structures as a securing point for their bikes. The existence of bikes parked in such a way is usually evidence of a distinct need for cycle parking.

When cycle parking of appropriate quality is sited in a key destination it will rapidly attract users. Conversely, cycle parking installations that are not convenient to the cyclists ultimate destinations or where security is perceived to be poor are often vandalised or stand empty.



Example of cycle parking provision

Trip Purpose

The bicycle is a flexible means of transport, offering considerable mobility for local trips. However, the parking needs of cyclists vary depending on the purpose of the trip. Cycle parking providers need to be aware of this before deciding where to locate their parking and what form it should take.

There are five broad bands of bicycle trip purpose:

1. **Collection and delivery of items:** Providing ride-in facilities may reduce the risks caused by bikes clustered around entrances to buildings or lying on pavements. Parking for such short stay users does not necessarily need to be very secure, but it does need to be near the entrance of, or inside, the place visited.
2. **Shopping type visits:** The rider may be away from the bike for as much as an hour, and ideally should be able to observe the bike. Groups of cycle stands should be located at regular intervals, so that the bike does not have to be parked more than a short walk from the final destination.
3. **Meetings and appointments:** Use is often irregular and can be for long periods, up to a whole day. Users favour locations where lighting and surveillance are perceived to be good - usually at or near to main building entrances.
4. **Workplace:** This is all-day use on a regular basis. Demand for such parking is more likely to justify grouping of racks, often within areas where there is controlled access, CCTV, monitoring, or individual lockers.
5. **Domiciliary parking:** This requires high standards of security for parking, and should aim to avoid the need to take bikes a long way into the building. This category includes locations such as university halls of residence, or at hospitals for staff who live on-site.

Location

Location plays a key role in persuading cyclists to use cycle parking. Cyclists prefer not to walk further than they need to, and generally do not divert more than 20-30m for the purpose of short term parking. However, they will be willing to divert further for longer term parking. Again, brightly coloured new stands were placed under the cover of Eastleigh stations front canopy en route to the trains as part of the then DoT Cycle Challenge initiative - see photo above. Existing users transferred and the cycle count increased four-fold. The introduction of covered parking for both short and long stay parking may influence cyclists choice of parking locations.



New stands at Eastleigh station

Poor location of cycle parking can also lead to cyclists having to battle against a heavy pedestrian flow when retrieving a bike. This sometimes happens at rail stations, for instance when the cycle parking has been located at the end of one of the platforms: typically a cyclist then has to cross a busy concourse and make trips up and down the platform to deposit or retrieve the bike.

Informal cycle parking can cause danger to pedestrians, especially people who are blind or have mobility impairments. Poorly sited formal cycle parking placed, for example, in the middle of the footway, can be equally dangerous. There are several measures that can be taken to minimise conflict between pedestrians and cyclists:

- Tactile surfaces around cycle parking provision
- Cycle parking placed on slightly raised slab plinths with a feathered edge in contrasting colours from the existing footway
- Cycle parking placed on the median zone between carriageway and footway, along with other street furniture
- Miniature hoops to deflect pedestrian flows at cycle stands, which are themselves angled to minimise intrusion
- Providing a tapping rail (maximum height above ground 150mm) so that an empty rack cannot be walked into
- Banks of three stands, with the middle one carrying a sign at eye level
- Location of parking stands on kerb build-outs at junctions
- Incorporating advertising and lighting with the stands. Good localised lighting can also add security at locations used at night by cyclists.



Images of 'Sheffield Stands'



Images of 'Sheffield Stands' (2)

Devices and Systems

Sheffield Stand

The Sheffield Stand (an upturned U), has become almost universally specified by groups lobbying for cycle parking. It has the virtues of simplicity and value for money, and its generic nature allows for great variation. The Sheffield Stand is a very basic form of parking which is ideal for short term parking for all types of cycle, though it is not always the best option for long term and high density parking. It is generally a tubular metal unit secured to the ground in a visible location.

There are a variety of designs, but generally the stand creates a horizontal bar 750-800mm above the ground, with two vertical supports (the height may be reduced where children are the main users). In its simplest form, it is a U shaped tube, ideally between 37mm and 80mm in diameter. The larger tube sizes tend to be more secure, as there is less space to lever apart the widely used D shackle lock.

There is a great need for clear specification, since every location will have certain requirements, such as tapping rails, advertising boards, or colours which either allow the stand to blend into the background or do the opposite, depending on siting.

- Avoid stand heights of over 800mm, as they do not support smaller bikes.
- A lower crossbar/panel can provide support for childrens bikes, and accommodate the habit of some regular users of leaving their locks on the cycle stands
- The stands should be 900-1200mm long to support the bike at or near axle centres. Without sufficient length, the lack of support allows the bike front wheel to lie to the side, making the parking less compact and increasing the risk of the bikes falling down forming a trip hazard.
- Toastracks are easy and cheap to fix to flat, hard surfaces such as pavements and platforms by means of a few fixing bolts, without the need to excavate holes. They can be easily relocated if necessary.
- Suitable space should be provided between stands to allow the cyclist to get alongside the bike to lock it.
- The use of raised setts or tactile paving to replace surfaces locally around an installation gives a warning of footway obstruction, and may eliminate the need for a protective barrier.

Most installers think in terms of a 20 year life for units, possibly with a mid-term repaint. Thus finish and weathering are significant factors in initial selection. The coating of stands in a material which will not chip the paint off cycles is also worth considering. An alternative in maximising the life of a stand is for it to be made of polished stainless steel.

Whole life considerations should also include the removal of dumped bikes, and the clearance of debris, which will normally be achieved as an extension of normal street cleaning activity, but which may require special consideration.

When deciding on the location of cycle parking, it is important to remember how far the bike will extend beyond the stand. By angling the stands, the obstacle width can be reduced to 700mm at most. Racks too close to walls will cause the wheels to stick out and interrupt pedestrian flow, as well as making the bike vulnerable to knocks and preventing secure locking. A useful design detail is to have all street furniture in a strip adjoining the carriageway, thus keeping pedestrian routes clear. In some locations cycle parking can be placed between phone boxes, providing convenient short term parking for phone box users, whilst also deflecting pedestrian flow around this prominent feature, with appropriate measures for visually impaired people. Other locations have used vertical information pillars to direct people around cycle parking. This also has the benefit of identifying the location of cycle parking above the heads of crowds, and parked cars.



Another type of cycle parking

Other designs of passive unit can provide equivalent degrees of support - a commissioned design for Cheltenham Council parks 6 bikes with just one post set in the ground.

Lockable Cycle stands

A wide range of lockable cycle stands is available. These stands secure both the frame and wheels of a bike, either with a built-in locking system or with a padlock or D-shackle supplied by the user. Whilst they generally have a lower parking density than standard Sheffield stands, they can be faster to use and offer greater levels of security.

With designs that incorporate moving parts, it is important to ensure that the individual components cannot be readily prised apart or used as leverage points. Lockable stands can also cost up to four times as much as Sheffield-type stands to install and maintain.

- Cycle rack devices with slots or grooves below ground level for part of their operating mechanism collect water and rubbish very easily, and need to be regularly cleaned.



Bicycle storage



Cycle lockers

Wall Loops

Wall loops, and anchor points are simple, cheap and convenient alternatives to stands where there is limited pavement space and where there is a substantial length of wall. In addition to this, they are almost maintenance free, although they must be fixed firmly. Cycle Friendly Infrastructure (see References), states that wall loops should be 700- 750mm from the ground, project no more than 50mm from the wall, and be set at a minimum pitch to park a bike every 1800mm or run as a continuous rail. Wall loops may not be suitable for all users, and are not favoured by some cyclists.

Lockers

Lockers combine speed of parking with weather protection and high levels of security. Of all cycle parking provision, lockers require the greatest level of management commitment. Good lockers can be expensive both to buy and install, and the opportunities for abuse are greater, so controls must be stronger. Liabilities for securing contents must be more clearly defined than for open parking. The ability to search a locker and to trace a user is important for security reasons.

The widely preferred system is a medium/long term hire regime. However, such a regime requires an explicit agreement with users, which should:

- Define the users responsibilities in keeping the door shut at all times when leaving the locker, storing only bikes and related accessories, and reporting any problems with a minimum of delay.
- Set penalties for misuse and termination conditions - return of keys; forfeit or refund of deposit; fines for ending an agreement before term.
- Obtain user contact details, waivers for inspections and set out providers liabilities.
- Set out the locker owners obligations to provide a secure locker, including transfer in the event of damage to the locker.
- Ideally lockers should be available late at night so locations will need to be well lit.

- Offer added value incentives, such as options of insurance cover for parked bikes and locker users (eg block third party liability assured through national cycling organisations).

Lockers require great attention to access and cleanliness. Some operators opt to have clearance under the units to use a high-pressure water jet to clean out leaves and other debris. A clearance will help to make a locker unattractive for warehousing and sleeping, eliminate unsightly moss growth/corrosion and ventilate to remove smells and moisture from wet bikes/clothing. Other design details (eg flat and unbraced roof panels which can be damaged from being stood on and get tide marks from standing water), can influence the costs of maintaining the appearance and operation of a site.

The following should be considered in the costing of a locker installation:

- The cost of site preparation (levelling etc), and adjustment of units on sloping sites.
- Delivery and installation costs, including future expansion or relocation of units.
- Ventilation and hygiene - ease of cleaning and airing the space (wet bikes)
- Durability of finish and ease of graffiti/ bill-posting removal.
- Opportunities for advertising revenue - especially with vertical lockers
- Spares and service parts (especially lock or key replacement/management costs).
- Ease of use - if the locker takes too long to use, it offers little advantage over open stands.

Staffed Facilities

The examples that exist of staffed cycle parking in the UK suggest that there is little potential for a cycle parking facility on its own to be commercially viable. Most successful units are associated with either a bike shop or some other compatible trading outlet. There are a few such cycle centres in this country (for further details, see TAL 5/98). Cycle centre proposals will usually be assessed from known demand for existing cycle parking, and allow for seasonal increases driven by weather and daylight hours.

Unstaffed Facilities

Secure cages or buildings can be used by employers to provide greater security for staff who cycle to work, or at public transport boarding points. Access may be by key or by swipe card. Cages may well be used where there is usable space below the suspended floor of a building, although full enclosures offer greater weather protection. It is prudent to limit the number of users, and have more than one unit if a large number of places are needed. Where access to parked bikes is through a security control, cycle racks which maximise parking density can make best use of the space, as individual locking of bikes may not be required.



Cycle sheds (secure cages)

Detailed guidance on installation and design criteria can be obtained from the Bike Parking and Security Association (BP&SA). The BP&SA have produced standards for cycle stands and are working on standards for cycle lockers. For contact details see the References section of this leaflet.

Signing

It is highly desirable to make the existence and method of use of cycle parking facilities obvious. Studies have shown that where one or two bikes are parked initially (especially where the site gives an air of organisation and security), many more will quickly appear. New facilities may require a promotional campaign in order to establish regular users. For example, it is helpful to

make the parking facility easily noticeable, and perhaps install a display panel explaining use. For lockers information should be given on how to hire them.

The Traffic Signs and General Directions signs manual has a series of prescribed signs for cycle parking on the public roads system. The benefit of using recognised highway signs, or a convention standard to the establishment concerned, is that it carries the image of a planned and managed scheme.

Management and Maintenance

When cycle parking has been installed, it needs to remain attractive. Paintwork should be kept clean, there should be no leaves or litter around the parking, and it should be kept free of abandoned bikes. Parking equipment which is damaged, or contains abandoned bikes, will discourage potential users. The whole life cost of cleaning and maintaining the facility must be considered in the selection and placing of equipment.

Cycle parking management should be active. Open stands can benefit from notices indicating that bicycles continuously parked for periods exceeding x number of days may be removed and disposed of within the normal conditions for abandoned property (usually held for a period and then sold, scrapped or recycled). Care should of course be taken that the weeding out of disused bikes does not include any legitimately parked bikes.

Signs and user information can also promote good practice, both in terms of consideration (do not lock through another bike), safety (avoid obstructing passageways) and security (advise on locking detachable parts).

Street parking is exposed to the elements, so any moving parts requiring lubrication or adjustment would have to be subject to an active management regime. Moving parts are easy targets for vandalism. This is why the simple Sheffield stand is often the most suitable type of parking for an open public environment, unless there is close surveillance.



Bicycle stands

Coin release keys, which tend to offer few security advantages, can pose liability problems. If a hirer loses the key, it is a risk to release the bike against a description. Lockers have an advantage here, in that it is more difficult for a prospective thief to describe accurately what is inside.

Evidence suggests that locker systems that have been offered as open access, often fall quickly into disrepair. Active management is therefore required. This need not be a burden on the staff of the site owner, as the work could be contracted to a voluntary organisation, and may even offer opportunities for commercial operators operating on a regional or national basis. In rare instances where there is very high demand for cycle parking, automated systems can provide a solution.

Conclusion

Cycle parking should not be a quick spend with instant publicity and no follow-up, as this rarely fulfils user needs, and often the facility will end up empty and vandalised. Instances have also occurred where cycling trips are discouraged by the lack of capacity. To be properly used, the range of solutions should reflect the wide range of trip purposes. With proper planning and specification, sites are shown to generate increased cycle use by example. The consideration of a whole life package is, however, a key element if the momentum is to be maintained.

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Bike Parking and Security Association, Marsili Court, 22 Palace Road, London, SW2 3NQ Tel: 020 8671 4483 Email: bpsa@pro-net.co.uk

References

Cycle Friendly Infrastructure, IHT and others, 1996

TAL 7/97 - Supply and Demand for Cycle Parking

TAL 11/97 - Cycling to Work TAL 5/98 - Cycle Centres

TAL 6/99 - Cycle Parking: Examples of Good Practice

TAL 11/99 - Improved Cycle Parking at South West Train Stations in Hampshire

TAL 8/01 - Promoting a Successful Cycling Project The Challenge

TAL 9/01 - The Nottingham Cycle Friendly Employers Project

Stop them taking your bike for a ride, NCF, 1998

Issues for Public Transport Operators and Planners, NCF, 1998

Cycling Works (advice for employers), NCF, 2001
Cycle Security, NCF, 2001

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