

C.04 Cycle Parking

Key Principle

The inclusion of 'Sheffield' type cycle parking stands should be considered in all highway traffic management and maintenance schemes.

Design Guidance

The introduction of good quality cycle parking is a key element in developing a cycle friendly environment. Cycle parking should be provided at all major destinations, including schools and other educational sites, hospitals, large employment sites, public transport interchanges and leisure attractions.



Convenient secure
cycle parking in town
centre, Oxford

Picture: Patrick Lingwood

Research has shown that it is closeness to the destination that influences a cyclist's choice of where to park, regardless of the journey purpose. Studies have also identified that the use of the bicycle as a feeder to public transport can be a valuable component of a strategy for encouraging more people to cycle. For the long-term parking that this and employment trips generate, security is seen as the major determining factor when choosing to cycle. This view is supported by rail station (Centro) and workplace surveys (Manchester Airport) that reach the same conclusion. Location and level of security may therefore be taken as the two most important issues to be addressed when planning cycle parking facilities.

A comparison of cycle parking provision at railway stations in a number of mainland European railway stations has enabled a summary of good practice to be drawn up. This, coupled with guidance drawn from several sources has been summarised in the table below. Most of the principles it contains can be applied to virtually all types of cycle parking provision. They are set out in no particular order of priority except for the first two: no matter how high the quality of the facility provided, it must be easy to find and get to with the minimum of delay and effort or it is unlikely to be used.

| Cycle parking - Good practice | |
|---|---|
| Visible | Parking facilities should be well signed, easy to find and benefit from good natural surveillance. Good siting and high quality facilities will help demonstrate the importance of cycling as a transport mode. |
| Accessible | Parking should be located as close as possible to the final destination (generally within 30m). It should be easy to get to, involving no detours, and should be well laid out with no difficult ramps or awkward stands to deal with. |
| Safe and Secure | It should give cyclists the confidence that their bike will still be there when they return. Adequate provision should be made for the bicycle to be secured with its owner's lock unless other security arrangements make this unnecessary. The facility should help users feel personally secure - those that make users feel at risk will not be used. |
| Consistently available | In places such as shopping areas, small clusters of stands at frequent intervals are usually better than larger concentrations at fewer sites. |
| Covered | The level of protection from the weather should be appropriate for the length of stay. Poor protection at long-term parking places will deter cycle use. |
| Easy to use | Parking facilities should be easy to use by all members of the community, accept all types of bicycle, and adequately support the frame. Cycle racks that require a bicycle to be lifted are often ignored in favour of locations requiring less effort, such as railings or street furniture. Bikes parked too close together can cause cables and handlebars to snag. Where provided, locking mechanisms should not be difficult to operate and instructions should be easily understood. |
| Fit for purpose | Racks and other support systems which only grip the front wheel should not be used since they provide poor stability and do not allow the frame to be secured. Also, if one bike falls it can damage not only itself but those next to it. Cycle parking should not be sited where it will get in the way of pedestrians, especially those whose vision is impaired. Abandoned bicycles should be promptly removed |
| Well managed and well maintained | Charges (if any) should be set at a level that will encourage use. Coin-operated locks should be properly maintained and not attract thieves. The process of paying charges for renting lockers etc. should be as simple as possible. Automated systems or electronic smart card operation should not create delays at peak periods. |
| Attractive | The design of cycle parking facilities should be sensitive to the surrounding area. It should also be attractive in the sense that users do not feel personally at risk because it has been placed out of sight of passers by. |

| Cycle parking - Good practice | |
|---|---|
| Coherent | It should relate well to other cycle infrastructure. There should be no road safety hazards, such as dangerous junctions or severance by busy roads likely to create a barrier to its use. Where possible, signed identified routes leading directly to the cycle parking should be provided. |
| Linked to other needs of cyclists. | Where provided at public transport interchanges or in city centres as cycle centres, opportunities to combine with cycle hire, repair and tourism activities should be exploited. |



On-carriageway cycle parking leaves footways unobstructed, Oxford

Picture: Patrick Lingwood

Statutory procedures

Part IV of the Road Traffic Regulation Act 1984 allows for the provision of off-street parking places for vehicles and authorises the use of any part of a road as a parking place. These powers are extended by Section 63 of the Act to allow provision "in roads and elsewhere of stands and racks for bicycles". A single order under this act can be used to cover cycle parking within the highway in the whole of an administrative area. However, all the individual sites must be set out in the mandatory accompanying Schedule.

In pedestrianised streets, section 115B of the Highways Act 1980 (inserted in Schedule 5 of the 1982 Act), provides for a local authority to place objects or structures on a highway for the purposes of providing a service for the benefit of the public or a section of the public. Where pedestrianised highways have been introduced under section 249 of the Town & Country Planning Act 1990, this also gives local authorities the powers to place objects or structures on the highway.

If waiting and loading restrictions are in force, bicycles (like other vehicles) may not be legally parked on the carriageway or the footway. Where such restrictions are in force, cycle parking can be permitted through an exemption within the existing waiting and loading orders, or by additional orders designating part of the road for cycle parking only.



Cycle parking on
Footway extension,
Oxford

Picture: Patrick Lingwood

Identifying Demand

Cycle parking should be provided wherever there is the potential to attract use, for example within shopping areas or at public transport interchanges. Very often, the appropriate level of provision and its location can be established by observing existing cycle parking patterns. A count of the numbers of cycle parked within a study area can be used to give an indication of how many formal parking spaces are required. However, any suppressed demand also needs to be taken into account. If all the informal parking places are regularly taken, it is likely that suppressed demand exists.

When new parking facilities are introduced these should aim to meet the existing demand (including suppressed demand), and provide capacity for future growth. A local authority should regularly monitor the take-up of new cycle parking to ascertain if demand is growing. Growing demand should be met by regularly increasing the number of parking places.

Parking standards for new development

Each local authority should have cycle parking standards for new development. The amount of parking required will depend on the current level of cycle use within the authority, the nature of the development, floor area of buildings etc.

Manual for Streets:

8.2.1 Providing enough convenient and secure cycle parking at people's homes and other locations for both residents and visitors is critical to increasing the use of cycles. In residential developments, designers should aim to make access to cycle storage at least as convenient as access to car parking.

The current level of cycle use may be determined by considering a range of factors, including;-

- **Census data** Although only produced every ten years this data is a good guide to cycle use for journeys to work at the time of the survey. The figures should be adjusted to allow for the fact that the census returns record the principal means of travel and journeys such as those to rail stations by bicycle will not be included as bicycle trips.
- **Travel Plans** Workplace and school travel plans can provide an indication of cycle use where the plan includes a regular programme of monitoring. A travel plan which includes regular monitoring of modal split and occupancy of cycle parking spaces can be made a requirement for obtaining planning consent. If so, it can be used to enforce the condition that additional cycle parking must be provided to match growing demand.
- **Modal split data** Work done by an authority to establish modal share for different types of journey and trip lengths, such as household or travel surveys, can inform this process.
- **Traffic counts** An authority's regular traffic counts and surveys to establish levels of cycle use and trip lengths can be a valuable source of information on trends and the setting of targets. Cycle surveys should include parking levels, both on-street and at selected employment/educational establishments, as well as recording the numbers of cyclists passing a census point.
- **Demographic data** Data on patterns of commuting, both in and out of the area plus typical catchment areas for employment or education can be helpful in setting standards.



Cycle parking at health centre, Oxford

Picture: Patrick Lingwood

Examples of local authority standards may be found at:

[Essex](#)

[Westminster](#)

[Cambridge](#)

Types of cycle parking provision

There are several ways of providing parking facilities for cyclists. Each has its own advantages and drawbacks.

Sheffield stand

This type of stand is named after the city where the design was first developed and used. It is a simple and effective design, based on an inverted U-shaped metal tube. The Sheffield stand is widely acknowledged as being the best performing design for bicycle parking and is recommended for most parking applications. When properly installed, Sheffield stands provide high levels of bicycle frame support and security. They are cost-effective and easy to install and maintain. If installed under shelters or within buildings or other sheltering arrangements, all the basic functional design criteria for good cycle parking can be met.



Covered Sheffield stands,
Peterborough,

Picture: Rob Marshall

Key dimensions are:

Length 700-1000mm (700mm recommended);

Height 750mm (+/- 50mm);

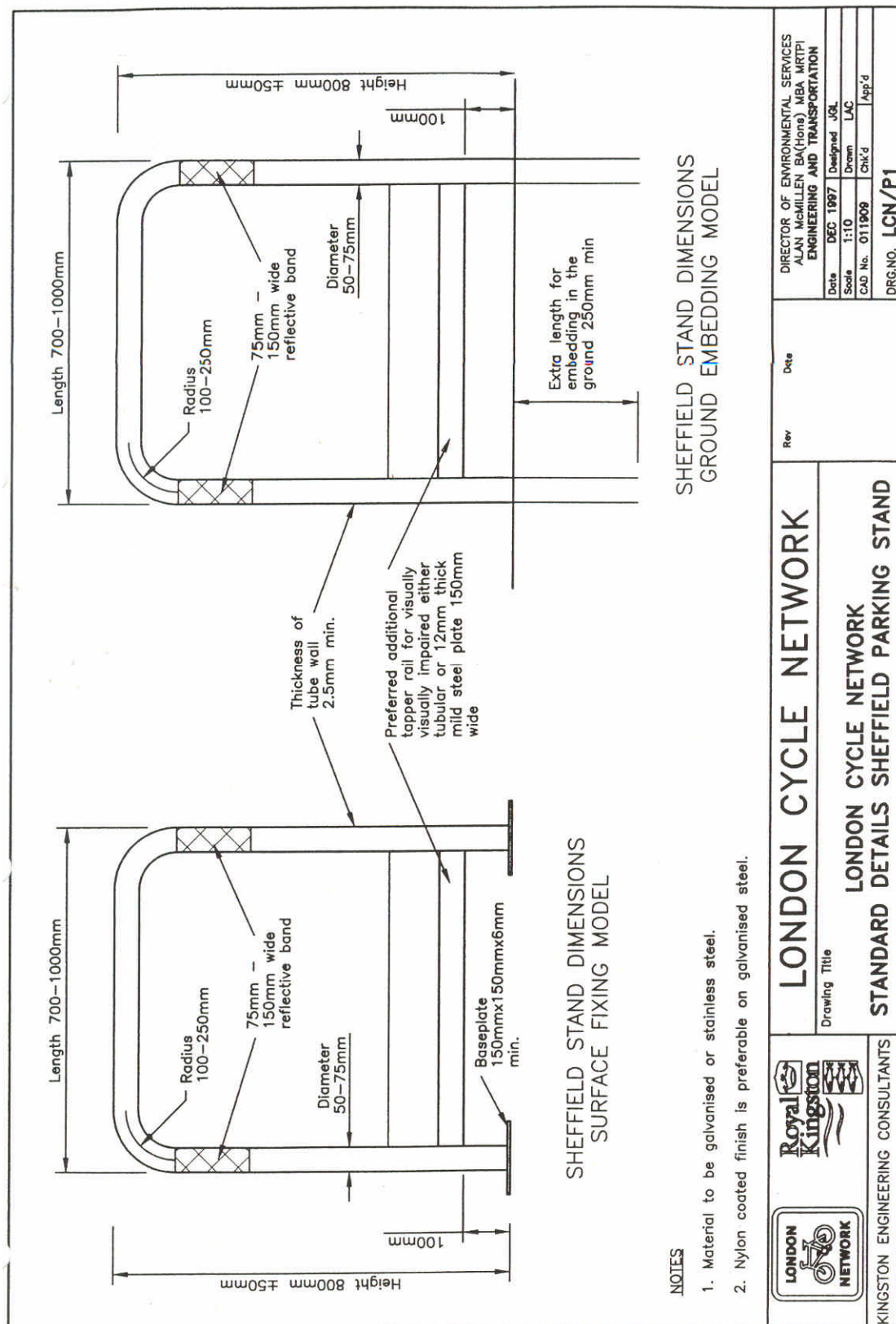
Tube diameter 50-90mm (larger diameter is more secure since there is less space to lever apart 'D-type' locks);

Corner radii 100-250mm;

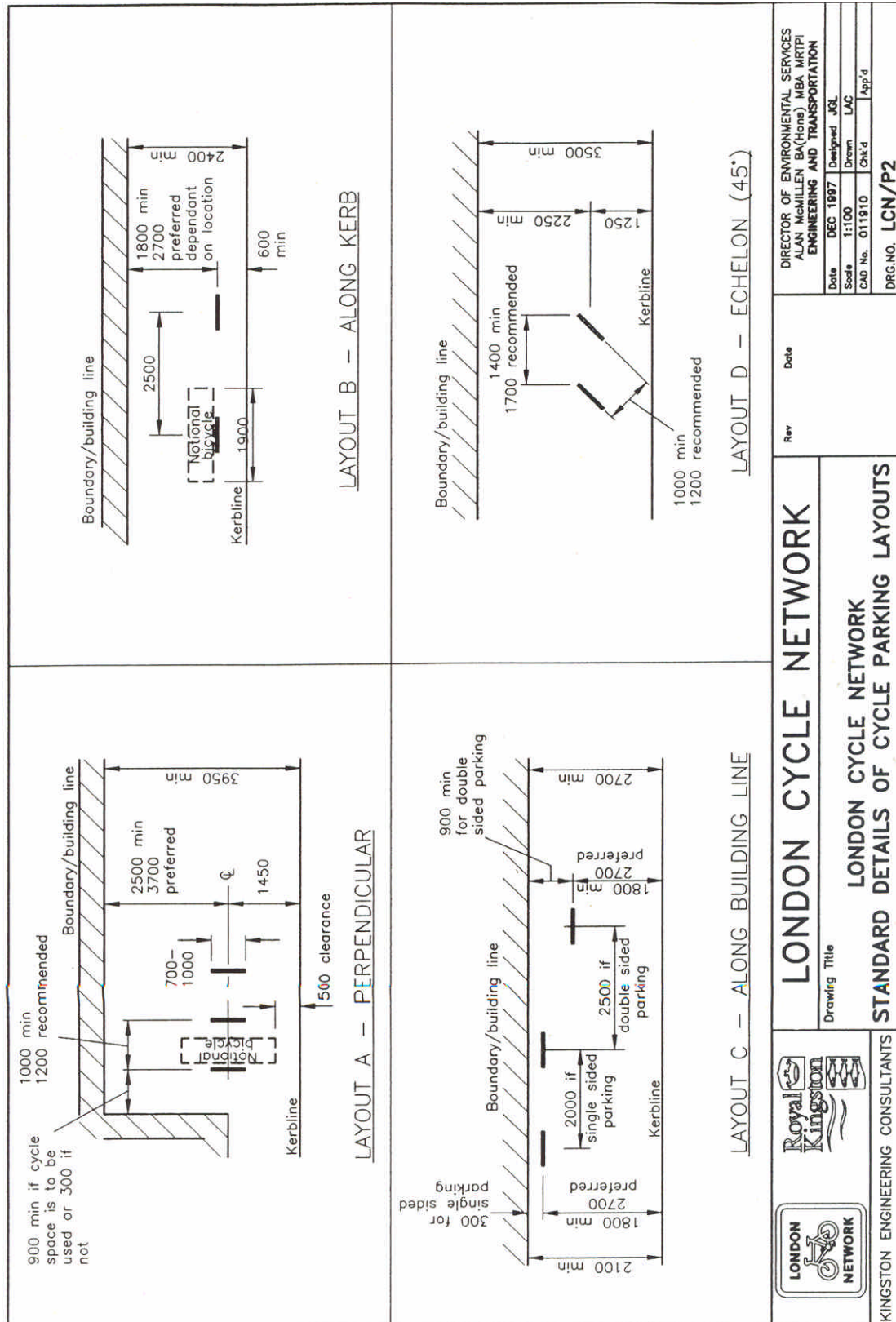
Fixing - If the stand is fixed to the surface using base plates, 2 security bolts passing through each base plate are required.

In order to comfortably accommodate two bicycles, stands should be set a clear distance of 1000mm apart.

See diagrams below for further information.



Sheffield stand details and key dimensions



Sheffield Stand layout variations and key dimensions

There are many variations on the basic Sheffield stand design. The most useful is the addition of a crossbar (which provides extra security and support for smaller bicycles) and a low-level tapping rail (to aid visually impaired people). 'Toast-racks' of Sheffield stands, comprising usually 3 to 5 stands joined together by additional ground-level bars, are easier to install but are not as aesthetically pleasing or convenient to use. Sheffield stands can be supplied in a range of colours and finishes. They can be specified with a durable coating (preferably plastic) which is kind to bicycle frames while requiring little maintenance. Stainless steel finishes are becoming increasingly popular.



Stands formed from
bollards and
horizontal bars

Picture: Tony Russell CTC

Sheffield stands at
Cambridge Station,

Picture: Rob Marshall



Sheffield stands can be equally attractive to motorcyclists, especially if there is insufficient formal provision to suit their needs. If they are using the stands, it may be worthwhile providing additional parking for motorcycles nearby.



Secure cycle parking for staff,
Peterborough

Picture: Rob Marshall

Sheffield stand with
tapping rail and
contrasting banding at
beginning of row

Picture: Tony Russell CTC



Wall mounted designs

Wall loops, bars and locking rings are simple and cost-effective. They require less space than a conventional stand although usually only one bicycle can be accommodated per device. Once installed, they should be maintenance-free. They are best suited to short-stay parking needs. They should be located where passing surveillance and/or CCTV enhances security. Designs range from simple rings to more complicated racks and hanging devices. The latter generally offer much less security and may therefore only be suitable for secure areas. 'Wheel-grabber' type designs are not recommended. Agreements (or easements) with property owners may need to be obtained where devices such as these are intended to be attached to walls.

Key dimensions are:

Height 600-750mm from ground level;

Project no more than 50mm from the wall;

Spacing intervals of 1800mm.



The "Oxford Ring" provides cheap useful cycle parking, Oxford

Picture: Patrick Lingwood

Space saving designs

High density, space saving designs are available from a range of suppliers. They may be wall-mounted or free-standing with some requiring physical lifting or hoisting. Some are spring-loaded to make lifting easier. The security of these devices is generally limited which restricts their application to work places in already secure compounds or cages. Maintenance and vulnerability to misuse are additional issues that make them less suitable for public parking.

Two level, spring assisted cycle rack used for staff parking

Picture: Tony Russell CTC



Cycle lockers

Lockers are useful for longer stays. The better designs offer greater security for the bicycle and for lights, pumps and other accessories which normally have to be removed when using stands in public places. Weather protection for the bicycle and additional storage for helmets, panniers, clothing, etc., are further benefits. Lockers are typically made from steel or other materials to form rigid, secure enclosures. Several locking options are usually available including keys and padlocks, smart-cards and number key-pads.

Lockers, however, require some form of supervision and management if they are to be well-used and not suffer from abuse or vandalism. They are suited to staffed locations such as the ground floors of multi-storey car parks (where close to destinations) and stations or workplaces. Unless there is adequate surveillance or CCTV, lockers are not recommended for open public places.

The management of cycle lockers is an important aspect to their ultimate use and success. Some form of registration or contract scheme, often based on an appropriate but modest monthly fee, should ensure that the facility is well used. A charge of between 50 pence and £1 is considered by many cyclists to be reasonable. Inconvenience and cost tend to deter cyclists from using them. Cycle lockers, in common with other forms of cycle parking, must be located close to cyclists' destinations if they are to be well used.



Cycle lockers at Park and Ride site, Taunton

Picture: Alex Sully

Aspects to consider when deciding upon and choosing lockers include:

- the need for long-stay parking and potential demand/use
- cost
- ease of use and general access
- management/administration
- door locking mechanisms and systems
- the need for a flat and level site to install them
- the need to conceal fixings and make them tamper-proof
- ventilation and hygiene issues (e.g. can they be pressure washed?)
- enclosure rigidity, quality of construction and trouble-free door operation
- modular construction and ease of adding more units

Other designs

There is a growing range of cycle parking products available. When considering them, an assessment on aspects of security, ease of use, maintenance, purchase and installation costs, should be made. Generally, the more complicated the design (e.g. moving parts and integral locks, etc), the more prone they are to some kind of failure. Overcomplicated designs tend not to get used. Cyclists prefer to use their own locks.

Wheel slots in concrete are probably the worst kind of provision and are seldom used by cyclists. Arrangements which only grip one wheel (often wall-mounted or incorporated into stands) are not recommended under any circumstances. They offer minimal opportunities to secure a bicycle (often only via a single wheel) and the wheel is prone to accidental and deliberate damage.



Wheel slots are virtually useless and are not recommended under any circumstances

Picture: Rob Marshall

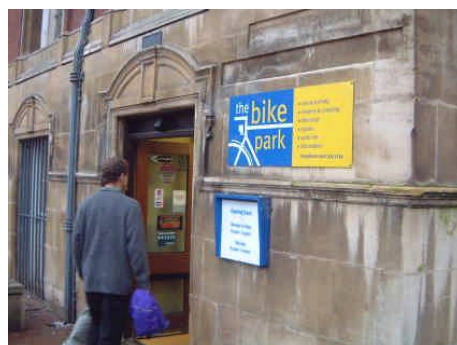
Sheffield stands are more popular than wheel grips, Oxford

Picture: Patrick Lingwood



Cycle Centres

These facilities are popular on the continent, particularly in the Netherlands and Germany where they typically provide space for between 1100 and 4000 bicycles. There is usually a full-time member of staff in attendance. In addition to secure and convenient parking, they often offer a range of other services including cycle hire, sales, service and repairs, local and tourist information. A newsagent type shop may be included as an integral part of the facility to enhance viability.



Leicester Bike Park

Photo: Tony Russell

From an examination of examples of staffed cycle parking in the UK, it would appear that there is limited potential for such a facility to be commercially viable on its own unless its position coincides exactly with where cyclists want to be e.g. right in the middle of the town centre or at a transport interchange. Most successful units are also associated with either a bike shop or some other trading outlet. There are a few cycle centres in the UK and their operation is described in TAL 5/98.

A covered, staffed, cycle park comprising of 125 automated lockable cycle racks, operated by a smart card system, opened at Finsbury Park Interchange in March 2006. This was created as the result of a partnership between Transport for London, the rail operator, London boroughs and other agencies as part of a London wide interchange improvement programme. The facility boasts 24 hour access to smart card holders and has over 300 registered users (as at Nov 2006). The use of smart cards creates the opportunity to achieve more than 100% capacity in terms of the number of cards issued. This capability is achieved because not every cyclist wishes to park at the same time and no rack is assigned to an individual user, thus making it available to any card holder when unoccupied. The charge for parking is 50 pence for each 24 hours parked (as at Nov 2006).

Staff are in attendance during the following hours in order to issue smart cards, top up credit on the cards and help with any queries:

- Monday to Friday 06:00-10:00 and 16:00-20:00
- Saturdays and Sunday 08:00-18:00



Finsbury Park Cycle Station – access is made secure by the use of smart card control

Picture: © Alex Sully



Finsbury Park Cycle Station –bicycles parked in individual smart card controlled racks

Picture: © Alex Sully

Cycle Parking Quality Standards

The Bike Parking and Security Association (BPSA) has set standards for the manufacture of secure and convenient cycle parking equipment to be used in the public domain. This includes general town centre cycle parking, cycle parking provided at public and leisure facilities, and cycle parking provided at transport facilities and interchanges. The BPSA standard also recognises that the criteria for the provision of suitable cycle parking facilities extend beyond the design and construction of individual units. This includes such factors as location, overall layout design, and integration with the surrounding environment.

Manufacturers of cycle parking hardware who are members of the BPSA can claim that their products meet the BPSA Quality Cycle Parking Standard. Before any cycle stand can receive BPSA approval, the manufacturer must demonstrate that the product complies with certain standards of design, security and service life. These requirements and a list of members can be seen at www.bpsa.info.



Covered Sheffield stands at an out-of-town health centre, Taunton

Picture: Alex Sully

Publications

[*Cycle Parking Supply and Demand*](#) TRL Report 276

[*Bike and Ride – Its Potential value*](#) TRL Report 189

[TAL 11/99 Improved Cycle Parking at South West Trains' Stations in Hampshire](#)
DfT 1999

[TAL 6/99 Cycle Parking Examples of Good Practice](#) DfT 1999

[TAL 7/97 Supply and Demand for Cycle Parking](#) DfT 1997

[Workplace Cycle Parking Guide](#) (pdf - 448kb) Transport for London 2006

[Quality Cycle Parking Standard Issue 1](#), (pdf - 237kb) Bike Parking and Security Association, November 2003

[Cycle Parking](#) (pdf - 791kb) Sustrans information sheet 2004

[Policy, Planning and Design for Walking and Cycling](#) – Local Transport Note 1/04, Public consultation Draft, DfT 2004

[Traffic Signs Regulations and General Directions](#) DfT 2002

[Cycling England, Engineering, Picture Gallery](#) (pictorial examples)

[London Cycling Design Standards – A guide to the design of a better cycling environment](#) (Sections 3.4, 3.5, and 3.6) TfL 2005

[Lancashire - The Cyclists' County](#) (pdf - 5.45Mb) (Section 3) – creating pleasant road conditions Lancashire County Council, 2005

[CTC Benchmarking – Best practice case studies](#)

[National Cycle Network – Guidelines and Practical details, Issue 2](#) Sustrans 1997

Other references

TAL 5/98 Cycle Centres DTLR 1998

[Cycle Friendly Infrastructure - Guidelines for Planning and Design](#), Bicycle Association et al 1996

[Cycle Security](#) (pdf – 218kb) National Cycling Forum 2001

Cycle Parking – Principles of Best Practice Alex Sully Velo Borealis 1998