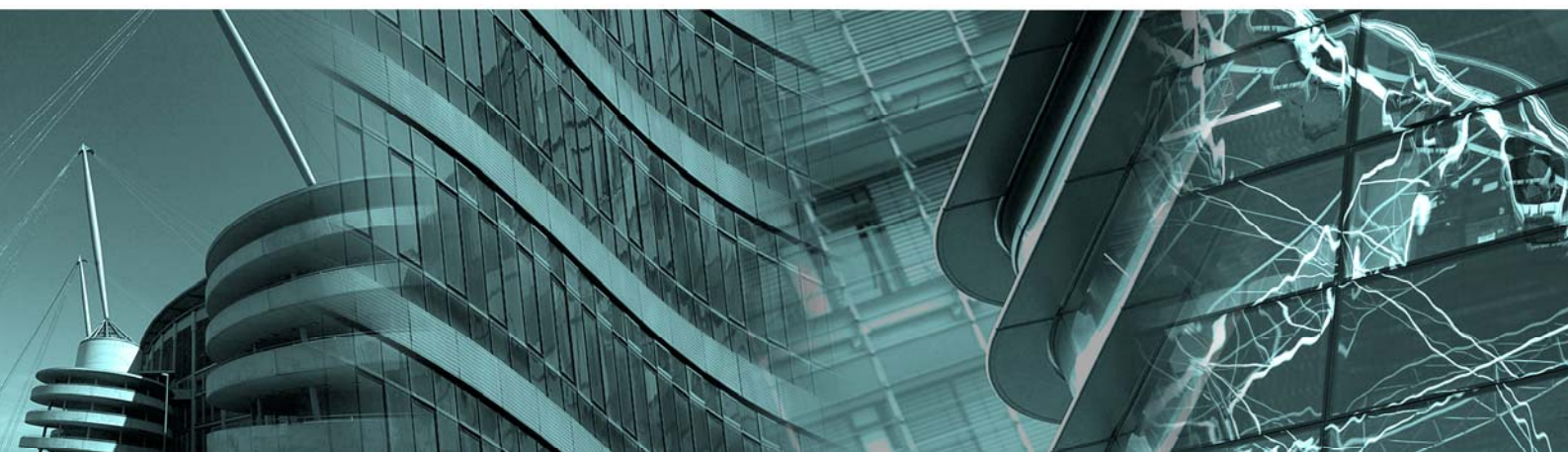


Greater Manchester Police

design**for**security

Cycle Parking Design Guidance

Revision A / October 2009



Cycle Parking Design Guidance

Thank you for downloading the Design for Security – Cycle Parking guidance document. Within this PDF are recommendations with regards to the design and specification of cycle parking and storage equipment.

This document provides design advice for locating and setting out new cycle parking facilities, as well as exploring the following methods of cycle parking/security:

- **Cycle Stands**
- **Cycle Racks**
- **Wall-Mounted Storage**
- **Wheel-Grabbing Systems**
- **Space Saving Systems**
- **Cycle Lockers**
- **Cycle Enclosures**
- **Wheel Slots**

The advice in this document is consistent with the principles of Secured by Design and CPTED, and should be adhered to if cycle parking is a feature in any new development that aims, or is required, to achieve the Secured by Design award. The 'Cycle Parking Standards' should also be consulted for proposed cycle facilities (outlined at the back of this document).

➤ What is 'Secured by Design'?

Secured By Design (SBD) is the UK Police flagship initiative supporting the principles of "designing out crime" through the use of effective crime prevention and security standards for a range of applications. SDB is owned by the Association of Chief Police Officers (ACPO) and is supported by the Home Office and the Planning Section of Communities and Local Government (CLG), as well as many Local Authorities across the UK.

The Secured By Design Award is presented to a building owner or developer in recognition that the development was constructed in accordance with the secure standards of SBD.

Registered Social Landlord's (RSLs); local authorities and Housing Associations, seek to achieve SBD in many of their schemes.

Further details of the scheme can be found on the Secured By Design website: www.securedbydesign.com

➤ What is 'CPTED'?

'Crime Prevention Through Environmental Design' (CPTED) is a crime prevention theory focusing on tactical design and the effective use of the built environment, which when applied, reduces both crime and the fear of crime. A main objective of CPTED is to reduce/remove the opportunity for crime to occur in an

environment, and promote positive interaction with the space by legitimate users. CPTED is a preventative, pro-active model, and not a reactive one. CPTED is a crucial element of the service that Design for Security provide, and the benefits are optimal when the strategy is applied in the earliest possible stage of the design process, before integral design decisions are set in stone. CPTED however, should not operate alone as the sole crime prevention method; and instead should work in conjunction with other social, environmental and community-based strategies.

There are 4 key principles at the centre of CPTED:

- **Surveillance** – people are seen, and can be seen.
- **Access Management** – users of an environment are passively directed to some places, whilst being restricted from others.
- **Territoriality** – ownership of spaces is defined by clear boundaries.
- **Environmental Quality** – well maintained and high quality environments attract users and aid surveillance.

Furthermore, there are 3 ways in which the physical environment may be managed in order to reduce the opportunity for crime:

- **Natural** – inclusion of basic security and behavioural provisions, influencing how spaces/buildings are used (e.g. definition of borders, windows for surveillance).
- **Organised** – formal, human security (e.g. police, patrols).
- **Mechanical** – incorporation of security hardware (e.g. CCTV, locks, lighting).

In summary, CPTED focuses on the natural crime prevention strategies which good design can account for. Mechanical and labour-intensive 'bolt-on' strategies are only added as a last resort when other options are exhausted.

➤ What are the Cycle Parking Standards?

These are outlined towards the end of this document, and are based on those developed by York City Council. These are generally acknowledged by Local Authorities as providing 'best practice'. These standards should be applied to all planning applications by Local Authorities.

Where should cycle parking be situated?

- As close as possible to the destination that they serve (no more than 30 metres away).
- Where they can benefit from good natural surveillance, adjacent to high traffic routes.
- Clear of pedestrian walkways to avoid accidental damage to bikes, or injury to passing members of the public.
- In an easily accessible location. In residential schemes, cycle parking should be **equally** accessible as car parking.
- In positions to serve all major public venues such as hospitals, schools, business districts and leisure facilities.
- Away from potential road hazards. Designated access/egress routes should be built in to facilities where necessary.
- Where possible, cycle parking should be integrated with other associated services, for example cycle centres, which are popular in Germany. 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.
- Only where demand requires, or there is likely to be demand. The supply should meet the demand for facilities. If the supply exceeds/falls short of demand, the facilities could be underused or overloaded, resulting in possible damage to equipment and cycles.

What should the design of facilities address?

- The ability to secure both wheels and the frame of a bike, (unless lockers are used).
- Local weather conditions. Stands where long term stays are likely should be appropriately protected from the elements to attract usage.
- Compatibility with various locks and bicycle frames available on the market.
- The need for motorcycle parking. This could be allocated to certain spaces, indicated by signage or hatched floor markings.
- Clear signage, so the facility can be seen from a distance. Information such as conditions of use, applicable charges, or whether the facilities are for public or private use should be signed.
- The density of parking spaces. If a large number of stands are required they should be split up into several clusters. Individual stands appropriately spaced apart will reduce likelihood of damage to bikes.

Management and Maintenance

- High quality, attractive facilities, which are well maintained promote a sense of safety and security, and therefore attract use.
- Easy to use equipment, with effortless operation (avoiding lifting or awkward manoeuvring) encourages use. Instructions should be provided if any special equipment is necessary.
- Successful facilities are well managed and kept clean. Any abandoned cycles should be removed within a specified period to avoid the appearance of neglect.
- The promotion of police-approved property marking/registering products may appeal to certain users. Consideration should be made with regards to making customers aware of these, which include: ImmoBitag, Smart Water, Selectadna

Cycle Stands

It is strongly recommended that cycle stands provide the user with multiple locking points to secure their bike. One of the most common (and preferred) solutions to stand-alone cycle storage, which fits this bill, is the 'Sheffield', or U-profile stand. These are versatile across a range of applications, inexpensive and simple to install, with good structural stability given the two connections with the ground. Based on the principle of a U-shaped section of tubular metal, these stands are available in a range of colours (RAL powder-coated), and finishes (plastic coated).



There are many variations on the traditional Sheffield/U-profile stand, which offer aesthetic alternatives. The following examples illustrate just a few of these variations:



Recommended Stand Dimensions

- Length 700-1000mm
- Height 750mm (+/- 50mm)
- Tube diameter 50-90mm (larger diameter is more secure)
- Corner radii 100-250mm

Extras

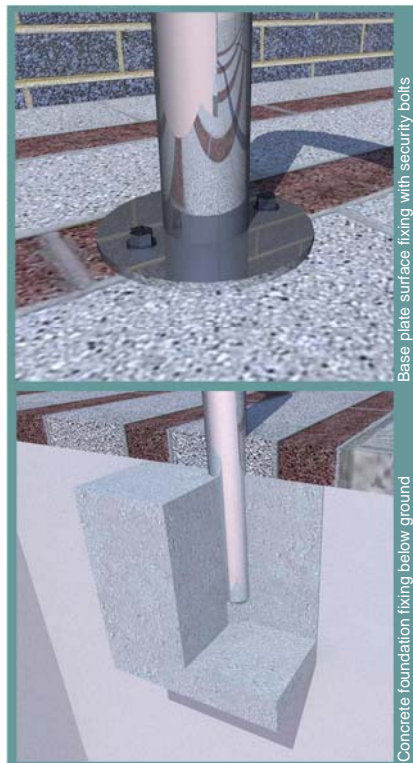
Additional features can increase the functionality of the stand if required, such as a tapping plate/rail to benefit the sight-impaired, or a mid rail for extra stability and locking positions.

Fixings

If the stand is fixed to the surface using base plates, 2 security bolts passing through each base plate are required. Otherwise, stands should have 'below ground' fixings, into a concrete foundation (300mm x 300mm x 300mm).

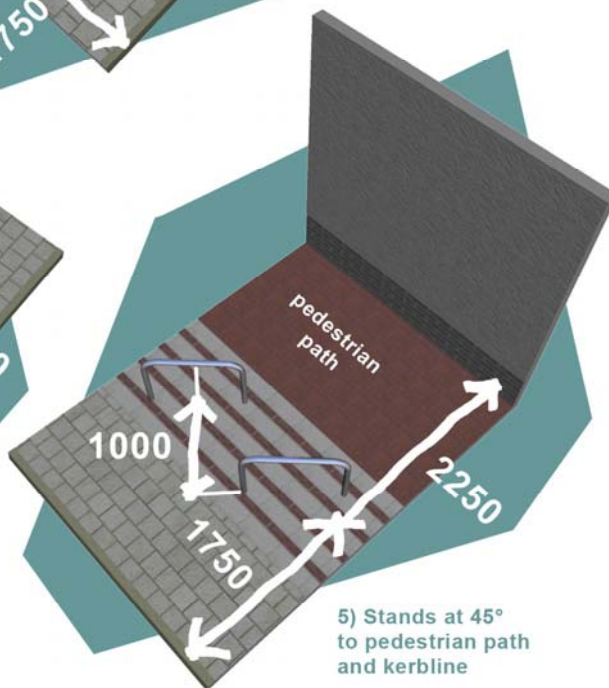
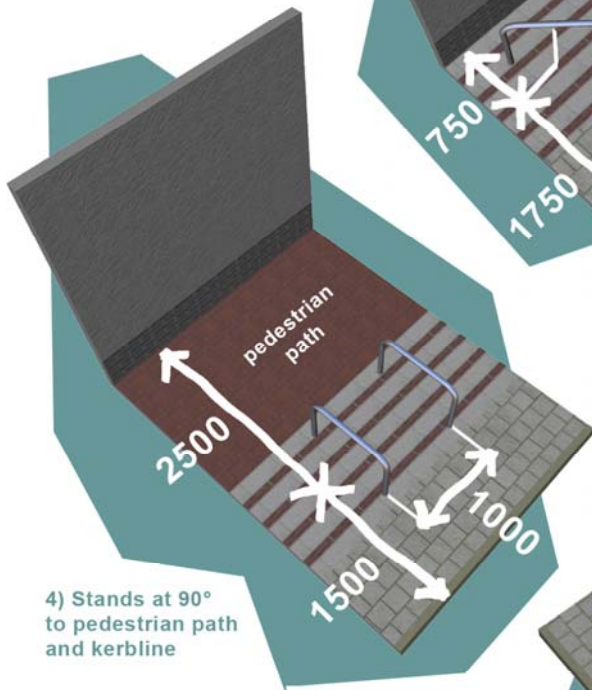
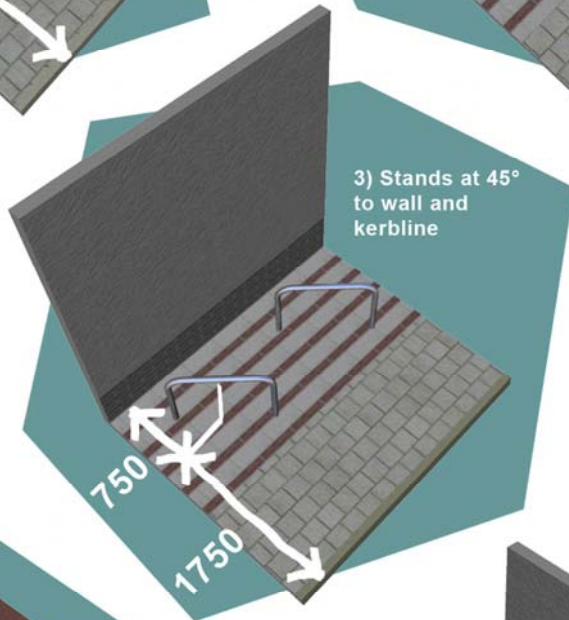
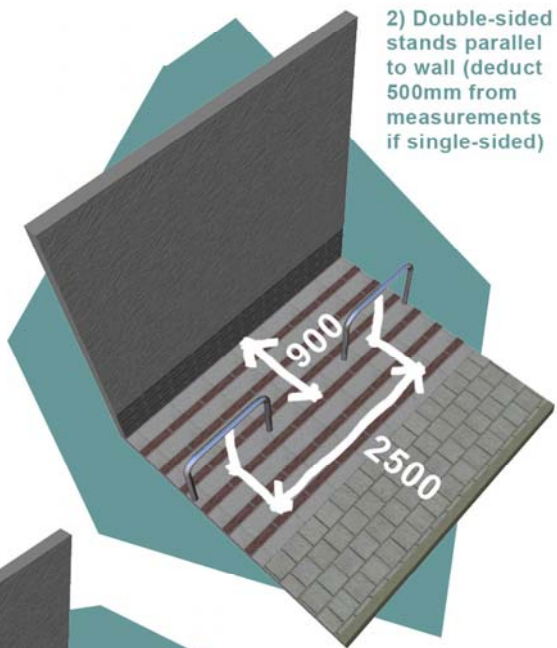
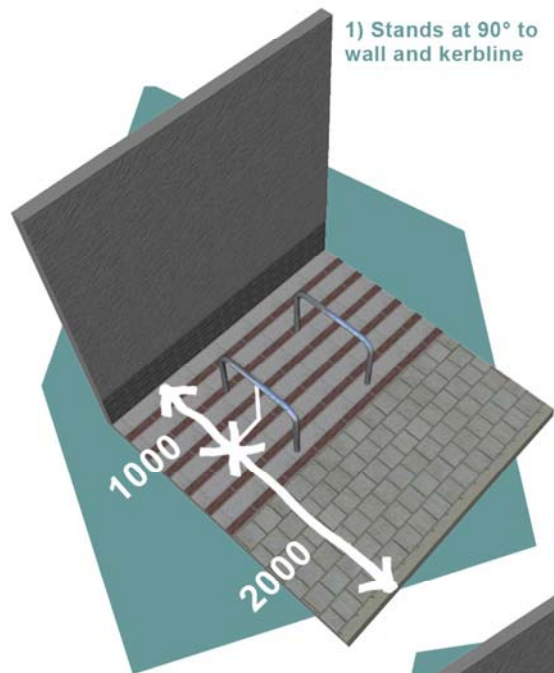
Spacing

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



Cycle Stands Continued

Multiple cycle stands should conform to the following setting out dimensions, to ensure that sufficient space is given for both cycles and their owner to mount/dismount and secure their bike unhindered. The following diagram show recommended dimensions for a range of locations.



Cycle Lockers

Lockers are highly recommended, but by nature lend themselves to certain scenarios. Any locker installation should be subject to thorough management and maintenance procedures to keep the facilities in good working order, with any damage rectified in a timely manner. Lockers can operate on a contract basis (monthly payment and key operated) or be open to public use (coin operated).



Cycle Shelters, Enclosures and Compounds

Enclosures are also highly recommended, but depending on the nature of the application, further security may need to be provided within.

Shelters

Shelters, which are simply to protect cycles from the elements and are not secured, or access controlled, should have fixtures within that allow both wheels and the frame of a bike to be secured, (i.e. parking equipment should be treated as normal). Shelters should also be visually permeable so that bikes and people can be seen, and the shelter not used to hide in. Shelters in publicly accessible places could be vulnerable to abuse and encourage loitering, so should be implemented carefully.



Secure Enclosures

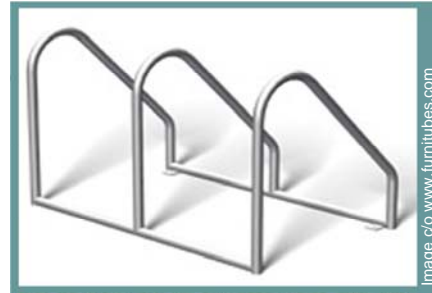
Secure compounds/shelters should be used in situations where a high number of bikes are anticipated to be stored for long periods. Typical examples of this include **large commercial premises, residential apartment developments, leisure facilities**, and similar.



Maintenance and operation are key considerations in specifying enclosures. Provided there are procedures in place to support use of, and maintain the facility, lockable enclosures in conjunction with appropriate internal parking equipment can provide an extremely secure parking solution. Again, enclosures should be visually permeable so that structures can be effectively surveilled.

Cycle Racks

These can take several forms, and tend to overlap with other types of parking equipment, such as being wall-mounted or space saving. Please refer to the remainder of this document, which should address these types of equipment.



☛ Toast Rack



These particular racks can be advisable, though their spacing and dimensions should conform to that of the 'Sheffield' stand. Effectively a cluster of Sheffield stands connected together, 'toast rack' stands are much easier and less time-consuming to install, but have a temporary feel about them. The raised ground bars could also impede usability.

Wall Mounted Devices

Wall mounted parking systems tend to have minimal locking points, and therefore should only be used in locations which benefit from high foot traffic or monitored CCTV which offer some level of security in the form of surveillance rather than in the mechanics of the parking device. It is advised that these systems are only used in situations where parking is likely to be short-stay.

☛ Fixed Hoops (includes Bars and Hooks)

These solutions are very inexpensive, but less secure than alternative methods. Hoops are useful for providing additional parking in confined spaces, or retrospective installations in areas where bikes are habitually chained to the street furniture.

☛ Wall-Mounted Wheel Grips and 'Butterfly' Racks

These devices should not be used unless security is provided through other means, (i.e. a secure enclosure). Wheel grips do exactly that, and offer no opportunity to the user to secure the frame of the cycle. These also offer limited stability, giving potential for damage to cycles.

Space Saving Systems

☛ Dual Level Racks

These types of racks normally require some sort of lifting or mechanical operation to secure bikes at high level. Providing the design of the system allows both wheels and the frame to be secured and provides adequate space per cycle, then these devices can be acceptable but it is advised that they are provided to regular users (to a commercial premises for example) who can become familiar with it's use. Thorough instructions should also be provided

☛ Hanging Storage

Vertical systems are only recommended if the area is secured and thorough operating instructions are provided.



Wheel Slots

These should not be used under any circumstances, offering no security for cycles.

Appendix 1: Cycle Parking Standards

Class	Type of Development	Level of Parking	Types of Parking Required
A1	Food / Non-food Retail	Shops: 1 per 36m ² DIY: 1 per 55m ² Retail W/housing: 1 per 80m ² Garden Centres: 1 per 80m ²	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
A2	Financial & Professional Services	1 per 55m ²	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
A3	Food & Drink: Restaurants / Fast Food / Public Bars	1 per 10m ² of Public Floor Area	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
Class	Type of Development	Level of Parking	Types of Parking Required
B1	Business: Standalone Offices / Business Parks	1 per 60m ²	Mainly Long stay for staff (minimum 1) Some Short stay for visitors (minimum 2)
B2	General Industry	1 per 75m ²	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
B8	Storage or Distribution	1 per 300m ² and 1 per 60m ² Office Space	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
Class	Type of Development	Level of Parking	Types of Parking Required
C1	Guest Houses and Hotels	1 space for every 2 members of staff and 2 spaces for every 10 bedrooms	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
C2	Residential Institutions and Hospitals	1 space per 2 staff 1 space per 3 beds	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
C2	Care/Nursing Homes	1 visitor space for every 10 residents	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
C3	Dwelling Houses	1 secure space per bedroom (ideally located in secure garage)	Long stay (minimum 1)
C3	Flats/Apartments	1 space per bedroom Some level of visitor cycle parking, in particular for large housing developments	Long stay for residents (minimum 1) Short stay for visitors (minimum 2)
C3	Multiple Occupation and Bed Sits	1 per unit	Long stay (minimum 1)
C3	Student Accommodation	1 per unit	Long stay (minimum 1)
C3	Moored Houseboats	1 secure space per boat	Long stay (minimum 1)
C3	Retirement Homes and Sheltered Housing	1 per 2 staff 1 space for every 6 residents	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
Class	Type of Development	Level of Parking	Types of Parking Required
D1	Non-residential Institutions (Medical/Health/Day Centres)	1 space per 4 staff 2 spaces per consulting room	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
D1	Crèche or day nursery	2 spaces per 3 staff 1 space per 9 children	Mainly long stay for staff & children (minimum 2) Some short stay for visitors (minimum 2)
D1	Schools, Higher or Further Education (FE)	2 spaces per 3 staff 1 space per 5 pupils (5-11yrs) 1 space per 3 pupils (12+yrs) 1 space per 3 students (FE)	Mainly long stay for staff & pupils (minimum 2) Some short stay for visitors (minimum 2)
D1	Art Gallery, Museum, Exhibition Hall or Library	1 space for every 2 members of staff 1 space per 30 sq m public floor area	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
D1	Public Hall or Place of Worship	1 space per 15 sq m of public floor area	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
D1	Conference Centres	1 space per 30 sq m	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
D2	Assembly & Leisure, Cinema, Bingo Hall or Casino, Concert Hall	1 space per 5 seats or 10 sq m of public floor space	Long stay for staff (minimum 1) Short stay for visitors (minimum 2)
D2	Indoor Sports or Recreation	1 space per 3 staff + 1 space per 2 players + 1 space per 5 spectators	Long stay for staff (minimum 1) Short stay for players / spectators (minimum 2)
D2	Outdoor Sports and Recreation	1 space per 3 staff 1 space per 2 players 1 space per 5 spectators	Long stay for staff (minimum 1) Short stay for players / spectators (minimum 2)
D2	Stadia / Spectator Seating	1 space per 3 staff 1 space per 5 spectators	Long stay for staff (minimum 1) Short stay for spectators (minimum 2)
D2	Swimming Pools / Ice Rink	1 space per 3 staff 1 space per 5 spectators	1 space per 5 sq m of pool / rink Long stay for staff (minimum 1) Short stay for spectators / users (minimum 2)
D2	Health Clubs / Gymnasiums	1 space per 3 staff 1 space per 5 spectators Users - 1 space per 5 sq m of public floor space	Long stay for staff (minimum 1) Short stay for spectators / Users (minimum 2)
D2	Golf Courses	1 space per 3 staff 1 space per 5 spectators Players - 1 space per two holes	Long stay for staff (minimum 1) Short stay for spectators / players (minimum 2)
D2	Marinas	1 space per 3 staff Users - 1 space per 2 berths Visitors - 1 space per 15 berths	Long stay for staff / users (minimum 1) Short stay for visitors (minimum 2)
D2	Caravan / Camping Sites	1 space per 3 staff Users - 1 space per pitch Visitors - 1 space per 15 pitches	Long stay for staff / users (minimum 1) Short stay for visitors (minimum 2)
D2	Railway, Bus Stations and Tram Stops	Staff: 1 space per 3 staff Rail / Tram Stations: 10 per morning peak service Bus stations: 4 per bus bays Key bus stops: 4 per stop Non key bus stops: individual consideration	Long stay for staff (minimum 1) Passengers: 50% long stay / 50% short stay Rail / Tram stations – minimum 10 Bus Stations – minimum 4 Key bus stops – Minimum 4
Class	Type of Development	Level of Parking	Types of Parking Required
MISC	Garage / Service stations / Car repair workshops / Petrol filling stations	1 space per 3 staff	Long stay for staff (minimum 1)
MISC	Car Parks / P&R Sites	1 space per 10 parking spaces	Long stay (minimum 1)

Appendix 2: Useful Links

Department for Transport, Cycling England

<http://www.dft.gov.uk/cyclingengland/>

Department for Transport

<http://www.dft.gov.uk>

Workplace Cycle Parking Guide (TFL)

<http://www.tfl.gov.uk/assets/downloads/businessandpartners/Workplace-Cycle-Parking-Guide.pdf>

Secured by Design

<http://www.securedbydesign.com/>