



# STANDARDS FOR PUBLIC CYCLE PARKING

June 2021





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The Bicycle Association (the trade body for the UK cycle industry) commissioned this study to co-ordinate the development of a cycle parking security standard, with support from a range of stakeholders including Department for Transport (DfT), Secured by Design (SBD), Transport for London (TfL), the Cycle Rail Working Group (CRWG) and equipment suppliers.

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Issue 1  
June 2021



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# 1 INTRODUCTION

## 1.1 SCOPE

- 1.1.1 This guidance is intended to enable people purchasing, installing and managing cycle parking to identify products and installations which are:
- Easy to use (including consideration of disabled people and inclusion generally);
  - Safe (for user and their cycle);
  - Secure (enables secure locking);
  - Long lasting (corrosion resistant etc); and
  - Fully in compliance with UK legal requirements.
- 1.1.2 This standard is intended to be widely applicable for public cycle parking procurement within the UK, for example at railway stations and other public transport interchanges, hospitals, educational facilities and at other public buildings. “Public cycle parking” refers to cycle parking used by the general public, whether this is at facilities operated by either the private or public sector. Cycle parking situated on the public highways is excluded. Some requirements in this standard relate to specific sectors such as railways, and these have been clearly indicated. Sector-specific requirements for other types of location may be provided in future editions and proposals are welcome.
- 1.1.3 General guidance on types of cycle parking and layouts is provided in Local Transport Note 1/20 (England), Active Travel Wales Planning and Design Guidance (Wales) and Cycling by Design (Scotland). The Cycle Rail Toolkit 2 (Cycle Rail Working Group) provides guidance about matters relating to cycle parking at stations. This standard complements Chapter 5 of the Cycle Rail Toolkit 2. The requirements are almost entirely in alignment with the Cycle Rail Toolkit 2 but in the event of any variation, this Standard should be followed.
- 1.1.4 This Standard also covers how the design, layout and installation of equipment contributes to the overall security of cycle parking facilities at stations.

## 1.2 HOW TO USE THIS STANDARD

- 1.2.1 Chapter 1 summarises the minimum requirements for public cycle parking installations (excluding cycle parking situated within the public highway). It does not include equipment intended for personal domestic use within houses or garden sheds.
- 1.2.2 Individual chapters then provide more detailed consideration of the minimum requirements:
- Chapter 2 sets out the requirements;
  - Chapter 3 summarises the design principles;
  - Chapter 4 considers the location and site of the parking;

- Chapter 5 considers the layout of equipment within the cycle parking area;
  - Chapter 6 considers the design of the cycle parking equipment and other security features;
  - Chapter 7 considers security compliance and testing arrangements;
  - Chapter 8 considers the quantity provided and accommodating growth in demand.
- 1.2.3 There are three categories of requirements:
- **Guidance** – qualitative advice on provision;
  - **Absolute Requirement** – requirements which must always be followed to meet the standard;
  - **Context Specific Requirement** – requirements which must be met in response to the local circumstances (unless this is impossible).
- 1.2.4 To meet the standard the facility owner (and supply chain) must:
- Follow the qualitative **Guidance** in the overall approach to design
  - Meet all applicable **Absolute Requirements** that apply to individual elements of design
  - Document any deviations from the **Context Specific Requirements** noted as context specific and the reasons why they cannot be met.
- 1.2.5 Checklists for use by manufacturers, installers and operators are provided in Appendix B. The facility owner and their supply chain of equipment providers and installers must be able to demonstrate adherence to the guidance summarised in this chapter.





2 PUBLIC CYCLE PARKING REQUIREMENTS

2.1 INTRODUCTION

- 2.1.1 Acceptable designs for public cycle parking are described in more detail in section 6.2 and include:
- Sheffield stands (horizontal 'hoops' and all the variant designs) in which a cycle is wheeled into place;
  - Ground anchors to provide a secure locking point for larger cycles such as cargo bikes, tricycles and hand-cranked cycles;
  - Two-tier racks with a lower tier and upper tier of cycle parking; and,
  - Lockers in which cycles are stowed either horizontally or vertically.
- 2.1.2 At every site a proportion of the cycle parking should be accessible to all (see 2.9, 2.15 and 3.1). Additional security may be offered by placing the cycle parking equipment within a locked shelter, compound or cycle parking hub.

2.2 GUIDANCE: DESIGN CRITERIA FROM LTN 1/20

- 2.2.1 Local Transport Note 1/20, Cycle Infrastructure Design (LTN1/20)<sup>1</sup> provides general guidance about high quality infrastructure and is based around achieving five design criteria that also relate to cycle parking infrastructure:
- Safe – The cycle parking should be secure for the cycle and users should feel safe from the risk of personal crime.
  - Direct – The cycle parking should be near to the cycle route and/or adjacent to the final destination.
  - Coherent – The cycle parking should be well-connected to routes and buildings, well-signed and easy to find.
  - Attractive – The cycle parking areas should be of good quality design and well-maintained.
  - Comfortable – The cycle parking should be easy to use and accessible to all.
- 2.2.2 The design should also be inclusive with proper consideration of the varying needs of potential users.

2.3 CONTEXT SPECIFIC REQUIREMENT: LOCATION

- 2.3.1 Cycle parking should be provided as close as possible to the final destination (see Chapter 4.1).

- 2.3.2 Unless local circumstances prevent this it should be:
- Within 15 metres for short-stay parking serving a single destination
  - Within 25 metres for short-stay parking serving multiple sites
  - Within 50 metres for longer-stay parking, and,
  - In convenient locations for entrances to and exits from the destination
- 2.3.3 For a railway station, this means that the parking is situated close to and convenient for the station entrance, the maximum distance between parking and entrance being 50 metres.
- 2.3.4 Where the cycle parking is on or close to a walking route, Sheffield stands can be difficult for blind and partially sighted users to detect. Tapping bars (or an equivalent low-level element on other stand designs) must be used at the end of a run to enable people to detect the cycle parking and avoid walking into a stand.

2.4 CONTEXT SPECIFIC REQUIREMENT: SITE CHARACTERISTICS

- 2.4.1 Site characteristics have a direct impact on accessibility, the security of the site and the safety of users (see Chapter 3.3).
- 2.4.2 For security cycle parking should be:
- co-located with other activities;
  - overlooked by occupied buildings; and
  - not hidden by embankments, walls, vegetation etc (the latter has implications for landscaping planning)
- 2.4.3 Cycle parking locations can be categorised according to the risk of cycle crime and the level of security can be set according to the level of risk, with simpler installations where there is low risk of theft, vandalism or terrorist activity.
- 2.4.4 The locally applicable existing standards for lighting and CCTV should be adopted, but the starting point should be:
- a good and consistent level of illumination should be provided at cycle parking area and along access routes;
  - CCTV (where required) and lighting should be considered together because the CCTV system will have specific lighting requirements;
  - Local staff must know how to operate the CCTV system and it must be maintained.

<sup>1</sup> Cycle Infrastructure Design, LTN 1/20, Department for Transport 2020 available at: <https://www.gov.uk/government/publications/cycle-infrastructure-design-ltn-120>



2.4.5 The walls of a secure compound/hub should not be opaque, to allow people to see in from outside. Lighting should enable people outside the secure areas to see activity within it - use of light coloured surfaces can help with this.

2.5 ABSOLUTE REQUIREMENT: EARLY CONSULTATION

- 2.5.1 It is an Absolute Requirement that cycle parking promoters consult with affected parties at an early stage of planning. For railway projects these are:
- Users and potential users (i.e. rail travellers and station staff)
  - People with specialist knowledge of access and inclusion
  - Station management team regarding operational matters including cleansing
  - The Nominated Security Contact (NSC) regarding counter terrorism
  - Local Designing Out Crime Officers (DOCOs) (or other similarly qualified local experts), regarding cycle crime.

2.6 ABSOLUTE REQUIREMENT: ACCESS ROUTES TO CYCLE PARKING

- 2.6.1 Step-free and comfortable access – e.g. through use of dropped kerbs, cycle routes and crossings.
- 2.6.2 So far as possible level with a maximum extended gradient of 5% and maximum short distance gradient of 15% where site conditions dictate.
- 2.6.3 Free from barriers that prevent access by adapted cycles (minimum unobstructed width 1500mm) unless a specific security requirement for counter terrorism hostile vehicle barriers prevents this.
- 2.6.4 Well Lit: The access route should be lit to highways and public realm standards (BS 5489-1:2020).

2.7 LAYOUT

- 2.7.1 **Guidance:** A range of bicycle designs (mountain bike, sports bike, shopper bike etc) is commonly in use in the UK and the layout needs to accommodate this range allowing users to manoeuvre their cycles with ease within a facility.
- 2.7.2 All locations should include a proportion of spaces that are accessible to larger cycles (cargo cycles, tricycles, tandems, adapted cycles) (See Chapter 3.2). These spaces should be clearly marked (and signed if not in the same place as the other cycle parking).

2.7.3 In larger installations, numbered spaces and colour coding can help people to locate their cycle.

2.7.4 Controlled access to cycle parking areas increases security by only permitting authorised users. Doors and their controls should be accessible to all (or alternative secure locations provided).

- 2.7.5 **Absolute Requirement: Minimum Aisle widths for main access routes**
- 3.0m where the aisle provides the main two-way access for pedestrian and cycle traffic at a larger installation (i.e. where cycles are ridden directly to the stand, including access to accessible parking areas for larger cycles).
  - 2.5m between two rows of Sheffield stands or two-tier cycle racks where the stands are at 90 degrees to the aisle (i.e. 2.0m clear space in front of stands).
  - A minimum of 2.0m clear space in front of Sheffield stands or the lowered tray of two-tier stands where the cycle parking is arranged at 45 degrees to the aisle.
  - 1.5m clear width in other circumstances (including doorways) enables a pedestrian to wheel a cycle

- 2.7.6 **Absolute Requirement: Minimum Spacing of Sheffield type stands**
- 1.0m space between stands.
  - 0.6m to adjacent walls/kerbs which allows for the distance the wheels extend beyond the stand.
  - 0.9m to walls/kerbs where the stand is parallel to the vertical feature to allow space for a cycle to be parked on both sides of the stand (0.3m if just one side of the stand is to be used).

- 2.7.7 **Absolute requirement: Ceiling heights**
- 3.0m minimum ceiling height within station areas that are underground
  - 2.7m height required to accommodate a cycle within a two-tier stand
  - 2.3m minimum ceiling height where access is by cycle
  - 2.1m minimum ceiling height where access is on foot

2.8 ABSOLUTE REQUIREMENT: TYPE OF STAND AND SECURITY CERTIFICATION

- 2.8.1 The following designs meet the Standard from the perspective of usability for public parking (see Chapter 4):
- Sheffield Stand (and similar designs which support the cycle and offer secure locking points for the front and rear



- wheel and frame). The top of the stand should be 750mm (+/- 30mm) above ground level and the top of the stand should be 750mm – 1000mm long. 'M' shaped stands can accommodate a wide variety of cycle shapes and sizes, including children's cycles.
- Two tier stands where frame and wheels can be secured to the stand and gas assist (or similar) is provided to assist in raising and lowering bikes to/from the higher level. The maximum height of the lowered top parking tray to the ground is 500mm (this being the maximum unassisted lift of the cycle's front wheel into the stand) and the maximum force required to lift the top parking tray (with bike) is starting force 105 Newtons and 70 Newtons for running force. The maximum lift height to raise the stand to the upper tier parking tray should be 135cm.
  - Lockers should normally be horizontal for ease of use although vertical lockers are acceptable if more accessible parking is also provided. The locker and any integral locking system must be as resistant to attack as the other types of stand.
  - All equipment must be designed and tested to Secured by Design Level 2 (Level 1 is acceptable when the parking is within a secure area that is protected to Level 2, see Section 6.3).
- 2.8.2 Manufacturers continue to develop new and improved designs of cycle parking. The following tests should be applied to innovative equipment not listed above. If the assessor is able to answer yes to these tests, it will be deemed to meet this Standard for use as a public cycle parking facility (Fig.01)

Table 2.1: Public cycle parking facility test

	Test	Yes/No
1	Does the design enable both wheels and the frame of a standard cycle to be secured using no more than two locks*?	
2	Does the equipment support a standard bicycle so that it remains upright without the use of a kick stand or similar?	
3	Does the equipment pass independent testing to comply with Secured by Design Level 1 or Level 2?	
4	Does the equipment enable the user to lift the cycle no higher than 50cm unaided to get the front or rear wheel or the whole cycle into the equipment?	
5	Does the user need to apply less than 105 Newtons of force in the course of the parking operation? (Assume cycle weight of 15kg)	
6	Is the equipment suitable for safe use with a heavier cycle (up to 25kg)?	
7	Can the equipment be routinely used without damaging a cycle by scratching or putting force onto a mudguard or components?	
8	Are any sharp edges, corners or clamps that could potentially injure people or damage cycles protected?	
9	Are the fastenings of secure design (i.e. not easily removed with hand held allen keys, spanners, torx or screw drivers)?	

- \*Locks should be Secured by Design approved D locks or other security rated lock.**
- 2.8.3 While they can offer a compact form of cycle parking, vertical and semi-vertical stand designs are not recommended for use within the rail environment because they are less accessible (requiring lifting the cycle), because tipping cycles upright to use vertical stands may damage mudguards and other fittings, and because many designs do not enable wheels and frame to be fully secured. This Standard applies to public cycle parking within the railway environment and can be sensibly applied to other public cycle parking such as at hospitals, education establishments and other public buildings. Alternative designs may be acceptable in other contexts.

2.9 ABSOLUTE REQUIREMENT: ADAPTED CYCLES, CARGO CYCLES AND ELECTRIC CYCLES

- 2.9.1 To meet this Standard each installation must either
- Include provision for non-standard cycles, or
  - Document why such provision is not necessary (e.g. there is a better positioned alternative at the venue).
- 2.9.2 The scale of provision will be determined by local conditions but the suggested quantity is at least one wide spaced bay at every location with sufficient horizontal and vertical clearance to accommodate a cargo cycle, cycle with child seat or adapted cycle (and 5% of capacity where more than 20 spaces are provided).





2.9.3 Provision for E-bikes and adapted cycles should also focus on security. Individual lockers or space in a secured area is preferred due to the high value of the cycles and components. It is not generally expected that there will be charging facilities though this may be offered where e-bike tourism is popular and as an ancillary service at mobility hubs. Additional security features such as ground anchors may also be helpful to secure larger cycles.

2.10 GUIDANCE: QUALITY OF MANUFACTURE AND DESIGN LIFE

2.10.1 All equipment should be designed for a service life of 10 years and purchasers should specify that the manufacturers/suppliers should offer a warranty for this period. The warranty will only cover failure of parts during normal use where the installation is fully in accordance with the manufacturer's instructions. It does not apply to paint surfaces etc which will inevitably show signs of wear.

2.11 ABSOLUTE REQUIREMENT: DESIGN AND CONSTRUCTION OF CYCLE LOCKERS

2.11.1 Lockers must have panels welded or securely riveted together, or be designed in such a way that any removable fastenings are inaccessible. Where mesh panels and similar are fitted these should not be easily removed by kicking or peeling back from the outside.

2.12 ABSOLUTE REQUIREMENT: INSTALLATION OF CYCLE LOCKERS

2.12.1 The equipment must be fixed to a solid surface with tamper proof bolts or embedded in concrete and in accordance with the manufacturer's instructions. Lockers used by more than one keyholder should include internal fittings that enable cycles to be secured by the user's own lock.

2.13 ABSOLUTE REQUIREMENT: INSTALLATION OF EQUIPMENT

2.13.1 Sheffield stands (and similar design) must be either:

- Fixed centrally in concrete bases 300mm x 300mm x 300mm with a minimum of 250mm embedded in the concrete base (tie bars in the legs of the stand may also be used for additional security); or where this is not possible,
- Fixed to a concrete slab base or other secure surface with at least 2 anti-tamper bolts per leg and with the legs of the stand firmly welded to the base used for the fixings.

- At high-risk sites or where there is a history of theft or damage to stands a 'toast rack' of stands welded together can be embedded in concrete for additional security.
- 2.13.2 Fastenings that form part of two-tier (or other stand designs) that are accessible when in use must be of an anti-tamper design and not permit use of standard hand tools to disassemble (i.e. not hexagonal nuts, allen key/hex bolts, Torx/star bolts, crosshead bolts or crosshead screws). Where practicable welds will be used to join parts of the equipment in preference to screw fittings.

2.14 ABSOLUTE REQUIREMENT: INSTALLATION SIGN-OFF

2.14.1 Installations at railway stations must be signed off upon completion either by the local Designing Out Crime Officer (DOCO) or by the operator where the security of the design has already been approved. This process may be absorbed as part of the wider Secure Stations assessment. The inspection should confirm that the location, equipment and installation offers the appropriate level of security.

2.15 CONTEXT SPECIFIC REQUIREMENT: HOW MUCH PARKING TO PROVIDE

- 2.15.1 LTN 1-20 sets the following typical minimum parking standards (Table 2.2 ) for different types of development which may be overridden where locally applicable development standards require greater amounts or where the demand exceeds the supply.
- 2.15.2 At some stations it may not be practically possible to provide the recommended quantity of cycle parking due to space constraints. Where this is the case, provision should be sought as part of station re-development works or provided nearby within the public highway in partnership with the local authority.
- 2.15.3 **Parking for non standard cycles must be included.** The accessible cycle parking may be placed closer to the concourse or platforms than the main cycle parking area. This might be alongside disabled car parking bays or drop-off areas for example, or within a dedicated space on the ground floor where multi-storey cycle parking is provided.
- 2.15.4 **Level of Provision:** A minimum of 1 accessible space **must** be provided at every cycle parking location, with 5% where over 20 cycle parking spaces are provided.

2.16 ABSOLUTE REQUIREMENT: MANAGEMENT OF FACILITIES

- 2.16.1 **Absolute Requirement: Cleaning:** All facilities **MUST** be cleaned and maintained regularly. The owner/maintainer must decide on the appropriate level of cleaning maintenance but the minimum to meet the standard is:
- that the cycle parking facility will be cleaned every 4 weeks.



- 2.16.2 The minimum routine maintenance of equipment requirement to meet the standard is:
- where there are no moving parts (i.e. no doors, no two tier racks etc) every 6 months (this may be restricted to an inspection in most cases); or,
  - where there are moving parts, every three months or according to manufacturers' guidance or more frequently following risk assessment.

2.16.3 Absolute Requirement: Management of abandoned bikes

2.16.4 A system must be put in place to remove abandoned bikes. For open public facilities this can be achieved through monitoring use and identifying cycles that have not moved from the stand for a long period. For controlled access facilities the terms and conditions of use can specify a maximum period after which unused cycles will be removed. An example procedure is shown in Appendix A.

Table 2.2: Typical Minimum Cycle Parking Standards

Land Use Type	Sub-Category	Short Stay Requirement (obvious, easily accessed and close to destination)	Long Stay Requirement (secure and ideally covered)
All	Parking for adapted cycles for disabled people	5% of total capacity.	5% of total capacity.
Public Transport Interchange	Standard stop (bus/metro)	Upon own merit (see below)	-
	Major interchange (railway stations)	1 per 200 daily users	-
Retail	Small (<200m²)	1 per 100m²	1 per 100m²
	Medium (200-1,000m²)	1 per 200m²	1 per 200m²
	>1,000m²	1 per 250m²	1 per 500m²
Employment	Office/Finance (A2/B1)	1 per 1000m²	1 per 200m²
	Industrial/Warehousing (B2/B8)	1 per 1,000m²	1 per 500m²
Leisure and Institutions	Leisure centres, assembly halls, hospitals and healthcare	Greatest of: 1 per 50m² or 1 per 30 seats/capacity	1 per 5 employees
	Educational Institutions	-	Separate provision for staff and students.  Based on Travel Plan mode share targets, minimum:  Staff: 1 per 20 staff  Students; 1 per 10 students
Residential	All except sheltered/elderly housing or nursing homes	-	1 per bedroom
	Sheltered/elderly housing/ nursing homes	0.05 per residential unit	0.05 per bedroom

Source: LTN 1-20 (original in London Plan Evidence Base, Mayor of London/TfL, 2017)



3 DESIGN PRINCIPLES

As with other cycle facilities the cycle parking and access to it should be **safe, direct, comfortable, coherent, and attractive.**

Cyclists and their cycles come in many different shapes and sizes and cycle parking needs to be designed with this in mind to offer access for all, not just bicycles.

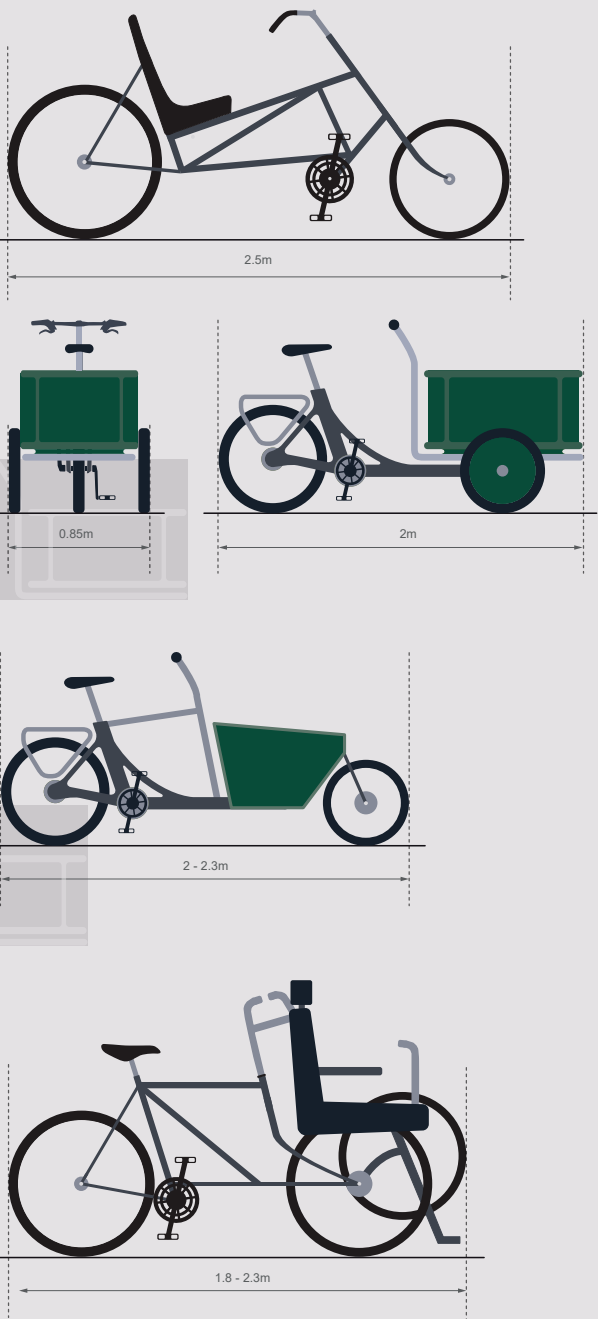
Early engagement with users, operations staff and security specialists must be integral to the design process.

3.1 INCLUSIVE AND ACCESSIBLE DESIGN

- 3.1.1 As with other cycle infrastructure the cycle parking area (and access to) it should follow the principles of safety, directness, comfort, coherence and attractiveness (see 2.1) set out in LTN1/20.
- 3.1.2 The term 'cycle traffic' encompasses the wide range of self-powered and electrically assisted cycles that fall within the definition of a cycle. This includes all forms of electrically assisted cycle, hand-cranked cycles, tricycles, tandems and cycles adapted for use by disabled people defined as Pedal Cycles or Electrically Assisted Pedal Cycles within the Highways Act.
- 3.1.3 It is not expected that every piece of cycle parking equipment will be accessible to all forms of cycle, but designers must integrate some provision for larger cycles into the cycle parking offer (i.e. not just bicycles). Examples of typical cycles are illustrated in Figure 3.1.
- 3.1.4 The approaches to the cycle parking area must be step-free and the aisles and cycle parking equipment must offer sufficient space for easy access. Widths are covered in Chapter 5.



Figure 3.1: Examples of typical cycles



3.1.5 Where stands are placed in the street or other public areas they should not obstruct the main walkways. A tapping rail across the bottom half of the stand (or similar height element for other stand designs), retro-reflective material and colour contrast will help blind and partially sighted users to detect the stand (see Figure 3.2). The rail may also be helpful for securing larger non-standard cycles to the end racks.



Figure 3.2: Tapping rail at end of a run of cycle stands

### 3.2 STAKEHOLDER ENGAGEMENT

- 3.2.1 Cycle parking promoters must consult with statutory consultees and other affected parties at an early stage of planning. For railway projects these are:
- Users and potential users (i.e. other rail travellers and station staff)
  - People with specialist knowledge of access and inclusion
  - Station management team regarding operational matters including cleansing
  - The Nominated Security Contact (NSC) regarding counter terrorism
  - Local Designing Out Crime Officers (DOCOs) (or other similarly qualified local experts), regarding cycle crime.







4 LOCATION AND SITUATION

Cycle parking should be as close to the desired destination as possible – especially when catering for commuters and for shoppers. It is a waste of time and money putting in facilities which are inconvenient to use (e.g. at the far side of a car park).

The location should also be easily seen and identifiable as cycle parking.

The location should ideally be under passive surveillance (i.e. in a busy area or overlooked by occupied buildings) covered by CCTV and well lit.

Sloping locations should be avoided if possible.

Cycle parking should be provided as close as possible to the destination, typically:

- Within 15 metres for short-stay parking serving a single destination
- Within 25 metres for short-stay parking serving multiple sites
- Within 50 metres for longer-stay parking including railway stations

Lighting to BS 5489-1:2020 must be provided for areas of highway and public realm.

Access to Cycle Parking: Routes to and within station buildings must meet the guidance in British Standard BS 8300-1:2018, Design of buildings and their approaches to meet the needs of disabled people Code of Practice; and, the Design Standards for Accessible Railway Stations, DfT, 2015.

Routes within the public highway should follow the design advice in LTN 1-20 and the Traffic Signs Manual.

4.1 SITE REQUIREMENTS

- 4.1.1 **Secure Position and Visibility:** The site for the cycle parking should not be remote from other activities. Cycle parking that is located in the quietest corner of a car park or around the back or side of a building will not be used. These sort of sites enable thieves to work undisturbed and may also feel insecure to users, with a risk of personal attack and robbery as well as cycle theft. Sites that are overlooked by the windows of occupied buildings offer a greater deterrent to crime.
- 4.1.2 The use of opaque materials for the walls of open-access cycle shelters and compounds can provide shelter for thieves to operate unobserved. Where the compound has secure access this is less important, and it may even be beneficial for thieves to be unable to see into the facility in order to target higher value cycles. Consideration is required for other security factors such as anti-terrorism, and the personal safety of users in the event that an attacker enters the compound.



Figure 4.1: Use of mesh and clear polycarbonate panels and prominent location outside station adds to security of this unstaffed secure cycle parking hub.

- 4.1.3 Care should be taken not to hide the cycle parking facility by landscaping or planting. When new planting is undertaken, select shrubs that have low natural growth characteristics.
- 4.1.4 Ensure hedges and bushes do not exceed one metre, and trees should be pruned of any branches below 2.5 metres. Sight lines should never be obscured.
- 4.1.5 **Secure Lighting:** A site must be well-lit. On-street and outdoor cycle parking should be close to street lighting or independently lit to an equivalent brightness (BS 5489-1:2020) or brighter. The way in which the interior and exterior of the cycle parking area is lit has a major impact on crime. Increased lighting levels in dark areas can reduce public fear of crime and reduce the opportunity for an offender to commit a crime.



- 4.1.6 An even spread of light, avoiding shadows, plays an important role in providing safety in parking facilities.
- 4.1.7 Painting roofs and walls white or using polished concrete finishes can dramatically reduce the number of luminaires required, thereby reducing both the carbon footprint and long term management costs. The use of light coloured paint on walls, ceilings and floors will help to increase the brightness of the site and is known to deter thieves<sup>1</sup>.
- 4.1.8 The lighting design should be co-ordinated with a CCTV installation (when specified) and the landscaping should be designed to avoid any conflicts and to ensure that the lighting is sufficient to support a CCTV system. Light fittings should be protected where vulnerable to vandalism.
- 4.1.9 **CCTV Coverage:** A CCTV system should be designed to cover any entrances and exits for cyclists and vulnerable areas at relevant times and have an operational requirement that covers the opening times of the cycle parking.
- 4.1.10 If the CCTV system is intended for prosecution, it should have a recording and storage capability of 31 days, using a format that is acceptable to the police for evidential purposes.
- 4.1.11 To prevent police investigations being hindered, ensure that there is always a member of staff who knows how to operate the system available.
- 4.1.12 The design of the CCTV system should be co-ordinated with the lighting system to ensure that the quality of lighting is sufficient to support it.

- 4.1.13 In high crime areas, cameras may need protection within vandal resistant housings.
- 4.1.14 The CCTV cameras including the housing must be regularly maintained and cleaned to ensure that the quality of the images are not inhibited. This could be the removal of a spider's web or ensuring that moisture is not infiltrating the camera so that remedial measures can be undertaken.
- 4.1.15 **CCTV Guidance:** Specific guidance is published by the Rail Delivery Group with respect to CCTV security at stations. The CCTV system may be subject to the Surveillance Camera Commissioner's Guidelines on using surveillance cameras in public places. The Surveillance Camera Code of Practice and further information is available at: [www.gov.uk/government/organisations/surveillance-camera-commissioner](http://www.gov.uk/government/organisations/surveillance-camera-commissioner)
- 4.1.16 CCTV cameras should provide images of recognition quality and should be positioned in such a way that site lighting does not interfere with picture quality. Refer to the Home Office Operational Requirements Manual for CCTV at: [www.gov.uk/government/publications/cctv-guidance](http://www.gov.uk/government/publications/cctv-guidance)
- 4.1.17 **Level Access:** Many modular compounds and shelters can be constructed on a slope, so have some tolerance for construction on slight gradients. However, for most users and most types of cycle parking equipment the preference is for a level surface. Where Sheffield stands are being placed on a gradient they should be fitted horizontally across the face of the slope where possible (see Figure 4.2).

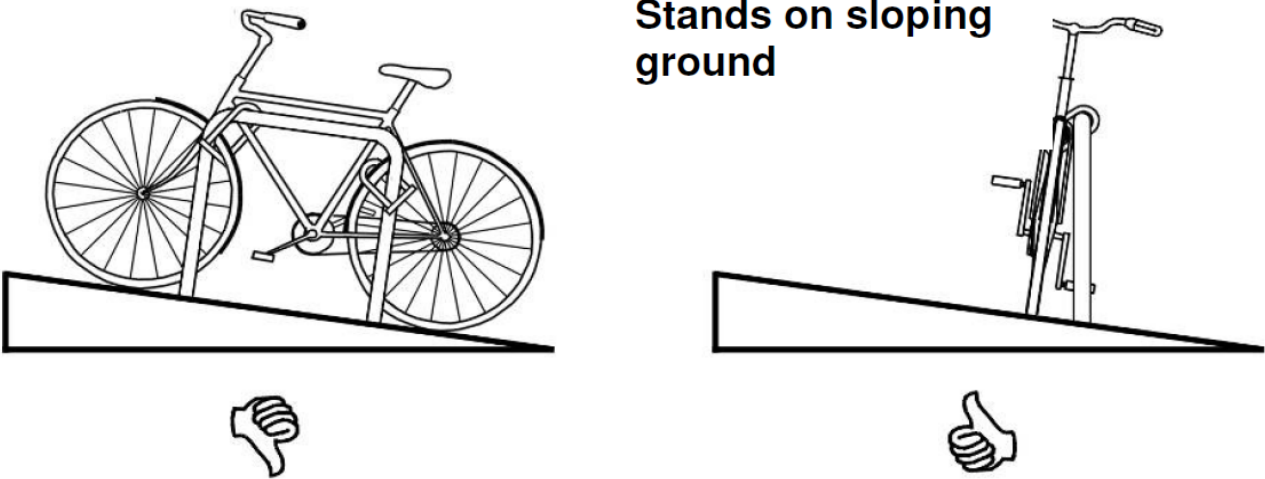


Figure 4.2: Positioning of Sheffield stands on a gradient (Source: York Cycle Parking Guide)

<sup>2</sup> Park Mark Secure Car Parking Guidance, British Parking Association/Secured by Design available at: <https://www.parkmark.co.uk/>  
<sup>3</sup> Rail Delivery Group, National Rail and Underground CCTV Guidance (2015) available at: <https://www.raildeliverygroup.com/about-us/publications.html>  
June 2021



- 4.1.18 As a general rule, a maximum gradient of 1 in 20 (5%) applies to public footways and cycle tracks (1:15 acceptable where constrained). LTN 1-20 applies to works within the public highway, while BS 8300-2:2018<sup>4</sup> applies to the approaches and interior public areas of buildings. Specific guidance on station design is also available in Design Standards for Accessible Railway Stations<sup>5</sup>.



Figure 4.3: This facility at Cambridge North station is well connected to the cycle network with level access immediately adjacent to the cycle route.

<sup>4</sup> BS 8300-2:2018 Design of an accessible and inclusive built environment. Buildings - code of practice, British standards Institution available at: <https://www.thenbs.com/PublicationIndex/documents/details?Pub=BSI&DocID=320547>  
<sup>5</sup> Design Standards for Accessible Railway Stations, DfT, 2015 available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/918425/design-standards-accessible-stations.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918425/design-standards-accessible-stations.pdf)



## 5 LAYOUT OF SITE

For a facility to work, it must be laid out to allow easy manoeuvrability of cycles.

In the UK we have many different sizes and shapes of bikes and design should accommodate this range.

As well as space in the horizontal plane, height and slopes matter especially when installing two tier racks.

Cycle parking should be well-signed from local routes and within buildings.

The site of the cycle parking should be easy to find, with clear signs from other parts of the building or highway.

In large facilities, colour coding or numbering of cycle parking bays can help users to quickly find their parked cycle.

Critical Minimum Dimensions:

3.0m width for two-way cycle track access outside and inside cycle parking facility

2.0m minimum aisle width for access on foot within parking area

2.5m aisle width for two-tier racks arranged perpendicular to the aisle

1.0m between Sheffield stands

0.6m from end of a Sheffield stand to any wall

0.75 x 2.0m footprint for individual horizontal cycle lockers

2.0m clear space in front of stands, lockers etc to enable cycle to be positioned

2.7m ceiling height for two-tier racks

Max. gradient 5% on access tracks/paths (excluding ramps within a cycle parking facility)

### 5.1 POSITION

5.1.1 The cycle parking should not impede pedestrian walkways, emergency exits or muster points. On street cycle parking should leave clear unobstructed space within the footway.

### 5.2 CYCLE SHAPES

5.2.1 The cycle parking area should be accessible to the wide variety of cycles commonly used in the UK. Many people use road bikes or mountain bikes for everyday trips, even in places where there is a greater proportion of traditional 'roadster' cycles. E-bike sales now make up a significant proportion of all cycle sales. While no different in size to other cycles, the battery and motor adds weight which affects the user's ability to lift the cycle. Finally, there are various three and four-wheeled cycles illustrated in Figure 3.1.



Figure 5.1: These high-low stands are popular in the Netherlands to maximise use of the space. The design doesn't work well for the UK due to the diversity of cycles in use and the fact that only the front wheel can be locked to the stand.

5.2.2 Cycle Envelope: A standard two-wheeled cycle fits approximately into the envelope described in Figure 5.2. Width 700mm (handlebar), Height 1200mm, Length 1800mm.

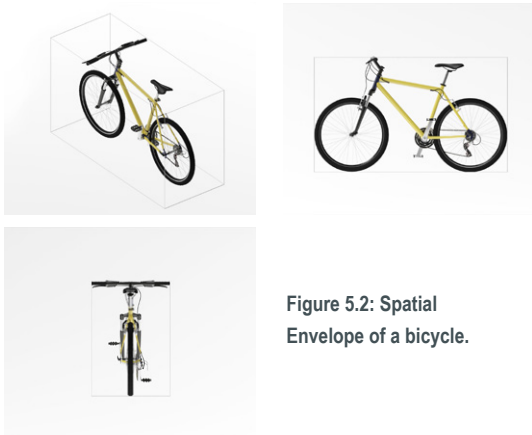


Figure 5.2: Spatial Envelope of a bicycle.





- 5.2.3 Rear or front-mounted child seats on a standard cycle will increase the height of the cycle to 1400mm. Flat handlebars may extend outside the envelope, generally width between 0.6m and 0.8m.
- 5.2.4 For other types of cycle see the dimensions in Figure 3.1.

5.3 AISLE WIDTHS

- 5.3.1 The Cycle Rail Toolkit 2 and LTN 1/20 feature layout illustrations. Factors that affect aisle width between parking include:
- Is the aisle accessed only on foot or also by cycle?
  - How much space is required to operate two-tier parking stands?
  - Is the aisle and cycle parking being used by 'non standard' cycles?
- 5.3.2 Minimum aisle widths are:
- 3.0m where the aisle provides the main two-way access for pedestrian and cycle traffic at a larger installation
  - 2.5m between two rows of 2-tier stands arranged at right angles to the parking
  - 1.5m clear space in other circumstances (i.e. 2.0m width from ends of unoccupied stands)

5.4 SPACING OF SHEFFIELD STANDS

- 5.4.1 Sheffield stands require the following minimum clearances:
- 1.0m space between stands.
  - 0.9m (0.6m min) to adjacent walls/kerbs which allows for the distance the wheels extend beyond the stand.
  - 0.9m (0.6m min) to walls/kerbs where the stand is parallel to the vertical feature to allow space for a cycle to be parked on both sides of the stand (0.3m if just one side of the stand is to be used).

5.5 SPACE IN FRONT OF TWO-TIER STANDS

- 5.5.1 Two-tier stands require adequate space in front of them to load or unload a cycle when the upper tier is lowered. The operational space requirement varies depending on the exact design of the stand and how it pivots but a clear space of 2.0m in front of the stand is required to load the cycle which also allows users to pass one another in comfort when the stand is retracted. Some designs can be arranged at 45 degrees to the aisle to ensure sufficient space is available for loading the cycle.

5.6 SPACE AROUND CYCLE LOCKERS

- 5.6.1 Two types of lockers that accommodate standard cycles are commonly in use:
- Horizontal – bike wheeled in
  - Vertical – bike lifted and suspended by front wheel
- 5.6.2 Individual product dimensions vary but the approximate dimensions of a locker for a single two-wheel cycle are:
- Horizontal type - Width 750mm, height 1300mm, depth 2000mm
  - Vertical type - Width 750mm, height 2000mm, depth 1100mm
- 5.6.3 In both cases the lockers will require about 1.5m clear aisle width in front for users to operate the door and place the cycle into position.
- 5.6.4 Ceiling Height and Overhead Clearance: The general recommendation is for unobstructed ceiling height of 2100mm above footways and 2300mm above cycle tracks<sup>6</sup>.
- 5.6.5 A ceiling height of 2.7m will accommodate all designs of two-tier stands and cycles fitted with child seats.
- 5.6.6 Where station facilities are underground the ceiling height requirement is 3.0m<sup>7</sup>.

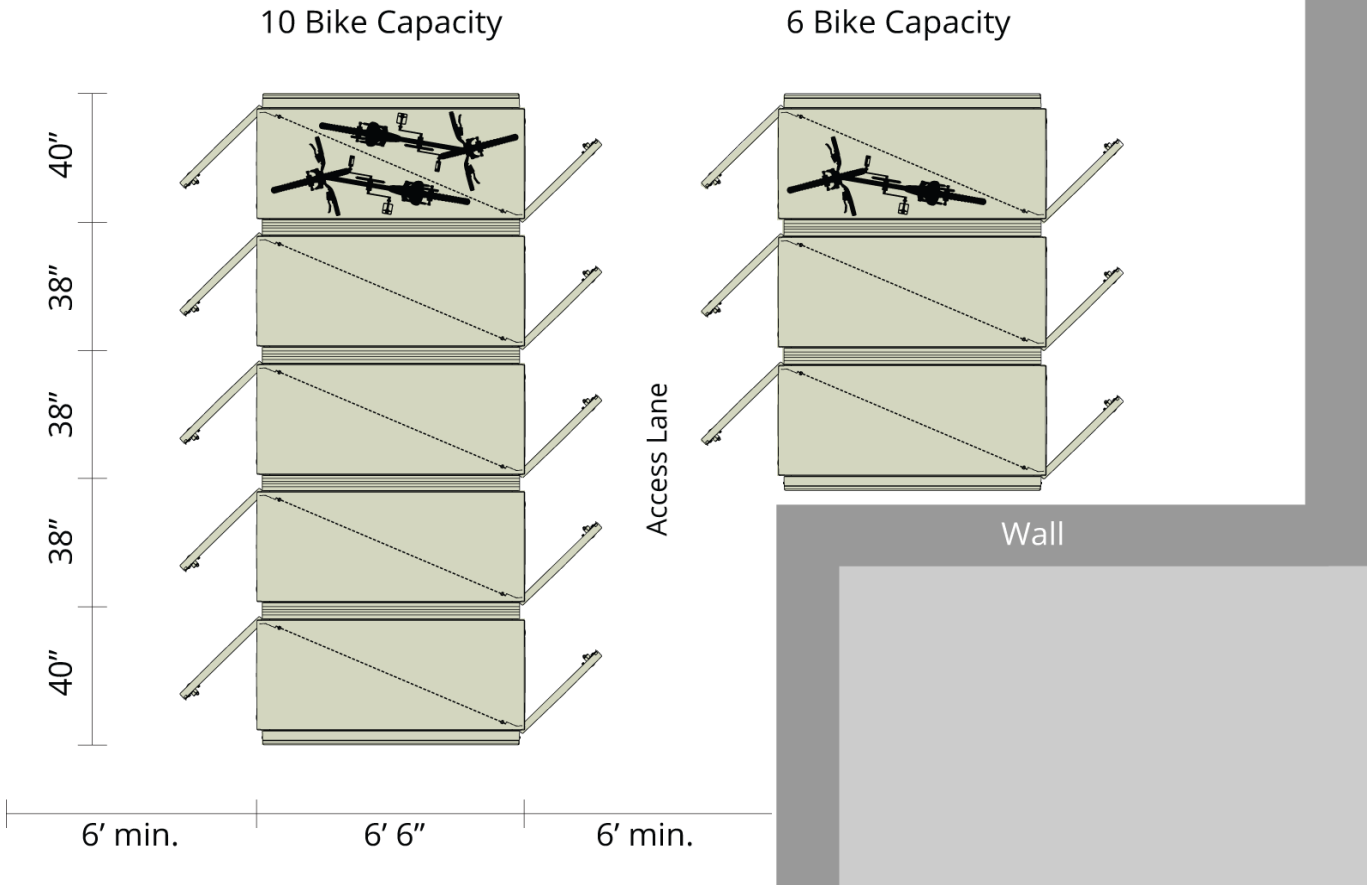


Figure 5.3: Cycle Lockers require aisle width of 2.0m clear space to allow for turning and loading the cycle (Source: CycleSafe)

- 5.6.7 Widths for Doors and Access Routes: A clear width of 1.5m will enable all types of adapted cycle to be ridden through a gap between bollards or a doorway (LTN 1-20). This gap will also easily accommodate all wheelchairs, mobility scooters and pushchairs. A clear space of 2.0m around doorways also enables users to align themselves to approach the door in a straight line. The minimum permitted width for a door to be used by pedestrians is 900mm (BS 8300-1:2018).
- 5.6.8 Automated sliding doors offer greatest convenience and enable the full width if the door opening to be used. Automatic hinged doors should be installed in such a way that the user does not need to move out of the arc of the door when using the opening and closing controls. Roller shutters can offer security but as they take more time to operate they may put users at risk from attack or enable 'tailgating' by unauthorised users and should not be used if a better alternative is available.
- 5.6.9 The recommended minimum width for a footway or one-way cycle track is 2.0m and for a two-way cycle track or shared footway/ cycle track it is 3.0m<sup>8</sup>. Cycle and pedestrian facilities should be

- separated and clearly indicated using height difference, upstand, different surface materials, tactile paving and signs where large numbers are expected.
- 5.6.10 Any bollards or other vertical features along the approaches should be at least 1000mm high and have good colour contrast with the surrounding environment<sup>9</sup>.

5.7 CLEAR SIGNS AND MARKINGS

- 5.7.1 Signs should enable users to find the cycle parking easily, including the routes to/from the nearest public road or cycle track. Outside in the public realm, standard highways signs are normally used, with several options to direct people to cycle parking areas and to mark the cycle parking itself.
- 5.7.2 Within railway stations there is a standard font and sign system using words and graphics to indicate the cycle parking areas<sup>10</sup>. Logos and markings can help define the dedicated spaces for larger cycles (see Figure 4.10)

6 Inclusive Mobility, DfT, 2005 and LTN 1-20, DfT, 2020  
7 Design Standards for Accessible Railway Stations, DfT, 2015

8 LTN 1-20, DfT, 2020  
9 See TfL Streets Toolkit at <https://tfl.gov.uk/corporate/publications-and-reports/streets-toolkit>  
10 Network Rail, Managed Stations Wayfinding (2011)



5.7.3 Within a large hub-type cycle parking facility pictorial/pictographic signage and colour coding, numbering and letters to denote levels and areas can help customers to easily retrieve their cycles. Colour coding can also be incorporated into any maps/diagrams of the cycle hub. Systems are now coming to the market that show which stands are free/occupied, and technology is also available to enable users to pre-book a dedicated cycle parking space.

5.7.4 Designers and operators should display the following information:

- Name of cycle parking facility and owner or operator - this should be located near the entrance.
- Cycle parking facility operational hours - this should be located near the entrance.
- Details of the owner or operator and how to contact them.
- A copy of the owner's or operator's Terms and Conditions.
- Clear information on any charges applicable and where to pay.
- Clear and visible signage must be provided to identify entrances, exits, lifts, stairwells and parking levels and zones.
- The locations of any customer service help points.
- Advertise Bike Locking Good Practice, such as: "Double-lock it, secure it and lock the lot". Information is available at [www.securedbydesign.com](http://www.securedbydesign.com)

## 5.8 SPECIALIST CYCLE PARKING

- 5.8.1 Specialist cycles, such as cargo bikes are becoming increasingly popular in the UK. They enable people to carry more on two and three wheels and do things you can't do on a normal bike. Specialist bikes also include cargo bikes and cycles used by people with mobility issues.
- 5.8.2 Just like standard cycles people use specialist cycles as part of combined mobility journeys that include public transport trips. This means that similarly to standard cycle parking cargo bike parking at stations needs to that is safe, secure and easy to use.
- 5.8.3 Access to cycle parking for specialist cycles therefore needs careful consideration and locating in a position of prominence and ease of access.
- 5.8.4 Cargo bikes and e-cargo bikes are becoming increasingly popular with families and businesses as an alternative to private cars and vans. Their speed, flexibility, running costs and low environmental impact make them great transport options, particularly for short-medium linked trips in urban environments.
- 5.8.5 Increasingly services such as cargo/e-bike hire and freight consolidation are co-located with cycle parking in Mobility Hubs at or near to transport interchanges.

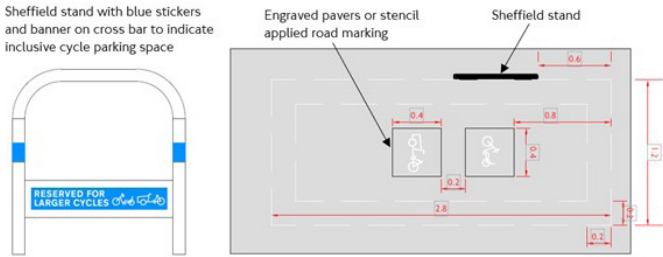


Figure 5.4: Concept drawing for larger cycles parking area and reserved spaces at Finsbury Park station. (Images: Transport for London)

5.8.6 Families wanting to take children to school before travelling to the station or using cargo bikes for the first/last mile of another combined journey require somewhere safe to leave them until their return.

## 5.9 CONSIDERATIONS FOR E-BIKE PARKING

- 5.9.1 E-bikes and adapted cycles are considerably more expensive than other cycles. The batteries used on many cycles can be easily removed. The cycles are heavier than a standard cycle. Cycle hubs may also offer provision of electrical points for charging the cycles. The typical range for a fully charged cycle is 40 – 50 miles so for most journeys the cycle does not need charging and provision for charging is a low priority.
- 5.9.2 It is essential that e-bikes can be parked in lockers or secured compounds to minimise the risk of theft. Because of the weight of e-bikes, horizontal lockers are preferable to vertical lockers.





## 6 EQUIPMENT DESIGN AND INSTALLATION

Stands that are acceptable in the Netherlands and Denmark where most cycles are roadster bikes with locks integrated into the cycle frame and wheels securely bolted may not be acceptable in the UK where many cycles in daily use are sports or mountain bikes with a variety of handlebar shapes and quick release wheels and saddles.

Acceptable designs for open access cycle parking are Sheffield stands and two-tier racks which enable both wheels and the frame of a cycle to be locked.

Equipment should have a minimum service life of ten years when properly installed and maintained.

Equipment must be easy to use and not require substantial lifting – bikes can be heavy and not everyone who cycles can comfortably lift their cycle.

The cycle parking equipment must offer the opportunity for three point locking – both wheels and frame and be capable of passing Secured by Design Level 2 testing or Level 1 when placed within a secured area (see Chapter 6).

Some space must be allocated for non standard cycles.

Providing users with information about good quality locks and how best to secure a cycle has a bearing on security.

### 6.1 GENERAL CONSIDERATIONS

- 6.1.1 The choice of design, materials and fixings will also contribute to aesthetics, longevity, resistance to vandalism and ease of maintenance. These aspects should be considered when procuring cycle parking. The design of the cycle and the presence or absence of fittings such as mudguards, luggage racks, child seats and bags has an impact on what type of cycle parking facility is viable to individual users.
- 6.1.2 Public parking (including stands provided within secure access areas) equipment should enable 3 points of locking (2 wheels and the frame) with a secure lock (usually a solid D lock although some chains and cables have Secured by Design approval) for a variety of cycle types (see Figures 6.1 and 6.2), or for the cycle to be fully enclosed within a locker. Users must be able to secure the cycle in a way that opportunities for leverage and twisting are minimised.

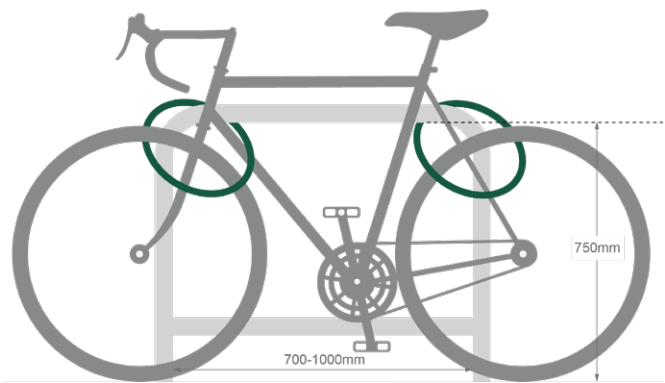


Figure 6.1: Three Point Locking. Design of the cycle parking should enable two wheels and the frame to be locked to the stand.

- 6.1.3 The police Designing Out Crime Officer (DOCO) (or TfL cycle security experts in London and other similarly qualified staff within other local authority areas) should be engaged at the earliest opportunity for advice about design and local cycle theft trends within the area. Opportunities for designing out crime in new installations have often been lost by the time officers are consulted.
- 6.1.4 **Provide User Information and Publicity:** Although disassembly or cutting through a cycle stand is one of the ways in which cycles are stolen, the most common point of attack is the user's lock. Campaigns that provide people with information about good quality locks, security marking, registration and how best to lock their cycle will help reduce levels of theft and make the site less attractive to thieves.



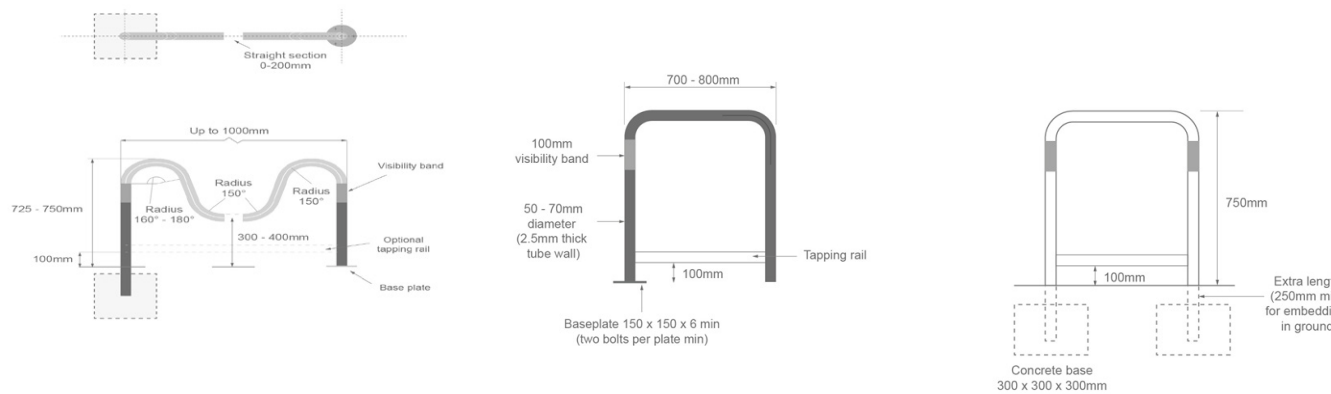


Figure 6.2: Sheffield stand installation

## 6.2 ACCEPTABLE DESIGNS FOR PUBLIC CYCLE PARKING AT STATIONS

- 6.2.1 **Acceptable Designs:** Within public parking at railway stations, the cycle parking designs that commonly meet the requirements set out in these standards are:
- Sheffield Stands (and the many variants of horizontal stand that incorporate various features to support or lock the cycle or protect wheels), including stands and ground-anchors for locking larger cycles.
  - Two-tier cycle racks that enable cycles to be stacked where these include measures to secure the wheels and frame.
  - Cycle lockers that provide a secure box for individual cycles.

Sheffield stand (and variant M shape, A shape, fin shapes etc) that offer up positions for locking frame and wheels to the stand. A shape stands provide additional locking points and are more resistant to bending if the top bar is cut. M shape stands can be helpful to lock smaller cycles and adapted cycles.

Low-level Sheffield type stands and/or ground anchors may be provided for cargo cycles and adapted cycles.

Two tier stands where frame and wheels can be secured to the stand

Cycle Lockers for individual cycles with integral secure locking mechanism or ability to use own lock. Vertical lockers are generally acceptable but alternative parking should also be provided for those that cannot lift a cycle.



Photo: Tim Pheby



## 6.3 CYCLE HUBS

- 6.3.1 Where the cycle parking area is staffed during the hours of operation or lies within an area that is not open to the general public there may be other options for less secure designs of cycle parking stands.
- 6.3.2 Vertical and semi-vertical stands and vertical lockers are not generally accessible to all due to the effort of lifting the cycle, but may form a proportion of the cycle parking so long as more accessible alternatives are also provided.
- 6.3.3 The overall security of a cycle parking hub, taking into account the security of access and operations, can be rated by a single Secured by Design Commercial award through liaison with Designing Out Crime Officers.



Figure 6.3: Insecure fixing with standard nut and bolt set in block paving.

## 6.4 SERVICE LIFE

- 6.4.1 **Service Life:** The quality of materials and finish will have an impact on the longevity of the cycle parking. Unfinished mild steel will have a limited lifespan outdoors, while galvanised steel to BS EN ISO 1461 Standards will last for over twenty years. Powder coating/painting and vinyl wrap will also add longevity but painted surfaces may be quickly scratched and chipped in use and appear unsightly.
- 6.4.2 Stainless steel stands (usually to Grade 304 or Grade 316 which offers higher corrosion resistance) are often selected for aesthetic reasons. Although initially more expensive than mild steel the surface finish will last longer.
- 6.4.3 It is recommended that all cycle parking should have a guaranteed service life of at least ten years under normal use.

## 6.5 GROUND FIXING

- 6.5.1 **Ground Fixings:** The cycle parking equipment is normally either embedded in concrete or bolted down (see Figures 6.2 and 6.3). Where the legs of tubular cycle stands are embedded into concrete the addition of a tie bar beneath the ground can help ensure that the stand cannot easily be loosened and pulled out if the surrounding terrain is unstable or constraints mean that the manufacturer's recommended minimum construction depth cannot be achieved.
- 6.5.2 Tamper-proof fixings (i.e. not hexagonal nuts and bolts, allen/hex keys or torx/star bolts or crosshead bolts or screws) must be used where stands and other types of parking are bolted down, and to secure component parts of the cycle parking to avoid the bolts being undone with commonly available spanners.

- 6.5.3 It is important that both the fixing and the surface it is bolted into, and any constituent parts of the cycle parking, cannot easily be removed with commonly available hand tools.
- 6.5.4 Ground anchors can be provided for additional security and are useful for larger cycles and tricycles where the design makes it difficult to lock the frame of the cycle to a Sheffield type stand.

## 6.6 MATERIALS

- 6.6.1 **Shape:** In most cases the cycle will be resting against the stand and will need to be pushed directly into the cycle parking. The risk of scraping the paintwork or catching hands against any sharp edges is relatively high. A rounded profile should be specified and will also be more forgiving in public places where pedestrians may also accidentally walk into the stand.
- 6.6.2 **Diameter:** Where the cycle stand is made of tubular steel, a larger diameter can provide additional security as it may take longer to cut through and will not enable the lock to be twisted and used as a lever. It may also be more stable when subject to loads such as a vehicle strike or vandalism. However, larger diameter tubes can also make it more difficult to position the lock. Most 'D' type cycle locks have an internal width of 100mm, so the tube diameter should not exceed this.
- 6.6.3 **Thickness:** Stands must be able to withstand the forces generated in everyday use, including people leaning against them or attempting to push them over.
- 6.6.4 **Fixings within the cycle parking design:** On two-tier stands and within cycle hangars the cycle is usually locked to a solid bar that is integral to the stand. A welded design will eliminate risks of thieves dismantling parts of the cycle parking stand or the failure of the fixings while in normal use. Where the cycle parking is bolted together, tamper-proof fixings will help prevent opportunist thieves



from using commonly available tools such as spanners and allen keys, or the parking designed in such a way that any removable fastenings are inaccessible. Using hardened steel within the vulnerable sections can help deter attack using bolt croppers and hacksaws.

6.7 ROUTINE MAINTENANCE

- 6.7.1 Responsibility for operation and maintenance of facilities and equipment must be agreed from the outset.
- 6.7.2 **Operation:** The three main operational arrangements for commuter cycle parking areas and cycle hubs are:
- Directly operated by a station operator or local authority ;
  - Operated by (or in partnership with) external organisations on behalf of local authorities; or,
  - operated by (or in partnership with) external organisations on behalf of station operators
- 6.7.3 Most hubs use a fob style entry system to restrict access to members, which is managed by the operator. Where cards are issued free or for a one off fee, this can cause problems if people fail to return unwanted fobs. It is worth considering a small annual fee, not least to make sure that the user is still intending to use the facility.
- 6.7.4 Help points and CCTV in the hub are operated either as part of a managed service or connected to the relevant landowner/local or transport authorities CCTV system.
- 6.7.5 Where successful, membership of hubs is often oversubscribed, with membership guaranteeing access, not a space. This enables larger revenues to be generated from the hubs making them more financially viable.
- 6.7.6 As most people won't use the hub every day, oversubscription does not adversely affect them, but occupancy should be monitored and capacity increased if necessary.
- 6.7.7 **Cleaning:** Adequate spacing of the stands will assist with cleansing and routine maintenance. The design of the racking system, including 'toast racks' of Sheffield stands or of any slots that hold wheels at ground level may also catch litter.
- 6.7.8 **Servicing:** Stacking systems (two tier racks) and other designs that have moving parts (including doors) may also require routine maintenance such as lubrication or replacement of bearings.
- 6.7.9 Facilities which are well maintained and cleaned on a regular basis promote a sense of safety and security and therefore attract cycle users.

- 6.7.10 **Removal of Abandoned Cycles:** A system for the removal of abandoned cycles, cycle parts and locks and the replacement of vandalised or broken equipment should form part of the management of the facility (See Appendix A).

6.8 EASE OF USE

- 6.8.1 Ideally cycles should be wheeled into the cycle parking stand. For some people, any requirement to lift the cycle will make the parking inaccessible. However, for most people a small amount of lifting is feasible, for example the effort needed to get wheels into the slots provided in two-tier parking.



**Figure 6.4: Toast rack parking in shelter at highly visible location. Good spacing between stands but the upstand of the horizontal metal bars at ground level results in the front wheel turning and some bikes may fall over. A flatter profile section can prevent this.**

- 6.8.2 Simple Sheffield stands are generally easy to use so long as there is 1.0m between them. Toast racks of stands welded together can be convenient to install but the upstand means that the front wheel of the cycle will often not stay straight unless secured with a lock (see Figure 6.4).
- 6.8.3 Vertical and semi-vertical parking designs where the front end of the cycle is lifted at or above shoulder height without mechanical assistance are outside this Standard due to the greater lifting effort required.
- 6.8.4 The Health and Safety Executive suggests some maximum loads for lifting based on the risk of injury. Although the actions required to operate cycle parking may not be directly comparable to those encountered when moving free-standing boxes in the workplace, the values are indicative of the limitations of human strength. A standard two-wheel cycle weighs between 10 and 15kg, while an e-bike weighs 15 – 25kg. These weights do not include luggage or child seats that may be fitted to the cycle. The forces involved in operation can be tested using the simple method outlined below.

- 6.8.5 The movements have been divided into the effort required to lift an upper tier rack into position (Test 1); the effort required to lower a rack for loading/unloading (Test 2); and the effort to slide the rack horizontally to/from the pivot point (Test 3). The forces required to overcome the initial momentum are greatest, referred to as 'starting force' while those used to complete the operation are referred to as the 'running force'.

**Test method for operating forces for two-tier racks**

The objective of these tests is to determine maximum operating forces in normal use.

**Test bicycle**

Prepare a test bicycle (an adult conventional bike or e-bike, 26-28" wheels) with any additional weights mounted with their centre of gravity not forward of or below the bike's bottom bracket, so that the total weight is at least 15 kg.

Any weights should be mounted securely so that they cannot move during the test procedures.

**Measurement**

Devices used to measure force should have a minimum accuracy of 5% in the relevant operating range. A peak force capture function is desirable; otherwise readings should be monitored throughout the test process.

Attach the measuring device to the tray lifting handle via a hook or other fixture which is not constrained against rotation.

During the following tests, apply the force via the measuring device so that its direction is aligned as closely as possible with the direction of motion of the lifting handle at all times. It is permissible to re-position the measuring device during the tests to achieve this, if necessary, so long as forces during the whole motion are measured.

Forces should be applied in a slow and controlled manner, so that effects of acceleration on the measurements are minimised.

If the force required reverses after initial motion is established (for example, if an upwards force is required to prevent uncontrolled lowering), it is permissible to stop the motion and rearrange the measuring device to properly measure these forces.

Repeat three times and record the results each time. It is acceptable to carry this out in any order, for example alternating between tests 1 and 2, or 3 and 4.

Requirement for all tests: The average (across the three repetitions) maximum running force in each test shall be 70N. A average peak starting force of up to 105 N is permissible during no more than the initial 10% of each separate motion (i.e. sliding or raising/lowering).

**Test 1 – Sliding and lowering forces, unloaded**

Place the rack tray in its fully closed position.

Pull the tray using the measuring device until it slides fully out, and then pull it downwards until is lowered to its fully lowered position.

**Test 2 – Raising and sliding forces, unloaded**

Place the rack tray in its fully lowered position.

Raise the tray using the measuring device until it lifts to its raised position, and then push it to its fully retracted position.

**Test 3 – Raising and sliding forces, loaded**

With the tray of the two-tier rack in its lowered position, place the bike in the tray and secure it if any securing devices are provided.

Lift the tray via the measuring device until it is in its fully raised position, then push it until fully in its retracted position.





Test 4 – Sliding and lowering forces, loaded

With the test bicycle in the tray of the two-tier rack in its raised and retracted position, pull outwards to slide the tray out, then downwards until the loaded tray is in its fully lowered position.

**Note:** The values in the requirements are derived principally from the HSE manual handling guide in which Figure 1 details “filter values” for raising and lowering of weights, for both women and men.

The running forces value takes as a worst case the extended reach zone for women between elbow and shoulder height, where a weight of 7 kg is indicated (approx. 70 N)

For the starting force limit, a somewhat higher value can be used as the load is normally close to the body. As the lifting point for a two-tier rack tray, in its lowered position, is likely to be near the ‘mid lower leg height’ boundary between zones, we have followed the HSE advice to “use an in-between weight” with regard to the surrounding zones, which have filter values of 7 kg and 13 kg. A maximum force value of 105 N (equivalent to just over 10 kg weight, the average of these two surrounding values) is also in line with previous cycle parking standards.

6.8.6 **Note:** The values in the requirements are derived principally from the HSE manual handling guide<sup>11</sup> in which Figure 1 details “filter values” for raising and lowering of weights, for both women and men. The running forces value takes as a worst case the extended reach zone for women between elbow and shoulder height, where a weight of 7 kg is indicated (approx. 70 N)

6.8.7 For the starting force limit, a somewhat higher value can be used as the load is normally close to the body. As the lifting point for a two-tier rack tray, in its lowered position, is likely to be near the ‘mid lower leg height’ boundary between zones, and follows the HSE advice to “use an in-between weight” with regard to the surrounding zones, which have filter values of 7 kg and 13 kg. A maximum force value of 105 N (equivalent to just over 10 kg weight, the average of these two surrounding values) is also in line with cycle parking standards used elsewhere.

6.8.8 To comply with the Standard for two-tier racks the maximum height of the lowered parking tray from the ground is 500mm (this being the maximum unassisted lift height of the bicycle into the stand) and the maximum force to lift the top parking tray when loaded is a starting force of 105 Newtons and running force of 70 Newtons. The maximum lift height for the upper tray is 135cm.

6.9 PLANNING AND BUILDING REGULATIONS

6.9.1 Planning and building regulations apply to new permanent structures, changes of use, modification of existing buildings and in some railway stations there may be additional restrictions due to heritage features or Listed Building status, operational requirements and counter terrorism considerations. Engaging a wide range of stakeholders at an early stage in design will help to avoid abortive work.

11 01/20 INDG4 (Rev 4) Manual Handling at Work, Health and Safety Executive, 2020, available at <https://www.hse.gov.uk/pubns/indg143.pdf>







## 7 SECURITY FEATURES AND TESTING

Layers of security help prevent crime by introducing additional security measures that increase the time and effort required to steal a cycle.

At rail interchanges, the combination of risk of cycle theft and the significance of the station should be considered to determine the level of security and ancillary services that are provided.

All public cycle parking must meet Secured by Design Level 2. SBD Level 2 applies to the point of secure access (to a shelter, compound or hub) or to the individual stand/locker where the cycle parking area has open public access. Equipment that meet SBD Level 1 is acceptable within a secured area.

For existing facilities and new types of equipment, providers can use the self assessed test described in section 7.6.

### 7.1 MEASURING SECURITY

- 7.1.1 Secured by Design is a police sponsored initiative to improve security in the community by encouraging better design of things like doors, locks and vehicle security. Under the scheme products are rated at different levels according to their resistance to attack - Level 1 being the most basic level given a certified rating. Secured by Design is suggested as a benchmark way to demonstrate security of cycle parking and is described in more detail in 7.3.

### 7.2 LAYERS OF SECURITY

- 7.2.1 No facility can ever be 100% proofed against theft. The overall security of the cycle parking is affected by:
- The quality of the user's lock and how it is used to secure the cycle;
  - The location of the cycle parking relative to other uses of the street/building;
  - The site of the cycle parking within a property;
  - The levels of visibility and illumination;
  - The quality of design and construction of the cycle parking stand/mechanism;

- The security of the installation of the cycle parking stand/mechanism into the ground;
- Whether it is fully open to the public or only to selected users;
- The quality of locking mechanism and other construction.

- 7.2.2 Cycle thieves target places where they can easily find items that can be quickly sold and where they are least likely to be detected. Passive surveillance and CCTV can help to deter crime and identify perpetrators, but in practice thieves are rarely noticed or challenged.

### 7.3 SECURITY REVIEW AND TESTING

- 7.3.1 Secured by Design is the official police security initiative that is owned by the UK Police Service. SBD operates an accreditation scheme for products or services that have met recognised security standards. The SBD focus is on the critical factors that combine to deliver a product's performance - design, use, quality control and the ability to deter or prevent crime – and these products or services are known as being of a 'Police Preferred Specification'.
- 7.3.2 Various test methods are used to determine resistance against attack with the sort of tools that a thief may use to steal a cycle or gain entry to a secure area. This section draws upon the advice contained in the Secured by Design (SBD) guidance for commercial and home settings.
- 7.3.3 Proven crime prevention techniques and measures also include the layout and landscaping described in Chapters 3 and 4, such as maximising natural surveillance and limiting excessive through movement. Designing Out Crime Officers (DOCs) throughout the UK offer police advice free of charge, while TfL and some other transport authorities and highway authorities also have staff with similar expertise.
- 7.3.4 Secured by Design is able to advise on the organisations, testing and certification regimes that can be used for the different elements of the cycle parking (see Table 7-1). The main UK certification agencies apply similar tests to equipment, providing a level of consistency to the way in which resistance to attack is measured. The ratings are based on the absolute ability to withstand attack and also the time taken to breach the security equipment. These organisations have already developed tests for related equipment such as those for walls, doors and ground anchors that can be applied to each element of cycle parking installations.

### 7.4 SECURITY FOR RAIL INTERCHANGES

- 7.4.1 Cycle parking equipment intended for public use must as a minimum meet the **Secured by Design Level 2 standard** which is described in Section 7.3.



7.4.2 The minimal layers of security and services for different types of stations are suggested in Table 7-1. In all cases, the design and installation of the cycle parking equipment should follow the requirements set out in Chapters 4, 5 and 6 and Appendix B.

Table 7.1: Suggested Minimal Provision based on station categories

Description	Suitability
Open access stands, no CCTV	Stations with unusually low risk of crime/very low usage. Typically station Categories E and F. No more than 2 reported cycle thefts in last two years
Open access stands, CCTV coverage	Stations with moderately low risk of crime (No more than 50 reported cycle thefts in last two years). Typically Station Categories E, F
Individual lockers or locked compound with controlled access, no CCTV	As above plus stations without CCTV Any station with more than 50 bikes a year stolen. Typically Station Categories C, D and possibly E.
Individual lockers, locked compound or cycle park with controlled access and CCTV	Category any station with more than 50 bikes a year stolen and significant passenger numbers. Typically Station Categories C and D.
Staffed, locked cycle park or mobility hub with controlled access and CCTV	As above, main urban stations and regional interchanges. Typically Station categories A and B.

7.5 SBD SECURITY LEVELS – TESTING SPECIFICATIONS

- 7.5.1 Secured by Design Does not test itself but various testing organisations provide certification to the SBD Levels. The individual testing houses use a variety of testing standards to ascertain the level of security indicated by the SBD levels. These are listed in Table 7-2.
- 7.5.2 The Secured by Design two-level standard for cycle parking is based on the combination of the cycle parking equipment itself and whether or not the cycles are being stored within a secured environment or within an area of public access. This enables the specification of cycle stands that may only meet Level 1 when they are placed within a secured environment.
- 7.5.3 Most well designed and correctly installed cycle parking facilities will achieve Level 2 status. Stands that cannot provide three point locking, where the design does not enable the user to secure both wheels and frame with a Secured by Design approved lock (i.e. not just a cable), or where an integral lock meets only Level 1 standard would be inappropriate for public long-stay parking unless within a locked area (or staffed access control) as described in section 6.1.

7.5.4 It should be noted that security testing procedures can be applied to a whole installation, to take into account the security of the way in which the racks are installed and secured to the ground, and the environment. A site can therefore be awarded a Secured by Design rating.

Table 7.2: SBD Specifications for Security Certification

Security Level 1
Products shall be certified to a minimum of one of the following standards:
<ul style="list-style-type: none"><li>Sold Secure - SS104 Specification for Mechanical Security System for Bicycles – Security Rating Bronze</li><li>Element (Wednesbury) - STS 501 Theft resistance of mechanical immobilisers Security Rating TR1</li><li>Element (Wednesbury) - STS 503 Theft resistance of ground and wall anchors Security Rating TR1</li><li>Warringtonfire - STS 205 Issue 6 2021 Security Rating BR1</li><li>Warringtonfire - STS 225 Issue 1 2021 Security Rating BR1 (s)</li><li>Loss Prevention Certification Board LPS1175 Issue 8 2018 Security Rating A (A1)</li></ul>
Security Level 2
Products shall be certified to a minimum of one of the following standards:
<ul style="list-style-type: none"><li>Sold Secure - SS104 Specification for Mechanical Security System for Bicycles – Security Rating Silver</li><li>Element (Wednesbury)-STS 501 Theft resistance of mechanical immobilisers Security Rating TR2</li><li>Element (Wednesbury) -STS 503 Theft resistance of ground and wall anchors Security Rating TR2</li><li>Warringtonfire - STS 205 Issue 6 2021 Security Rating BR2</li><li>Warringtonfire - STS 225 Issue 1 2021 Security Rating BR2 (s)</li><li>Loss Prevention Certification Board LPS1175 Issue 8 2018 Security Rating B (B3)</li></ul>



Security Level 3
Doorsets including louvred doorsets shall be certificated to one of the following standards:
<ul style="list-style-type: none"><li>PAS 24:2016; or</li><li>Warringtonfire - STS 201 Issue 12:2020; or</li><li>Warringtonfire - STS 222 Issue 1 2021 Security Rating BR2 (s) or</li><li>Warringtonfire STS 202 Issue 6:2015 Burglary Rating 2; or</li><li>Loss Prevention Certification Board LPS 1175 Issue 8:2018 Security Rating A3+; or</li><li>Loss Prevention Certification Board LPS 2081 Issue 1.1:2016 Security Rating B.</li></ul>

7.6 MEETING THE SBD SPECIFICATIONS

- 7.6.1 Secure Access Compounds: Cycle stores inside an existing building or within a station, car park or commercial site should be easily accessible, with floor to ceiling dividing walls, no windows and be fitted with a secure doorset or a louvred doorset to allow ventilation to the area. The secured doorset (or controlled access within staffed facilities) will restrict the parking facility to legitimate users. The doors should meet the requirements specified in SBD Homes or Commercial guidance<sup>12</sup>. Where there is restricted access to cycle parking, entrance and exit routes should be kept to a minimum.
- 7.6.2 The type and design of the doorset should also allow easy access with a cycle. Sliding, inward or outwards opening doors are available as secure doorsets. Sliding doors are perhaps the most practical for cyclists where high numbers of users are expected. Two sets of doors can be arranged to create a secure ‘airlock’ between the public area and the restricted area to prevent unauthorised users following a legitimate user into the facility.
- 7.6.3 The locking system must also be easily operable from the inside to ensure that users are not accidentally locked in by another person. Cycle parking for accessible cycles that is behind a door should enable user access and egress without dismounting.
- 7.6.4 In England and Wales, doorsets providing access from the storage facility into communal parts of a building (including emergency egress doorsets) are required to meet Part B, Part M and Part Q of Building Regulations.
- 7.6.5 Within the secure area the cycle infrastructure must be certified to a minimum of Security Level 1.

- 7.6.6 Lockable Cycle Shelters and Lockers with registered keyholders: A shelter where access is certified to Security Level 2 may contain individual cycle parking equipment (cycle stands, anchor points, single and two-tier racks) designed to Security Level 1 or 2.
- 7.6.7 Shelters that do not meet Security Level 2 themselves shall provide individual parking equipment within the shelter to Security Level 2 standard.
- 7.6.8 Cycle Parking that is fully accessible to the public: All cycle parking areas with full access to the facility by the public will be at greater risk of theft and vandalism. Cycle stands and racks whether designed for the storage of a single bike or multiple bikes in public areas must be certified to a minimum of Security Level 2.
- 7.6.9 Short-stay locations within close proximity to the destination will normally enjoy good levels of passive surveillance..
- 7.6.10 Long-stay parking access and exit routes should be designed so that people who have no legitimate reason to be in the parking facility are inhibited from unobserved access to a site.. The sites should be designed to maximise both active and passive surveillance and completely remove recessed areas (see Chapters 3 and 4). Lockers specifically designed for the secure storage of a single bike, or multiple bikes in a public area where the lock is provided by the user must be certified to a minimum of Security Level 2.
- 7.7 TESTING ALTERNATIVE DESIGNS
- 7.7.1 New designs and installations may fall outside some of the descriptions in the guidance. The following tests described in 2.7.2 and Appendix B can be applied to check suitability for public use:
- 7.7.2 Note that equipment designed specifically for adapted or non-standard cycles does not have to pass all of these tests, but should be judged against their intended AND likely use.

12 Homes and Commercial Security, Secured by Design, 2020



## 8 QUANTITY OF CYCLE PARKING

Guidance for the minimum quantity of cycle parking to be provided at a range of types of location is published in LTN 1-20 and repeated below.

This guidance should be the starting point for consideration of the scale of provision as demand will vary according to local circumstances.

**Quantity:** The quantity provided must meet typical current peak demand and allow for a surplus to accommodate future growth. Growth can be predicted by monitoring patterns of demand over time and taking into account local factors that generate greater use such as new developments or improvements to the rail service.

**Accessible Design.** It is essential to provide some parking for different types of cycle to ensure the facility is accessible to all.

### 8.1 QUANTITY

8.1.1 The minimum quantity of cycle parking required for classes of new development is usually covered by local planning authority standards for car parking and cycle parking. The example from LTN 1-20 is shown below. Locally applicable guidance is normally adopted by the local planning authority as a Supplementary Planning Document. The standards are the minimum provision and should be increased where demand is high, or is predicted to be high in future (see 4.2).

8.1.2 **Accessible Design:** A proportion of the cycle parking should be accessible to the larger types of cycle in Figure 3.1. A minimum of 1 accessible space must be provided at every cycle parking location. It is suggested that 5% of parking capacity is accessible to all.



Figure 8.1: Provide cycle parking for all types of cycle.





Table 8-1: Cycle Parking Quantities for New Development

Land Use Type	Sub-Category	Short Stay Requirement (obvious, easily accessed and close to destination)	Long Stay Requirement (secure and ideally covered)
All	Parking for adapted cycles for disabled people	1 space minimum. 10% (up to 50 spaces) 5% of total capacity (over 50 spaces) co-located with disabled car parking.	1 space minimum. 10% (up to 50 spaces) 5% of total capacity (over 50 spaces) co-located with disabled car parking.
Retail	Small (<200m²)	1 per 100m²	1 per 100m²
	Medium (200-1,000m²)	1 per 200m²	1 per 200m²
	>1,000m²	1 per 250m²	1 per 500m²
Employment	Office/Finance (A2/B1)	1 per 1000m²	1 per 200m²
	Industrial/Warehousing (B2/B8)	1 per 1,000m²	1 per 500m²
Leisure and Institutions	Leisure centres, assembly halls, hospitals and healthcare	Greatest of:  1 per 50m² or 1 per 30 seats/ capacity	1 per 5 employees
	Educational Institutions	-	Separate provision for staff and students.  Based on Travel Plan mode share targets, minimum:  Staff: 1 per 20 staff  Students; 1 per 10 students
Residential	All except sheltered/elderly housing or nursing homes	-	1 per bedroom
	Sheltered/elderly housing/ nursing homes	0.05 per residential unit	0.05 per bedroom
Public Transport Interchange	Standard stop	Upon own merit (see below)	-
	Major interchange*	1 per 200 daily users	-

Source: LTN 1-20. \*NB Major Interchange definition includes all railway stations.

8.1.3 National Rail stations should assume minimum provision of 1 cycle parking space per 200 daily users. Many station operators already offer a higher level of provision and have experienced rapidly increasing demand for cycle parking.

8.2 ASSESSMENT OF DEMAND

8.2.1 **Existing Cycling Levels:** The Cycle Rail Toolkit 2<sup>13</sup> identifies several considerations which have been updated below:

- **Cycling Catchment:** The DfT Cycling to Stations Report suggest that around 75% of journeys to stations are less than 2.5 miles (4-5km). Other data such as the National Travel Survey also suggests that the majority of everyday cycle journeys fall within this range. Clearly the density of development within this radius of the station will therefore have an impact on demand.

13 Cycle Rail Toolkit 2, Cycle Rail Working Group, 2016  
14 Local Cycling and Walking Infrastructure Plans Guidance, DfT, 2018



8.2.2 **Predicting Future Growth:**

- **Local Cycling and Walking Infrastructure Plans:** The Department for Transport’s Local Cycling and Walking Infrastructure Plan Guidance (LCWIP)<sup>14</sup> and Propensity to Cycle Tool (PCT) can be helpful when attempting to predict future demand. The LCWIP process involves identifying local journey patterns by plotting the main trip attractors and using available data sources to help identify where short local trips are taking place.
- **Propensity to Cycle Tool:** The Propensity to Cycle Tool (PCT see <https://www.pct.bike/>) offers a simple way to look at local travel patterns based on Census Journey to Work data which is fed into a GIS based application. The tool also provides a ‘scenario planning’ facility that can help illustrate the magnitude of increase in various potential scenarios. All of the data and software in the PCT is open source, enabling it to be customised with additional local information, such as planned new development.

8.2.3 These tools can be helpful, in combination with records of existing parking facilities and typical occupancy rates, to help to consider where, and how much, additional capacity to provide.

- **Existing station patronage and growth trends:** Prior to the lockdowns associated with the Covid 19 pandemic, demand for rail travel increased significantly year on year across much of the network. The Office of Rail and Road (ORR) collects passenger data for each station (<https://dataportal.orr.gov.uk/statistics/usage/estimates-of-station-usage>) which can help to inform where demand is likely to be highest, and where growth in passenger numbers is strongest.
- **Planned Cycle Parking Improvements:** Previous investments, such as those under the Cycle-Rail fund, have resulted in increased cycling to the station where the quality and capacity of cycle parking has been improved.
- **Planned Network Improvements:** Improvements to the highway network to create safer cycling infrastructure will increase levels of cycling with a corresponding increase in demand for cycle parking.

8.2.4 **Responding to Demand:**

- **Monitoring Cycle Parking Occupancy:** Where cycle parking has already been provided, regular counts can help to establish patterns of use and trends over time. Once the cycle parking occupancy regularly breaches 70% this can trigger the provision of additional capacity to ensure that there is always a space to meet demand.
- **Monitoring Informal Cycle Parking Activity:** When counting parked cycles and occupancy of stands, it is also important to note how many cycles are parked informally (i.e. away from cycle parking stands) to get a true picture of the total demand. In some cases informal parking may also occur if the formal parking stands are located in an insecure or inconvenient location, and may therefore be indicative of the preferred location.



APPENDICES



Appendix A

Example Procedure for Removal of Abandoned Cycles

We (station operator) are responsible for removing cycles from the station if they are classed as abandoned. A cycle may be classed as abandoned, if it meets one or more of the following criteria:

- It is secured in a dangerous way (e.g. blocking access)
- It is secured to a cycle rack and considered unroadworthy (see below)
- When it is reported by a member of the public and assessed as unroadworthy or in a dangerous position
- When it is noted as not having moved for a reasonable period of time – 3 or more weeks.
- A cycle that is defined as unroadworthy will have sustained one or more of the following:
  - » Missing wheel(s)
  - » Missing seat
  - » Buckled front/rear/both wheels
  - » Bent forks
  - » Seized/damaged brakes
  - » Rusted chain/gears
  - » Missing chain

How do I report a cycle as abandoned or claim my cycle from the station?

All reports or requests should be made by phone on [0121 2345678] or by e-mail at: [email@stationoperator.co.uk]

What happens when a cycle is abandoned?

Once a cycle is identified as potentially abandoned, we will secure a notice to the bike, this warns that if the cycle is not removed within 14 days it will be removed as abandoned.

If there is anything about the cycle that identifies the owner, we will attempt to contact the owner and advise them that their cycle is to be removed as abandoned. We will also provide details of all cycles that have been removed to the British Transport Police.

Once a cycle has been removed we will store it for further 14 days, after which it will be recycled as scrap metal or donated to a cycle recycling scheme.

Can I claim my cycle if I think it has been removed by station staff?

Yes, any claimant should call or e-mail and will be asked to prove the cycle is theirs by providing a description of the cycle (i.e. make, colour, model, etc.) and the location of where the cycle was left.

If an individual cannot provide this basic information, the cycle will not be released.

(Source: Based on East Cambridgeshire Council guidelines)





Appendix B

Certification of Facility as meeting  
Cycle Parking Standard

Table B1 - Standard for Cycle Parking Locations

Station Location			
Name of Designer			
Certifying Person			
Equipment supplier			
Equipment approved by Secured By Design?	SBD Level 1		SBD Level 2
Inclusive	At least 5% of capacity at the site is accessible to all types of cycle without the rider dismounting.		
Proximity to main entrance	Short Stay Parking	Short and Long Stay mixture	Long Stay Parking*
	Within 15m	Within 25m	Within 50m
Gradient	Gradient within cycle parking area and main access routes does not exceed 5%. Short ramps within cycle park exempted so long as there is Inclusive access as above.		
Width of access routes	Access routes at least 2.0m for one-way cycling or 3.0m for shared pedestrian/cycle access or two-way cycling. Absolute minimum of 1.5m at constraints.		
Width of aisles	For 2-way cycling or shared cycle/ ped use	Between 2-tier stands and lockers**	Access on foot to Sheffield Stands
	3.0m	2.0m – 2.5m	1.5m
Clearance to walls and kerbs	At least 0.6m clearance from end of Sheffield stand to vertical wall. At least 0.9m to any parallel wall.		
Spacing of stands	1.0m minimum distance between Sheffield stands		
Lighting	Cycle parking area and approach evenly lit to BS EN 5489-1:2020 (highway standard) or better.		
Type of stand***	Sheffield	2-tier	Locker
Cleansing	No more than 4 week intervals between sweeping of cycle parking areas.		
Maintenance	Inspection of equipment for damage and routine maintenance at minimum of 6 month intervals.		
Management	Procedure for removal of abandoned cycles in place.		

\*Cycle parking installations at stations are considered to be long stay

\*\*Always check manufacturer operational requirements for clear space in front of stand

\*\*\*If you are using an alternative design please confirm YES to the questions in Table B2

The location conforms to the above checklist.

Signed

Email ..... Date.....



Table B2 - Tests for Equipment not previously approved by Secured by Design or rated by Sold Secure

	Test	Yes/No
1	Does the design enable both wheels and the frame of a standard cycle to be secured using no more than two locks*?	
2	Does the equipment support a standard bicycle so that it remains upright without the use of a kick stand or similar?	
3	Does the equipment pass independent testing to comply with Secured by Design Level 1 or Level 2?	
4	Does the equipment enable the user to lift the cycle no higher than 50cm unaided to get the front or rear wheel or the whole cycle into the equipment?	
5	Does the user need to apply less than 105 Newtons of force in the course of the parking operation? (Assume cycle weight of 15kg)	
6	Is the equipment suitable for safe use with a heavier cycle (up to 25kg)?	
7	Can the equipment be routinely used without damaging a cycle by scratching or putting force onto a mudguard or components?	
8	Are any sharp edges, corners or clamps that could potentially injure people or damage cycles protected?	
9	Are the fastenings of secure design (i.e. not easily removed with hand held allen keys, spanners, torx or screw drivers)?	

\*Locks should be Secured by Design approved D locks or other security rated lock.



Table B3 - Standard for Cycle Parking Equipment Supply and Installation

Manufacturer		
Certifying Person and Position		
Product Name		
Description		
Equipment supplier (if different)		
Equipment installer (if different)q1		
Equipment approved by Secured By Design?*	SBD Level 1	SBD Level 2
*Where equipment is not already approved or security rated please apply the tests below.		
Sheffield Stand Installation	300mm x 300mm x 300mm concrete	Tamper-proof secure bolts
Manufacturer's Guarantee	Equipment guaranteed for 10 years in normal use.	

The equipment conforms to the above checklist.

Signed

Email ..... Date.....



# CYCLE PARKING & SECURITY STANDARDS

June 2021

