

Bicycle Parking

Summary

The actions to encourage people to cycle generally focus on training and the provision of safe separated road infrastructure, which are extremely important. However, when considering utility cycling the provision of parking and storage is essential for anyone who intends to cycle regularly.

Domestic or residential bicycle parking is important as this is where most of those utility journeys commence; the storage here needs to be safe, secure and convenient. Bicycle storage can be problematic in many residential areas where there is limited space which is where repurposing unused space or the installation of on street storage can be beneficial.

Bicycle parking at every destination: shops, workplace, medial centres, schools and colleges, cafes etc needs to accommodate the various needs of people stopping. A range of facilities are required to address those needs in the context of security and distance from the potential destinations.

Cycling needs to be considered to have a symbiotic relationship with public transport, it is already accepted that people ride to railway stations, this should be expanded to other modes such as buses with cycle parking provided at key bus stops. This would enhance many people's travel options and increase the catchment area of the buses.

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ISSUE: 1a

DATE: 1 October 2020

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Introduction

Since a significant number of people in the UK ride bikes solely for leisure the requirement for parking / storage is primarily in the domestic setting, whereas those using a bicycle for utility journeys require parking facilities at each location they visit. Anyone riding a bicycle as transport has an expectation that they can park it somewhere convenient and safe at either end of their journey. One of the greatest deterrents to riding a bicycle is theft.

People making utility journeys by bicycle require convenient, safe and secure parking facilities at their stopping places; shops, cafes, workplace, etc. However, they also need to have a secure location to leave their bike in or close to their residence, which must be easily accessed. Many people don't have access to convenient secure parking / storage and so don't consider using a bike or they leave it in the garden or locked to street furniture.

To encourage people to cycle there must be safe and secure parking at both ends of each journey, providing facilities that are at least equivalent to those expected by drivers. Vehicle manufacturers have gone to great lengths to secure vehicles, but such provision is particularly challenging to provide on a bicycle, hence, secure facilities are essential. Security becomes even more important where people use expensive Ebikes.

This review investigates the issues around the provision for bicycle parking, in various locations, how they can be addressed and the equipment that is available on the market.

Drivers have high expectations of being able to park their vehicle some where that is convenient and safe, and there should be no difference for bicycles.

Definitions

Utility cycling - Cycling as a means of transport to get to and from work, shopping, education, escort journey, etc.

Leisure cycling - Riding a bicycle for pleasure, exercise or as a family activity.

Purpose

Bicycle parking is an important element in encouraging people to use bicycles for commuting and utility journeys, rather than solely for leisure. To facilitate utility cycling there must be provision for secure bicycle parking / storage at either end of the journey, in the domestic environment and at all stopping places en-route.

In the Netherlands people tend to ride what is often referred to as the ubiquitous Dutch bike, these are relatively cheap and frequently left with only the simple rear wheel lock or chained to railings.

Many cyclists invest large sums in their prized bike, which will only ever go out for a Sunday dash around the lanes, while others will invest all they can afford on their only mode of transport and need to ensure that they remain safe. It is often those with the lowest income that have the greatest reliance on their bicycle.

A growing segment of the bike riding community are those buying and riding Ebikes, these machine provide assistance to the rider which can offer benefits to some people. Being more expensive than traditional bicycles Ebikes are a greater

investment to their owners, who may also be more reliant on them for transport. Providing secure parking for these bikes will be very important to the owners.

Some people will use their bicycles to travel to and from social or leisure events that take place during the evening and to have secure parking becomes an essential part of that experience. As cycle parking will potentially be used at all times of the day and night it is essential that the area is well illuminated, without any dark corners or worrying shadows. A well illuminated area will allow riders to secure their bikes and similarly unlock and prepare themselves to ride away.

A frustrating aspect of the bicycle is that many parts essential for their safe use, such as lights and pump, are detachable so need to be taken off when the bike is parked, similarly helmets and protective clothing, all of which need to be carried while away. So having some storage lockers would be extremely helpful for those riders who wish to enjoy an unencumbered time.

Method

This review uses previous cycling surveys, research and manuals to illustrate the need for cycle parking. Reference to cycling blogs and other sources on the internet are used to identify the types of cycle parking that can be provided and to understand what is commercially available. Also, personal experience of cycling and what is required to make cycling a utility mode of transport. Searches for bicycle parking equipment and facilities on the internet have been conducted to show what is available or recommended by acknowledged groups and experts.

The report will review the facilities that are provided generally for shoppers, employees and those undertaking utility journeys by bicycle and the consequences of having a bicycle stolen.

Cycle Parking Facilities

Cycle parking facilities encompass a wide range of options from a garden shed to a dedicated multi-storey indoor facility for 1000's of bicycles, the latter more commonly found abroad. The basic requirement is having somewhere that a bicycle can be secured, though this is no surety against theft. A range of commercial cycle parking facilities are provided by manufacturers in the UK and include; stands, racks, lockers, shelters, cages, etc. A list of manufacturers is provided in Appendix A - Cycle parking equipment manufacturers. The following describes some of the more commonly encountered cycle parking equipment:

Cycle racks: This is a fixture, fastened to the street or infrastructure, to which several bicycles can be secured. In their simplest form they may be a series of features into which a bicycle wheel is located. They can be a series of hoops which bicycles can be leant against or a sliding tray onto which the cycle is positioned and one wheel located to hold it in place. An important function of a rack is the ability to secure most of the bicycle, wheels and frame together, some of the single wheel racks may not be suitable for securing the bicycle and frame effectively and certainly are unlikely to accommodate small wheel bicycles.

Two tier racks: An arrangement where one rack is positioned above the other. The top rack usually has retractable trays onto which the bicycles are positioned and secured before being pushed into place for storage. The upper tier may prove difficult to operate for some users, who would benefit from using the lower tier.

Cycle stands / clamps: Typically singular these are either ground or wall mounted. They fall into two general categories; ground mounted hoops (Sheffield stands), which the bike can be leant against and secured to, or wheel jams / holders, which locate the bike by holding one wheel and may be either ground or wall mounted.

Cycle lockers: These may be considered to be large version of the personal lockers in sports facilities or workplaces. Bicycle lockers are large enough to accommodate at least one bicycle either horizontally, like a dog kennel, or vertically, standing on the rear wheel. Lockers are less space efficient than staggered racks but they can potentially provide individual security that perhaps is greater than most cycle parking arrangements. The locking arrangements depend on the application, varying from key or code access to automated card or phone authorised. These units can be used externally, in commercial premises or for individual residences, and within a building / carpark.

Cycle shelters / compound / cages: These are secure constructions having some form of glass or mesh surrounding walls, those without a roof will be a compound while those with a roof will become a shelter and cages are typically secure compounds within buildings. Such facilities can vary in size from accommodating three or four cycles to larger facilities containing several hundred. A range of racks can be installed within these structures to suit the requirement of users. Variations such as the bike-hangars have been used extensively in London where they are installed in a car parking space and store about 6 bikes.

Parking - Home / Domestic

Most of our daily journeys will start from home. If these journeys are to be made by bicycle then safe, secure and convenient storage is needed. Without such storage it is unlikely that people will regularly ride their bicycle: who wants to struggle early in the morning extracting their bicycle from a shed inconveniently placed at the end of the garden or a room that is full of other stored items at the end of a narrow corridor. A survey by Transport for London found that a third of cyclists would be encouraged to ride if there was better town centre cycle parking and about 10% if there were better cycle parking at or near their homes¹.

A recent report highlighted that people on low incomes are more likely to experience problems with their bicycle storage: typically those on low incomes live in smaller homes and have less storage space, which may prevent storage of a bicycle. Also, they are more likely to live in flats or high-rise buildings, having limited storage space. Furthermore, about 25% of people from ethnic minorities have limited cycle storage at home or work.²

Many inner city areas or residential localities with high multiple occupancy housing, such as halls of residence, have limited or no safe, secure or convenient bicycle storage. In such situations bicycles may be kept in the living accommodation, left partially blocking passageways (which may also be a critical exit route), or locked to street furniture, impeding pedestrians. These are often areas where some form of secure bicycle parking would be extremely beneficial in encouraging more cyclists and generally improve the lives of the local population.

¹ Town Centre Study 2011, Transport for London. Sept 2011

² Cycling for everyone: a guide for inclusive cycling in cities and towns, Sustrans and Arup. July 2020

A cycle parking survey undertaken by Camcycle³, Cambridge cycle campaign group, revealed that most (83%) respondents parked their bike on their own property, including; in the house, shed/garage, or in the garden. The remainder (17%) resorted to parking their bikes in the street, including parking bays and locking to street furniture. 30% of respondents found parking their bikes at home was difficult, specifically access or egress to the parking location. The majority (64%) found their bike parking secure while those parking on the street, parking bays or in gardens felt least secure. A survey of residents in Edinburgh tenements⁴ indicated that more than 80% of cyclists kept their bikes either in the apartment or in the stair well. Most indicated difficulty in storing their bikes and 32% said it stopped them cycling regularly. Some respondents indicated that bikes left in public areas were subject to damage, vandalism and theft.

A London Cycling Campaign report reviews the provision of convenient and reasonably secure cycle parking for residents in the borough of Hackney and highlights some simple steps to facilitate bicycle storage⁵, such as repurposing unused areas in buildings, fixing doors and locks and providing lockers. A more radical solution is the provision of “bike hangars”, these are secure bicycle enclosures that are often installed in car parking spaces on the road and typically accommodate 6 bicycles. Bike hangars^{6/7/8} tend to be organised by local councils with the management being by the equipment supplier. Rented to locals with an annual charge in the order of £100 to £150 per annum and a deposit for the access key.

In many parts of the country house buyers expect cycle storage as part of new housing developments, which affects saleability and desirability⁹. In England 42% of people have access to a bicycle¹⁰, which suggests there are a lot of households with poor storage facilities. In the Netherlands people have their bicycles readily available because building regulations ensure that most Dutch have a perfect place to store their bicycles in or near their home¹¹. There should be a planning requirement for every housing developer to provide secure, convenient and accessible residential cycle parking as part of all new developments, in line with the government proposals for cycle storage set out in “Gear Change”¹². Where neighbourhood parking is considered then it should be within a reasonable distance of the users homes, as the distance increases the acceptability reduces and by 150 metres then only 21% will find them still useable¹³.

³ Street Cycle Parking Project, Camcycle. 2018

⁴ Survey of Residential Bike Storage, Spokes. October 2010

⁵ Hackney Residential Cycle Parking Project, HomeBikePark, LCC in Hackney. 2017

⁶ Guide to residential bike hangars, Islington.

⁷ Brent Bike Hangars, Brent. March 2020

⁸ Secure Bike Storage for Residential Streets, Cycle Forum. November 2018

⁹ Cycle Parking Implementation Plan, Transport for London. 2019

¹⁰ Walking and Cycling Statistics, England 2017, Department for Transport. August 2018

¹¹ <https://bicycledutch.wordpress.com/2013/07/11/parking-your-bike-at-home/>, Bicycle Dutch. July 2013

¹² Gear Change: A bold vision for cycling and walking, Department for Transport. July 2020

¹³ Bicycle Parking in Residential Areas, PRESTO fact sheet (Infrastructure).

Parking - Shopping / city centre

A key barrier to cycling, identified in most cycling surveys, is the risk of having a bicycle stolen when shopping or at work. There is an expectation that when people drive there will be parking available at their destination, so why are we surprised when people don't ride their bicycles if there is inadequate or even no cycle parking.

Throughout most of Europe journeys to local shops are often made by bicycle. The shops generally have bicycle parking adjacent to the entrance, providing excellent access and as they are visible to everyone entering and leaving offer reasonable security. Bicycle parking arrangements are usually simple hoops (similar to Sheffield stands), although most bicycle are equipped with kick-stand so only need the hoops for securing too. It is notable that even in the UK the European stores such as Aldi and Lidl provide bicycle parking close to the entrance, a contrast to more traditional British stores where, if provided, the bicycle parking will invariably be away from the entrance.

The provision of adequate, convenient, safe and secure bicycle parking is essential to encourage people to undertake bicycle journeys, for shopping, work, leisure or socialising. There are some key factors which influence people's desire to choose cycling over other modes of transport; firstly the type of cycle parking provided and secondly how far the parking is away from their destination, both have an impact on the attractiveness of cycling.

Parking facility security: The type of bicycle parking facility provided influences the security being offered; simple parking hoops (Sheffield stands) located in the streets provide a feature to which a bicycle can be secured but the security is a combination of the individual's chosen locking arrangement, the robustness of the facility and visibility. Even when the best locks are used, components can be taken off the bike while the owner is away. Any theft, bike or component, is disconcerting and causes nuisance in that replacements will need to be found, all of which can result in people abandoning cycling as transport. Secure parking in the form of lockers, compounds or shelters may provide greater security, particularly when they are monitored either by CCTV or manned.

The duration of the shopping trip can influence the type of cycle parking facility that is used, when quickly popping into a shop then it may be acceptable to briefly lock the bike to the closest street furniture, whereas, a more secure parking facility will be preferred for longer shopping trips¹⁴.

Distance from the shops: The anticipated duration of the shopping trip will influence how far away the bicycle is parked. A quick trip, popping to the shops will encourage parking nearby, typically up to 15 metres from the expected destination. When considering a longer shopping trip, up to about 2 hours, then parking up to 100 metres away may be acceptable^{15/16}. It is clear that for quick trips to a shop then cycle parking very close to the entrance and easily accessed is a priority. However, even higher security supervised parking facilities should be located within a radius of 150 metres from the heart of the shopping area¹⁷.

¹⁴ Cycle Parking Supply and Demand, TRL276, Transport Research Laboratory. 1997

¹⁵ Dublin City Centre Cycle Parking Strategy Report, Dublin City Council. 2015

¹⁶ Bicycle Parking Manual, The Danish Cyclists Federation. 2008

¹⁷ Bicycle Parking in the City Centre, PRESTA fact sheet (Infrastructure)

The provision of bicycle parking facilities for shopping areas and centres is not straight forward, there is need for various types of facilities providing different levels of security and proximity to the shops. In addition the bicycle parking facilities need to be visible and clearly signed, if people don't know where the bicycle parking facility is, and is not immediately visible, it will not be used. Bicycle parking should be located on cycle routes as cyclists are more likely to notice parking en-route to their destination rather than if it is located a distance away. Cyclists not finding suitable parking at their destination face a dilemma, not many have the patience to spend long looking. "Invisible bicycle parking is no better than no parking". Making parking visible is a question of layout and design of the parking facilities and of its visual appearance. There must be no doubt about where bicycle parking is and how to access, it must be attractive, inviting and visible¹⁸.

Underground cycle parking is obviously not visible so special effort is needed to draw attention to the facility in the form of clear signs and distinctive entrances. Multi-storey parking is an alternative for areas where the demand for parking is high and space limited. Ideally it should be possible to ride in and out of bicycle parking facilities, for underground or multi-storey this will require acceptably gradual ramps.

There are often calls for the removal of town centre on-street parking, something that local authorities are reluctant to do as nearby shop keepers perceive that their customers predominantly arrive by car. Many studies have shown this is not the case and a report from Melbourne Australia illustrates the spending powers attributed to cars and cyclists: a car parking space will generate \$27 per hour while each cyclist will spend \$16.20 per hour, however, six bicycles can be parked on a single car parking space hence a spending of \$97.20 per hour¹⁹. Whilst car parking spaces are full of cars other drivers, finding no parking place, may decide to travel elsewhere to do their shopping, so making cycling more appealing may encourage more shoppers to local stores. Many towns around the world now appreciate the benefits of encouraging bicycle travel and support the introduction of more cycling facilities.

Parking - Workplace

Typically people cycling to work will expect to park their bicycles only a short distance from their workplace, most would expect to walk up to 50 metres but where higher level of security is provided the distance may be greater²⁰. A surveys of drivers who live within 5 miles of their workplace indicated that 37% would consider cycling if they were given more secure cycle parking²¹.

Workplace parking is difficult to categorise as some people work in town centres while others work in commercial and industrial areas. Many of the people working in town centres will use the public bicycle parking and those employed on commercial and industrial areas will rely on the parking provided at that site and which will depend on space and nature of the site. Employees potentially leaving their bicycles for 8 hours or more will need to have a high degree of confidence in the security arrangement.

¹⁸ Bicycle Parking Manual, The Danish Cyclists Federation. 2008

¹⁹ What is the economic contribution of cyclist compared to the car driver in inner suburban Melbourne's shopping strips? Alison Lee, The University of Melbourne. 2008

²⁰ Bicycle Parking Manual, The Danish Cyclists Federation. 2008

²¹ Cycle Parking Supply and Demand, TRL276, Transport Research Laboratory. 1997

The cheap easy option is to place a few Sheffield stands in the carpark, but the perception is that they offer limited security for a working day and may not satisfy most cyclists. Commercial and industrial sites can find the provision of secure bicycle parking a challenge, with conflicts between demand for car and bicycle parking. There are numerous options available commercially that can be adapted for a range of applications.

Some employers engage whole heartedly with cycling and in addition to providing cycle parking facilities they also provide changing and shower facilities, together with lockers for cycle clothing and equipment, and even a clothes drying facility²². A few employers assist their staff in organising rides and other activities within the local community.

Parking - Transport Interchange (bus stops)

Being able to leave bicycles at railway stations has been part of train travel since the growth in popularity of the safety bicycle. Riding to the railway station effectively extends the catchment radius, from within walking distance to that within a short riding distance. This philosophy has been adopted whole heartedly by the Dutch, where people ride to the stations and park in dedicated bicycle parks, then use the train or tram to the town where they work and then they may take a hire bike to their place of work. All of this travel can be achieved using a single travel card as parking, train travel and bike hire are integrated across their network. Cycling brings express public transport within a 20 minute reach of 46% of the Dutch population, compared with only 10% within 20 minute walk of a station²³.

The Dutch also ride their bicycles to bus stops, leaving them in parking facilities²⁴. Again this extends that catchment area for the bus system allowing people to use public transport rather than resorting to using the car. Even in England some authorities are providing cycle parking at bus stations, Greater Manchester have built cycle hubs in some of their suburbs²⁵. These secure facilities require membership at varying levels with a modest regional membership for parking at regional hubs while a higher level provides guaranteed parking at City Tower or Media City and a premium membership allows use of showers and lockers at either location.

There is growing recognition that providing public transport interchanges with cycle parking increases the travel options²⁶ and customer base, and without such opportunities people would opt for using their cars. There are considerable benefits to providing a range of travel combination options; such as reducing congestion and pollution in cities and along major routes. The travelling public have a more reliable journey, when not relying on the vagaries of driving on congested streets.

²² Trip end facilities for cyclists, TRL309, Transport Research Laboratory. 1997

²³ Synergies from Improved Cycling-Transit Integration, Urban Cycling Institute. June 2019

²⁴ Bus Stop Bike Parking, A View from the Cycle Path. September 2013

²⁵ <https://tfgm.com/cycling/parking>

²⁶ Cycling Facilities at Interchanges, PRESTO factsheet (Infrastructure)

Discussion

An inevitable necessity of personal transport is the need to leave it somewhere safe and secure when not in use, both in the domestic / residential setting as well as at any chosen destination. The provision of bicycle parking at town centres, shopping centres, work places, places of education, etc, facilitate utility cycling. Bicycle parking infrastructure provides somewhere secure to leave bicycles and ensures they are left in an orderly manner (not haphazardly secured to other street furniture). However, insufficient parking will deter people from cycling, they will either defer to an easier form of transport or go somewhere else, particularly at peak times when parking is at a premium and when cycling come into its own. With a growing emphasis on active travel, enabling people to make those choices becomes an integral part of the transport solution.

An essential part of planning bicycle parking requirements is understanding the needs of the cycling population and how they will use them. Collecting travel data and undertaking surveys of the local population can provide an indication, however, in an evolving transport environment collecting reliable information is challenging. Guidance suggests there should be 20% to 30% extra spaces than peak number of users^{27 / 28}, this allows for growth in demand and is particularly important to ensure there is space for parking at all times, as people not finding a parking space will be deterred from cycling. We can be sure that demand will increase, with the appropriate policies, necessitating expansion of facilities in the not too distant future so any development should be future proofed.

The provision of domestic bicycle parking is frequently overlooked, the focus is usually on the destination, towns, shopping centres, workplaces and places of education. There are areas in most cities where high density housing offers limited storage for bicycles and even new housing developments have limited facilities for bicycle storage provided by the developer. The outcome is that bicycles are stored in difficult to access locations, which makes their use less appealing, or secured to something on the street or front garden making them vulnerable to theft and vandalism. Areas with high levels of multiple occupancy, such as halls of residence and student accommodation, may provide little space for cycle storage and it is these types of areas that benefit from reviews of facilities for bicycles. There are numerous options from upgrading or repurposing existing space to providing secure bike hangars in parking spaces on the street.

Bicycle parking in city centres and shopping centres addresses the needs of both shoppers and employees in the locality. An important aspect of such bike parking is the variety that is required to address the different needs, such as; those quickly popping to a shop, only taking a few minutes, to the longer shopping trips, at least an hour, or those working in the locality. The needs are quite different and the demands of the users are different and need to be taken into consideration when planning the facilities. There is a place for basic Sheffield stands in the street conveniently placed for those quick trips but also a demand for more secure parking for a longer duration, which is covered and provided with some form of security. In addition, the distance between the parking place and the destination is important and related to the level of security offered, people will walk a little further from secure bicycle parking but the popularity will reduce with distance.

To be effective parking must be visible and/or well signposted to ensure that it is being used, an underground bicycle park is underground hence invisible. Inside parking must also be accessible by riding, all access routes need to be smooth without steps or

²⁷ Cambridge Cycle Parking Guide, Cambridge Cycling Campaign. Sept 2008

²⁸ Cycle Parking Implementation Plan, Transport for London. 2019

irregularities and have gradients that are sufficiently gentle to be cycled up: why have bike parking where the bike must be pushed?

Workplace parking is predominantly used by employees who will be using the facility for at least 8 hours, so will require a high level of security and be within a short walk of their workplace. The preferred parking should be undercover and possibly include some simple tools to effect repairs and inflate tyres. A frequent request of commuting cyclists is the provision of changing facilities, showers and suitable lockers; which can be a bigger challenge for small organisations in finding the space and funding the facilities. Often other employees will see that cyclists are getting something they are not, despite being provided for all employees. Some organisations have encouraged the formation of cycling groups, as part of the social engagement and worked towards accreditation to awards such as 'Investors in People'.

More people are using Ebikes as a means of transport, these bicycles are comparatively expensive so the users will seek more secure parking. These bikes are also heavier than traditional bicycles which restrict the parking facilities that can be used by most people, needing to be at ground level and avoiding any lifting. Many of these machines will be used by people with limited mobility which needs to be considered when providing parking facilities. Ebike users will be seeking parking facilities that offer high security, easy access and do not require the bicycle to be lifted.

Many people having mobility issues find that cycling becomes the most accessible means of transport; be that with a standard bicycle, Ebike, a tricycle or other form of cycle. Fundamentally, cycling offers a means of transport that they would otherwise be deprived, needing to use a car or taxi. To ensure equity there needs to be provision for non-standard cycles within the secure parking arrangement, that take consideration of people's abilities and potential restrictions.

Cargo bikes are an important and growing category, they can be found in a range of forms; trikes with a box on the front, long bicycle with cargo platform or cargo box, cargo trailers and four wheeled pedalled cargo cycles. Being longer, wider, and heavier makes them more difficult to manoeuvre than traditional bikes and require smooth, flat areas for parking, fortunately most have stands and parking brakes so do not require stands though may require some anchor points for security. Cargo bikes are used for commercial deliveries and may require secure parking in and around the city, although this may not be of long duration. Parents often use cargo bikes to transport their small children, so it is not unrealistic to expect people to require secure parking at their destinations: in Copenhagen 25% of all families with 2 children have a cargo bike²⁹. Again cargo bikes are also comparatively expensive, most incorporating some form of electric pedal assist, and so people will be reluctant to leave them unsecured on the street.

Secure parking facilities can be provided in a range of different formats from various manufacturers, each with their different application and intended use. Secure parking in the street or pedestrian areas can be found in a range of types, an example that has been used in a number of London boroughs is the bike hangar which is fastened in a car parking space and accommodates 6 bikes. The spaces are rented to individuals for the storage of their bicycles, and mostly located in residential areas. Larger structures, often referred to as hubs, may be a more traditional steel construction with a secure access, some utilise recycled containers, though they are not terribly spacious when manoeuvring bicycles. A selection of manufacturers are listed in Appendix 1. Unfortunately most commercially produced buildings utilise a racking system which do not readily accommodate cargo bikes or adapted cycles.

²⁹ Copenhagen city of cyclists, City of Copenhagen. 2017

The provision of 'security' is a challenge, whether that is providing some form of locking arrangement that is accessed by; key, code, electronic token, mobile app, card, etc, but they are not fool proof and rely on the user operating the system correctly. Some parking facilities use CCTV which relies on the system being monitored during the operational period and then using the images captured to identify the perpetrator. It relies on the crime being reported and then acted upon, and in the meantime someone has had a bike stolen and will probably be reluctant to repeat the experience and possibly give up cycling.

The provision of secure bicycle parking becomes even more complicated with the possibility of charging for secure facilities, which will impinge more on the lower income and those more reliant on their bicycle. Those with expensive bicycles may be accepting of paying a modest fee but those most benefiting from using a bicycle, being their sole means of transport, may find the charge for their modestly priced second hand bike to be excessive. This raises many questions such as; what level of fee should be charged for using a secure bicycle parking facility or should it be free? How long can they be parked? Security personnel or CCTV? How are abandoned bicycles dealt with?

Theft of a bicycle can be quite traumatic and it is reported that about 25% of people would give up cycling after having their bicycle stolen³⁰. There are reputedly more than 300,000 bicycles stolen each year, about three times the number of cars taken³¹, and potentially a lot of people abandoning cycling. Whilst we are endeavouring to encourage more people to ride bicycles, every effort must be made to ensure the safety of bicycles parked at their destination; be that residential, shopping, work, etc. To encourage utility cycling the provision of bicycle parking facilities becomes an extremely important part of the infrastructure, with a variety of equipment that address the different needs and at distances from expected destinations commensurate with the security levels provided.

³⁰ Bicycle parking in the City. PRESTO fact sheet (parking)

³¹ Gear Change: A bold vision for cycling and walking, Department for Transport. July 2020

Conclusion

The provision of bicycle parking is an integral part of the cycling infrastructure and encouraging people to ride bicycles for many of those short journeys. Having a bicycle stolen means that trip has been spoiled and then sets in place a series of actions that had not been contemplated at the start of the journey; getting home, reporting the theft to the police and the insurance company, and then searching for a replacement. The trauma of replacing the bicycle is just the start, there is then the nerve racking decision of whether to risk the theft of another precious bicycle by leaving it in the same location or try somewhere else or use another means of transport?

Utility cycling invariably starts from home for those necessary journeys to the shops, work, medical centre, cafe, etc. The provision of safe, secure and convenient bicycle parking in residential areas is a fundamental. People need to have their bicycle easily accessible for those short trips to the local shops and when rushing to work at the last minute. Whether the bicycle storage is achieved by updating / converting existing spaces or providing new facilities in the street it must be safe and secure for those using it.

When arriving at their destination people must feel confident that their bicycle can be left safe and secure, as theft and vandalism will quickly deter people from cycling and they will either use alternative modes of transport or go elsewhere. The locations of bicycle parking facilities must consider the expectation of the security being provided and the distance to shops, workplace and other relevant destinations. Even where good security is provided people will still only walk a comparatively short distance to their destination, typically about 150 metres. There is a need for a range of parking facilities which include the ubiquitous 'Sheffield stands' up to secure compounds, individual lockers and manned supervision.

Cycling should not just be considered a mode of transport on its own but used in combination with other modes of public transport; it has long been accepted to cycle to the railway station. Providing bicycle parking facilities at bus stops would improve many people's ability to travel. The bicycle should be an integral part of modern life for all those local, short journeys, to facilitate this there must be adequate parking facilities provided to satisfy the needs of those cyclists.

Appendix A - Cycle parking equipment manufacturers

Manufacturers of cycle parking equipment

Manufacturer	Email address
Cyclehoop	https://www.cyclehoop.com
Falco	https://www.falco.co.uk/products/cycle-parking/cycle-racks/
Turvec	https://turvec.com
Basics Industrial and Commercial Equipment	http://www.basicsequipment.co.uk/index.htm
Cyclepods	https://www.cyclepods.co.uk
Broxap	https://www.broxap.com
Bikedocksolutions	https://www.bikedocksolutions.com
Metrostor	https://www.metrostor.net/products/cycle-parking/
Langleydesign	https://langleydesign.co.uk
Cycle-Works	https://cycle-works.com
Velopa	https://www.velopa.com
Giken Ltd	https://www.giken.com/en/
Ooneepod	https://www.ooneepod.com