

Planning, Design and Access Statement

In support of a planning application for the installation of a Barclays Cycle Hire docking station on the footway and carriageway adjacent to:

3 Greenland Road and the former Greenland Road Children's Centre, NW1 in the London Borough of Camden

Date: September 2011

TfL reference: 02/610502



Executive Summary

Transport for London (TfL) is coordinating the implementation of a comprehensive cycle hire scheme in London on behalf of the Mayor of London. Barclays Cycle Hire was launched by the Mayor in July 2010, and by the end of 2010, 2 million journeys had been made.

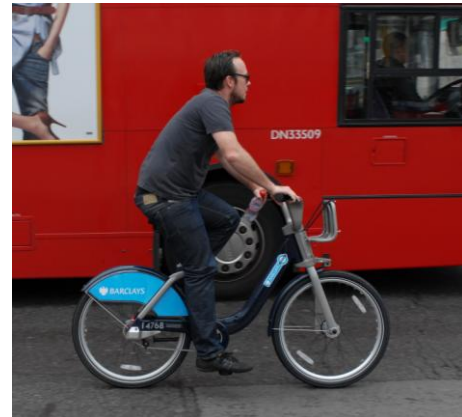
The scheme provides safe and convenient public access to cycles for short trips, especially for those who do not usually cycle or own a bicycle. It promotes the Mayor's vision for a sustainable and low emission transport system within London by actively encouraging cycling. Barclays Cycle Hire is set out in the Mayor's cycling strategy (Cycling Revolution London, 2010), along with other TfL initiatives, which will bring significant social, environmental, health and financial benefits to the Capital.

Building on the success of the scheme to date, the Mayor has announced his intention to expand the scheme eastwards, covering the London Borough of Tower Hamlets, and North Shoreditch in the London Borough of Hackney. In addition to expanding the scheme area, TfL is also currently intensifying the number of docking points in the existing zone. Docking stations will continue to be spaced approximately 300-500 metres apart within nine London boroughs and the Royal Parks, and when complete, the network will provide about 14,400 docking points and 8,000 cycles for hire.

This Statement incorporates a Design and Access Statement as well as providing an appraisal of relevant planning policy. It demonstrates how TfL along with its partners has had special regard for the design and location of the docking stations. The design of the street furniture, in particular the terminal design, has evolved through consultation with the host boroughs, the Royal Parks, and access groups. This collaborative process has led to a high quality docking station design which is adaptable to and visually appropriate in a variety of locations across London.

This Statement is provided in support of a full planning application for the installation of a Barclays Cycle Hire docking station on the footway and carriageway adjacent to No. 3 Greenland Road and the former Greenland Road Children's Centre, NW1.

This Statement concludes that the proposal is supported by, and is consistent with, the relevant planning policy and guidance within national and local development plans and strategies. The docking station will be appropriate within the existing local environment and as part of the wider Barclays Cycle Hire scheme will contribute to an innovative and sustainable transport system in London.



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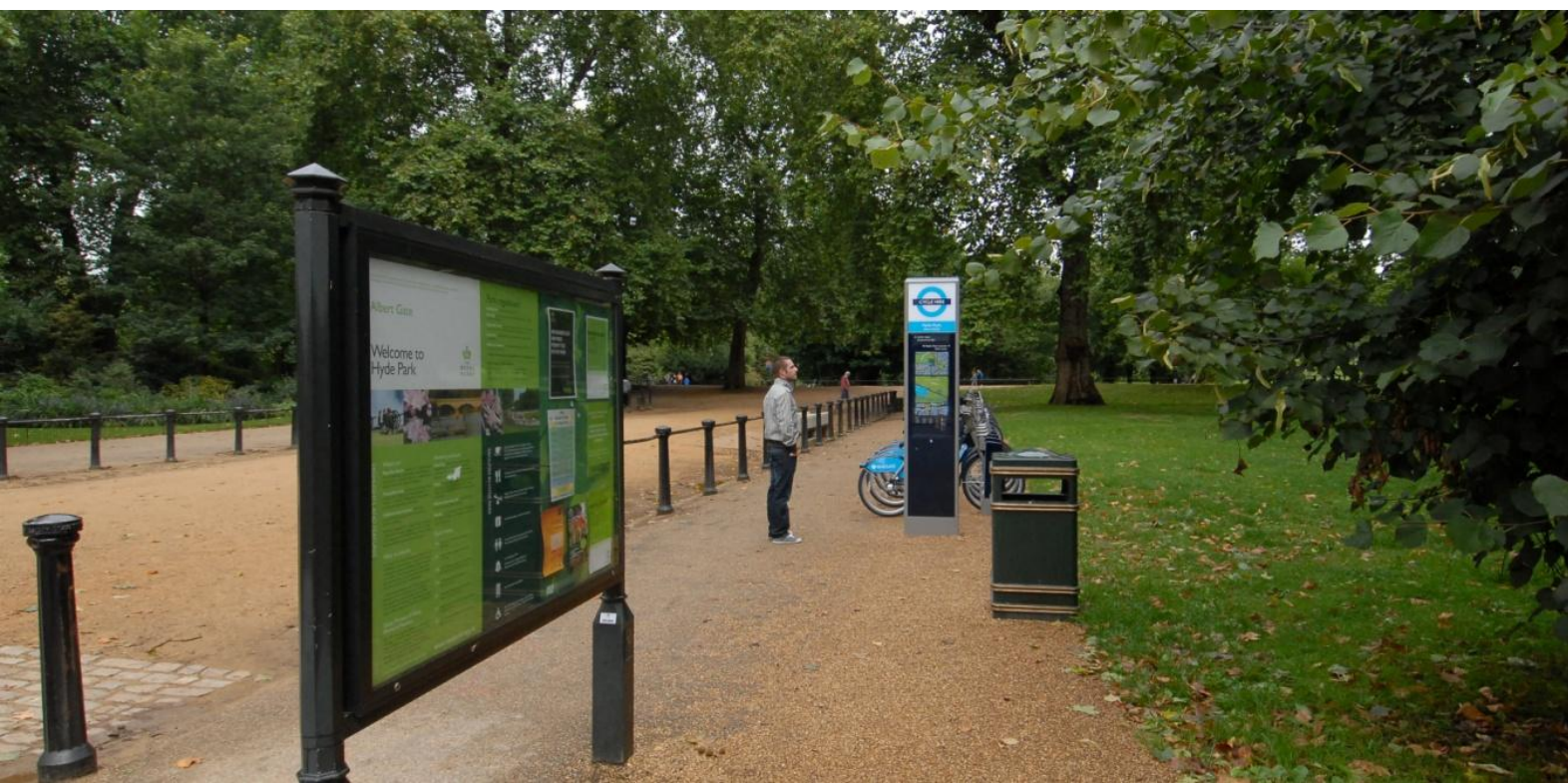
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Barclays Cycle Hire docking stations (clockwise from top left):

- on a footway build out in London Borough of Camden;
- on the carriageway in Royal Borough of Kensington and Chelsea;
- on the carriageway in City of Westminster;
- in Hyde Park, in City of Westminster.



1. Barclays Cycle Hire

1.1 Statement Overview

This Statement is provided in support of an application for the installation of a Barclays Cycle Hire docking station on the footway and carriageway adjacent to No. 3 Greenland Road and the former Greenland Road Children's Centre, NW1, in the London Borough of Camden. The docking station forms part of the Barclays Cycle Hire scheme (the scheme).

Figure 1.1 shows an existing site before and after the installation of a Barclays Cycle Hire docking station.

Part 1 of this Statement provides background to the scheme, details of the docking stations and information regarding the implementation of the proposal. Part 2 explains the design principles for the scheme. Part 3 is an access statement which explains how mobility and access issues have been addressed. Part 4 provides a review of planning policy and guidance. Part 5 describes the planning application at this location.



Figure 1.1: An existing site before and after installation of a Barclays Cycle Hire docking station



1.2 The Barclays Cycle Hire Scheme

Cycling within London is experiencing rapid growth. It is estimated that there has been an 117 percent increase in the number of cycling trips on London’s major roads since the year 2000 with around half a million cycle trips currently taking place in London every day. The Mayor has set a target to increase the number of cycling trips within London by 400 percent by 2026, and more generally, improve conditions for cyclists.

To help achieve this growth TfL was tasked with implementing the Barclays Cycle Hire scheme within London in 2010. The scheme allows people to hire a cycle from a docking station, use it as desired, and return it to either the same or another docking station. To ensure the adequate availability of docking points and cycles for those hiring and returning cycles, docking points outnumber bicycles by 70-80%.

The scheme was developed in collaboration with the Royal Parks and the following nine London Boroughs:

- London Borough of Camden;
- London Borough of Hackney;
- London Borough of Islington;
- Royal Borough of Kensington and Chelsea;
- London Borough of Lambeth;
- City of London;
- London Borough of Southwark;
- London Borough of Tower Hamlets; and
- City of Westminster.

The scheme was launched in July 2010, and by the end of 2010 there were around 350 docking stations in operation, accommodating a network of 5,000 bicycles, and over 2 million cycle hire journeys had taken place with over 100,000 scheme members.

A survey conducted of the scheme in 2010 (*Barclays Cycle Hire Behaviour Change and Customer Satisfaction Survey*, TfL, 2010. Base 1,350 respondents) indicates high levels of customer satisfaction, where 71% rated the scheme as 7 or more out of 10, and most would recommend it to a friend. Most journeys have been under 30 minutes in duration and are typically for commuting to and from work. Most users carry out a journey at least once a week. More than half of those using the scheme in 2010 did not usually cycle prior to Cycle Hire, indicating that the scheme has been successful in spreading the benefits of cycling to a new group of people and increasing the number of cycling trips in London.

Building on the success of the scheme to date, the Mayor has announced a commitment to expand the zone eastwards to include the London Borough of Tower Hamlets and North Shoreditch in the London Borough of Hackney. In addition to expanding the scheme area, TfL is also engaged in intensifying the number of docking points in the existing scheme area to meet the additional demand generated by the eastern expansion. Around half of the journeys generated by the expansion are expected to be between the east and central areas.

TfL is to expand and intensify the scheme in 2011 and 2012. The Barclays Cycle Hire scheme will cover the area shown in Figure 1.2, and will deliver around 8,000 cycles across approximately 14,400 docking points.

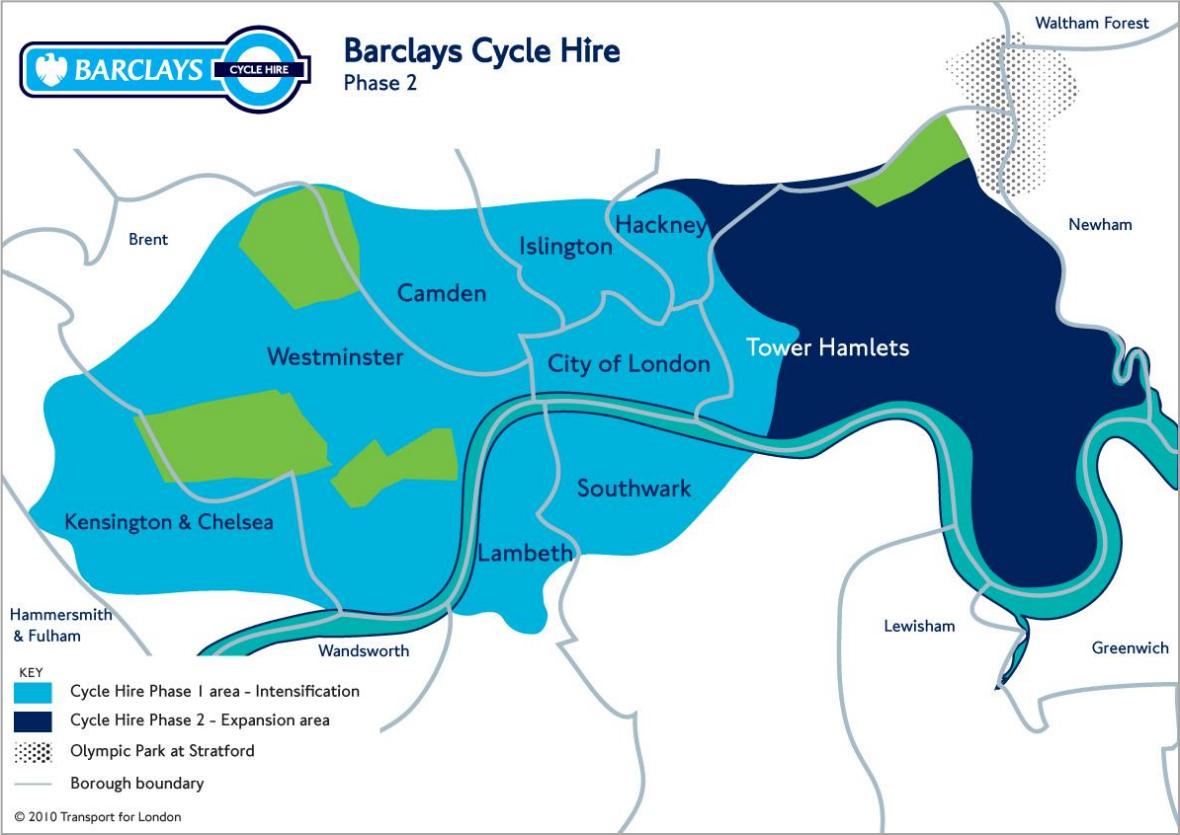


Figure 1.2: Barclays Cycle Hire scheme area



In preparing for the expansion and intensification of the scheme, TfL has worked closely with the partner boroughs. TfL has also worked extensively with the London Borough of Tower Hamlets, who have set out in their cycling strategy: *Cycling Connections* (2009), their commitment to become one of the most active and healthy boroughs in London by 2020, including increased cycling trips and mode share as a key objective.

Serco Group Plc (Serco) was appointed as the Scheme Operator in 2009. They worked with the Public Bike System Company (Montreal) to develop the Barclays Cycle Hire scheme in London, based upon the 'BIXI' System which successfully operates in Montreal (Figure 1.3). Serco design and build sites, and operate and maintain the scheme on TfL's behalf. Their contract includes the following:

- design and implementation of business support operations and maintenance processes;
- maintenance of assets;
- re-distribution of cycles around the scheme area; and
- customer service centre including the website and user communications.



Figure 1.3: BIXI docking station, Montreal

serco

Scheme Benefits

Scheme benefits, both existing and anticipated long term benefits, include the following:

- a modal shift from other forms of transport to cycling. In the 2010 survey of Barclays Cycle Hire users, 35% of the journeys by scheme cycles were undertaken previously by London Underground. Other modes include 29% by walking, 23% by bus, 5% by private bicycle, 3% by taxi, 2% by train, and 1% by private motor vehicle;
- encouraging additional cycle trips in London, and greater uptake of cycling in general. The 2010 survey shows the scheme is attracting those who did not previously cycle, where six in ten started cycling in the three months previous to scheme launch;
- reduced journey times for users. In the 2010 survey, this reason was given most often for switching to the scheme, reported by 67% of respondents;
- improved health of users. This was the second most popular reason for switching in the 2010 survey, given by 62% of users;
- encourage a broader cross-section of the population to try cycling and experience the benefits of low-cost and active travel; and
- helps to remove a number of perceived and real barriers to cycling uptake, such as the expense of buying a bicycle, the fear of bicycle theft, the difficulty of storing bicycles, the lack of opportunities to try cycling for the first time or to improve cycling skills, and the difficulty of finding secure places to park bicycles.

The scheme also:

- allows a greater choice of public transport options;
- provides the fastest option for many short journeys;
- provides a transport mode that is available 24 hours a day, 365 days a year;
- encourages local trips within London by bicycle;
- offers a sustainable and low emission form of transport;
- offers a way to keep fit and lose weight;
- provides a good way to get to know one's neighbourhood better; and
- provides an inexpensive transport option.



1.3 Site Selection Criteria

A detailed site search to select appropriate sites for docking stations in London has been undertaken by TfL and the host boroughs, based on site selection criteria developed in collaboration with the scheme partners. The criteria takes into account relevant local planning policies, supplementary design guidance, and TfL’s own standards and design guidance. The key criteria includes:

- no loss of trees and avoidance of grassed areas;
- minimal relocation of existing street furniture, including existing cycle stands;
- sufficient space to maintain clear pedestrian/vehicular paths/access;
- safe and secure areas with good natural surveillance, street lighting and/or where appropriate, close circuit television cameras (CCTV);
- close proximity to where people live and work, and attractors such as tourist destinations, and community and leisure facilities;
- avoidance of areas of high pedestrian congestion and areas known to be unsuitable for cyclists; and
- a presumption against sites where the docking station would have a detrimental impact on sensitive townscapes and/or the setting of heritage assets.

Each site is assessed on its merits having regard to its location and the surroundings. Not all of the above criteria are relevant to every site.

The London Borough of Camden has developed additional site selection criteria as follows:

- the use of carriageways where there are single or double yellow lines;
- generally no loss of residents parking bays or specially designated parking bays - disabled, doctors, car clubs, electric vehicle;
- a location on, or near to, existing London Cycle Network cycling routes and/or cycling lanes;
- a location on, or close to, junctions to provide visibility to docking stations and consistency with Legible London design principles, particularly to make way-finding mapping on terminals as useful as possible; and
- the carriageway locations to allow for the construction of a footway build-out that creates a cohesive streetscape appearance.

The identification of sites on borough land in the London Borough of Camden that best met the site selection process involved officers from the transport planning, culture and environment teams within the borough.



1.4 Docking Station Design

Each Barclays Cycle Hire docking station comprises a terminal and docking points (Figure 1.4). The layout of each docking station and number of docking points is tailored to each site, depending on the available space, the proximity to buildings, the presence of street furniture and other relevant criteria listed above. Docking stations are located on footways, carriageways and other hard-standing areas.

The Terminal

The terminal (Figure 1.5) controls the locking and release of scheme cycles, enables payment of user tariffs, allows print out of journey records, provides information about the scheme and provides way-finding mapping of the local area and the location of other docking stations.

The terminal is four sided with a maximum height of 2.4m. Two faces of the terminal have a maximum width of 0.5m and the other faces have a maximum width of 0.35m. The TfL cycle hire logo (roundel) is located at the top of each face of the terminal, along with the docking station name. The 0.5m wide faces of the terminal each comprise way-finding maps and information panels (Faces A and C as shown in Figure 1.6).

Depending on the expected usage of the docking station, and whether it is located on the carriageway or footway, one (Face B) or two (Faces B and D1) of the 0.35m wide terminal faces will comprise a screen, keypad, and membership key reader. Where only one face of the terminal is used for payment, the remaining face will display additional information (Face D2). The face of the terminal that is orientated toward the carriageway (Face D1 or D2) will incorporate traffic regulations signage to avoid the need for a separate traffic sign.

The terminal colour palette comprises:

- body - dark blue (Pantone 296c);
- base, trim and cap – silver grey (RAL 9007);
- roundel circle - cyan blue (Process Cyan C100) ; and
- roundel bar - blue (Pantone 2767).



Figure 1.4: Barclays Cycle Hire docking station



Figure 1.5: The four sides of the terminal



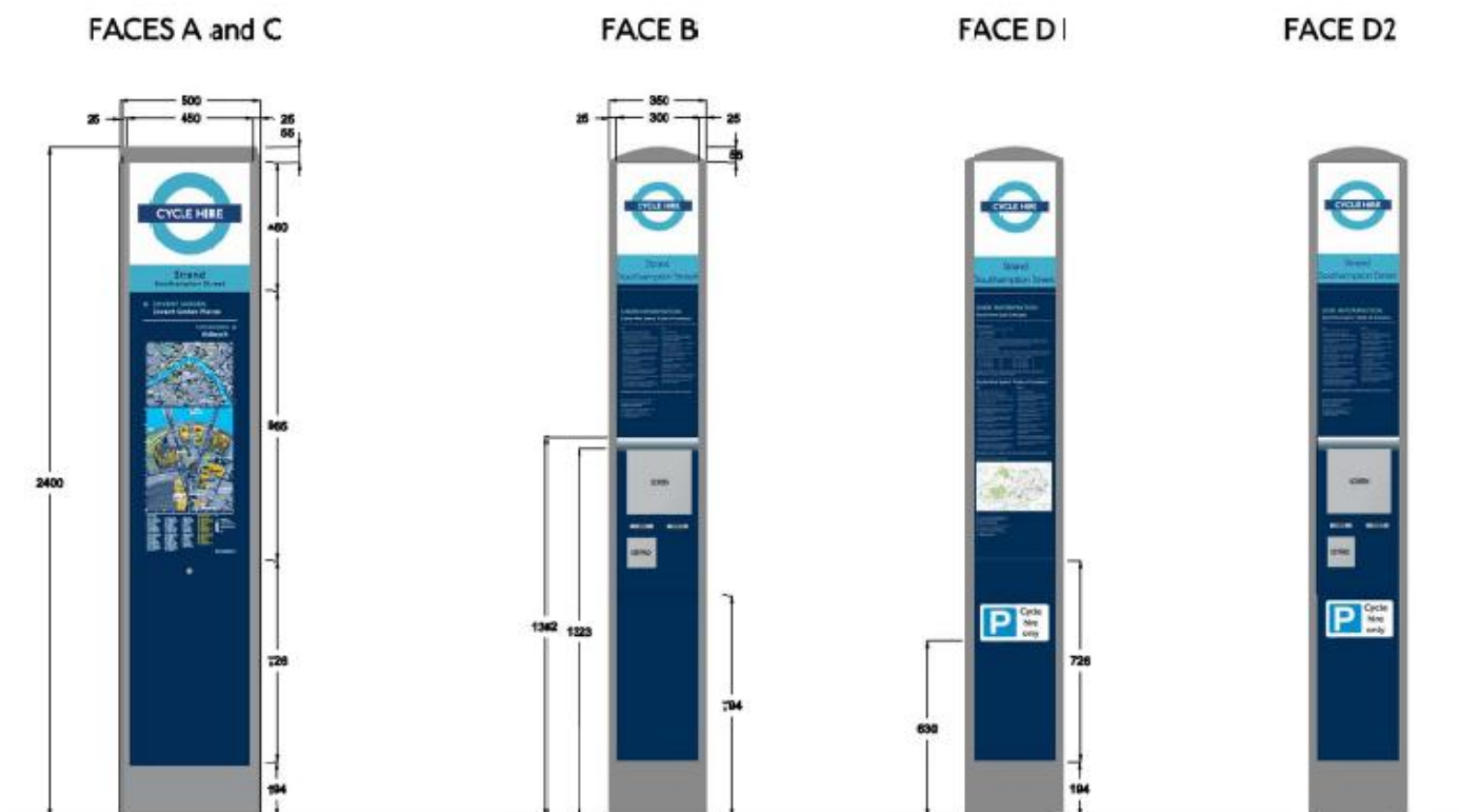


Figure 1.6: Terminal design

The terminal is constructed from the following materials:

- top cap, housing and main panels – cast aluminium with powder coat finish and a clear graffiti resistant coating; and
- information panels - toughened glass.

The TfL roundel is not illuminated. The way-finding maps and information panel can be illuminated on demand to improve visibility for users in poor light conditions.

The top of the terminal is curved to mitigate the collection of litter. It has also been designed to enable later installation of a solar panel if solar technology improves and sufficient power could be produced to operate the docking station.

The footprint of the terminal and its associated circulation area is generally a minimum of 2.0 metres by 2.0 metres, allowing ample space for people to use the terminal without causing obstruction to pedestrians. The exact location of the terminal within the circulation area is dependent on site characteristics, access to the required connection to electricity, and the need to retain clear pedestrian paths.



The Docking Points

The docking points (Figure 1.7) for the docking of scheme cycles, will be contained within a defined area (or areas) adjacent to the terminal. The dimensions of the docking point area(s) will vary between docking stations depending on the number of cycle docking points, the way in which they are laid out and the site constraints and characteristics.

The docking points each secure one cycle (Figure 1.7) and are laid out to provide a minimum of 0.75 metres between the centre point of the cycles once docked. The docking points area will be designed so that the cycles will be angled at either 45 or 90 degrees within the site. The cycle will be wheeled into the docking point where it will slot firmly into a secure locking cassette. Each locking cassette has a membership key reader to allow quick release of cycles for Barclays Cycle Hire members (refer Section 1.8).

The docking points each have a maximum height of 0.8 metres and maximum dimensions of 0.3 x 0.3 metres (Figure 1.8). The tops of the docking points are sloped to avoid litter accumulation and allow rain water to drain.

The docking points mirror the terminal in colour, being predominantly dark blue with silver inner panels, locking cassette and base, as outlined below:

- body – dark blue (Pantone 296c);
- inner panels, locking cassette, and base – silver grey (RAL 9007); and
- roundel – cyan blue (Process Cyan C100) .

The docking points are constructed from cast aluminium with a powder coated finish and a clear graffiti resistant coating.



Figure 1.7: The docking point, with one scheme cycle

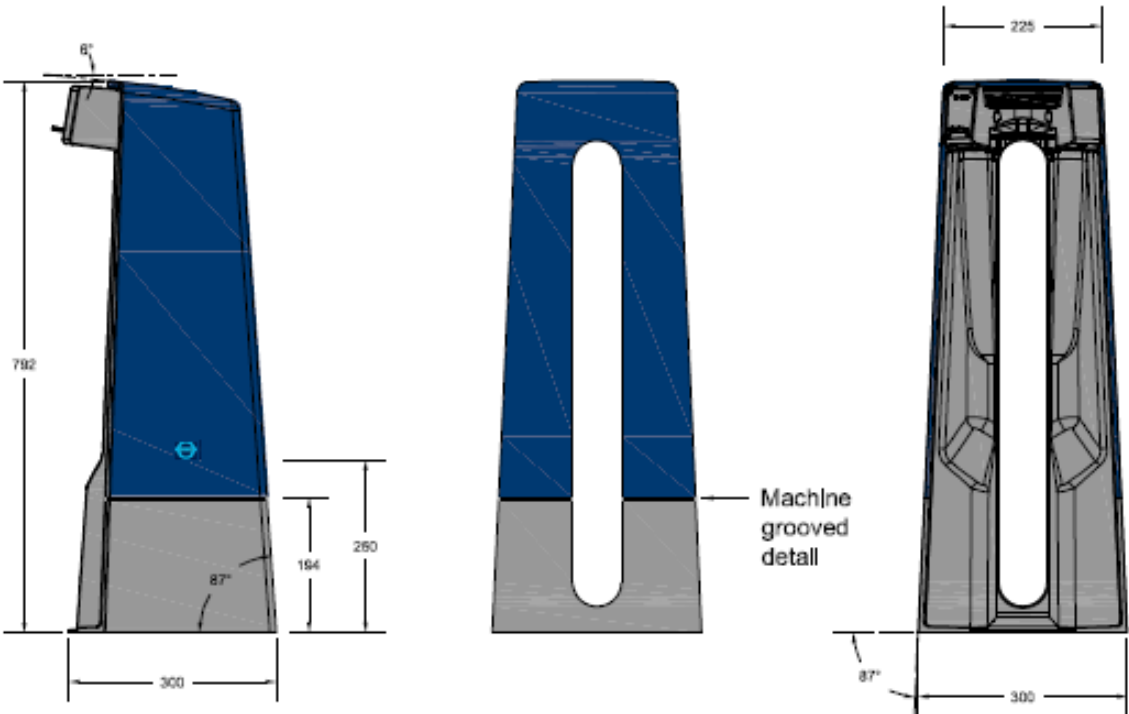


Figure 1.8: Docking point design



Foundations

The terminal foundations have a maximum depth of 0.45m (including the surfacing) and a maximum sub-surface plan area of 0.7 x 0.7 metres. The terminal is secured to a square foundation box.

The docking point foundations will not exceed a depth of 0.45 metres from the surface and a width of 0.7 metres, and are constructed as a trench extending the length of the docking points area. Figure 1.9 provides a cross section for a footway site. The docking points are each secured to a square foundation box (Figure 1.9), and its corners will be visible around the edges of the docking points (Figure 1.10). The cover of the foundation box will be finished to a high standard with a non-slip surface.

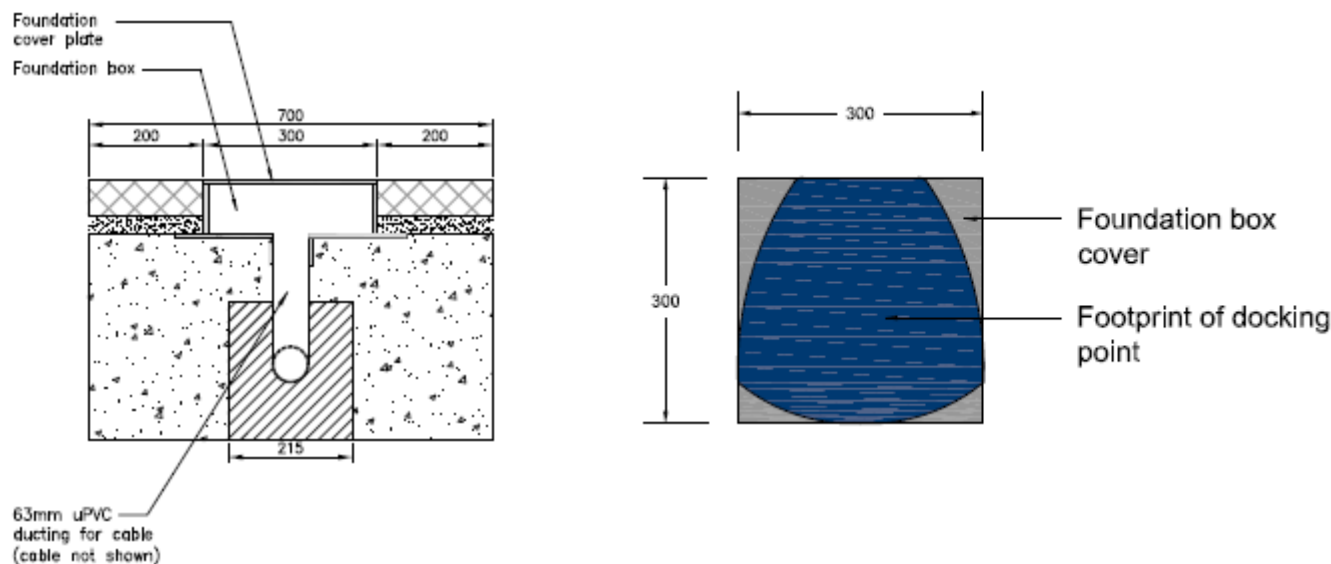


Figure 1.9: Cross-section of docking point foundations for a footway site

Figure 1.10: Footprint of docking point at base

1.5 Implementation

In addition to planning permission, other consents and orders, including a Traffic Regulation Order, will be sought for all docking stations. All preparatory works, including the installation of ducting to provide power and communications, will be undertaken prior to the installation of the docking station. Where the site is not located on part of the TfL road network, the works will be undertaken with the agreement of the relevant borough or other land owner.

Construction will normally take place over approximately 8-10 working days, and a 10 day New Roads and Streetworks Act permit will be sought to allow for site set-up and appropriate reinstatement.

Since the foundation depth for the terminal and docking point structures will be a maximum of 0.45 metres (including surfacing), the duration of excavation activities will be limited.

Within the 8-10 working days, the street furniture (terminal and docking points) is also installed and the equipment tested. This involves connecting the electrical cables and bolting the street furniture to the foundations. These are relatively quiet operations .



1.6 Operation

The docking station will be available for use 24 hours a day, seven days a week, with the main periods of use during weekday mornings and early evenings. The majority of patrons using the docking station are members who do not need to be at the station for long as they simply insert their membership key into a docking point to release a cycle. Casual users will register at the terminal and receive a cycle release code which they will enter using the touch sensitive numbered pad located above the key slot on the docking point (Figure 1.11).

The noise level associated with using the terminal is comparable to bus patrons using a ticket machine located at a bus stop, or to people viewing Legible London way-finding maps. The locking mechanism used to secure cycles to the docking points utilises innovative technology developed for the Public Bike System in Montreal. The design has been carefully optimised to ensure that the risk of cycles being stolen is minimised. The docking point has been designed to guide the user to wheel the cycle into the correct position to easily engage the locking mechanism.

The locking mechanism is contained within the docking point and the progress of locking and unlocking of cycles is indicated by discrete lights on the locking cassette (Figure 1.11). The release and re-docking of the cycles is expected to occur without any discernable noise. These design features all provide a streamlined system of releasing and locking cycles that is quick, easy, and efficient.

Contractual arrangements between TfL and the Scheme Operator regarding maintenance, repair and replacement ensure the appearance of the docking station meets appropriate standards. A key objective has been to minimise the physical depreciation of the street furniture through design by, for instance, the use of curved edges on equipment and the selection of robust materials and finishes that are easy to maintain.



Figure 1.11: Using the Barclays Cycle Hire docking station:

- a using a membership key to release a cycle at the docking point;
- b using the terminal for registration and/or information;
- c printing out the release code from the terminal;
- d entering release code at the docking point;
- e re-docking the cycle at the docking point; and
- f locking the cycle into the locking cassette.



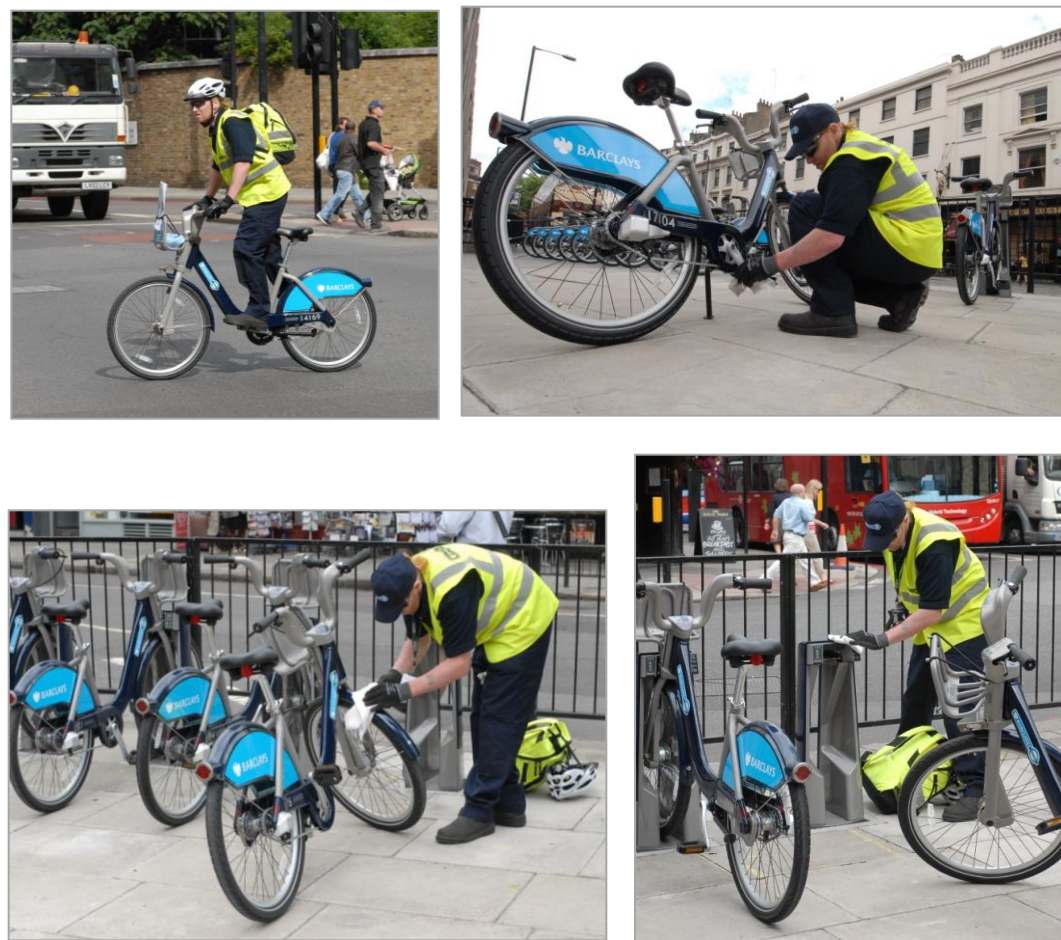


Figure 1.12: Maintenance and cleaning of the docking stations

Each docking station is inspected by maintenance staff a minimum of every 14 days to ensure all equipment is fully functional and a high standard of station cleanliness is maintained. Any damage identified during this visit is repaired on site where possible or reported for follow-up action. This inspection usually occurs during daytime hours when visibility is best and by a single member of staff on a scheme cycle (Figure 1.12). The noise generated by these activities is not anticipated to cause any disturbance.

In addition, docking stations are also visited when faults or damage is reported by users or following an inspection. The visit is usually by a single staff member on a scheme cycle who will assess the fault and if possible resolve it on site. Where this is not possible, an operational vehicle is directed to the station to collect and remove the equipment to the maintenance depot for repair (Figure 1.12).

The Scheme Operator maintains painted and treated surfaces, and repairs or re-applies treatments as required so as to retain the original finish and quality of the docking station equipment. All graffiti and vandalism is removed / repaired within 24 hours of it being reported.

The success of the scheme relies on the appropriate distribution of cycles across the network and availability of vacant docking points at the end of each hire. The scheme network has therefore been designed to maximise the natural redistribution of cycles.

As the scheme develops and the Scheme Operator continues to learn more about customer patterns of use, redistribution models will be revised. Furthermore, the network will be adjusted where possible to minimise the need for the redistribution of cycles, such as through intensification within the existing scheme area.



2. Design Statement

2.1 Overview

This section demonstrates how the design of the docking station evolved and explains how the scheme discourages crime and supports sustainability. From the feasibility stage, TfL looked at operational cycle hire schemes in cities around the world, in particular the Paris (Vélib') and Barcelona (Bicing) schemes. The successes and shortcomings of these schemes have informed the design of the Barclays Cycle Hire scheme in London.

TfL developed the design in partnership with the host boroughs, the Royal Parks and other key stakeholders. This included working closely with English Heritage, Design for London, and access and inclusivity groups to produce a design appropriate for London. The final design, materials, finishes and livery were developed in close consultation with TfL's design standards team, who have extensive experience in the development and maintenance of street furniture in the London street context.

The result is high quality contemporary design, with detailing and finishes that are robust, sustainable and functional in the context of London. The final design complements and enhances the public realm in London, is equally appropriate in both traditional and modern townscape settings, and meets the requirements of users and stakeholders.

2.2 Case Studies

This section looks at the operational bicycle hire schemes in Paris and Barcelona and discusses how these schemes have influenced the Barclays Cycle Hire scheme.

Vélib': Paris, France

In 2007 Paris implemented a self-service bicycle system (Vélib') to promote sustainable travel and improve mobility and the quality of life in the city. After 18 months of operation, the scheme recorded between 80,000 to 100,000 users every day, 41 million users (in total), and 238,000 long term subscribers

The main characteristics of the Paris scheme are as follows (Figure 2.1):

- **The terminal** is oval in plan with dimensions of 2.1 metres (height) by 0.5 metres (width), with one main functional panel incorporating a payment point, Vélib' top-up card point and mapping;
- **The docking points** are for a single bike and are approximately 0.8 metres in height;
- **Bicycle release** from the docking points for subscribers is controlled by a swipe card system at either the terminal or a docking point;
- **Advertisement panels** are located in the vicinity of the site as the scheme is funded in part by advertisements;
- **The colour scheme** comprises grey terminal, docking points and scheme bicycles; and
- **The docking stations** are located on streets, pavements, parks and public squares.



Figure 2.1: Clockwise from top left: Vélib' Bicycle Docking Points, Vélib' Terminal, and Vélib' Advertising Panels



Bicing: Barcelona, Spain

The Barcelona scheme (Bicing) was implemented in 2007 and comprises 200 docking stations with 3,000 bicycles located approximately every 300 to 400 metres.

The main characteristics of the scheme are as follows (Figure 2.2):

- **The terminal** comprises a flat rectangular column that is approximately 2.5 metres in height and contains a payment point, a touch screen display and a small local area map;
- **The docking points** are connected to the terminal and comprise a single horizontal bar with upright supports;
- **Bicycle release** from the docking points for subscribers is controlled by a swipe card system at the terminal;
- **Advertising** does not form part of the scheme;
- **The colour scheme** comprises red, black and white bicycles, and a red and black docking point and terminal; and
- **The docking stations** are located on streets, pavements and public squares/plazas.



Figure 2.2 Left: Bicing Docking Point; and right: Bicing Terminal with Docking Station

A Design for London

The design of the London Barclays Cycle Hire docking stations has been influenced by the Paris and Barcelona experiences as follows:

Terminal - the height of the London terminal is similar to that of the Vélib' and Bicing schemes. This is considered appropriate in relation to the docking points and other street furniture. The images in Figure 2.2 demonstrate that the height is appropriate in the context of the centre of a large European city.

Docking points - the Bicing design features a horizontal bar with the docking points attached. The London scheme uses individual docking points to provide for pedestrian circulation between the docking points when cycles are not docked.

Bicycle release - the Vélib' scheme enables release of bicycles by way of a smart card system at either a docking point or the terminal. The London scheme also operates in this manner.

Logo/ Colour scheme - the Vélib', Bicing and London schemes have incorporated their own individual colour scheme and logo. The grey colour scheme of the Vélib' scheme makes it difficult to locate the docking stations from a distance. The London scheme incorporates a roundel and a predominantly dark blue colour scheme to ensure that the docking stations are visible and instantly recognisable to users.

Advertising - unlike the Vélib' scheme, the London scheme is not financed by advertising.

Location of docking stations - as discussed in Section 1.3 the docking station locations for the London scheme have been selected by TfL, the host boroughs and the Royal Parks using similar criteria as the Vélib' and Bicing schemes. They are, as far as is reasonably practicable, located in easily accessible locations on streets within convenient walking distance from prominent landmarks, attractions, public transport nodes and in commercial and residential areas where they will be in most demand.





Figure 2.3: Stage 1 – Design Conception Artists Impression



Figure 2.4: Stage 2 – Design Development Artists Impression



Figure 2.5: Stage 3 – Design Development Artists Impression

2.3 Design Evolution

This section explains how and why the docking station design has evolved during the design development process.

Stage 1: Design Conception

A preliminary design (Figure 2.3) was prepared to illustrate how the scheme may look and operate to initiate discussions with the host boroughs, the Royal Parks, interested local parties and design and access groups.

The terminal was shown with no cycle hire branding and was mainly designed to accord with relevant cycling standards and guidance.

Stage 2: Design Development (after initial consultation)

After discussion with the host boroughs and the Royal Parks the docking station design evolved to integrate more comprehensively with existing street furniture and in particular Legible London way-finding mapping and information. The TfL branding was omitted and the equipment was finished in colours from the Legible London colour palette (Figure 2.4).

Enhanced way-finding mapping was incorporated to give the terminal a dual function. The dark blue (near black) colour scheme was adopted to be consistent with the streetscape guidance standards adopted by many host boroughs. The yellow from the Legible London palette was incorporated on the advice of highways officers that this would be more visible to motorists.

Stage 3: Design Refinement (after further consultation)

The terminal and docking point designs were further reviewed following discussions with Design for London, English Heritage, the host boroughs and Royal Parks.

A three-sided triangular terminal structure was developed (Figure 2.5) as it minimised the space required to accommodate it, had no blank panels that could be subject to graffiti, and minimised opportunities for people to hide/ loiter behind.

The yellow colour was omitted from the colour palette as many of those consulted considered yellow to be inappropriate for London's more sensitive historic areas and the Royal Parks. The Cycle Hire roundel was incorporated into the design of the terminal (Figure 2.5).

A light green / turquoise colour was selected from a range of four colours available at the time in the approved TfL colour palette. This was considered appropriate given the nature of the scheme as a sustainable form of transport and the best fit with the proposed colour scheme for the terminal and docking points.





Figure 2.6: Stage 4 – Design Resolution Artist's Impression



Figure 2.7: BIXI docking station design



Figure 2.8: Barclays Cycle Hire docking station

Stage 4: Design Resolution

Following feedback from the boroughs and other stakeholders the terminal shape was changed from a three-sided to a four-sided rectangular design (Figure 2.6). The rectangular design offers the following benefits:

- traffic regulation signs can be displayed on the side facing the carriageway to negate the need for separate traffic signs and minimise street clutter;
- payment functions can be provided on the smaller faces of the terminal whilst providing way-finding information on the larger sides; and
- the way-finding maps and information can be displayed in the same orientation as Legible London mapping (i.e. perpendicular to the carriageway) to provide a clear form of mapping that maintains consistency with the appearance and functionality of Legible London mapping.

Stage 5: The Final Design

With the award of the contract to the Scheme Operator Serco, the final form of the street furniture was developed. The system is based on the 'BIXI' Public Bike System in Montreal which has received a number of international design awards (Figure 2.7).

The docking point is an innovative design by Michel Dallaire, the internationally renowned industrial designer. Rather than the side locking system visualised in the indicative docking point design, the design utilises a cassette type locking system that accommodates the front wheel of the cycle within the docking point.

The cycle is wheeled into the docking point and secured into the cassette by a locking triangle on the front fork of the frame. This provides a robust docking and locking system which is simple to use and avoids the locking faults experienced by other schemes.

Due to the climate in Montreal, the BIXI scheme is not operational during the winter and the docking stations are removed from the street. Transport for London has worked with the contractor and designer to develop the street docking point and terminal design to be suitable for the London context as a permanent addition to the public realm.

The materials, livery and finish have been the subject of careful consideration and as a result, the use of cast aluminium with powder coated finish and a clear graffiti resistant coating was selected, along with toughened glass for the mapping, information and roundel panels. The materials and finish achieve a robust and high quality appearance that suits the function, location and usage of the street furniture. The livery remains very similar to the previous design iteration but has been refined as part of the design process (Figure 2.8).



In finalising the functionality and operation of the terminal, there were some minor changes to the layout of information, many resulting from stakeholder comments. These included docking station naming to provide both the locality and street, and directional information moved to the top of the mapping panels to improve visibility. The details of the traffic regulation signage on the terminal were agreed by the Department of Transport and a smaller plate was incorporated on the elevation facing the carriageway at a higher position to improve visibility (Figure 2.9).

In February 2011, the scheme won the transport category in the Brit Insurance Design Awards, which showcases the most innovative and forward thinking designs from around the world. Londoners and visitors to London have praised the cycles for their reliability, convenience, ease of use, and value for money. The Design Awards recognises them for their style as well.

Mayor of London, Boris Johnson, said: "I need no convincing that London's blue bikes are simply the best way to travel. With the backing of the aficionados of the design world I hope this is the first sign of the bikes becoming a design classic like London's iconic red bus or black cab."

An outline of all design development changes are shown in the table in Figure 2.10.



Figure 2.9: Docking point and terminal (left), Police call box (middle), and Red phone box (right)

Summary

The docking station is easily identifiable - clear image which is easily seen and distinct. The TfL roundel makes it recognisable as a transport scheme, consistent with other modes of public transport in London (Figure 2.10).

The design is compatible with London streetscapes - the dark blue colour is consistent with Legible London and the black livery colour scheme used on most street furniture. The roundel is common place on London streets and the cyan blue colour is compatible with a variety of sensitive environments, including the Royal Parks. The scheme continues the London tradition of four-sided street furniture, such as the police call box and red telephone box (Figure 2.9).

The docking station minimises street clutter - it has been designed to incorporate way-finding mapping and traffic regulation signs, removing the need for separate structures in the street.

The docking station is visible and maintains clear paths - the terminal and docking points have been designed to be noticeable to pedestrians in terms of their height, material and colours. They are located where there is sufficient space to accommodate the street furniture without causing an obstruction.

The design is adaptable and functional - the terminal can be tailored to provide 1 or 2 faces with registration/payment functionality, depending on the demands of the location.

