
Accessibility & Inclusive design guide

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Our public spaces play a fundamental role in ensuring the Royal Docks is a sustainable, healthy and inclusive place, and one that meets the needs of the community and creates a unique place in London.

The Royal Docks Public Realm Framework, published in March 2020, sets out the vision and strategy to ensure the delivery of the Royal Docks' public realm is comprehensive, coherent and connected, while also ensuring a diverse approach. Achieving this vision relies on working closely with a number of stakeholders and partners, so it is important that the principles of the Framework are translated into clear guidance for delivery.

This is why the Royal Docks Team has developed a series of Design Guides, by working with local stakeholders and communities to adopt a user-centred approach. These Guides set out how the design principles of the Public Realm Framework should be applied across the Royal Docks.

The Design Guides support the Mayor of London's Good Growth by Design agenda and the London Borough of Newham's Community Wealth Building agenda. The Guides contribute towards the creation of thriving "15-minute neighbourhoods" that connect communities to critical services and social and civic amenities, supporting the health, wellbeing and prosperity of everyone who lives and works here. The Guides focus on equalising access to public space and prioritising sustainable travel modes through inclusive design principles; and they help fulfil air quality and climate change adaptation commitments.

Three thematic Guides have been created: the Wayfinding, Lighting and Landscaping Guides enhance the character and legibility of the place. They focus on several fundamental and cross-cutting principles, including;

- Creating places that are inclusive and accessible.
- Increasing access to green spaces and local amenities.
- Improving connectivity across the Royal Docks.
- Enhancing access to the water.
- Celebrating the heritage and culture of the Royal Docks.
- Creating a welcoming and safe environment.
- Promoting healthier lifestyles.
- Promoting community participation and co-design.
- Encouraging community stewardship of public spaces.

An Inclusive Design Guide will accompany and support the other three thematic Guides, setting out how national legislation and best practice should be applied to the specific accessibility challenges characterising the Royal Docks' open spaces, so that we can ensure equitable access for all.

The Design Guides constitute an essential resource for anyone who intends to commission design work and public realm projects in the Royal Docks, including public sector organisations, developers, landowners, local businesses and community organisations.

The Guides are intended to sit alongside and support the vision and principles of other strategies, including the Royal Docks Economic Purpose and the Royal Docks Cultural Placemaking Strategy, which are key to shaping the regeneration of the Royal Docks. Taken together, the principles will ensure the Royal Docks becomes a testbed for new ideas and innovation, and a unique place that benefits communities, businesses and visitors alike.

1. Introduction

Royal Docks Public Realm Design Guides

In 2019 the Royal Docks Team worked with 5th Studio to produce the Royal Docks Public Realm Framework (the Framework), which was endorsed by the Enterprise Zone Programme Board in March 2020. The Framework sets out the key principles for future interventions and investment in the area's open spaces. The Design Guides are the next phase of this project, establishing a unified design code for wayfinding, lighting and landscape elements in the area.

These guides are intended to support the delivery of coherent, legible and socially inclusive public realm across the Royal Docks. The ambition for the transformation of the Royal Docks is set out in the Royal Docks Public Realm Framework, which was publicly consulted on in 2019 and published in March 2020.

Purpose of the guides

The aim of the Design Guides is to provide a coordinated approach to landscape, lighting, wayfinding and inclusivity and access for the Royal Docks. As set out in the Framework, it is essential that interventions in the area are working to similar goals and draw from a similar design language. The Design Guides will serve as a common resource to achieve this goal.

David Bonnett Associates (DBA) were appointed to review the emerging Design Guides from an accessibility perspective and to produce an Accessibility and Inclusive Design Guide to compliment the suite.

An Accessibility and Inclusive Design Guide (hereafter referred to as the AIDG) accompanies and supports the other three thematic guides and should be read in conjunction, setting out how national legislation and best practice should be applied to the specific accessibility challenges characterising the Royal Docks' open spaces to enable equitable access for all.

Who are the guides for?

The Design Guides are primarily for anyone who is thinking of commissioning or designing a project within the Royal Docks. As new development impacts everyone in the area, both existing communities and future ones, the Design Guide also provides record of how community groups and key stakeholders have participated in and influenced the process.

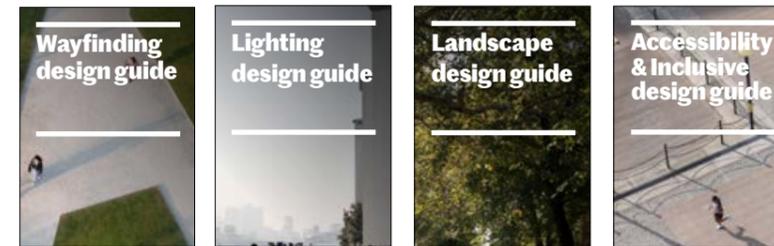
Structure of the guides

The structure of the Design Guides will allow stakeholders, designers and local authorities to understand the vision for the entire area, as well as use the specific guidance within the guides for different areas and conditions. This is critical, because without an understanding of the broader picture, the value of individual interventions can be diminished.

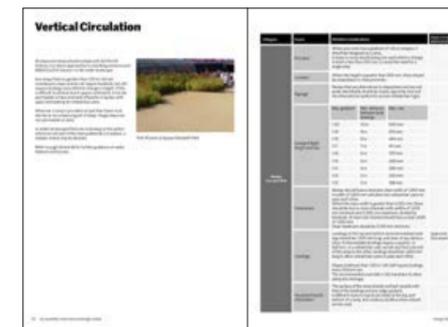
At the end of this chapter, a 'How to use this Guide' spread is included to ensure that the Design Guides are used effectively.



Royal Docks Designer Pack



+ Walking and cycling action plan



Public Realm Framework

Sets out an overall vision for the Docks. Identifies the challenges to be overcome and the strategies to do this. Also identifies key areas where intervention is needed in order to achieve a coherent public realm.

Design Guides

Identifies the specific strategies and elements that users of the guide can employ to meet the objectives of the Framework. The guides also articulate in more detail the families of elements that are appropriate in certain locations, as well as providing technical information and maintenance advice.

How was the Accessibility and Inclusive Design Guide developed?

Phase 1

Phase 1 reporting took into account the principles of inclusive design and considered the requirements of all users who may have one or a number of difficulties:

- People with restricted mobility (PRM);
- People with visual impairments (PVI);
- Cognitive, memory and neurological difficulties; and
- People who are deaf and have hearing loss.

While the meaning of 'disabled' is adopted as defined in the Equality Act, the reviews and AIDG take on board accessibility in its widest sense for local communities, as there are common issues that affect everyone regardless of ability.

The Royal Docks has an ambition to be an inclusive and accessible place for people of all abilities, ages and backgrounds and identities - truly reflective of the diversity of Newham and London as a global city. To this aim, the experiences of diverse groups is considered in this Guide.

As part of the foundation for the Guide, DBA undertook a site visit, reviewed the first drafts of the Design Guides, the community engagement results and the community engagement process to ensure the suite of Guides acknowledge the need for universal design and inclusive processes.

The reviewed documents include:

- Community Consultation Analysis
- Wayfinding Design Guide
- Landscape Design Guide
- Lighting Design Guide

Following the critique of the Guides, with reference to inclusive statutory and best practice guidance and the unique nature of the site, a Phase 1 appraisal report was produced to provide information for inclusion into the Phase 2 for the AIDG.

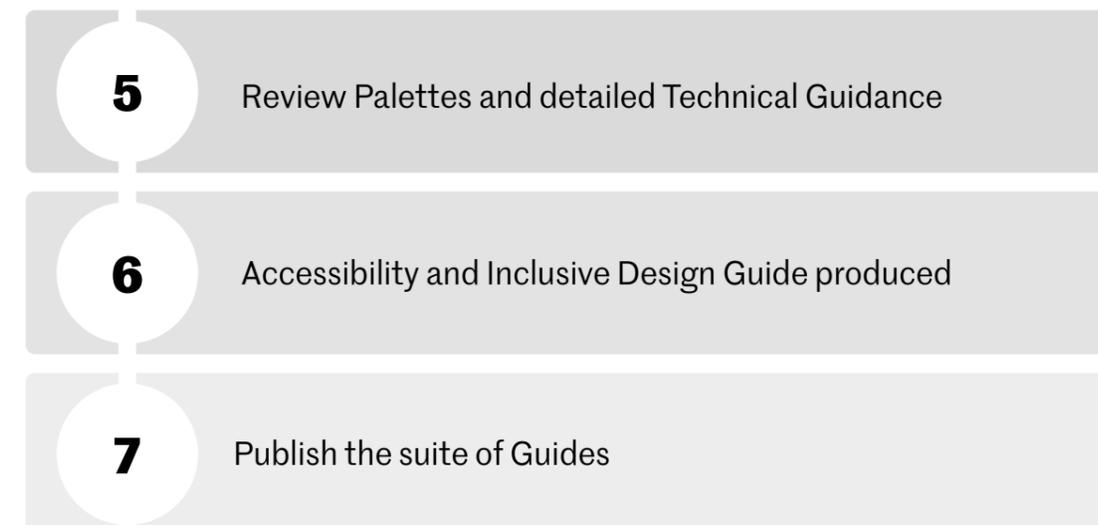
Phase 2

With input from the Royal Docks Team, the AIDG has been drafted to assist stakeholders, designers, local authorities and communities in their review of design proposals. The AIDG will be a reference tool to ensure key inclusive elements are included and proposals are safe for all to use. The AIDG is intended to be used by both professionals and the local community.

Phase 1 - information gathering



Phase 2 - developing the AIDG



Site Analysis

The purpose of the site visit was to ascertain the scale, travel distances, the current site constraints, materiality, and neighbourhoods in order to inform the Phase 2 AIDG and identify areas for improvement and opportunities. The site survey also picked up on current good practice features that will be included in the Design Guide.

The basis of the survey prioritised statutory technical design guidance and planning policy and, when this is lacking, deferred to good practice guidance.

Re-occurring issues across the Royal Docks were also picked up in the Phase 1 consultation feedback.

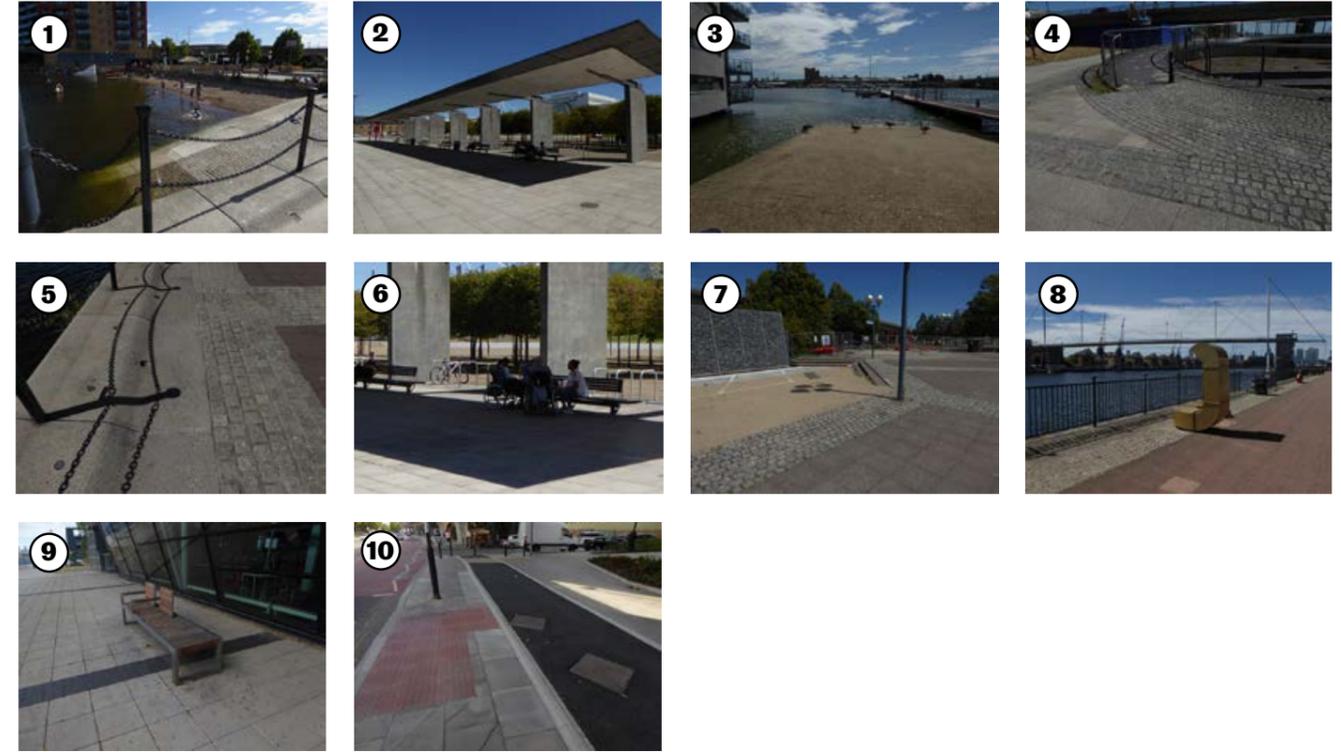
Summary of key issues / observations

Cons:

- Signage and wayfinding limited.
- Infrastructural barriers – limited step-free links to neighbourhoods.
- Limited provision of seating.
- Limited step-free waterside access.
- Frequent use of riven paving setts creates a trip hazard.
- Long walking distances.
- Current developments have installed inconsistent paving surfaces and steps.
- Large areas of limited lighting and inconsistency.

Pros:

- Consistent docks edging detailing is good and should be retained.
- The site is mostly level with the exception of bridge links over waterways and DLR line.
- Some good examples of accessible seating and large canopies for socialising.
- Plenty of space to provide good levels of access and accessible parking / drop off and segregated cycle / scooter routes.



Site Analysis

- ① good step-free beach access and shallow water
- ② shelters and covered outdoor recreation areas
- ③ step - free beach access and shallow water
- ④ inclusive surfaces needed
- ⑤ good consistent dock edging and tactile edging
- ⑥ opportunities for outdoor eating / recreation / games / sport
- ⑦ inclusive solutions needed for feathered steps and levels
- ⑧ iconic wayfinding and landmarks
- ⑨ good accessible seating across the site
- ⑩ inclusive solutions for shared routes and cycle / scooter paths

Community Participation

The inclusive appraisal of the Phase 1 consultation process considered the feedback and recommendations of the organisations and communities involved in the participatory process to develop the Design Guides which is represented in the diagram below. This feedback has been referred to in the AIDG. Recommendations and processes for inclusive consultation methods have also been included in the AIDG Appendix.

The participation of diverse local people of different abilities and with lived experience of moving around the area is a key recommendation of this Guide. Spatial planning and public realm design in the Royal Docks should build upon the community design principles alongside the practical recommendations in this guide. This approach considers the socio-economic implications of spatial transformations for people of different backgrounds, ages and abilities, enabling equitable access and inclusion which results in better quality public realm for everyone.

The public engagement findings are reported in detail in the “Community Engagement Appendix report” and the key overarching points relating to access and inclusion are summarised below.

Prioritise cycling, walking and assisted mobility, for example by:

- Introducing signs and maps that show which parts of the docks have walking/cycling access, and any time restrictions;
- Using clear floor paintings and treatments to identify paths and areas of interest;
- Installing interactive maps at different points of the river and dockside to help people manoeuvre around;
- Focussing on access at transport hubs and crossings over the train tracks to minimise the distance from local communities;
- Providing a clear scenic walking route all around the waterfront area of the dock as a key recreational route.

Mitigate the impact of long walking distances, for example by:

- Providing more seating and shelters at regular intervals;
- Employing large landscape icons, including special signage and installations on existing structures;
- Ensuring there is clear wayfinding to local cafes, restaurants and refreshments;

Improve safety in open spaces, including by:

- Providing better and consistent lighting, especially around the dock edge
- Taking into account identity-based experience in public spaces when designing public realm schemes (e.g. women, people with different mobility, audio or visual needs, ethnic backgrounds, socio-economic backgrounds)
- Paying special attention to conflicts between different users.

Such groups give independent advice to ensure that access issues are properly considered and resolved to an appropriate level of detail at each step of planning, design and construction of the development, including post-completion and management.

It is important to also consider the usage behaviours people want for their neighbourhoods by understanding the experiences of people from diverse backgrounds, in addition to how people with disabilities experience space. There are some common elements that would support access and inclusion across all groups that are important to consider - some of these are listed below.

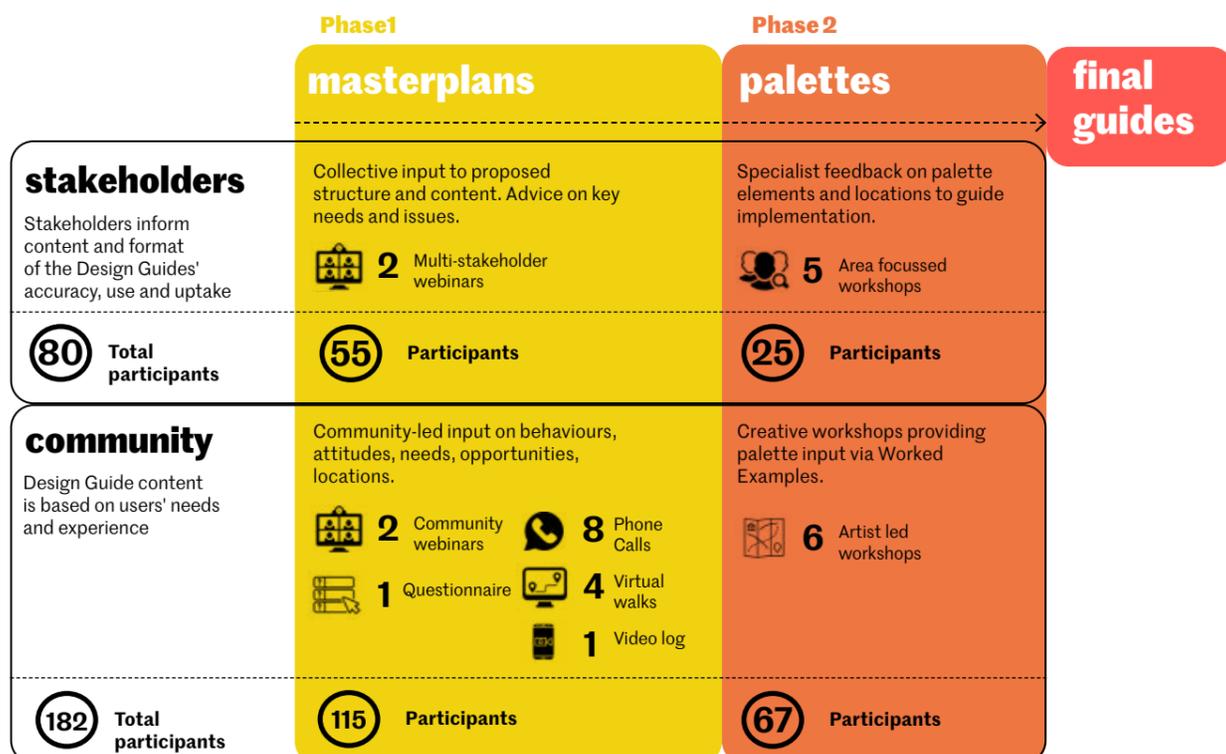
Considering a wide perspective of experiences will optimise the use of space and help different users develop behaviours that enable negotiation for sharing space where there are different needs and requirements. This improves public space for all.

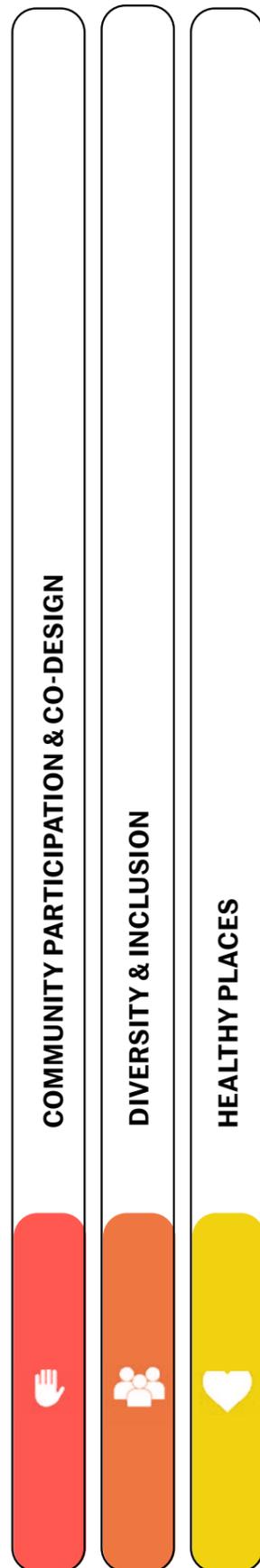
An access group should have a range of disabilities represented, to cover as many areas as possible, but other groups justify inclusion, such as older people and parents with disabled children. In the main the group should represent:

- People with sensory difficulties, e.g. sight and hearing loss;
- People with learning difficulties;
- People with mobility difficulties, e.g. wheelchair users, those with walking aids;
- Older people;
- People with small children;
- People with needs relating to mental health and other types of neurodiversity
- Children and young people.

More detailed recommendations around the above points are provided in the next chapter of this Guide, and a more granular understanding of area-based issues will need to be developed as part of specific intervention to sites and projects. The involvement of Access Groups can help in establishing a detailed baseline and identifying suitable solutions for a variety of demographics and disabilities.

One recommended participation mechanism is a reference group. This consists of people with different experiences of disability who bring background or experiences from under-represented or marginalised perspectives. An Access Group is an example of this. Access groups are usually made up of local people with disabilities with an interest in improving the building environment.





Ecology

Promote nature-based solutions and low-carbon communities that reduce pollution and waste. Encourage biodiversity, be climate change adaptive, promote people-nature connections.

Play and active design

Integrate play and physical activity opportunities into the public realm for people of all ages with formal, informal and creative measures. Support active travel, to ensure accessibility and awareness.

Sensory design

Incorporate pleasant sensory experiences (sight, sound, smell, touch) throughout the public realm, including art and creative elements to enhance tranquillity, attractiveness, imagination and interconnection with the surroundings.

Living heritage

Bring the area's industrial, maritime and socio-cultural history and infrastructure into play in the public realm to inspire curiosity and feelings of belonging at a human scale by creating inviting spaces and learning opportunities.

Water connection

Consider water as public space, enhancing access for different users with different needs. Encourage views and wayfinding, and support its role in ecology and climate resilience.

Flexible use: multi-functional and adaptive

Maximise opportunities to enable the free use of space by the public. Consider the increased and multiple use of space for social and livelihood activities at different times of day by building in adaptivity across strategies.

High streets and amenity centres

Multiply civic links to local centres with accessible high streets which support daily needs and livelihoods and provide opportunities to meet, talk and celebrate.

Hyper-local networks

Enable and enhance existing networks of care, socio-spatial connections, local mobility, and the exchanges of goods, services, support and knowledge.

Community stewardship

Emphasise and encourage community knowledge and action to maintain and curate public and green space; to drive low carbon solutions, ecological stewardship and local strategies for community resilience.

How to use this Guide

The AIDG sets the benchmark for accessible design across the Royal Docks and is based on the design standards and guidance set out in Page 18 & Appendix 3.

The purpose of the guide is to inform planners, urban designers, landscape architects and their clients plus the local community how to create accessible and barrier-free public spaces, so that they can be confidently and safely used by all.

The guide is intended to support and be read in conjunction with the suite of Design Guides as follows:

- Landscape
- Lighting
- Wayfinding

Each of these guides already include an element of guidance on inclusive design features but do not address them on a specific technical level.

This guide is not intended to replace or replicate statutory guidance such as Building Regulation Approved Documents or British Standards and will cross reference where possible to ensure this guide is always kept up to date with current standards rather than replicate in this document.

The guide has been drafted following a detailed review of the site, Design Guides and community consultation responses. This is to ensure that the guide addresses the unique character of the Royal Docks and the local area and people using it.

The guide is organised by topic and intended as a quick reference with a table for each item to indicate what is statutory, to meet regulatory standards, and what is good practice provision.

Illustrative examples of guidance and good practice are provided where possible.

Methodology



The Equality Act

The Equality Act 2010 ('the Act') combines and supersedes previous separate civil rights discrimination legislation.

People are protected from discrimination and harassment based on 'protected characteristics' as defined in the Act .

There are nine different protected characteristics under the Act which have different levels of protection depending on the context (such as employment, provision of goods and services or the provision of education).

The Equality Act does not contain any technical requirements for the built environment and therefore has no application to 'compliance' in respect of physical building standards .

The Public Sector Equality Duty requires public bodies to show evidence that they have considered how their decisions affect people with protected characteristics under the Equality Act. A public authority is an organisation which carries out public functions or services - for example, a school, the NHS or the police and local authorities such as the London Borough of Newham.

The Public Sector Equality Duty means public authorities must think about whether they should take action to meet differing needs and/or reduce inequalities. In doing this, public authorities are allowed to treat some groups more favourably than others.

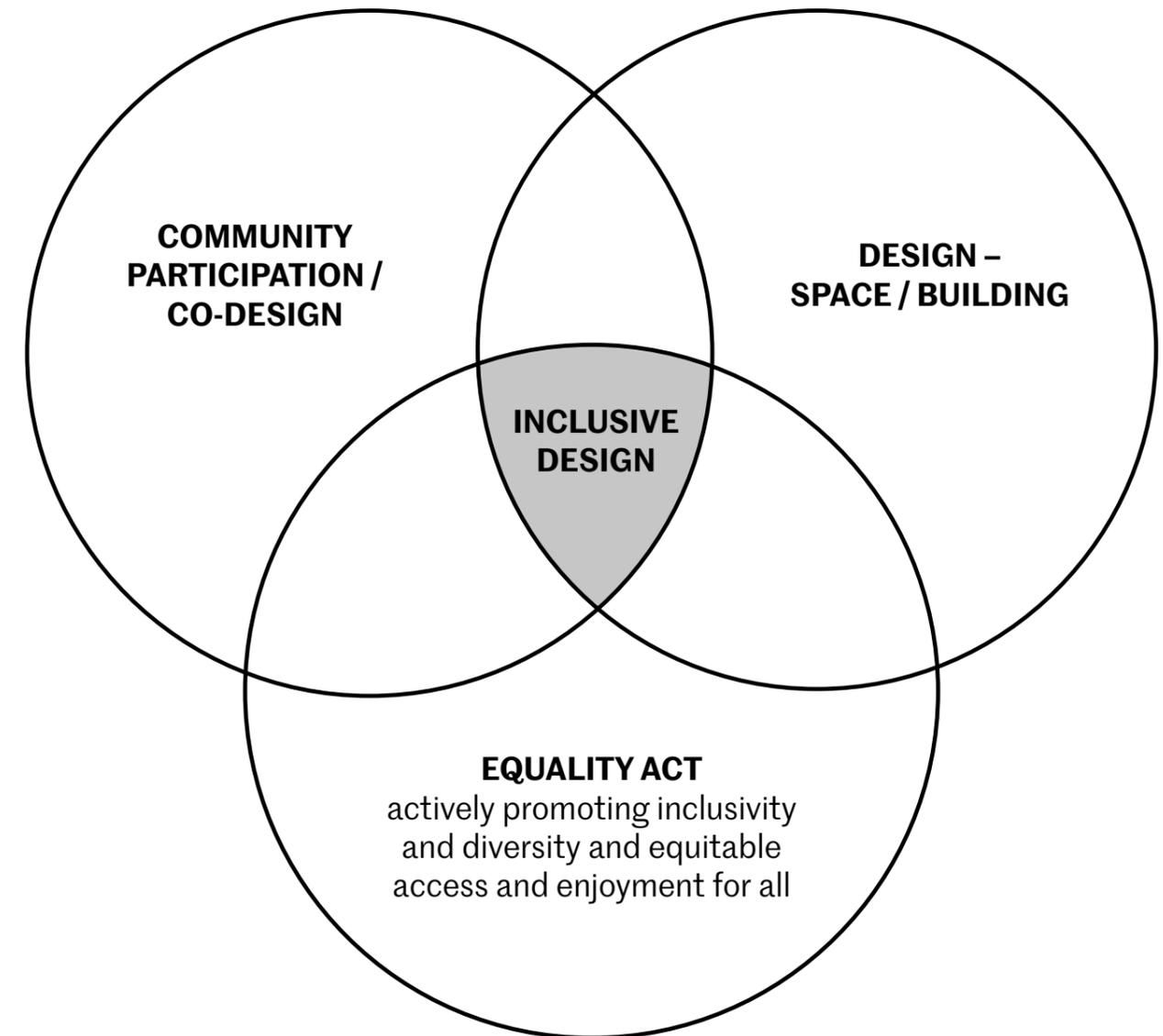
Statutory consents

When considering a reasonable adjustment to, or design of, a physical feature, the Equality Act does not override the need to obtain consents such as planning permission, building regulations approval, listed building consent, scheduled monument consent, or override some legislation such as fire regulations or health and safety.

However, even if the consent is not given, there is still a duty to consider a reasonable means of avoiding the feature and providing an equal level of service / access.

Where an alteration is not possible, service providers and employers still need to meet their duties under the Equality Act. In such cases a managed approach or alternative provision may be adopted and should be set out in an Access Management Plan.

The Equality Act, community participation and the design of public spaces must all be considered during the project development and jointly contribute to ensure equal access for all and the creation of successful public realm.



The Standards

There is specific national guidance governing the design of external spaces and landscaping beyond direct approaches to building entrances. These guidelines are as follows:

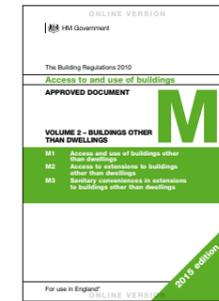
- For primary routes and approaches to buildings the statutory Building Regulation Approved Documents Part M (both volumes depending on building type) are taken as a bench mark for determining accessibility.
- With regards to streetscape and pavement design, guidance is provided by the Department for Transport's Inclusive Mobility Guide and Local Transport Notes.
- London wide and local authority SPGs and guidance.
- Guidance for the public realm and landscaping defers to BS8300:2018 Design of an accessible and inclusive built environment Part 1: External environment - Code of Practice.
- For the wider landscape and soft landscaped areas, and especially areas such as woodland paths, wildlife areas and rural settings, there are 'best practice' access standards, such as the Fieldfare Trust Countryside for all guidance.

Water side environments and dock heritage

Design guidance for the accessibility of access to water and dockside is limited and is predominantly HSE health and safety standards or access to marinas and harbours, which includes no specific inclusive design guidance.

In light of the lack of any other access guidance relating to water access and docks, reference is therefore made to BS8300:2018 as a baseline ergonomic standard for access plus other UK good practice guidance such as that provided by the Fieldfare Trust and the Royal Yachting Association (RYA) Sailability.

Hierarchy of design guidance



Statutory Building Control guidance - nation wide



London wide planning policy and Supplementary Planning Guidance - localised guidance



London Borough of Newham - Borough planning policies and guidance



British Standards - best practice guidance



Design Guides
Identifies the specific strategies and elements that users of the guide can employ to meet the objectives of the Framework. The guides also articulate in more detail the families of elements that are appropriate in certain locations, as well as providing technical information and maintenance advice.



Connectivity and Masterplanning

Barriers created by infrastructure - the bigger picture

Local neighbourhoods in the Royal Docks are often separated from each other by roads, railways lines and large expanses of water.

Due to the existing layout of the Royal Docks, most neighbourhoods around the perimeter rely on good infrastructure around the DLR station's lift access as this is the only way to cross the railway line, especially for wheelchair users and people with prams and children. As a result, these hubs create key community connections to Royal Docks and require the highest levels of accessibility. DLR stations already have lift access but the streetscape to/from the Royal Docks requires dropped kerbs, formal road crossings and tactile paving in line with TfL and DfT guidance.

When developing a site it is important to consider the wider access needs and not just limit to the red line plot boundary. This will include controlled crossing points, consistency of dropped kerbs to / from neighbourhoods, bus stops, vehicle drop-off points and possibly car parking.

How to ensure accessibility in the interim in an area undergoing major change?

All developments undergoing major change need to consider temporary measures to ensure local communities can still gain access to the dockside and street network. This may include a variety of measures such as temporary ramps, area maps and liaison with local access groups if a road needs to be blocked off for a period of time.

Where any temporary barriers are erected for maintenance or construction works, the obstruction of pedestrian routes needs to be kept to a minimum.

For example:

- If the pedestrian route becomes narrower than 1m at any point, an alternative route might be needed for wheelchair users and pushchairs;
- Any barriers or guarding need to be at least 0.9m high and visually contrasting with the background against which they will be seen for blind and partially sighted people. Where barriers or guarding are not required, it needs to be determined whether the route is detectable for cane users;
- If any works mean that pedestrians will have to use the carriageway then access for wheelchair users and people pushing trolleys or pushchairs will require temporary ramped access or raised access routes are required.

Further guidance is available in DfT publication Safety at street works and road works: a code of practice and the DfT Inclusive Mobility Guide.

Canning Town to the Docks

By connecting the Leaway to the Royal Docks, via Canning Town and eventually the Limmo, the Lea River Park's green connections can be enjoyed by more people. Through completing this route, a traffic-free connection between two of Newham's major growth areas can be achieved, establishing off-road links to the Queen Elizabeth Olympic Park and Canary Wharf.

Custom House to the Thames

Centuries of infrastructural works at the edges of the docks have created significant barriers to movement between the communities around Freemasons Road, the Docks, and the River Thames. Overcoming these severances will lead to a diverse series of connected spaces and greater access to cultural and recreational activities around the docks.

Connaught Crossings

An improved offer of leisure and recreational activities, as well as connectivity improvements which seek to humanise the scale of existing road and DLR infrastructure, can reconfigure the Connaught Crossing as an 'armature for local amenities' and a destination in its own right.

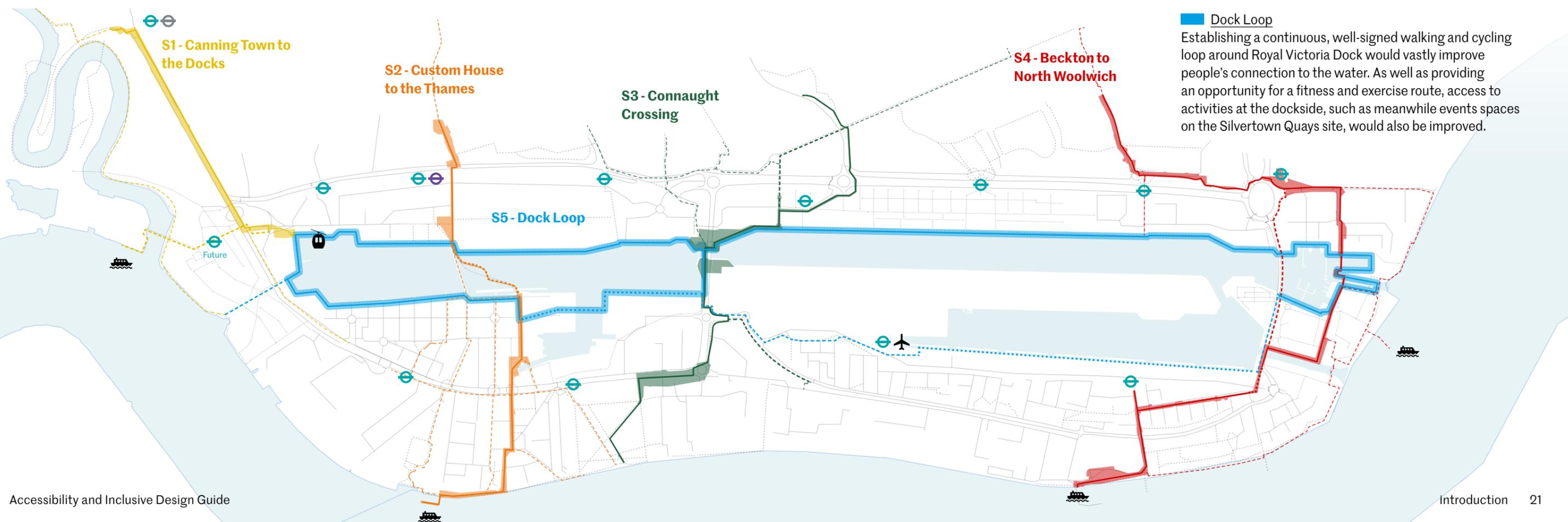
Beckton to North Woolwich

Poor quality infrastructural environments such as the Steve Redgrave Bridge, Woolwich Manor Way and Factory Road hinder a strong sense of place, north and south of the docks. Local connections and public realm improvements could ensure that these two established communities have a renewed connection to the Thames and its maritime heritage.

Dock Loop

Establishing a continuous, well-signed walking and cycling loop around Royal Victoria Dock would vastly improve people's connection to the water. As well as providing an opportunity for a fitness and exercise route, access to activities at the dockside, such as meanwhile events spaces on the Silvertown Quays site, would also be improved.

Stitches - connective landscapes diagram





The aim of the Design Guides is to provide a coordinated approach to public realm design for the Royal Docks. As set out in the Framework, it is essential that interventions in the area are working to similar goals and draw from a similar design language. The Design Guides will serve as a common resource to achieve this goal.

The following AIDG technical section is intended to provide 'how to' guidance in the support of the design process.

Set Down and Pick up points

Location

Generally, set-down/pick-up points should be located to optimise accessibility and minimize onward pedestrian travel distances to entrances. Drop-off points should preferably be within 10–20 m of entrances to key facilities, and no more than 50 m.

Level access

Set-down/pick-up points should be on firm, level ground and with suitable level access from the bay to the footway. However, wheelchair-accessible vehicles may be easier to access from a raised footway with a kerb. Level-access drop-off points should ideally be highlighted with a change of material, texture and colour.

Specific recommendations

Set-down and pick-up points should conform to BS 8300:2018, Inclusive mobility (DFT, 2005) and AD M Volume 2

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Set-down/ pick-up points	Provision	Set-down/pick-up points should be provided at transport termini, public buildings, shopping centres and key public building and attractions.	
	Location	As near as possible, preferably within 10–20 m and no more than 50m, to the accessible entrance. Where the distance is more than 50m, resting places with seating should be provided.	
	Dimensions	6.6 m long by 3.6 m wide, parallel to the carriageway.	Inclusive Mobility, December 2005.
	Level access	In the parking space the road gradient and camber should be not more than 1:50. Dropped kerbs should be provided although black taxis require a full height kerb for the retractable ramp.	Inclusive Mobility, December 2005.



Taxi set-down points with raised kerb, King's Cross station, London. Image courtesy of DBA

Pavement / Pedestrian route design

Definitions

- Primary access routes (PARs) are defined as the most direct and convenient accessible pedestrian routes linking buildings, public open spaces and other key facilities;
- Secondary access routes (SARs) should have similar features to PARs but are less prominent, may be longer and used by fewer people;
- Tertiary routes have the lowest priority and may include service routes or rough terrain landscaped areas where routes do not lead to an essential facility.

All road and pedestrian crossings should comply with DFT and TfL guidance.

Floor surfaces

Ribbon setts around the Royal Docks provide a useful tactile wayfinding guide for the dock edge and around some landscape features, but they should be used sparingly. Ribbon setts should not be used across the full face of footpaths, as this can create trip hazards and discomfort.

Off-piste access to green areas / play spaces

Rough terrain routes can have gravel or bark chippings but if they lead to an essential public feature such as a viewpoint or playspace then a smooth section needs to be provided through the floor surface.

Shared / kerb-free spaces

The local transport note LTN 1/11 on 'shared space' has been withdrawn and the general consensus is that they should not be permitted due to the safety risk for blind and partially sighted people. However, kerb-free areas may be permitted in quiet residential streets, provided there is a 800mm wide tactile strip between pedestrians and vehicles / cyclists.

Most access consultation groups prefer a 50mm kerb edge for cane detection. Additional safety segregation can be provided with the road surface itself having a rougher finish to contrast with the smooth pedestrian surface; pedestrian cross-overs will still require tactile blister paving and a smooth surface.

The Landscape Institute also has a technical guidance note on shared spaces.

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Surfaces	Slip resistance	A wet slip resistance value (SRV) of greater than 36 is recommended, increased to greater than 40 where a user is likely to be turning or pushing. Adjacent different materials should have similar SRVs.	
	Roughness	A roughness of >20 microns gives a low potential for slip in dry conditions.	
	Level and flatness	Undulations should not exceed 3 mm under a 1 m straight edge for formless materials. For joints between paving slabs the level difference between adjacent slabs should not exceed: <ul style="list-style-type: none"> Twice the joint width or 5 mm where joints are filled to the surface; 2 mm where joints are filled but recessed below the surface, with joints no wider than 10 mm and recess no deeper than 5 mm; 2 mm where joints are unfilled, with joints no wider than 5 mm. 	Inclusive Mobility, December 2005.
	Tactile surfaces	Prescribed tactile surfaces, blister or ribbed surfaces, are used for warning of hazards such as crossings, platform edges, segregations of cycle paths and footpaths, and as guidance around a hazard or obstacle or for directional guidance. It is vitally important that these different surfaces and colours are used consistently in accordance with the standards, as blind and partially sighted people rely on these to anticipate the type of hazard that they are about to encounter.	Inclusive Mobility, December 2005. Guidance on the use of Tactile Paving Surfaces, June 2007
	Firmness and resilience	Surfaces should be firm. Loose surfaces, such as gravel and sand, are not appropriate for primary routes.	
	Visual contrast	IA contrast in LRV of 30 points will provide good contrast, but 20–30 points may be adequate, particularly in large areas.	
	Pattern	Patterned surfaces and the use of highly contrasting colours should be used with great care so that they are not confusing but rather provide directional and wayfinding information. Patterns that can be misconstrued as steps or nosings should be avoided.	

Table 2: Recommendations for set-down/pick-up points

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Surfaces	Reflection and glare	Shiny, reflective surfaces, such as polished marble or metal, should be avoided. Artificial lighting should be positioned so that it does not cause reflection or glare.	
	Acoustic qualities	Consideration of the acoustic qualities of different materials should be considered. Hard surfaces with high impact sound can assist people to hear others approaching, and changes in impact sound can assist in guiding blind and partially sighted people.	
	Cleaning	Surfaces should be easy to clean and maintain. Avoid polishing floors	Inclusive Mobility, December 2005.
	Material selection	A small range of materials should be specified and used consistently throughout the area, creating a 'sense of place' for blind and partially sighted people, as well as for people with learning difficulties. Local distinctiveness can also be a wayfinding device.	



Tactile definition to separate vehicles from pedestrians is used to delineate zones.,Lyons
Photo courtesy Marine Semichon



Solid barriers around cafe seating

Cycle paths

Cycle paths should be as segregated as far as is possible from the pedestrian path route, unless the cycle path is on the road.

Where a surface is fully level, a raised strip (trapezoidal in cross section), or some other textured material should be used. The white line road marking to TSRGD diagram 1049B or 1049.1 may be less easily detected by visually impaired people and is unlikely to provide sufficient separation. DfT Cycle Infrastructure Design , Section 8.2.5. July 2020.

Cycle path segregation can take the form of tactile paving setts to match the existing Royal Docks materials.

Cafe /retail spillout

Tables and chairs for outdoor café or picnic areas should not intrude into the required width of accessible routes, and should not cause a hazard for blind and partially sighted people. Where they are adjacent to a footway or main accessible route, they should be contained by a clearly defined boundary, barriers such as planting troughs.



Tactile paving needs to be used minimally



Segregated cycle lanes, Royal Docks

Parking

Vehicles

Parking layouts should conform to AD Part M Volume 2 and ideally be within 50m of buildings / facilities. Transfer zones either side need to be level (1:60) and the surface firm. The area for the car to stand on, however, can have a green permeable solution.

Where car parking bays are located on pavements with a flush interface, the car bay floor needs to either have a textured floor finish or a tactile boundary edge at a minimum width of 400mm.

Cycles

Cycle stands and any canopies and their supports should contrast visually with their surroundings. Stands should be grouped with other street furniture or located away from the primary pedestrian routes. The design of cycle stands needs to provide a number of fix heights for recumbent and adapted cycles and have a tactile floor surround to warn blind and partially sighted people away from the stands.

At least 5% of cycle parking spaces needs to accommodate larger, adapted cycles or bicycles used by disabled cyclists in line with the London Cycling Design Standards, as required in the London Plan, and section 11.3.2 of the DfT Cycle Infrastructure Design Guide. These can be accommodated at the ends of cycle stands.

Scoters

Recharge points could be located around the Royal Docks for electric scooters, bicycles and wheelchairs in line with LLDC Inclusive Design Standards, May 2019 – 11.3 Inclusive Design Guidelines on Mobility Scooter Parking.



Tactile flooring under cycle stands



Tactile flooring under / around on pavement parking / loading bays

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Surfaces	Provision	The proportion of accessible parking should be in accordance with local planning policy and guidance, and as recommended in BS 8300 for different building types. For shopping, recreation and leisure facilities the recommendation for accessible parking is 6% of the total capacity for visitors, with a further 4% enlarged standard spaces. For residential developments it is common for 1:1 parking provision for wheelchair-accessible dwellings but check local planning policy.	
	Location	Accessible/Blue Badge parking bays should be distributed to minimise pedestrian travel to destinations. Accessible bays should preferably be located within 50m of the accessible entrance to buildings, transport termini, public open spaces and any other public facilities, and not further away than 150m.	
	Dimensions	On-street parking: bays 6.6 m long by 3.6 m wide, parallel to the carriageway. If there are two parallel rows of parking there should be a continuous lateral transfer zone 1.2 m wide between the rows. Accessible bays: 4.8 m long by 2.4 m wide, plus a 1.2 m safe access zone to both sides of the space and at the end. Overall space requirements can be minimized by sharing side access zones. If this is done, five designated bays can fit into the same space as eight standard bays. Enlarged bays: 6 m long by 3.6 m wide. Height required for HTCVs: 2.6 m.	Inclusive Mobility, December 2005.

Vertical Circulation

All steps and ramps should comply with AD Part M Volume 2 on direct approaches to a building entrance and BS8300:2018 Volume 1 in the wider landscape.

Any ramps that are gentler than 1:20 to 1:60 are considered a slope and do not require handrails, but still require landings every 500mm change in height. If this is difficult to achieve due to space constraints, it can be permissible to have level pull-off points or lay-bys with space and seating for wheelchair users.

Wherever a ramp is provided on land then there must also be an accompanying set of steps. Single steps are not permissible on land.

In wilder landscaped features (including on the water) which are not part of the main pedestrian circulation, a steeper incline may be allowed.

Refer to page 38 and 46 for further guidance on water features and access.



Pull off point at Queen Elizabeth Park

Category	Issues	Detailed considerations	Source if not BS 8300:2018	
Ramps on Land-Side	Provision	Where any route has a gradient of 1:20 or steeper, it should be designed as a ramp. A slope or ramp should always be used where a change in level is less than 300 mm, to avoid the need for a single step.		
	Location	Where the height is greater than 300 mm, there should be steps/stairs in close proximity.		
	Signage	Ramps that are alternatives to steps/stairs and are not easily identifiable should be clearly signed by text and the international symbol for access (wheelchair logo).		
	Gradient/flight length and rise	Max. gradient	Max. distance between level landings	Max. rise
		1:20	10 m	500 mm
		1:19	9 m	473 mm
		1:18	8 m	444 mm
		1:17	7 m	411 mm
		1:16	6 m	375 mm
		1:15	5 m	333 mm
1:14		4 m	285 mm	
Dimensions	Ramps should have a minimum clear width of 1,500 mm. A width of 1,800 mm will allow two wheelchair users to pass each other. Where the clear width is greater than 2,500 mm, there should be two or more channels with widths of 1,000 mm minimum and 2,000 mm maximum, divided by handrails. At least one channel should have a clear width of 1,500 mm. Clear headroom should be 2,100 mm minimum.			
	Landings at the top and bottom and intermediate landings should be 1,500 mm long, and clear of any obstructions. If intermediate landings require a quarter- or half-turn, or a wheelchair user cannot see from one end of the ramp to the other, landings should be 1,800 mm long to allow wheelchair users to pass each other. Slopes shallower than 1:20 to 1:60 still require landings every 500mm rise. The recommended cross-fall is 1:50 maximum to allow adequate drainage.			
Visual and tactile information	The surface of the ramp should contrast visually with that of the landings and any edge upstand. A different texture may be provided at the top and bottom of a ramp, but corduroy tactile surface should not be used.			

Category	Issues	Detailed considerations	Source if not BS 8300:2018																
Ramps on Land-Side	Surface finishes	<p>Ramps require increased slip resistance values (SRV) compared to a level surface:.</p> <table border="1"> <thead> <tr> <th>Length of ramp (m)</th> <th>Max. gradient</th> <th>Estimated additional SRV</th> <th>Recommended SRV</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>1:20</td> <td>5</td> <td>45</td> </tr> <tr> <td>5</td> <td>1:15</td> <td>6.7</td> <td>47</td> </tr> <tr> <td>2</td> <td>1:12</td> <td>8.3</td> <td>48.5</td> </tr> </tbody> </table> <p>The slip resistance of the ramp surface, without the additional SRV, should be similar to that of the landings. Surface finishes should be matt to minimize reflections, and should not have striped patterning which could be confused for steps.</p>	Length of ramp (m)	Max. gradient	Estimated additional SRV	Recommended SRV	10	1:20	5	45	5	1:15	6.7	47	2	1:12	8.3	48.5	
	Length of ramp (m)	Max. gradient	Estimated additional SRV	Recommended SRV															
10	1:20	5	45																
5	1:15	6.7	47																
2	1:12	8.3	48.5																
	Handrails	<p>Provision: handrails should be provided on each side of a ramp, and should be continuous around landings. If an additional central handrail is added, this should not be continuous across intermediate landings.</p> <p>Height: principal handrail should be 900–1,000 mm high on the ramp and landings. There should be a second lower handrail at 600 mm high.</p> <p>End extensions: handrails should extend 300 mm horizontally beyond the ends of the ramp to let blind and partially sighted people know when they have reached the top or bottom. The extension must not project into an access route and must be finished so that it cannot catch clothing.</p> <p>Dimensions: circular handrails should have a diameter of 32–50 mm; oval profiles should be 50 mm wide by 39 mm deep with a radius of 15 mm.</p> <p>Handrails should not protrude more than 100 mm into the surface width of the ramp if this would reduce the clear width of the ramp below the requirements, nor should the inner face of the handrail be more than 50 mm beyond the clear width of the ramp. There should be clearance of 50–75 mm between the handrail and a wall, and 50 mm minimum clearance between the underside of the handrail and a cranked support.</p> <p>Visual contrast: handrails should visually contrast with their background.</p> <p>Finishes: external handrails should have an insulated finish so that they are not cold to the touch in winter, or too hot in summer if they are in direct sunlight. They should have a smooth, non-reflective finish, and should visually contrast with their background.</p>																	

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Ramps on Land-Side	Guarding	<p>A continuous upstand at least 100 mm high, or an equivalent barrier such as a rail or planter, should be provided on the open side of the ramp.</p> <p>Where the drop on the open sides of ramps is more than 600 mm, there should be guarding to a height of 900 mm minimum from the pitch line; 1,100 mm is recommended. Landings with open sides should have guarding to a height of 1,100 mm. Guarding should not be climbable and should have no gaps or opening greater than 100 mm.</p> <p>Where the drop on the open side of a ramp is more than 380 mm, within the site boundaries of a non-domestic building's access route that is controlled under the Building Regulations, a barrier should be provided.</p> <p>Where open soffits underneath ramps are less than 2,100 m high, they should be protected by guarding at least 1,000 mm high and with low-level cane detection, or a continuous raised flower bed at least 900 mm high, or a warning surface not intended to be walked on, such as cobbles, but this must not constitute a trip hazard.</p>	The Building Regulations 2010, Approved Document K BS6180:2011

Steps/stairs and landings should have visual and tactile information on approach to assist blind and partially sighted people. The appropriate corduroy surface should be positioned forward of the first step.

Tapered steps

There is a trend in landscaping for 'feathered' or 'tapered' steps where the ground plane changes front to back and left to right. However, this does not meet standards for approaches to buildings (which requires regularly sized risers on the primary route) and can be a trip hazard for people with sight loss. When applied to the public realm, this can result in confusing amounts of tactile corduroy paving top and bottom. Consideration needs to be given instead to how to 'bookend' the tapers with planting, seating or sculptural intervention of at least 400mm high. Where tapered steps are used, they should be supplemented by a flight of BS 8300-compliant steps.

Undercrofts and voids

Where there is an open void under stairs or escalators it is essential to protect these areas to a height of 2.1 m to minimize accidental head injury. This can be achieved in a number of ways, using floor surfacing or a raised plinth, or using the space for storage, signage or seating



Tapered steps bookended with planting

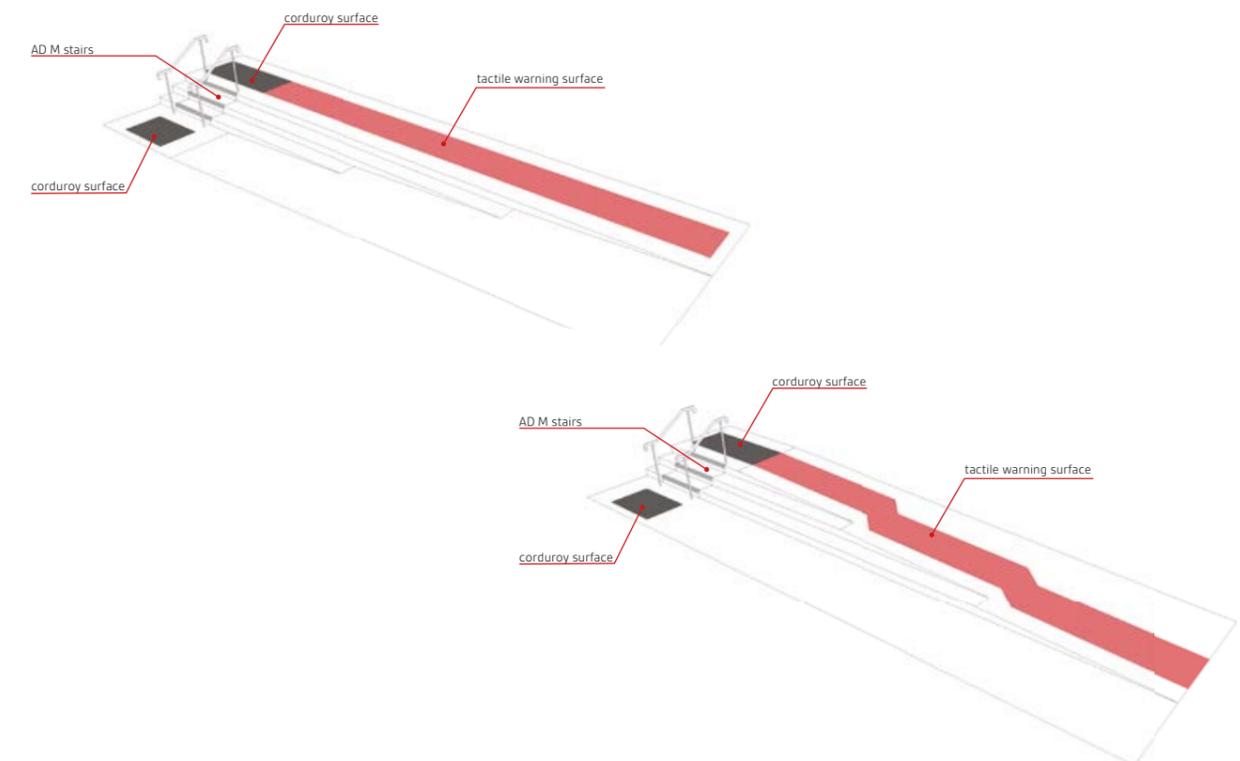


Tapered steps with tactile corduroy paving



VOIDS under stairs protected

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Steps/stairs	Provision	Levels should be designed so that it is not necessary to have steps/ stairs on PARs or SARs. Steps/stairs should always be provided in addition to ramps with a rise greater than 300 mm, escalators and lifts ideally.	BS EN 1991-1-1:2002
	Location	Steps/stairs should be located as close as possible to the accessible means of vertical access, such as lifts or ramps.	
	Signage	Routes on which there are steps/stairs should be clearly indicated in any signage, and highlighted on any informational plans displayed of an area.	
	Material selection	The maximum recommended flight rise is 20 risers between landings. There should be the same number of risers in successive flights. Where a stepped approach is within the site boundaries of a non-domestic building's access route that is controlled under the Building Regulations, the maximum number of risers is 12 for a going less than 350 mm and 18 for a going greater than or equal to 350 mm. Single steps should not be used; when necessary, a slope or ramp should be used instead.	



Barrier/Edge Design

Bollards

All bollards should be 1000mm high and contrast with their background; bollards can be of any shape and can adopt marine style fittings provided they meet the guidance; it is also desirable to incorporate a 150 mm deep contrasting strip at the top of low-level posts and bollards. They should not be linked with chains and have no horizontal projections; they may taper towards the top but should not taper towards the ground.

Dock edges

By the nature of their usage, the edges of rivers, docks and canals need to be without barriers in order to maintain water craft access. That said, edge protection is needed for areas with high public footfall. The current tactile edging around the Royal Docks is very good in that there are granite riven block setts and an upturn of concrete edging to give a strong indication to blind and partially sighted people, of the presence of the water's edge. Consultation has shown a nervousness of open edges for child safety. There are a variety of chain links and solid fencing provided around the edge of the docks, both of which are acceptable; although chain links should be avoided in the public realm, it is appreciated that these are part of the historical dockside language and as they are not in the path of pedestrian travel may be acceptable.

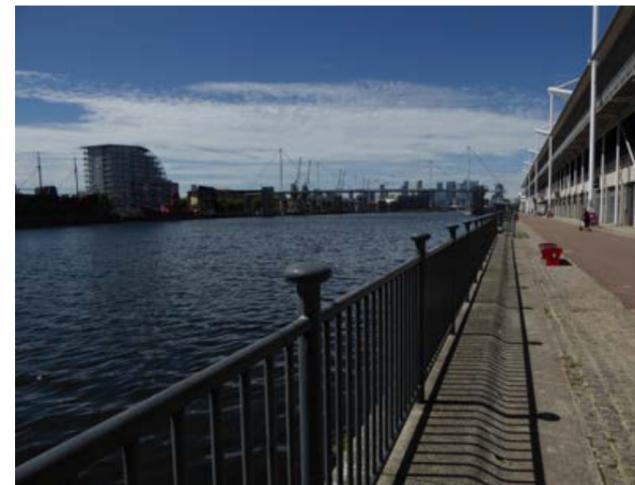
Boardwalks and pontoons

Guidance for boardwalks and pontoons is provided by the Royal Yachting Association Sailability guide and small specialist charities and equipment suppliers.

Gangways should be no steeper than 1:10 (1:4 for trolley access) and as wide as possible with a horizontal AIDG across the ramp of 25x12x350mm and located no further than 300mm from either side; this is to provide a break for heavy equipment trolleys.

The key issue is tide levels with the low tide presenting the biggest gradients. The Royal Docks is not strictly tidal but the drop from walkway to the water levels can range as much as 1.8m to 2.4m with an average of 2m from dock wall edge to water level; this can also vary due to dock wall heights. Hence a switch-back ramp with BS8300 compliant gradients is recommended for publicly accessible facilities to floating pontoons and pools where possible.

The Fieldfare Trust recommends all floating pontoons to have a 150mm high edge protection to prevent mobility aids and prams rolling off.



Dock edge protection

Play Spaces and Sports Equipment

Free outdoor community sports facilities as a key benefit to a neighbourhood, and where this is provided it should enable play and playful engagement with the space for people of all ages. Consideration should be given to wheelchair accessible equipment and the ability to side transfer onto seats and enhancing the experience for people with sensory impairments.

There is no English statutory document that defines what accessible and inclusive playspace looks like but there are a number of useful guides with regards to accessible play spaces namely the (emerging) London Plan's Policy S4, Play and Informal Recreation, the Making London Child-Friendly report produced as part of the Mayor of London's Good Growth by Design Programme and the LDDC Inclusive Design Standards, May 2019.

The Inclusive Play's PiPA checklist is an accreditation scheme that assesses the accessibility of new play space design and also audits existing play spaces to identify any barriers to accessibility in the landscape.

London Plan's Policy S4, Play and Informal Recreation requires that development proposals for schemes that are likely to be used by children and young people should:

- Increase opportunities for play and informal recreation and enable children and young people to be independently mobile.
- For residential developments, incorporate good-quality, accessible play provision for all ages.

PiPA recommends play areas are to have a hardstanding pathway throughout the play space area and the surfacing must be suitable for wheelchair users and allows space for both wheelchairs and prams without causing obstruction. Play space should encourage access to the 'six senses of inclusive play' from a seated or standing position.

- Sight (different textures, shapes, colour contrast, patterns and reflected light).
- Sound (musical play, communication with others and making a noise by activating elements in the play space).
- Smell (landscaping features – identifying plants by smell).
- Touch (tactile experiences - sand, water and textures).
- Proprioception (pushing, pulling, jumping and climbing).
- Vestibular (lying on stomach/back while in motion, rolling, swinging and spinning).

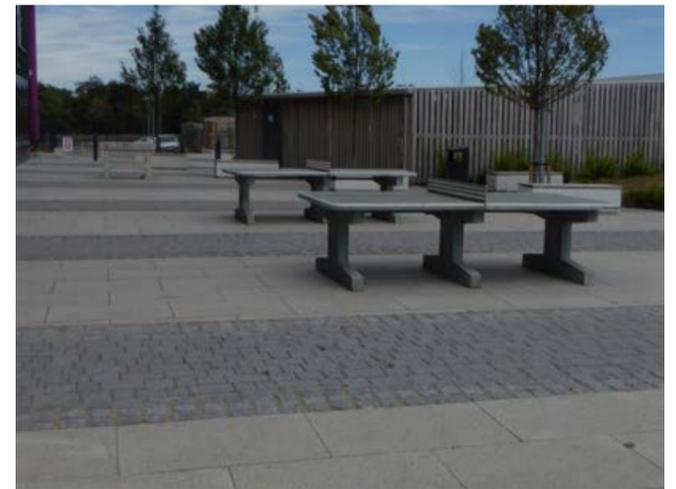
There is a wide variety of children's play equipment providing different experiences: swinging, rocking, sliding, climbing, spinning. As far as possible, it should be accessible to all. Where different types of equipment are provided, there should be at least one of each type of equipment accessed from ground level. Where possible, elevated equipment should have step-free access, either by means of a ramp or a platform lift. Equipment should be designed to aid and provide enjoyment for all children, for example by cut-out shapes providing hand or arm support, and visually contrasting elements. Recreation and play areas should have a variety of seating for parents or other supervising adults who are watching or wish to rest.

PiPA specifically recommends the following:

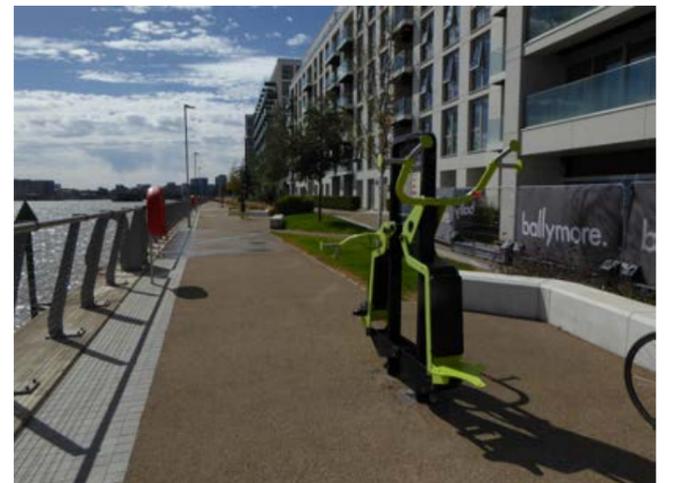
- Have opportunities for children to get their whole bodies involved in dynamic play.
- Be mindful of older users/family members who will also benefit from a flush and level path.
- Have minimum 1200mm wide pathways with passing places.
- Have maximum slopes of 1:12.
- Have accessible parking spaces less than 250m away.
- Have accessible routes on foot and by wheelchair into the play space.
- Have full 360° surveillance at all points of play space.
- Include fences and barriers surrounding the play space as a safety consideration.
- Include non-toxic plants and landscaping.
- Have accessible signage and wayfinding – Braille pictorial images and symbols.
- Provide audio information about the play space on site.
- Provide signage located at a height that is suitable for wheelchair users and children – 1000mm AFFL.
- Have individual and quiet play spaces.
- Encourage social play and opportunities for families/groups to play together using open space.
- Have fine motor/ small scale play opportunities at a variety of heights.

- Have information on refreshment, drinking, changing and toilet facilities (including Changing Places) on site or nearby to the play space.
- Provide seating and tables throughout the play space where wheelchair users and users with mobility aids can sit amongst / between others without feeling like an afterthought.
- Provide seating with back and arm rests.
- Have shaded areas with and without play equipment using canopies, sail shades or trees.

List of useful resources is included in Appendix 3 References.



UEL table tennis



Outdoor sports equipment at Royal Docks



Ref: <https://www.playlsi.com/en/playground-design-ideas/inclusive-play/>

Lighting

Different levels of lighting are required for different locations. There should be no significant variation or pools of darkness because these can cause problems for blind and partially sighted people, and create a feeling of insecurity.

Higher levels of lighting are recommended at junctions and pedestrian route crossing points, to assist with orientation and wayfinding and at the tops and bottoms of steps and ramps and where there are any potential hazards.

Where there is a change in lighting, it should be gradual to allow people's eyes time to adjust, particularly for blind and partially sighted people.

Lux levels vary according to the function of a space and reference should be made to the relevant standards, e.g. CIBSE, SLL (Society of Light and Lighting) Code for Lighting.

Lighting can be used to assist wayfinding, e.g. set into the underside of handrails, faint glowing strips to edge cycle lanes., Note that using LED light strips in the risers for steps can be problematic due to glare levels for blind and partially sighted people and are not recommended.

Lighting for access can be categorised with a number of functions:

- Safety – the ability to see steps, gradients, trip hazards;
- Wayfinding – the ability to make decisions such as location, direction, routes, location of streets and doorways etc;
- Information - signage to indicate the location of facilities such as WCs and train stations;
- Features - highlighting iconic planting and landscape structures;
- Public art – note that any light installations should minimise strobing and flashing due to epilepsy issues.

Consideration should also be given for pop-up events such as street markets and Christmas events. There may also be the need for more outdoor activities such as cafés and shelters. If there are plates in the floor for electrical mains supply they need to be flush with the floor to minimise trip hazards.

Note also the impact of shadowing onto the signage boards and the floor from overhead projections such as trees. In such case lower level lighting may be needed to supplement.



Ensure low level lighting supplements shadowed areas under trees (Image: 5th Studio)



Features highlighted (Image: 5th Studio)



Soft lighting could assist in navigation (Image: 5th Studio)

Seating & Street Furniture

Seating and picnic tables

- Accessible seating is required, as a minimum, every 50m. This should have arm and back rests to assist people who have difficulty in standing up from a seated position and side transfer opportunities for wheelchair users, i.e. open ended benches. Where seating is set back into planting, gaps for wheelchairs should be provided next to benches to pull in alongside companions.
- Multi-height seating and perch-points are useful, such as planters and proposed Royal Docks stools, to provide a variety and choice.
- The clear height to the underside of tables should be 700 mm with some tables having a clear height of 750 mm to accommodate wheelchairs with armrests. Some tables provided solely for use by children can be of a lower height, and with lower chairs.
- Where tables and chairs/benches are fixed, there should be some spaces for wheelchair users, so that they have a choice of seating. Fixed tables with one space removed for wheelchair access can have an extended tabletop overhang for knee clearance at one end.

Drink fountains

- Drink fountains need to take into account the ability of wheelchair users to pull alongside without getting their feet and knees wet and also people with restricted ability to bend. The controls for fountains also need to be considered with regards the ability to operate them with a closed fist and minimal dexterity.

Bins

- Waste bins should be 1,300 mm in height with a bin opening 1,000 mm from the floor. They should be rounded in design, tonally contrasting and continue down to near ground level so that they can be detected by a cane user.

Tonal contrast

- Street furniture should visually contrast with its background, (30% tonal contrast) or have visually contrasted markings/bands 150 mm deep and between 1,400 mm and 1,600 mm from the floor on columns to enable them to be identified by blind and partially sighted people.



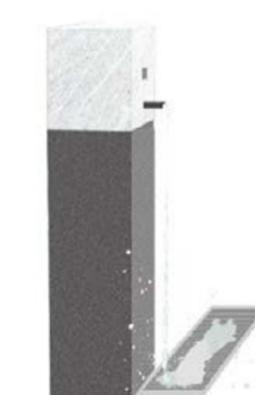
Accessible picnic / fixed cafe tables. Image courtesy of Gillespies



Proposed bins -solid structure to floor level



Accessible seating with arm, backrests and side transfer spaces



Proposed drink fountains



Proposed perch points

Water Features/Waterside Access

Public realm water features

Water features should be located off main access routes, where they, and people gathering around them, cannot cause an obstruction to the circulation of vehicles or pedestrians.

Particular care should be taken in pedestrian areas to ensure that water from fountains cannot be blown over pedestrian routes, making them slippery and potentially unsafe. However, water features with moving water can provide audible orientation and wayfinding clues for blind and partially sighted people.

Safety

Water features should be protected by barriers, walls, planting or have tactile floor warning surfaces so that people cannot inadvertently walk/fall into them.

Boardwalks and pontoons

Boardwalks and floating pontoons typically are not edge protected for open waterside access for swimming and water craft access.

Sloping gangways to floating pontoons, which fluctuate with tide and water levels, can be difficult to make compliant with recommended gradients (section 2.4, 2.5). Most regulatory standards relating to marina and harbour access are for health and safety purposes, e.g. optimum inclines for trolleys.

That said, access to the water's edge also needs to be accessible for recreation and a number of features should be included:

- Boardwalks need edge protection in the form of 150mm raised skirting to provide a tactile guide for blind and partially sighted people and prevent wheels rolling off the edge of the boardwalk;
- Sloping gangways to water's edge and floating pontoons should have handrails to both sides;
- Steep gangways normally have raised tactile horizontal strips to act as break for trolleys but this can hinder pushchair and wheelchairs so a slip-resistant surface will be required;
- Pontoons can have semi-submersible platforms for level access into the water to create a beach but will need to follow health and safety guidance.

Where possible, it is desirable to calculate the lowest tide and steepest slope achievable with the guidance set out in BS8300:2018 Volume 1. However the shallower the gradient, the longer the ramp and the space provision may restrict the ability to meet guidance.

The key issue will be whether the pontoon offers access to an activity, feature or experience that cannot be offered at higher level or at an alternative accessible venue.

Refer to section 2.5 for more information.



Water feature South Bank London



Water feature with tactile warning at Central Saint Martin's College of Art and Design, London.



Calvert Trust accessible pontoon

Wayfinding/Signage

The ease of wayfinding through an urban area is mainly determined by its inherent legibility, supported by signage and information systems. Wayfinding support can take many forms:

- Shapes – landscape, buildings, planting, sculpture;
- Signage;
- Tactility – surfaces, planting;
- Personal navigation systems – mapping and memory, photo-guide Global Positioning Systems (GPS).

Information and signage should be provided in accordance with the recommendations of The Sign Design Guide, BS 8300:2018 and Legible London (<http://www.legiblelondon.info/wp01/index.php>).

For the Royal Docks, large consistent icons are required in such a large space that can be seen from a distance - to denote signage and meeting points and key facilities. Floor markers provide good wayfinding markers but must be clear about the reference to and from features.

Visual contrast

There should be good visual contrast between the information and its background, and between the board or sign and its surroundings, to assist with legibility particularly for blind and partially sighted people. Colour coding a zone is useful, but needs to take into account accessibility for blind and partially sighted people and people with colour loss. The NHS Wayfinding guide notes that people can only remember up to five colours, and two out of three people do not actually notice colour. For these reasons, colour may be accompanied by a recognisable icon to represent a zone.

Tactile information

Where possible, tactile information should be provided to facilitate wayfinding assistance for blind and partially sighted people. It should be at a height and angle that is within comfortable reach. Signs beyond reach and not intended for touch do not need to be tactile.

Audible information

Audible information can assist with orientation and wayfinding, particularly for blind and partially sighted people.

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Information and Signage	Location	<p>Signage: should be at a suitable height, making sure that it is clearly visible and will not be obstructed by vehicles or hidden by greenery. It should not obstruct the pedestrian flow or clutter the area.</p> <p>Street signs: although there is no common standard for where in the street signs should be positioned, they should preferably be on both sides of the street and should feature at regular intervals along a route.</p>	BS 5499-4:2013 – Manual For Streets 2, September 2010
	Lighting	Lights and signs should be positioned to avoid glare and reflection in daylight and artificial light. Artificial light should avoid creating 'hot spots': pools of bright light and/or strong shadows, for example up-lighters mounted at floor level, and should be designed to give good colour rendering of all surfaces.	Inclusive Mobility, December 2005
	Size and height	10 mm high for every 1 m of viewing distance with no lettering less than 22 mm high. Wall-mounted signs: 1,400–1,700 mm ffl.	BS 5499-4:2000, Section 6



Tactile signage at Tower Bridge, London.



Forecast by Barber & Osgerby, London



New wayfinding at Connaught Crossing, by 5th Studio

Category	Issues	Detailed considerations	Source if not BS 8300:2018
Information and Signage	Format of information	Symbols and accompanying texts on maps and information boards should avoid information clutter. Where symbols, icons or other images are used, these should conform to international conventions.	
	Directional signs	Wherever possible, walking distance, or the time it takes to get to the destination, should be provided on directional signs.	
	Design and size of lettering	Case/font: sentence case (lower-case with an upper-case letter at the start of a sentence or proper name) using sans serif fonts (e.g. Helvetica or Arial) are recommended, because they are more legible. An appropriate size text should also be used. Size: large print 16 points as minimum, clear prints guidelines 12 points minimum. Justification: left.	Sign Design Guide: A Guide To Inclusive Signage, 2004 (Reprint)
	Visual contrast	There should be appropriate visual contrast in the signage itself and between the signage and the surroundings. Difference in light reflectance value: 70%.	Sign Design Guide: A Guide To Inclusive Signage, 2004 (Reprint) The Colour, Light and Contrast Manual: Designing and Managing Inclusive Built Environments, March 2010.
	Tactile information	Where possible, tactile information should be provided in a range of formats on one sign, e.g. pictogram, tactile text and Braille. Tactile information panels, such as directory boards, are best installed at 30° to the horizontal plane with key information at 1,200 mm and 1,400 mm from the floor. Wall-mounted panels should be 1,400– 1,700 mm. Embossed letters: raised typeface should be embossed at a height of 15 mm with 1.5–2 mm stroke width, and pro rata for larger letters, with a consistent profile of 1.0–1.5 mm high. The leading edges of embossed letters (left and upper) should be well defined, crisp and with increased inter-character spacing of 20–30%. Braille: Grade 1 Braille should be used for single-word signs; and Grade 2 contracted to reduce length of multi-word signs. Tactile maps should clearly indicate north, which should align with the direction the viewer is facing. Shape-based landmarks are helpful for map and key.	

Public Art/Landscape Features

Public art and landscape features such as dockside heritage infrastructure may require tactile flooring where they protrude or cantilever to guide blind and partially sighted people away from a collision hazard.

New sculptures can be either mounted on a plinth or have tactile flooring around their base. Care should be taken with cantilevered sculptures / features that they do not present a head injury hazard and can be detected and ground level with a cane.

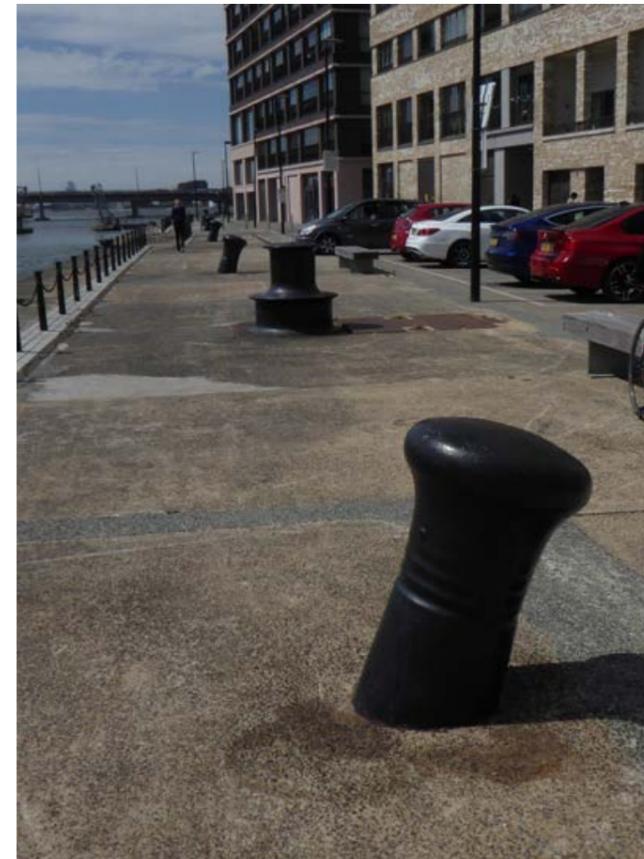
Features that cannot meet the 1000 mm standards for bollard heights will need tactile flooring around their perimeter to ward off blind and partially sighted people.



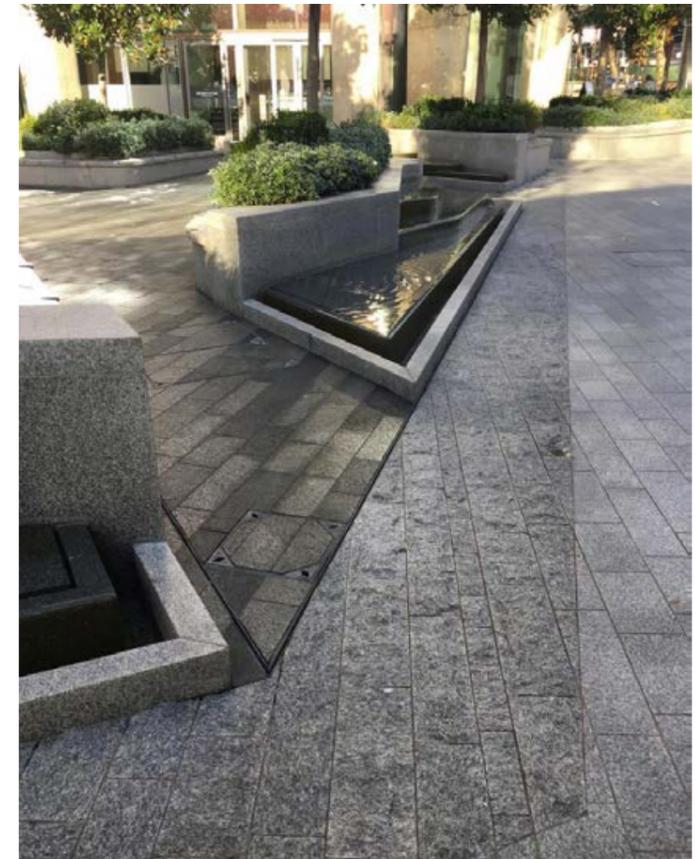
Cantilevered landscape features



Low level marine features



Low level marine fittings



Edge protection for water features, 1 Blackfriars, London

Planting

Evergreen signature trees, as per species included in the Landscape Design Guide, can assist wayfinding for partially sighted people and people with learning difficulties in that there is an element of planted landscape which is constant throughout the seasons.

Planting can be used to separate pedestrian routes from vehicles and bicycles.

Accessible raised beds are a welcome addition which can provide perch points and seating in the landscape. Be mindful of the placement of fruit trees near the pavement, as falling fruit can create a slip hazard in the autumn months.

Trees and shrubs could also be used in the Royal Docks for windbreaks, as the site is on occasion extremely exposed. Trees can also be used to mitigate wind tunnels when they occur on routes between buildings.

Grasses with audible movement in the wind and fragrant planting can help wayfinding for blind and partially sighted people.



Evergreen planting, 1 Blackfriars, London



Tactile edging around tree pits

Management and Maintenance

Once construction works are complete, full accessibility will rely on effective facilities management.

Management items will range from provision of a good quality website to effective landscape maintenance and cleaning.

Access Management Plans can form part of a operator's on-going duties and maybe required as part of the planning process.

The Public London Charter, a report produced as part of the Mayor of London's Good Growth by Design Programme, sets out a 'Good Stewardship' approach for managing and security of public spaces.



3. Appendices

Appendix 1 - Co-design and participation

In publicly funded projects there are obligations to consult with local people as the future users of a new development or refurbished open space. The recommendations here move beyond consultation towards participatory approaches which aim not simply to challenge detailed design standards but to positively influence their approach and application, drawing on local experiences and perceptions in order to raise standards. The benefit of such participation is to improve overall quality for all users, ensure that proposals provide value for money by addressing real needs thereby providing better outcomes for all stakeholders.

The reasons and aspirations that drive a public realm project into being may be many and varied. What they all have in common is an impact on local people who use – or hope to use – that public space. The aim of participation with disability and community groups is to avoid a mismatch between the project ‘vision’ on the one hand and the inclusivity and therefore success of its delivery on the other.

Participation early in the design process is therefore necessary, to gain input that shape the strategy; before ideas become irreversibly fixed and resources allocated. The generally accepted model of good practice is to approach an existing group, or set up a new group, to follow the design process who are ideally local people. Typically, these are called ‘Access Groups.’

There are various considerations to be taken on board when setting up an Access Group and guidance on these processes is widely available. Some of these include:

- Developing a Terms of Reference or other suitable contract or agreement which includes confidentiality points;
- A realistic timetable for meetings determined by the project programme;
- Meeting in an accessible venue;
- Compensation (e.g. for time or travel expenses).

Above all, there must be a realistic understanding of objectives, expectations and roles set out in a plan that is agreed to by all parties. Designers must be allowed to design, while group participants are there to facilitate that process. Their advice must be recorded and responded to by the design team with rationale as to why advice is not being taken on board where that is the case.

Administering and supporting the participation of communities and residents in general, including through an Access Group requires a special understanding of people’s needs and particular attention to ways of communicating and presenting information so that knowledge is shared and all participants can input in an informed and suitable way. Ideally, a group should have a range of disabilities represented, to cover as many areas as possible. It is also important to involve other groups to achieve inclusive and diverse input from a range of lived experiences, these include but are not limited to older people, different gender perspectives, children and young people and parents with small children.

The requirements of all users should be considered, including:

- People with sensory difficulties, e.g. sight and hearing loss;
- People with learning difficulties;
- People with mobility difficulties, e.g. wheelchair users, those with walking aids;
- Older people;
- People with small children or those carrying heavy shopping or luggage;
- People with needs relating to mental health and other types of neurodiversity;
- Processes for engaging children and young people;

A simple checklist has been provided to assist access groups and designers to monitor the approach and deliverables for inclusive design.

Process for working with an Access Group

The design process is divided into stages (1-7) developed by the Royal Institute of British Architects (RIBA) to represent key points in the history of a project’s development - this is the definitive guide when designing and constructing buildings and environment and is called a Plan of Work. The Landscape Institute (LI) also has a similar structure. Reference should be made to the summary of community feedback on page 12-13 and the Design Guides Community Engagement Appendix report.

The following section includes general guidance to work with an access group for each design stage. However, the approach need to be adjusted based on the specific project.

Stage 1 - Client action

- Client decision to set-up Access Consultation Group.
- Terms of reference agreed.

Stage 2 - Group action

- Access review of the scheme is carried out between Client and Architects.
- Design proposals are presented to the Access Group.
- Group asked for feedback on the current scheme.
- Feedback is received from the Group and entered on to a spread sheet list to be considered during the design process.

Stage 3 - Design Process

- Design Development is influenced by feedback.
- Recommendations and comments are identified as either mandatory and therefore already considered or Best Practice / Innovative idea.
- Recommendations are discussed between the Client and Architects and placed at either RIBA Stage 2/3 (Planning), Stage 4/5 (Detail design), or as a Post occupancy issue to be considered when project is complete.
- Some recommendations may be rejected to due to site constraints, English Heritage / Conservation reasons, impracticality, cost etc.

Stage 4 - Design action

- Recommendations to be considered at 3/4 Planning stage are included in the scheme and designs presented to the Group as in stage 2 – Group Action.
- Recommendations for the next stage 4/5. Detail design) remain on the list and will be considered at that time. Any new recommendations identified will be added to the list.
- Post Occupancy recommendations remain on the list and will be considered at that time. Any new recommendations identified will be added to the list.

Appendix 2 - Access Features Checklist

Ref	Feature	Yes/No
Arrival		
1	Is the site clearly signposted?	
2	Is there a safe vehicle drop-off point and is it clearly signposted with the appropriate kerb detailing?	
3	Is there accessible parking needed - for both cars and bicycles? If yes, then does it comply with the standards?	
4	Is there a safe way to cross the road to the feature e.g. dropped kerbs, tactile paving and controlled crossings?	
5	Is the step-free access to the feature? Is it accessible for pushchairs and wheelchairs?	
Circulation		
6	Is the circulation, i.e. the pavements, level and has a smooth even surface?	
7	If there are ramps and steps and are they compliant with the design guidance?	
8	Is there seating every 50 m? With arm and backrests and capacity for side transfer from wheelchair?	
9	Is there clear signage indicating the location of transport links, WC 's, cafés and other facilities?	
10	If there are any entrances to buildings or facilities are they easy to locate and a good tonal contrast?	
11	Is the site layout logical and easy to understand? Are routes too long for people with restricted mobility?	
Features		
12	If there are play or sports facilities, are there elements which are accessible to all?	
13	If there are any water features are they accessible, for example do they have ramped and stepped access? Do they need a protective barrier or tactile floor surface surround?	
14	Are there any recreational features e.g. picnic tables or outdoor games, and are they accessible?	

Appendix 3 - References

Statutory Building Regulations

The Building Regulations 2010, Approved Document M (Access to and use of buildings) Volume 1: Dwellings. Volume 2: Building other than dwellings, HM Government, 2015 edition.

The Building Regulations 2010, Approved Document K: Protection from falling, collision and impact, HM Government, 2013 edition.

British Standards

British Standard 8300:2018 Design of an accessible and inclusive built environment
Part-1: External Environment, Code of Practice
Part-2: Buildings, Code of Practice, British Standards Institution, 2018.

DD CEN/TS 15209:2008 Tactile paving surface indicators produced from concrete, clay and stone, British Standards Institution, 2008.

BS 5395-1:2010 Stairs. Code of practice for the design of stairs with straight flights and winders, British Standards Institution, 2010.

BS 8501:2002 Graphical symbols and signs. Public information symbols, British Standards Institute, 2002.

Urban Design / External Environment / Landscape / Transport

Inclusive Urban Design: A guide to creating accessible public spaces, David Bonnett Associates, BSI, 2013.

Inclusive Mobility: A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure, Department for Transport, 2005.

Improving Walkability: Good Practice Guidance on Improving Pedestrian Conditions as Part of Development Opportunities, Transport for London, 2005.

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Signage, Lighting And Wayfinding

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Sign Design Guide: a guide to inclusive signage, JMU and the Sign Design Guide, 2000.

Inclusive Play

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LDDC Inclusive Design Standards, May 2019.

Sensory Trust's Inclusive Play Booklet, 2018.

HAGS Guide to Designing Inclusive Playgrounds.

Making London Child Friendly - Finding places and streets for children and young people, GLA , 2019.

https://www.london.gov.uk/sites/default/files/ggbd_making_london_child-friendly.pdf

<https://www.playengland.org.uk>

<https://www.access-board.gov/guidelines-and-standards/recreation-facilities/guides/play-areas>

<https://www.designcouncil.org.uk/inclusive-design>

Universal Design

<http://universaldesign.ie/Built-Environment/Building-for-Everyone/9-Planning.pdf>

<https://emaginspace.com/interior-design/accessible-spaces/>

<https://bestbrothersgroup.com/americas/new-universal-design-guide-aims-to-make-public-spaces-pleasant-for-all/>

Temporary outdoor events

<http://www.attitudeiseverything.org.uk/>

British Standard 8300:2018 Design of an accessible and inclusive built environment . Part-1: External Environment, Code of Practice, pages 72-77.

Royal Dock's designer's pack: Accessibility and Inclusive Design Guide is a publication from the Royal Docks Team – a joint initiative from the Mayor of London and Mayor of Newham.

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