

INCLUSIVE DESIGN STANDARDS

MAY 2019



Global
Disability
Innovation
Hub



QUEEN
ELIZABETH
OLYMPIC PARK

LONDON
LEGACY
DEVELOPMENT
CORPORATION



Key

- Underground station
- Overground station
- DLR station
- National Rail station
- Bus station
- Business developments
- East Bank
- Entrance points
- Bus stop
- Venue car park
- Blue Badge parking
- Information
- Docking station
- ATM
- Restaurant
- Café
- Toilet
- Changing Places Toilet
- Accessible facilities including step-free access and toilets

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Foreword

This second edition of the London Legacy Development Corporation's (LLDC's) Inclusive Design Standards (IDS), originally published in March 2013, is evidence of the positive impact and continued legacy created by the enormous success of the Olympic and Paralympic Games held in London back in the summer of 2012.

It is well documented that the ambition to create, 'the most accessible Games ever' resulted in a Park and venues that excelled in their inclusive design and the story could have ended there. However, LLDC embraced this approach and made 'Championing equalities and inclusion' one of their four corporate priority themes that underpin every aspect of their work.

In an unprecedented move, they also invested £10m in delivering a Paralympic legacy programme that delivered a broad range of projects creating opportunities for disabled people while recognising and celebrating the impact of disability sport, arts and culture. Ensuring that all subsequent development projects on and around Queen Elizabeth Olympic Park in east London met the IDS was a key strand of the Paralympic legacy programme, leading LLDC to deliver inclusive places and neighbourhoods that can be used easily and enjoyed by everyone, equally.

Another example of LLDC acting on their priority theme to champion equality and inclusion has been their support of the Global Disability Innovation Hub (GDI Hub). Born out of the Paralympic legacy programme, GDI Hub is building a movement to accelerate disability innovation for a fairer world by harnessing academic excellence, innovative practice and co-creation to tackle global challenges from a new perspective – all to have a positive impact on the lives of disabled people around the world.

GDI Hub is now in a strong position to promote the approach taken in east London to help influence and create similarly inclusive places and neighbourhoods well beyond the planning boundaries of LLDC. Surely that's a legacy London can be proud of.

Tanni, Baroness Grey-Thompson

LLDC Board Member
Paralympic Gold Medallist





Introduction

Inclusive design can help all human beings experience the world around them in a fair and equal way by creating safe and accessible environments for all members of the community.

When it comes to the built environment, there is a difference between being 'accessible' versus being 'inclusive'. Access can be made fairly easily in most cases, the emphasis typically being to provide step-free, level physical access.

Delivering genuine inclusive design requires more. It requires more thought, more engagement, more innovation and more desire to create the best design possible for all intended users. It's about people. It considers that we are all different and will have differing needs and requirements throughout our lives. It considers a wide range of abilities, age groups and backgrounds. It reflects faith requirements of the local community, hidden disabilities such as autism and chronic pain and addresses the important issues likely to affect people with different sensory abilities. In doing so, it helps create better designs, more intuitive designs and usable designs that ultimately benefit all of us throughout our lives.

Our Process

LLDC has developed a process to help deliver inclusive design across all its development projects and create inclusive places and neighbourhoods in this part of east London, as summarised below:

- **Design Principal – Inclusive Design**

LLDC created this role to champion inclusive design for the organisation, shape LLDC led schemes and advise LLDC's Planning Policy and Decisions team

- **Inclusive Design Standards**

These Standards are enshrined in LLDC's planning policy (Local Plan Policy BN.6: Requiring inclusive design) to ensure all development within LLDC's planning boundary meets them as required

- **Built Environment Access Panel**

LLDC support an independent Built Environment Access Panel (BEAP) to review all the development work taking place on the Park. BEAP members are made up of disabled and non-disabled people, all with vast experience and knowledge of inclusive design in the built environment

- **Disability Innovation**

The Park is constantly changing and LLDC are always looking for new ways to innovate and remain at the forefront of inclusive urban design



A Living Document

This is a living document and will continue to evolve to take into account changes in recognised good practice guidance as appropriate.

LLDC will write to the local planning authority every three years and on any other occasion where LLDC wishes to amend this document, to seek their approval of the updated edition or for their approval that an updated edition is not necessary.



Policy context

	SUMMARY	APPLICATION
Equality Act 2010		
The Equality Act 2010 provides the legal framework that protects people from discrimination.	<p>The Equality Act 2010 is anti-discrimination legislation that gives rights to nine 'protected characteristics'. These are:</p> <ul style="list-style-type: none"> • Age • Disability • Gender reassignment • Marriage and civil partnership • Pregnancy and maternity • Race • Religion or belief • Sex • Sexual orientation 	<p>The Act applies to:</p> <ul style="list-style-type: none"> • all providers of services • public authorities carrying out their functions • an association in Great Britain • employers. <p>It applies to all services, whether or not a charge is made for them.</p>
Public Sector Equality Duty	<p>The Public Sector Equality Duty includes a General Equality Duty which is also set out in the Equality Act 2010. Public bodies in the exercise of their functions must have due regard to the need to:</p> <ul style="list-style-type: none"> • Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act. • Advance equality of opportunity between people who share a protected characteristic and those who do not. • Foster good relations between people who share a protected characteristic and those who do not. 	All Public Bodies (including the LLDC and planning authorities)
National Planning Policy Framework		
<p>The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied.</p> <p>It provides a framework within which locally-prepared plans for housing and other development can be produced.</p>	<p>The NPPF sets out that:</p> <p>Planning policies and decisions should ensure that developments create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.</p>	All planning policy and decisions in England

	SUMMARY	APPLICATION
The London Plan 2016 (Including Supplementary Planning Guidance)		
Overall strategic plan for London, its policies guide decisions on planning applications	Relevant Polices include: 2.4 The 2012 Games and their legacy 3.8 Housing choice 6.10 Walking 7.1 Lifetime neighbourhoods 7.2 An inclusive environment 7.5 Public realm	All planning applications in London
London Plan Policy 3.8 makes specific reference to accessible housing as defined by Part M4 of the Building Regulations	Accessible London Supplementary Planning Guidance 2014 provides guidance on the policies contained in the London Plan 2011 regarding the creation and promotion of an accessible and inclusive environment.	
London Plan Policy 7.2 makes specific requirement to deliver developments to the highest standards of inclusive design	Accessible London Supplementary Planning Guidance 2014 provides guidance on the policies contained in the London Plan 2011 regarding the creation and promotion of an accessible and inclusive environment.	
Local Planning Policies		
LLDC Local Plan		
Creating high quality buildings and places, which have inclusive design and maintain and build upon existing local character	Non-residential proposals will be considered acceptable where they respond to the needs of all users and provide an accessible and inclusive environment by incorporating all applicable elements of the Legacy Corporation's Inclusive Design Standards. Residential proposals will be considered acceptable where they respond to the needs of all users and provide an accessible and inclusive environment by providing 90% of dwellings in accordance with Optional Requirement M4 (2) Category 2 of Part M of the Building Regulations, and 10% of dwellings in accordance with Optional Requirement M4 (3) Category 3 of Part M of the Building Regulations.	All planning applications within the Local Plan Area
LLDC Guidance		
Design Quality Policy	Sets out LLDC's vision for achieving high quality design across all their developments. Forms the basis of a delivery plan for design quality identifying key principles, processes and technical requirements to embed high standards of design throughout Queen Elizabeth Olympic Park and east London.	All building projects within the LLDC planning boundary including the Legacy Communities Scheme.

	SUMMARY	APPLICATION
Inclusive Design Standards	<p>LLDC good practice guidance and recommendations based on existing guidance including publications mentioned above.</p> <p>The Standards are a single document to inform development partners and act as a benchmark against which LLDC can measure levels of inclusive design achieved.</p>	All building projects within the LLDC planning boundary including the Legacy Communities Scheme.
Park Design Guide	LLDC'S Park Design Guide provides third party designers, developers and land managers with overarching design principles for developing plans associated with proposed neighbourhoods and landscape improvements.	All landscaping and public realm projects on Queen Elizabeth Olympic Park and within LLDC planning boundary.
Technical housing standards		
Nationally Described Space Standard	The Nationally Described Space Standard replaces existing different space standards used by local authorities. It is not a building regulation and remains solely within the planning system as a technical planning standard.	Applies to all new build residential projects in London
Building Regulations		
Part M of the Building regulations	<p>Building regulations for access to and use of buildings in dwellings and buildings other than dwellings and provides a baseline for accessibility in the built environment.</p> <p>The guidance set out in the Approved Document is a minimum legal requirement.</p>	
Approved Document M (ADM) – Vol 1: dwellings	<p>The 2015 edition with 2016 amendments of 'Approved Document M: access to and use of buildings Volume 1: dwellings' only covers dwellings and contains updated guidance. In particular, it introduces 3 categories of dwellings:</p> <ul style="list-style-type: none"> • Category 1: visitable dwellings • Category 2: accessible and adaptable dwellings • Category 3: wheelchair user dwellings 	<p>All newly erected dwellings in England.</p> <p>Categories 2 and 3 apply only where required by a planning condition.</p>
Approved Document M (ADM) – Vol 2: buildings other than dwellings	The 2015 edition covers buildings other than dwellings.	All new build and refurbishment projects in England
Approved Document K (AD K) Protection from falling, collision and impact	The 2013 edition was updated to amalgamate 'Approved Document N: Glazing – Safety in relation to impact, opening and cleaning' along with some overlapping guidance that resided in 'Approved Document M: Access to and use of buildings'.	All new build and refurbishment projects in England

How to Use This Document

All development work undertaken within LLDC's planning boundary and subsequently submitted to LLDC's Planning Policy and Decisions Team (PPDT) seeking planning approval is required to demonstrate that it has met the provisions applicable within this document.

It is important to note that LLDC's IDS are not an entirely new set of guidelines distinct from existing, recognised good practice. Rather, the IDS bring together what LLDC consider the best of existing good practice guidance and consolidate this in a single benchmarking document to be used as a tool by design teams.

LLDC-Led Schemes

LLDC-led schemes will have their inclusive design expectations and IDS compliance requirements made at the point of writing the project design brief and will ensure it is a scored element in the procurement tendering process.

LLDC-led schemes will involve and consult the Design Principal responsible for Inclusive Design. They will also go before the LLDC supported independent advisory panel, the Built Environment Access Panel (BEAP) throughout the pre-application design stages as appropriate. This process helps reassure PPDT that the scheme has been thoroughly and independently reviewed from an inclusive design perspective.

Compliance

As a Mayoral Development Corporation and public body, LLDC is legally required under the public sector equality duty, formed under the Equality Act 2010, to establish and promote equality and be transparent about how it does so.

On LLDC-led schemes development projects typically follow the process set out below:

- **Reporting:** All design reports submitted for review will have an inclusive design section outlining compliance with the IDS. There is an IDS Conformance Report template (See Appendix 2) that all significant projects must complete and submit as part of their inclusive design reporting. This is also where any non-compliance can be set out giving the rationale and subsequent mitigation
- **LLDC Review:** LLDC's Design Principal responsible for inclusive design will be engaged throughout the design process and will feed into overall client comments at each stage of design
- **BEAP Review:** The scheme will be reviewed by BEAP at the appropriate and agreed stages of design. Key points raised are captured on a BEAP Tracker spreadsheet that also includes any outstanding comments from LLDC's Design Principal on inclusive design
- **Tracking:** Issues listed on the BEAP Tracker must be satisfactorily addressed prior to planning submission and included as part of the Design and Access Statement (DAS) reporting along with a completed Conformance Report. The design team's responses to the BEAP Tracker and any non-conformance noted in the Conformance Report are reviewed by LLDC and either accepted, deferred to a later design stage or rejected

- **Building Regulations:** Approved Document M of the Building Regulations is seen as the minimum compulsory requirement to be met and are most relevant to residential development where compliance as dictated by the London Plan is mandatory. LLDC aim to go beyond minimum requirements and deliver exemplar schemes that react and respond to the needs of the widest possible range of end users and not just aim to be 'compliant'
- **Construction and Completion:** LLDC will ensure that inclusive design features and facilities are reviewed during and post-construction to uncover and remedy any deviation from the permitted design drawings

Non LLDC-Led Schemes

Schemes not led by LLDC but within the LLDC planning boundary and submitted to LLDC PPDT are also required to meet LLDC's IDS. However, it is not expected that these will have had thorough review or input from either LLDC's Design Principal on Inclusive Design or BEAP prior to submission.

For these schemes, PPDT case officers will review, check for IDS compliance and may flag issues for advice and clarification from LLDC's Design Principal on inclusive design. It is also possible for strategic non LLDC-led schemes to be identified by LLDC as warranting review from LLDC's BEAP prior to submission. Applicants may also request an audience with BEAP directly if they have specific inclusive design issues they are seeking advice on.

Complementary Documents

LLDC's IDS are not to be used in isolation. LLDC have a suite of policy and guidance documents to be used alongside the IDS including but not restricted to:

- Design Quality Policy
- Park Design Guide

For specific building types and uses, supplementary and more specific inclusive design guidance should also be used and referenced as appropriate.

Inclusive Design Standards

The Inclusive Design Standards have been set out in four key parts:

Achieving inclusive neighbourhoods

Movement

Residential developments

Public buildings

Each inclusive design standard includes two sections, the design intent and the inclusive design guidelines. The design intent section gives some background and context while the inclusive design guidelines set out good practice that LLDC expect will deliver inclusive places and neighbourhoods. References to existing good practice guidance are made throughout as applicable and in some cases illustrations, diagrams and images are used to highlight how design measures can be accommodated. However, they do not mean that they are the only form of provision.

It is important to note that the guidance contained in this document represents one way of achieving inclusive design requirements. There may be equally satisfactory alternative physical or operational solutions that achieve the same outcomes. LLDC will work with design teams and in collaboration with the Built Environment Access Panel (BEAP) to address alternatives on a case by case basis.

Achieving inclusive neighbourhoods

LLDC is committed to continuing the significant inclusive design work undertaken to create Queen Elizabeth Olympic Park and its legacy venues. The aim is to create wholly inclusive neighbourhoods that can be enjoyed by everyone, regardless of disability, age, gender, sexual orientation, race or faith. This applies to homes, public buildings, spaces and all services and facilities.



The Legacy Communities Scheme (LCS) set out a masterplan for development across the Park, covering building heights, land uses, open space, access plans, street layout, development of infrastructure and more for all five neighbourhoods. At the heart of the LCS is the delivery of 'Lifetime Neighbourhoods', which in turn leads to the creation of inclusive neighbourhoods.

Accessible London¹ defines three principles to help frame the concept of a Lifetime Neighbourhood as a place where people at all stages of their lives:

1. can get around – neighbourhoods which are well-connected and walkable
2. can have a choice of homes, accessible infrastructure and services, places to spend time and to work with a mix of accessible and adaptable uses, and
3. belong to a cohesive community which fosters diversity, social interaction and social capital.

Inclusive neighbourhoods help to build cohesive, successful and sustainable communities.

The London Plan recognises that good growth is inclusive growth. It builds upon the city's tradition of openness, diversity and equality to help deliver strong and inclusive communities. It requires that streets and public spaces are planned for people to move around and to spend time in comfort and safety, creating places where everyone is welcome, fostering a sense of belonging, encouraging community buy-in and enabling communities to develop and thrive.

In order to achieve this, the environment must support and promote neighbourhoods where all people can move around with ease and enjoy the opportunities that have been provided. This should be a welcoming environment that everyone can use confidently, independently and with choice and dignity, avoiding separation or segregation.

LLDC and its partners must, therefore, consider all members of the community, including: older people, disabled people, large families, families with young children and babies, people from diverse faith groups and different cultures and people who do not have English as a first language.

Services and amenities

Embedded vital services, such as those below, contribute to the formation of an inclusive and age-friendly neighbourhood:

- local access to shops and amenities
- sociable spaces and places of exchange within neighbourhoods
- opportunities for volunteering and employment and
- access to social infrastructure.

Social infrastructure covers a wide range of facilities such as health provision, nurseries, schools, community, cultural, play, recreation and sports facilities, places of worship, fire stations, policing and other community safety facilities. It also covers essential elements such as accessible seating within the public realm and public toilets. With regard to local infrastructure, other facilities should be considered such as water fountains, public seating and toilets.

Furthermore, providing community-use spaces within housing developments is an important aspect of working towards inclusive neighbourhoods.

Creating connected environments

The Mayor of London's Transport Strategy² identifies that accessibility and inclusivity are embedded in planning and design of Healthy Streets. To support Healthy Streets LLDC requires that developments are welcoming places for everyone to spend time in and engage in community life. They should seek to encourage pedestrian activity including the use of cycles and public transport.

To support sociability, health and well-being, neighbourhoods should be designed to encourage people to get out and about to enjoy outdoor spaces and access services and facilities. Connected neighbourhoods consider not only the physical design of routes and distances between daily destinations, but also features and facilities that are inclusive of the widest possible range of needs, for example:

- places for people to rest along their journey
- signage and streetscape design to help with orientation and wayfinding
- accessible toilet facilities.

London's first Walking Action Plan³ targets an extra million walking trips a day. Streets therefore need to be designed, built and managed to support all pedestrians with new infrastructure, better signposting and maps and more pedestrian crossings.

¹ Shaping Neighbourhoods: Accessible London: achieving an inclusive environment Supplementary Planning Guidance, GLA, 2014

² Mayor's Transport Strategy, GLA, 2018

³ Walking action plan. Making London the world's most walkable city, GLA, 2018

A lack of resting places can limit mobility for certain groups of people. Ensuring there are places to stop and rest benefits everyone. It is also important that shade and shelter from high winds, heavy rain and direct sun be provided. This will enable everybody to use our streets, whatever the weather.

The following guidance brings together the best of good practice design guidance to ensure that developments being built in Queen Elizabeth Olympic Park create a series of connected neighbourhoods that will be successful on completion as well as in the future.

IDS 01. Site planning

Design intent

Inclusive design principles should be integrated into the masterplan of a site at the very beginning of the design process.

As with the original masterplan for the London 2012 Olympic and Paralympic Games the early assessment of gradients across the site, the orientation of the buildings, main entrances and their relationship with pedestrian and vehicular movement can dictate how accessible the environment will be.

In the initial masterplanning stage of a development it is important to consider and then demonstrate, how: the context of the site links to public transport, choice of routes, topography and the approaches to the buildings affect the accessibility and usability of the site for all users.

Neighbourhoods should be designed to encourage pedestrians to get out and about to enjoy outdoor spaces and access services and facilities. This has a significant implication for sociability, health and well-being.

Inclusive Design Guidelines

The masterplan of and the arrangement of buildings and other features within a development should be organised so that it:

- will be welcoming to visitors and encourage use from the surrounding neighbourhoods
- has a positive relationship to the Park, social infrastructure and existing developments
- makes optimum use of the topography for provision of easy access in to, through and out of the site and buildings within it
- prioritises pedestrian movement over vehicular forms of transport
- promotes a healthy streets approach to the provision of pedestrian environments and provides features such as gentle gradients and resting areas that promote pedestrian use
- enables easy navigation, logically integrating wayfinding within the landscape and building forms to remove confusion and aid independent use
- provides way-marking features that are prominent and legible from the point of arrival
- enables people to navigate and orientate themselves easily through the arrangement of any buildings and their entrances
- has variety and difference; repetition of building types and street patterns can make wayfinding and orientation around neighbourhoods difficult for some people including people with learning difficulties and cognitive impairment.

Movement

This section focuses on movement around external areas including the Park, access to waterways and public realm areas.



IDS 02. Public realm

Design intent

The external areas between buildings, public space, open space and amenity areas are just as important as the buildings themselves.

An inclusive public realm is made up of a coordinated network of legible, safe and accessible routes. Paths, roadways and streets should be designed to provide a strong, legible framework.

The ease of orientation and wayfinding through an area will be determined by its inherent legibility, supported by information systems and signage.

Inclusive Design Guidelines

The public realm should:

- include spaces where people choose to and want to spend time
- have pedestrian routes that are designed to be easily identifiable, predictable and direct; straight lines with right angled turns are the easiest to follow and should be provided on at least one step-free and accessible route through an area
- carefully consider the safety and security of pedestrians and cyclists
- have routes and facilities such as parking, play and seating areas that are well-lit with natural surveillance, clear sightlines, no dead ends and ideally a degree of overlooking from adjacent buildings
- avoid unnecessary changes in level; where a change in level is required, design solutions should be inclusive and provide a choice of routes
- minimise visual clutter, for instance, through the careful location and integration of various elements.

IDS 03. Wayfinding and orientation

Design intent

Wayfinding should use spatial, physical and environmental clues to help people plan and navigate moving from one place to another.

Spaces should be legible and easy to understand. Legibility of space includes recognisable routes, intersections and landmarks to help people find their way around. Routes to and within buildings should be designed to provide a strong, legible framework.

The layout of a building and location of key facilities, such as entrance doors, reception and vertical circulation stairs and lifts should be easily identifiable and intuitive for all users.

Information and wayfinding should be provided based on the principle of at least two senses. This could include visual clues such as landform, architecture or graphics, tactile elements such as paving surfaces or textured walls, audible elements such as running water and other sensory information, such as scented plantings (olfactory).

Inclusive Design Guidelines

Wayfinding strategies should:

- promote uncluttered streetscapes with street names clearly visible and accessible
- anticipate desire lines which will lead people towards amenities and provide logical and accessible routes that are clearly detectable
- provide orientation through the use of existing or new landmarks which may include; trees, building facades or public art
- have clearly defined and appropriately indicated pedestrian crossing points

CASE STUDY: Park Signage

Signage examples from the Park including monoliths, internal signage at Copper Box Arena, tactile and audio map at Mandeville Place and using the Agitos installation to mark a location.





Main pedestrian route on the south Park.

- make appropriate use of tactile paving as and where required including the use of guidance paving (see IDS 05.6 External Tactile Paving)
- make use of appropriate lighting for wayfinding at night, this can be achieved by directional lighting and the colour coding of external areas and key pedestrian routes (See IDS 07 External Lighting)
- make good use of accessible and legible signage including visible and clearly identified street names and directional signage; avoid wayfinding signage gaps (see IDS 04 Signage)
- consider smartphone apps and other new wayfinding technologies as they become available at key locations.

Audible communication methods include:

- audible signs and descriptive wayfinding information
- water features when in operation
- changes in walking surface materials and texture.

Tactile communication methods include:

- tactile and braille signage
- changes in level and kerb upstands
- tapping rails
- changes in walking surface materials and texture
- tactile paving.

IDS 04. Signage

Design intent

Good signage is important, and it is imperative that all signage is accessible to as wide a range of visitors as possible.

A range of factors need to be considered to address people's differing access requirements. For example, many people who are blind or partially sighted may need access to tactile or audible information. People who do not have English as first language may need pictograms.

No single medium can communicate the information required to all people to understand the built environment and as such duplication will be required. The use of visual and tactile information can benefit from being reinforced by audible information and vice versa.

The system of signage should be complementary to the surrounding environment, including the Park, and be consistent from the approaches to and throughout the development providing a simple consistent method for people to find their way.

Inclusive Design Guidelines

Design criteria outline that signage should be clear, concise and consistent.

Wayfinding signage to navigate unfamiliar environments should not rely exclusively on text-based signage but have informative systems that use:

- tone and visual contrast within the signage itself and contrast against the background on which it is seen
- simple and careful language
- identification and confirmation of directional information
- simple symbols
- architectural elements including public art
- smart technology where appropriate including smartphone apps

For specific signage design guidance reference should be made to the Sign Design Guide⁴

IDS 05. Pedestrian routes

Design intent

It is important to consider the experience of the pedestrians throughout different times of the day, week and year. Key factors are:

- directness and choice of routes for different modes of travel
- route legibility and ease of access and safety, especially for people with dementia or with a visual impairment
- how suitable the route is with regards to widths and gradients
- distances between resting places and seating (to assist people on their journey, or to enjoy a space)
- shelter and shade
- quality of lighting and natural surveillance

IDS 05.1. Pedestrian routes: general

Inclusive Design Guidelines

The design of pedestrian routes should:

- provide routes that are intuitive and easy to use
- take account of the fact that people's mobility ranges vary enormously between individuals by age and ability and contributing factors such as weather, topography (gradients) and obstacles
- provide the same quality of experience for all different options of overcoming levels (either by graded route, lifts or by steps), with none of the choices feeling secondary; see also IDS 18.1. Journey sequence – equity of experience
- avoid the use of winding routes for principal routes as they can be disorientating, increase travel distances and result in informal desire lines
- avoid excessively long graded routes which can become tiring for people, providing more direct routes and stepped route alternatives where appropriate
- provide seating located along pedestrian routes, which may be combined with associated public facilities such as public toilets and play spaces
- prevent the risk of falling where there are changes in level between the access route and the surrounding area. The risk should be assessed, and appropriate mitigation measures taken
- avoid locating stepped routes in an unexpected position or directly in line with access routes as this may cause a person to trip or fall. Where this situation occurs, the steps must be clearly identifiable, especially for a person who is blind or partially sighted

CASE STUDY: Park Seating

Seating across the Park offers cut outs for wheelchair users to sit beside non-disabled companions and bench seating with both back and arm rests.





- provide a continuous physical edge that can be used to indicate an access route; these allow routes to be clearly defined and as such more intuitive – well defined edge treatments such as planting, a change of texture or the use of kerbs (minimum 60mm) will help indicate the extent of the path, particularly for people who are blind or partially sighted, particularly long cane users
- be well lit (See IDS 07 External Lighting)

IDS 05.2. Widths

Inclusive Design Guidelines

Access routes should:

- be adequately sized for the predicted pedestrian flow
- have a minimum surface width of at least 1800mm for principal access routes, which is the minimum space required for two wheelchair users to pass each other. The minimum allowable width to cater for unavoidable obstructions along access routes is 1200mm, but this reduction in width cannot be for more than 2000mm in length
- provide passing places 2000mm long by 1800mm wide, no more than 25m apart or where there is no direct line of sight of the next passing place, when access routes are less than 1800mm.

Note: Where routes are to accommodate the Park Mobility service, designers should consult with the service operators in advance with routes expected to be at least 2000mm to accommodate the electric golf buggies.

IDS 05.3. Seating / rest points

Inclusive Design Guidelines

Seating / rest points should:

- be provided at regular intervals no more than 50m apart
- be obvious and clearly visible along main circulation routes, for example to/from drop-off/pick-up points and local amenities
- have well designed, accessible seats and benches that complement the surrounding environment
- where possible, be located in areas naturally sheltered from the weather, in particular wind and rain
- be located off main pedestrian routes as not to cause an obstruction, particularly along busy routes.

Seats should:

- be located on an accessible surface; seats may be provided on areas of soft landscaping so long as an accessible route to them is provided
- have adequate clear space alongside it, or within seating rows, to allow wheelchair and scooter users to sit directly beside friends and family or in groups
- be clearly identifiable against their surroundings
- not have highly reflective finishes
- incorporate seat heights between 450mm – 480mm for seats and benches except for where there are a significant number of benches and seating; in which case 50% should have varying seat heights with at least one at 380, 480 and 580mm high. Where perching seats are used provide seat heights of 650mm – 800mm

- enable a wheelchair user to transfer laterally onto a bench, with a level transfer space of 1200mm located at one end and an arm rest set in at 500mm to 750mm from the transfer space.

The majority of the seating provided has both back and arm rests. When provided, these should incorporate:

- armrests that are approximately 200mm above seat height level that contrast visually with the remainder of the seat to ensure that they are easily identifiable
- a space between arm rests of at least 500mm
- back rests that are at least 300mm high from seat level.

When considering the design of seating, designers should note materials that are cold to the touch are best avoided for external use. For some people, metal can become too cold during winter months to be used comfortably.

IDS 05.4. Street furniture

Inclusive Design Guidelines

Design criteria to consider for street furniture:

- permanent street furniture should be placed in areas that will not obstruct or create a hazard for people – in particular people with a visual impairment – and ideally located outside of primary circulation routes
- street furniture should be located parallel to the path of travel so the layout is predictable and readable to prevent collisions
- street furniture, planters, litter bins and signposts should have smooth rounded edges to reduce the possibility of injury in case of impact
- warnings underfoot or furniture that can be detected by the sweep of a long cane reduces the risk of people with a visual impairment from colliding with items located along access routes
- warnings at ground level should be considered for public art and water features for people who are blind or partially sighted, including long cane users
- furniture should contrast visually with the surroundings and be apparent in all weather conditions, including when wet, and should not have a highly reflective surface
- bollards should not be used unless absolutely necessary; a minimum width between bollards of 1000mm is required
- bollards should be a minimum of 1000mm high and contrast visually with their surroundings with a 150mm deep contrasting strip at the top
- street furniture should not be less than 150mm in height
- each free-standing post or column within a circulation area should incorporate a 150mm wide visually contrasting band whose bottom edge is 1500mm above ground level
- placement of A-frame advertisement boards and other moveable street furniture should be regulated as not to be located in a different position every day, reducing the risk of being a hazard for people who are blind and partially sighted people.

IDS 05.5. Pedestrian surfaces

Inclusive Design Guidelines

Surface finishes can render a route inaccessible. However, it is possible to improve the accessibility and provide valuable information for disabled people if the correct choice of materials is made. The choice of material and tone are important in determining this.

Pedestrian surfaces should:

- have surfaces that are smooth, firm and slip resistant and be hard enough so that wheels and sticks do not sink into them. Generally, packed surfaces such as crushed rock, gravel, sand or grit are not suitable
- be even, firm, well drained surface that is non-slip in both wet and dry weather conditions; BS 8300-1:2018 recommend that pedestrian surfaces have a PTV of 40 (when wet) to when a user is likely to be turning or pushing (for example a wheelchair user)
- be hard-wearing, durable and easily maintained
- be installed with any necessary joints closed and flush to prevent small wheels, heels, walking sticks and canes becoming trapped
- have a surface that is even and stable, with any variation of surface profile not exceeding $\pm 5\text{mm}$ (i.e. between paving, surface features or different surfaces)
- have a cross-fall no greater than 1:50
- have consistent use of colour and surface material if used as a wayfinding tool
- have level changes indicated by visually contrasting surfaces that do not create confusion
- avoid the use of busy patterns, including stripes, that may cause confusion or be disorientating
- avoid the use of highly reflective materials, they can appear to be wet and therefore slippery even when they are not. They may also be a source of reflective glare which can be disorientating for many people with a visual impairment.

Drainage covers and gratings within walking areas are to:

- be flush and non-slip
- have slots in drainage gratings no greater than 13mm wide, with the diameter of circular holes in covers/gratings to be no more than 18mm
- located off main pedestrian areas where possible
- not be provided within tactile surfaces at controlled crossing points
- not to be open top and dished channels.

IDS 05.6. External tactile paving

Inclusive Design Guidelines

The main use of tactile paving will be to identify level changes (steps/stairs), pedestrian crossings and to differentiate cycle lanes from pedestrian footpaths. Guidance is given in this standard on the correct application of corduroy and blister tactile paving. With regard to the layout of tactile paving, reference should also be made to the detailed guidance developed by the Department for Transport (DfT)⁵.

⁵ Guidance on the use of tactile paving surfaces, Department for Transport, 1998

CASE STUDY: Graded Routes

Shallow graded accessible routes are found around the Park, with stepped alternatives at the same locations.



The excessive use of tactile surface can cause confusion and can be uncomfortable for some wheelchair users and disabled people to traverse. Therefore, it is recommended that care is taken to specify and install it correctly in order to avoid conflicting and/or confusing information.

In some situations, it may also be advisable to consult with local user groups on the preferred application, specification and configuration of tactile paving including LLDC's Built Environment Access Panel (BEAP).

Corduroy paving

Corduroy paving conveys the message 'hazard, proceed with caution' and can be used in a number of applications including highlighting a level change. Corduroy paving should:

- comprise rounded bars running perpendicular to the direction of pedestrian travel
- contrast visually with the surrounding ground surface, but not be red which is reserved for tactile blister paving at a controlled crossing points
- not become slippery when wet or worn.

Guidance paving

Guidance paving which assists people who are blind or partially sighted to orientate themselves and navigate around large open spaces such as public squares, has domed, parallel bars which have a different configuration than corduroy paving. See the detailed DfT⁶ guidance for its correct installation.

Blister paving

Blister paving is used to indicate a pedestrian crossing point, either controlled or uncontrolled.

Blister tactile paving should:

- be applied at both controlled and uncontrolled crossings where the footway has been dropped flush to the carriageway or the carriageway has been raised to the level of the footway
- not become slippery when wet or worn.

At controlled crossing points, the pedestrian is able to establish priority over vehicular traffic. The blister tactile paving should be red for a controlled crossing and provide a clear visual contrast with the surrounding ground surface.

Controlled crossings are the preferred choice, especially for people who are blind and partially sighted as they can cross the road with confidence. All crossing beacons are to emit an audio sound or incorporate the rotating cone.

At uncontrolled crossing points the pedestrian does not have priority over the vehicular traffic. Uncontrolled crossing points include:

- side road crossings
- crossings away from junctions
- kerb to kerb flat-top road humps (level crossings).

The blister paving should be buff or any colour other than red as to provide a suitable visual contrast with the surrounding ground surface.

For the requirement to differentiate cycle lanes from pedestrian footpaths see IDS 09. Cycling infrastructure.

IDS 05.7. Hazards

Inclusive Design Guidelines

Design criteria for addressing hazards state that:

- external access route widths should maintain a clear height of at least 2.5m above ground level
- any feature which could constitute a hazard should not project into or be located within an access route
- elements such as water features can present a significant hazard and should not be positioned within a primary access route without adequate protection and warning for pedestrians
- all hazards should be made clear through visual contrast that is apparent when both dry and wet
- hazard protection should be provided if objects project more than 100mm into an access route and their lower front edge is more than 300mm above the ground

⁶ Guidance on the use of tactile paving surfaces, Department for Transport, 1998

- where appropriate, hazard protection should also be provided in the form of a tapping rail to enable a person who is blind or partially sighted to detect it using a long cane. The underside of the tapping rail should not be higher than 150mm above ground level
- in addition to cane detection, guarding between 900mm and 1100mm from the surface of the accessible route should be installed each side of the obstruction or hazard.

IDS 06. Changes in level

Design intent

Changes in level can cause problems for many people. Even a single step can prevent access for someone who has mobility impairment and can present a trip hazard.

LLDC's aim is to achieve shallow gradients (approximately 1:60 or less steep) wherever possible in keeping with what was achieved across Queen Elizabeth Olympic Park for the London 2012 Olympic and Paralympic Games.

Where changes in level cannot be avoided and graded routes are required they should be designed to be as shallow as possible. Steep ramps are trip/slip hazards and often require excessive effort for some disabled people to access independently.

Significant changes in level (more than 2m) will require alternative step-free options, such as lifts.

It is important that journeys by lift, graded route or by steps provide the same quality of experience with none of the alternative routes feeling secondary.

Ramps should:

- have a visually contrasting surface to indicate their presence
- have gradients no steeper than 1:15 and level landings as detailed in the table below

GRADIENT	GOING OF A FLIGHT	MAXIMUM RISE
1:20	10m	500mm
1:19	9m	474mm
1:18	8m	444mm
1:17	7m	412mm
1:16	6m	375mm
1:15	5m	333mm

- be clearly indicated on approach
- be provided with adjacent stairs if over a 300mm rise (See IDS 06.03 External stairs)
- have a surface width between walls, upstands and kerbs of no less than 1500mm
- have a cross-fall gradient of not more than 1:50
- have landings at least the width of the ramp (minimum 1500mm) and at least 1500mm long clear of any door swing or other obstruction; if an intermediate landing is a quarter turn or half turn landing, the width of the ramp should be maintained throughout the turn or turns
- incorporate intermediate landings at least 1800 x 1800mm where there is no clear line of sight from one end of the ramp to the other, or where there are three or more flights
- have handrails designed in accordance with IDS 06.4 Handrails
- have evenly distributed artificial lighting with an illuminance at ramp and landing level as per Table IDS 07
- have suitable non-slip surfaces when wet and dry (BS 8300-1:2018 recommends that where a ramp is likely to become wet, the recommended wet PTVs for ramps are increased from 40 to 45 for shallow ramps of 1:20 and to 49 for a gradient of 1:12).

IDS 06.1. Graded routes

Inclusive Design Guidelines

Graded routes should have:

- a maximum gradient of 1:21, although preferably shallower gradients should be provided where possible
- level landings for each 500mm level change (for gradients between 1:21 – 1:60); with gradients less steep than 1:30, a level resting place adjacent to the route may be provided as an exception.
- level landings where changes in direction occur
- level landings that are a minimum of 1500mm long (3000mm preferred), clear of any obstruction cross-falls no steeper than 1:50, except when associated with a dropped kerb or adjacent resting place.

IDS 06.2. Ramps

Inclusive Design Guidelines

Ramps are to be avoided where possible and not used on principal routes. Where used, gradients should not be steeper than 1:15.

Where ramps are required they will:

- rise no more than 2m without providing an alternative means of step-free access, typically a fully enclosed passenger lift.

IDS 06.3. External stairs

Inclusive Design Guidelines

Design criteria for external stairs are:

- stairs are not to be dissected by ramps or graded routes as to produce feathered/tapered steps
- stairs should always be provided in addition to a ramp (1:20 or steeper) unless the change in level is less than 300mm
- where stairs are provided, designers must be mindful that too many risers in a single flight may be difficult for people with mobility impairment and that the

External passenger lifts provide level access at strategic locations.



transition between stairs and landing is often the area that poses most risk for people who are blind or partially sighted

- in areas of high pedestrian flow, to help ensure a free flow of people and avoid crowd pressures building up, the head of each stairway should be designed so that the flow onto the stairway is uniform across its width.

Where stairs are provided they will have:

- no tapered risers
- incorporated straight flights. Spiral stairs are not to be provided, however if a helical flight is incorporated they will need to comply with BS 5395-2⁷ and designers will need to demonstrate they are accessible with suitable goings and risers to people with a mobility impairment and assistance dog users
- no less than two risers in each flight (avoid single steps)
- no more than 20 steps in a single flight and should be uniform in successive flights.
- a minimum of 30° change in direction if there are more than 40 risers in consecutive flights
- suitable corduroy tactile paving warning at the top and bottom of stairs
- no open risers
- treads and risers that are solid and opaque
- riser profiles designed so as to avoid people who drag their feet from tripping up the stairs, preferably a step will not overlap the one below, however, if there is an overlap the nosing should not project over the tread by more than 25mm
- a minimum unobstructed width of 1200mm, with the width between the handrails being no less than 1000mm
- additional handrails, where the width of stairway is greater than 2000mm (for wider stairs within the landscape this may only be required along the main desire lines and the strategy for handrails is to be agreed with BEAP)
- uniform risers and goings with risers preferably between 150mm – 180mm (preferably 170mm or less) and goings between 300mm – 450mm, with at least 350mm preferred
- level landing at the head and foot of stairways, and between flights, to have a length no less than the surface width of the flight. This should therefore be no less than 1200mm clear of any door swings with 1800mm preferred
- slip resistant treads in accordance with BS 5395-1: 2010⁸
- a durable, permanently visually contrasting nosing of continuous material extending the full width of the stair on both the thread and the rise that extends 50mm to 65mm in width from the front edge of the tread and 30mm to 55 from the top of the riser
- flights and landings made from different materials, where their frictional characteristics are similar enough that individuals using the route will not stumble or trip
- continuous handrails on both sides and on intermediate landings as in IDS 06.4 Handrails.

⁷ BS 5395-2: 1984 Stairs, ladders and walkways –Part 2: Code of practice for the design of helical and spiral stairs
⁸ BS 5395-1: 2010 Stairs. Code of practice for the design of stairs with straight flights and winders

Stairs are to:

- not be constructed from materials that are highly reflective
- be well lit, with each flight and landing illuminated to provide a clear distinction between each step and riser and avoid the generation of highly contrasting shadows; the illuminance at tread level for primary circulation stairs should be in accordance with Table IDS 07
- be clearly identifiable and contrast visually with their surroundings.

IDS 06.4. Handrails

Inclusive Design Guidelines

The requirement for handrails that are not cold to touch is to be considered in external areas. However, long-term maintenance and the need to provide sustainable materials are equally important.

Handrails are to:

- be continuous on each side of steps and ramps including intermediate landings where this does not obstruct the use of adjoining access routes
- be strong enough to support individuals and be fixed to the structure in order to support the loading required
- have a top surface between 900mm – 1000mm above the pitch line of the stair or ramps
- be provided in addition to any required balustrading/guarding higher than handrail height
- extend 300mm horizontally beyond the last nosing of a stair at both the top and bottom before finishing in positive end as not to catch users clothing
- be easy to grip, able to be held comfortably and leant upon, and either round or elliptical
- have a clearance of between 50 – 75mm off any adjacent wall surface
- be 50mm above any fixing bracket to allow smooth running of a person's hand along the rail
- not project into the minimum clear width of any stair, ramp or circulation route
- contrast visually with the background against which they are seen
- be impact resistant from damage by impact with powered wheelchairs and scooters.

IDS 06.5. External passenger lifts

Inclusive Design Guidelines

Design criteria for external lifts are:

- to comply with IDS 19.5 Passenger Lifts
- to be provided with adjacent stairs and be situated in safe locations with clear sightlines of the entrances/exits and natural surveillance
- to be provided with suitable shelter from the weather,

including a roof, covering the entrances, the lift controls and any external waiting space

- to have stairs adjacent to them conforming to IDS 06.03 External Stairs.

IDS 07. External lighting

Design intent

Appropriate lighting is critical to help create safe and inclusive neighbourhoods.

Where it is necessary to light external environments, the difference in illuminance experienced by the user as they transition from inside to outside must be taken into account. Some people take longer to adapt to differences in light levels

Artificial light

Particular attention should be paid to main circulation routes, entrance/exit points and places where people may be expected to interact with others. In these instances, lighting will be important at both low level to indicate pathways/routes and at a higher level to allow people's faces to be clearly lit and identified.

Inclusive Design Guidelines

Artificial lighting requirements are:

- artificial lighting systems should be designed to maintain a level of illumination that is comfortable and provides a safe environment that is suitable for people who are blind or partially sighted
- the positioning of artificial light sources should be designed to avoid creating glare, confusing reflections, pools of bright light and strong shadows
- transitional lighting should be provided between areas of lighting level changes to allow people's eyes to adapt to the different levels
- any information points, kiosks or counters are to be lit to allow lip reading
- down lighters are to be carefully located so that they do not create shadows across people's faces, making lip reading difficult
- up lighters are not to be used on pedestrian routes
- see also guidance on emergency lighting in IDS 30 Emergency Egress.

Table IDS 07: Lighting levels⁹

APPLICATION	AVERAGE ILLUMINANCE	MINIMUM ILLUMINANCE
Pedestrian routes in the external environment	5	–
Pedestrian routes adjacent to building entrances/exits	–	100
Cycleways	10	–
Open footbridges (night)	30	15
Enclosed footbridges (night)	100	50
Enclosed subway (day)	350	150
Enclosed subway (night)	100	50
Open stairways and ramps in the external environment	30	15
Open stairways and ramps in adjacent to building entrance/exits	–	100
Signage	50	–

IDS 08. Bridges and subways for pedestrian use

Design intent

Bridges and subways are to be accessible for all users and should be designed with gradients in accordance with the standards being applied to circulation routes in IDS 05.

Inclusive Design Guidelines

Bridges and subways should be designed for safety and be well-lit, have clear sightlines, preferably with natural surveillance and ideally a degree of overlooking from adjacent buildings.

Bridges and subways should have:

- gradients that comply with the requirements of IDS 06.1: Graded Routes, including level landings
- surfaces in accordance with IDS 05.5: Pedestrian Surfaces
- rest areas and seating provided on longer bridges as appropriate in accordance with IDS 05.3 Seating / rest points
- stepped, sloped or ramped approaches, in accordance with IDS 06 Changes in level
- handrails on both sides of the footbridge when the gradient exceeds 1:30
- additional handrails provided on particularly wide (exceeding 50m) and steep (exceeding 1:20) footbridges where they do not present a hazard
- lighting levels in accordance with Table IDS 07.

Bridge parapets should, where possible, offer viewing heights for people both standing and seated; this is not expected when health and safety would prevent such provision.

CASE STUDY: Cycling Infrastructure

Cycling infrastructure across the Park includes on street cycle lanes and segregated cycle lanes such as those used on the Greenway. Cycle stands allow access for adapted cycles.



IDS 09. Cycling infrastructure

Design intent

Cycle networks and cycling infrastructure have traditionally been designed around the two-wheeled bicycle and do not support inclusive cycling. The London Cycling Design Standards¹⁰ (LCDS) require that developments support inclusive cycling, and this is something LLDC are keen to encourage.

Cycle infrastructure should be designed in a way that is inclusive both of larger types of cycles and various models used by disabled people. The concept of 'the inclusive cycle' is embraced – meaning a more forgiving environment is required. Although many disabled cyclists use a standard two-wheeled bicycle to get around, it is important to understand that many use a variety of non-standard cycles depending on their need. These take many different forms and further information is provided within the LCDS.

Considerable work was done on the separation of cycle lanes and pedestrian routes for London 2012. BEAP was heavily involved in the development of the Greenway which is seen as good practice example.

It is essential that the design of cycle infrastructure in off-road environments is informed by a good understanding of the needs of other users. Patterns of use by cyclists and pedestrians should be informed by an understanding of where the expected desire lines are and by the function of the wider route or network.

IDS 09.1. Cycle lanes

Inclusive Design Guidelines

Cycle lanes should not diminish on the accessibility of the pedestrian routes. Considering accessibility is imperative to addressing user needs, and any opportunities to increase accessibility should be taken.

Cyclists and pedestrians should not be forced together where there is space to keep them apart, creating unnecessary conflict which can only increase as the number of cyclists rises. Cyclists and pedestrians should not share the same space at crossings and junctions.

Main circulation routes that are specifically intended for high levels of usage by both pedestrians and cyclists (such as the Greenway) will be clearly demarcated in accordance with current good practice guidance. Demarcation helps give pedestrians (in particular people who are blind or partially sighted and older people) confidence to use the circulation route as it helps remove the uncertainty of use.

Sufficiently wide cycle lanes are needed to accommodate all types of cycles.

Cycle paths

Cycle paths are to:

- be set out to be accommodating for all cycles by incorporating appropriate widths and geometries
- have the gentlest camber possible to facilitate comfortable and safe cycling, whilst allowing for drainage. A maximum cross-fall of 1:40 is recommended for paths used for cycles

- incorporate approaches to junctions and crossings that are perpendicular for visibility
- have a corduroy tactile surface to indicate to people with a visual impairment what side to enter (for more information on design and layout of tactile paving at junctions see the DfT guidance on the use of tactile paving surfaces¹¹)
 - o the corduroy tactile paving is laid perpendicular to the direction of travel on the pedestrian side and parallel with the direction of travel on the cyclists side
 - o the corduroy tactile paving to extend for 2400mm at the entry/exit and at junctions on both the pedestrian and cyclists sides
- incorporate a raised, central delineator strip, to help people with a visual impairment keep to the pedestrian side
- have a cycle symbol marking provided on the appropriate side at all entry/exit points and any junctions with footways or other shared routes
- use different coloured surfaces and materials (for example bitumen and concrete) on the different sides of the route to provide a useful additional cue
- be no less than 2m wide, to allow wheelchair users and prams to pass shared paths
- have bollards or gaps between kerbed upstands at no less than 1500mm apart when used across a cycle pathway to prevent access to motor vehicles
- have dropped kerbs (where required) that are at least 1500mm wide, and wider when the approach creates an oblique angle. Dropped kerbs should be specified with zero upstand within 6mm tolerance; any upstand of more than 10mm could destabilise the rider when approached at an angle.

Pedestrian safety:

- footpaths and cycle tracks should be appropriately separated, preferably with a change in level with kerbs should be at least 60mm high with bevelled edges being considered
- wider, adapted cycles will need larger widths otherwise they will encroach into the pedestrian route
- crossings with blister tactile paving must be provided for pedestrian; the crossing should preferably contrast visually with the cycle track.

IDS 09.2. Cycle parking

Inclusive Design Guidelines

Cycle parking locations should be carefully considered to ensure that they are convenient for the intended destination and that they do not become a hazard for pedestrians. Cycle parking locations should be easy to find and use and be close to intended destination facilities whilst ensuring they do not create any areas of conflict between pedestrians and cyclists.

Cycle parking design criteria are:

- where new cycle parking facilities are installed, 5% of all spaces are to be allocated for use by non-standard cycles
- parking facilities for non-standard cycles within buildings should either be located on ground level or have step-free access (i.e. via a shallow ramp or accessible lift)

¹⁰ London Cycling Design Standards, TfL, 2016
¹¹ Guidance on the use of Tactile Paving Surfaces, Department for Transport, 1998



Tertiary mews streets at Chobham Manor.

- where accessible car parking spaces are provided, the co-location of inclusive cycle parking is to be considered
- it is preferable that non-standard cycle parking bays be under shelter and not exposed to the elements and nearest to the entrance of any facility they serve
- the minimum gap between cycle stands/bays should be 1000mm
- at least one bay for non-standard cycles should be allocated at the end of a row of standard cycle parking stands, with these bays a minimum of 1500mm wide to allow for dismounting
- where possible, install cycle parking bays that people on non-standard cycles can ride into and out of (meaning no need for reversing, turning or lifting a cycle)
- cycle stands should be clearly identifiable when not in use and contrast visually with their surroundings in all weather conditions
- ground level detection, such as tapping rails, should be observed for the entirety of the parking stand; its underside should not be higher than 150mm
- non-standard cycle parking bays should be clearly signposted, with signage denoting that these bays have been allocated for non-standard cycles.

IDS 10. Shared space

Design intent

Shared space aims to make pedestrians the priority within the built environment by reducing the dominance of vehicles and enabling users to share the space rather than follow the rules implied by more conventional road priority management systems and devices. However, such pedestrian-prioritised streets should only be adopted where traffic volumes and speeds allow the space to be used safely by all, and as such they are not considered suitable for primary or secondary vehicular routes.

Using shared space on tertiary streets in residential neighbourhoods (such as mews streets where there will be minimal vehicular traffic) can help to create more child, pedestrian and community friendly streets. The intention is to design tertiary streets in residential developments as places instead of just corridors for movement.

There is no such thing as a definitive shared space design as each site will be different with individual characteristics. Many people, including people who are blind or partially sighted, rely on kerbs to ensure they are separated from traffic and to act as an orientation guide. Shared space doesn't automatically mean using a 'level' surface.

It will be important that BEAP are consulted on any proposed shared space scheme/design.



Accessible parking spaces at London Aquatics Centre.

Inclusive Design Guidelines

Shared space design criteria are:

- shared space must be easy to navigate and the street conditions with regard to accessibility, security and safety should be enhanced to ensure this.
- a 'gateway' into the area of shared space that differentiates the space from the main roadway should be created. This may incorporate a speed restriction sign, narrowing of the carriageway/overall street width, vertical change in street surface level and contrasting surface finishes from surrounding streets to help differentiate it and imply pedestrian priority
- tactile blister paving should be used to demarcate crossing points at junctions leading to shared space streets
- a vehicle speed of between 10 – 15mph should be enforced, with 10mph preferred
- keep the space uncluttered through minimal use of traffic signs and other unnecessary street furniture
- all crossings in areas of shared space are to be indicated using tactile warning blister paving in accordance with Department for Transport guidance¹²
- any areas of shared space with no kerbs must ensure there are other ways to make pedestrians feel safe and to help guide them, such as pedestrian comfort zones and tactile paving
- crossings can be highlighted by a combination of the following; tonal/visual contrast, using bollards to indicate the pedestrian entry to the crossing, have the crossing on a raised table (if not a level surface), narrow pinch points at crossings and using differently textured surfacing on vehicular approaches to crossings

- a kerb height of 60mm is the minimum that a person with a visual impairment can detect with confidence when stepping up and stepping down.

Pedestrian Comfort Zones:

Where shared level surfaces are proposed, such as residential mews streets, safe pedestrian comfort zones must be provided and clearly defined on each side of the street.

Comfort zone design criteria are set out below:

- plan to ensure that through traffic will take alternative, primary or secondary routes rather than use shared space streets, which should be designed so it cannot be used as a short cut
- safe pedestrian comfort zones to be a minimum of 1200mm wide on each side of the street, though increasing these areas to 1800mm wide will allow two wheelchair users to pass each other
- the building line is an important navigation aid for people with a visual impairment and it is important to keep this side free from clutter such as planters and wheelie bins
- the use of surface finishes including tone and texture to clearly define safe pedestrian comfort zones
- the boundary between safe pedestrian comfort zones and shared routes can be further defined by the use and placement of street furniture including seating, litter bins and planters as well as trees where appropriate
- all necessary street furniture is to be located in logical and consistent configurations
- parking is not to be provided within pedestrian comfort zones, nor should it be possible to park informally in these areas

¹² Guidance on the use of Tactile Paving Surfaces, Department for Transport, 1998

- the location of parking spaces can be used to help in demarcating pedestrian comfort zones in certain situations as long as the vehicle does not encroach into the pedestrian comfort zone in any way
- parking restrictions need to be clear to motorists without necessarily using painted yellow lines
- patterns should not cause confusion with regard to guidance paths/delineator strips
- cycle parking stands can be used to help demarcate pedestrian comfort zones along with other items of necessary street furniture
- seating can also be used to help demarcate pedestrian comfort zones along with other items of street furniture

IDS 11. Parking and drop-off

Design intent

People who qualify for a Blue Badge include people who are blind or cannot walk a distance of up to 50 metres without severe pain. This should be borne in mind when deciding where to site designated vehicle parking spaces for disabled people.

Appropriate provision should also be made for bus/coach parking/drop-off and pick-up areas, taxi drop-off/collection, community transport and any interlinking transport systems.

IDS 11.1. Parking for general public

Inclusive Design Guidelines

Designated accessible parking bays will:

- support electric vehicles
- have dimensions of 2.4 x 4.8m
- have a 1.2m access zone between bays and at either end of a row of bays
- have a 1.2m safety zone for boot access
- have the international symbol of disability on the surface of the bay and additional signage on a post (or wall if applicable) sited at one end to indicate the bays are reserved for use by Blue Badge holders
- have at least one accessible space of 4.8 x 8m, if there is space to allow for rear or side hoisting
- be within 50m of building entrances; if it is not possible to locate accessible spaces within 50m of a principal entrance then accessible seating with both arm rests and backrests should be provided to create resting areas every 50 meters.
- have walking surfaces conforming to IDS 05.5 Pedestrian Surfaces
- show the maximum acceptable height of vehicle on the approach to the car park
- provide directional signage to the accessible parking bays from the car park entrance
- in cases where there is a pavement between the parking bays and the access route, provide a dropped kerb alongside the bays which should preferably be set off from the line of pedestrian travel

- give consideration to making provision for wheelchair accessible vehicles; commonly these drivers access and egress their vehicles via a side or tail lift ramp and require up to an additional 2m clearance to be able to drive on/off their vehicle ramps
- provide parallel parking bays for on street parking of 3.6 x 6m
- where parking is permitted adjacent to cycle lanes, at least 2.5m extra width needs to be observed.

Multi-storey car park:

- accessible parking spaces to be clearly sign-posted and at the same level as the principal entrance to the building or the main access route to and from the car park
- travel distances from parking spaces to the exit (or lift if not on the exit floor) to be no greater than 50m
- a suitable passenger lift to be provided between levels (see IDS 18.5 Passenger Lifts)
- signage to be provided indicating the accessible route to; the ticket machine(s), the lift(s), each storey and final exits
- ticket machines are to be accessible and specified to comply with the recommendations in BS 8300-1:2019¹³
- disabled motorists should not have to pass behind parked vehicles that aren't their own
- disabled motorists should not have to follow a vehicular path to reach the entrance to the building.

Some disabled motorists use vans or adapted people carriers and others use cars with some storing their wheelchair on top of the vehicle. This makes the height of a route to, from and at an accessible car parking space critical.

- the minimum vertical clearance, from carriageway to a proportion of designated parking bays and through to exit, to be 2600mm
- it is essential that the maximum vertical clearance for vehicles is shown on the approach to the car park before any likely queue can form into the car park.

IDS 11.2. Drop-off

Inclusive Design Guidelines

Drop-off/pick-up points must:

- be provided at all public buildings; where possible this should be sheltered and immediately adjacent to the main entrance of the building
- be clearly indicated
- have level access to the main building entrance
- have a kerb and suitable dropped kerbs; Hackney-style cabs and some bus/coaches will require a kerb in order to deploy their ramp at a suitable gradient to pick up/drop off wheelchair users
- be provided on firm and level ground
- have dimensions of not less than 9m x 3.6m
- if covered, have a clearance of at least 2.6m.

CASE STUDY: Assistance Dog Facilities

A dedicated assistance dog facility where assistance dogs can toilet and have access to clean water is provided at the London Stadium.



IDS 11.3. Mobility scooter parking

Inclusive Design Guidelines

For public buildings, there should be parking or storage options for mobility scooters. Where provided, parking will:

- be undercover and sheltered from bad weather
- be provided with charging points (plug sockets)
- have minimum dimensions of 700mm wide x 1500mm long with a transfer zone of at least 500mm to one side.

IDS 12. Access to public toilets

Design intent

Away from home toilets is a key feature of developing accessible environments. Many people, including disabled and older people, may receive little warning of when they need to use the toilet and so having access to good, accessible toilets is often fundamental in deciding whether to go out or not. Areas where people meet, spend time or wait should have public toilet facilities.

Providing access to good, accessible public toilets will be an important aspect of achieving inclusive neighbourhoods.

Inclusive Design Guidelines

Public toilets design criteria are:

- where schemes incorporate a community facility, this is to have accessible toilets that are available for local residents and the general public to use when the facility is open
- signage should be provided to indicate the location of accessible toilets available for public use (see IDS 03: Wayfinding and Orientation and IDS 04: Signage)
- if there is only space for one toilet facility, this should be an enlarged unisex corner accessible toilet
- other public toilet facility recommendations include accessible family facilities, ambulant facilities, enlarged cubicles and changing places facilities – see IDS 20 Sanitary facilities.

IDS 13. Assistance dog facilities

Design intent

Assistance dog facilities were provided for the venues in Queen Elizabeth Olympic Park during the 2012 Olympic and Paralympic Games and continue to be provided on significant developments within the LLDC boundary.

While primarily people with sensory impairments require an assistance dog, people with mobility impairments and wheelchair users may also have an assistance dog with them.

As visit times to Queen Elizabeth Olympic Park may be considerable, it is essential to provide suitable areas for assistance dogs to be watered and relieve themselves.

Inclusive Design Guidelines

The provision of assistance dog facilities, which are typically located externally, are to be in alignment with the recommendations from The Guide Dogs for the Blind Association¹⁴, and guidelines include:

- are to be step free
- 2m wide access to allow for one wheelchair user or two ambulant people and one dog
- they should be a secure area of minimum 3m x 4m, with a boundary fence/wall at a minimum height of 1200mm
- 50% grass surface and 50% hard-standing
- slight gradient in the direction away from the gate to assist drainage (a ditch/drainage running the edge of the area should be provided if a gradient is not possible to achieve)
- an entrance gate or opening should be easy to operate and have a minimum clear manoeuvring space 1500mm x 1500mm to allow wheelchair users to turn around
- a water supply and hose should be provided for ease of cleaning the area and to allow assistance dog users to provide a drink for their dog

- if the spending area is indoors, it should be illuminated to around 100 lux and be provided with an extractor system to keep the area well ventilated
- include seating
- include a waste bin with cover and a supply of plastic bags for disposal of dog waste
- a sign saying, 'For Guide and Assistance Dogs Only' should be clearly displayed in English and Braille.

IDS 14. Inclusive play

Design intent

Providing regular play areas for children of all abilities will further contribute to creating an inclusive neighbourhood. Children and young people should have access to safe, good quality, mentally stimulating play facilities. This should include green space wherever possible.

Inclusive play ensures that all children, young people and older people of any ability have equal access to and equal participation in local play and leisure opportunities. Inclusive Play is a range of flexible, formal and informal spaces that will attract children to play, young people to meet with friends and adults and older people to engage in physical activities. The integration of the play spaces into the wider public realm will offer a diverse experience within the landscape, encouraging an inclusive social mix.

ILC-UK and Age UK¹⁵ identify that facilities that support older people in outdoor spaces are those that will benefit all generations; toilets, catering facilities and equipment such as outdoor gyms. They also recommend provision of desegregated apparatus for fun in outdoor spaces that includes people of all ages – like swings outside of children's play areas, and outdoor gyms to encourage older people to become more active.

"Plan Inclusive Play" (PIP) assessing inclusive play for children Inclusive Play¹⁶ is a play area assessment tool to help create inclusive outdoor play areas as well as assess installed play areas. The PIP checklist can be worked through online.

Inclusive Design Guidelines

Play areas are to:

- be overlooked by surrounding development
- be accessible to wheelchair users and other disabled children and adults, with main circulation routes through the play-space to be wide enough to allow two wheelchair users to pass one another and one wheelchair user to turn 180° (1800mm)
- be designed to take advantage of direct sunlight
- be within close vicinity of public toilets, including accessible public toilets and changing places facilities in the area
- have observation points, where parents or carers can observe their children without being involved in play activities
- provide space for parking prams, pushchairs and mobility equipment

¹⁴ Guidance on the provision of spending facilities for guide dogs and other assistance dogs, The Guide Dogs for the Blind Association, 2015

¹⁵ 'Making our Communities Ready for Ageing', ILC-UK, 2014

¹⁶ The checklist can be accessed at www.inclusiveplay.com/pip-assessment/



Inclusive play at Tumbling Bay playground.

- provide a range of play challenges to meet various different ages and abilities and incorporate play spaces and equipment that will engage the senses including the use of colour, texture, sound, movement, vibration, water, lighting, tactile experiences, smell and taste
- have equipment and play opportunities that will be exciting and fun for all children and older people, with various levels of challenge offered; the inclusion of equipment that can be used in different ways by children at different stages of development and with differing levels of ability, including children who are wheelchair users, are recommended
- incorporate features with the ability to interact in some way with the units that may not be accessible to wheelchair users, such as climbing
- provide quiet areas to enable sensory experiences of a gentler manner
- have areas that offer protection from the weather, in particular the wind and rain. These could be incorporated with seating areas
- have good hard-standing surfaces with good drainage as not to flood during wet weather
- have planting that will not encroach onto main circulation routes and cause a hazard at both foot and head level
- have some seating through the play-space for adults at regular intervals, including some with both back and arm rests. Seating should be located off main circulation routes
- have some raised plant beds to allow wheelchair users to get close to plants/flowers/vegetables and take part in any planting activities where provided
- have drinking fountains, where provided, that are accessible for all including wheelchair users

Residential developments

When considering the provision of housing on Queen Elizabeth Olympic Park it is imperative that the needs of the local population including local demographic trends are considered.

The key to successful new housing will be its versatility and flexibility. It should be able to meet the needs of the surrounding population now and equally in 30 years' time. This will require designs that can be easily adapted to meet these changing needs over time.

This section focuses on new residential developments and considers the impact of the London Plan, Localism Act and the National Planning Policy Framework.



Required Housing Provision

HOUSING TYPE	GUIDANCE REQUIRED	PROVISION REQUIRED
General Needs Housing Category 2 – Accessible and adaptable dwellings	The London Plan and associated SPGs Local Planning Policy (as appropriate) Approved Document M of the Building Regulations Volume 1 dwellings	90% of all housing and tenures
General Needs Housing Category 3 – Wheelchair user dwellings	The London Plan and associated SPGs Local Planning Policy (as appropriate) Approved Document M of the Building Regulations Volume 1 dwellings	10% across all typologies and tenures
Specialist Housing for Older people	The London Plan Local Planning Policy (as appropriate)	To be agreed on a site by site basis with the LLDC

IDS 15. Inclusive housing

Design intent

All developments are to conform to the London Plan and therefore meet the requirements for accessible and adaptable dwellings and wheelchair user dwellings as well as the Housing Supplementary Planning Guidance requirements.

New residential developments are to support inclusive neighbourhoods and be child and family friendly. Children and young people need free, inclusive and accessible spaces offering high-quality play and informal recreation opportunities.

There will be a wide range of individual requirements from older people with arthritis or dementia to disabled people with multiple impairments. As the first occupants are often unknown, homes should be designed to be easily adaptable. Wheelchair user dwellings should be distributed throughout a development to provide a range of aspects, floor level locations, views and unit sizes.

LLDC is committed to diversity and inclusion and it is vital that new homes represent the needs of the 4 boroughs that surround Queen Elizabeth Olympic Park. Therefore, new homes should address the needs and housing design requirements for people of different faiths and cultures particularly in relation to black, Asian and minority ethnic (BAME) communities as appropriate.

While London is a 'young city', it is expected to experience substantial growth in its older population. By 2029 the number of older person households (aged 65 and over) will have increased by 37 per cent, with households aged 75 and over (who are most likely to move into specialist older persons housing) increasing by 42 per cent. Appropriate accommodation is needed to meet the needs of older Londoners. Some older Londoners may wish to downsize, move closer to family or friends or be closer to services and facilities, but they may not want to move into specialist older persons housing. LLDC recognise the important role that new, non-specialist residential developments play in

providing suitable and attractive accommodation options for older Londoners and align with the Housing our Ageing Population: Panel of Innovation (HAPPI)¹⁷.

Therefore, in addition to the requirements of the optional Building Regulations and the Housing SPG, the following standards are to be integrated into the designs of new homes where appropriate.

IDS 15.1. Drop-off/visitor parking

Inclusive Design Guidelines

As well as residents' parking spaces, it is equally important to consider drop-off for visitors, particularly where no on-street parking is available.

Visitor parking areas should be as flexible as possible to accommodate an increase in accessible provision as required.

All accessible visitor parking spaces to be on a level surface with:

- no gradient exceeding 1:60
- no drainage cross-fall exceeding 1:50
- slip-resistant surface materials.

Drop off/visitor parking

All residential developments accessible by private vehicles are to incorporate accessible parking or drop off spaces for visitors as close as possible to an individual house or communal entrance to a block of flats not more than 50m.

IDS 15.2. Residents' Parking

Inclusive Design Guidelines

Residential car parking criteria are:

- for three per cent of all dwellings, at least one designated disabled persons parking bay should be available from the outset and it should be able to be demonstrated that an additional seven per cent of dwellings could be provided with a designated disabled persons parking space in the future upon request
- parking spaces are to have level access to/from the wheelchair user dwellings and be as close as possible to the dwelling entrance and not exceeding 50m
- it is preferable to provide a covered parking space (for example a car port or garage) for every ground floor level wheelchair user dwelling with a direct external entrance
- where a garage is provided the garage door should operate automatically (i.e. via a key fob or proximity sensor).

Communal accessible parking spaces

Communal accessible parking spaces should:

- be 1200mm to both sides to give users good, clear manoeuvring space and allow doors to be opened fully when entering/exiting the vehicle
- be 6000mm long to assist people when accessing the rear of their vehicle
- have an access route to/from the parking space a minimum of 1200mm wide
- be located as to minimise travel distances between parking spaces and dwelling entrances

¹⁷ Housing our Ageing Population: Panel of Innovation (HAPPI), 2009

- preferably be under cover.

(Also refer to IDS 11.1: Parking for General Public)

On-street accessible parking bays

Where on-street accessible parking bays are provided for residents, they should be:

- 3600mm wide where the road width permits. This width is particularly important on one-way streets where a disabled driver may have no choice but to get out of the vehicle on the road side
- 6600mm long when parallel to the kerb
- 3600mm wide and 6000mm long when on-street accessible parking bays are at an angle to the kerb
- provided with ramped or level access from the parking bay to the pavement, where necessary by use of a dropped kerb.

Under cover parking

Where parking areas are proposed undercover, for example basement 'Podium' parking as part of a block of dwellings, it will be important to provide suitable clear headroom to and from the area of accessible parking spaces. The clear height should be no less than 2.2m with some provision with 2.6m to cater for vehicles deploying roof mounted hoists.

It is essential that the maximum vertical clearance for vehicles is shown on the approach to the car park to avoid the need to reverse or undertake any awkward evasive manoeuvre.

IDS 15.3. Cycle and mobility scooter parking

Inclusive Design Guidelines

Cycle storage/racks

Residential cycle store design criteria are:

- at least 5% of cycle parking will accommodate non-standard cycles, see IDS 09.2 Cycle parking
- where located outside the home it is to be secure, sheltered and adequately lit with convenient access to/from the street
- where cycle racks are provided a section is to be designed to accommodate tandems and other adapted cycles, see IDS 09.2 Cycle parking.

Mobility scooter parking

Mobility scooters are widely used by older people as well as some disabled people, in particular people with mobility impairment. Storage for these devices can be problematic, particularly in flats/apartment.

Mobility scooter parking design criteria are:

- some secure parking for mobility scooters is to be provided within the communal areas
- parking is to be provided with charging points (plug sockets) and be suitably assessed for fire risk
- the parking is to have minimum dimensions of 700mm wide x 1500mm long with a transfer zone of at least 500mm to one side
- step-free access is to be provided to/from the scooter parking.
-

IDS 15.4. Approaching the home

Inclusive Design Guidelines

It is important that approach routes to/from the dwelling from all areas including parking and drop off areas and public transport links are accessible and as short as possible. This will accommodate all users and will be particularly beneficial for people with mobility impairment, people with young children and people carrying large bags/shopping.

Design criteria for approach routes are:

- approach routes to all entrances of the dwelling (including from any areas of parking) should be level or if required be a graded route (see IDS 06.1 Graded routes)
- ramps are not to be provided on principal entrance routes
- any cross-fall necessary for drainage to be no steeper than 1:50
- approach routes to communal entrances should be no more than 50m. If the routes are in excess of 50m then justification including reasoning and rationale should be clearly explained in the design and access statement and regular rest areas incorporating seating to be provided at 50m intervals
- paths and footways to have smooth, firm and slip resistant surfaces. Loose surfaces such as unbound crushed gravel, sand or grit are unacceptable
- as far as possible pedestrian routes should be overlooked and well-lit to create a feeling of safety.

IDS 15.5. Inclusive amenity, including inclusive play

Inclusive Design Guidelines

A good quality playable space is one providing all children and young people with safe access to physically accessible and inclusive facilities that are stimulating and fun.

Communal amenity and play areas are to:

- be designed to be easily accessed from all related dwellings
- be accessible to wheelchair users and other disabled children and adults
- be overlooked by surrounding development
- be designed to take advantage of direct sunlight
- be within close vicinity of communal cores with clear sight lines from internal communal circulation
- have areas that offer protection from the weather, in particular the wind and rain.
- be designed to support an appropriate balance of informal social activity and play opportunities for various age groups and meet the changing and diverse needs of different occupiers
- consider imaginative integration of amenity and play space by incorporating planting, landscape, street furniture and play features (particularly on spaces that are above ground).

See also IDS 14 Inclusive Play

IDS 15.6. Communal lifts

Inclusive Design Guidelines

Communal lifts:

Communal lifts will be designed in accordance with IDS 19.5 Passenger Lifts.

With regard to provision, it is recommended that:

- in developments with four or more storeys, and in cores serving wheelchair user dwellings, consideration should be given to providing more than one lift. This will ensure lift access is always available should one of the lifts breakdown or require servicing or maintenance
- the lift is sized appropriately and is accessible for all users including people using mobility equipment.

IDS 30 Emergency Egress identifies that buildings should be designed and built to accommodate robust emergency evacuation procedures for all building users, including people who require level access. This also applies to dwellings. In all buildings where lifts are installed a minimum of least one lift per core (or more subject to capacity assessments) is to be a suitably sized lift suitable to be used to evacuate people in the event of fire who require step-free egress.

IDS 15.7. Within the home

Inclusive Design Guidelines

In addition to the minimum requirements set out in M4(2) and M4(3)¹⁸ the following standards set out further factors to ensure delivery of inclusive homes:

- wheelchair user dwellings should be distributed throughout a development to provide a range of

aspects, floor level locations, views and unit sizes

- where a large development is delivered in phases, care must be taken to ensure the provision of wheelchair user dwellings is evenly distributed and not confined to a single phase
- all dwelling plans are to demonstrate how they accommodate furniture, access and activity space requirements relating to the declared level of occupancy and provide flexibility for example by allowing alternative seating arrangements in living rooms and by accommodating double or twin beds in at least one double bedroom
- any fixed furniture, for example kitchen units or storage units should demonstrate how they are accessible and can be used easily by a range of end users

IDS 15.8. Considerations for supporting older Londoners and multi-generational housing

Inclusive Design Guidelines

LLDC have an aspiration to push beyond traditional models of housing for older people on and around Queen Elizabeth Olympic Park. There is an opportunity to innovate here and test new models that deliver more flexible and desirable homes.

The following elements are to be considered within the development of new homes to support the HAPPI recommendations.

HAPPI identifies ten key design elements:

- space and flexibility

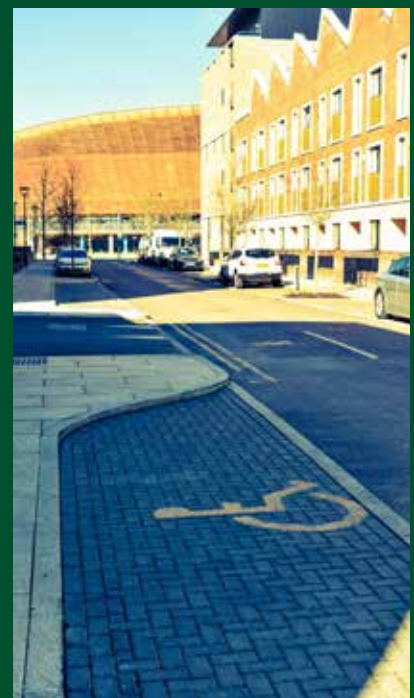
CASE STUDY:

Chobham Manor residential neighbourhood – multi-generational house

In response to LLDC's aspirations to accommodate aging and extended families, our development partners (PRP Architects) developed a new residential typology for Queen Elizabeth Olympic Park.

The multi-generational house is a main house with separate annexe linked by a shared courtyard. This provides a flexible family home for extended families to live together but with a degree of mutual independence. This typology can also support disabled adults in the family who want to live with independence but require some family support.

Both the house and annexe are designed to accommodate disabled residents and visitors with the corner plot typology proving to be very popular with both the developers and customers alike.



¹⁸ Building Regulation Approved Document M – Access to and use of Buildings Vol 1: Dwellings, 2016

- daylight in the home and in shared spaces
- balconies and outdoor space
- adaptability and 'care ready' design
- positive use of circulation space
- shared facilities and 'hubs'
- plants, trees, and the natural environment
- energy efficiency and sustainable design
- storage for belongings and bicycles
- external shared surfaces and 'home zones'.

Many of these can be met by applying LLDC's Inclusive Design Standards and London Plan Policies. However, in addition to these it is also recommended that designs consider:

- a suitable level of safe storage and charging facilities for residents' mobility scooters, see IDS 15.3. Cycle and mobility scooter parking
- adequate storage available outside the home together with provision for cycles and mobility aids, and that storage inside the home meets the needs of the occupier (age friendly housing should allow for at least one wheelchair to be stored in the home). External storage solutions must ensure they do not become a barrier to access or a hazard in their own right
- generous, daylit internal spaces with potential for flexible habitable rooms and designed to accommodate flexible layouts
- that, according to recommendations, the main bedroom should be at least 12.5m² and storage at least 2m² in one bedroom apartments and at least 2.5m² in two bedroom apartments
- that, where appropriate, flexible ground floor spaces can integrate a range of potential uses, from local shops, GP practices, restaurants and community facilities. These should also be accessible from public streets to accommodate non-residents
- providing a multipurpose space for residents to meet, with facilities designed to support an appropriate range of activities – perhaps serving the wider neighbourhood as a community 'hub' or providing a base for health care workers. Such facilities should have easy and visible public access for non-residents
- where appropriate, that entrance lobbies and public amenities such as restaurants and bars encourage use by the surrounding local community as well as the internal community
- a layout that lowers barriers to social interaction and encourages engagement between people, providing incidental meeting spaces should be provided in public and semi-public spaces within the building
- amenity spaces should be of a size and quality that actively encourages their use and community engagement
- homes are designed to be 'care ready' so that new and emerging technologies, such as telecare and community equipment, can be readily installed.
- layouts that allow for a flexible family home for extended families to live together.



Accessible parking spaces at Copper Box Arena.

IDS 15.9. Faith and cultural considerations

Inclusive Design Guidelines

Faith and cultural considerations¹⁹:

- where possible, minimise the use of long corridors to connect space and create hallways and landings that can be used as shared space (for example as a separate study area for children when sharing bedrooms)
- family homes should consider how kitchen, living and dining space could be flexibly configured to meet the faith and cultural needs of the household including separation of space and opening up for large gatherings
- family homes should demonstrate how living room spaces can be flexible to accommodate separation and also opening up for extended family visits and celebrations
- include alcoves, deep window sills or other such spaces as appropriate within the main living room space that have the potential to be used as a shrine or altar
- kitchen designs should allow for additional ventilated storage for dry goods in an accessible area and layout
- where a dwelling for 4 or more people has a utility room this should provide space for fridge/freezers and space for a low-level washing facility with an accessible seat
- cooker ventilation to be possible at 60 l/sec with adjustable controls to accommodate the removal of particularly aromatic cooking over long periods
- consider the configuration of bedrooms to be shared by children to allow for a degree of separation when one of the children reaches puberty
- have additional play/study space for children sharing bedrooms (such as the option for study space in hallways or on landings)
- bathroom layouts should not preclude the provision of a shower hose, low level tap or bidet next to the toilet
- consideration given to the orientation of toilets and where possible ensure the toilet pan does not align with Mecca
- consideration should be given to having some windows in the living room with low glazing or full height glazing where applicable to allow people to see out while seated on the floor (Note: people should be able to see out while seated on the floor with a glazing line of 500mm AFFL +/- 50mm). In addition, safety glass will be required below 800mm.

IDS 16. Student accommodation

Design Intent

Universities have the power to transform lives and are developing inclusive teaching and practices which recognise that a student's gender and race can, and does, affect their experience and that educational experience can also be adversely affected by disability.

To ensure the student's whole educational experience is inclusive, student accommodation must be inclusive.

Student accommodation differs from other residential accommodation including hotel accommodation. Students book or reserve their accommodation in advance, giving longer lead-in times than would be received, for instance, with a hotel booking, which allows for a degree of flexibility and adaptability to ensure that accessible accommodation is arranged and that the correct equipment and facilities have been installed to suit an individual disabled student.

Inclusive Design Guidelines

The following should be considered:

- ensure that disabled students and visitors can live in and visit the development as a whole, not just the accessible bedrooms
- a minimum of two lifts should be provided in each core in order to ensure that step free access can be maintained in the event of breakdown or periods of maintenance
- provision of designated Blue Badge parking bays for disabled students that need a car in order to live independently
- the minimum provision of accessible bedrooms as a percentage of the total number of bedrooms should be as BS 8300-2:2018 and be:
 - one room or 4%, whichever is the greater, wheelchair-accessible
 - one room or 1%, whichever is the greater, with a tracked hoist system and a connecting door to an adjoining (standard) bedroom for use by an assistant or companion
 - 5% easily adaptable wheelchair-accessible rooms for independent use.
- the rooms that are to be wheelchair accessible from the outset should incorporate the features and space requirements of Figures; 31, 32, 52 and 54 of BS 8300-2:2018²⁰, and also demonstrate that suitable circulation space is allowed for socialising and working within the room
- easily adaptable rooms should be provided with suitable structure and plumbing to allow for ease of adaptation in a similar manner to the wheelchair adaptable housing. Features such as window heights, switch and socket heights and plumbing should all be to a wheelchair accessible standard from the outset, to ensure that the rooms are genuinely easy to adapt
- if more than one en-suite accessible bedroom is provided, a choice of shower or bath and a choice of left-hand or right-hand transfer to the WC and shower or bath should be provided
- the maintained illuminance (or general lighting level) for an accessible bedroom should be not less than 100 lux at floor level.

¹⁹ Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
²⁰ BS 8300-2:2018 Design of accessible and inclusive built environment Part 2: Buildings

Public buildings

This section focuses on movement around public buildings. These are buildings, venues and facilities that are open to the public and serve a public function. They include buildings such as; community centres, museums, theatres, academic buildings, cultural buildings, sport venues, cafes, restaurants and retail facilities.

Public buildings on and around Queen Elizabeth Olympic Park vary in nature and size. However, the guidance in this section intends to ensure they are designed to be inclusive for all building users and in a considered and consistent way.



IDS 17. Entering the building

Design intent

It is important that buildings are easily understandable. All entrances should therefore have a logical relationship with the routes that serve them and be clearly identifiable to avoid unnecessary travel for people approaching the building.

It is essential that all reception areas in all public buildings are accessible for all visitors and create a welcoming and inviting first impression.

IDS 17.1. Entrances

Inclusive Design Guidelines

Entrances should be:

- easily distinguishable from the façade
- well-lit and clearly signed
- provided with canopies or recessed entrance as protection from bad weather
- have approaches to door entry controls clear of obstructions and away from any projecting columns or return walls
- provided with transitional lighting between the inside and outside to minimise contrast
- not provided with highly reflective or mirrored finishes
- provided with level access and ensure drainage is considered to avoid water ingress in wet weather
- provided with flush thresholds (a maximum change in level of 15mm is permissible if they are clearly visible and chamfered and the floor finishes are graded to provide a flush junction)
- provided with a means to remove water and debris from shoes and wheels accounting for likely pedestrian flow and also that the circumference of a wheelchair wheel is typically about 2000mm (See IDS 27.2 Floor Surfaces). Coir matting is not to be used.

IDS 17.2. Entrance doors and lobbies

Inclusive Design Guidelines

Entrance doors

Design criteria for doors are:

- revolving doors with adjacent pass doors are not considered inclusive and therefore are not to be used; accessible door types include swing, sliding or folding doors
- powered, automatic doors are preferred
- automatic sliding doors are preferred wherever their installation is possible. Either manually activated or an automatically activated via motion sensor
- the entrance should be clearly identifiable
- public entrance doors should have a minimum effective clear opening width of 1000mm. Where manual double

door sets are used, at least one door leaf to have a clear effective opening width of 1000mm

- frames to glazed doors should be clearly distinguishable including when being held open.

Pedestrian flow should be considered when thinking about the approach to a power-operated door (See also IDS 18.1 Doors).

Lobbies

Design criteria for lobbies are:

- the dimensions and shape of a lobby should allow a wheelchair or scooter user to be able to move clear of one door swing to push open the next door or reverse their wheelchair to pull it open
- the dimensions and shape of a lobby should also allow someone assisting a wheelchair user to open a door
- lobbies with single leaf doors should be avoided wherever possible.
- where lobbies with single leaf doors they are used, the minimum dimensions of such lobbies should be as shown in Figure 1 of BS 8300-2:2019²¹
- where double doors are used for a lobby, the length of the lobby should be at least the projection of the door or doors, if swinging into the lobby, plus 1570mm, which represents the space required for a wheelchair user with companion or a large mobility scooter.

IDS 17.3. Access controls

Inclusive Design Guidelines

Door entry systems need to be:

- located as close to the door as possible without causing an obstruction or hazard
- accessible to people who are Deaf, deafened or hard of hearing and people who cannot speak
- accessible to people who are blind or partially sighted, be clearly identifiable and have tactile features
- easy and intuitive to be accessible to people who are neurodivergent

Where manually activated doors are installed, the controls should be between 750 – 1000mm above floor level and should visually contrast with their background.

IDS 17.4. Reception areas

Inclusive Design Guidelines

Reception desks

Design criteria for reception desks are:

- they are to be easily identifiable from the building entrance
- the approach to the desk should be direct and unobstructed with a firm, slip-resistant surface that allows for easy manoeuvre of a wheelchair
- any queue system provided should:
 - o allow wheelchair users good clear manoeuvring space to turn towards the desk and pass others in the queue

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- o provide seating and a method to allow individuals who are less able to stand to queue in a way that allows them to keep their place without standing in line
- where users are expected to carry out transactions, fill in forms or use the desk surface two counter heights are required, one low for wheelchair users at 760mm above finished floor level (AFFL) and one high (950 – 1100mm AFFL) to allow a comfortable height while standing
- where provided the low section will:
 - o be easily identifiable on approach to the reception and not hidden or to the side
 - o have an overhang to provide a knee recess to allow wheelchair users to draw up to the desk
 - o be at least 1800mm wide to allow two wheelchair users to sit side by side
- a clear manoeuvring space in front of the reception desk of at least 1500 x 1500mm should be provided
- all reception desks/counters to provide a hearing induction loop that is constantly switched on, regularly tested to ensure it is in good working order and clearly indicated on approach with the appropriate “T” switch symbol signage
- other signage should include indications for lifts, stairs, toilets and circulation routes
- the desks/counters should not be located in a position where the presence of glazing or mirrors adversely affects the ability of a person who is Deaf, deafened or hard of hearing to lip read
- the backgrounds of the desk/counters not to be brightly lit as to produce glare or reflections or be patterned so as to facilitate lip reading for people who are Deaf, deafened or hard of hearing
- assisted listening systems should be implemented using an induction loop, infrared or radio transmission where glazed screens are used.

Reception foyer layout and design

Design criteria for reception foyers are:

- there should be spaces between seating to allow wheelchair users to either sit together or sit beside seated companions
- access to seating to be direct and unobstructed
- seating and other furniture should not be fixed to the floor but should be moveable to allow flexible seating arrangements as required. A mixture of seating should be provided including some with both back and arm rests
- a range of seats heights at 380, 480 and 580 should be provided. Where only one height is provided it should be at a height of between 450 – 480mm.

Security barriers (where applicable)

Design criteria for security barriers are:

- certain types of barrier controls such as turnstiles should only be used if they will be supervised. Bi-parting or folding gates are recommended
- a suitable number of accessible gates with at least 1000mm clear width to accommodate wheelchair users are to be located directly adjacent to standard width gates
- accessible gates are to be automatically opening gates that can be used without staff assistance

- they are to have flush, level thresholds
- gates will have clear and unobstructed approach routes on both sides.

IDS 18. Horizontal circulation

Design intent

Corridors and passageways must be wide enough to allow wheelchair users to approach and gain easy access through doors off the corridor and where necessary turn through 180°.

Inclusive Mobility²² gives some examples of the space required by individuals to move freely and indicates that someone using crutches requires a width of 1200mm while an ambulant person passing a wheelchair user will require a width of 1500mm. Two wheelchair users using ‘standard’ width manual wheelchairs, where one can see the other approaching, will require a minimum corridor width of 1800mm. However, these measurements take no account of crowds where the visibility of wheelchair users is impeded.

In addition, the width of ‘standard’ manual wheelchairs is increased by the user’s hands. Wheelchair users often injure/scrape their knuckles when passing through a narrow space. The width should be increased to take into account the anticipated usage of related facilities. Experience shows that this usage may be greater than is often expected.

Doors

It is essential that all doors to rooms, spaces and along corridors are designed to provide at least the minimum effective clear door opening appropriate to the type and scale of the facility.

IDS 18.1. Doors

Inclusive Design Guidelines

Design criteria for doors are:

- keep the number of doors along circulation routes to a minimum as they can restrict progress
- all internal doors to rooms (excluding plant areas) or along corridors are to be designed to provide at least the minimum effective clear width appropriate to the type and scale of the facility. A minimum effective clear width range of 800mm up to 825mm to be provided depending on the angle of approach to the doorway and the corridor width
- double doors must have at least one leaf that provides the minimum effective clear width opening appropriate to the type and scale of the facility and no less than 800mm
- bi-fold and manual sliding doors are not to be used
- locate all doors so that there is clear wall space of at least 300mm to the leading edge side
- all doors are to be designed and located so that they can swing open to at least 90°
- the opening force on manually operated doors, when measured at the leading edge of the door, is to be not more than 30N from 0° (the door in the closed position)

²² Inclusive Mobility: A guide to best practice on access to pedestrian and transport infrastructure, Mobility and Inclusion Unit, Department for Transport, 2002

to 30° open, and not more than 22.5N from 30° to 60° of the opening cycle

- where fitted with a latch, the door opening furniture can be operated with one hand using a closed fist, i.e. a lever handle
- the leading edge of any door that is not self-closing, or is likely to be held open, contrasts visually with the door surfaces and its surroundings
- all door opening furniture contrasts visually with the surface of the door
- the door or the door frame is made visually apparent through visual contrast with the surrounding wall
- where privacy is not required doors should incorporate visibility glazing from a height of 500 – 1500mm.

IDS 18.2. Corridors and passageways

Inclusive Design Guidelines

Design criteria for corridors and passageways are:

- a minimum corridor width for main circulation routes of 1800mm should be provided to allow two wheelchair users to pass, with an unobstructed minimum width of 1000mm permissible only at short localised restrictions
- secondary corridors should have a minimum width of 1200mm with passing places at least 1800mm long and with an unobstructed width of at least 1800mm at regular intervals
- corridors are to be unobstructed. Fire extinguishers, radiators and any other obstructions are not to project into the clear corridor width to ensure they do not present a hazard to children, wheelchair users or people with a visual impairment. Where unavoidable, they should be guarded with hazard protection
- provide splayed or radius corners wherever possible
- doors must not open out into corridors, apart from doors to accessible WCs which may open into a corridor where they are recessed to at least the width of the door or are located at the end of a dead end²³
- all parts of the building to which the public have access are to have minimum headroom of 2.1m
- floor finishes should be chosen in accordance with IDS 27.2 Floor surfaces.

IDS 19. Vertical circulation

Design intent

It is important that all people are able to access all facilities and move independently between levels of all buildings confidently, independently and with equity.

All buildings with multiple levels should have a passenger lift serving all storeys.

The use of wheelchairs on escalators and moving walkways can lead to dangerous situations which cannot be mitigated by machine design. The use of conventional passenger lifts is the most suitable means of vertical access to get to facilities within a suitable timescale and in comfort.

The design of stairs is also vitally important. Poorly designed stairs can represent barriers for a large proportion of people, including people who are blind or partially sighted, who have mobility impairments and people with young children.

IDS 19.1. Journey sequence – equity of experience

Inclusive Design Guidelines

Design principles for equity of experience are:

- people should have a choice of routes to access different levels within a building, with at least the choice of stairs and lift
- stairs should promote well-being and their use should be encouraged. However, lifts are not to be hidden as a result. Lifts are to be located directly adjacent to the principal circulation stairs or escalators
- anyone using lifts should have the same quality of experience as they journey vertically through the building. The use of lifts should not feel like a secondary option. Lifts should use the same primary circulation cores and have access to the same facilities. Using lifts should not create any undue separation or extended travel distances.

IDS 19.2. Graded routes and ramps

Inclusive Design Guidelines

Design criteria for internal graded routes and ramps are:

- changes in floor levels along primary circulation routes should be avoided where possible, if required they are to comply with IDS 06.1 Graded routes
- ramps (1:20 or steeper) are not to be provided along primary circulation routes, where provided they will comply with IDS 06.2 Ramps and if the rise is greater than 300mm alternative stairs are to be provided.

IDS 19.3. Internal stairs

Inclusive Design Guidelines

Design criteria for internal stairs are:

- encourage use of stairs by using as an integral component of the main circulation system of the building
- to comply with IDS 06.03 External stairs apart from the provision of corduroy tactile warnings
- to have suitable warning at the top and bottom of stairs for people who are blind or partially sighted through the use of visual contrast and/or surface materials. A corduroy hazard warning surface is only recommended for an internal stair that is directly in line with an access route. The frictional resistance characteristic of the warning surface must be comparable with the surface used for the flooring and the stairs.

Escape stairs should be designed to the same standard as general circulation stairs, including contrasting nosings.

IDS 19.4. Escalators

Inclusive Design Guidelines

Escalators are to:

- conform to BS EN 115-1²⁴
- have a clearly signposted accessible passenger lift in close vicinity to provide the same equity of experience for people unable to use escalators (see IDS 19.5 Passenger Lifts)
- have the direction of travel clearly indicated by signs
- have a clear, well-lit unrestricted area at least 2.5 m long unaffected by passenger flow, where practicable, at the top and bottom of an escalator; in all cases, the unrestricted area at the exit should conform to the requirements specified in BS EN 115-1 and be unaffected by passenger flow within the building
- have a surface and handrails that contrast visually with the surroundings
- be provided with audible signals or pre-recorded messages to indicate the start and finish of the escalator
- have guarding alongside and at each end for the safety of people who are blind or partially sighted if the escalator is within a pedestrian access route. Any side panels to guarding should have a non-reflective finish.

IDS 19.5. Passenger lifts

Inclusive Design Guidelines

Design criteria for passenger lifts are:

- the number of lifts provided and their size must accommodate the expected people flow and anticipated use of the building.
- at least one conventional passenger lift should be provided in multi-storey buildings, with two preferred to offer resilience should one break down or require maintenance
- conform to the requirements of BS EN 81-70²⁵
- in existing buildings only, a vertical lifting platform may be installed if there are no means to provide a conventional passenger lift
- to allow for one wheelchair user and several other accompanying passengers, the lift car should be a minimum of 2000 x 1400mm. This allows wheelchair users and individuals using walking aids to turn 180 degrees
- be easy to find and have lift doors that contrast visually with the adjoining wall in all light conditions
- be located adjacent to main circulation stairs see IDS 19.1 Journey sequence – equity of experience and not be hidden from view
- have a clear, level manoeuvring space of at least 1500mm x 1500mm at the front of the entrance to the lift; the manoeuvring and queuing space must accommodate the expected people flow and anticipated use of the lifts
- have suitable door opening widths, ranging from 900 to 1100mm depending on the anticipated use
- have an audible and visual signalling system to provide

the user with a warning that the lift has arrived. Clearly indicate what lift has arrived when there is a bank of lifts

- lighting within the lift car should not cause glare, reflection, confusing shadows or pools of light and dark and be a minimum lux of 100 at floor level
- have a floor with a high Light Reflection Value that is firm and slip-resistant and frictional qualities similar to the lift landing
- have a mirror that does not cause visual confusion and provides views at high and low level for a wheelchair user to see behind them when reversing
- glass lifts to have adequate visual contrast between floor, walls, handrails and all other fittings
- on all glass doors and walls there should be permanent contrasting manifestations at two levels, within 850mm to 1000mm from the floor and within 1400mm to 1600mm from the floor
- the control system shall allow for the door dwell time to be adjustable to suit the conditions where the lift is installed, the recommended dwell time is a minimum of 5 seconds
- have controls available at each entrance point where the lift has two entry/exit points above first floor level
- have visual and voice indication of floor levels and where appropriate also indicate the facilities available on each floor
- have controls that have an embossed legend on the face of the control button, or adjacent to the button
- have emergency two-way intercom fitted with an inductive coupler
- have a 'Help Coming' sign that illuminates when the alarm is answered.

See also IDS 30 Emergency Egress, for information on evacuation lifts.

IDS 20. Sanitary facilities

Design intent

The toilet facilities provided should respond to the local demographic and address the requirements of people from a broad range of backgrounds and faith groups as appropriate.

There should be appropriate provision of toilet cubicles designed to meet the needs of ambulant disabled people. Ambulant disabled people have mobility impairment but do not use a wheelchair or scooter and include people using crutches, canes, sticks as well as some older people or anyone that requires some additional support.

Changing Places toilet facilities (see IDS 20.5 Changing Places Facility) should be provided in all new public buildings/facilities where people can be expected to spend long periods of time. They are also important in buildings that offer the only suitable sanitary accommodation within a locality. Family facilities including baby/child changing facilities should be accessible for all users including wheelchair users and should not be solely located within accessible toilets as this reduces the availability for disabled people who require them.

Accessible toilets are often designed and finished in a way that makes them feel clinical or institutional. This is not necessary and LLDC require all accessible sanitary facilities to be finished to the same high standards as all other sanitary accommodation in the building.

²⁴ BS EN 115-1:2008+A1:2010 Safety of escalators and moving walks. Construction and installation
²⁵ BS EN 81-70:2018 Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lift. Accessibility to lifts for persons including persons with disability

IDS 20.1. General – including gender neutral and faith/cultural considerations

Inclusive Design Guidelines

Comparison of toilet requirements:

	LLDC Inclusive Design Standards	Approved Document M	BS 8300-2:2018	Circumstances when this should be included
Unisex Accessible – Corner Layout	Yes	Yes	Yes	All
Ambulant cubicle	Minimum one, 10% recommended	Minimum one in each block	Minimum one in each block	All – for use by people who need additional support
Enlarged cubicle in single sex toilets	Minimum one where 4 or more cubicles are provided	Minimum one where 4 or more cubicles are provided	No	All – for use by people who need additional space
Ambulant urinal	One every four (when four or more urinals provided)	If block includes male accessible toilet and there is more than one urinal	Yes	Required only when there are four or more urinals
Unisex self-contained ambulant cubicle	At least one	No	At least one where self-contained cubicles are provided	All
Lower height wheelchair accessible urinal	Yes	No	Yes	In consultation with LLDC
Changing Places Facility	Yes	No	Yes	In consultation with LLDC
Accessible Baby/Child Change Facility	Yes, separate wheelchair accessible baby changing to be provided	Baby changing not to be provided in wheelchair accessible toilets	Separate wheelchair accessible baby changing facilities to be provided	All

General design criteria for inclusive toilet facilities includes:

- routes to be accessible, free from obstacles, well- lit and clearly signed
- provide adequate manoeuvring space for disabled people
- cubicles are to have a minimum width of 800mm
- 10 – 15% of toilets pans and urinals are not to align with Mecca
- one urinal suitable for a disabled person who is ambulant is to be provided for every four urinals (with handrails rather than privacy screens)
- toilet blocks serving spectator/audience areas are to be located as close as possible to the wheelchair user accessible viewing spaces with accessible toilet provision not exceeding a 40m horizontal travel distance
- where there is only one toilet facility provided, it should be a corner unisex accessible facility designed for right hand transfer
- fixtures and equipment should require a minimal operation force no greater than 10N
- fixtures and equipment should be operable by people with restricted movement and preferably operable with a closed fist
- lever taps or taps with automatic sensors to be

provided; mixer taps with single lever action are preferred. If individual hot and cold taps are provided they must be clearly marked. There should be not more than a quarter turn from off to full flow.

- where automatic sensors are used for sink taps or toilet flushing, they are to be located in easy to reach, in logical locations that will not result in accidental activation. Automatic taps should run for a reasonable length of time and it should be noted that these can be difficult to use in smaller, finger rinse basins
- semi-pedestals are allowed as long as they do not obstruct a wheelchair users access
- timed lighting systems should not be used
- clothes hooks should be sited at 1050mm and 1400mm high within cubicles
- have good visual contrast between the main features, equipment and controls, including grab rails
- heating pipes and heating equipment must be carefully located and fitted with thermostatic controls
- water should be delivered at no more than 43°C
- hot water pipes should not be exposed
- diameter of grab rails should be 32 – 35mm with a clear area between the rail and the wall of between 50 – 60mm
- surface of grab rails should still provide grip when wet

- when upright, drop-down rails should be able to hold securely and released easily when necessary
- drop-down support rails should not be fitted with support struts
- it is not appropriate to install ultra-violet light (to deter drug use) as it reduces the ability of people who are blind or partially sighted to appreciate visual contrast and might trigger seizures in people with epilepsy
- the maintained illuminance (or general lighting level) of toilet accommodation should be not less than 100 lux at floor level.

IDS 20.2. Unisex accessible toilet

Inclusive Design Guidelines

Unisex accessible toilets will:

- have a minimum finished overall room dimension of 1700mm x 2200mm with no services or finishes obstructing or reducing these overall dimensions to allow a 1500mm x 1500mm unobstructed turning circle (Note: a slightly larger overall room size will make manoeuvrability easier)
- be 2000mm x 2200mm and incorporate an additional hand wash basin if the accessible WC is the only WC provided within a building
- be designed to ensure that the transfer space can be kept clear at all times (Note: designing in a specific place for a bin, preferably a recessed space, will help to avoid it being placed in the transfer space)
- allow for frontal transfer, oblique transfer and lateral transfer
- be handed to provide a choice of both left and right-hand transfer – in locations where there is more than one unisex accessible corner layout toilet signage should indicate whether a toilet is left or right handed
- comply with the provisions and relative locations of all fixtures, fittings and equipment to follow Figure 40, BS 8300-2:2018²⁶
- have the flush lever must always be placed on the transfer side of the toilet
- fitted with an alarm and reset button (within easy reach from the toilet) that is registered at a monitored security point (i.e. building reception).

IDS 20.3. Ambulant and enlarged cubicles

Inclusive Design Guidelines

At least 10% of the cubicles (with a minimum of one) to meet the needs of disabled people who are ambulant in each single sex toilet, irrespective of whether there is a wheelchair accessible toilet or cubicle nearby. In addition to the ambulant cubicle an enlarged cubicle should also be provided where there are 4 or more cubicles.

Ambulant accessible cubicles will:

- be 800 – 1000mm wide and provide a clear unobstructed zone of 750mm in front of the pan and clear of the door swing (if the cubicle door opens inwards)

- have both horizontal and vertical grab rails on both sides of the cubicle that are 600mm long, the horizontal rails to be at a height of 680mm AFFL and the vertical grab rails mounted at 800mm AFFL
- have one horizontal grab rail on the door
- be provided with a drop-down rail where a wider cubicle is used
- have an outward opening door
- be provided with 2 clothes hooks at height of 1050mm and 1400mm
- have toilet seat 480mm above floor level.

Enlarged cubicles will:

- be 1200mm wide and provide a clear unobstructed zone of 750mm in front of the pan and clear of the door swing (if the cubicle door opens inwards)
- have a 600mm long horizontal grab rail adjacent to the WC pan mounted at 680mm AFFL and a 600mm long vertical grab rails on rear wall mounted at 800mm AFFL
- have space for a shelf and drop-down changing table.

IDS 20.4. Ambulant self-contained cubicle

Where separate-sex cubicles (super-loos) are provided, at least one unisex ambulant self-contained toilet should be provided. It will have:

- a width of at least 1200mm and have a clear unobstructed zone of 750mm in front of the pan and clear of the door swing (if the cubicle door opens inwards)
- a 600mm long horizontal grab rail adjacent to the WC pan mounted at 680mm AFFL and a 600mm long vertical grab rail on the rear wall mounted at 800mm AFFL
- one horizontal grab rail on the door (if an outward opening door is provided)
- 600mm long horizontal grab rails either side of the basin mounted 680mm AFFL
- a drop-down rail is to be installed at 680mm AFFL
- 2 clothes hooks at height of 1050mm and 1400mm AFFL
- a toilet seat 480mm above floor level
- a shelf



Unisex accessible WC at Timber Lodge.



IDS 20.5. Changing places facility

Inclusive Design Guidelines

The design and layout are to have:

- overall room dimensions a minimum of 3m wide x 4m long (or equivalent floor space of 12m²) and a ceiling height of 2400mm in accordance with guidance provided by the Changing Places Consortium²⁷
- a doorway with a minimum effective clear width of 1000mm with a level threshold
- turning space of 1800mm within the room clearly demonstrated
- outward doors fitted with a horizontal pull rail on the closing side of the door; where they open inwards, the door position should not restrict access to the room
- a full room cover overhead tracked hoist system with instructions clearly displayed. Slings may be provided, however many users will have their own slings with them as theft and misplacement of slings is a common problem in such facilities. This must be able to support a safe working load of 200kg
- a peninsular toilet to allow space for a personal assistant on both sides with drop down support rails on either side
- an automatic combined toilet/bidet/drier
- suitable heating as users may be undressed for longer periods of time
- a mobile, height-adjustable changing bench, the covering of which to be suitable for use when a person is showering as well as changing
- a wide, tear off paper roll for cover the changing bench
- a large waste bin for disposable pads, recessed into the wall
- a retractable privacy screen/curtain to allow privacy when using the toilet
- a shower unit and detachable shower head located close to head of changing bench
- a floor drain positioned to prevent water flowing across room.

IDS 20.6. Family facilities – including baby changing facilities and family toilets

Inclusive Design Guidelines

Separate unisex accessible baby/child changing areas to be provided.

It is desirable to provide a dedicated hygienic space with a washbasin such as for those who might need to express milk or for parents who wish to be private separate to sanitary facilities.

Baby/child changing facilities are to have:

- ideally a toilet within the room and a drop-down seat for small children
- a minimum room size 2m x 2m
- approaches to the facility should have accessible routes free from obstacles that are well-lit and clearly signed
- a wall-mounted adjustable height changing table that
 - o can be set at heights between 750mm and 1200mm
 - o can be used with minimum effort and does not require skilled hand movement
 - o accommodate people while standing as well as wheelchair users
 - o have a safe, hygienic surface
 - o have a minimum of 700mm clear space underneath
- to enable a wheelchair user to access the table.
- a seat
- good visual contrast between all main features including equipment, controls, fixtures and fittings and the background against which they are seen
- paper roll dispenser for lining the table and cleaning babies that can be used with one hand
- shelf space for belongings and cleaning materials
- 2 clothes hooks at height of 1050mm and 1400mm AFFL
- a wash basin that provides warm water with a soap dispenser and automatic hand dryer (to be as quiet as possible)
- a soap dispenser hand drier mounted so that their undersides are between 800 – 1000mm above floor level



- a full-length mirror with its rim at 720 – 740mm above floor level. Its lower rim should be 600mm above floor level
- a sanitary disposal bin preferably recessed into the wall.

IDS 21. Changing facilities

Design intent

Communal changing facilities are to be accessible for all users.

While separate unisex accessible changing rooms are to be provided, it must be recognised that many disabled people will want to change within communal facilities and the design and layout of communal changing facilities should encourage and facilitate this.

The need for privacy may require individual shower cubicles in addition to an open plan shower area. This should be considered on a case by case basis. For new buildings, choice is important and therefore a flexible solution is preferable.

Unisex accessible changing rooms are separate, standalone rooms in close proximity to main communal changing rooms with priority use for disabled people who require additional space and support.

IDS 21.1. Communal changing facilities

Inclusive Design Guidelines

Main changing areas are to provide:

- toilet provision (including accessible toilet provision) in close proximity to the changing area
- a self-contained changing area accessible to wheelchair users in the main changing rooms in addition to separate unisex facilities (these changing cubicles are to include a shower and toilet)
- benches at a depth of 500mm and a height of between 450mm and 475mm
- alternate coat hooks are to be located at 1050mm and 1400mm above floor level to accommodate all users
- a grooming/vanity area (where provided) that accommodate both standing and seated users
- communal changing facilities that have the same provisions as a self-contained changing area

In addition, wet changing areas (incorporating shower facilities) should be usable by everyone and also provide:

- direct and level access between changing and shower areas, and upstands are not to be used to separate wet and dry areas
- slip-resistant flooring, as level as possible with a 1:50 gradient to assist drainage
- clear space in the shower area to allow a wheelchair user to transfer to a shower seat easily and without getting their wheelchair wet
- heating pipes and heating equipment that are carefully located and fitted with thermostatic controls
- adjustable height, detachable shower heads within an easy reach range of 1050mm – 1850mm. These may be provided in addition to a fixed shower head at a standard height

- a fold down seat for shower areas; there should not be vertical support struts between the floor and the seat as these impede access
- shower controls that are lever operated and located at a height of between 750mm and 1000mm AFFL
- thermostatically controlled showers with a maximum temperature of 43°C
- a shower curtain should provide privacy for both sitting and standing users and should be operable from a seated position.

Locker provision

The design criteria for lockers are:

- lockers in changing areas are to provide adequate manoeuvring space in front to allow disabled people, including wheelchair users, easy access
- lockers which will store crutches, callipers and artificial limbs should be a minimum of 1200mm high.
- lockers which will store walking frames should be a minimum of 800 x 600mm
- a proportionate number of accessible lockers are to be provided. Sport England recommends that 10% of lockers in sport venues are accessible (these are 'full height' lockers that are at least 1.8m high to accommodate mobility aids/equipment)
- lockers to be a minimum of 600mm deep and at least 300mm wide with some mounted to provide a knee recess under an accessible locker between 400mm and 800mm high
- locks for lockers should be located no higher than 1150mm and be easy to use
- it is preferable for lockers to have self-closing doors as locker doors left open can be an obstruction particularly for people with a visual impairment who may not detect the open door with a cane
- it is preferable for lockers to have raised, embossed numbers that contrast visually with the locker door as this will help people with a visual impairment to find their locker. Raised embossed numbers should also be provided on the corresponding wristband if applicable
- lockers should be located outside the changing area in a dry space
- distance between the lockers should be a minimum of 1200mm if knee space is provided and 1500mm if no knee space is provided.



Accessible locker provision at London Aquatics Centre

Privacy

Privacy is essential for some faith groups to whom open plan changing, showering areas and communal toilet facilities are unacceptable:

- communal changing areas are to be flexible spaces and designed to offer users a choice that allows privacy for people that prefer or require it
- unisex changing facilities, in addition to those provided for wheelchair users, are to be provided.

IDS 21.2. Unisex accessible changing facilities

Inclusive Design Guidelines

Unisex accessible changing rooms should:

- comply with Figure 30 of BS 8300-2:2018²⁸
- include a shower and toilet
- have a level floor surface that is slip-resistant when wet or dry
- left and right transfer options should be provided.

The design and quality of fixtures and fittings used in accessible changing facilities is to be of a similar standard to all other changing facilities.

It may be advantageous to allow direct, level access between communal changing rooms and unisex accessible changing rooms.

IDS 22. Multi-faith facilities (including wash cubicles)

Design Intent

In the adjoining four boroughs to Queen Elizabeth Olympic Park, different faith groups who say prayers at various times of the day make up at least 28% of the population. In some of these faith groups washing is a part of the prayer ritual. It is recommended that public buildings provide a room or space that can be used as a quiet space and multi-faith prayer facility, with adjacent wash facilities.



Multi-faith facility at Westfield Shopping Centre

Inclusive Design Guidelines

Multi faith facility

The facility criteria are:

- a room that can be divided into two areas with two entrances to accommodate separate single sex prayer
- an informal room giving both aural and visual privacy
- the facilities for ablutions are either to be incorporated or be provided within toilet accommodation or single sex communal wash facilities (i.e. changing rooms where applicable). Where this is the case, prayer facilities are to be located as close as possible to these facilities
- some enclosed storage (such as a cupboard/shelves with doors) to accommodate prayer mats, shawls, literature and other necessary items
- the interior design of the room is to be designed to be conducive to quiet contemplation
- there should be no religious pictures/symbols or images in the room
- an 'engaged' sign is to be provided to indicate when the room is in use
- a shoe rack (preferably built in) to store users' footwear.

Wash cubicles

Wash cubicles are preferable in compartments and not cubicles (i.e. not thin partitions with gaps at floor level).

A wash cubicle is to have:

- a sunken trough/footbath
- a non-fixed seat with arm rests (preferably height adjustable)
- a horizontal grab rail adjacent to the seat
- a drop-down horizontal grab rail on the rear wall
- an adjustable/detachable shower head for face, arm and feet washing
- easy to use taps/controls, in particular for people with reduced/limited manual dexterity
- a low shelf for dry storage of clothes
- good visual contrast between the main controls, fixtures and fittings and the background against which they are seen.

IDS 23. Audience seating

Design intent

Not all disabled people will require wheelchair user accessible viewing spaces or amenity seating. It is therefore important to ensure an appropriate level of accessibility for all seating within the venues. People with varying access requirements should also have a choice of seating positions and not only in areas that are available for wheelchair users and their companions.

Sightlines from seating are important to allow everyone to comfortably watch and enjoy the event and will need to be considered carefully, in particular from wheelchair user viewing spaces.

IDS 23.1. Seating: general

Inclusive Design Guidelines

All seating will meet the following requirements:

- for a capacity of up to up to 10,000:
 - o 2% should be permanent, fixed wheelchair user spaces
 - o 1% should be removable wheelchair user spaces
 - o 6 or 4% (whichever is largest) should be accessible 'amenity' seating.
- some seats are to be located so that an assistance/guide dog can accompany its owner and rest in front of, or under, the seat (see IDS 23.2 Easy access/amenity seating)
- prefabricated, temporary or demountable seating all need to satisfy the same criteria to ensure suitably accessible facilities are available
- barriers, balustrades, handrails and columns should not obstruct sight lines in venues; this is particularly important for people who may not be able to change their position due to their impairment.
- seat heights are to be provided between 450mm and 480mm
- row depth are to be a minimum of 700mm, however greater row depth of at least 800mm for easy access/amenity seating
- seating is to contrast visually with the surrounding surfaces.

For British Sign Language (BSL) interpreting purposes provide:

- space at the front for a sign language interpreter where they can easily be seen
- provision of seating which allows an easy view of the interpreter and the performance simultaneously
- dimmable directional lighting, separate from the rest which can be controlled so the interpreter can easily be seen
- screen captioning, with provision of seating to allow an easy view of the screen and the performance simultaneously.

IDS 23.2. Easy access/amenity seating

Inclusive Design Guidelines

Easy access/amenity seating will meet the following requirements:

- access/amenity seating can be incorporated with standard seating and located at a variety of locations and at all levels to provide a variety of locations at different levels
- easy access/amenity seating should be located where there are no more than 2 steps to negotiate
- where easy access/amenity seating is accessed via steps these are to be in accordance with IDS 19.3 Internal stairs
- handrails or other forms of support are recommended where access to easy access/amenity seating involves using steps

- armrests give additional support and help people when sitting and standing. If some seats have fold down arms, the needs of a greater number of people will be met
- they are to be located close to wheelchair and scooter storage space
- some to be provided where the rake of the seating is not more than 20 degrees
- the seat width (measured from centre of seat to centre of seat) is at least 500mm when without arms and 550mm when provided with arms
- the seats need to be provided at a suitable height for people with mobility impairments – between 450mm and 560mm is suitable
- seating should be provided with sufficient depth in front of the seat for assistance dogs or mobility aids
- consideration needs to be given to users of mobility aids such as sticks and crutches and the need for safe storage of these when people are seated.

IDS 23.3. Wheelchair user viewing spaces

Inclusive Design Guidelines

Wheelchair user viewing spaces within audience seating is to meet the following requirements:

- the location and the design of the wheelchair user viewing spaces need to be flexible and allow increased provision as and when required by specific events
- some wheelchair user accessible viewing spaces should accommodate mobility scooters which can be larger and are often less manoeuvrable than most manual or electric wheelchairs
- wheelchair users and accompanying companions (for example family members) must have equal access to all the facilities offered
- wheelchair user viewing spaces and associated circulation routes (for example, the space behind the viewing space) need to be wide enough to provide flexible, accessible seating to allow wheelchair users to sit next to seated companions or as part of a group of wheelchair users
- a mixture of fixed and removable seats should be provided to accommodate adaptable seating layouts and accommodate varying numbers of wheelchair users and their companions; ideally some seats should be double, with retractable arm rests
- clear sightlines are important for some wheelchair users who cannot lean forwards or to the side in order to get a better view
- sightlines for fellow audience members should not be compromised by the location of wheelchair user viewing spaces through careful design including of the access routes and access to spaces for wheelchair users
- viewing spaces are to be designed so that they can be accessed independently
- viewing spaces must not be located in areas that may make people feel isolated from other members of the audience/ spectators. They should be integrated to surrounding seating as much as possible to ensure they are part of the overall audience atmosphere and experience

CASE STUDY: Accessible Seating

All venues on the Park provide wheelchair user accessible viewing positions like these at the Copper Box Arena. Easy access/amenity seating is also provided to support ambulant disabled people. The key is flexibility to provide choice and allow people to sit together and in groups depending on demand.



- viewing spaces are to be dispersed throughout the audience seating to provide a variety of locations at different levels. Often, viewing spaces are either at the front or rear of audience seating. Efforts should be made to provide some wheelchair user viewing spaces at mid-levels and along any wings or in boxes
- VIP areas must be accessible and incorporate some wheelchair user viewing positions
- each wheelchair user accessible viewing space to occupy a minimum area of 1400mm by 900mm wide and be on level ground
- wheelchair user accessible viewing spaces to be located within a 40m horizontal travel distance from the nearest accessible toilet
- in larger venues to ensure provision for greater numbers of wheelchair users, it may prove essential to design rows of wheelchair user accessible viewing spaces together. Therefore, to ensure that suitable circulation space is provided:
 - o rows accommodating multiple wheelchair user viewing spaces to have a 1200mm clear circulation zone at the rear of the space
 - o in locations where only two wheelchair user accessible viewing spaces are provided a 900mm minimum clear circulation zone to be provided.

Note: a balustrade is only required where there is a change of level directly in front of the viewing space. When provided, care must be taken to ensure that it does not adversely affect viewing sightlines for users.

IDS 24. Refreshment facilities

Design intent

It is important that space planning for refreshment facilities considers the diverse needs of both staff and users from the outset. Refreshment facilities could be cafes, bars and restaurants within public buildings.

Inclusive Design Guidelines

Refreshment facilities will meet the following requirements:

- where provided they should include adequate toilet provision, including accessible toilets
- facilities should not reduce the access route width below that recommended in IDS 18.2 Corridors and passageways. The circulation routes that are maintained should be located in a logical and navigable position to allow ease of movement past the area
- where food is provided, there should be a good choice to accommodate a wide range of visitors including gluten free, vegetarian and vegan options as well as kosher and halal food.

Layout

- gangways in areas between tables to have at least 1200mm clear width
- furniture is to be placed in a regular layout rather than in a random pattern to assist people with a visual impairment
- circulation routes and open floor space to be wide enough to allow wheelchair users access to tables and general seating areas (inside and out). These routes should also permit wheelchair users to pass each other and, where necessary, turn through 180°.

Furniture

- tables must have a clear under top height of at least 700 – 800mm to allow a wheelchair user to draw in
- seating in dining areas to be planned so that wheelchair users can sit alongside companion(s)
- furniture to have rounded corners to prevent injury from sharp corners
- seating to be provided wherever people might need to wait and be arranged to allow wheelchair users to sit alongside others without obstructing circulation routes
- a choice of seating is to be provided, including some with both back and arm rests and with a seat height of between 450mm and 480mm AFFL
- furniture is to contrast visually with the surrounding surfaces.

Counters

- counters to be a minimum 700mm deep where a seated staff member and visitor are facing each other and one is a wheelchair user
- provide a section lowered to 750 – 800mm AFFL with a clear space of 700 – 800mm underneath
- assistive listening systems such as a portable induction loop to be fitted at counters, see IDS 29 Acoustics and communication systems
- lighting must aid people's ability to lip-read
- where tray slides are used, they must be continuous to the till
- food displays must be viewable by wheelchair users and people of short stature.

IDS 25. First aid facilities

Design intent

Where first aid facilities are provided it is important that such facilities are designed to meet the diverse needs of those using the building.

Inclusive Design Guidelines

First aid facilities are to meet the following requirements:

- the room is to be large enough to contain an adjustable height changing bench and have sufficient space for a wheelchair user to manoeuvre easily
- preferably close to toilets, including accessible toilets and the Changing Places facility where provided (see IDS 20.5 Changing Places Facility)
- be clearly signposted and identified
- include an area in close proximity where people can be seated while waiting with:
 - o a mixture of seating with armrests, see IDS 05.3 Seating / rest points
 - o space for a wheelchair user to pull up alongside a seated companion
- have an area for treating sitting patients
- have a doorway large enough to allow access for a stretcher
- have good visual contrast between the main features, equipment and controls and the background against which it is seen.

IDS 26. Internal Lighting

Design Intent

Good lighting is critical for many people in ensuring that they are able to use buildings conveniently and safely. This is particularly important for people who are neurodivergent, partially sighted or Deaf, deafened and hard of hearing.

The illuminance on interior surfaces, the quality of the lighting, good colour rendering and the avoidance of glare are key factors to be considered.

Activities that involve precise hand movement within buildings, such as entry controls, may require higher illuminance levels or dedicated task lighting.

Inclusive Design Guidelines

Lighting general

Both natural and artificial sources of lighting should be designed to avoid creating glare, pools of bright light and strong shadows.

Natural and artificial lighting in a corridor should be even, diffused and without glare, reflections or shadows.

In circulation areas, glare and cross-shadows which can prevent people who are blind or partially sighted distinguishing changes in levels should be avoided.

Artificial lighting systems:

Design criteria for artificial lighting systems are:

- maintain a level of illumination that is suitable for people who are partially sighted
- avoid any perception of flicker
- uplighters at floor or low-level can cause glare and obscure vision and therefore should not be used
- support lip reading by illuminating the face of the person speaking to make it easier for a person lip reading where one-to-one communication is important, for example at a reception desk
- artificial lighting for corridors that receive no daylight should be designed to achieve an illuminance at floor level of at least 100 lux
- lighting that causes glare (such as poorly located wall lights, spotlights, floodlights or low-level light sources) should be avoided.

IDS 27. Finishes

Design intent

The choice of finishes will be critical for many people in ensuring that they are able to use buildings conveniently and safely.

For example, poorly designed structural glazing can be a hazard and a barrier to many people, in particular people who are partially sighted. It is important that designs and glazing types recognise the need to avoid glare from the sun and reflections from artificial lighting.

Flooring systems used need to ensure that all people can travel horizontally conveniently, safely and without discomfort.

Choosing appropriate floor, wall and ceiling materials that are not overly patterned and contrast visually with adjacent surfaces, and careful use of natural and artificial lighting, will benefit people who are blind or partially sighted, people who are neurodivergent as well as all other building users.

IDS 27.1. Glazing

Inclusive Design Guidelines

Design criteria for glazing are:

- glazed facades should not incorporate fully glazed frameless entrance doors without being clearly identifiable on approach from both sides
- full height glazing must be clearly identified with permanent visually contrasting (under both natural and artificial lighting) manifestations within two zones, between 850mm and 1000mm and between 1400mm and 1600mm above floor level
- suitable manifestation should contrast visually with the surface behind it in all light conditions and will typically take the form of a continuous or broken line, sign, logo or patterning on the glass. Etched glass often does not provide a suitable degree of visibility and if proposed will need to clearly demonstrate that it will be visually apparent
- the edges of a glass door should be visually apparent when the door is open.

IDS 27.2. Floor surfaces

Inclusive Design Guidelines

Design criteria for floor surfaces are:

- glossy or highly polished materials are not to be used as they can appear wet and therefore 'slippery' (even if they are not), they can also cause reflective glare that can confuse people
- matting and carpets to have a shallow, dense, non-directional pile
- large or repeating patterns should not be used if they involve bold and contrasting colours, including step prints
- attention should be given to flooring details at changes in level.

At entrance points a floor surface that removes water is to be provided, ensuring that floors remain dry and slip resistant. Entrance matting systems to be:

- firm, fixed and flush with surrounding levels
- a minimum depth should cater for the circumference of a wheelchair wheel (which is a minimum of 2000mm) and the expected footfall
- mat well depths designed to ensure that the mat is level with adjacent floors or have a rubber backing and chamfered edges
- coir type matting is not to be used
- fixed securely onto firm backing material.

IDS 27.3. Visual contrast

Inclusive Design Guidelines

In order to facilitate orientation and ensure the safe use of the built environment visual contrast is to be provided between adjacent surfaces to highlight potential hazards and to promote the legibility of graphical information.

Visual contrast is defined as the difference in LRV of two adjacent surfaces or a component and its background on the LRV scale (LRV1 – LRV2), where LRV1 is the lighter element and LRV2 is the darker element. LRV is expressed on a scale of 0 – 100, with a LRV of 0 representing absolute black and 100 representing absolute white.

The perception of visual contrast is improved with better lighting conditions; note that reflection and glare from shiny surfaces may reduce visual contrast and create visual confusion for some groups of people.

For large surface areas where lux level is greater than 200 lux, then at least 20 points difference in LRV between building elements is acceptable. For all other lighting conditions at least 30 points difference is required.

The minimum difference in the LRV should be achieved and maintained throughout the life of the building elements and in all conditions (i.e. when wet or dry). Deterioration and maintenance shall be considered at specification.

Visual contrast to be in accordance with the following table.

VISUAL TASK	RECOMMENDED DIFFERENCE ON THE LRV SCALE
Large surfaces areas (i.e. walls, floors, doors and ceilings)	Greater than 20 points at 200 Lux or more Greater than 30 points at 200 Lux or less
Elements and components to facilitate orientation (handrails, tactile warning surfaces and visual indicators on glazed areas)	Greater than 30 points
Potential hazards and self-contrasting markings (visual indicators on step nosings) and text information	Greater than 60 points ²⁹

IDS 28. Signs and information

Design Intent

The ease of orientation in and wayfinding around a building is determined by its inherent legibility and is supported by information systems and signage. Clear and accessible signage and information is therefore important, especially for people who might be unable to ask, or feel uncomfortable about asking, for directions.

Signs should form part of an integrated communication scheme that gives clear directions, information and instructions for the use of a building. They should support a wayfinding strategy that takes into account the requirements of different types of building users as well as the complexity of the building layout.

As no single format can communicate information to everyone, some duplication in different formats is essential. Information may take the form of visual, audible or tactile information.

²⁹ ISO 21542 2011 Building construction -- Accessibility and usability of the built environment

Inclusive Design Guidelines

The effectiveness of information and signage is determined by:

- the location, layout and height of signs
- the size and case of lettering, the size of symbols and reading distances
- visual contrast
- the finishes of the materials used for signs
- quality of lighting
- integration with any other communication systems or formats.

Design criteria for signage are:

- information and direction signs should be provided at decision points such as lift lobbies, junctions of circulation routes, key locations such as reception points, at facilities such as toilets, and in rooms, spaces and counters where induction loop systems are fitted
- for complex buildings or buildings to be used infrequently by members of the public, orientation information should be provided in accessible places alongside the main accessible route, or clearly visible from the entrance to the building
- sign design, names of destinations and location should be consistent throughout a building
- key location information, such as sign directories, orientation signage and plans, should be both visual and in tactile form where low enough to be touched; where practicable, audible information is recommended
- the use of well-contrasted tactile text and symbols can cater for both sighted and blind/partially sighted users. People who do not read Braille can still identify, or be aided by, tactile information
- directional signs should readily identify and easily distinguish accessible routes, including egress routes
- universally recognised public information symbols should be used to replace text, wherever possible, any other symbols should be used in conjunction with text
- directional signs should be placed only on fixed parts of the building such as walls, posts and floors
- where directional signs would not be visible in large crowds, they should be suspended from the ceiling
- text entirely in upper case type (capitals) should not be used. Any sans serif typeface with a relatively large x-height (lower case letter height) to capital height should be used
- information where practicable, should be complemented by audible information for people who are blind or partially sighted; there are a number of smartphone-based technologies available to support this.

IDS 29. Acoustics and communication systems

Design intent

Poor acoustics cause confusion and make it difficult to use sound as a navigational aid. People can experience sensory or neurological overload within environments that are noisy and too reverberant.

The use of Audio Description (AD) commentary that describes non-aural events is particularly important to people with a visual impairment. AD describes expressions and movements making the event clear through sound and enhancing the overall experience and should be supported in venues to be used for performances or sporting activity.

It is important that the type of assistive listening systems and their placement is established in the early design stages and integrated into the design and cost plan.

Inclusive Design Guidelines

Design criteria for acoustics and communication systems are:

Acoustics

- provide noise reduction where communication will be important
- provide adequate sound insulation to minimise intrusive noise, both from outside and within the building
- separate quiet and noisy areas of buildings with a buffer zone
- avoid too many hard surfaces in areas where communication will be important
- room materials should contribute to a desirable acoustic environment
- where public address systems are installed near counters or reception desks, suitable ceiling, wall and floor materials should contribute to an acoustic environment that helps orientation and enables the information to be clearly heard.

Assistive listening systems:

An assistive listening system, using induction loop, infrared or radio transmission, should be installed in:

- rooms and spaces used for meetings
- lectures theatres and classrooms
- audience seating
- at help and information points and service or reception counters.

Assistive listening systems should be designed to following criteria:

- where audience seating provision includes a public address system, this must be supplemented with an assistive listening system
- where a building includes spaces where announcements are transmitted through an assistive listening system, signs should be provided to inform people who are deafened or hard of hearing of locations in the building where these systems are fitted, and where they can obtain the necessary equipment for assistive listening systems

- where a building includes spaces where announcements are transmitted the PA system is to be accompanied with a system making the same information available in text form for people who are Deaf, deafened or hard of hearing
- provide commentaries (audio description) to assist people who are blind or partially sighted during events/performances
- a hard-wired built-in loop system is to be provided in localised locations such as reception areas or information points
- have no overspill or interference
- assistive listening systems are to be installed in rooms and spaces designed for meetings and at service or reception counters
- the presence of an induction loop or infrared or radio hearing reinforcement system and audio description to be indicated by the standard symbols placed in clearly visible locations
- line input sockets should be installed into all rooms which will be used for presentations in accessible locations.

Induction loop systems should meet the recommendations given in BS 7594³⁰.

IDS 30. Emergency egress

Design intent

Well-designed buildings/facilities should reduce the need to rely on high levels of staff management during an emergency.

Evacuation strategies for disabled people are to be provided for all buildings. These strategies are not only to cover people unable to use stairs, but people with sensory impairments or who are neurodivergent.

Safety procedures should be developed to avoid confusion and conflict between people requiring step-free egress routes and people able to use stepped egress routes during emergency evacuation. They are to be designed to incorporate safe and dignified emergency evacuation for all building users.

Inclusive Design Guidelines

Design criteria for safe and dignified emergency evacuation are:

Escape routes

- all escape routes to be direct and free from obstruction at all times
- all escape routes to be clearly signed, including routes to refuges
- unobstructed clear width for escape route is a minimum of 1200mm
- the final escape route should have a clear width of at least the width of the stair leading up to it.

Horizontal egress

- horizontal travel routes to be free from obstacles, such as steps or raised thresholds. Where such obstacles cannot be removed, a graded route or ramp should be provided with visually contrasting floor finishes to provide a warning of the level change (see IDS 06.1 Graded routes and IDS 06.2 Ramps)
- escape routes should be designed to take into account the needs of people who are neurodivergent, including the provision of appropriate orientation information.

Vertical egress

- buildings should be designed and built to accommodate robust emergency evacuation procedures for all building users, including those who require level access. All building users should be able to evacuate from a building with dignity and by as independent means as possible. Emergency carry down or carry up mechanical devices or similar interventions that rely on manual handling are not considered to be appropriate, for reasons of user dignity and independence.
- the installation of lifts which can be used for evacuation purposes (accompanied by a management plan) provide a dignified and more independent solution. In all buildings where lifts are installed a minimum of at least one lift per core (or more subject to capacity assessments) is to be provided to evacuate people in the event of fire
- the lifts are to incorporate suitable levels of fire resistance to elements of construction forming refuges, evacuation lift enclosures, and lobbies
- a lift that is not explicitly designed solely for evacuation may be used for evacuation, provided that it provides the same functionality as an evacuation lift (for example the fire-fighting lift). If this is to be considered as an option then a suitable risk assessment should be undertaken to evaluate whether the lift meets the recommendations of BS 9999:2017³¹
- other proposed emergency egress solutions to be clearly justified with reasoning and rationale in the design and access statement and following consultation with local disabled people including the BEAP.

Evacuation (fire protected) lifts

If lifting appliances have an independent power supply, control panel, fire protected shaft and features outlined in BS 9999: 2017, they can be used to assist evacuation.

A lift for evacuation should:

- be in accordance with IDS 18.5 Passenger Lifts and BS 9999:2017 and BS EN 81 – 72³²
- have the fire resistance of a protected stairway
- be clearly marked and signposted adjacent to an associated refuge
- have two independent power supplies
- have controls that can be isolated
- have any electrical boards, generators, hydraulic pumps protected by a fire-resistant enclosure
- wherever practicable it should be a lift routinely used as a passenger lift and not one used solely for evacuation or occasionally as a lift for transporting goods.

³⁰ BS 7594:2011 Code of practice for audio-frequency induction-loop systems (AFILS)

³¹ BS 9999:2017 Fire safety code of practice for the design, management and use of buildings, 2017

³² BS EN 81-72:2015 Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts. Firefighters lifts

Stairs

- stairs to be used in emergency evacuation to be in accordance with IDS 18.3 Internal stairs
- handrails on escape stairs and ramps to be continuous.

Refuges

- to be in accordance with requirements from BS 9999:2017
- for larger public buildings, suitable enlarged areas of relative safety must be provided to accommodate the estimated number of disabled people (including all visitors and staff)
- the use of refuges should only be used to support phased evacuation towards evacuation lifts wherever possible
- provide information at refuges outlining the evacuation procedures.
- for people unable to use stairs without assistance, one or more refuge points must be provided on each level offering a place of relative safety until assistance arrives
- a two-way communication device must be provided at all refuge points and controls for emergency voice communications need to be accessible
- the minimum area of a refuge point should be 1400mm x 900mm and should not restrict the width of the escape route
- where a refuge is located in a lobby or stairway, a sign must be displayed 'Refuge – Keep Clear'
- wheelchair users must be able to manoeuvre around the refuge space and access it independently.

Refuges should be located:

- on all floors, except exit level floor(s)
- inside a protected compartment such as a stair/lift lobby or a stairwell
- in open areas such as balconies, flat roofs or podiums that have their own means of escape
- refuges should not be positioned in storeys solely used for plant.

Fire/evacuation alarm signals and lighting (designed in accordance with BS 5839-1³³)

- audio alarm systems should also incorporate the use of flashing lights/beacons (flashing lights should be regulated as not to stimulate photosensitive epilepsy)
- low output beacons in large quantities are desired over small numbers of high output beacons due to the production of glare
- light outputs of the beacon should be altered from area to area based on the type of user that would be there
- the use of vibrating pager units to alert frequent building users including staff with a hearing impairment should be considered
- audible alarms should not negatively impact communication in a refuge area
- directional sound evacuation systems should be considered.

Management

- emergency evacuation strategies to take account of the needs of disabled people in the building
- trained staff to support the emergency evacuation plan who should be able to respond in a timely manner (i.e. it is not appropriate for management to be remotely located if required to assist in the evacuation of disabled occupants)
- in accordance with BS 9999:2017, a test evacuation, in which people who require help are assisted to a place of ultimate safety, should be carried out at least once a year and should be both horizontal and vertical.

33 BS 5839-1: 2017: Fire detection and fire alarm system for buildings. Code of practice for design, installation and commissioning and maintenance of systems in non-domestic premises



Appendix 1 – Bibliography

Existing good practice guidance and standards that design teams may also refer include but are not restricted to:

Legislation:

- The Equality Act 2010
- Regulatory Reform (Fire Safety) Order 2005.
- Building Act 1984, as amended by the Deregulation Act 2015

Planning

- London Plan, 2016
- The National Planning Policy Framework, 2018
- LLDC Local Plan, 2015

LLDC Policies:

- Design Quality Policy
- Equality and Inclusion Policy
- Inclusive Design Strategy
- Park Design Guide

Building Regulations:

- Approved Document K – Protection from falling, collision and impact, 2013
- Approved Document M – Access to and use of Buildings Vol 1: Dwellings, 2016
- Approved Document M – Access to and use of Buildings Vol 2: Buildings other than dwellings, 2016

British Standards:

- BS 5395-1 Stairs – Code of practice for the design of stairs with straight flights and winders, 2010
- BS 5839-1: 2017: Fire detection and fire alarm system for buildings. Code of practice for design, installation and commissioning and maintenance of systems in non-domestic premises
- BS 6440:2011 Powered vertical lifting platforms having non-enclosed or partially enclosed liftways intended for use by persons with impaired mobility. Specification
- BS 7594:2011 Code of practice for audio-frequency induction-loop systems (AFILS)
- BS 8300-1:2018 Design of accessible and inclusive built environment Part 1: External Environment
- BS 8300-2:2018 Design of accessible and inclusive built environment Part 2: Buildings
- BS 9999:2008 Fire safety code of practice for the design, management and use of buildings
- BS 9999:2017 Fire safety code of practice for the design, management and use of buildings, 2017
- BS EN 115-1:2008+A1:2010 Safety of escalators and moving walks. Construction and installation
- BS EN 81-70:2018 Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lift. Accessibility to lifts for persons including persons with disability
- BS EN 81-72:2015 Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts. Firefighters lifts

GLA / TfL:

- Healthy Streets for London, TfL, 2017
- Housing Supplementary Planning Guidance, GLA, 2016
- London Cycling Design Standards, TfL, 2016

- Mayor's Transport Strategy, GLA, 2018
- Olympic Legacy Supplementary Planning Guidance, GLA, 2012
- Shaping Neighbourhoods: Accessible London: achieving an inclusive environment Supplementary Planning Guidance, GLA, 2014
- Shaping Neighbourhoods: Children and Young People's Play and Informal Recreation Supplementary Planning Guidance, GLA, 2012
- Walking action plan. Making London the world's most walkable city, GLA, 2018

Other Good Practice Guidance:

Education

- Building Bulletin 102 Designing for disabled children and children with special educational needs – Guidance for mainstream and special schools. DCSF, 2014

Sport

- Access for All, UEFA and CAFÉ Good Practice Guide to Creating an Accessible Stadium and Matchday Experience, CAFÉ, 2011
- Accessible Sports Facilities, Sport England, 2010
- Accessible Stadia - A good practice guide to the design of facilities to meet the needs of disabled spectators and other users, The Football Stadia Improvement Fund/The Football Licensing Authority, 2003
- Guide to Safety at Sports Grounds (Green Guide) 6th Edition, 2018

Residential

- Age-friendly Housing: Future design for older people, Porteus and Park, RIBA Publishing, 2018
- Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
- Housing our Ageing Population: Panel of Innovation (HAPPI), 2009

General

- Access to ATMs: UK design guidelines, CAE, 2002
- A guide to inclusive cycling, Wheels for Wellbeing, 2017
- Building Sight, Peter Barker, Jon Barrick and Rod Wilson, RNIB/HMSO, 1995
- Changing Places: the practical guide, Changing Places Consortium, 2013
- Colour Contrast and Perception- design guidance for internal built environments, Project Rainbow, University of Reading, 1997
- Designing for Accessibility, CAE/RIBA Enterprises, 2012
- Effective Kerb Heights for Blind and Partially Sighted People, UCL commissioned by Guide Dogs, 2009
- Emergency Lighting and Wayfinding Systems for visually impaired people, BRE Information Paper, Webber, G M B, and Cook, G K, August 1997,
- Essential principles for built environment professionals – Creating an accessible and inclusive environment, CIC, 2017
- Good Signs - Improving signs for people with a learning disability, Disability Rights Commission, 2004
- Guidance on the provision of spending facilities for guide dogs and other assistance dogs, Guide Dogs for the Blind Association, 2015
- Guidance on the use of tactile paving surfaces, Department for Transport, 1998
- Inclusive Landscape Design, SPD, LB of Islington, 2010
- Inclusive Mobility: A guide to best practice on access to pedestrian and transport infrastructure, Mobility and Inclusion Unit, Department for Transport, 2002
- ISO 21542 2011 Building construction - Accessibility and usability of the built environment, 2011
- Making our Communities Ready for Ageing, ILC-UK, 2014
- Recovering the Calm, St Ethelburga's Centre for Reconciliation and Peace
- Safer Surfaces to Walk On – Reducing the Risk of Slipping, CIRA, 2010
- See it Right, RNIB, 2006
- Sign Design Guide - A Guide to Inclusive Signage, JMU & the Sign Design Society, 2000
- The Accessible Toilet Resource, Hanson, Bichard and Greed, UCL, 2007
- The Principles of Inclusive Design, CBE 2006

Appendix 2 – Conformance Report Template

A clean copy of this will be issued to design teams at the start of LLDC-led development projects.

The following is the key to the tables.

Compliant	
Nothing precluding compliance; dependant on specification	
Dependant on management strategy	
Non-compliant	
Not applicable	

INCLUSIVE DESIGN STANDARD		SUMMARY OF REQUIREMENTS	LEVEL OF CONFORMITY	COMMENTARY
Achieving inclusive neighbourhoods				
IDS 01.	Site planning	Neighbourhoods should be designed to encourage pedestrians to get out and about to enjoy outdoor spaces and access services and facilities.		
Movement				
IDS 02.	Public realm	An inclusive public realm is made up of a coordinated network of legible, safe and accessible routes. Paths, roadways and streets should be designed to provide a strong, legible framework.		
IDS 03.	Wayfinding and Orientation	Wayfinding should use spatial, physical and environmental clues to help people plan and navigate moving from one place to another.		
IDS 04.	Signage	The system of signage should be complementary to the surrounding environment, including the Park, and be consistent from the approaches to and throughout the development providing a simple consistent method for people to find their way.		
IDS 05.	Pedestrian routes	It is important to consider the experience of the pedestrians throughout different times of the day, week and year.		
IDS 05.1.	Pedestrian routes: general			
IDS 05.2.	Widths			
IDS 05.3.	Seating / rest points			
IDS 05.4.	Street furniture			
IDS 05.5.	Pedestrian Surfaces			
IDS 05.6.	External Tactile Paving			

INCLUSIVE DESIGN STANDARD		SUMMARY OF REQUIREMENTS	LEVEL OF CONFORMITY	COMMENTARY
IDS 05.7.	Hazards			
IDS 06.	Changes in level	<p>LLDC's aim is to achieve shallow gradients (approximately 1:60 or less steep) wherever possible.</p> <p>It is important that journeys by lift, graded route or by steps provide the same quality of experience with none of the alternative routes feeling secondary.</p>		
IDS 06.1.	Graded routes			
IDS 06.2.	Ramps			
IDS 06.3.	External Stairs			
IDS 06.4.	Handrails			
IDS 06.5.	External Passenger Lifts			
IDS 07.	External Lighting	Appropriate lighting is critical to help create safe and inclusive neighbourhoods.		
IDS 08.	Bridges and subways for pedestrian use	Bridges and subways are to be accessible for all users and should be designed with gradients in accordance with the standards being applied to circulation routes in IDS 05.		
IDS 09.	Cycling infrastructure	Cycle infrastructure should be designed in a way that is inclusive both of larger types of cycles and various models used by disabled people. The concept of 'the inclusive cycle' is embraced – meaning a more forgiving environment is required.		
IDS 09.1.	Cycle lanes			
IDS 09.2.	Cycle parking			
IDS 10.	Shared Space	Using shared space on tertiary streets in residential neighbourhoods (such as mews streets where there will be minimal vehicular traffic) can help to create more child, pedestrian and community friendly streets. The intention is to design tertiary streets in residential developments as places instead of just corridors for movement.		
IDS 11.	Parking and drop-off	Appropriate provision should also be made for Blue Badge holders, bus/coach parking/drop-off and pick-up areas, taxi drop-off/ collection, community transport and any interlinking transport systems.		

INCLUSIVE DESIGN STANDARD		SUMMARY OF REQUIREMENTS	LEVEL OF CONFORMITY	COMMENTARY
IDS 11.1.	Parking for General Public			
IDS 11.2.	Drop-off			
IDS 11.3.	Mobility scooter parking			
IDS 12.	Access to public toilets	Providing access to good, accessible public toilets will be an important aspect of achieving inclusive neighbourhoods.		
IDS 13.	Assistance dog facilities	As visit times to Queen Elizabeth Olympic Park may be considerable, it is essential to provide suitable areas for assistance dogs to be watered and relieve themselves.		
IDS 14.	Inclusive Play	Inclusive play ensures that all children, young people and older people of any ability have equal access to and equal participation in local play and leisure opportunities.		
Residential Developments				
IDS 15.	Inclusive housing	All developments are to conform to the London Plan. In addition, the needs of large families and design considerations in relation to faith and culture are often overlooked as is the consideration of appropriate housing for older people who require a level of care.		
IDS 15.1.	Drop-off/visitor parking			
IDS 15.2	Residents' Parking			
IDS 15.3.	Cycle and mobility scooter parking			
IDS 15.4.	Approaching the home			
IDS 15.5.	Inclusive amenity, including inclusive play			
IDS 15.6.	Communal Lifts			
IDS 15.7.	Within the home			
IDS 15.8.	Considerations for supporting older Londoners and multigenerational housing			
IDS 15.9.	Faith and cultural considerations			
IDS 16	Student accommodation	In order to ensure the student's whole educational experience is inclusive, it is important that student accommodation is inclusive		

INCLUSIVE DESIGN STANDARD		SUMMARY OF REQUIREMENTS	LEVEL OF CONFORMITY	COMMENTARY
Public buildings				
IDS 17	Entering the building	It is important that buildings are easily understandable. All entrances should therefore have a logical relationship with the routes that serve them and be clearly identifiable to avoid unnecessary travel for people approaching the building.		
IDS 17.1.	Entrances			
IDS 17.2.	Entrance doors and lobbies			
IDS 17.3.	Access controls			
IDS 17.4.	Reception areas			
IDS 18.	Horizontal circulation	Corridors and passageways must be wide enough to allow wheelchair users to approach and gain easy access through doors off the corridor and where necessary turn through 180°.		
IDS 18.1.	Doors			
IDS 18.2.	Corridors and passageways			
IDS 19.	Vertical circulation	It is important that all people are able to access all facilities and move independently between levels of all buildings confidently, independently and with equity.		
IDS 19.1.	Journey sequence – equity of experience			
IDS 19.2.	Graded routes and ramps			
IDS 19.3.	Internal stairs			
IDS 19.4.	Escalators			
IDS 19.5.	Passenger Lifts			
IDS 20.	Sanitary facilities	The toilet facilities provided should respond to the local demographic and address the requirements of people from a broad range of backgrounds and faith groups as appropriate.		
IDS 20.1.	General – including gender neutral and faith/cultural considerations			
IDS 20.2.	Unisex Accessible Toilet			
IDS 20.3.	Ambulant and enlarged cubicles			
IDS 20.4.	Self contained cubicle			

INCLUSIVE DESIGN STANDARD		SUMMARY OF REQUIREMENTS	LEVEL OF CONFORMITY	COMMENTARY
IDS 20.5.	Changing Places Facility			
IDS 20.6.	Family facilities – including baby changing facilities and family toilets			
IDS 21.	Changing Facilities	While separate unisex accessible changing rooms are to be provided, it must be recognised that many disabled people will want to change within communal facilities and the design and layout of communal changing facilities should encourage and facilitate this.		
IDS 21.1.	Communal Changing facilities			
IDS 21.2.	Unisex accessible changing facilities			
IDS 22.	Multi-faith facilities (including wash cubicles)	In the adjoining four boroughs to Queen Elizabeth Olympic Park, different faith groups who say prayers at various times of the day make up at least 28% of the population. In some of these faith groups washing is a part of the prayer ritual. It is recommended that public buildings provide a room or space that can be used as a quiet space and multi-faith prayer facility, with adjacent wash facilities.		
IDS 23.	Audience seating	Not all disabled people will require wheelchair user accessible viewing spaces or amenity seating. It is therefore important to ensure an appropriate level of accessibility for all seating within the venues. People with varying access requirements should also have a choice of seating positions and not only in areas that are available for wheelchair users and their companions.		
IDS 23.1.	Seating: general			
IDS 23.2.	Easy access /amenity seating			
IDS 23.3.	Wheelchair user viewing spaces			
IDS 24.	Refreshment facilities	It is important that space planning for refreshment facilities considers the diverse needs of both staff and users from the outset.		
IDS 25.	First aid facilities	Where first aid facilities are provided it is important that such facilities are designed to meet the diverse needs of those using the building.		

INCLUSIVE DESIGN STANDARD		SUMMARY OF REQUIREMENTS	LEVEL OF CONFORMITY	COMMENTARY
IDS 26.	Internal Lighting	<p>Good lighting is critical for many people in ensuring that they are able to use buildings conveniently and safely. This is particularly important for people who are neurodivergent, partially sighted or Deaf, deafened and hard of hearing.</p> <p>The illuminance on interior surfaces, the quality of the lighting, good colour rendering and the avoidance of glare are key factors to be considered.</p>		
IDS 27.	Finishes	The choice of finishes will be critical for many people in ensuring that they are able to use buildings conveniently and safely.		
IDS 27.1.	Glazing			
IDS 27.2.	Floor surfaces			
IDS 27.3.	Visual contrast			
IDS 28.	Signs and information	The ease of orientation in and wayfinding around a building is determined by its inherent legibility and is supported by information systems and signage. Clear and accessible signage and information is therefore important, especially for people who might be unable to ask, or feel uncomfortable about asking, for directions.		
IDS 29.	Acoustics and communication systems	<p>Poor acoustics cause confusion and make it difficult to use sound as a navigational aid. People can experience sensory or neurological overload within environments that are noisy and too reverberant.</p> <p>It is important that the type of assistive listening systems and their placement is established in the early design stages and integrated into the design and cost plan</p>		
IDS 30.	Emergency Egress	Evacuation strategies for disabled people are to be provided for all buildings. These strategies are not only to cover people unable to use stairs, but people with sensory impairments or who are neurodivergent.		



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