Inclusive Design Standards
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Foreword

London’s bid to host the 2012 Olympic and Paralympic Games promised ‘the most accessible Games ever’ and our city delivered resoundingly on that promise. This summer we hosted the first ever ‘sold-out’ Paralympics, drew together the most diverse games-time workforce ever, created the most accessible Park and venues ever and secured all of this with the consistent involvement of local communities. I am immensely proud that London has achieved more than any previous host city.

The positive attitude towards disabled people that was inspired by the Paralympians and their achievements was even further enhanced by the exceptionally high numbers of disabled workers and volunteers taking part. Not only did London 2012 change perceptions of what disabled people can achieve, it also set a new standard in the design of sporting venues and used the Games as a springboard for transforming the UK’s capital to be more accessible and inclusive. We need this vital work to continue so that access and inclusion continues to be ‘business as usual’ for London.

What better way to carry forward this momentum than to seize the opportunity once again to set high standards of inclusive design for the future Queen Elizabeth Olympic Park. Under the careful watch of the London Legacy Development Corporation Queen Elizabeth Olympic Park will become a new part of this great City with five new neighbourhoods creating around 6,800 new homes, a great location for business creating up to 8000 new jobs, 3 new schools, 29 new playgrounds, health, retail and community spaces surrounded by beautiful Parkland and world class legacy venues.

It is right that these inclusive design standards build upon what was developed for Games-time; adopting the standards that are still fit for purpose, updating the standards where improvements can be made and extending them into the new areas for the legacy development. I am pleased to confirm that the Legacy Corporation will be at the forefront of high quality inclusive design, implementing these new standards with the help of a talented panel of inclusive design experts who will ensure they are fulfilled.

The future Queen Elizabeth Olympic Park and the surrounding neighbourhoods are a key asset for London and the Park is already famous around the world for its accessibility, inclusivity and spirit of achievement. What more compelling a case could be found to continue as a beacon of accessibility; creating a place that everyone can enjoy with choice, dignity and independence throughout their lives.

Boris Johnson
Mayor of London
Introduction

Inclusive design aims to achieve solutions that create safe and accessible environments for all members of the community. Born out of the disability movement, an inclusive design approach has much wider benefits for other groups including; older people, people with temporary impairments, large families, parents with young children and babies, people from diverse faith groups and different cultures, people that speak different languages and a combination of all of the above.

The Legacy of the London 2012 Olympic and Paralympic Games

The Olympic Delivery Authority (ODA) together with its partners used the power of the Games to inspire change and take a proactive approach to improving standards of inclusive design.

In 2007 the ODA produced their own Inclusive Design Standards (IDS) to guide project teams on the principles of inclusive design they were expected to adopt and the procedures that they were expected to follow in delivering them. It contained a mix of guidance and requirements generated from a large number of published guidance and good practice documents.

The London Legacy Development Corporation (LLDC) has now adopted these IDS to ensure that the hard work and progress made in delivering an integrated and accessible Olympic Park is not lost and becomes fit for legacy use. Our approach in developing the original ODA IDS has been to:

- **Adopt:**
  Take ownership of the ODA’s Inclusive Design Standards (IDS).

- **Update:**
  Review and update those standards superseded since 2007

- **Extend:**
  Extend the standards into the new areas relevant to the legacy development.

The original ODA IDS was written specifically with sports venues on the Olympic Park in mind. However, while the Olympic and Paralympic Games are unique events, the design standards are still relevant to the legacy transformation of the existing Park venues and to inform the design of other public buildings and external landscapes.

One of the key differences in legacy is the development of new neighbourhoods on the Park and the subsequent provision of residential buildings. As a result, a new section on residential buildings has been added to the IDS. In keeping with the existing IDS, the standards on residential buildings are based on existing good
practice guidance. A list of the key source guidance documents can be found in the Bibliography, Appendix 1.

**Relationship with Other Publications**

The recommendations in the IDS are based on existing good practice guidance and are the Legacy Corporation’s guidelines for delivering inclusive design solutions. They do not replace the need for reference to other relevant published design guidance and it is recognised that some projects or elements of projects may require reference to specific inclusive design guidance.

**The London Plan**

As a Mayoral Development Corporation, the Legacy Corporation recognises the London Plan and subsequent Supplementary Planning Guidance (SPG) developed and published by the Greater London Authority (GLA). The London Plan makes specific reference to a number of existing guidance and these documents should be referred and adhered to as appropriate when presenting inclusive design proposals.

**Projects the IDS Apply to**

The LLDC IDS are applicable to all projects that the Legacy Corporation is directly responsible for delivering within their physical boundary which incorporates the Queen Elizabeth Olympic Park and fringe areas including:

- Transformation of existing venues, public realm spaces and buildings within the Queen Elizabeth Olympic Park for legacy use
- All new development projects within the physical boundary that the Legacy Corporation is responsible for including the Legacy Communities Scheme (LCS)
- Refurbishment projects in fringe areas within the physical boundary that the Legacy Corporation is responsible for

The public realm and public buildings sections of the IDS will inform the building of retail, commercial and leisure/community uses. However, in some cases, more specific guidance may also be applicable to particular types of buildings and facilities. In such cases, it is recommended that project teams seek specialist access advice and refer to building regulation, health and safety and other relevant authorities for advice and guidance. For example:

- Schools and other education facilities (including libraries)
  - Building Bulletin 99 – Briefing Framework for Primary School Projects
  - Building Bulleting 102 – Designing for disabled children and children with special educational needs
  - Further information on museums and libraries is available from the Arts Council England (ACE)
• Health Buildings
  o Department of Health, Doubly Disabled: Equality for disabled people in the new NHS – access to services

• Transport related buildings
  o Department for Transport, Inclusive Mobility

• Travel and Tourism related buildings (including hotels)
  o BS 8300:2009+A1:2010

Refurbishment projects particularly in the fringe areas surrounding the Park may have additional restrictions on them including existing site constraints. In these cases, any deviation necessary from the guidance set out in the IDS must be clearly set out in access statements.

A Living Document

The LLDC IDS will be a living document and as such will evolve to take into consideration changes in recognised good practice, guidance and standards. As a result it is expected that subsequent updated versions will be produced as deemed necessary based on the significance and relevance of these changes. The LLDC will write to the Local Planning Authority every three years (and on any other occasion when LLDC wish to amend the document) to seek their approval of the updated draft, or for their approval that it is not necessary for an updated draft to be prepared.
## Publication Hierarchy

<table>
<thead>
<tr>
<th>Publication</th>
<th>Summary</th>
<th>Application</th>
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<tr>
<td>Building Regulations</td>
<td>The guidance set out in the Approved Document is a minimum legal requirement</td>
<td>All new build and refurbishment projects in England and Wales</td>
</tr>
<tr>
<td>Approved Document M (ADM) of the Building Regulations 2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The London Plan (Including SPGs)</td>
<td>Overall strategic plan for London, its policies guide decisions on planning applications</td>
<td>All planning applications in London</td>
</tr>
<tr>
<td>The London Plan 2011 (in particular policies 2.4, 3.8, 6.10, 7.1, 7.2 and 7.5)</td>
<td>Both these guidance documents give minimum requirements as well as additional recommendations</td>
<td></td>
</tr>
<tr>
<td>The London Plan 2011, Policy 3.8 makes specific reference to:</td>
<td>British Standards contain national good practice guidance and recommendations</td>
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<td>- Lifetime Homes Standards</td>
<td></td>
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<td>- Wheelchair Housing Design Guide</td>
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<td>Hackney</td>
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<td>LB Waltham Forest</td>
<td>Waltham Forest Local Plan</td>
<td>Waltham Forest</td>
</tr>
<tr>
<td>LLDC Guidance</td>
<td>LLDC good practice guidance and recommendations based on existing guidance including publications mentioned above. 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.</td>
<td>All building projects within the LLDC physical boundary including the Legacy Communities Scheme. The Inclusive Design Standards are being submitted to PPDT for sign off as an LCS planning condition.</td>
</tr>
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<td>LLDC Inclusive Design Standards</td>
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Inclusive Design Standards

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

- Public Realm
- Residential Developments
- Public Buildings (including venues)
- Venues – Spectator and Participant Requirements

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 accessible and inclusive environments. 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. The Legacy Corporation will work with design teams and in collaboration with the Built Environment Access Panel (BEAP) to address alternatives on a case by case basis.
Public Realm

This section focuses on movement around external areas including the Parklands, access to waterways and public realm areas.
01. Graded Routes

Design Intent

Changes in level generally cause problems for many disabled people, particularly people with mobility or visual impairments. Even a single step can prevent access for someone who has mobility impairment and can present a trip hazard.

Mobility ranges vary enormously between individuals with age and disability, while factors such as weather, topography (gradients) and obstacles can also affect mobility ranges. Recent research found that 30 per cent of disabled people could manage no more than 50 metres without stopping or experiencing severe discomfort and a further 20 per cent of those surveyed could only manage between 50 and 200 metres without a rest. ¹

It is expected that large numbers of people will be moving around the Queen Elizabeth Olympic Park and it will therefore be important to ensure that everyone can move safely and quickly by minimising gradients wherever possible.

Inclusive Design Guidelines

The Legacy Corporation’s aim is to achieve shallow gradients (approximately 1:60) across the Queen Elizabeth Olympic Park wherever possible in keeping with what was achieved for the Games. The Approved Document to Part M of the Building Regulations defines 1:60 as level.

Level breaks on routes steeper than this are important to ensure wheelchair users and others with mobility impairments can rest and recover.

Extrapolated from Approved Document M² and Inclusive Mobility¹ ranges, the table below should be used as a guide to the frequency of ‘level’ areas.

<table>
<thead>
<tr>
<th>Gradient</th>
<th>Preferred footpath distance between level areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:60</td>
<td>50m</td>
</tr>
<tr>
<td>1:50</td>
<td>40m</td>
</tr>
<tr>
<td>1:40</td>
<td>30m</td>
</tr>
<tr>
<td>1:30</td>
<td>20m</td>
</tr>
<tr>
<td>1:21</td>
<td>10.5</td>
</tr>
</tbody>
</table>

On gentle gradients, where the gradient is 1:30 or shallower, the level areas may be set off the main pathway.

Designs should where possible have a:

- maximum gradient of 1:21 across the main routes throughout the Queen Elizabeth Olympic Park
- crossfall no steeper than 1:50\(^3\)
- level landings that are a minimum of 1500mm long (3000mm preferred), clear of any obstructions\(^1\)

\(^1\) Inclusive Mobility, Department for Transport, 2002
\(^2\) Approved Document M (ADM) of the Building Regulations 2010
\(^3\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people – Code of Practice
02. Ramps

Design Intent

Changes in level generally cause problems for disabled people and older people, in particular people with mobility or visual impairments.

Ramps are defined in the Building Regulations as gradients of 1:20 or steeper and should not be designed on primary circulation routes around the Queen Elizabeth Olympic Park. They are used to overcome localised changes in level, normally encountered at emergency exits, secondary entrances and within buildings.

Steep ramps are trip/slip hazards in a crowd and often require excessive effort for some disabled people to access independently.

Inclusive Design Guidelines

Where changes in level cannot be avoided and ramps are required they should be designed to be as shallow as possible and have appropriate handrails and surfaces. It should be noted that ramps are not always the ideal solution and can take up a great deal of space.

Ramps should:

- have gradients between 1:15 and 1:20 where possible
- have a visually contrasting surface to indicate its presence (Note: light reflectance values (LRVs) are used to measure visual contrast with a difference in LRV of 30 points or more providing a good visual contrast)
- have level breaks in ramps as outlined below:

<table>
<thead>
<tr>
<th>Maximum gradient</th>
<th>Going of a flight</th>
<th>Maximum rise</th>
<th>Recommended Pendulum Test Value (PTV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:20</td>
<td>10m</td>
<td>500mm</td>
<td>45</td>
</tr>
<tr>
<td>1:15</td>
<td>5m</td>
<td>333mm</td>
<td>46.7</td>
</tr>
<tr>
<td>1:12</td>
<td>2m</td>
<td>166mm</td>
<td>48.3</td>
</tr>
</tbody>
</table>

Where ramps are required they will:

- rise no more than 2m without providing an alternative means of access for wheelchair users, typically a fully enclosed passenger lift
- be provided with adjacent stairs if over a 300mm rise (see IDS 37: Steps)
- have a surface width between walls, upstands and kerbs no less than 1500mm
- Landings should be at least the width of the ramp (minimum 1500mm) and at least 1500mm long clear of any door swing or other obstruction
- have handrails designed in accordance with IDS 38: Handrails
- have luminance at the top and bottom of each flight of the ramp of at least 100 lux
• have suitable non-slip surfaces when wet and dry (CIRIA\textsuperscript{3} recommend that pedestrian areas have a minimum PTV of 45 when wet)
• have a kerb or upstand on the open side at least 100mm high in addition to any guarding\textsuperscript{1}
• not dissect a flight of stairs as to produce feathered/tapered steps as these are particularly problematic for many disabled people and in particular people with a visual impairment

The provisions of Approved Document M\textsuperscript{1} require that a ramp (including the required level landings) to overcome a level change of 1m would have an overall length of 19.5m at 1:12, 18m at 1:15 and 21.5m at 1:20. This highlights that 1:12 ramps are not effective in many situations.

Ramps steeper than 1:15 should be avoided when possible, however, it is recognised that they may be an appropriate solution in a localised area. The use of such gradients will be judged on a case by case basis.

\textsuperscript{1} Approved Document M (ADM) of the Building Regulations 2010
\textsuperscript{2} BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people – Code of Practice
\textsuperscript{3} Safer Surfaces to Walk On – Reducing the Risk of Slipping, CIRA, 2010
**03. Bridges for Pedestrian Use**

<table>
<thead>
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<th>IDS 03</th>
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### Design Intent

Bridges around the Queen Elizabeth Olympic Park will be accessible for all visitors and should be designed with gradients in accordance with the standards being applied to the circulation routes across the Park.

Rest areas and seating will be provided on longer bridges as appropriate in accordance with IDS 04: Seating/Rest Points.

### Inclusive Design Guidelines

Bridges should:

- have 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 as it is reasonable to do so
- 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
- comply with the gradient requirements of IDS 01: Graded Routes, including level landings
- have surfaces in accordance with IDS 05: Walking Surfaces
## 04. Seating/Rest Points

### Design Intent

Mobility ranges vary greatly between disabled people, while factors such as weather, topography (gradients) and obstacles can also affect mobility ranges. Resting places should therefore be provided on all circulation routes.

Mobility impaired people need to rest and recover at reasonably frequent intervals. In commonly used pedestrian areas the frequency of seating provision should consider the mobility ranges of disabled people as described in IDS 01: Graded Routes.

### Inclusive Design Guidelines

Seating areas should provide a choice of different seat designs for example single seats and benches. Some seats are to have both back and arm rests as these are important features for many people. Having arm rests on both sides will assist people that require additional support when getting in and out of a seat.

In addition to adequate standard seating, consideration may be given to the provision of perching seats, with and without backs, as casual rest places along longer circulation routes.

When considering the design of seating, designers should note materials that are cold to the touch are best avoided.

Seating should be located along but not within pedestrian routes and may be combined with associated public facilities such as public toilets and play spaces. Adequate clear space should be provided alongside seating to allow wheelchair users to sit directly beside non-disabled companions.

Seats may also be located on soft landscaping (such as grass) although this will require an associated accessible route.

The preferred distance on level ground between resting places is 50m, though this may not be a formal seat.

**Seating should:**

- have a seat height of between 450mm – 480mm for seats and benches
- have a seat height of 650mm – 800mm for perch seats
- be clearly identifiable against their surroundings. Consideration should also be given to having the arm rests at the end of a row of seating a different colour to further help someone with a visual impairment identify where the seating starts and ends
- be sited on a suitable surface
- designed to allow a wheelchair user or scooter user to sit alongside non-disabled friends and family or in groups
• armrests when provided to be approximately 200mm above seat height level

Diagram 01: Indicative Seating Layouts

*All dimensions in mm

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1 Inclusive Mobility, Department for Transport, 2002
2 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people – Code of Practice
## Design Intent

Surface finishes can render an accessible 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 colour are important in determining this.

The best type of surface is smooth, firm and slip resistant. Surfaces must 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.

## Inclusive Design Guidelines

Visual contrast is to be used to indicate level differences; it should not be used when it may confuse people with a visual impairment.

When paths are used as a wayfinding tool they should have consistent use of colour and surface material.

Footways and footpaths should:

- be even, firm, well drained surface that is non-slip in both wet and dry weather conditions
- be hard-wearing, durable and easily maintained
- have a minimum pendulum test value (PTV) of 40
- be installed with any necessary joints closed and flush to prevent small wheels, walking sticks and canes becoming trapped
- have a surface that is even and stable, with any variation of surface profile not exceeding ± 5mm (e.g. between paving, surface features or different surfaces)
- have well defined edge treatments such as planting, a change of textures or by the use of kerbs (minimum 60mm) to help indicate to visually impaired people the extent of the path
- have a visually contrasting surface to their surroundings
- have a cross fall no greater than 1:50
- be well lit

Covers and gratings within walking areas are to:

- be flush and non-slip
- slots in drainage gratings are to be no greater than 13mm wide and the diameter of circular holes in gratings to be no more than 18mm
- where possible drainage gratings are to be located off main pedestrian areas
- be integrated into the surrounding area that includes tactile surfaces at controlled crossing points
Footways and footpaths are not to use:

- busy patterned surfaces including stripes\(^5\) that cause confusion or are disorientating in particular for people with a visual impairment or people with a learning disability
- highly reflective materials as they appear to be slippery even if they are not, and they cause reflective glare which can be disorientating for people with a visual impairment\(^4\)

\(^1\) Approved Document M (ADM) of the Building Regulations 2010
\(^2\) Safer Surfaces to Walk On – Reducing the Risk of Slipping, CIRA, 2010
\(^3\) Effective Kerb Heights for Blind and Partially Sighted People, UCL commissioned by Guide Dogs, 2009
\(^4\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people – Code of Practice
\(^5\) Guidance on the Use of Tactile Paving Surfaces, Department for Transport, 1998
06. Tactile Paving  

Design Intent

Tactile paving is used to warn visually impaired people of hazards in the environment.

The main use of tactile paving within the Queen Elizabeth Olympic Park 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) including, ‘Guidance on the use of tactile paving surfaces’. In some situations it may also be advisable to consult with local user groups on the preferred application and configuration of tactile paving including the BEAP.

Inclusive Design Guidelines

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, as a delineator strip in level areas of shared space and as guidance paving. In general, corduroy paving should:

- Comprise rounded bars running transversely across the direction of pedestrian travel
- Bars to be 6mm high (+/- 0.5mm), 20mm wide and spaced 50mm from the centre of one bar to the centre of the next
- Corduroy paving to contrast visually with the surrounding ground surface although not be red which is reserved for blister tactile paving at a controlled crossing point

Level Change:

For visually impaired people the provision underfoot of a timely warning that there is a change in level is essential. They risk tripping or losing their balance if they are not made aware of changes in level, steps or a flight of stairs. The greatest risk of tripping is at the head of a flight of steps or stairs and it is essential to ensure that people are aware that they are approaching a change in level.

External steps along a route without warning or in an unexpected position may cause a person to trip or fall. Designers need to be aware of the potential risk of having steps directly in line with an access route and therefore where this is provided the steps must be clearly identifiable to visually impaired people.

However, the excessive use of tactile surface can cause confusion; it is therefore recommended that care is taken to avoid conflicting and confusing information.
particularly in spaces likely to be used by crowds of people. It is not reasonable to require a hazard warning surface at the head of internal stairs since there is no recognised warning surface for use internally which can be guaranteed not to constitute a trip hazard when used alongside flooring surfaces with different frictional resistance characteristics.2

A corduroy hazard warning surface is only required for an internal stair that is directly in line with an access route. Where it is unavoidable the frictional resistance characteristic of the warning surface must be comparable with the surface used for the flooring and the stairs2

Application:
- a ribbed corduroy paving strip needs to indicate the approach to the head and foot of external steps or stairway2 in accordance with Diagram 02
- the surface to be laid so that the bars run transversely across the direction of pedestrian travel2
- extend across the full width plus 400mm each side of stairs at top and bottom2
- be 800mm deep2

Shared Space Use:
In shared space streets with a level surface, corduroy tactile paving is often used as a delineator strip between the notional carriageway and the footway although some schemes use other tactile methods, such as textured setts. It can be useful to use a contrasting colour for the delineator strip.

Research has shown3 that an 800 mm wide strip of corduroy tactile paving could be reliably detected by blind and partially sighted people.

Where corduroy paving is used as a delineator, it should change to blister paving at crossing points. Blister paving should not be used as a general delineator because of its specific meaning of indicating a crossing point. In addition, over-use of blister paving can create instability issues for many disabled and older people.

Guidance Paving:
Corduroy tactile paving can often be used as guidance paving to assist people with a visual impairment to orientate themselves and navigate around large open spaces such as public squares.

Blister Paving
Blister paving is used to indicate a pedestrian crossing point, either controlled or uncontrolled. In general, 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
- be in rows of flat topped ‘blisters’ 5mm high (+/- 0.5mm)1
• Ideally not metal blisters as these can become slippery when wet

**Controlled Crossing:**

At controlled crossing points, the pedestrian is able to establish priority over vehicular traffic. Controlled crossing points include:

- Traffic signal junctions with pedestrian phases (traffic lights)
- Zebra
- Pelican
- Puffin
- Toucan

The blister tactile paving should be red for a controlled crossing and provide a clear visual contrast with the surrounding ground surface.

**Uncontrolled Crossing:**

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

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

For the requirement to differentiate cycle lanes from pedestrian footpaths see IDS 16: Cycle Lanes.

Diagram 02: Corduroy Paving at Top and Bottom of External Steps
*All dimensions in mm

1 Guidance on the use of Tactile Paving Surfaces, Department for Transport, 1998
2 Approved Document M (ADM) of the Building Regulations 2010
3 Local Transport Note 1/11 - Shared Space, Department for Transport, 2011
## Design Intent

The Legacy Corporation will work closely with development partners to determine the location and use of street furniture. The organisation and language that is expressed in the landscaping, pathways and street furniture will be a key factor to ensuring a safe and accessible Queen Elizabeth Olympic Park.

Street furniture, planters, litter bins and signposts are all intended to improve the environment however, they are hazardous if not carefully designed and positioned, even when projecting from a building.

Around venues, standard height bollards will not be seen by people in dense crowds and this can cause accidents. It should be noted that bollards at recently completed football stadia have been designed to be significantly higher than standard height bollards (for example the Emirates Stadium has some bollards/posts at 2.2m high).

## Inclusive Design Guidelines

- permanent street furniture to be placed in areas that will not obstruct or create a hazard for disabled people, in particular people with a visual impairment
- street furniture, planters, litter bins and signposts are to 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 cane will reduce the risk of colliding with items located along access routes
- lighting columns, signposts, litter bins, trees and seats to be located at or beyond the boundaries of pedestrian routes
- furniture to be visually contrasting with the surroundings and be apparent in all lighting conditions
- Bollards are not to be used unless absolutely necessary. A minimum width between bollards of 1000mm is required.
- Bollards to be a minimum of 1000mm high with a 150mm deep contrasting strip at the top
- each free-standing post or column within a circulation area will incorporate a 150mm wide visually contrasting band whose bottom edge is 1500mm above ground level

1 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
2 Inclusive Mobility, Department for Transport, 2002
08. Signage

**Design Intent**

The signage strategy for the Queen Elizabeth Olympic Park will be an important part in ensuring that everyone can easily navigate their way around. It is imperative that all signage is accessible for as wide a range of visitors as possible.

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

Signage is a very important access tool for people with a hearing impairment. Visually impaired people and people with language and learning difficulties require signs to be designed in specific ways. By addressing the needs of disabled people the signage system becomes more accessible to everyone.

**Inclusive Design Guidelines**

Wayfinding used to navigate unfamiliar environments should not rely exclusively on text-based signage, but utilise more information systems, for example:

- colour
- simple and careful language
- identification and confirmation as well as directional information
- simple symbols
- guidance paving
- architectural elements including public art works
- smart technology where appropriate

For specific signage design guidance reference should be made to the Sign Design Guide\(^1\)

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# 09. Lighting

## Design Intent

Appropriate lighting will be critical to the success of the Queen Elizabeth Olympic Park and to help create safe neighbourhoods.

Appropriate lighting conditions are important for people with a hearing impairment who rely on lip reading to communicate and for partially sighted people to maximise their field of vision. Lighting also has security implications, in particular, where CCTV cameras are used.

### Natural Light

Bright sunlight can make it harder for people to detect and avoid potential hazards, especially those with poor contrast with their backgrounds, for example, structural glass.

Reflections can cause visual confusion and reflected glare can dazzle a person. This may cause them to move to avoid an ‘object’ which could potentially see them unwittingly bump into another.

### Artificial light

Particular attention should be paid to main circulation routes, venue and amenity 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.

The level and source of lighting is important to people who need to lip read.

Lighting must illuminate both the horizontal and vertical plane to facilitate lip reading and the reading of signs.

The use of lighting for effect must be balanced with the need to maintain a safe environment, particularly for people with a visual impairment.

## Inclusive Design Guidelines

Artificial lighting requirements:

- lighting is needed to illuminate routes, avoiding glare, confusing reflections and shadows
- transitional lighting to 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 provided on pedestrian routes
see also guidance on emergency lighting in IDS 51: Emergency Egress

1 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
2 Approved Document M (ADM) of the Building Regulations 2010
3 Inclusive Mobility, Department for Transport, 2002
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 vehicle parking spaces for disabled people across the Queen Elizabeth Olympic Park.

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.

Inclusive Design Guidelines

Blue Badge parking bays will:

- be in accordance with Diagram 03 below
- have dimensions of 2.4 x 4.8m
- have a 1.2m access zone between bays
- have a 1.2m safety zone for boot access
- have the international symbol of disability painted 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

Car parking spaces will meet the following criteria:

- Blue Badge bays to be within 50m of building entrances

The ratio of Blue Badge bays provided for public buildings:

- minimum one space for each employee who is a disabled motorist plus
  - 6% of the total capacity for visiting disabled motorists or
  - 8% for large sports facilities including any facility with a 50m swimming pool
- walking surfaces will conform to IDS 05: Walking Surfaces
- the maximum acceptable height of vehicle is shown on the approach to the car park
- directional signage to the accessible parking bays will be provided from the car park entrance
- where there is a pavement between the parking bays and the access route, a dropped kerb is to be provided alongside the bays and it should preferably be set off from the line of pedestrian travel
- If it is not possible to locate accessible spaces within 50m of a principal accessible entrance or accessible transport link then accessible seating with both arm rests and backrests should be provided to create resting areas every 50 meters.
- A drop-off/pick-up bay must be provided at all public buildings. This should be
sheltered where possible and immediately adjacent to the main entrance of the building.¹

- Drop-off/pick-up spaces to have level access to the main building entrance. While dropped kerbs and level access is important Hackney style taxis and some bus/coaches will require a section of raised kerb in order to deploy their ramps at a suitable gradient
- Consideration to be given to making provision for people ‘driving from their wheelchair’. 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.

**Multi-Storey Car Park:**

- accessible parking spaces to be clearly sign-posted and at the same level as the principal, or alternative, accessible 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 50m³
- a suitable passenger lift to be provided, between levels (see IDS 39: Passenger Lifts)³
- signage to be provided, indicating the accessible route to accessible ticket machine(s), to the lift(s), to the storey and final exits³

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 designated parking bays and through to exit to be 2600mm⁴
- 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

**Cycle Racks**

- provide space for adapted cycles and tandems as they are often wider than other bicycles and require more room between racks

Diagram 03: Accessible Parking Layout
1 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
2 Accessible Sports Facilities, Sport England, 2010
3 Approved Document M (ADM) of the Building Regulations 2010
4 Inclusive Mobility, Department for Transport, 2002
11. Assistance Dog Facilities

Design Intent

Assistance dog facilities were provided for venues in the Park during the Olympic and Paralympic Games. It will be important that these essential facilities are maintained in legacy. 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.

The visit times to the Queen Elizabeth Olympic Park may be considerable and it will therefore be essential to provide suitable areas for assistance dogs to be watered and relieve themselves. It will also be important to provide appropriate facilities for assistance dog owners at these areas, such as signage and seating.

Inclusive Design Guidelines

The criteria for marked-out assistance dog facilities, for example, associated with larger public buildings including venues includes:

- typically located externally
- 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 to assist drainage
- entrance gate to be accessible to wheelchair users and have a minimum clear manoeuvring space 1500mm x 1500mm to allow wheelchair users to turn round
- 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
- 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 and around neighbourhoods on the Park, it will be important to ensure that space and facilities, such as dog waste bins, are made available for all owners to walk their dogs responsibly, including assistance dog owners.

1 Guidance on the provision of spending facilities for guide dogs and other assistance dogs, Guide Dogs
Residential Developments

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

The Legacy Corporation is committed to creating Lifetime Neighbourhoods where all members of the community can live together throughout their lives with ease and in comfort. This applies to homes, public buildings and spaces and all services and facilities.

Recent studies including the ‘Lifetime Neighbourhoods’ report published by the Department for Communities and Local Government (CLG) in December 2011 highlight that it is, ‘not just our homes, but also the neighbourhoods where we live that have a significant role in keeping us well and independent as we grow older’.

This same report defines a lifetime neighbourhood as having the following main components:

- **Resident empowerment** – supporting residents to develop lifetime neighbourhoods
- **Access** – both physical and virtual accessibility to enable residents to connect with other people
- **Services and amenities** – provide developments with a mix of residential, retail and employment uses and access to services such as health, post offices and banking
- **Built and natural environments** – physical access to key services and local greenspace
- **Social networks/well-being** – social, learning/training, volunteering opportunities that reflect the needs of different ages, cultures and ethnicities
- **Housing** – a range of affordable housing to meet changing needs

As well as considering the needs of disabled people, we must consider all members of the community including; older people, large families, families with young children and babies, people from diverse faith groups and different cultures, people that speak different languages and a combination of all of the above.

Current good practice housing design guidance focuses on adaptable housing to allow older people to live in their own homes longer (Lifetime Homes) and housing to accommodate wheelchair users (Wheelchair Housing Design Guide). However, 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.

The following guidance brings together the best of existing good practice design guidance (see Appendix 1 - Bibliography) to ensure that all housing developments being built on the Queen Elizabeth Olympic Park (QEOP) create a series of connected lifetime neighbourhoods that will be as successful in 30 years time as they will be on completion.
Services and Amenities

London Plan Policy 7.1 – Building London's Neighbourhoods and Communities states that, 'In their neighbourhoods, people should have a good quality environment in an active and supportive local community with the best possible access to services, infrastructure and public transport to wider London.'

The CLG report on Lifetime Neighbourhoods advocates neighbourhoods that offer a mix of residential, retail and employment uses to help meet the needs of diverse groups within the community. Supporting this approach, lifetime neighbourhoods have the potential to enable local authorities and residents to meet a range of parallel objectives towards environmental, economic and social sustainability.

Vital services embedded within neighbourhoods can contribute to how an age-friendly neighbourhood might look in the following ways:

- local access to shops (including post offices and banks);
- accessibility within shops;
- creating sociable spaces and places of exchange within neighbourhoods;
- providing opportunities for volunteering and employment;
- access to health care and provision of health services.

Further, providing community use spaces within housing developments are an important aspect of working towards lifetime neighbourhoods. These spaces can be run by members of the community for the community and can provide a wide range of important services while also creating opportunities and helping to establish a sense of community.

Creating Connected Environments

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. As expressed in the CLG ‘Lifetime Neighbourhoods’ report, 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 journeys;
- accessible toilet facilities;
- signage and streetscape design to help with orientation and wayfinding

Walkability in London has been defined in terms of the five C’s in the London Plan:

- Connected
- Convivial
- Conspicuous
- Comfortable
- Convenient

One way of achieving more convivial and comfortable routes around residential neighbourhoods is the use of shared space. Shared space can be used in tertiary
streets with minimal vehicular traffic to help create more child and community friendly streets and therefore help to create a better connected and walkable environment. However, the use of shared space remains a complicated issue and all proposals that incorporate an area of shared space are to be discussed with the Built Environment Access Panel (BEAP).

Good signage and logical street design can also help to deliver more legible routes and therefore promote walkability for older people as well as others, for example, people with dementia.
12. Rest Places in Residential Neighbourhoods

**Design Intent**

Rest places incorporating seating at suitable and regular intervals enable residents with mobility impairment to feel comfortable walking around their neighbourhood.

**Inclusive Design Guidelines**

- provide rest places incorporating seating at regular intervals no more than 50m apart within all new housing developments. Rest places to be obvious and clearly visible along main circulation routes, for example to/from shops and other local services
- have well designed, accessible seats and benches that complement the surrounding environment (See Design IDS 04: Seating/Rest Points)
- where possible have seating in areas naturally sheltered from the weather, in particular wind and rain
- seating to be located off main pedestrian routes as not to cause an obstruction, particularly along busy routes

13. Access to Public Toilets

**Design Intent**

Away from home toilets is a key feature of developing accessible environments. Many 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.

Providing access to good, accessible public toilets will be an important aspect of achieving lifetime neighbourhoods. The North Park and South Park Hub buildings will both provide accessible toilets that can be used by the general public and it will be important that other community facilities proposed consider the importance of providing accessible toilets for public use.

See IDS 44 – 46: Accessible Toilets

**Inclusive Design Guidelines**

- where residential 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 to indicate the location of accessible toilets available for public use around the Park (see IDS 08: Signage and IDS 14: Wayfinding and Orientation)
### 14. Wayfinding and Orientation

**Design Intent**

The repetition of building types and street patterns can make wayfinding and orientation around residential neighbourhoods difficult for some people including people with learning difficulties and cognitive impairment.

The Legacy Corporation will develop a detailed wayfinding strategy for the Park that will help to inform developers and ensure that a consistent and easy to use system is implemented across the site.

**Inclusive Design Guidelines**

- make good use of accessible directional signage (see IDS 08: Signage)
- avoid wayfinding signage gaps
- have uncluttered streetscapes with street names clearly visible and accessible
- create desire lines towards amenities to lead people in logical and accessible routes
- use existing, or create new landmarks, to help people with orientation i.e. trees, building facades, public art
- consider smartphone apps and other new wayfinding technologies as they become available at key locations around the Park
- have clearly defined and appropriately indicated pedestrian crossing points
- make good use of tactile paving as and where required including the use of guidance paving (see IDS 06: Tactile Paving)

### 15. Shared Space

**Design Intent**

Shared space aims to improve pedestrian movement and comfort by reducing the dominance of motor vehicles and enabling users to share the space rather than follow the rules implied by more conventional road priority management systems and devices.

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

There is no such thing as a definitive shared space design as each site will be different with individual characteristics. It is also worth noting that a shared space...
doesn’t automatically mean using a shared or ‘level’ surface. It will therefore be important to ensure that any proposed shared space scheme/design is presented to the BEAP for comment.

Inclusive Design Guidelines

General Design Considerations:

- create a ‘gateway’ into the area of shared space that differentiates the space to the main roadway. 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
- in any proposed large open areas of shared space guidance paths should be created to lead pedestrians in safe and logical routes
- use tactile blister paving to demarcate crossing points at junctions leading to shared space streets
- enforce a vehicle speed of between 10 – 15mph with 10mph preferred (Note: DfT recommend a vehicle speed of no more than 20mph and preferably less than 15mph)
- 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 guidance
- controlled crossings are the preferred solution to give confidence in use, particularly for people with a visual impairment. However, uncontrolled crossings are often used in areas of shared space and where these are proposed the BEAP are to be consulted on the design
- uncontrolled 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, safe pedestrian comfort zones must be provided and clearly defined on each side of the street.

- 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 bins;
- the use of surface finishes including tone and texture (for example, tactile paving)
to clearly define safe pedestrian comfort zones

- the boundary between safe pedestrian comfort zones and shared routes can be further defined by innovative 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
- the design and layout of the space to discourage parking within pedestrian comfort zones
- avoid complicated surface patterns. Any patterns should not cause confusion with regard to guidance paths/delineator strips

**Cycle parking:**

- well designed and appropriately positioned cycle stands will help to discourage informal cycle parking and help prevent obstructions along pedestrian routes
- cycle parking stands can be used to help demarcate pedestrian comfort zones along with other items of necessary street furniture
- cycle stands to be clearly identifiable when not in use and contrast visually with their surroundings

**Seating:**

- have seating located along shared space streets as with other pedestrian routes around the Park at approximately 50m intervals
- seating is very important to increase pedestrian dwell times and can also be used to help demarcate pedestrian comfort zones along with other items of street furniture
- see IDS 12: Rest Places in Residential Neighbourhoods

**Lighting:**

- lighting should be an integral part of the design and to help reduce clutter it may be possible to incorporate lighting with other items of street furniture
- create a sense of place both during the day and night
- produce an even spread of light (see IDS 09: Lighting)

**Drainage:**

- excessive crossfalls to be avoided (no more than 1:50)
- where drainage gratings are necessary, they are to be located off main pedestrian routes where possible (see IDS 05: Walking Surfaces)

**Alternative Routes:**

- plan to ensure that through traffic will prefer to take alternative, primary routes rather than use shared space streets as a short cut, further minimising traffic flow

**Parking and loading strategy:**

- the location of accessible Blue Badge parking spaces is an important consideration to ensure they are as close as possible to main entrances and
BEAP are to be consulted in accessible parking location decisions

- parking restrictions need to be clear to motorists without necessarily using painted yellow lines
- 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
- Hackney style cabs and some bus/coaches will require a raised kerb in order to deploy their ramp at a suitable gradient to pick up/drop off wheelchair users

Diagram 11: Shared Space Example

- Pedestrian comfort zone min. 1200mm wide
- When level, corduroy paving can help define pedestrian comfort zones
- Crossing points indicated with appropriate blister paving
- In addition, pedestrian comfort zones can be further defined by logical and consistent placement of street furniture including seating, planters and trees where appropriate

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1 Guidance on the use of Tactile Paving Surfaces, Department for Transport, 1998
2 Effective Kerb Heights for Blind and Partially Sighted People, UCL commissioned by Guide Dogs, 2009
3 Local Transport Note 1/11 – Shared Space, Department for Transport, 2011
### 16. Cycle Lanes

#### Design Intent

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 with a sensory impairment) confidence to use the circulation route as it helps remove the uncertainty of use.

#### Inclusive Design Guidelines

Considerable work has been done on the separation of cycle lanes and pedestrian routes for London 2012. The Built Environment Access Panel (BEAP) was heavily involved in the development of the Greenway. As such, this is seen as good practice and for continuity and consistency the same design principles should be applied throughout the Park on circulation routes with high levels of usage by both pedestrians and cyclists.

**Images of the Greenway cycle/pedestrian route**

**Design guidance:**

- have a corduroy tactile surface to indicate to people with a visual impairment what side to enter
- 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
- the corduroy tactile paving to extend for 2400mm at the entry/exit and at junctions on both the pedestrian and cyclists sides
- a raised, central delineator strip is provided to help people with a visual impairment keep to the pedestrian side
- a cycle symbol marking should be provided on the appropriate side at all entry/exit points and any junctions with footways or other shared routes
- using different coloured surfaces and materials (i.e. bitumen and concrete) on the different sides of the route can provide a useful additional cue
- for more information on design and layout of tactile paving at junctions see the
DfT guidance on the use of tactile paving surfaces

Other useful DfT guidance includes:

- LTN 2/08 – Cycle Infrastructure Design, October 2008
- LTN 1/12 – Shared Use Routes for Pedestrians and Cyclists, September 2012

1 Guidance on the use of Tactile Paving Surfaces, Department for Transport, 1998
17. Inclusive Play

Design Intent

Providing regular play areas for children of all abilities will further contribute to creating a lifetime neighbourhood. Inclusive play ensures that all children and young people of any ability have equal access to and equal participation in local play, childcare and leisure opportunities. This includes the provision of accessible play equipment that can be used easily by all children.

Inclusive Design Guidelines

Play areas can be considered in a similar way to communal open space which the London Housing Design Guide (LHDG) recommends is:

- overlooked by surrounding development;
- accessible to wheelchair users and other disabled children and adults;
- designed to take advantage of direct sunlight;

Design requirements:

- play spaces to be close to accessible parking spaces and public transport links and be accessed via accessible pedestrian approach routes;
- all play spaces to be accessible by wheelchair users, children and adults including accessible pathways throughout the space;
- 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);
- paths to provide a good hard-standing surface with good drainage as not to flood during wet weather;
- ensure that planting 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 to be located off main circulation routes;
- where any picnic benches/tables are provided some are to be accessible and all are to be located in an area that is accessible for wheelchair users;
- have areas that offer protection from the weather, in particular the wind and rain. These could be incorporated with seating areas;
- any direction/wayfinding signage or interpretation to be accessible with consideration given to providing information in alternative formats such as other languages, tactile and Braille;
- where there are areas of planting, have some raised plant beds to allow wheelchair users to get close to plants/flowers/vegetables and take part in any planting activities;
- consider providing access to toilet facilities including accessible toilets. This may
be through arrangements to use local business facilities such as a local cafe or
co-locating play spaces with community buildings that provide public toilet
facilities

- provide 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. Create play spaces that engage children and encourage them to
  learn as they play

- provide a range of play challenges to meet various different ages and abilities

- where appropriate consider providing installations that children can help to create
  and develop

- create a variety of different play spaces each with a different feel and look and
  create spaces that can be used by groups of children as well as areas for
  independent play

- incorporate space for more traditional games such as; football, basketball and
  table tennis. Elements of more traditional games may be represented or
  incorporated in different and unique ways

- where a drinking fountain is provided ensure that it is accessible for all including
  wheelchair users

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1 Shaping Neighbourhoods: Children and Young People’s Play and Informal Recreation, Draft
SPG, GLA, 2012
Provision of Accessible and Adaptable General Needs and Wheelchair Accessible Housing

When considering the provision of housing on the Queen Elizabeth Olympic Park (QEOP) it will be 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. With adaptability built in for future improvement, it will be important to make sensible and achievable accessible provision initially.

There will be a wide range of individual requirements from older people with arthritis or Alzheimer’s to more severely disabled people with multiple impairments. As the first occupants are often unknown, homes should be designed to be easily adaptable.

All developments are to conform to the London Plan and therefore meet the Interim London Housing Design Guide, 2010 (LHDG) or the Housing SPG if adopted, both of which incorporate the Lifetime Homes Standards and advice on wheelchair accessible housing.

Recommended Housing Provision

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>Guidance Required</th>
<th>Provision Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Needs Housing</td>
<td>• The London Plan and associated SPGs</td>
<td>All housing (100%)</td>
</tr>
<tr>
<td></td>
<td>• Local Planning Policy (as appropriate)</td>
<td>In addition, there is a site wide target of 42% family housing (defined as 3-</td>
</tr>
<tr>
<td></td>
<td>• Approved Document M of the Building Regulations</td>
<td>bedroom or above)</td>
</tr>
<tr>
<td></td>
<td>• London Housing Design Guide or Housing SPG if adopted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Habinteg Lifetime Homes requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In addition, consideration to be given to:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Draft BS 9266:2012 Design of accessible and adaptable general needs housing – Code of practice</td>
<td></td>
</tr>
<tr>
<td>Wheelchair Accessible Housing</td>
<td>In addition to the standards listed above:</td>
<td>10% across all typologies and tenures</td>
</tr>
<tr>
<td></td>
<td>• Habinteg Wheelchair Housing Design Guide</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In addition, consideration to be given to:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• South East London Housing Partnership wheelchair homes design guidelines</td>
<td></td>
</tr>
</tbody>
</table>

In addition, faith and culture considerations have been incorporated throughout our housing guidance.
## Approaching the Home

### 18. Car/Cycle Parking (Communal and Private)

#### Design Intent

It is important for many disabled people and in particular people using mobility equipment that parking makes getting into and out of the vehicle as easy as possible. As well as private parking spaces, this is equally important to consider for visitors, particularly where there is no on street parking available.

#### Inclusive Design Guidelines

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

All parking spaces to be on a level surface with:

- no gradient exceeding 1:60
- no drainage crossfall exceeding 1:50
- slip-resistant surface materials

### Communal/Shared Parking

Communal and/or shared accessible parking spaces should be (also refer to IDS 10: Parking for General Public):

- 3600mm wide to give users good, clear manoeuvring space clear and allow doors to be opened fully when entering/exiting the vehicle (Note: Lifetime Homes Standards require a minimum width of 3300mm with 3600mm recommended)
- 6000mm long to assist people when accessing the rear of their vehicle (Note: Lifetime Homes Standards require a minimum length of 4800mm with 6000mm recommended)
- access route from parking to be a minimum of 1200mm wide

### 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 (Note: Inclusive Mobility will permit a minimum width of 2700mm where direct access to the footway/pavement is possible with 3600mm preferable)
- 6600mm long when parallel to the kerb
- on street accessible parking bays at an angle to the kerb should be a minimum of 3600mm wide and 6000mm long (Note: Inclusive Mobility will permit a minimum length of 4200mm)
There should be ramped or level access from the parking bay to the pavement, where necessary by use of a dropped kerb.

**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.

**On Plot (Private) Parking**

Where a dwelling has car parking within its individual plot (or title) boundary, at least one parking space length should be capable of width enlargement to achieve an access path adjacent to and level with it.

On plot, private parking to be:

- a minimum of 2400mm wide capable of extension to 3600mm - 2400mm wide space with a 1200mm wide access path (Note: Lifetime Homes Standards require a minimum available width of 3300mm wide - 2400mm plus 900mm access path - with 3600mm recommended)
- a minimum of 4800mm long (Note: where possible having the space capable of extension to 6000mm long (incorporating a 1200mm deep transfer space) will accommodate disabled people who require access to the rear of the vehicle to retrieve mobility equipment)

Where car ports are the only parking for the dwelling they are to have the same dimensions as above.

Garages should be a minimum of 3600mm wide and where direct access to the home is provided, this should be level to accommodate people unable to use steps.

**Cycle Storage/Racks**

- where cycle storage space is 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 which are often wider than standard cycles

**Note:** A parking management plan will be submitted for planning approval for each development zone within the LCS and this will address the provision and location of accessible Blue Badge parking. Parking areas should be designed to be flexible and able to increase provision of accessible spaces as required.

**Wheelchair Accessible/Adaptable Inclusive Design Guidelines**

Car parking for wheelchair accessible homes:

- each designated wheelchair accessible or adaptable home will have an associated accessible parking space with level access to/from the dwelling as close as possible to the dwelling entrance and not exceeding 50m
- minimise travel distances from parking to/from dwellings
accessible Blue Badge parking spaces will also be provided in close proximity to each residential block entrance or lift core in addition to those provided for each wheelchair accessible/adaptable home. These will also be within a 50m travel distance

car parking space a minimum of 3.6m wide x 5.4m long. Increasing the overall dimensions will further assist people using mobility equipment to get in and out of vehicles with ease

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 covered be at a minimum height of 2.2m (Note: BS 8300 Section 4.3 recommends a garage height of 2.6m to permit the use of a wheelchair hoist)

where a garage is provided the garage door should operate automatically (i.e. via a key fob or proximity sensor)

individual garage size for a wheelchair user accessible/adaptable dwelling to be; 4200mm wide x 5400mm long with a height clearance when the garage door is open (raised) a minimum of 2.1m (Note: BS 8300 Figure 4 recommends a garage length of 5700mm)

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 2.6m recommended. The additional height clearance will accommodate disabled people using high-top vehicles and others that may store mobility equipment, including wheelchairs, on the car roof. It will also accommodate vehicles using a hoist to load/unload mobility equipment. 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.

Consideration should also be given to secure parking for mobility scooters. Mobility scooters are used by many older people as well as disabled people and storage for these devices can be problematic, particularly in flats/apartments.

Space should be allocated for secure scooter parking/storage including access to a power supply to enable scooter battery re-charging.

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1 Lifetime Homes Standards (16 Criteria), Habinteg, 2010
2 Inclusive Mobility, Department for Transport, 2002
3 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
5 Wheelchair Housing Design Guide, Habinteg, 2006
### 19. Approach Routes to Dwellings

#### Design Intent

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.

#### Inclusive Design Guidelines

Approach routes to all entrances of the dwelling (including from any areas of parking) should be kept to a minimum and be level or gently sloping:

- have a level approach no steeper than 1:60\(^1\) with any crossfall necessary for drainage to be no steeper than 1:50\(^2\)
- approach routes to communal entrances to be no more than 50m\(^1\)
- if approach routes are in excess of 50m then justification including reasoning and rationale to 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
- Historic cobbles are not to be used. However, accessible alternatives such as flush stone setts can be used to good effect

#### Approach Route Widths - Communal

- communal paths to be a minimum of 1200mm wide\(^1\) and will require passing places 1800mm wide at regular intervals and within the line of sight. 1800mm is the recommended overall path width as this will allow two wheelchair users to pass each other with a width of 2m preferable
- wider routes may be required in areas with high levels of pedestrian movement and where bus stops and other street furniture such as seating, trees, planters and ATMs are located
- as far as possible pedestrian routes should be overlooked and well lit to create a feeling of safety

#### Approach Route Widths – Private

- paths within the curtilage of a dwelling to be a minimum of 900mm wide (1200mm is the preferred width to give all users greater manoeuvring space)

#### Stepped Access Routes

Steps on the access route to a dwelling will be in accordance with IDS 37: Steps

#### Sloped Surfaces and Ramps

Where necessary, any gentle slope or ramped area will be designed in accordance
with IDS 01: Graded Routes and IDS 02: Ramps.
- level landings should be provided at the top and bottom of all sloped routes as well as intermediate landings.
- level landings should be a minimum of 1500mm long clear of any door swing

Wheelchair Accessible/Adaptable Inclusive Design Guidelines

- provide a smooth, slip resistant route to dwelling entrances
- where ramps are unavoidable they should aim to have a gradient of 1:20 or as close as possible and must not exceed 1:15

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1 Lifetime Homes Standards (16 Criteria), Habinteg, 2010
2 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
## Entrances

### 20. Entrances (Communal and Private/Dwelling)

#### Design Intent

It is important that all entrances are easily identifiable and doors are easy to use. Easily identifiable entrances will benefit all users and in particular people with a visual impairment and people with cognitive impairment or learning difficulties. Making entrance doors easy to use will also benefit all users and in particular people with reduced or limited manual dexterity and people with mobility impairment including mobility aid users.

#### Inclusive Design Guidelines

All main entrances to be clearly visible and identifiable from the public realm on approaches and be properly illuminated at all times.

**External Lighting to Entrances:**

- Lighting should either be on permanently (during hours of darkness) or sensor activated
- Achieve a luminance range of 100-200lux at locks and access controls
- Lit with fully diffused luminaries to reduce glare

**External Entrance Landing:**

- Have a level external landing at individual dwellings 1200mm x 1200mm
- At communal entrances the level landing should be 1500mm x 1500mm
- Level landings should be clear of any door swings

**External Entrance Canopy:**

- Have adequate weather protection to an individual dwelling a depth of 900mm (Note: Lifetime Homes Standards require a minimum depth of 600mm with 900mm recommended)
- At a communal entrance have weather protection a depth of 1200mm (Note: Lifetime Homes Standards require a minimum depth of 900mm minimum with 1200mm recommended)
- The width should be the width of the door plus any associated controls

**Door Entry and Call Systems:**

- Entry controls to be located on the latch side of the door
- Controls to be centred between 1000mm to 1200mm AFFL

**Main Entrance Door:**

- Have level access over the threshold with a maximum threshold upstand of 15mm and maximum slope of transition units of 15 degrees (this applies to all...
entrances including balconies and roof terraces)

- have a minimum effective clear opening width of 800mm for both communal and private/dwelling entrances. This is to be increased to 825mm when at right angles to an access route at least 1200mm wide
- 300mm clear space at the leading edge of the door on the pull side
- door to be secured by single-handed locking system at a height of 900mm
- doors with a letterbox should allow the door to open fully with a letter cage fitted

For door thresholds refer to IDS 34: Entrances and for door opening forces refer to IDS 35: Doors.

### Wheelchair Accessible/Adaptable Inclusive Design Guidelines

#### External Entrance Landing:

- entrance landings to be 1800mm x 1800mm providing a 1200mm space clear of any door swing (Note: The Wheelchair Housing Design Guide requires a minimum landing of 1500mm x 1500mm with 1800mm x 1800mm recommended)
- the leading edge to the entrance door to be 500mm (Note: The Wheelchair Housing Design Guide requires a minimum leading edge of 450mm with 500mm recommended)

#### External Entrance Canopy:

- entrance door canopy will provide weather protection and have a minimum depth of 1200mm and a minimum width of 1500mm
- canopy to be at a height of 2.3m (or as close as possible to ensure it is effective)
- canopy to extend beyond the lock side (leading edge) by a minimum of 300mm with 500mm recommended

#### Main Entrance Door:

- minimum effective clear opening width to a dwelling of 900mm (Note: The Wheelchair Housing Design Guide requires a minimum door opening width of 800mm with 900mm recommended)
- lock to be between 800mm – 900mm AFFL
- have a maximum opening/closing force of 20N

#### Secondary Entrance Door (i.e. back door):

- have an external level landing of 1500mm x 1500mm with 1200mm clear of the door swing
- minimum effective clear door opening width of 900mm (Note: The Wheelchair Housing Design Guide requires a minimum door opening width of 800mm)
- if French style ‘patio’ doors are used then at least one of the double doors to provide an effective clear opening width of 900mm (Note: The Wheelchair Housing Design Guide requires a minimum effective clear opening width of 800mm)
- sliding doors that require a raised threshold are not to be used as these can be
more difficult to use in particular for wheelchair users\(^4\)
- latches, handles and locks to be located between 800mm and 1000mm AFFL
- any external lighting to be automatically operated for example by passive infra-red (PIR) automatic sensors\(^3\)

**Dealing with Callers:**
- there is to be a minimum clear space 1500mm wide x 1800mm long inside the front door\(^2\)
- have a good clear space at the leading edge of the door on the inside\(^2\) (Note: The Wheelchair Housing Design Guide requires a minimum clear space of 300mm with 700mm recommended)
- provide a space 1200mm wide x 1700mm long to store and charge a powered wheelchair or scooter\(^2\). A charging point should be provided at this space. It is also important to maintain a clear hallway width past this space in accordance with IDS 22: Hallways
- have a letter cage to collect letters at 700mm AFFL that does not affect the effective clear opening width of the door\(^3\)

1. Lifetime Homes Standards (16 Criteria), Habinteg, 2010
3. Wheelchair homes design guidelines, South East London Housing Partnership, 2009
Internal Circulation in Communal Areas and Dwellings

21. Doors

Design Intent

It is important that movement through all doorways is easy and convenient to the widest possible range of people, including people using mobility aids, wheelchair users as well as people moving furniture or other objects. Poorly designed doors and doorways can often pose a significant barrier to many disabled people.

Inclusive Design Guidelines

As a general principle, narrower hallways and landings will need wider doorways in their side walls.

All doors to have a clear leading edge of at least 300mm. This is particularly important on the pull side of the door.

Communal:

The minimum effective clear opening width of any communal door is to be 800mm (825mm when at right angles to an access route at least 1200mm wide)\(^1\).

Dwellings:

Internal dwelling door width requirements apply to all internal dwelling doors with the exception of storage/cupboard doors unless the cupboard is a walk-in\(^1\).

<table>
<thead>
<tr>
<th>Internal Dwelling Doors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direction and width of approach</td>
</tr>
<tr>
<td>Straight-on (without a turn or oblique approach)</td>
</tr>
<tr>
<td>At right angles to a hallway/landing at least 1200mm wide</td>
</tr>
<tr>
<td>At right angles to a hallway/landing at least 1050mm wide</td>
</tr>
<tr>
<td>At right angles to a hallway/landing less than 1050mm wide (minimum width 900mm)</td>
</tr>
</tbody>
</table>

Wheelchair Accessible/Adaptable Inclusive Design Guidelines

- all internal dwelling doors to have a clear effective opening width of 900mm\(^2\) (Note: The Wheelchair Housing Design Guide requires a minimum door opening width of 775mm when approached straight on or off a corridor a minimum of
1200mm wide with 800mm recommended

- a leading edge of 550mm is recommended\(^3\) (Note: The Wheelchair Housing Design Guide requires a minimum 300mm leading edge with 550mm recommended)
- provide space to turn between doors at an angle to each other (at least 400mm from door to corner)\(^3\)
- where sliding doors are used, provide space beyond the doorway at the latch side for sideways approach and operation a minimum of 300mm\(^3\)

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1 Lifetime Homes Standards (16 Criteria), Habinteg, 2010
2 Wheelchair homes design guidelines, South East London Housing Partnership, 2009
### 22. Hallways

#### Design Intent

It is important that hallways are designed to be as convenient and easy to use for the widest possible range of people. Narrow hallways pose a particular problem for many disabled people including people using mobility aids and wheelchair users.

#### Inclusive Design Guidelines

##### Communal:
- minimum width of any hallway in a communal area to be 1200mm\(^1\) with 1500mm preferred\(^2\) particularly where corridors serve dwellings on each side and where wheelchair accessible dwellings are provided

##### Dwelling:
- Minimum width of any hallway in a dwelling to be\(^1\):
  - 900mm when no doorways in its side walls
  - 1050mm when there are doorways on the side walls with a minimum clear opening width of 775mm
  - 1200mm when there are doorways on the side walls with a minimum clear opening width of 750mm

##### Wheelchair Accessible/Adaptable Inclusive Design Guidelines
- minimum width of any hallway in a dwelling to be 1200mm (to allow a 90° turn)\(^3\) with a hallway width of 1500mm preferred as it will allow a wheelchair user to turn 180° (Note: The Wheelchair Housing Design Guide requires a minimum of 900mm wide where no turning or door approach is required, with 1000mm recommended. Where users need to turn 90° a minimum clear width of 1200mm is required. Where users need to turn 180° a minimum clear width of 1500mm is required.)

#### Faith and Culture Considerations

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.
- 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)\(^4\)

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\(^1\) Lifetime Homes Standards (16 Criteria), Habinteg, 2010
3 Wheelchair homes design guidelines, South East London Housing Partnership, 2009
4 Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
# 23. Stairs

## Design Intent

It is important that all stairs are designed to be easy and comfortable to use for the widest range of people regardless of whether or not a lift is provided. It is important to recognise that some ambulant disabled people will actually prefer to use stairs than a ramp when given the choice. Ensuring a consistent stair design also makes them easier for many people to use and in particular people with a visual impairment.

## Inclusive Design Guidelines

### Communal stairs

Communal stairs providing a principal access route to a dwelling should be easy to use (see IDS 37: Steps):

- uniform rise not exceeding 170mm
- uniform going not less than 250mm
- handrails that extend 300mm horizontally beyond the top and bottom nosing
- handrails height 900mm above the pitch line of the stairs
- visually contrasting step nosings on both the riser and the going
- closed risers – stairs with open risers are not to be used

### Dwelling stairs

Stairs in a dwelling should be able to accommodate the installation of a seated stair lift without significant alteration or reinforcement:

- have a clear width of at least 900mm when measured at 450mm AFFL
- a straight flight is preferred to make stair lift installation easier and more cost effective
- have adequate space at the top and bottom of the stairs to ‘park’ the stair lift chair
- have an appropriate power supply in close proximity to the stairs

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1. Lifetime Homes Standards (16 Criteria), Habinteg, 2010
2. Lifetime Homes Design Guide, Habinteg, 2010
### 24. Lifts

**Design Intent**

Lifts are obviously an essential feature to provide access for people unable to use stairs such as wheelchair users and some ambulant disabled people. Lifts will also accommodate older people, families with young children and people carrying large bags or shopping.

It is important that where any dwelling or dwellings are reached by a lift that it has been sized appropriately and is accessible for all users including people using mobility equipment.

**Inclusive Design Guidelines**

**Communal Lifts:**

Communal lifts will be designed in accordance with IDS 39: Passenger Lifts.

With regard to provision, it is recommended that:

- where possible, lift access is provided to all dwellings above entrance level in accordance with Section 9.1 of Approved Document M of the Building Regulations which states that, ‘the objective should be to make reasonable provision for disabled people to visit occupants who live on any storey’
- in larger housing blocks with four or more storeys, 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
- where lift access is not provided initially, the design should enable provision at a later date by incorporating the space and infrastructure necessary

**Dwellings:**

In addition to having stairs that are able to accommodate the installation of a seated stair lift, a dwelling of two or more storeys should also identify a suitable route for a wheelchair accessible through-the-floor lift from the entrance level unless the entrance level of the dwelling contains; the living accommodation, the kitchen, a main (twin or double) bedroom and a bathroom meeting the requirements of IDS 29: Bathrooms.

- the aperture size for the route through the floor to be a minimum of 1000mm x 1500mm with this area being clear of services
- where the identified lift route within the dwelling passes through a concrete floor, a ‘knock out’ panel should be pre-formed within the floor
- when the potential arrival point for the lift arrives directly into a bedroom, a compromised room layout would be expected. However, as a basic minimum the room should still be able to function as a single bedroom
- if the lift route is to arrive directly into a bedroom, the dwelling must have at least one bedroom that remains functional as a double bedroom
- provide an electrical point at the identified route to further assist future installation\(^1\)

**Note:** a non-enclosed or partially enclosed platform lift (conforming to BS 6440) is limited to 3m of travel.

**Wheelchair Accessible/Adaptable Inclusive Design Guidelines**

- in dwellings with more than one storey, provide a powered domestic lift in accordance with good practice guidance to allow level access to all storeys\(^3\)
- have a clear 1500mm turning circle at the entrance to the lift on all storeys\(^4\)
- internal dimensions to be a minimum of 1120mm x 790mm (see good practice guidance including BS 5900:2012 and BS 6440:2011)\(^4\)

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\(^1\) Lifetime Homes Standards (16 Criteria), Habinteg, 2010  
\(^2\) Approved Document M (ADM) of the Building Regulations 2010  
\(^3\) Wheelchair Housing Design Guide, Habinteg, 2006  
\(^4\) Wheelchair homes design guidelines, South East London Housing Partnership, 2009
Within the Home

In accordance with the London Housing Design Guide (LHDG), or Housing SPG if adopted, 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.

25. Living Room/Space

Design Intent

A living room or living space is defined in Lifetime Homes\(^1\) as any permanent living room, living area, dining room, dining area (i.e. within a kitchen/diner), or other reception area that provides seating/socialising space for the household and visitors.

It is important to provide accessible socialising space for all members of the household as well as visitors who are less able to use stairs.

Inclusive Design Guidelines

- dwellings with three or more bedrooms should have two living spaces, for example a living room and a kitchen-dining room and both rooms should have external windows. If a kitchen is adjacent to the living room, the internal partition between the rooms should not be load-bearing, to allow for reconfiguration as an open plan arrangement\(^2\).
- a living room/space to be provided on the entrance level of every dwelling\(^3\).
- entrance level is defined in Lifetime Homes\(^3\) as the storey containing the main entrance door. This will usually be the ground floor of a house, or the storey containing the entrance door of a flat approached by a communal hall, stair or lift. Where there are no rooms on the storey containing the main entrance door (e.g. flats over garages or shops) the first storey level containing a habitable or non-habitable room can be considered the entrance level.

Circulation Space:

- living rooms/spaces to show a clear turning circle of 1500mm or a turning ellipse of 1700mm x 1400mm clear of furniture layouts\(^3\).
- provide a clear minimum width of 750mm between items of furniture\(^3\).

Entrance Level Temporary Bed Space:

In homes of two or more storeys with no permanent bedroom at entrance level, provide space on the entrance level that could be used as a convenient temporary bed-space\(^3\). This is primarily to accommodate a member of the household that becomes temporarily unable to use stairs, for example, after a hip operation.
To achieve a suitable temporary bed space requires:

- a corner of a room (typically a living room/space) able to accommodate a single bed with a 750mm clear space to one side
- the room/space where the temporary bed is proposed should remain functional
- this area should be able to be screened
- provision of an electrical socket within the space is required
- the temporary bed space and identified through floor lift space can overlap
- ideally there will be a window and heat source within the temporary bed space area
- a room layout with a recessed area that can be used for the temporary bed space is preferred as this will allow better screening/separation

Wheelchair Accessible/Adaptable Inclusive Design Guidelines

Wheelchair user accessible dwellings to have a living room/space layout that allows a wheelchair user to approach furniture, circulate around it, transfer to seating and approach and operate doors, windows, equipment and service controls easily and without obstruction.

Living rooms/space to provide:

- a minimum clear passage of 800mm to be available between all items of furniture
- a 1400mm clear zone in front of any furniture (Note: The Wheelchair Housing Design Guide requires a minimum clear zone of 1000mm for side approach and a minimum of 1350mm for front approach for example to pull out drawers)
- sockets at height of 800mm AFFL and located at least 750mm from a corner

Faith and Culture Considerations

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.

- windows in living room to provide additional glazing at 500mm AFFL (+/- 50mm) to allow people to see out while seated on the floor
- family homes for 4 or more people (including dwellings with 3 or more bedrooms) to demonstrate how kitchen, living and dining space can be configured to meet the faith and cultural needs of the household including meeting the need for separation of space and opening up for large gatherings
- family homes for 4 or more people (including dwellings with 3 or more bedrooms) to demonstrate how two living room spaces accommodate space for visitors beyond the LHDG two visitor space allocation (for example for extended family visits and celebrations)
- include alcoves, deep window sills or bay windows within the main living room/space to provide space for a shrine or altar
1 Lifetime Homes Design Guide, Habinteg, 2010
3 Lifetime Homes Standards (16 Criteria), Habinteg, 2010
4 Wheelchair homes design guidelines, South East London Housing Partnership, 2009
5 Wheelchair Housing Design Guide, Habinteg, 2006
6 Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
### 26. Kitchens

#### Design Intent

It is important to ensure that kitchens can be used easily by all members of the household including people with mobility impairment and wheelchair users. This will not only accommodate disabled people but will also accommodate people as they grow older and people that may have a temporary impairment.

#### Inclusive Design Guidelines

**Design Requirements:**

- in locating services, it is recommended that flexibility and adaptability will allow a kitchen or kitchen-dining room to be provided at entrance level if not provided at entrance level initially
- kitchen layouts to be planned so that they can include a continuous run of units, unbroken by doorways including; a built in oven at an accessible height beside a minimum 600mm wide work surface, a hob beside a further minimum 600mm wide work surface and a sink/drainer
- this continuous run, uninterrupted by doorways should be 3600mm in length measured along the front face and can be straight, L shaped, or U shaped
- window positions will not impede on the oven or hob positions
- space for other typical ‘white goods’ and fittings should be available elsewhere in the kitchen so that only the oven and hob are contained within this particular length of run

**Circulation Space:**

- kitchens should have a clear width of 1200mm between kitchen unit fronts/appliance fronts and any fixed obstruction opposite (such as other kitchen fittings or walls). This clear 1200mm should be maintained for the entire run of the unit, worktop and/or appliance
- provide a clear 1500mm diameter circular or 1400mm x 1700mm elliptical manoeuvring space

#### Wheelchair Accessible/Adaptable Inclusive Design Guidelines

The design of the kitchen has a big impact on whether a wheelchair user can live independently at home. The kitchen must be large enough and easily adaptable to suit individual needs and requirements and enable a wheelchair user to move freely and safely.

**Design Requirements:**

- provide a height adjustable worktop with a surface height range between 750mm - 910mm and with a knee recess at least 600mm high
- provide a height adjustable shallow sink with an insulated bowl and clear knee
space underneath. Recommended height adjustable range between 700mm and 910mm. This will require flexible plumbing and should have an easily manipulated lever handle mixer tap with swivel arm

- height adjustable hob with a recommended height range between 700mm and 910mm with protected, knee space underneath. Flat hobs (such as ceramic hobs) may be easier for some people to use when transferring pots and pans
- ovens to be at an accessible height for wheelchair users with a reversible, side hung oven door. Ovens should not be located directly underneath hobs. In addition a heat resistant pull out shelf below the oven can be beneficial for many users
- provide remote and clearly labelled switches for appliances and equipment in an accessible location
- having a minimum 300mm wide clear worktop space on opening the fridge door can also be beneficial for many users

**Circulation Space:**

- provide a clear manoeuvring space not less than 1800mm x 1500mm

**Faith and Culture Considerations**

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.

- kitchen designs should include 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 accessible seat
- cooker ventilation to be set at 60 l/sec with adjustable controls to accommodate the removal of particularly aromatic cooking over long periods
- gas cooker hobs may be desirable and it is recommended that dwellings do not preclude the use of gas at the owner/tenants request
- family homes for 5 or more people to install six burner hobs

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1. Lifetime Homes Standards (16 Criteria), Habinteg, 2010
3. Wheelchair homes design guidelines, South East London Housing Partnership, 2009
4. Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
27. Beddrooms

Design Intent

It is important to ensure that bedrooms can be used easily by all members of the household and visitors including people with mobility impairment and wheelchair users. For people with mobility impairment, having appropriate clear manoeuvring and transfer space around the bed is essential.

Inclusive Design Guidelines

Circulation Space:

- the main bedroom should have a clear space 750mm wide to both sides and at the foot of a standard sized double bed. This bedroom should also allow a clear 1500mm diameter manoeuvring circle that can overlap the 750mm clear space
- other bedrooms should have a clear space of 750mm to one side of the bed and where it is necessary to pass the foot of the bed (for example, to open a window) a clear width of 750mm should also be provided at the foot of the bed

Wheelchair Accessible/Adaptable Inclusive Design Guidelines

Bedrooms in wheelchair accessible dwellings should accommodate the normal range of bedroom furniture and allow wheelchair users to enter, approach and transfer to beds as well as approach and use other furniture and operate windows.

Wheelchair accessible dwellings to:

- provide at least two bedrooms (one double and one single)
- allow direct access from the main bedroom to the bathroom (either via a door or a knock-out panel for future use)
- all bedrooms to have a clear 1500mm diameter turning circle/activity space clear of any door swing (Note: The Wheelchair Housing Design Guide requires a minimum 1200mm x 1200mm clear activity square)
- ensure easy access to both sides of a double bed and one side of a single bed with a clear transfer space 1100mm to approach and transfer (Note: The Wheelchair Housing Design Guide requires a minimum clear transfer space of 1000mm at the side of beds)
- minimum of 1000mm clear space at the end of the bed subject to the need to access wardrobes and drawers
- switches/sockets for equipment including TV aerials, a telephone and entry phone point should all be adjacent to the proposed bed location
- a pull cord, two-way light switch should also be located adjacent to the bed
- the main bedroom should have a horizontal ceiling that can accommodate future installation of a ceiling fixed hoist (this may require ceiling strengthening in some cases). The hoist run is to allow direct access from the main bedroom into the bathroom. Appropriate conduit and wiring should be provided in the ceiling to
further facilitate the future installation of a hoist

**Faith and Culture Considerations**

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.

- 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

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1. Lifetime Homes Standards (16 Criteria), Habinteg, 2010
3. Wheelchair homes design guidelines, South East London Housing Partnership, 2009
4. Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
# 28. WC and Shower Drainage

## Design Intent

Having either an accessible bathroom or an accessible WC with potential for showering facilities on the entrance level storey is essential. This will ensure that all members of the household and visitors have easy access to a toilet and if need be showering facilities. In dwellings with upper storeys this is important for people unable to use the stairs.

## Inclusive Design Guidelines

Dwellings designed for occupancy of five or more people should provide a minimum of one bathroom with WC and one additional WC\(^1\).

Where an accessible bathroom is not provided on the entrance level of a dwelling, the entrance level is to have an accessible WC with potential for a shower to be installed.

An accessible WC to have\(^2\):

- a minimum overall room size of 1450mm x 1900mm
- if the only accessible WC available on the entrance level then the door should be outward opening
- clear space of between 400mm - 500mm either side from the centre line of the cistern (including to the adjacent wall)
- the cistern flush handle should be located on the opposite side of the cistern from the adjacent wall. Where push buttons/panels are used they should be easily reached from the side of the WC away from the adjacent wall. Flush controls should be at a height of between 800mm – 1000mm AFRL
- an approach zone extending at least 350mm from the cistern centre-line towards the adjacent wall, and at least 1000mm from the cistern centre-line on the other side. This zone should extend forward from the front rim of the WC by at least 1100mm. The zone should also extend back at least 500mm from the front rim of the WC
- a basin may be located on the adjacent wall or adjacent to the cistern and should not project into the approach zone by more than 200mm
- the basin should have a clear frontal approach zone extending back for a distance of 1100mm from any obstruction under the basin. This zone will normally overlap with the WC’s approach zone
- if possible the basin should be reachable from the WC
- provide floor drainage for an accessible floor level shower (this may be provided at a later date). The floor construction should have shallow falls or allow easy installation of a ‘laid-to-fall’ floor surface in the future
- all fall gradients to be the minimum required for efficient drainage of the floor area and with minimal crossfalls
the floor drain to be located as far from the doorway as possible
walls in all bathrooms and WC compartments should be capable of fixing and supporting adaptations such as grabrails at any location and within a height range of between 300mm and 1800mm AFFL.

**Faith and Culture Considerations**

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.

- incorporate a shower hose, low level tap or bidet next to the toilet or install a ‘clos-o-mat’ toilet which has a bidet and drying system incorporated
- consideration given to the orientation of toilets and where possible ensure the toilet pan does not align with Mecca

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2. Lifetime Homes Standards (16 Criteria), Habinteg, 2010
3. Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
### Design Intent

It is important that all dwellings provide an accessible bathroom with ease of access to its facilities from the outset and that it has potential for simple adaptation to provide for different needs in the future. This will benefit all household members and visitors and will also allow people to live in their own homes longer as it is easier to make necessary adaptations.

### Inclusive Design Guidelines

- an accessible bathroom to be provided in every dwelling and on the same storey as and adjacent to a main bedroom
- the accessible bathroom to be on the entrance level/storey (or a level with potential for access by a through floor lift)

### Design Requirements:

- a minimum internal footprint of 2100mm x 2100mm to allow a degree of choice and flexibility
- if the only accessible WC available on the entrance level then the door to be outward opening
- WC and basin layout to be designed in accordance with IDS 28: WC and Shower Drainage
- flexible to accommodate either a bath or a floor level shower as required
- unless provided elsewhere in the dwelling, the bathroom is to have floor drainage to allow future installation of a floor level shower (even when a bath is fitted initially). For floor drainage requirements see IDS 28: WC and Shower Drainage
- a clear space 1100mm long x 700mm wide to be provided along the side of the bath (this manoeuvring space typically overlaps with approach space to the WC)
- where a floor level shower is provided initially instead of a bath, provide clear manoeuvring space either 1500mm diameter circle or an ellipse 1700mm x 1400mm clear of the door swing or any other obstructions
- the bathroom should allow direct connection with a main bedroom via a door if required initially or a full height knockout panel for future installation
- walls to be capable of supporting grabrails and the ceiling to be capable of supporting a hoist route into the bedroom

### Wheelchair Accessible/Adaptable Inclusive Design Guidelines

**Provision:**

- provide an accessible bathroom in all dwellings
- bathroom to have flexible/easily adaptable services to accommodate a floor level shower and a bath as required
• ensure provision for direct access from the bathroom to the main bedroom
• in dwellings intended for four or more persons provide a second accessible WC with basin
• where more than one accessible WC is provided they should be handed to provide a choice of left and right hand transfer
• the main bathroom is not to be en-suite unless there is secondary access from the hallway

**Design Requirements:**

**Manoeuvring Space**

- bathrooms to have a clear 1500mm x 1500mm square manoeuvring space clear of all fixtures and fittings
- the front edge of the toilet pan to the rear wall to be 800mm to facilitate side/lateral transfer with this dimension maintained including when the toilet cistern is enclosed (Note: The Wheelchair Housing Design Guide requires a minimum 750mm projection)
- transfer space to front of WC (and shower seat if applicable) to be a minimum of 1100mm clear of door swing and obstructions
- clear manoeuvring space between the centreline of the WC and the edge of the bath/opposite wall to be a minimum of 1000mm
- clear space a minimum of 450mm from centreline of the WC to the flank wall

**Fixtures/fittings**

- walls and ceilings to have a structural capacity to accommodate a range of supports including; ceiling track hoists, grabrails, floor fixed equipment and over bath rails

**WC**

- the WC should allow for adaptable WC heights and have a minimum seat height of 400mm AFFL
- large flushing lever to be located on the transfer side of the WC

**Shower**

- shower to have level access with floor level drainage. Two way floor falls to be avoided
- clear showering space to be 1200mm x 1200mm giving good manoeuvring space for users (Note: The Wheelchair Housing Design Guide requires a minimum 1000mm x 1000mm shower activity area)
- scope for suitable water containment or suitable enclosure (such as a curtain or doors) as long as they do not restrict access
- reachable and easy to use shower controls 750mm from corner to edge of controls at a height of 1000mm AFFL
- anti-scald thermostatic control pre-set at temperature of 43°C
- shower seat to be provided with drop down legs, a back and drop down arms and...
be height adjustable³

**Bath**

- bath to be a standard 520mm high, 700mm wide and 1700mm long bath and not a shallow bath³
- an unobstructed transfer space 450mm long, the width of the bath to be provided at the end of the bath. It is also preferable to have clear space in front of the taps to enable easy access²

**Basin**

- it is recommended that the wash hand basin is height adjustable² with flexible plumbing and splash-back tiles provided (Note: if a fixed, pedestal basin is provided, the rim height is to be 750-800mm with a 600mm clearance underneath the bowl²)

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¹ Lifetime Homes Standards (16 Criteria), Habinteg, 2010
² Wheelchair Housing Design Guide, Habinteg, 2006
³ Wheelchair homes design guidelines, South East London Housing Partnership, 2009
⁴ BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
30. Hoists between Bathrooms and Bedrooms

Design Intent

Hoists between bathrooms and bedrooms are important as they enable independent living by allowing convenient movement between bedroom and bathroom facilities for people that require additional assistance.

Inclusive Design Guidelines

- the bedroom and bathroom being connected to be on the same storey and located adjacent to each other to allow direct access
- the ceiling structure above the main bedroom and the accessible bathroom should be capable of supporting a ceiling hoist
- the design should provide an easy and comfortable route between the bedroom and the bathroom that is as short as possible
- there should be a full height 'knock out panel' sufficient to form a direct doorway with a minimum clear effective opening width of 900mm

Wheelchair Accessible/Adaptable Inclusive Design Guidelines

As above, the main bathroom should have a horizontal ceiling that can accommodate future installation of a ceiling fixed hoist. The hoist run is to allow direct access from the bathroom into the main bedroom. Appropriate conduit and wiring should be provided in the ceiling to further facilitate the future installation of a hoist.

Typical Hoist Specifications (approximations):

- hoist unit weight – 15kg
- weight of hoist tracking – 3kg per metre
- typical safe working load – 150kg
- maximum span of track between fixings – 900mm
- maximum distance of first fixing from end of track – 150mm

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1 Lifetime Homes Standards (16 Criteria), Habinteg, 2010
2 Wheelchair Housing Design Guide, Habinteg, 2006
3 Wheelchair homes design guidelines, South East London Housing Partnership, 2009
Service and Ventilation Controls

31. Windows

**Design Intent**

It is important that windows enable all household members and visitors to have a reasonable line of sight from a seated position. It is also important that at least one window in each room can easily be approached and operated by all household members (including anyone using mobility equipment) for ventilation.

**Inclusive Design Guidelines**

- windows in the principal living space (typically the living room/space), to allow people to see out when seated\(^1\)
- the principal window (or doors where applicable) to have glazing that starts no higher than 800mm AFFL (+/-50mm)\(^1\)
- any full width transom within the field of vision (typically up to 1700mm AFFL) to be at least 400mm away from any other transom\(^1\)
- at least one window in each habitable room to be approachable and operable by a wide range of people including wheelchair users and people with restricted movement and reach\(^1\)
- a clear route a minimum of 750mm wide should be provided to enable a wheelchair user to approach a window in each habitable room\(^1\)
- window handles/controls should be no higher than 1200mm AFFL (this includes windows in kitchen/bathrooms situated behind units/fittings)\(^1\)

**Wheelchair Accessible/Adaptable Inclusive Design Guidelines**

- ensure a wheelchair user can approach all windows and operate controls for opening\(^2\)
- window fittings to be easily manipulated with one hand and located between 800mm and 1000mm AFFL\(^3\)
- avoid the need for remote control gear unless unavoidable
- outward opening windows (at ground floor level) over paths and gardens are to be located in a way that will not create a hazard for passersby, in particular people with a visual impairment\(^2\)
- having the window glazing line start at 800mm AFFL will satisfy most wheelchair users\(^2\)
- avoid full width transoms (in particular between 800mm and 1500mm AFFL)\(^2\)
- where passive ventilation devices such as trickle vents are required they are to be provided or duplicated at a low level for control from a wheelchair\(^2\)
Faith and Culture Considerations

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.

- 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). Also, safety glass will be required below 800mm).

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1. Lifetime Homes Standards (16 Criteria), Habinteg, 2010
3. Wheelchair homes design guidelines, South East London Housing Partnership, 2009
4. Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
### Design Intent

The location of regularly used service controls, or those needed in an emergency, is important to ensure that they are easily usable by a wide range of household members including wheelchair users and people with restricted movement and limited reach.

### Inclusive Design Guidelines

- any service control needed to be operated or read on a frequent basis or in an emergency to be within the height band of 450mm – 1200mm AFFL and at least 300mm away from any internal corner
- similar controls (such as light switches) to be in consistent locations throughout the dwelling and mounted no higher than 1200mm AFFL
- switches and controls requiring precise hand movement (i.e. hot water and heater controls) should be within 750mm -1000mm AFL
- consumer units and meters (in dwellings and communal) should be mounted between 1200mm and 1400mm to allow reading viewed and switches operated by someone seated or standing
- lever taps (or sensors where applicable) are to be used as they are easier to operate by people with reduced/limited manual dexterity
- controls to be clearly identifiable and have a clear visual contrast with their surroundings
- provide capped-off electrical outlets or fused spurs at key locations to assist with potential future adaptations such as the installation of a fixed ceiling hoist, stair lift or through the floor lift

### Wheelchair Accessible/Adaptable Inclusive Design Guidelines

- ensure a wheelchair user can reach, control and read; central heating controls, mains water stop cock, gas and electricity main switches and consumer units.
- heating controls to be located 750mm from a corner and at a height of 900mm AFFL
- provide essential isolating stop taps to sinks, washing machine, WC and shower and ensure that control by a wheelchair user is possible
- low Surface Temperature (LST) radiators to be installed throughout. Hot water temperature not to exceed 43° at any fitting
- specify full plate or large rocker light switches set at 900mm AFFL
- where pull cord light switches are required, provide a large pull at 800-900mm AFFL
- specify sockets with large switches at the outer ends of double sockets. Sockets to be at least 750mm from corner at a height of 700mm AFFL (or 100mm above
the maximum worktop level in kitchens)²

- telephone connection points to be available at the main dwelling entrance, living room, kitchen, main bedroom and upper level circulation all at 700mm AFLL to match general socket outlets
- entryphone handsets/panels are also to be provided in bedrooms, living room/space and the kitchen. Hands free fittings are more easily operated than the telephone type.

¹ Lifetime Homes Standards (16 Criteria), Habinteg, 2010
² Wheelchair Housing Design Guide, Habinteg, 2006
Additional Space Considerations

### 33. Additional Space

#### Design Intent

Space is an important factor to allow homes to be truly flexible throughout their lifetime. Space is also important for storage particularly for disabled people who use mobility equipment that can often be bulky.

#### Inclusive Design Guidelines

**Storage Space**
- in accordance with the LHDG¹ (or the Housing SPG if adopted), all dwellings should have built-in general storage space in addition to storage provided by furniture in habitable rooms
- doors to storage space should have a level threshold and a minimum clear effective opening width of 1000mm
- storage spaces should be provided with lighting and an electrical socket

**Study and Work Space**
- in accordance with the LHDG¹ (or the Housing SPG if adopted), all dwellings to demonstrate that they have adequate space and services to allow people to work/study from home. This is particularly important for many disabled people who may prefer or have no option but to work/study from home

**Private Open Space**
- accessible, private open space is to be provided for all dwellings such as a garden, terrace or balcony
- dwellings with gardens are to provide an accessible route between the external door, external storage and the external gate (where applicable). Ensure that gates have a minimum clear opening width of 850mm and can be easily operated from both sides
- dwellings with balconies to provide good clear usable space clear of any door swings to allow wheelchair users to turn 180° with a 1500mm diameter turning circle recommended¹. All thresholds are to be accessible by people using mobility equipment, including wheelchair users
- refuse and recycling containers are to be located within a short distance of the external door or ensure appropriate management provision

**Storage for Mobility Scooters**
- mobility scooters are widely used by older people as well as some disabled people, in particular people with mobility impairment. Mobility scooters are typically larger than most manual and powered wheelchairs and also require
access to a power supply in order to re-charge batteries. Therefore, careful consideration needs to be given to developing innovative design solutions that will accommodate the secure storage of these devices.

### Wheelchair Accessible/Adaptable Inclusive Design Guidelines

#### Storage Space
- wheelchair accessible/adaptable dwellings should provide good storage space for mobility equipment including wheelchairs

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Public Buildings (including venues)

This section focuses on movement within larger, public buildings including the existing venues located on the Park.
### Design Intent

It is important that buildings are easily understandable to ensure smooth crowd flow movement. Entrances should therefore have a logical relationship within the routes that serve them and be clearly identifiable to avoid unnecessary travel for disabled people approaching the building.

### Inclusive Design Guidelines

Entrance doors should be:

- easily distinguishable from the façade\(^1\)
- provided with canopies as protection from bad weather\(^1\)
- the approach to any door entry controls to be clear of obstructions and away from any projecting columns or return walls\(^1\)
- door entry systems need to be
  - accessible to people with a hearing impairment and people who cannot speak\(^2\)
  - accessible for people with visual impairments, be clearly identifiable and have tactile features\(^2\)
  - easy and intuitive to be accessible to people with cognitive impairments
  - positioned and adjusted so that the door starts to open when a person is no closer than 1400mm from the leading edge of the door when open at 90°\(^1\)
- thresholds to be flush (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)\(^2\)

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\(^1\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice

\(^2\) Approved Document M (ADM) of the Building Regulations 2010
## 35. Doors

### Design Intent

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. For example, having doors a suitable width to accommodate sports wheelchairs will be an essential factor to consider in sports facilities and in particular where athletes are competing or where there may be a changeover of teams. Typically, the wheelbase of sports wheelchairs is wider than most day-to-day manual wheelchairs due to the cambered wheels.

![Manual day-to-day wheelchair](image1.png)  ![Sports (tennis) wheelchair with cambered wheels](image2.png)

### Inclusive Design Guidelines

Revolving doors with adjacent pass doors are not considered inclusive and therefore should not be used.¹

Automatic sliding doors are preferred wherever their installation is possible².

Keep the number of internal doors to a minimum as they can restrict progress.

Ensure all external and internal door widths (front and back of house) are wide enough (i.e. sports facilities are able to accommodate sports wheelchairs in public circulation routes as well as back of house areas allowing other teams to spectate during tournaments).

Effective clear openings for doors to range from 825mm to 1200mm depending on the activity, in accordance with Sport England Guidance, Accessible Sports Facilities³.

Design criteria for doors is:
• entrance doors to have a minimum effective clear opening width of 1000mm\(^4\) and preferably be automatically power operated (where manual double door sets are used, at least one door leaf to have a clear effective opening width of 1000mm)
• all internal doors to rooms (excluding plant) or along corridors to be designed to provide at least the minimum effective clear door opening 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\(^4\)
• double doors must have at least one leaf that provides the minimum clear opening appropriate to the type and scale of the facility\(^4\)
• locate all doors so that there is clear wall space of at least 300mm\(^4\) to the leading edge side, for doors to be used by sports wheelchair users this is to be increased to 500mm\(^3\).
• all doors are to be designed and located so that they can swing open to at least 90\(^\circ\)
• bi-fold and manual sliding doors are not to be used
• where privacy is not required doors should incorporate visibility glazing from a height of 500 -1500mm\(^4\)
• 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\(^\circ\) (the door in the closed position) to 30\(^\circ\) open, and not more than 22.5N from 30\(^\circ\) to 60\(^\circ\) of the opening cycle\(^4\)
• where fitted with a latch, the door opening furniture can be operated with one hand using a closed fist, e.g. 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\(^4\)
• the door frames contrast visually with the surrounding wall\(^4\)

See also IDS 40: Circulation Corridors and Venue Concourses

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1 Designing for Accessibility, CAE and RIBA Enterprises, 2004
2 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
3 Accessible Sports Facilities, Sport England, 2010
4 Approved Document M (ADM) of the Building Regulations 2010
### 36. Reception Areas

#### Design Intent

One of the key changes to Park venues in legacy will be the introduction of public reception areas to facilitate community use. Security barriers may also be provided between reception areas to gain access to the facility.

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

#### Inclusive Design Guidelines

**Reception desk design:**

- Easily identifiable from the building entrance
- Approach to the desk should be direct and unobstructed
- Any queue system provided should allow wheelchair users good clear manoeuvring space to turn towards the desk and pass others in the queue
- The lowered section of desk should have an overhang to provide a knee recess to allow wheelchair users to draw up to the desk
- Have clear manoeuvring space in front of the reception desk at least 1200mm deep x 1800mm wide when a knee recess has been provided
- Have two counter heights, one low for wheelchair users at 760mm above finished floor level (AFFL) and one high (950 – 1100mm AFFL) to allow others to sign in at a comfortable height while standing
- The low section of reception desk to be centrally located and easily identifiable on approach to the reception and not hidden
- Low level counter to be at least 1800mm wide to allow two wheelchair users to sit side by side
- 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
- The background seen behind the reception desk is not to be brightly lit as to produce glare or reflections and should facilitate lip reading for people with a hearing impairment

**Reception foyer layout and design:**

- There should be spaces between seating to allow wheelchair users to either sit together or sit beside non-disabled 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 to be provided including some with both back and arm rests
Security barriers (where applicable):

- Have a suitable number of accessible gates at least 1200mm wide to accommodate wheelchair users
- Have automatically opening gates that can be used without staff assistance (similar to security gates used on the London Underground)
- Flush, level thresholds
- Clear and unobstructed approach routes on both sides

1 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
### 37. Steps

#### Design Intent

Steps represent barriers to movement for a large proportion of people, including people with visual impairments, mobility impairments and people with young children. These people are generally unable to manage incorrectly designed flights of stairs.

While most wheelchair users are unable to use steps, some ambulant disabled people can have difficulty using ramps, for example people who cannot flex their knees or ankles. Therefore even where ramps are provided steps are also necessary to provide choice and ensure suitable access is available for everyone.

#### Inclusive Design Guidelines

A stair should always be provided in addition to a ramp unless the change in level is less than 300mm.

The number of risers in a single flight should not be more than 20 and should be uniform in successive flights. The number of risers between flights should be decided on a case by case basis to ensure that the correct balance is provided for the anticipated use. Designers must be mindful that too many risers in a single flight may be difficult for people with mobility impairment and that the transition between stairs and landing is often the area that poses most risk for people with a visual impairment.

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 steps are provided they will:

- have no winders nor be tapered
- be no less than two risers in each flight (avoid single steps)
- have no open risers
- have a minimum unobstructed width of 1200mm
- have uniform risers and goings with risers preferably between 150mm - 180mm and goings between 300mm – 450mm
- 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
- have slip resistant treads in accordance with BS 5395-1: 2010
- have visually contrasting nosings extending the full width of the stair at the recommended depth of 55mm in both the tread and the riser - this will be particularly important for people with a visual impairment
- have suitable warning at the top of stairs for visually impaired people through the use of visual contrast and/or surface materials. Corduroy tactile paving is typically only used externally and only in exceptional circumstances to be used
internally (see IDS 06: Tactile Paving)

- each 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
- have continuous handrails on both sides\(^4\) and on intermediate landings as in IDS 16: Handrails
- have additional handrails where the width of stairway is greater than 1800mm to give people support on both sides if they require it\(^4\)
- be clearly identifiable and contrast visually with their surroundings
- be well lit in accordance with the CIBSE standards\(^6\)
- not be constructed from materials that are highly reflective
- ensure any open areas under stairs do not pose a hazard and are either guarded or closed off accordingly

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

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\(^1\) Guide to Safety at Sports Grounds (Green Guide), 2008
\(^2\) Inclusive Mobility, Department for Transport, 2002
\(^3\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
\(^4\) Approved Document M (ADM) of the Building Regulations 2010
\(^5\) BS 5395-1 Stairs – Code of practice for the design of stairs with straight flights and winders, 2010
\(^6\) Code for Lighting, Chartered Institution of Building Services Engineers (CIBSE), 2009
### 38. Handrails

#### Design Intent

Handrails give support to people as they cope with changes of level, therefore they must be securely fixed.

The horizontal extension of a handrail beyond the first and last step allows an individual to steady or brace themselves before ascending or descending. Visually impaired people recognise the change in slope of the handrail and its return into a wall as a signal that they have reached the start or finish of a flight.

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

#### Inclusive Design Guidelines

Handrails are to:

- be continuous at each side of steps and ramps\(^1\)
- the top surface of the handrail to be between 900mm - 1000mm above the pitch line of the stair\(^2\) and 1100mm high when acting as a balustrade
- 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\(^1\)
- be round with a 32-45mm diameter or elliptical with dimensions 50mm wide and 38 deep\(^2\)
- have a clearance of between 60-75mm\(^2\) off any adjacent wall surface
- be 50mm above any fixing bracket\(^2\) to allow smooth running of a person's hand along the rail
- not project into the minimum clear width of the stair, ramp or corridor\(^2\)
- have a clear visual contrast with the background against which they are seen to ensure they are clearly visible and obvious for all users including people with a visual impairment

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\(^1\) Approved Document M (ADM) of the Building Regulations 2010

\(^2\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
### Design Intent

It is important that disabled people are able to access all facilities and venues in the Queen Elizabeth Olympic Park. Changes in level can cause problems for many disabled people and in particular people with mobility impairment and people with visual impairment.

A passenger lift is the most suitable means of vertical access\(^1\) to get to facilities within a suitable timescale and in comfort.

The number of lifts provided and their sizes will need to accommodate the expected people flow and anticipated use.

### Inclusive Design Guidelines

Lifts play a vital role in vertical circulation where level changes exceed 2m\(^1\).

It should be noted that while such changes in level can be overcome via a ramp the additional travel distances make it an inaccessible option for circulation routes in all but emergency situations.

Facilities and venues should have a passenger lift serving all storeys as required by the Building Regulations\(^1\).

Approved Document M states that passenger lifts are to be provided in new buildings and that platform lifts and wheelchair stair lifts should not be used\(^1\).

Lifts are to:

- conform to the requirements of BS EN 81-70\(^2\)
- be sufficiently sized to accommodate the expected visitor numbers and help minimise the anticipated waiting times particularly during events
- be easy to find and have lift doors that contrast visually with the adjoining wall in all light conditions\(^1\)
- be located adjacent or close to any circulation steps or ramps provided\(^1\)
- have a clear, level manoeuvring space 1500mm x 1500mm at the front of the entrance to all types of lifts\(^3\)
- have suitable door opening widths, ranging from 900 to 1100mm depending on the anticipated use (areas being used by people in sports wheelchairs may require 1100mm door width)
- have an audible and visual signalling system to provide the user with a warning that the lift has arrived\(^4\)
- 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\(^2\)
- 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\(^2\)
- glass lifts to have adequate visual contrast between floor, walls, handrails and all other fittings\(^2\)
- 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\(^1\)
- the control system shall allow for the door dwell time to be adjustable to suit the conditions where the lift is installed\(^2\), the recommended dwell time is a minimum of 5 seconds\(^5\)
- have controls available at each entrance point where the lift has two entry/exit points above first floor level\(^5\)
- have visual and voice indication of floor levels and where appropriate also indicate the facilities available on each floor\(^2\)
- 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\(^2\)
- have a ‘Help Coming’ sign to be illuminate when the alarm is answered\(^2\)

See also IDS 51: Emergency Egress, for information on evacuation lifts

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\(^1\) Approved Document M (ADM) of the Building Regulations 2010
\(^2\) BS EN 81-70, Safety rules for the construction and installation of lifts - Particular applications for passenger and goods passenger lifts Part 70: Accessibility to lifts for persons including persons with disability, 2003
\(^3\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
\(^4\) Accessible Sports Facilities, Sport England, 2010
\(^5\) Inclusive Mobility, Department for Transport, 2002
### 40. Circulation Corridors and Venue Concourses

#### Design Intent

Corridors must be wide enough to allow wheelchair users to approach and gain easy access through doors off the corridor.

Corridors and passageways need to be wide enough to allow wheelchair users to manoeuvre, pass other wheelchair users and where necessary turn through 180°.

BS 8300¹ 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.²

#### Venues:

Venue circulation routes are to be planned to minimise travel distances from entrances to seats, changing rooms to field of play and from seats or changing rooms and field of play to refuges, evacuation lifts, toilets and refreshments.

Designs should take account of crowds where the visibility of wheelchair users or others of short stature is impeded and where reversing or turning around in a wheelchair in a confined width would cause great disruption to people flows and will also cause frustration to disabled people and non-disabled people alike.

Minimum corridor widths must take into account athletes using specialised sports wheelchairs. This is an essential factor to consider in all areas of sports facilities where it is expected athletes will be in a sports wheelchair (such as competition/activity spaces and changing areas). Most sports wheelchairs have cambered wheels resulting in a wider footprint than most day to day manual wheelchairs as shown below:

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¹ BS 8300
² Experience shows that this usage may be greater than is often expected
Inclusive Design Guidelines

All Public Buildings:

- 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 impairment³.
- 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 at short localised restrictions.⁴
- Secondary corridors to have a minimum width of 1200mm with passing places at least 1800mm long and with an unobstructed width of at least 1800mm at reasonable intervals.
- Provide splayed or radius corners wherever possible¹.
- Doors, other than those for accessible toilets, must not open out into corridors.
- All parts of the building to which the public have access are to have minimum headroom of 2.1m

Venues:

For sports venues on the Queen Elizabeth Olympic Park the Legacy Corporation requires the designs to meet the requirements of the Green Guide and Sport England Guidance where appropriate (see Bibliography in Appendix 1).

The Green Guide defines a concourse as a circulation area that provides direct access to and from viewing accommodation, via stairways, ramps, vomitories or level passageways, and which serves as a milling area for spectators for the purposes of refreshment and entertainment. It may also provide access to toilets. Concourses should be designed to allow for the smooth, unimpeded passage of people through the ingress and egress routes. In addition, careful design should ensure that during periods of peak use circulation is not impeded².

In larger facilities or in those areas where is can be anticipated that there will be large
numbers of wheelchair and scooter users, the corridor width is to be increased to 2000mm to allow wheelchair users to pass each other freely along main routes.\textsuperscript{5}

It will be particularly important that in venues where athletes may be using sports wheelchairs that corridors are sufficiently wide to ensure access. Sport England\textsuperscript{5} recommends a preferred corridor width of 2.5m in such locations to allow users in large sports chairs to pass each other.

Wherever possible, the clear minimum headroom should be raised to 2.4m in circulation routes and viewing areas, particularly the rear of covered seated areas.\textsuperscript{2}

**Diagram 04: Preferred Minimum Corridor Dimensions**

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{preferred_minimum_corridor_dimensions.png}
\caption{Preferred Minimum Corridor Dimensions}
\end{figure}

\textsuperscript{*All dimensions in mm}

\begin{itemize}
\item[1] BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
\item[3] Approved Document M (ADM) of the Building Regulations 2010
\item[4] Accessible Stadia, FLA, 2003
\end{itemize}
### 41. Floor Surfaces

#### Design Intent

Flooring systems used need to ensure that all people can travel horizontally within venues and other public buildings/facilities conveniently, safely and without discomfort.

Glossy or highly polished materials are not to be used as they can appear wet and therefore ‘slippery’ (even if they are not) and they can also cause reflective glare that will confuse some people with a visual impairment.

#### Inclusive Design Guidelines

Glossy or highly polished materials are not to be used.

Matting and carpets to have a shallow, dense, non-directional pile.

At entrance points a floor surface that removes water is to be provided, ensuring that floors remain dry and slip resistant. Entrance matting systems deeper than the minimum 1500mm are likely to be required at entrances with heavy pedestrian traffic.

Entrance matting systems to be:
- firm, fixed and flush with surrounding levels
- a minimum depth of 1500mm
- mat wells depths designed to ensure that the mat is level with adjacent floors
- coir type matting is not to be used

In areas that may become wet, such as the building entrance, changing and shower areas or poolside, anti-slip surfaces or safety flooring to be used that accords to HSE guidance:
- wet flooring should have a minimum pendulum test value (PTV) of 65
- wet pedestrian areas are also required to have a 20 +μm Rz surface roughness
Highly reflective floor surfaces can appear wet to some people with a visual impairment and are therefore a barrier to many disabled people.

1 Approved Document M (ADM) of the Building Regulations 2010
2 Assessing the slip resistance of flooring: A technical information sheet, Health and Safety Executive, 2007
42. Structural Glazing

Design Intent

Poorly designed structural glazing can be a hazard and a barrier to many people, in particular people with a visual impairment.

It is important that designs and glazing types recognise the need to avoid glare from the sun and reflections from artificial lighting.

Inclusive Design Guidelines

- 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 manifestations within two zones, between 850mm and 1000mm and between 1400mm and 1600mm above floor level¹
- 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. Note that etched glass often does not provide a suitable degree of visibility
- glazed doors adjacent to or incorporated within a fully glazed wall to be clearly distinguishable from both sides²
- the edges of a glass door should be apparent when the door is open

¹ Approved Document M (ADM) of the Building Regulations 2010
² BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
Design Intent

Accessible toilet provision should as a minimum be located together with standard toilet provision in all public buildings and facilities.

The Building Regulations require that accessible WCs are no more than a 40m horizontal travel distance from any location within a building.¹ However, this may be extended up to 100m in exceptional circumstances, for example, where there are no obstructions such as doors or lifts along the route.

The majority of disabled people do not require wheelchair accessible toilets and many ambulant disabled people prefer to use ambulant or enhanced cubicles.

The toilet facilities provided should also address the requirements of people from a broad range of faith groups local to the surrounding areas.

Changing Places toilet facilities (see IDS 46: Accessible Toilet – Changing Places Facility) should be provided in all new public buildings/facilities where people can be expected to spend long periods of time including large sports facilities and community use buildings.

Family facilities including baby/child changing facilities should be accessible for all users including wheelchair users and should not be located within accessible toilets as this reduces the availability for disabled people.

Accessible toilets are often designed and finished in a way that makes them feel clinical or institutional. This is not necessary and the Legacy Corporation recommends that accessible sanitary facilities are finished to a similar standard and in a similar style as equivalent ‘standard’ facilities.

Inclusive Design Guidelines

Comparison of toilet requirements:

<table>
<thead>
<tr>
<th></th>
<th>LLDC Inclusive Design Standards</th>
<th>Approved Document M</th>
<th>Good Loo Design Guide²</th>
<th>Circumstances when this should be included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unisex Accessible - Corner Layout (for independent use)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>All</td>
</tr>
<tr>
<td>Unisex Accessible – Peninsular</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>In consultation with LLDC</td>
</tr>
<tr>
<td>Layout (for assisted use)</td>
<td>Ambulant cubicle</td>
<td>Enlarged cubicle in single sex toilets</td>
<td>Ambulant urinal</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>Minimum one, 10% recommended</td>
<td>Minimum one in each block</td>
<td>Minimum one</td>
<td>All – for use by people who need additional support</td>
<td></td>
</tr>
<tr>
<td>Minimum one where 4 or more cubicles are provided</td>
<td>Minimum one where 4 or more cubicles are provided</td>
<td>Minimum one where 4 or more cubicles are provided</td>
<td>All - for use by people who need additional space</td>
<td></td>
</tr>
<tr>
<td>One every four (when four or more urinals provided)</td>
<td>If block includes male accessible toilet and there is more than one urinal</td>
<td>Yes</td>
<td>Required only when there are four or more urinals</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>In consultation with LLDC</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>In consultation with LLDC</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>In consultation with LLDC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accessible Baby/Child Change Facility</th>
<th>Yes, separate wheelchair accessible baby changing to be provided</th>
<th>Baby changing not to be provided in wheelchair accessible toilets</th>
<th>Separate wheelchair accessible baby changing facilities to be provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>All toilet provision criteria:</td>
<td>All toilet provision criteria:</td>
<td>All toilet provision criteria:</td>
<td>All toilet provision criteria:</td>
</tr>
<tr>
<td>• routes to be accessible, free from obstacles, well lit and clearly signed</td>
<td>• routes to be accessible, free from obstacles, well lit and clearly signed</td>
<td>• routes to be accessible, free from obstacles, well lit and clearly signed</td>
<td>• routes to be accessible, free from obstacles, well lit and clearly signed</td>
</tr>
<tr>
<td>• provide adequate manoeuvring space for disabled people</td>
<td>• provide adequate manoeuvring space for disabled people</td>
<td>• provide adequate manoeuvring space for disabled people</td>
<td>• provide adequate manoeuvring space for disabled people</td>
</tr>
<tr>
<td>• fixtures and equipment should require a minimal operation force no greater than 10N</td>
<td>• fixtures and equipment should require a minimal operation force no greater than 10N</td>
<td>• fixtures and equipment should require a minimal operation force no greater than 10N</td>
<td>• fixtures and equipment should require a minimal operation force no greater than 10N</td>
</tr>
<tr>
<td>• fixtures and equipment should be operable by people with restricted movement preferably, operable with a closed fist</td>
<td>• fixtures and equipment should be operable by people with restricted movement preferably, operable with a closed fist</td>
<td>• fixtures and equipment should be operable by people with restricted movement preferably, operable with a closed fist</td>
<td>• fixtures and equipment should be operable by people with restricted movement preferably, operable with a closed fist</td>
</tr>
<tr>
<td>• lever taps or taps with automatic sensors to be provided as required. Automatic sensor activated 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</td>
<td>• lever taps or taps with automatic sensors to be provided as required. Automatic sensor activated 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</td>
<td>• lever taps or taps with automatic sensors to be provided as required. Automatic sensor activated 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</td>
<td>• lever taps or taps with automatic sensors to be provided as required. Automatic sensor activated 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</td>
</tr>
</tbody>
</table>
- where automatic sensors are used for sink taps or toilet flushing, they are to be located in easy to reach, logical locations that will not result in accidental activation
- timed lighting systems should not be used
- cubicles are to have a minimum width of 800mm
- have 10% of the cubicles (with a minimum of one) designed to be accessible for someone who is ambulant and has a mobility impairment.
- 10-15% of toilets pans and urinals not to align with Mecca
- one urinal suitable for a disabled person who is ambulant to be provided for every four urinals (with handrails rather than privacy screens).\(^3\)
- clothes hooks to be sited at 1050mm and 1400mm high
- have good visual contrast between the main features, equipment and controls
- heating pipes and heating equipment must be carefully located and fitted with thermostatic controls
- water should be delivered at no more that 41\(^\circ\) Centigrade
- toilets within venues/facilities with spectator areas are to be located as close as possible to the wheelchair user accessible viewing spaces and not exceed a 40m horizontal travel distance

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\(^1\) Approved Document M (ADM) of the Building Regulations 2010

\(^2\) Good Loo Design Guide, CAE and RIBA Enterprises, 2004

\(^3\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
**Design Intent**

Wheelchair users and other disabled people who will use an accessible toilet often move more slowly than non-disabled people. In addition they may need to rest along a route. This then extends the time it will take to reach a facility and therefore wheelchair user accessible toilets will be required within a reasonable distance of the disabled person’s location within a building.

The travel distance to be no more than 40m on the same floor or from seats within a venue, unless a greater distance can be justified as part of the planning application and by agreement with the BEAP.

Unisex accessible toilets should be located to ensure that disabled people have access to the facility via the shortest available direct route and should always be available adjacent to standard male and female toilets.

Corner layout toilets are designed for independent use by disabled people.

**Inclusive Design Guidelines**

- a minimum finished overall room dimension of 1500mm x 2200mm with no services obstructing or reducing these overall finished dimensions to allow a 1500mm x 1500mm unobstructed turning circle (Note: a slightly larger overall room size will make manoeuvrability easier)
- design 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)
- in locations where there is more than one unisex accessible corner layout toilet they should be handed to provide a choice of both left and right hand transfer. Signage should indicate whether a toilet is left or right handed
- the flush lever is to be placed on the transfer side of the toilet
- the provisions and relative locations of all fixtures, fittings and equipment to follow Diagram 05
- toilets are to be fitted with an alarm and reset button (within easy reach from the toilet) that is registered at a security point
- riser seat attachments should be provided in accessible toilets as required

**Diagram 05: Accessible Toilet - Corner Layout Unisex**

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*All dimensions in mm
1 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice

2 Based on BS 8300:2009, Figure 51 – Unisex accessible corner WC layouts
### Design Intent

Peninsular layout unisex accessible toilets are intended for assisted use. The key difference between a peninsular layout and corner layout is that in a peninsular layout, clear manoeuvring space is available on either side of the toilet pan to allow assistance from both sides as required.

This is essential for many disabled people that require personal skilled assistance.

A single peninsular layout unisex accessible toilet should not be provided as a substitute for two, handed corner layout unisex accessible toilets but as an additional facility.

When considering the need for a peninsular layout toilet, consideration should be given to the need for a Changing Places facility (see IDS 46: Accessible Toilet - Changing Places Facility).

### Inclusive Design Guidelines

- Minimum overall dimensions for a unisex accessible peninsular WC for assisted use is 2400mm wide x 2200mm deep
- Have a clear wheelchair user turning space at least 1500mm x 1500mm

### Diagram 06: Accessible Toilet - Peninsular Layout Unisex
Based on BS 8300:2009, Figure 55 – Unisex accessible peninsular WC for assisted use

*All dimensions in mm

1 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice

2 Based on BS 8300:2009, Figure 55 – Unisex accessible peninsular WC for assisted use
Design Intent

The lack of suitable changing facilities for those who need them is one of the most restrictive problems disabled people encounter.

In addition to standard peninsular layout accessible toilets, there is also a need for ‘Changing Places’ toilets. These are large enough to allow people with complex and multiple disabilities to use the toilet or to have their continence pad changed and where necessary get washed and changed with assistance from up to two carers.

Inclusive Design Guidelines

Changing Places toilets are to be provided in larger buildings where the public have access in numbers or where visitors might be expected to spend longer periods of time. They are also important in buildings that offer the only suitable sanitary accommodation within a locality.

The design and layout to incorporate:

- minimum overall room dimensions of 3m wide x 4m long (or equivalent floor space of 12m²)
- doorway with a minimum effective clear width of 1000mm
- 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
- peninsular toilet to allow space for a personal assistant on both sides with drop down support rails on either side
- have an automatic combined toilet/bidet/drier
- have a mobile, height adjustable changing bench, the covering of which to be suitable for use when a person is showering as well as changing
- wide, tear off paper roll to be provided to cover the changing bench
- a large waste bin for disposable pads
- a retractable privacy screen/curtain to allow privacy when using the toilet
- a CP facility to contain as a minimum the fittings and accessories shown in the example layout of Diagram 07

Diagram 07: Accessible Toilet - Changing Places Facility
Based on BS 8300:2009, Figure 58 – Example of fittings and accessories in a Changing Places facility

1 http://www.changing-places.org
2 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
3 Based on BS 8300:2009, Figure 58 – Example of fittings and accessories in a Changing Places facility
47. Ambulant Toilet Cubicles

**Design Intent**

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.

**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.

Ambulant accessible cubicles will be:¹

- 800mm wide
- have both horizontal and vertical grabrails on both sides of the cubicle
- where a wider cubicle is used it is essential that a drop down rail is installed
- outward opening door
- 2 clothes hooks at height of 1050mm and 1400mm
- toilet seat 480mm above floor level

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¹ Approved Document M (ADM) of the Building Regulations 2010
48. Family (Baby Change) Facilities

Design Intent

A family friendly approach is fundamental to a successful Park. As such, baby/child changing facilities will not be located within the accessible toilet provision\(^1\) as this can increase the time disabled people have to wait to use the toilet and similarly increase waiting times to use the baby change facility.

Equally, baby feeding areas should not be located in general toilet provision.

Separate baby/child changing facilities to be provided that can be used easily by all including wheelchair users. They are to provide enough space to accommodate a double buggy and nappy-changing facilities.

Inclusive Design Guidelines

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

Baby/child changing facilities to have:

- a minimum room size 2m x 2m\(^1\)
- approaches to the facility to have accessible routes free from obstacles that are well lit and clearly signed
- an adjustable height changing table that can be set at heights between 750mm and 1200mm and can be used with minimum effort and does not require skilled hand movement to accommodate people while standing as well as wheelchair users with a safe, hygienic surface
- good visual contrast between all main features including equipment, controls, fixtures and fittings and the background against which they are seen\(^2\)
- paper roll dispenser for lining the table and cleaning babies that can be used with one hand
- shelf space for belongings and cleaning materials
- a wash basin that provides warm water with a soap dispenser and automatic hand dryer
- full length mirror\(^1\)
- a sanitary disposal bin preferably recessed into the wall\(^1\)
- the changing unit needs to accommodate older children who still wear nappies
- provide a drop-down seat for small children

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\(^1\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice

\(^2\) Approved Document M (ADM) of the Building Regulations 2010
### Design Intent

In the adjoining 4 boroughs to the Queen Elizabeth Olympic Park, different faith groups who say prayers at various times of the day make up at least 23% 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 (see IDS 50: Wash Cubicles).

### Inclusive Design Guidelines

The facility criteria are:

- either two rooms, or 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 (see IDS 50: Wash Cubicles) 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
- the interior design of the room is to be designed to be conducive to quiet contemplation
- if it is to be utilised by followers of more than one faith, 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
- Some enclosed storage (such as a cupboard/shelves with doors) to accommodate prayer mats, shawls, literature and other necessary items

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1 Recovering the Calm, St Ethelburga’s Centre for Reconciliation and Peace
# Design Intent

In the adjoining 4 boroughs to the Olympic Park, faith groups who ritually wash as part of the prayer ritual make up at least 23% of the population.

Where possible, it is preferable for multi-faith prayer rooms to incorporate separate sex wash cubicles to facilitate this activity. This will help reduce the impact of users washing in toilet facilities where the washing of feet in particular can be difficult and may not be appropriate.

However, it is recognised that this may only be achievable in larger buildings due to the additional space requirements.

## Inclusive Design Guidelines

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

A wash cubicle to have:

- 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
- sunken trough/footbath
- 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
51. 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 public buildings in the Queen Elizabeth Olympic Park.

In venues, safety procedures should be developed to avoid confusion and conflict between disabled spectators and non-disabled spectators during the course of both normal egress and emergency evacuation.

**Inclusive Design Guidelines**

**Escape routes**
- all escape routes to be direct and free from obstruction at all times
- escape routes for athletes in sports facilities to be adequately sized to allow free passage of sports wheelchair users
- all escape routes to be clearly signed, including routes to refuges

**Horizontal egress**
- horizontal travel routes to be free from obstacles, such as steps or raised thresholds. Where such obstacles cannot be removed, a ramp should be provided with visually contrasting floor finishes to provide a warning of the level change (see IDS 02: Ramps)

**Vertical egress**
- the use of evacuation ‘evac’ chairs is deemed inappropriate by many disabled people and emergency evacuation must be provided by lift. Other proposed emergency egress solutions to be clearly justified with reasoning and rationale in the design and access statement following consultation with local disabled people including the BEAP

**Evacuation (fire protected) lifts**
An evacuation lift should:
- be in accordance with IDS 39: Passenger Lifts and BS 9999:2008
- 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
Stairs and ramps
- stairs and ramps to be used in emergency evacuation to be in accordance with; IDS 02: Ramps and IDS 37: Steps
- handrails on escape stairs and ramps to be continuous

Refuges
- to be in accordance with requirements from BS 9999:2008²
- for venues on the Queen Elizabeth Olympic Park, suitable enlarged areas of relative safety must be provided to accommodate the estimated number of disabled people (including spectators, athletes and staff)
- the use of refuges is not ideal and 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 points²
- 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’

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
- audio alarm systems should also incorporate the use of flashing lights/beacons (flashing lights should be regulated as not to stimulate photosensitive epilepsy)
- the use of vibrating pager units to alert frequent building users including staff with a hearing impairment should be considered
- visual alarms are more appropriate than pagers in water activity areas
- 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
1 Fire risk assessment supplementary guide: Means of Escape for Disabled People, Department for Communities and Local Government, 2007

2 BS 9999:2008 Fire safety code of practice for the design, management and use of buildings, 2008
Venues – Spectator and Participant Requirements

This section focuses on the requirements of spectators and participants both in the existing venues on the Park as well as any new spectator/participant areas being created, including any temporary venues/spaces created including for meanwhile uses.
52. Spectator Seating (General)

**Design Intent**

Wheelchair user accessible viewing spaces and amenity seating are required to ensure that venues are accessible for a range of disabled people.

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.

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 accessible viewing spaces.

**Inclusive Design Guidelines**

Venue/stadia designers should refer to ‘Accessible Stadia’ and the ‘Green Guide’ (see Bibliography) and work closely with their own access specialist/consultant for advice on the relevant viewing standard. The amount of seating provided should reflect the anticipated use and where possible all seating should exceed minimum standards and be agreed by the BEAP.

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.

Seating should contrast visually with the surrounding surfaces\(^1\).

Prefabricated, temporary or demountable seating all need to satisfy the same criteria\(^2\).

**All seating will have:**

- seat height between 450mm and 475mm\(^1\)
- minimum 760mm row depth\(^2\), however greater row depth is recommended for amenity seating to provide a minimum clearway of 650mm as recommended in Sport England guidance\(^3\)
- some seats to be located so that an assistance/guide dog can accompany its owner and rest in front of, or under the seat\(^4\) (see IDS 53: Amenity Seating)

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\(^1\) BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice

\(^2\) Accessible Stadia, FLA, 2003

\(^3\) Accessible Sports Facilities, Sport England, 2010

\(^4\) Approved Document M (ADM) of the Building Regulations 2010
53. Amenity Seating

Design Intent

Amenity seating is required to provide accessible seating for; ambulant disabled people, older people, people with a visual impairment and others that have limited movement.

Many ambulant disabled people are unable to stand up quickly and easily. It is therefore important to have reasonable sightlines from areas of amenity seating as spectators may not be able to change their position.

Additional legroom may be required by people with mobility impairment and to allow space for an assistance/guide dog to rest in front of or under the seat.

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.

Inclusive Design Guidelines

Ambulant disabled spectators should have a choice of seating positions and not only in areas that are available for wheelchair users and their companions. Areas of amenity seating can be incorporated with standard seating and located at a variety of locations and at all levels.

- amenity seating should be located where there are as few steps as possible to negotiate with no more than 4 steps recommended
- handrails or other forms of support are recommended where access to amenity seating involves using steps
- where amenity seating is accessed via steps these are to be in accordance with IDS 37: Steps or as close as the seating bowl design will allow
- arm rests give additional support and help disabled people when sitting and standing. If some seats have fold down arms, the needs of a greater number of people will be met

Amenity seating should also be in accordance with Accessible Stadia¹ which states that:

- they are to be dispersed throughout the stadium to provide a variety of locations at different levels
- they are to be located close to wheelchair and scooter storage space
- some to be provided where the rake of the seating tier is not more than 20 degrees
- they are to have armrests to aid spectators
- the seat width (measured from centre of seat to centre of seat) is at least 500mm²

Seats also need to be provided at a suitable height for people with mobility impairments in accordance with BS8300³ which states between 450mm and 475mm
is suitable.

1 Accessible Stadia, FLA, 2003
3 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
### Design Intent

Wheelchair user accessible viewing spaces are to be provided in a variety of positions to give all spectators a suitable range and choice of viewing options.\(^1\)

The location and the design of the wheelchair user accessible viewing spaces need to be flexible and allow increased provision as and when required by specific events.

Wheelchair user accessible viewing spaces need to accommodate mobility scooters which can be larger and are often less manoeuvrable than most manual or electric wheelchairs.

### Inclusive Design Guidelines

Wheelchair user accessible viewing spaces and associated circulation routes (for example, the space behind the viewing space) needs to be wide enough at concourse level to provide flexible, accessible seating that does not have a negative impact on crowd movement. This will create a flexible space that can accommodate a single wheelchair user or a group of wheelchair users.

- wheelchair users and family members must have access to each of the facilities offered within a venue
- wheelchair user accessible viewing areas to be designed to allow wheelchair users to sit next to non-disabled companions (including family members) or as part of a group of wheelchair users
- clear sightlines are important for some wheelchair users who cannot lean forwards or to the side in order to get a better view
suitable space for assistance dogs to rest adjacent to their owners needs to be provided
wheelchair user accessible viewing spaces to ensure sightlines of both disabled and non-disabled spectators are not compromised
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/family

Wheelchair user accessible viewing spaces to be in accordance with Accessible Stadia which states:

- accessible viewing spaces to be designed so that they can be used independently
- spectators who are wheelchair users must not be located in areas that may make them feel isolated from other spectators
- wheelchair users must be able to manoeuvre easily to a space that allows them a clear view of the event
- wheelchair user accessible viewing spaces are to be dispersed throughout the stadium to provide a variety of locations at different levels
- wheelchair user accessible viewing spaces to be included in any ‘family’ areas within a venue
- 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
- sightlines of wheelchair users should not be impeded when spectators in front stand up
- super-riser height (where used) to be a minimum of 1200mm to achieve a ‘C’ value of 90mm

To ensure provision for large 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:

- rows accommodating multiple wheelchair user viewing spaces to have a 1200mm clear circulation zone at the rear of the space
- in locations where only two wheelchair user accessible viewing spaces are provided a 900mm minimum clear circulation zone to be provided
Picture showing poor circulation space provided for wheelchair users, restricting access to exits and toilet facilities

Diagram 08: Recommended minimum dimensions for a row of multiple wheelchair user accessible viewing spaces

\(^3\)
Note: the handrail/balustrade/crash bar 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.

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1 Accessible Stadia, FLA, 2003
2 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
3 Based on BS 8300:2009, Figure 63 - Location of wheelchair spaces at a seatway and Figure 32 - Spaces for wheelchair users in a general seating layout
### 55. Communal Changing Facilities

#### Design Intent

Communal changing facilities are to be accessible for all users, including disabled people. They should also be able to accommodate teams of disabled participants.

While separate unisex accessible changing rooms should also be provided, it must be recognised that many disabled people will want to change with their friends and/or team-mates 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, the Legacy Corporation prefer to offer choice and therefore a flexible solution is preferable.

For additional design guidance, reference the Sport England guidance, ‘Accessible Sports Facilities’

#### Inclusive Design Guidelines

**Main changing areas, provide:**
- sufficient manoeuvring space, to cater for teams of disabled participants
- toilet provision (including accessible toilet provision) in very 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
- where a grooming/vanity area is provided it is to accommodate both people standing and wheelchair users
- provide secure storage space for participants day-to-day wheelchairs when competing in their sports wheelchair. These areas to be close to activity areas and may be within changing areas or at an alternative suitable location

**In addition, wet changing areas (incorporating shower facilities) to 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
- The shower area must be designed so that there is clear space to allow a wheelchair user to transfer to a shower seat easily and without getting their wheelchair wet
- a ceiling track hoist in wet changing areas to aid transfer to a shower
- heating pipes and heating equipment that are carefully located and fitted with thermostatic controls
- adjustable height, detachable shower heads are required by wheelchair users within an easy reach range of 1000mm – 1400mm. These may be provided in addition to a fixed shower head at a standard height
- floor finishes must be slip resistant even when wet with wet flooring having a minimum pendulum test value (PTV) of 65°
- fold out seating to be provided for shower areas
- all shower controls to be lever operated and located at a height of between 750mm and 1000mm AFFL
- showers to be thermostatically controlled with a maximum temperature of 41°C

**Locker provision**

- lockers in changing areas are to provide adequate manoeuvring space in front to allow disabled people, including wheelchair users, easy access
- a proportionate number of accessible lockers are to be provided. Sport England recommends that 10% of lockers are accessible (these are ‘full height’ lockers that are at least 1.8m high to accommodate mobility aids/equipment)
- lockers to be 600mm deep and at least 300mm wide with some lockers wider to help accommodate sports equipment, bags and mobility equipment
- mounted to provide a recess under a locker to be 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

![Accessible Lockers](image-url)
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

Diagram 09: Communal Changing Facilities

*All dimensions in mm

1 Sport England, Accessible Sports Facilities, 2010
Assessing the slip resistance of flooring: A technical information sheet, Health and Safety Executive, 2007
56. Unisex Accessible Changing Room

**Design Intent**

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.

**Inclusive Design Guidelines**

Unisex accessible changing rooms should:

- include a shower and toilet
- have a level floor surface that is slip resistant when wet or dry
- 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

**Diagram 10: Accessible Changing Room with Toilet and Shower**
Based on BS 8300:2009, Figure 42 – En-suite shower room with corner WC for independent use

*All dimensions in mm
### 57. First Aid Facilities

#### Design Intent

First aid facilities will need to be provided for spectators and participants. It is important that such facilities are designed to meet the diverse needs of those attending/participating.

#### Inclusive Design Guidelines

First aid facilities will 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 in particular the changing places toilet when provided (see IDS 46: Accessible Toilet - Changing Places Facility).
- Be clearly signposted throughout the venue and clearly identified.
- Include an area in close proximity where patients, relatives and friends can be seated while waiting with:
  - A mixture of seating with armrests, see IDS 04: Seating/Rest Points.
  - Space for a wheelchair user to pull up alongside a seated companion.
- Have an area for treating sitting casualties.
- Have a doorway large enough to allow access for a stretcher (for example, a 'penny farthing' door set could be used that can open up to accommodate stretchers when required).
- Have good visual contrast between the main features, equipment and controls and the background against which it is seen.
- Consideration needs to be given to the provision of emergency medical aid and individual evacuation from all designated seating areas including wheelchair user accessible viewing spaces.

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### Design Intent

Poor acoustics cause confusion and make it difficult to use sound as a navigational aid.

Audio reinforcement systems are to be provided:

- at reception and retail counters
- in meeting rooms
- community facilities, fitness suites and anywhere that information is exchanged
- seating bowls

Audio Description (AD) is commentary that describes non-aural events and is therefore particularly important to people with a visual impairment. AD describes expressions and movements making the event clear through sound and enhancing the overall experience, for example, explaining that a bird had landed on the volleyball net or who is leading in a race.

### Inclusive Design Guidelines

Audio reinforcement systems should be designed to following criteria:

- where spectator provision includes a public address system, this must be supplemented with an audio reinforcement system\(^1\)
- provide commentaries (audio description) to assist people with visual impairment in all venues during events\(^2\)
- be accompanied with a system making the same information available in written text for deaf people who cannot hear (clearly audible public address system must be supplemented by visual information\(^1\))
- to relay commentary to any person equipped with a necessary earpiece or receiver (this can be achieved by placing headphone sockets at specific locations or by using an infrared or radio communications system)
- a hard wired built in loop system in localised locations
- have no overspill or interference
- hearing reinforcement system 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

### 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
• sports facilities tend to be cavernous facilities with many hard surfaces, to avoid long reverberation times acoustic linings are required within these facilities

1 Approved Document M (ADM) of the Building Regulations 2010
2 Accessible Stadia, FLA, 2003
## 59. Spectator Services (temporary events)

### Design Intent

Temporary concession/information/retail areas, temporary events and meanwhile uses will be provided as part of the ‘Park Opening’ strategy.

It is important that space planning for these areas considers the diverse needs of both staff and users from the outset, even when they are not permanent.

### Inclusive Design Guidelines

Refreshment areas should include adequate toilet provision, including accessible toilets.

Where food is provided, there should be a good choice to accommodate a wide range of visitors including vegetarian options as well as kosher and halal food.

Concession, information and retail areas to be accessible for all users.

### 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 700–750mm to allow a wheelchair user to draw in
- seating in dining areas to be planned so that wheelchair users can sit alongside non-disabled 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 475mm AFFL
- furniture 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 – 750mm underneath
- audio reinforcement systems such as an induction loop to be fitted at counters, see IDS 58: Audio Reinforcement and Audio Description
- 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

1 BS 8300:2009+A1:2010 Design of buildings and their approaches to meet the needs of disabled people - Code of Practice
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
- The London Plan 2011

LLDC Policies:
- Equality and Inclusion Policy
- Inclusive Design Strategy

Building Regulations:
- Approved Document M (ADM) of the Building Regulations 2010

British Standards:
- BS 9999:2008 Fire safety code of practice for the design, management and use of buildings
- BS EN 81-70, Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts. Accessibility to lifts for persons including persons with disability, 2003
- BS 5395-1 Stairs – Code of practice for the design of stairs with straight flights and winders, 2010
- BS 6440:2011 Powered vertical lifting platforms having non-enclosed or partially enclosed liftways intended for use by persons with impaired mobility. Specification
- BS 5900:2012 Powered homelifts with partially enclosed carriers and no liftway enclosures. Specification
- BS 9266:2012 Design of accessible and adaptable general needs housing – Code of practice (British Standard draft currently being developed)

GLA SPGs:
- London Plan SPG – Accessible London: achieving an inclusive environment, GLA, 2004
- Olympic Legacy Supplementary Planning Guidance – consultation draft (2011)
- Housing – Draft SPG, GLA, 2011
- Shaping Neighbourhoods: Children and Young People’s Play and Informal Recreation, Draft SPG, GLA, 2012

Other Good Practice Guidance:

Sport
- 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

**Residential**

• Wheelchair accessible housing – Best Practice Guidance, GLA, 2007
• Lifetime Homes Case Study Examples, GLA, 2006
• Lifetime Homes Standards (16 Criteria), Habinteg, 2010
• Lifetime Homes Design Guide, Habinteg, 2010
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• Wheelchair homes design guidelines, South East London Housing Partnership, 2009
• Lifetime Neighborhoods, 2011, by the Department for Communities and Local Government

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• Inclusive Mobility: A guide to best practice on access to pedestrian and transport infrastructure, Mobility and Inclusion Unit, Department for Transport, 2002
• Guidance on the use of tactile paving surfaces, Department for Transport, 1998
• Local Transport Note 1/11 – Shared Space, Department for Transport, 2011
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• By All Reasonable Means: Inclusive access to the outdoors for disabled people, The Countryside Agency, 2005
• Colour Contrast and Perception- design guidance for internal built environments, Project Rainbow, University of Reading, 1997
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• Emergency Lighting and Wayfinding Systems for visually impaired people, BRE Information Paper, Webber, G M B, and Cook, G K, August 1997,
• Good Loo Design Guide, CAE/RIBA Enterprises, 2004
• Good Signs - Improving signs for people with a learning disability, Disability Rights Commission, 2004
• See it Right, RNIB, 2006
• The Principles of Inclusive Design, CABE 2006
• Guidance on the provision of spending facilities for guide dogs and other assistance dogs, Guide Dogs
• Recovering the Calm, St Ethelburga’s Centre for Reconciliation and Peace
- Housing Design Guidance and Standards in Relation to Faith and Culture report, JCT Business Solutions, commissioned by LLDC, 2011
- Inclusive Landscape Design, SPD, LB of Islington, 2010
- The event safety guide: A guide to health, safety and welfare at music and similar events 2nd Edition, 1999