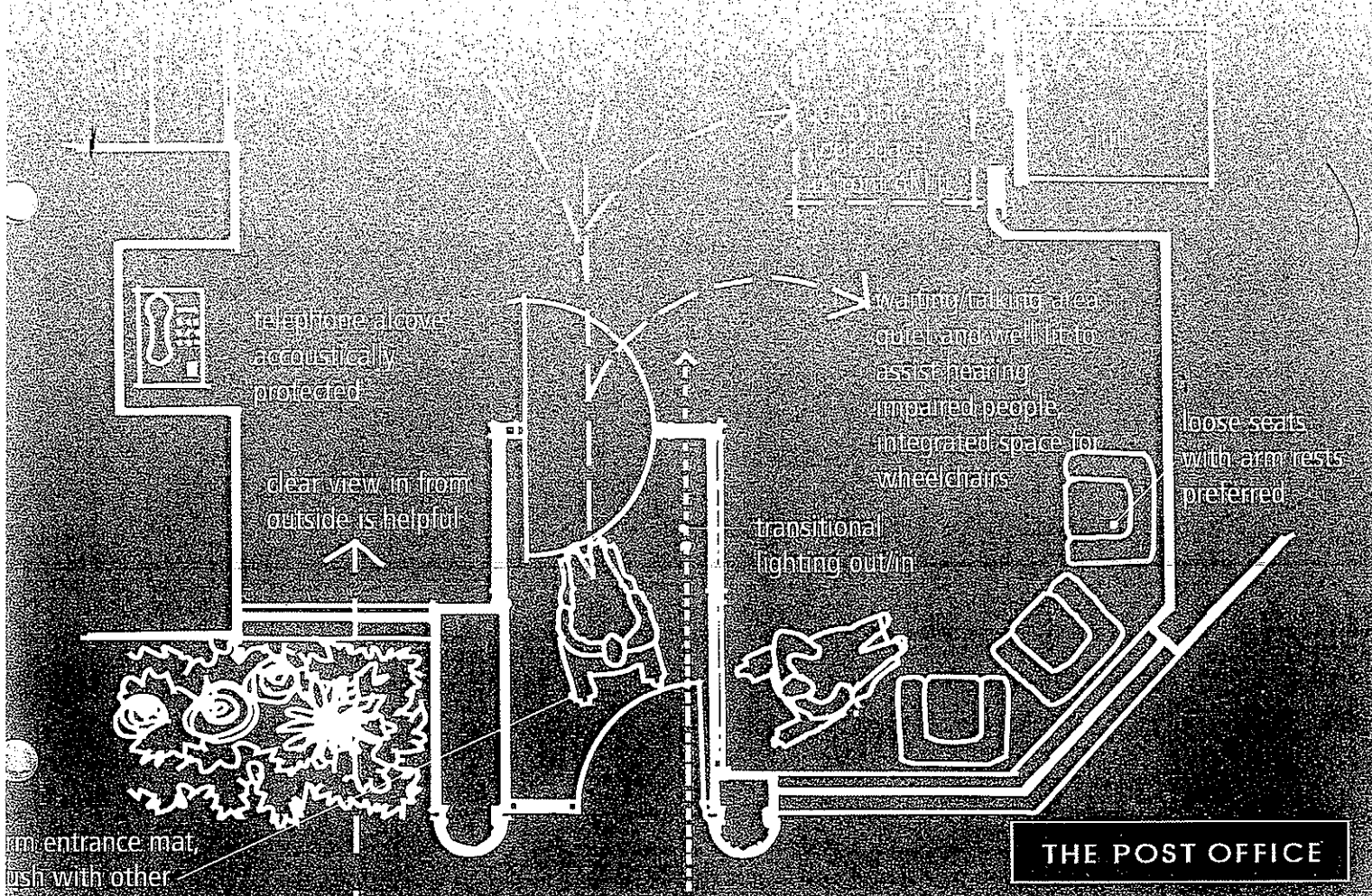


# Designing for Accessibility

an essential guide  
for public buildings



# Acknowledgements

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Sections of the text are revisions and updates of the Centre's 1993 edition of *Designing for Accessibility* by Tessa Palfreyman BSc (Eng); many of the drawings in this guide are based on drawings by Stephen Thorpe which appeared in the 1993 edition.

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**Endorsed by: RIBA, RICS, RTPI, IBC  
and the Access Association**

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# Introduction

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*Designing for Accessibility* is a guide to designing public buildings to be accessible to a wide range of users including people with mobility or sensory impairments, people with learning difficulties, those carrying luggage or shopping, parents with young children and older people. With over eight million adults in Britain with some degree of disability and an increasing elderly population it becomes ever more important that buildings – whether offices, shops, cinemas, museums, benefit offices, doctors' surgeries, bus stations, church halls or swimming pools – are designed for optimum ease of use by their occupants and visitors.

This guide is based on the belief that the needs of people with disabilities, older people and carers of young children should be considered as an integral part of the design process and that by meeting these needs buildings will perform better for all users. People are complex and their needs cannot simply be itemised in a checklist: for this reason it is important to read and learn from the entire publication rather than selecting single sections out of context. You will get the most out of this guide by reading it in its entirety before choosing the information most relevant to your own particular interest. This approach may also reveal areas of consideration that you had not previously identified.

The guide attempts to introduce those unfamiliar with the subject to a basic understanding of what accessibility entails. Based on Part M of the Building Regulations, the guide also introduces the requirements of the Disability Discrimination Act 1995, with particular guidance and advice for commissioners, designers and managers of buildings.

The main part of the booklet covers the basic design considerations; the importance of building management in ensuring the continuance of an accessible environment; and means of escape. Appendices cover useful organisations and publications.

Readers of *Designing for Accessibility* who have questions about its content or about work on which they are engaged are invited to contact the Centre for Accessible Environments for information and advice. Full details of the Centre and the services it offers appear on page 45.

# Building regulations

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In England and Wales the construction of new buildings and the refurbishment of existing ones is governed by the Building Regulations. These regulations comprise a series of requirements covering structure; fire safety; site preparation; toxic substances; thermal and sound insulation; ventilation; hygiene; drainage; heat-producing appliances; stairs; ramps, and guards; glazing; and access for disabled people. A requirement for access was first introduced in August 1985. At the end of 1987 it was replaced by a more detailed requirement, again updated in June 1992. Part M of the Building Regulations 1991 requires access for disabled people to all floors of new nondomestic buildings and the provision of facilities such as accessible WCs and spectator seating. Disabled people

are defined by Part M as those with mobility impairments or impaired hearing or sight. In October 1998, Part M of the Building Regulations was extended to cover new housing, with the requirement that from 25 October 1999 new homes will have to be built with features that make them better suited to the needs of disabled people. The Approved Document Part M: *Access and Facilities for Disabled People* (1999 Edition) contains guidance on achieving the requirements relating to housing (see appendix two for details).

In Scotland, Part T of the Building Regulations applies, while in Northern Ireland Part R applies.

# Disability Discrimination Act 1995

The Disability Discrimination Act 1995 (DDA) introduces new laws and measures aimed at ending the discrimination that many disabled people face. Over time, the Act gives disabled people new rights in the areas of:

- employment
- access to goods, facilities and services
- the management, buying, or renting of land or property.

In addition the DDA:

- requires schools, colleges and universities to provide information for disabled people
- allows the Government to set minimum standards so that disabled people can use public transport easily
- sets up the National Disability Council to advise the Government on discrimination against disabled people (this will be superseded by a new Disability Rights Commission).

In addition to granting new rights to disabled people, the Act also places new duties on, among others, employers and service providers. Duties in Part II covering employers were all introduced on 2 December 1996. Since the same date, it has also been illegal under Part III of the Act for a service provider to treat a disabled person less favourably than others when providing a service. The remaining service provision duties under Part III are being introduced in two stages: October 1999 and in the year 2004 (see DDA Part III: Service provision, below). The duty of reasonable adjustment on the part of trade associations is being brought in to a similar timetable as that for Part III.

## Principles

It is important to understand that the DDA does not *directly* require accessible environments to be provided for disabled people either in their place of work or for access to goods, facilities or services (for example in

shops, restaurants or offices to which the public have access). The newly established rights are for access to *employment* (rather than access to and within a particular building where workers are employed) and for access to *goods, facilities and services* (rather than to the particular building in which these goods, facilities and services are normally made available to the public).

There are a variety of ways in which employers and service providers can ensure that they are not discriminating against disabled people. There will be many instances where this can be achieved without changing the physical environment of the workplace or of the place where goods, facilities and services are provided.

These principles, their application in practice and implications for building design and management are discussed in the following sections on DDA Part II: Employment and DDA Part III: Service provision.

## Definitions

*Disability:* Part I of the Act defines what is a disability under the Act, and therefore who is protected under it. The definition is broad: 'a physical or mental impairment which has a substantial and long-term adverse effect on a person's ability to carry out day-to-day activities'. To affect day-to-day activities an effect must be in one of the following broad categories: mobility; manual dexterity; physical coordination; continence; lifting carrying or moving objects; speech, hearing or eyesight; memory, concentration, learning or understanding; or recognition of physical danger.

*Physical features:* Regulations define the term 'physical features' to include anything on the premises arising from a building's design or construction or from an approach to, exit from or access to such a building; fixtures, fittings, furnishings, equipment or materials and any other physical element or quality of land in the premises. All of these are covered whether temporary or permanent.

# Disability Discrimination Act 1995

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## Where the DDA applies

The DDA applies to the whole of the UK, including (as modified by Schedule 8) Northern Ireland. A Code of Practice reflecting those modifications is published in Northern Ireland. The DDA does not apply to the Channel Islands or the Isle of Man nor to employment or services provided outside the UK.

## Key points for building commissioners, designers and managers

- Building designers, while not legally required to respond to the DDA – since the Act relates to access to employment (Part II) and to services (Part III) rather than access to buildings themselves – should anticipate the requirements of the DDA by presuming that building users will fit the definition of 'disabled' under the Act, and design buildings accordingly.
- Even the most accessible building will not *in itself* ensure that an employer or service provider does not discriminate against a disabled person in ways which would be illegal under the DDA.
- However, those commissioning new buildings or adaptations to existing buildings are well advised to consider the implications of the DDA in terms of their ability to employ or offer goods and services to disabled people on an equal basis.
- **Access audits** of buildings are a useful starting point in assessing the current state of accessibility and usability by of buildings by disabled people. Buildings which are designed or adapted bearing in mind the access needs of people with different disabilities are likely to be more flexible and make it easier for employers and providers of goods and services to meet the requirements of the DDA.
- Ongoing **access action plans**, including regular monitoring and updating of the original access audit, take a long-term strategic view of improving access, and identify opportunities for change (for example, at routine maintenance or when a major refit is planned) and demonstrate a serious commitment to making buildings more accessible to everyone, thereby reducing the likelihood of cases being brought against employers and service providers under the DDA.
- From 2004, service providers will have to make 'reasonable adjustments' to the physical features of their premises to overcome physical barriers to access. Enlightened developers and building managers will want to anticipate this legal requirement well before 2004, and will call upon architects and designers to find technical solutions to remove physical barriers even before legally required to do so under the DDA.

# DDA Part II: Employment

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Under the DDA, employers of 15 or more people have certain duties to ensure that disabled people are not discriminated against. One duty is not to treat disabled people less favourably than others for a reason relating to their disability unless this can be justified. The Act also says that the duty of reasonable adjustment applies where any physical feature of premises occupied by the employer, or any arrangements made by or on behalf of the employer, cause a substantial disadvantage to a disabled person compared with non-disabled people. An employer has to take 'such steps as it is reasonable for him to have to take in all the circumstances' to prevent that disadvantage – in other words the employer has to make a 'reasonable adjustment'. Unjustified less favourable treatment and failure to make a reasonable adjustment which cannot be justified are discrimination.

The duty of provision of a reasonable adjustment is triggered when an *individual disabled person* applies for a job, is employed or it becomes apparent that an existing employee requires some form of accommodation adjustment. Unlike Part III (which covers the provision of goods, facilities, services and premises), there is no general duty under Part II to make provision for disabled people.

The Code of Practice for the *Elimination of Discrimination in the field of Employment against Disabled Persons or Persons who have had a Disability* gives guidance to employers on the implications of the Act.

## What 'physical features' and 'arrangements' are covered by the duty?

'Physical features' include (whether temporary or permanent):

- anything on the premises arising from a building's design or construction or from an approach to, exit from or access to such a building
- fixtures, fittings, furnishings, furniture, equipment or materials
- any other physical element or quality of land in the premises.

The duty applies to 'arrangements' for determining to whom employment should be offered and any term, condition or arrangement on which employment, promotion, transfer, training or any other benefit is offered or afforded. The duty applies in recruitment and during employment.

- *Example:* The design of a particular workplace makes it difficult for someone with a hearing impairment to hear. That is a disadvantage caused by the **physical feature**. There may be nothing that can reasonably be done in the circumstances to change these features. However, requiring someone to work in such a workplace is: an **arrangement made by the employer** and it might be reasonable to overcome the disadvantage by a transfer to another workplace or by ensuring that the supervisor gives instructions in an office rather than in the working area.



# DDA Part II: Employment

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## What adjustments might an employer have to make?

These might include:

- making adjustments to premises
- allocating some of the disabled person's duties to another person
- transferring the person to fill an existing vacancy
- altering the person's working hours
- assigning the person to a different place of work
- allowing the person to be absent during working hours for rehabilitation, assessment or treatment
- giving the person, or arranging for him to be given, training
- acquiring or modifying equipment
- modifying instructions or reference manuals
- modifying procedures for testing or assessment
- providing a reader or interpreter
- providing supervision.

Experience shows that the majority of adjustments which employers are likely to have to make would not relate to physical features.

## When is it reasonable for an employer to have to make an adjustment?

The Act lists a number of factors which may have a bearing on whether it is reasonable for the employer to have to make a particular adjustment, although there may be other relevant ones:

- the effectiveness of the step in preventing the disadvantage
- the practicability of the step
- the financial and other costs of the adjustment and the extent of any disruption caused
- the extent of the employer's financial or other resources
- the availability to the employer of financial or other assistance to help make an adjustment.

## How do building regulations affect reasonable adjustments?

A building or an extension to a building may have been constructed in accordance with Part M of the Building Regulations (Part T in Scotland and Part R in Northern Ireland) which is concerned with access and facilities for disabled people (see page 3). In these circumstances an employer does not have to alter any physical characteristics of the building or extension which still complies with the building regulations in force at the time the building works were carried out.

- *Example:* Where the building regulations in force at the time of a building's construction required that a door should be a particular width, the employer would not have to alter the width of the door later. However, he might have to alter other aspects of the door (eg the type of handle).

# DDA Part III: Service provision

Part III of the Disability Discrimination Act 1995 places duties on those providing goods, facilities or services to the public ('service providers') and those selling, letting or managing premises. The Act makes it unlawful for service providers, landlords and other persons to discriminate against disabled people in certain circumstances.

The duties on service providers are being introduced in three stages:

- since **2 December 1996**, it has been unlawful for service providers to treat disabled people less favourably for a reason related to their disability
- from **October 1999**, service providers have to make 'reasonable adjustments' for disabled people, such as providing extra help or making changes to the way they provide their services
- it is intended that, from **2004**, service providers will also have to make 'reasonable adjustments' to the physical features of their premises to overcome physical barriers to access.

The Code of Practice for *Rights of Access: goods, facilities, services and premises*, published in June 1999, outlines what may be considered as reasonable for disabled people to establish rights of access to goods, facilities, services and premises. Several factors have a bearing on whether a change is a reasonable one to make: effectiveness; practicality; cost and disruption; and financial resources.

This section looks at the duties being introduced in October 1999 – which have significant implications for building managers – and at how developers and their architects can anticipate the future requirement to remove, alter or avoid physical features of buildings which impede access by people with disabilities.

## October 1999 duties

Service providers are required under the Disability Discrimination Act 1995 not to discriminate against disabled people in certain circumstances. Specifically, under section 21 of Part III, from October 1999 service providers will have to take reasonable steps to:

- change practices, policies or procedures which make it impossible or unreasonably difficult for disabled people to use a service
- provide auxiliary aids or services which would enable disabled people to use a service, and
- overcome physical barriers by providing a service by a reasonable alternative method.

While the above may not have direct implications for new building design or require adjustments to existing premises, they clearly have implications for the way buildings are used and managed. Case examples in the following sections on auxiliary aids and service; policies, procedures and practices; and physical features are selected from a wider range of cases used for illustrative purposes in the Code of Practice for *Rights of Access: goods, facilities, services and premises*.

## Auxiliary aids and services

### What are 'auxiliary aids and services'?

The Code of Practice gives various examples of auxiliary aids or services, such as the provision of information on audio tape; a sign language interpreter; a special piece of equipment; or extra assistance to disabled customers, clients or service users. Auxiliary aids and services are not limited to aids to communication. Some of these are directly related to the physical aspects of the building – such as providing a temporary portable ramp – but will not involve a permanent alteration to the physical features or fabric of premises.

# DDA Part III: Service provision

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## What are reasonable steps in relation to auxiliary aids and services?

For people with hearing disabilities, the range of auxiliary aids or services which it might be reasonable to provide include:

- appropriate written information (such as a leaflet, book or guide)
- a facility for taking and exchanging written notes
- non-permanent induction loop systems
- subtitles
- videos with sign language interpretation
- information displayed on a computer screen
- textphones, telephone amplifiers or teletext displays
- audio-visual telephones
- audio-visual fire alarms (not involving physical alterations to premises)
- qualified sign language interpreters or lip speakers.

For people with visual impairments, aids to communication might include:

- readers
- documents in large or clear print, Moon or Braille
- information on a computer diskette
- information on audiotape
- telephone services to supplement other information
- spoken announcements or verbal communication.

What might be reasonable for a large service provider might not be reasonable for a smaller service provider to undertake.

## Policies, procedures and practices

### What are 'policies, procedures and practices'?

Policies, procedures and practices relate to the way in which a service provider operates its business or provides its services. This includes any requirements that it makes of its customers, clients or service users. The terms cover:

- what a service provider intends to do (its policy)
- how a service provider plans to go about it (its procedure), and
- what a service provider actually does (its practice).

### What is the duty to change a policy, procedure or practice?

Where a service provider's policy, procedure or practice makes it impossible or unreasonably difficult for disabled people to make use of the goods, facilities or services which it offers or provides to other members of the public, the service provider must take such steps as it is reasonable, in the circumstances, to change the policy, procedure or practice so that it no longer has that effect. For example, a video rental shop normally offers membership only to people who can provide a driving licence as proof of their identity. This automatically excludes some disabled persons from joining, so the shop would be required to accept alternative forms of identification from its customers.

### What are 'reasonable steps' in relation to policies, procedures and practices?

The Act does not define 'reasonable steps' in this context. However, the draft Code of Practice gives various examples, such as a reservations policy for accessible bedrooms in a refurbished hotel.

## Physical features

### What is a 'physical feature'?

Under the DDA, a 'physical feature' will include anything arising from the design or construction of a building or from an approach to, exit from or access to a building. Physical features of premises will also include any fixtures, fittings, furniture, equipment or materials in or on the premises, whether temporary or permanent.

# DDA Part III: Service provision

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## **What is the duty to provide a service by an alternative method?**

From October 1999, where a physical feature makes it impossible or unreasonably difficult for disabled people to make use of any goods, facility or service which are offered or provided to other members of the public, a service provider must take 'such steps as it is reasonable in all the circumstances of the case for it to have to take to provide a reasonable alternative method of making the goods, facilities or service available to disabled people'. An example might be for a public enquiry point within a government office located in a building which is accessed by a flight of steps to offer an alternative telephone enquiry service.

## **What are 'reasonable steps' in relation to provision of a service by an alternative method?**

A reasonable alternative method of making a service available may involve the provision of an auxiliary aid or service, such as a member of staff bringing items to a cash till for a disabled customer or, in an building where the main public entrance is up a flight of stairs, allowing access for disabled people through an entrance normally used by staff which is fully accessible.

## **Adjustments to physical features**

The duty to make reasonable adjustments in relation to physical features does not until 2004 require a service provider to take any action to remove or alter a physical feature of its premises or to provide a reasonable means of avoiding it.

However, service providers may wish to anticipate the remaining duties in relation to physical features coming into force in 2004. Whenever a service provider is planning and executing building or refurbishment works – such as extending existing premises or making structural alterations to an existing building – it will be sensible to provide for the removal or alteration of a physical

feature which creates a barrier to access to disabled people or to consider providing a reasonable means of avoiding the physical feature, even though the law does not yet require this.

It is the Centre's experience that the access audit and ensuing access action plan – whereby advantage can be taken of routine maintenance and planned minor works programmes to effect improvements cost-effectively over time – is the best approach for service providers who seek to fulfil the 'general', 'evolving' and 'anticipatory' duty to make reasonable adjustments. The following example from the Code of Practice illustrates the point:

- A public inquiry point is located on the third floor of a Government office building and is accessed by a flight of stairs. This makes it impossible or unreasonably difficult for some disabled people to get to it. People with a mobility disability or a mental health problem (like anxiety-related depression) may find using the stairs difficult. The service provider would not be expected at present to make physical alterations to its premises. When the remaining duties relating to physical features are introduced, it might be reasonable to install a lift or move the inquiry point to an accessible ground floor. It may be sensible to plan or make such changes now, especially if refurbishment is being planned in any event.

When the duty to make reasonable adjustments to physical features is fully in force in 2004, the Code of Practice will be revised accordingly.

# Car parking

Preferred arrangement – gives wheelchair users the choice of transferring on either side of the bay.

Where space is more limited, hatched transfer area is shared between two adjacent bays.

Standard bay, using adjacent footway as transfer area, with flush kerb at junction. Ensure adequate width of footway to avoid obstructing pedestrian flow.

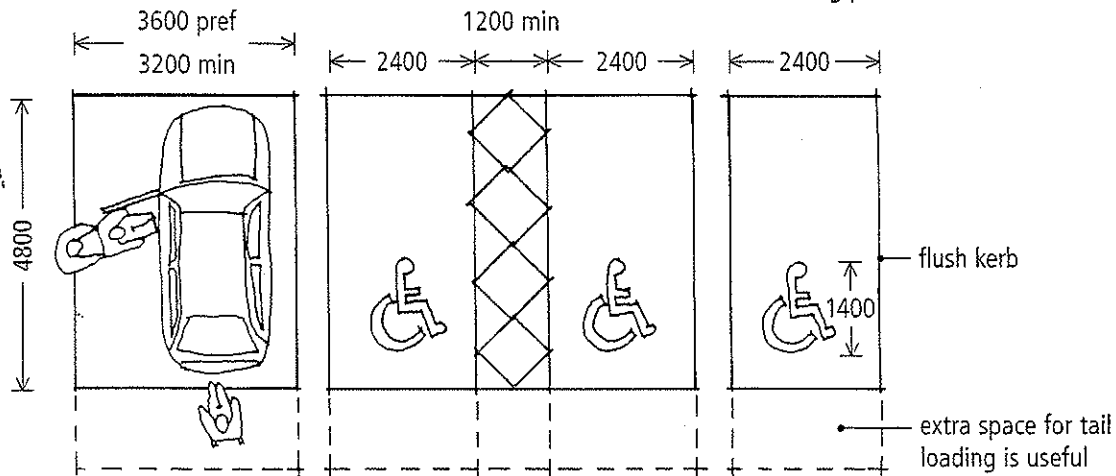
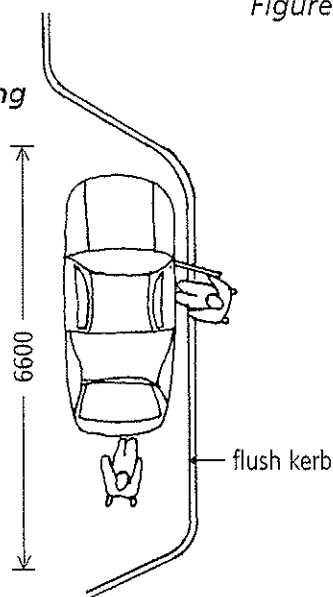


Figure 1 Accessible off-street parking bays

Figure 2 On-street parking



- Larger parking bays are required to allow people with reduced mobility to get into and out of their cars with the minimum of difficulty (see Figure 1).
- The location of accessible bays should be clearly signposted from the car park entrance.
- Bays should be identified as provision for disabled drivers or passengers only.
- Bays should be close to the entrances to the facilities the car park serves – within 50m if uncovered, 100m if covered.
- Bays need to be wide enough for car doors to be fully opened to allow disabled drivers and passengers to transfer to a wheelchair parked alongside and long enough to allow space for tail loading.
- Kerbs between the parking area and routes to buildings should be dropped to give access to wheelchair users.
- The car park surface should be smooth and even and free from loose stones.
- Layout of on-street parking bays is shown in Figure 2.
- All pedestrian routes within the car park should be level.

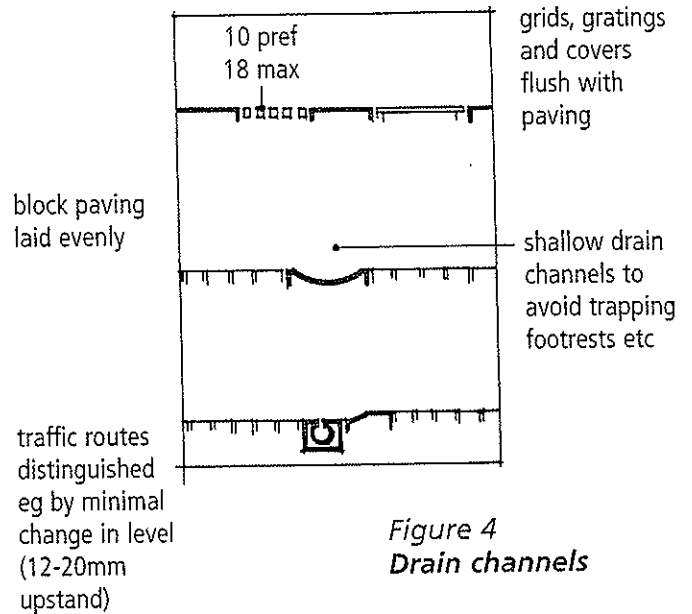
### Minimum recommended number of bays in off-street car parks

Car park used for:	Car park size:	
	Up to 200 bays	Over 200 bays
Employees and visitors to business premises	Individual bays for each disabled employee plus 2 bays or 3% of total capacity, whichever is greater	6 bays plus 2% of total capacity
Shopping, recreation and leisure	3 bays or 6% of capacity whichever is greater	4 bays plus 4% of total capacity

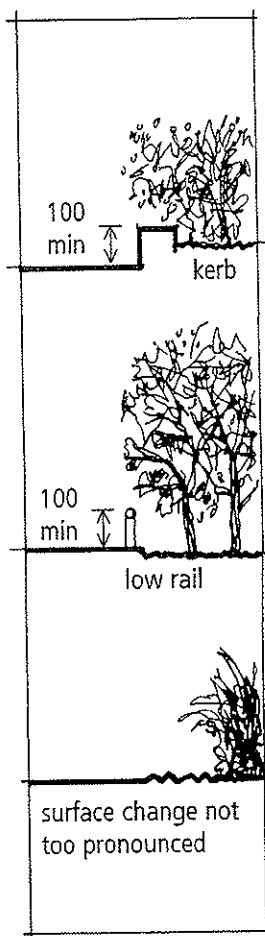
(source: Reducing Mobility Handicaps, Institution of Highways and Transportation)

# Routes

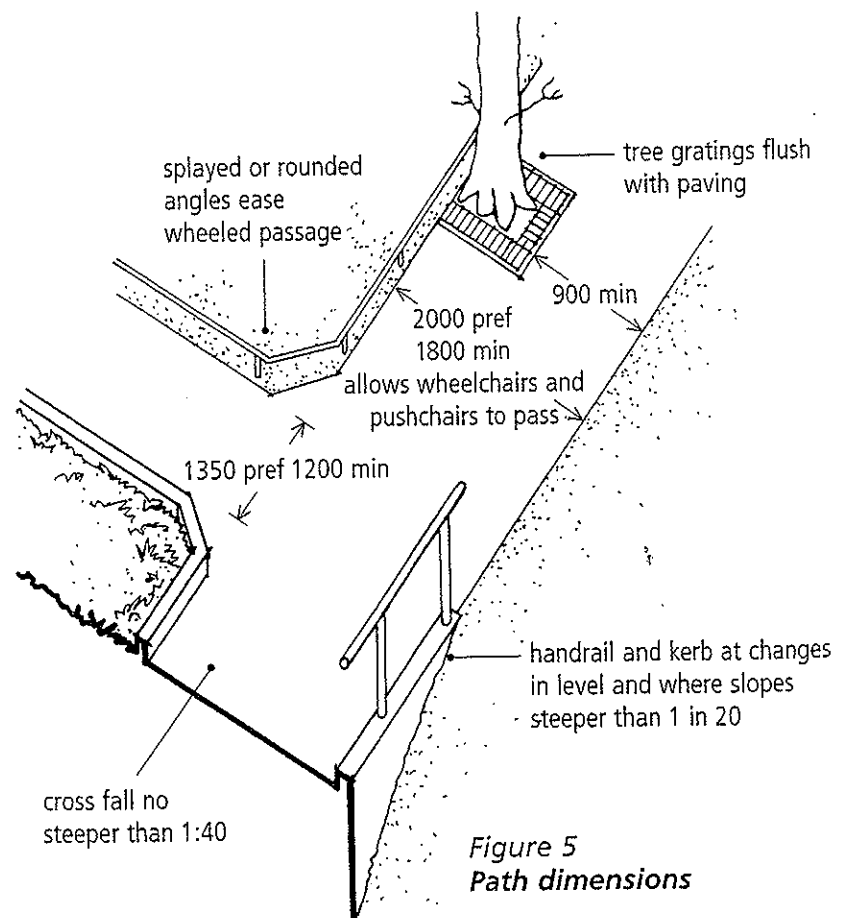
- Routes should provide ample aural and tactile information as well as visual clues to help people with sight impairments.
- Pedestrian and traffic routes should be clearly distinguished using texture and colour.
- Landmarks are helpful for orientation. As well as providing visual clues they can also incorporate audible clues such as fountains.
- Path edges should be defined (see *Figure 3*).
- Detailing of drain channels is shown in *Figure 4*.
- Path dimensions are shown in *Figure 5*.



*Figure 4*  
**Drain channels**

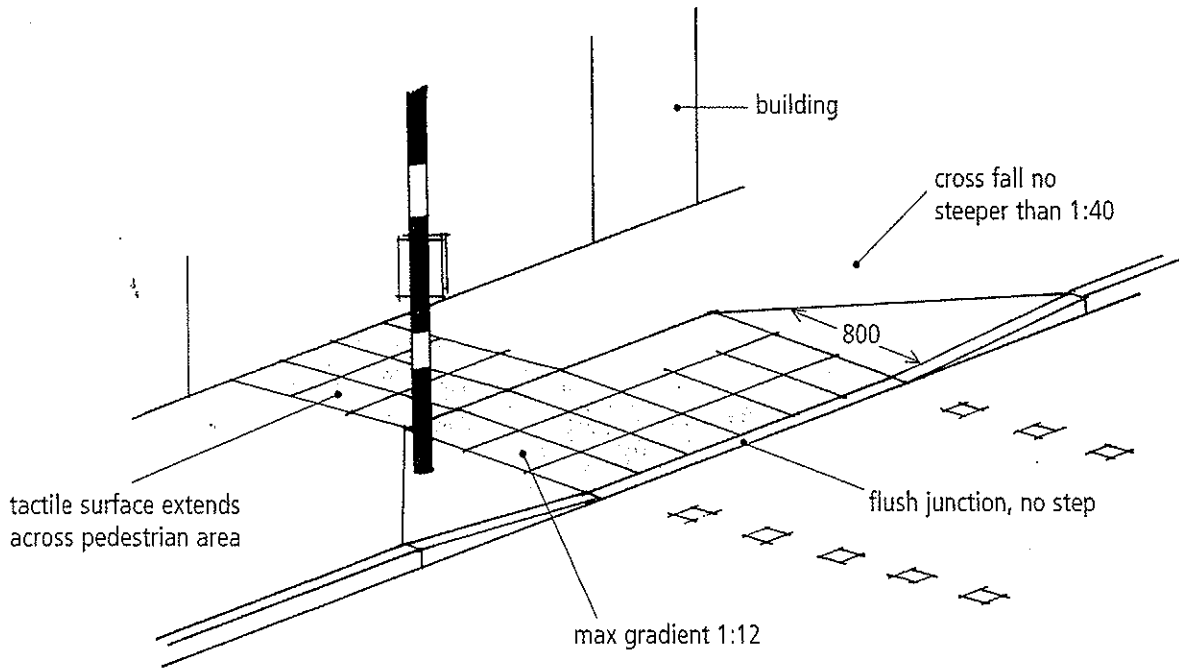


planting should be trimmed to at least head height (2100mm) to avoid obstruction

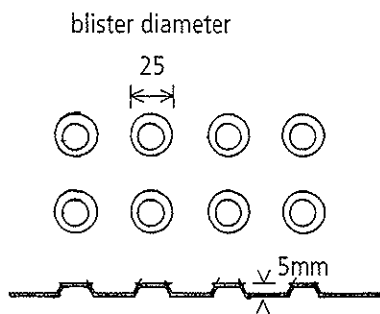


*Figure 5*  
**Path dimensions**

# Routes



**Figure 6**  
**Example of blister surface at controlled crossing point**  
 (refer to *Guidance on the use of Tactile Paving*, DETR, 1997 for detailed guidance)



**Figure 7**  
**Blister surface detail**

- Surface materials should be firm, slip-resistant in all weather (such as tarmac or York paving), well laid and maintained. Cobbles and terrazzo are not recommended.
- Surfaces such as loose gravel should be avoided.
- Surface materials can offer different sound qualities and textures as well as colour as an aid to locating the route within the environment (see *Figures 6 and 7*). Junctions between different external surfaces must be level.
- Planting can provide scent and colour, but must not obstruct routes.
- Signs should be carefully located, clear, non-reflective and logical (see p 34 *Signs*).
- Routes and potential hazards should be adequately lit. Low level uplighters are not recommended because they cause glare.
- Lighting should not create pools of light and dark.

# Street furniture

- Clearly defined routes should be planned for pedestrians.
- Consider use of tonal contrast and/or textural changes in paving, logical grouping of street furniture, and effective lighting to define routes.
- Avoid placing street furniture where it causes problems for people with sight impairments or obstructs the passage of wheelchair users (see *Figure 8*; see also p 34 *Signs*).
- The provision of appropriate seating is important, especially on long or sloping routes (see p 31 *Seating*).
- Avoid low headroom and safeguard building projections.
- Bollards should be a minimum of 1000mm in height and tonally contrasted with background. Adjacent bollards should not be linked with chain or rope.
- Cycle parking areas should be clear of routes.

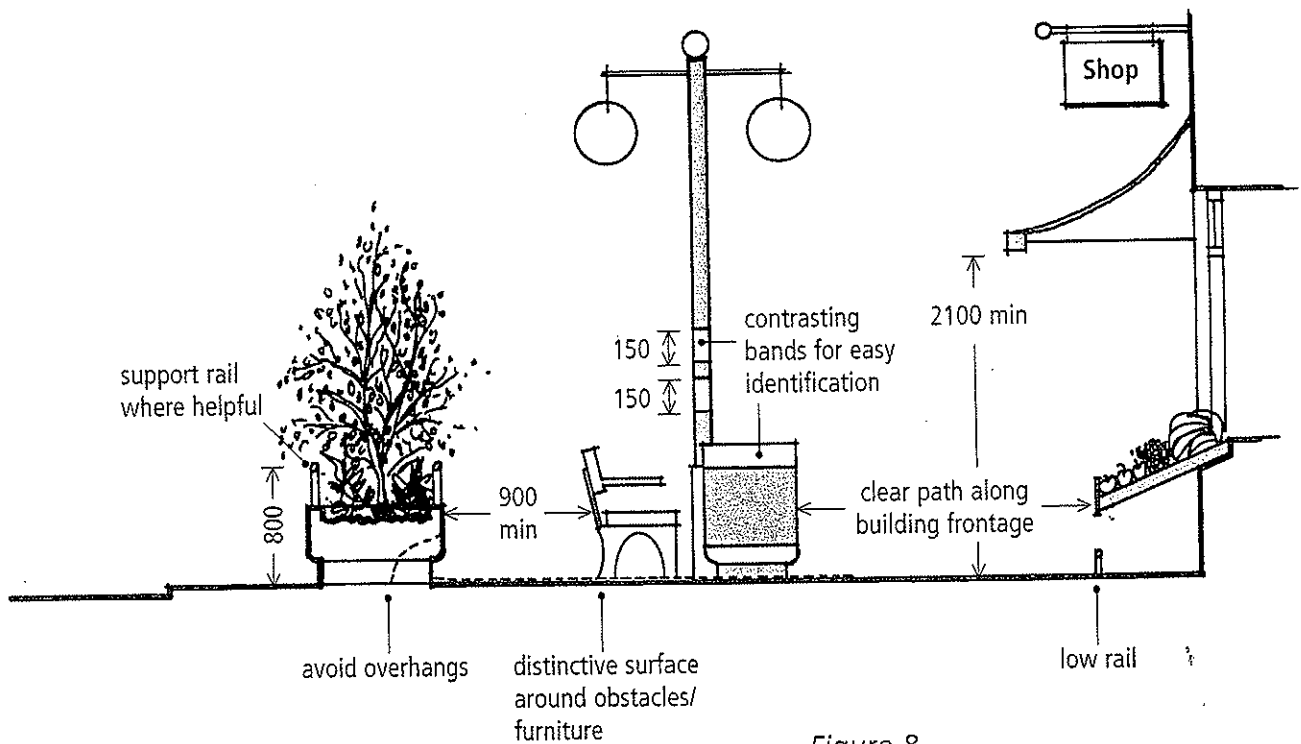


Figure 8  
Positioning of street furniture



# External ramps

- Ramps are essential to enable wheelchair users and people with pushchairs to overcome level changes, but should be accompanied by steps for ambulant disabled people where steeper than 1:20.
- In Part M of the Building Regulations, a gradient of 1:20 is considered level, 1:15 is adequate and 1:12 is the absolute maximum. The preferred gradient is 1:15 or less. The steeper the ramp, the shorter the length between level landings (see *Figures 9 and 11*).
- Ensure 1000mm min clear width (see *Figure 10*).
- Handrails: 45-50mm max outside diameter, to each side, continuous to ramps and landings (see diagram on p 16).
- Handrails should be provided and formed from materials that are not cold to the touch, for example hardwood or nylon-coated steel.
- The handrail should be easily distinguishable from its background for the benefit of people with sight impairments.
- Avoid patterning which simulates steps, such as applied or inserted slip-resistant strips.
- Surface materials should be slip-resistant, firmly fixed and easy to maintain.
- In existing buildings where an extreme level change would require a long, circuitous ramp or where space is limited, a short-rise lift may be appropriate (see p 26 *Platform lifts*).
- It is not recommended to use corduroy tactile warnings to indicate ramps or lift, as these are properly used to indicate the start of a flight of steps or stairs.

Figure 9  
Ramp design

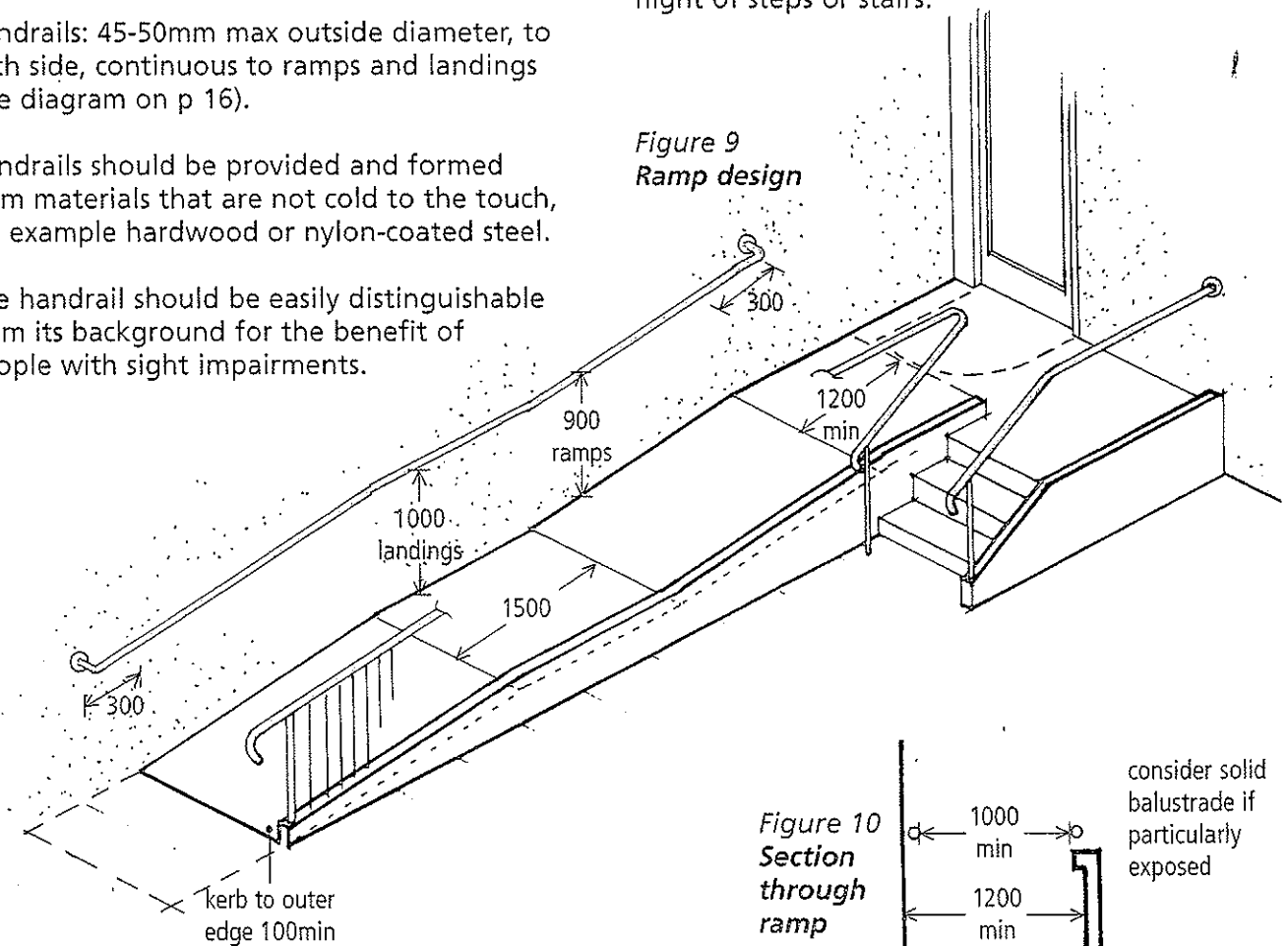
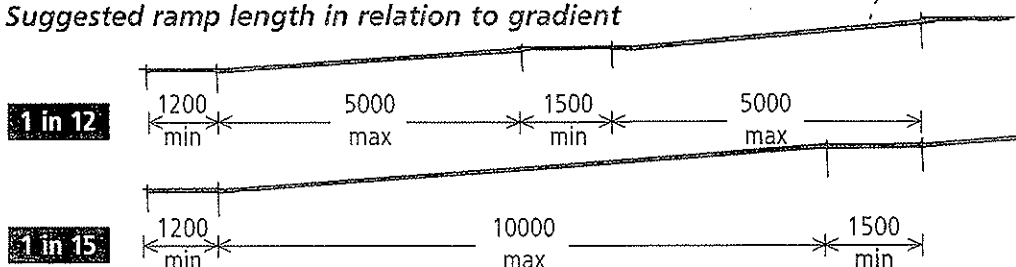


Figure 10  
Section through ramp

Figure 11  
Suggested ramp length in relation to gradient



# External steps

- Steps should always be provided as an alternative to ramps steeper than 1:20, as they are preferred by some ambulant disabled people (see Figure 15).
- Lighting can be located either above or at the side of the flight and should not cause anyone to negotiate the stairs in their own shadow.
- Straight flights are easier to negotiate than curved or dogleg flights.
- Handrails should be provided, however short the flight. Max 45-50mm outside diameter, to each side, continuous to flights and across landings. Distinguish rails from background by colour and brightness (see Figure 13).
- A tactile surface of raised ribs set parallel to the step nosings should be provided at the top (according to Part M of the Building Regulations) and the bottom (preferred guidance) of each flight as a warning to people with sight impairments of the presence of a tripping hazard (see Figure 14).
- Nosings should be integral and distinguishable in colour and tone (see Figure 12).

Figure 13  
**Handrail profiles**

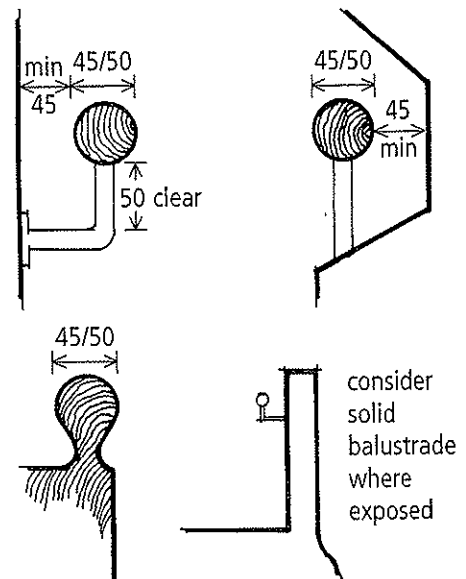


Figure 14  
**Corduroy tactile surface detail**

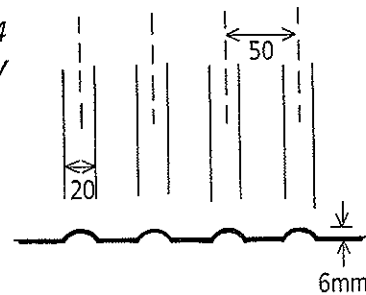
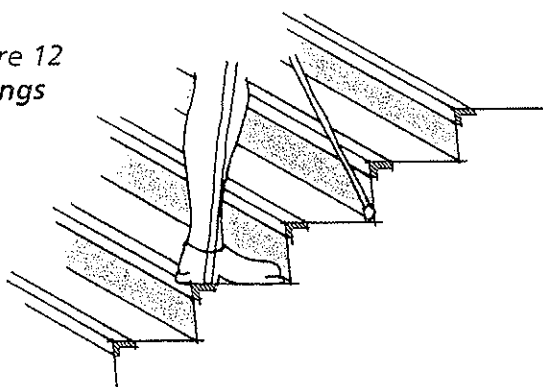
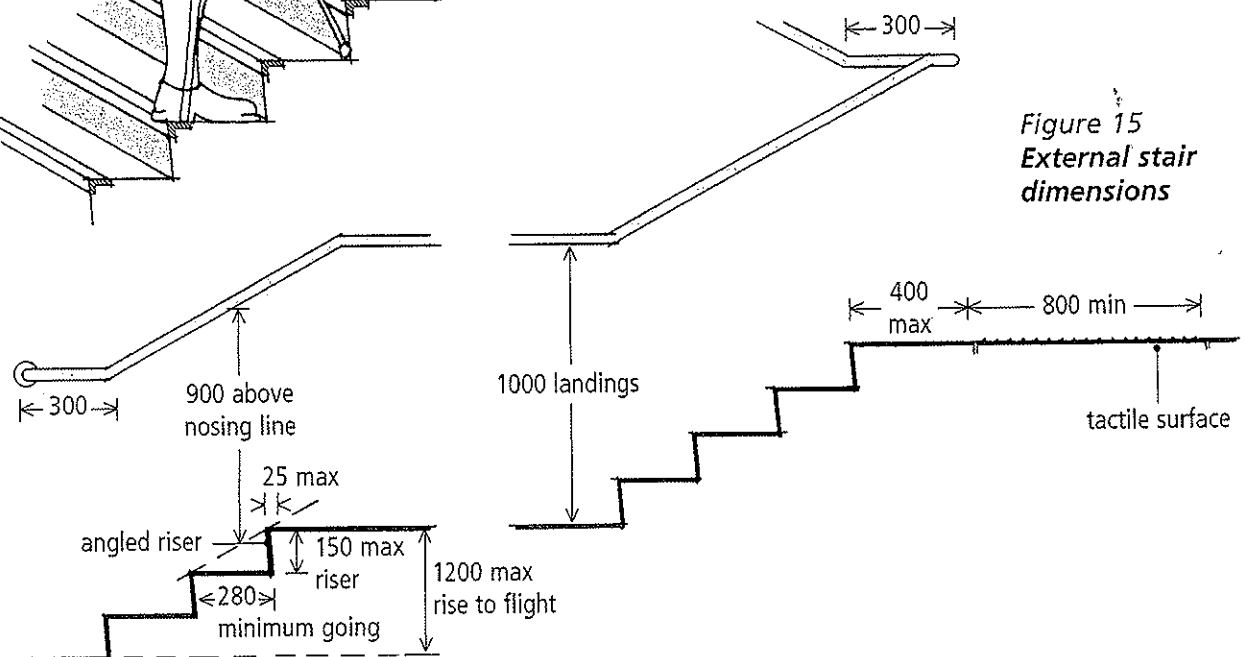


Figure 12  
**Nosings**



- Nosings should be used on the front face as well as on the top of each step so that they are visible when ascending and descending.
- Open risers should not be used.

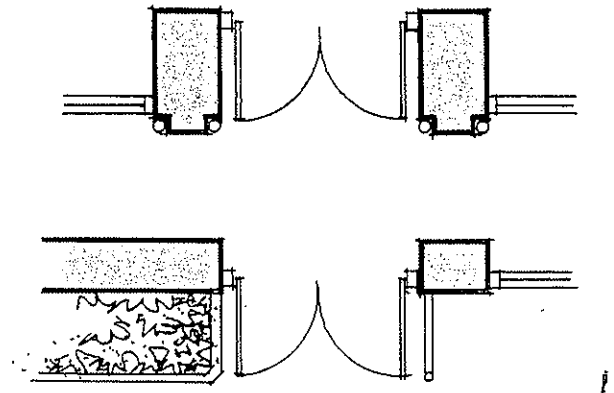
Figure 15  
**External stair dimensions**



# Entrances

- Entrances to buildings should be placed in a logical relationship within the routes that serve them and be easily distinguishable from the facade.
- Clear signs indicating the entrance should be provided. These should be visible from all approaches to the building. Signs hanging perpendicular to the building facade are useful.
- Outward-opening doors should be protected or recessed (see Figure 16).
- Entryphones should contain an LED display to enable people with hearing impairments to use them and be sited for approach and use in a wheelchair.
- Security systems such as swipe cards and turnstiles should be detailed to allow use by people with sensory or mobility impairments.

Figure 16  
Outward-opening doors



- Doors in frequent use should have vision panels. Substantially glazed doors or side panels must bear markings for safety and visibility (see Figure 17).
- Fully glazed, frameless entrance doors should be avoided.
- See p 21 for guidance on doors.

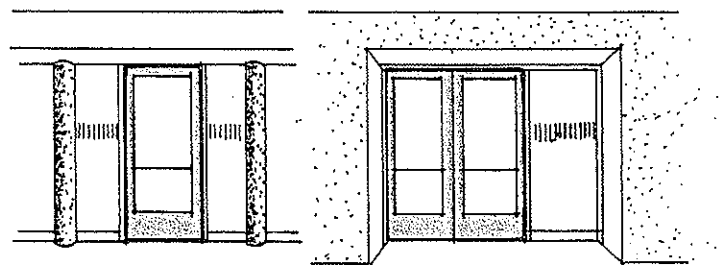
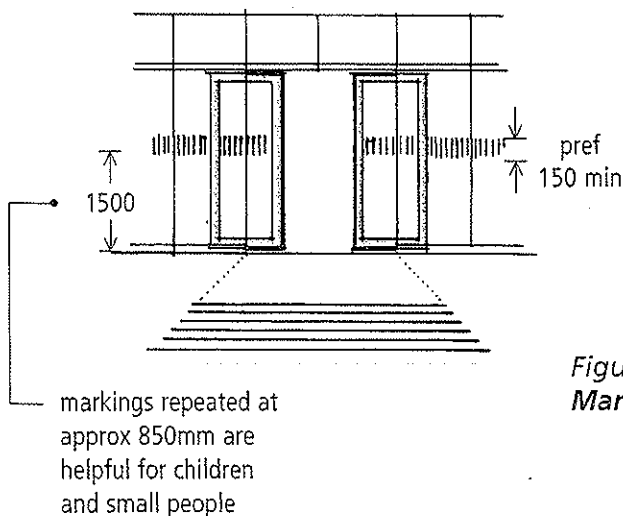
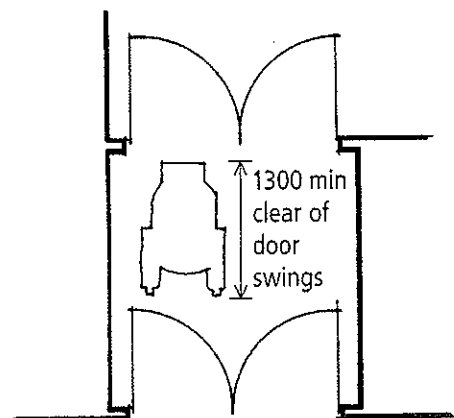
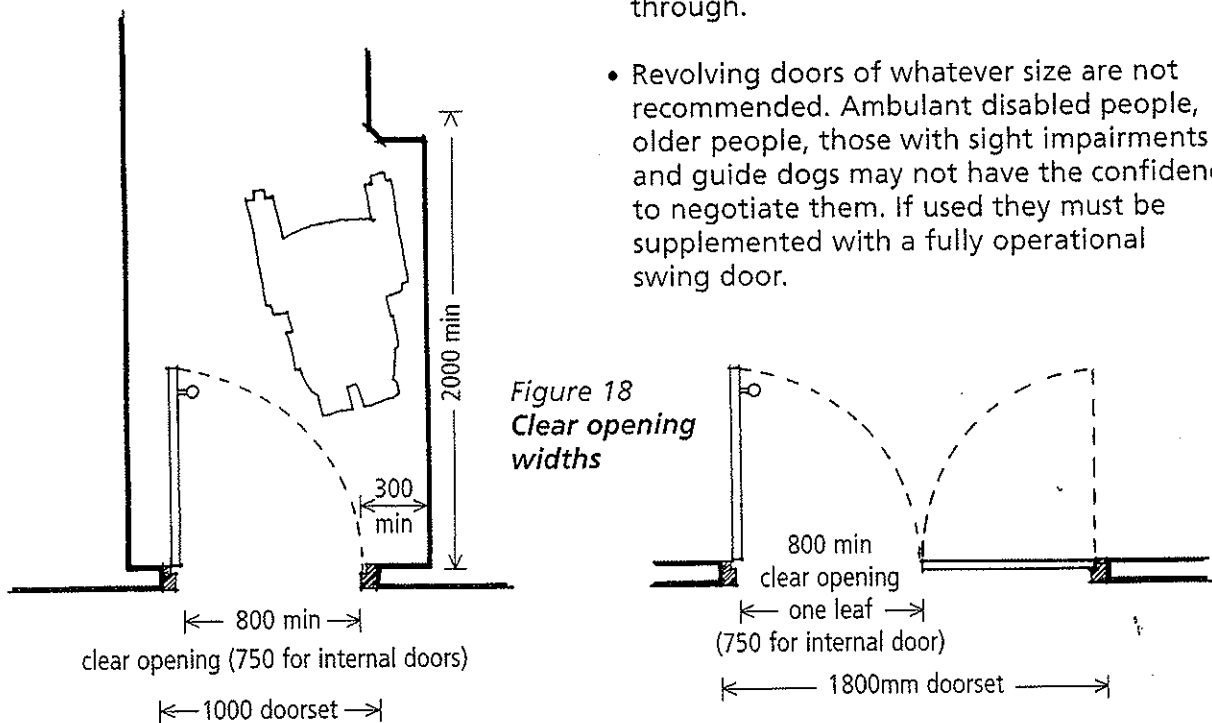


Figure 17  
Markings for safety and visibility

# Entrances

- Clear opening widths are shown in *Figure 18*.
- Door handles should be selected for ease of grip by people with poor manual dexterity.
- Door closers should be adjusted to the minimum force necessary, be slow in operation and regularly maintained. There is currently no national standard for door opening pressures, but good practice guidance recommends a maximum force of 25-30 Newtons.
- Particularly where doors are heavy, consideration should be given to providing automatic opening, electromagnetic catches which hold doors open or closers linked to fire alarm installations.
- Thresholds should be flush wherever possible. A maximum change in level of 13mm is permissible if clearly visible and floor finishes graded to provide a flush junction.
- A firm and flush entrance mat should be provided extending a minimum 1500mm into the building (see p 23 *Surfaces*).
- For double doors, clearly identify leaf in regular use.
- Automatic sliding doors generally offer very good access for disabled people, but those that swing towards the user can be dangerous. Low-energy swing-door operators are an alternative.

- Automatic doors should remain open long enough for a slow-moving person to pass through.
- Revolving doors of whatever size are not recommended. Ambulant disabled people, older people, those with sight impairments and guide dogs may not have the confidence to negotiate them. If used they must be supplemented with a fully operational swing door.



## Entrances

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- Immediately inside the entrance door there should be a lighting transition zone within the lobby where people with sight impairments are able to adjust from a bright outdoors to a more dimly lit interior.
- Lobbies should be sized to allow wheelchair users to move clear of the first door before negotiating the second (see *Figure 19*).
- Signs should be obvious and clear, indicating where visitors should go to find the reception, information point, lifts, stairs or WCs.
- Minimum 300mm (ideally more) space at leading edge of door allows wheelchair users and others with limited mobility to approach and open the door – essential with self-closing doors (see *Figure 18*).
- Full-height door pulls can be useful but may restrict clear opening width, as may weather boards. Additional opening width should be provided to accommodate these.
- Exit doors, particularly those for emergency egress, are as important as entrances. A minimum 800mm clear opening, level thresholds and external ramps where necessary also apply to exits that are not combined with entrances.

# Reception areas

- Clear view in from outside is helpful.
- Should be well lit, with plenty of circulation space. Routes to reception counters, lifts, stairs and WCs should be clearly defined and unobstructed.
- Where sliding glass windows are installed they should be fully openable to allow for audible conversation.
- The receptionist's face should be clearly visible to all, and well lit to allow lip reading.
- Where main entrance is also a fire exit door, the door should open outwards, with suitable protection against protruding doors (for example, recessed door or handrails). Suitable warning signs should alert visitors to outward-opening doors.
- See *Figure 20* and also guidance on counters (p 32) and induction loops (p 38).

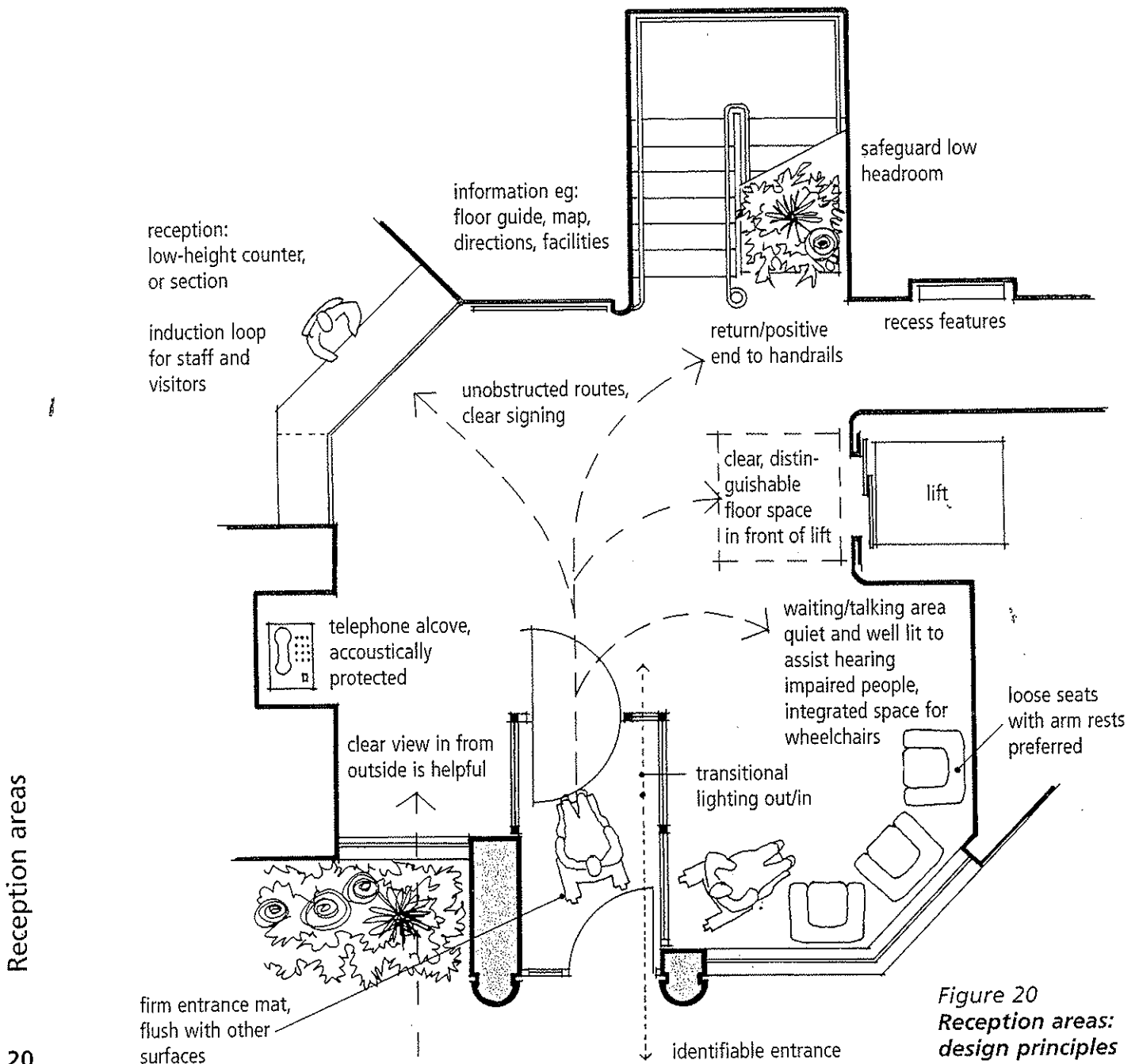


Figure 20  
Reception areas:  
design principles

# Doors

- Entrance doors should provide a minimum clear opening width\* of 800mm. Internal doors should provide a minimum 750mm clear opening width, though 800mm or more is preferred (see *Figure 18*). Double doors should provide the minimum required clear opening width through at least one leaf.
- Doors and/or door frames should be clearly identified by tonally contrasting with the wall.
- Door furniture should be clearly distinguishable from the door using tonal contrast and be designed and positioned to be easily reached and gripped (see *Figure 21*).
- Door closers should be adjusted to the minimum force necessary and regularly maintained. There is currently no national standard for door opening pressures but good practice guidance recommends a maximum force of 25-30 Newtons.
- Where doors are heavy, consideration could be given to providing automatic opening or electromagnetic catches which hold doors open.
- Doors in frequent use should have vision panels (see *Figure 22*). Substantially glazed doors should bear markings for safety and visibility (see diagram on p 17).

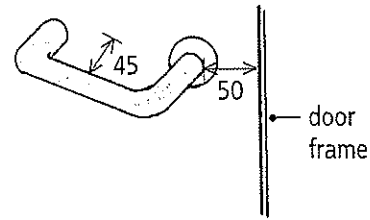


Figure 21  
Door handle details

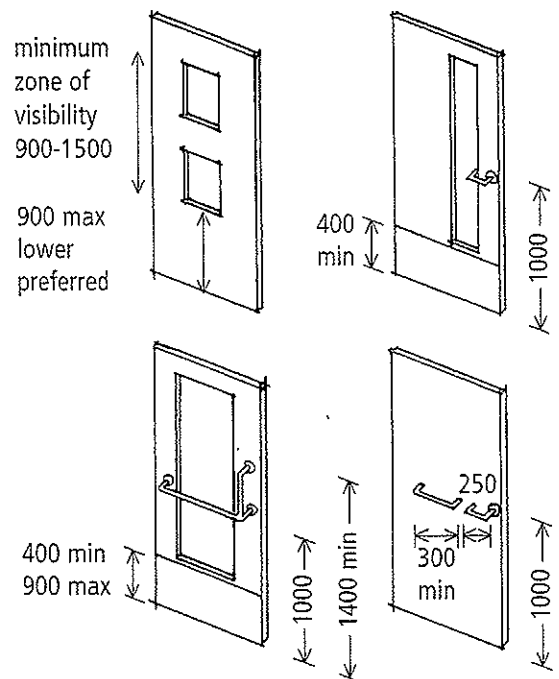
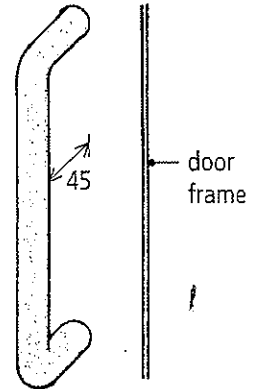


Figure 22  
Vision panels and positioning of door handles

\* *Clear opening width*: should be measured from the face of the door when open to the opposite frame or doorstop. But note that protruding door furniture may reduce useable opening.

# Circulation

- Circulation through open-plan spaces such as offices, restaurants, exhibition spaces, entrance foyers and shopping centres should also be considered. A minimum clear circulation width of 1200mm should be provided and maintained when furniture layouts are altered.
- For large open-plan areas, defining routes or areas with contrasting floor finishes and textures should be considered.
- Ensure adequate tonal contrast in colour schemes.

# Corridors

- Corridors should be simple and safe to negotiate, as they both provide access and form part of escape routes.
- In a well planned building, corridors convey information about a building and assist with circulation around it.
- Corridor widths should be unobstructed. Wherever possible, doors that are held open, radiators and equipment such as fire extinguishers should be recessed. Projections, including outward-opening doors, are hazardous to people with sight impairments (see *Figure 24*).
- Avoid glazing at ends of corridors.
- Where corridor widths in existing buildings are unavoidably narrower, wider doors could be considered.
- Avoid colour schemes with little tonal contrast. Doors, floors, walls and ceilings should be defined using tonal contrast.
- Lighting should be located where it does not create glare or silhouettes.
- Wall and floor surfaces should be chosen to minimise light reflection and sound reverberation which can be confusing for people with sensory impairments.
- See *Figure 23* for layout of internal lobbies.

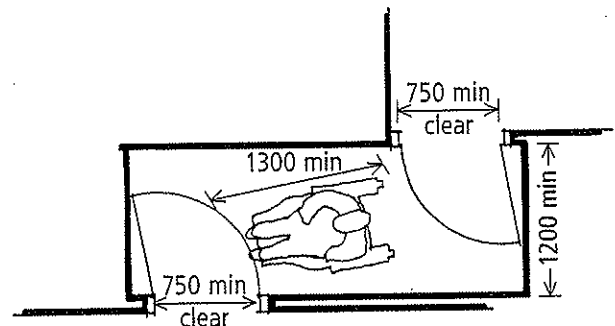
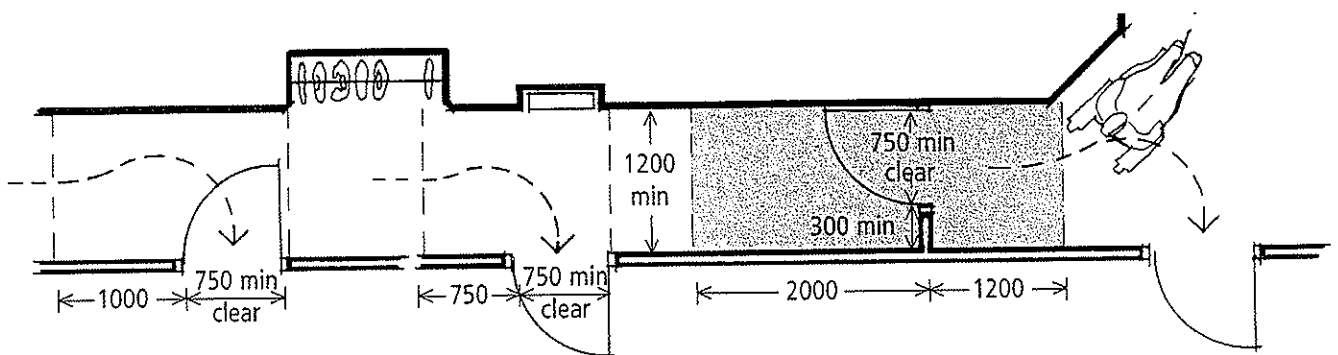


Figure 23  
Internal lobby



shaded areas indicate minimum space for manoeuvre

Figure 24  
Dimensions for easy wheelchair passage



# Surfaces

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- The selection of floor surfaces is of considerable importance to all building users.
- Hard surfaces can cause sound reverberation and increased background noise levels which can cause difficulties for people with hearing impairments. A mixture of hard and soft surfaces should be used.
- Floor surfaces should be firm and flush to allow easy wheelchair passage. Avoid coir matting, deep pile or excessively grooved carpet.
- Glossy floors and walls cause reflection and glare which can create difficulties for people with visual impairments.
- Glossy floors can also give the illusion of being wet and slippery even if they are not. This may inhibit people with mobility impairments.
- A combination of colour, tonal and textural contrast helps people with sight impairments distinguish between surfaces and objects placed upon them such as switches on walls and litter bins on floors.
- Tonal contrast is more important than colour contrast. Some colours which appear to be different can be tonally similar under certain lighting conditions or for people who have difficulty distinguishing colours.
- Wall coverings should not be busy or distracting. This can cause difficulties for wayfinding or those needing to lip read.
- For easy wheelchair passage floor surfaces should be non-directional, firmly fixed and of shallow dense pile if carpeted.
- Junctions between different flooring materials should be carefully detailed so as not to create an obstacle to wheelchair users or a tripping hazard for people with mobility or visual impairment.
- Textured surfaces are important in providing information to people with little or no sight. Textured floors can warn of hazards or impart directional information. Textured walls (of fine rather than rough grain) can alert people to the presence of facilities such as WCs or lifts where a key to the understanding of this system has been given in advance.
- Floor surfaces should be slip-resistant. This is of particular importance to people who use walking aids such as sticks or crutches, and to older people.
- Floor areas that may become wet – just inside the entrance to covered shopping malls for example – should not be of a type that becomes slippery.
- Avoid types of floor that become hazardous when recently washed.
- Bright, boldly patterned flooring should be avoided as it can create a confusing impression for people with impaired sight.

# Lifts

- Lifts should be served by landings large enough for wheelchair users to turn to reverse into or out of the lift (see *Figure 25*).
- The call panel should be easily distinguishable from its background.
- Lift buttons should be clearly distinguishable. 'Lift coming' indication should be clear. Where more than one lift, ensure people with mobility impairments have time to get to relevant lift.
- Provide visual and tactile indication of floor level adjacent to call buttons and opposite lift doors.
- Lift doors should remain open for five seconds, providing an adequate time for entry. Door reactivating devices which rely on infrared or photo eye systems are necessary to ensure no one can get trapped in the doors.
- Control panels should be located on a side wall, and preferably on both side walls of the lift car. Raised and well contrasted numbers on buttons help people with sight impairments. Braille can also be used, although it is read by a minority of visually impaired people.
- Audible announcements and visual displays are recommended internally and externally on all lifts to indicate floor reached or inform that the doors are open.
- Emergency telephones in lifts should contain inductive couplers so that hearing aid users can make use of them.
- Alarm buttons in lifts should be fitted with a visual acknowledgement that the alarm bell has sounded for lift users unable to hear it.
- Fold-down seats in larger lifts could be considered.

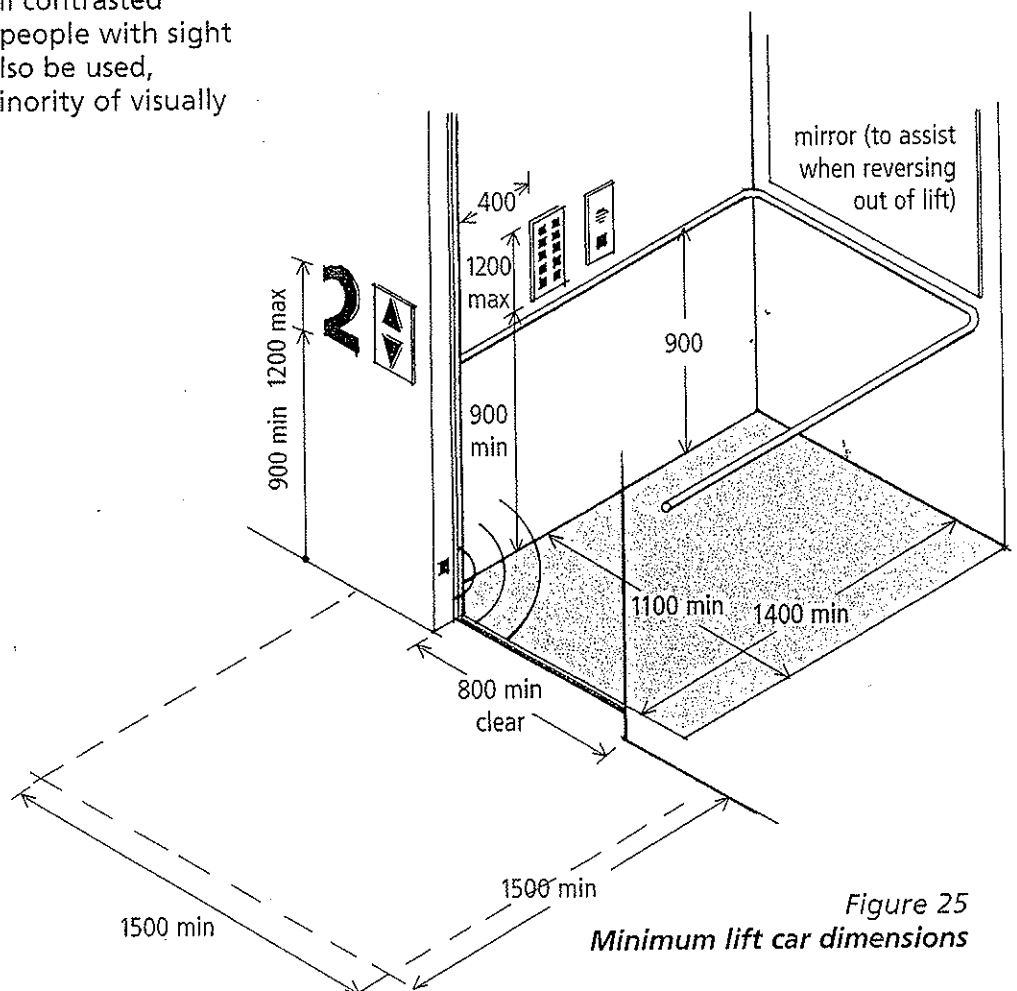
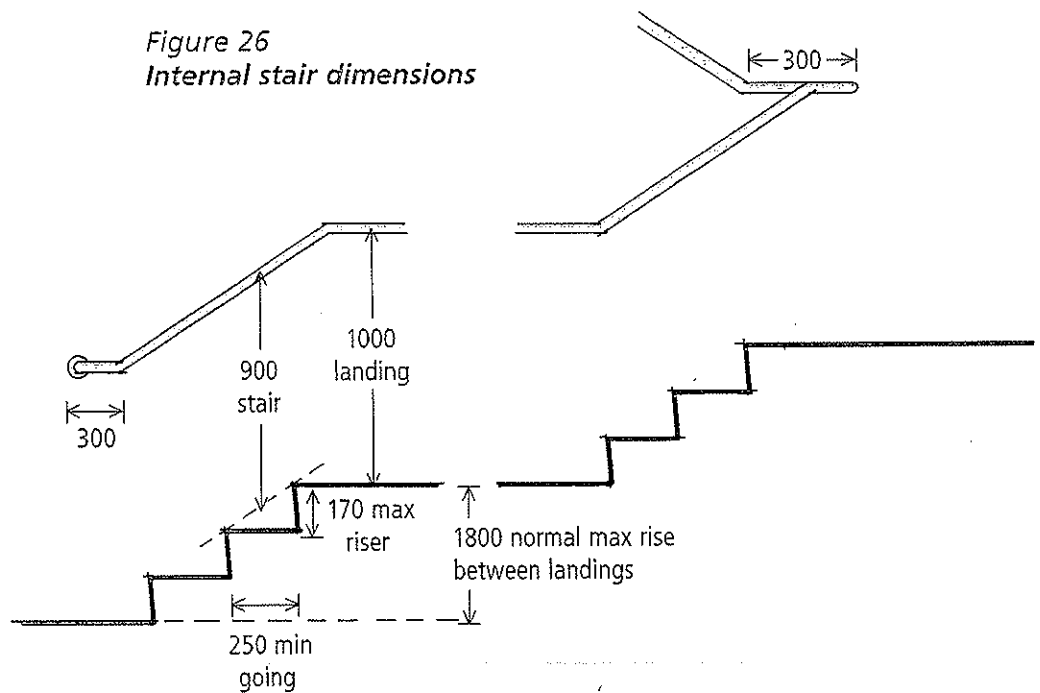


Figure 25  
Minimum lift car dimensions

# Internal stairs

- Dimensions for stairs designed for ambulant disabled use are recommended for all internal steps and stairs (see *Figure 26*).
- Provide integral nosings, distinguishable on riser and tread (see p 16 *External steps* for suitable profile).
- Open risers should not be used.
- Distinguish handrails from background by colour or brightness.
- Tactile warnings at the top and bottom of stairs can be provided. These can be incorporated into floor finishes and handrails.
- Spiral stairs and tapered treads are not recommended.

For guidance on internal ramps see p 15 *External ramps*.



# Platform lifts and stairlifts

- Platform and wheelchair stairlifts can be used to overcome changes in level where passenger lifts or ramps are not possible (see Figures 27 and 28). They should be designed for independent use with clearly visible controls set at a suitable height for wheelchair users.
- Platform lifts should be located adjacent to the stair with which they are associated.
- Platforms need to be large enough to accommodate a range of users including those with powered chairs.
- British Standard BS6440:1983 specifies maximum rise of platform lift to be 1980mm. A waiver may be granted to increase the rise up to 4000mm.
- Wheelchair stairlifts are not recommended for new buildings. They can rarely be used independently and can obstruct passage width of the stair while in use. However, they may be suitable in adapting existing buildings.
- Ensure sufficient clear stair width when lift platform is folded up.
- A means of communication with building staff is recommended should assistance be required.
- A fold-down seat with appropriately positioned controls for the platform could be considered for ambulant disabled users.

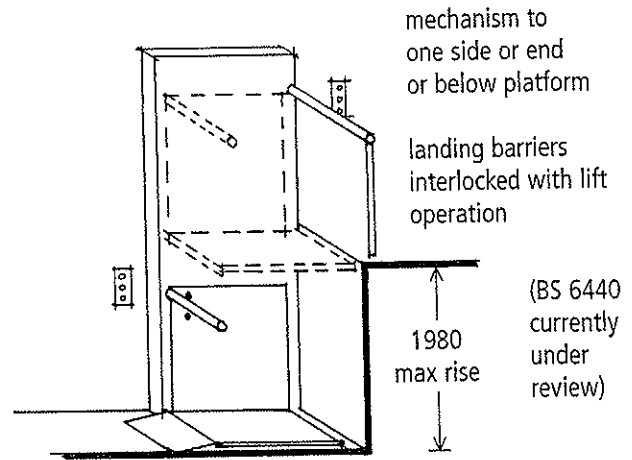


Figure 27  
Short-rise platform lift

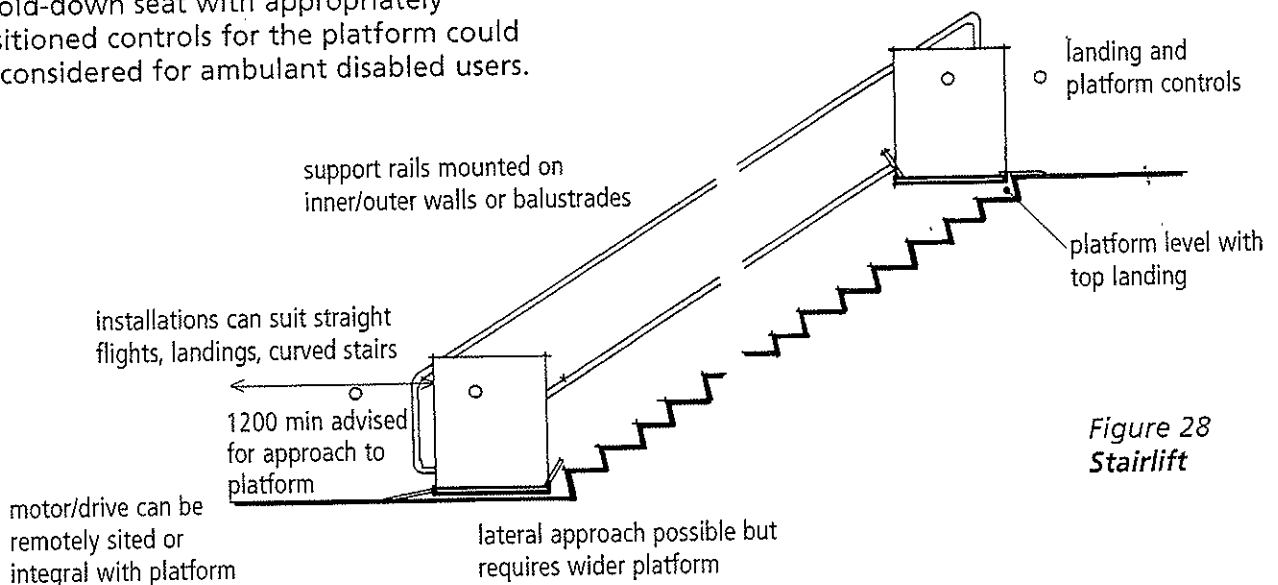


Figure 28  
Stairlift

# WCs

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## General guidance

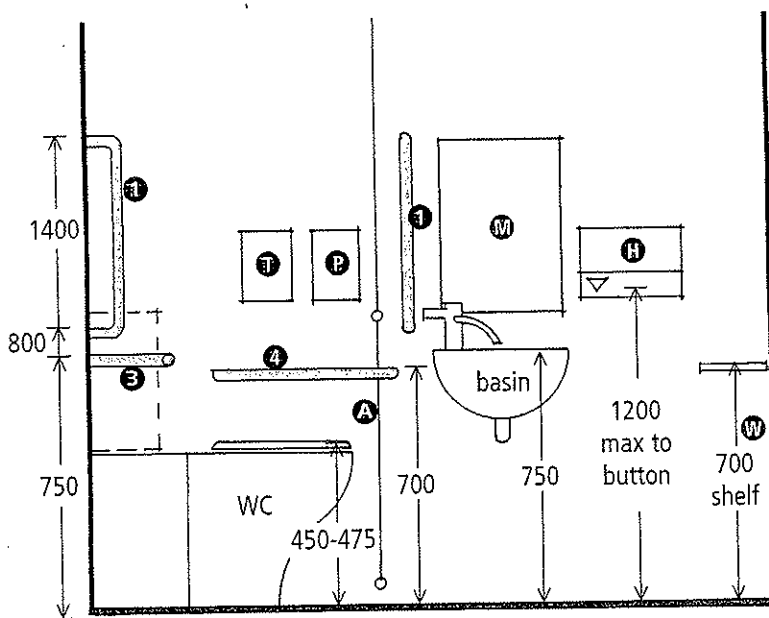
- Wheelchair users use WCs in a variety of ways. This may be independently or with assistance. Transfer to the WC from a wheelchair could be from the front, side or at an angle. Some may transfer backwards with assistance by removing the wheelchair back support.
- A mixture of Part M layout (with alternate left and right-hand transfer space) and peninsular layout should be provided where possible.
- Where Part M layout is handed, the door configuration should be handed accordingly.
- Unisex accessible WCs can be provided in addition to compartments within the men's and women's WCs.
- The recommended number and location of wheelchair accessible WCs depends on the size and use of the building. A wheelchair user should not have to travel more than one storey to reach a suitable WC. The recommended maximum distance for a member of staff to travel to a WC from their workstation is 40m.
- Shiny ceramic tiles and floors should be avoided. They cause reflection and glare which may be visually confusing.
- Slip-resistant flooring materials should be used.
- Fixtures and fittings within the WC should be clearly visible using tonal contrast.
- Use plastic-coated handrails and grabrails, and drop-down rails that are easy to operate.
- Emergency alarm systems should be provided. These should be audible as well as visual and connected to a source of assistance. Emergency alarm pull-cords should extend to floor level and be easy to grip.
- A lever-type flush is recommended. It should be easy to operate and mounted on the transfer side of the cistern within easy reach.
- Coat hooks and mirrors should be fixed at heights usable by standing and seated users. A recommended height for a coat hook is 1200mm. It is recommended that mirrors extend from 300mm to 1800mm from floor level for full height view.
- Fittings such as radiators, vending machines, sanitary disposal units and waste paper bins should be recessed where possible so as not to obstruct transfer space or manoeuvrability.
- The boxing in of pipes should be carefully considered so as not to compromise manoeuvre space.
- Combining baby-changing facilities within Part M layout WC compartments which are likely to be in frequent use should be avoided.
- Where space permits, a full-length changing bench for adults can be helpful.
- WC doors conventionally open outwards, but may with advantage open inwards providing there is a minimum of 700mm x 1100mm space clear of the door swing and fittings and door can be opened outwards in emergency.
- Reduced-swing doors could be used where space outside is restricted.

# WCs

## The Part M unisex WC

- Can accommodate a variety of methods of transfer and allows most users to wash and dry their hands while seated on the WC before transferring back to their chair.
- Layout 1500mm wide x 2000mm long minimum (see Figure 29; overall dimensions shown are minimum and could be increased to advantage).

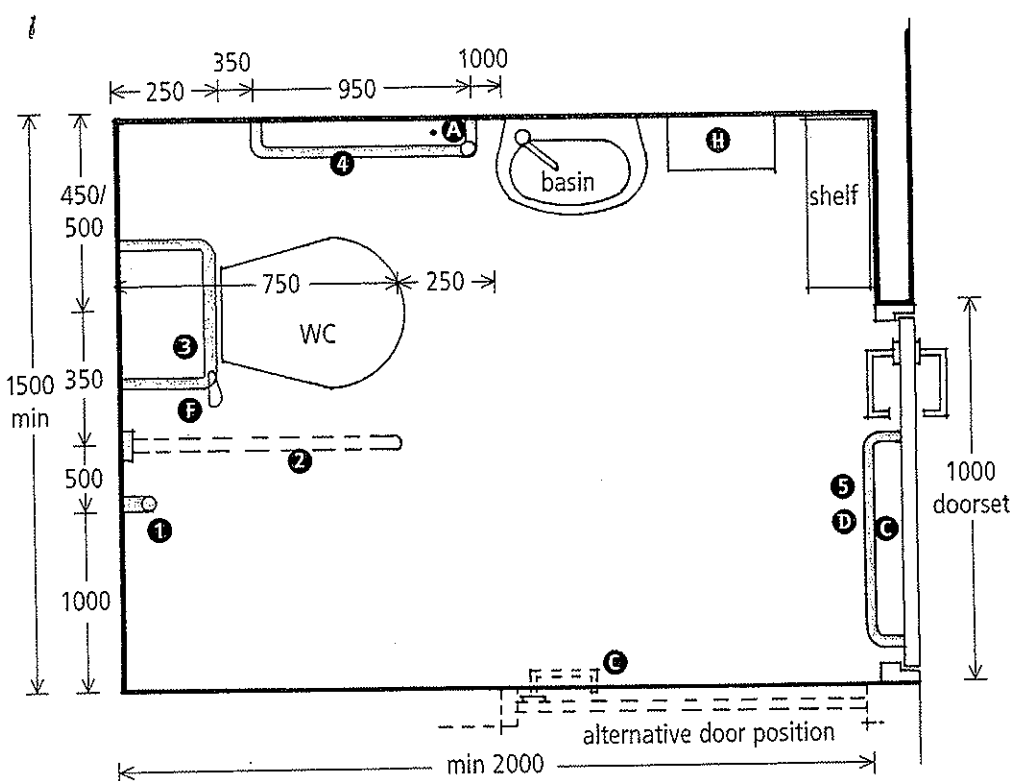
- The dimensions relating WC pan to basin and associated fittings and equipment, and to wheelchair manoeuvring space, are critical for independent use.
- The horizontal rail/backrest to the rear of the WC should be padded if there is no WC lid to rest against. A backrest may not be required if the cistern is low-level.



### Grab rails:

35mm diameter, good grip when wet, well fixed, contrast with walls

- ① fixed vertical rail
- ② drop-down rail (easy to use from seated position)
- ③ fixed horizontal rail behind WC
- ④ fixed horizontal rail
- ⑤ horizontal door pull (to enable door to be closed when entering)



- ⓕ lever flush (to transfer side)
- ⓖ paper towel dispenser
- ⓗ toilet paper dispenser
- ⓓ mirror
- ⓔ hand drier (electric)
- ⓐ alarm cord (distinguish from light pull)
- ⓒ coat hooks (1200-1400 high)
- Ⓦ sealed container for incontinence pads and other disposables

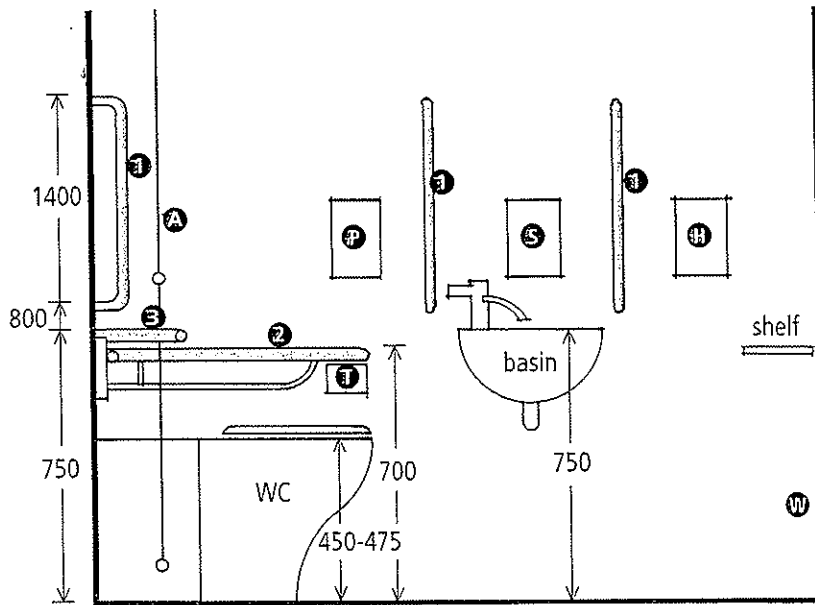
Figure 29 Part M unisex layout WC

# WCs

## The peninsular layout WC

- Allows for approach and transfer from either side and space for an assistant, but not for use of basin from WC.

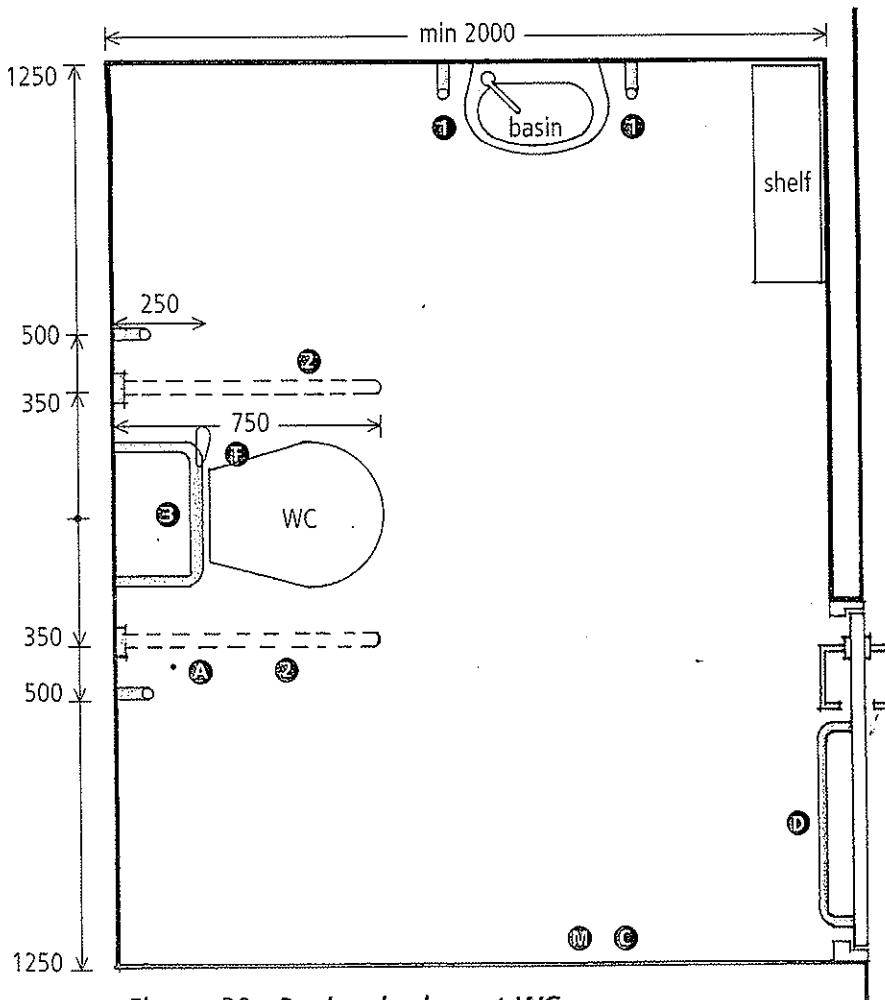
- Layout 2500mm wide x 2000mm long minimum (see Figure 30).
- Basins should be approachable in a wheelchair with all associated fittings within reach.



### Grab rails:

35mm diameter, good grip when wet, well fixed, contrast with walls

- ① fixed vertical rail
- ② drop-down rail – note fittings attached
- ③ fixed horizontal rail behind WC



- Ⓣ lever flush (to basin side)
- Ⓢ soap dispenser
- Ⓟ paper towel dispenser
- Ⓣ toilet paper dispenser
- Ⓜ mirror
- ⓗ hand drier (electric)
- Ⓐ alarm cord (distinguish from light pull)
- Ⓒ coat hooks (1200-1400 high)
- Ⓜ sealed container for incontinence pads and other disposables
- Ⓓ horizontal door pull (to enable door to be closed when entering)

Figure 30 Peninsular layout WC

## WCs

### WC layout for ambulant disabled people

- Where there are storeys not accessible for wheelchair users, at least one cubicle per range of WC compartments should be provided which is suitable for ambulant disabled people (see *Figure 31*).
- Ensure that the grabrails protrude no more than approximately 90mm so as not to restrict space within the cubicle.
- The door should open outwards wherever possible. In situations where the door opens inwards the minimum clear space must be maintained. The door should be designed so that it can be opened outwards in an emergency.
- Provide shelf if space permits.
- Provide coat hook at 1200-1400 high.

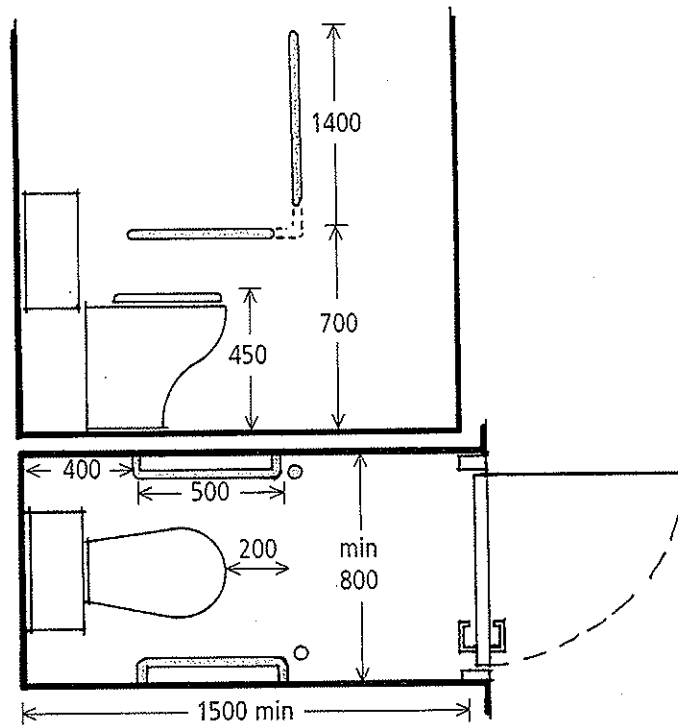


Figure 31 WC layout for ambulant disabled people



# Seating

- Seats should be provided at intervals along long routes or where waiting is likely.
- Seats should be stable and provided in a range of heights (see *Figure 32*).
- A mixture of fixed and loose seating provides flexibility of use of space.
- A mixture of seating with and without armrests should be provided.
- In waiting areas there should be space for a wheelchair user to pull up alongside a seated companion.

## Audience and spectator seating

- In auditoria seating, a minimum clear width of 650mm should be provided between rows. Extra leg space is recommended for some if not all rows.
- Space should be provided for guide dogs adjacent to seating which would not obstruct circulation routes.
- Spaces for wheelchair users to sit adjacent to seated companions should be provided and distributed throughout the seating area. Provision for parties of wheelchair users who wish to sit together should be considered.
- The minimum required number of designated wheelchair spaces is six or 1% of capacity, whichever is the greater.
- Wheelchair spaces should be 900mm x 1400mm minimum. Barriers, handrails or columns should not obstruct sight lines.

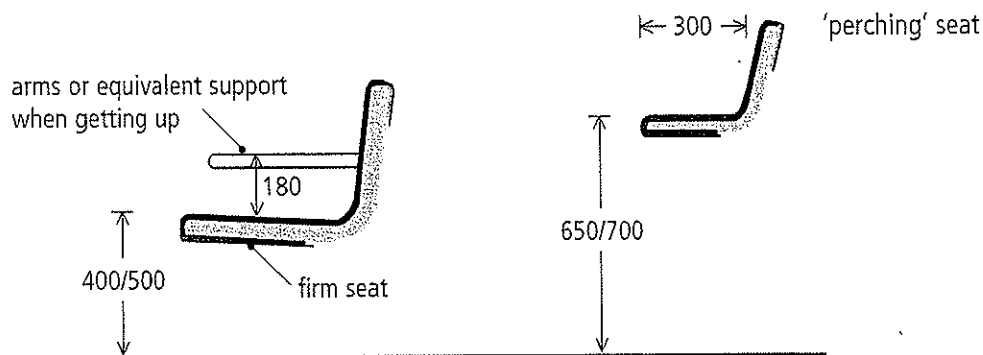
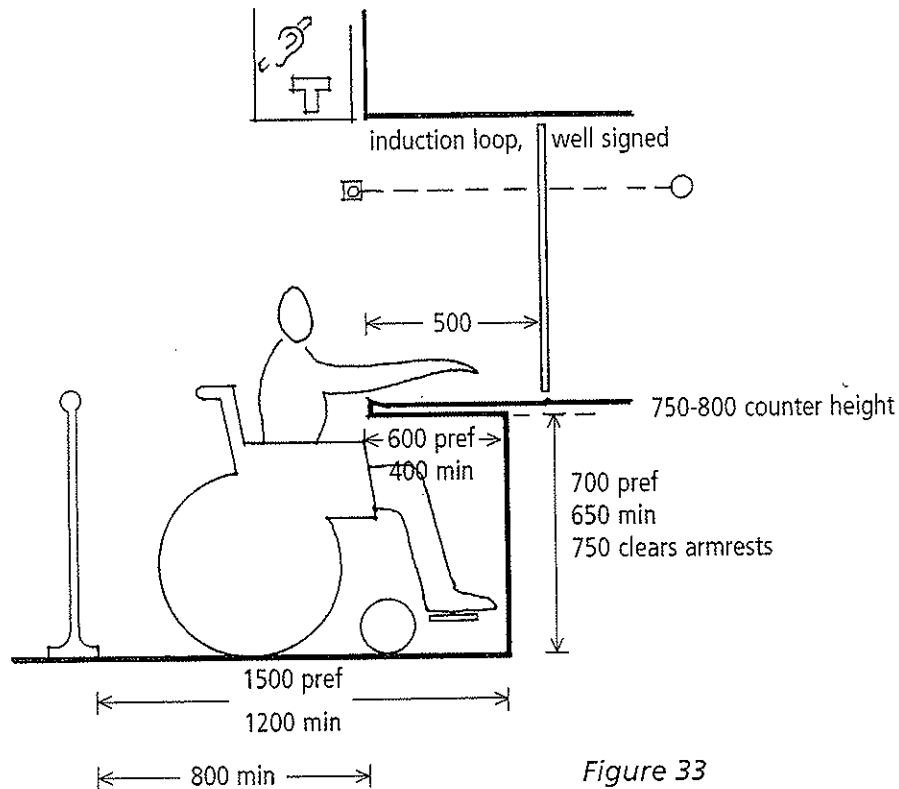


Figure 32 Seating

# Counters and service desks

- Counters and desks should be set at a height suitable for seated and standing users, with high and low sections where possible (see *Figure 33*). Provision of seats near low counters could be considered.
- An upstanding lip at the edge of the counter, if well detailed, can assist in picking up tickets or change.
- Contrast between objects and surface is helpful. Top of counter should contrast with edge.
- All exposed edges should be well rounded.
- Access for wheelchair users should be provided to both staff and visitor sides of the counter.
- There should be sufficient counter space to allow people to write or sign documents.
- Locating counters or reception desks in front of windows or reflected light at glazed counters can result in silhouetting which prevents lip reading.
- Induction loops should serve staff and visitors.
- Speech enhancement and induction loop systems should be fitted at counters with glazed screens or where there is background noise will help people with hearing aids.



*Figure 33*  
**Accessible counters/service desks**

# Telephones

- If possible, locate telephones where background noise levels are minimal.
- Telephones should be fixed at a height that allows wheelchair users to read any visual display panels and to use the telephone with ease (see *Figure 34*).
- If telephones are fixed at a low height, seats should be provided.
- Where several telephones are provided a range of fixing heights to suit standing and seated users could be adopted.
- A textphone should be provided.

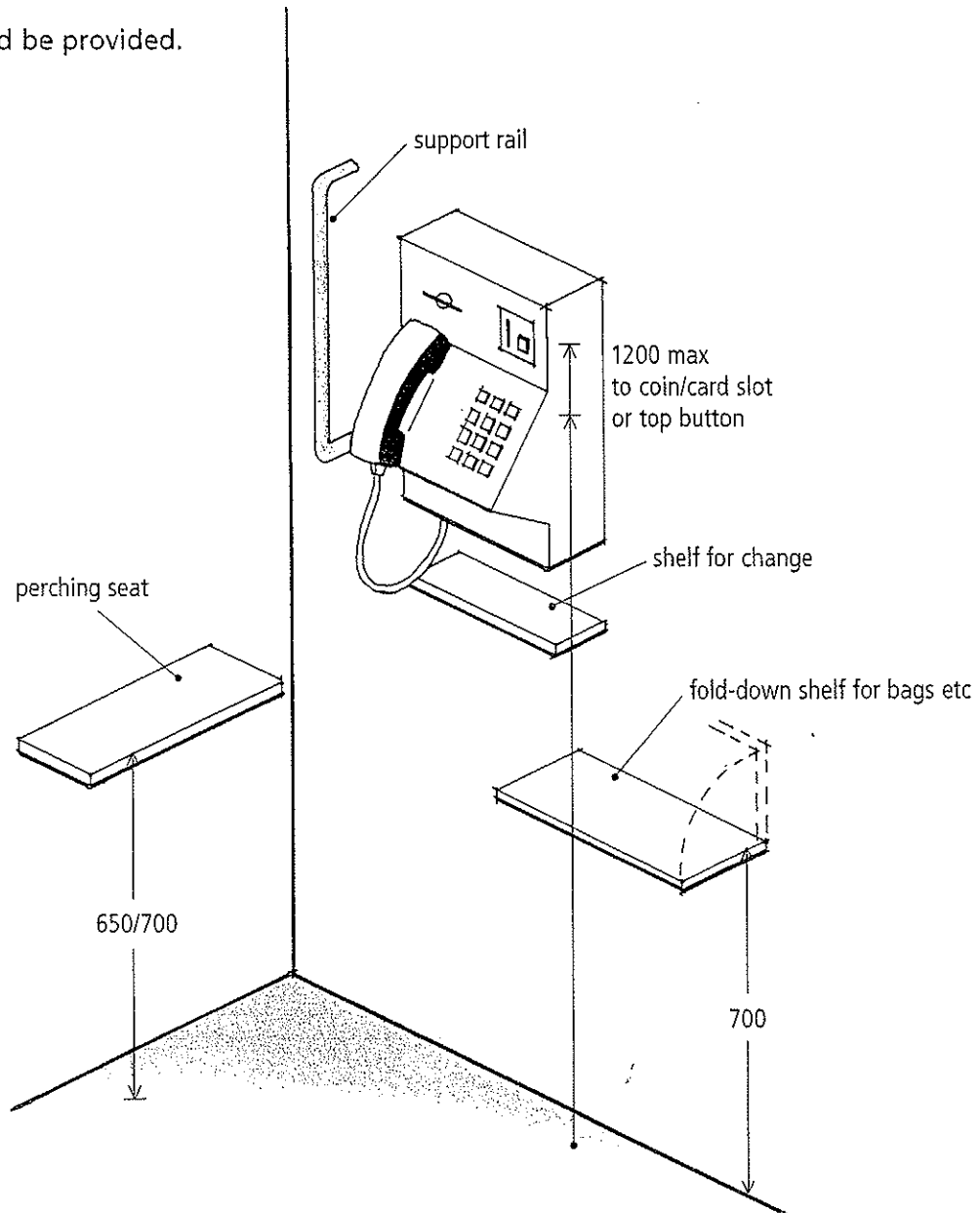


Figure 34  
Accessible telephone

# Signs

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- Location of signs should be part of the process of planning the building. They should be placed in a logical position and be obviously identifiable.
- Signs should be situated so that they do not cause obstruction and are well lit.
- Signs are difficult to identify and read if they are positioned against a background of low-level sunlight or artificial light.
- The signboard must contrast with the background against which it is seen and the lettering should contrast with the sign board.
- Fixing the sign at eye level with easy access for close viewing is an advantage for all.
- Signs need to be simple, short, consistent and easily understood using prescribed typefaces, colour and graphic devices.
- Lower case (non-capitalised) lettering is generally easier to read.
- The legibility of signs is improved for people with visual impairment if light lettering is set on a dark background.
- To minimise glare, avoid reflective glass and ensure that the sign has a matt surface.
- Symbols should be used to supplement written signs.
- Tactile signs (such as embossed letters, raised pictograms and direction arrows) should only be used where they can be easily reached eg lift controls, door numbers, lockers and WC doors.

# Wayfinding systems

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- Logical building layout assists wayfinding, particularly for people with sight impairments and people with learning difficulties, as well as facilitating means of escape.
- Colour can be used to signal where certain features can be found within a building. For example, all walls within core areas containing stairs, lifts and WCs could be painted a particular colour to help orientation.
- Provide visual information by distinguishing floor, wall and ceiling planes, door surrounds and decorative features.
- Tactile maps and models of the interior layout of buildings – particularly those of architectural interest – aid the comprehension of the building for those with sight impairments.
- Audio guides could be considered.
- Where a building relies upon its own vocabulary of textured surfaces to convey information to people with sight impairments a key must be offered at a central information point.

# Alarms

- Audible alarms should be supplemented by visual alarms for people with hearing impairments (but note that certain types of strobe light alarm systems may induce seizures in some people).
- Vibrating pagers are an alternative means of providing a warning system.

# Controls

- Colour and tonal contrast should be used to ensure controls are distinguishable from their background (see *Figure 35*).
- Consider use of tactile buttons and controls. These should be embossed, not engraved.

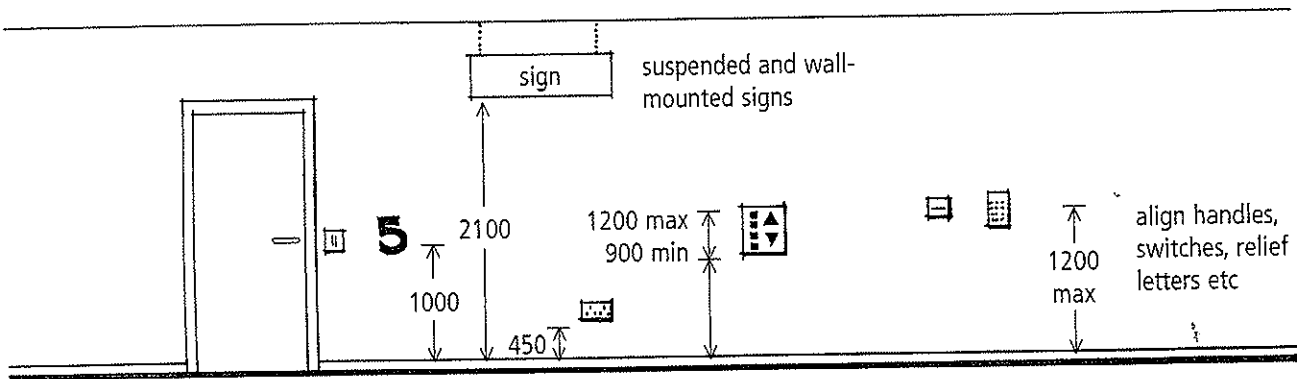


Figure 35  
Height of controls

# Lighting

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- Good lighting is essential for everyone for visibility and safety.
- Lighting systems can be used to accentuate interior colour, tone and texture scheme.
- Good light levels are particularly important in potentially hazardous areas such as stair wells or changes in level along a route.
- Passive infrared sensors can be used to detect dim light and activate booster lighting.
- Keeping windows, blinds and lamps clean maximises the amount of light available.
- Lights should be positioned where they do not cause glare, reflection, confusing shadows or pools of light and dark.
- Avoid positioning service desks in front of windows where bright sunshine will cause the user's face to be in a shadow and hence difficult to lip-read. Similarly, avoid confusing backgrounds such as strong patterns.
- Positioning lighting in unusual or unexpected places can create shadows and misleading visual effects.
- Uplighters placed above a standing person's eye level can deliver a comfortable, glare-free illumination.
- All lighting including natural light should be controllable and adjustable where possible to suit the needs of the individual.
- Fluorescent lights create a magnetic field which causes a hum in hearing aids. Lighting of this type should be specified with care where it cannot inconvenience people with hearing impairments.

# Acoustics

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- In order to allow people with hearing impairments to use the hearing they do have, it is important to keep background noise to a minimum.
- However, sounds can be useful for people with visual impairments. For example, the sound of a lift arrival bell locates the lift and being able to hear footsteps informs that someone is approaching.

## Noise reduction

- 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 which cause problems for people with hearing impairments.
- Supplementary heating units should be chosen with a view to minimising background noise which can be distracting and tiring for people with hearing impairments.
- Air conditioning units create a lot of background noise. They should be regularly maintained in order to reduce noise due to wear.
- The main power supply cable to a building generates a considerable magnetic field which can cause a loud hum in hearing aids. Care should be taken to route the cable away from public spaces.
- Computers, overhead and slide projectors and lighting can create background noise and interfere with hearing aids.

## Induction loops and infrared systems

- Induction loops convert sound via a microphone into a varying magnetic field which is converted back to amplified sound by an individual's hearing aid. Loops help to cut out extraneous background noise.
- Induction loops should be fitted wherever information is given verbally: airports, railway stations, box offices, ticket counters, banks, post offices, churches, meeting rooms, cinemas and theatres.
- Further technical advice should be sought from induction loop system manufacturers. Some systems may allow sound to be picked up by hearing aid users in adjacent rooms – this is called overlap. This may be a problem in multiscreen cinemas or where confidentiality is required. Large amounts of metal within a building can also reduce the effectiveness of the loop system.
- Infrared systems work on different principles by converting a sound source into an infrared light signal and require special receiving headsets. This system is more suitable for controlled areas such as cinemas, theatres and lecture rooms where headsets can be borrowed from a central source. As the technology is based on light, sound cannot be picked up outside the room in which the infrared signals are generated.



# Building management checklist

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Accessibility cannot be guaranteed by good design alone. How a building is managed in its day-to-day running will have a huge impact on how easy it is to use by disabled people. For example, a spacious lift lobby with plenty of room for a wheelchair user to reverse into the lift is rendered useless if used for the temporary storage of boxes of stationery. Installing an induction loop in a theatre or meeting room is only useful if management advertises its presence.

It is important that those involved in making a building accessible – whether new or existing – contribute to the drafting of a building management manual, which can be updated and added to as required. In response to duties under the DDA, and to achieve good practice in the management of buildings generally, the following building management, maintenance and health and safety issues should be considered.

**Car parking** – ensuring that non-disabled drivers do not occupy bays intended for disabled people.

**Routes** – ensuring that external routes, ramps and steps are kept clean, unobstructed and, in winter, ice-free.

**Doors** – ensuring that door closers are regularly maintained, door ironmongery is kept clean and free-moving, side-hung doors accompanying revolving doors are not kept locked.

**Horizontal circulation** – ensuring that spaces required for wheelchair manoeuvres are not obstructed by deliveries or storage.

**Vertical circulation** – ensuring that lifts are regularly checked to see that the lift car floor aligns with the structural floor, that short-rise lifts are not abused by people using them as goods lifts.

**WCs** – ensuring that supplies of toilet tissue and paper towels are regularly replenished and that the WC is not used as an unofficial storage area.

**Signs** – ensuring that new signs integrate with the existing signage, that signs are replaced correctly when removed for redecoration.

**Maps and models** – ensuring that maps and models of building interiors are updated when departments move offices within the building.

**Induction loops and infrared systems** – ensuring that installations are advertised and regularly checked.

**Alarms and security** – ensuring that alarm systems, including those in WCs, are regularly checked and that new staff are trained in alarm response procedures.

**Surfaces** – ensuring that cleaning and polishing do not render slip-resistant surfaces slippery. Ensuring that the junctions between different flooring materials do not become worn, presenting a tripping hazard. Ensuring that when flooring is renewed, like is replaced by like. Ensuring that the redecoration of interiors does not compromise a carefully selected colour scheme designed to impart information to people with poor sight or impair contrast with features such as door frames, control panels, signs etc.

**Lighting** – ensuring that windows, lamps and blinds are kept clean in order to maximise available light. Ensuring that blown light bulbs are swiftly replaced.

# Means of escape

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*Designing for Accessibility* does not attempt to cover emergency egress from buildings in the same degree of detail as it does access to and within buildings. However, this is a crucial subject area that should be considered at the same time as access.

The design of a building alone cannot ensure safety for the occupants in the case of a fire or other emergency. Means of escape strategies must be devised by the building's management in order to ensure safe, swift, orderly evacuation. Escape strategies for disabled building users will differ from those for able-bodied building users according to the amount of assistance they require in order to leave the building.

The Approved Document supporting Part B of the Building Regulations 1991 comprises the requirements for fire precautions in a building and guidance on meeting them. Detailed information on means of escape is given in Part 8 of BS5588 *Fire Precautions in the Design, Construction and Use of Buildings*. This document considers the concepts of horizontal and vertical escape, proposing that disabled people evacuate themselves as far as possible horizontally to a fire-protected refuge space on or near the escape stairs. From there they can be evacuated vertically with the required assistance from the building management or fire brigade. BS5588 Part 8 states that lifts can be used to assist in the evacuation of disabled building users if they are encased within a fire-protected shaft and have their own independent electrical supply and control panel. Appendices give guidance on evacuation techniques.

The safe and competent evacuation of disabled employees depends to a large part upon the creation of bespoke personal emergency egress plans (PEEPS) that take into account the difficulties the building presents, the requirements of the disabled person for assistance and the abilities of colleagues in giving assistance. Generic emergency evacuation plans can be devised to meet the needs of visitors. These will be fundamentally suited for the evacuation of wheelchair users or ambulant disabled people or people with sight impairments and will facilitate the safe evacuation of disabled visitors whose needs cannot be identified in advance.

Details of guidance concerning the creation of PEEPS and other documents about fire safety are given in appendix two.

# Organisations

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## **British Standards Institution (BSI)**

389 Chiswick High Road  
London W4 4AL  
Tel: 020 8996 9000  
Fax: 020 8996 7400  
Website: [www.bsi.org.uk](http://www.bsi.org.uk)

Publishes British Standards including BS5810:  
1979 Code of Practice for *Access for the  
Disabled to Buildings* (currently under review)

## **Centre for Accessible Environments**

Nutmeg House  
60 Gainsford Street  
London SE1 2NY  
Tel/minicom: 020 7357 8182  
Fax: 020 7357 8183  
e-mail: [cae@globalnet.co.uk](mailto:cae@globalnet.co.uk)  
Website: [www.cae.org.uk](http://www.cae.org.uk)

Provides technical information, training and consultancy in making buildings accessible to all users, including disabled and older people and carers of young children.

## **Disabled Living Foundation**

380-384 Harrow Road  
London W9 2HU  
Tel: 020 7289 6111  
Fax: 020 7266 2922  
e-mail: [advice@dlf.org.uk](mailto:advice@dlf.org.uk)  
Website: [www.dlf.org.uk](http://www.dlf.org.uk)

Provides an information service on aids and equipment that help disabled people with their daily lives. Administers a comprehensive database of products that can be used by disabled people in public and employment buildings.

## **Employers' Forum on Disability**

Nutmeg House  
60 Gainsford Street  
London SE1 2NY  
Tel/minicom: 020 7403 3020  
Fax: 020 7403 0404  
e-mail: [efd@employers-forum.co.uk](mailto:efd@employers-forum.co.uk)

Represents and advises member companies on disability issues, plus information on good practice available free to all businesses.

## **The Guide Dogs for the Blind Association**

Hillfields  
Burghfield Common  
Reading  
Berks RG7 3YG  
Tel: 0118 983 5555  
Fax: 0118 983 5433  
e-mail: [guidedogs@gdba.org.uk](mailto:guidedogs@gdba.org.uk)  
Website: [www.gdba.org.uk](http://www.gdba.org.uk)

Provides guide dogs, mobility and other rehabilitation services that meet the needs of blind and partially sighted people.

## **Hearing Concern**

7-11 Armstrong Road  
London W3 7JL  
Tel: 020 8743 1110  
Minicom: 020 8742 9151  
Fax: 020 8742 9043  
e-mail: [hearing.concern@ukonline.co.uk](mailto:hearing.concern@ukonline.co.uk)  
Website:  
[www.web.ukonline.co.uk/hearing.concern](http://www.web.ukonline.co.uk/hearing.concern)

Acts as an information and advice centre for problems concerning people with impaired hearing. Can assist designers with the installation of hearing enhancement systems in buildings.

## **JMU Access Partnership**

224 Great Portland Street  
London W1N 6AA  
Tel: 020 7391 2002  
Fax: 020 7387 7109  
e-mail: [jmu@rnib.org.uk](mailto:jmu@rnib.org.uk)  
Website: [www.rnib.org.uk/jmu](http://www.rnib.org.uk/jmu)

JMU Access Partnership is a service provided jointly by The Guide Dogs for the Blind Association and RNIB. Pan-disability consultancy working to provide inclusive environments. Services include access audits, design appraisals, education and training, information, electronic wayfinding, publications and research.

## Organisations

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### **National Disability Council (NDC) Northern Ireland Disability Council (NIDC)**

Independent statutory bodies set up under the DDA to advise the Government on issues related to the operation of the DDA and other measures on the reduction and elimination of discrimination against disabled people. Will be replaced by a Disability Rights Commission in April 2000.

### **Partially Sighted Society**

The Sight Centre  
9 Plato Place  
72-74 St Dionis Road  
London SW6 4TU  
Tel/fax: 020 7371 0289

Aims to assist partially sighted people in their daily lives. Offers an environmental consultancy service for building designers seeking to meet the needs of people with sight impairments.

### **RADAR**

12 City Forum  
250 City Road  
London EC1V 8AF  
Tel: 020 7250 3222  
Minicom: 020 7250 4119  
Fax: 020 7250 0212  
e-mail: radar@radar.org.uk  
Website: www.radar.org.uk

Gives free general information on the needs of disabled people.

### **Royal National Institute for the Blind (RNIB)**

224 Great Portland Street  
London W1N 6AA  
Tel: 020 7388 1266  
Fax: 020 7388 2034  
e-mail: helpline@rnib.org.uk  
Website: www.rnib.org.uk

Help, advice and support for people with serious sight impairments.

### **Royal National Institute for Deaf People (RNID)**

19-23 Featherstone Street  
London EC1Y 8SL  
Tel: 020 7296 8000  
Minicom: 020 7296 8001  
Fax: 020 7296 8199  
e-mail: helpline@rnid.org.uk  
Website: www.rnid.org.uk

Provides consultancy on the environmental needs of people with hearing impairments.

# Publications

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## Legislation

**Approved Document M, 1999 edition:  
Access and Facilities for Disabled People**  
*DETR*  
*The Stationery Office, 1998*

**BS5810:1979 Code of Practice for Access  
for the Disabled to Buildings**  
*BSI*

**BS5588:Part 8:1988 Fire Precautions in the  
Design, Construction and Use of Buildings –  
Code of Practice for Means of Escape for  
Disabled People**  
*BSI*

**Disability Discrimination Act 1995**  
*The Stationery Office, 1995*

**Disability Discrimination Act 1995: Code of  
Practice: Rights of Access, Goods, Facilities,  
Service and Premises**  
*DfEE*  
*The Stationery Office, 1999*  
Deals with the duties placed by Part III of the  
DDA on those providing goods, facilities or  
services to the public and those selling,  
letting or managing premises.

**Disability Discrimination Act 1995: Code of  
Practice: Elimination of Discrimination in  
the field of Employment against Disabled  
Persons or Persons who have had a Disability**  
*DfEE*  
*The Stationery Office, 1996*  
Deals with the duties placed on employers by  
Part II of the DDA.

**Disability Discrimination Act 1995: Code of  
Practice: Duties of Trade Organisations to  
their Disabled Members and Applicants**  
*DfEE*  
*The Stationery Office, 1999*

**L24: Workplace, Health and Safety:  
Workplace (Health, Safety and Welfare)  
Regulations 1992**  
*HMSO, 1992*

## Other publications

**A Design Guide for the Use of Colour and  
Contrast to Improve the Built Environment  
for Visually Impaired People**  
*Dulux Technical Group, ICI Paints, 1997*  
Based on findings from 'Project Rainbow', a  
research project carried out by the University  
of Reading.

**Access Policies for Local Plans**  
*RTPI / Access Committee for England, 1993*  
Sets out proposals for incorporating policies  
for people with disabilities into local  
authorities' local plans.

**Access to ATMs: UK design guidelines**  
*by Robert Feeney*  
*CAE, 1999*  
Design principles and guidance for those who  
design, manufacture, install and maintain  
ATMs.

**Barrier-Free Design**  
*by James Homes-Siedle*  
*Butterworth-Heinemann, 1996*

**Buildings for All to Use: good practice  
guidance for improving existing public  
buildings for people with disabilities**  
*by Sylvester Bone*  
*Construction Industry Research and  
Information Association (CIRIA), 1996*  
Good practice guidance for improving  
existing public buildings for people with  
disabilities.

**Building Sight**  
*by Peter Barker, Jon Barrick, Rod Wilson*  
*HSMO in association with the Royal National  
Institute for the Blind*  
*RNIB, 1995*  
A handbook of building and interior design  
solutions to include the needs of visually  
impaired people.

**Designing for Spectators with Disabilities**  
*Football Stadia Advisory Design Council, 1992*  
Guidance for designing stadia that are  
accessible and meet the requirements of  
Part M of the Building Regulations.

## Publications

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### **Designing for the Disabled: the new paradigm**

*by Selwyn Goldsmith*

*Butterworth-Heinemann, 1997*

A new vision that obliges architects to rethink the methodology of designing for disabled people.

### **Easy Access to Historic Properties**

*English Heritage, 1995*

Guidance in relation to achieving access in historic buildings (now out of print).

### **Guidance on the Use of Tactile Paving Surfaces**

*DETR*

*The Stationery Office, 1997*

### **Personal Emergency Egress Plans**

*Northern Officer Group, 1993*

A practical manual on how to plan and implement the management elements of a fire safety strategy for the safe evacuation of disabled people.

### **Specifiers' Handbooks**

A compact A5 series for designers and specifiers on the design and performance criteria for access products and specialist equipment.

### **1: Electrical Controls**

*by Tessa Palfreyman*

*CAE, 1990*

### **2: Wheelchair Stairlifts and Platform Lifts**

*by Stephen Thorpe*

*CAE, 1993*

### **3: Automatic Door Controls**

*by Ann Sawyer*

*CAE, 1995*

### **4: Internal Floor Finishes: improving access for all**

*by Vin Goodwin*

*CAE, 1997*

### **Tourism for All: providing accessible visitor attractions**

*by Bob Donaldson*

*English Tourist Board, 1994*

Designing access that allows more people to get at and enjoy visitor attractions.

### **Wheelchair Template**

*by Stephen Thorpe*

*CAE*

Invaluable design tool for drawing appraisals and in the creation of drawings to ensure accessible layouts and detailing.

### **Widening the Eye of the Needle: access to churches for people with disabilities**

*by John Penton*

*Church House Publishing, 1999*

Focuses on the alteration and operation of existing churches and associated buildings but also covers new churches.

# Centre for Accessible Environments

The Centre for Accessible Environments is a specialist charity committed to the provision of buildings which are accessible to all users, including disabled and older people and carers of young children. The Centre provides technical information and advice, training and a wide range of consultancy services including access audits of buildings and appraisals of proposals.

The Centre's work is informed by a belief in inclusive design. Generally access improvements should take account of a wide range of environmental needs and not be limited to specific types of disability. By adopting this broad approach we aim to promote the provision of environments that are safe, convenient and enjoyable for use by everyone.

The Centre's services include:

- technical information and advice by telephone, fax, letter and e-mail
- advice on compliance with Part M of the Building Regulations
- advice on implementation of the Disability Discrimination Act 1995
- access audits and access appraisals
- access consultancy on new projects
- a comprehensive training and seminar programme
- the quarterly magazine *Access by Design*
- design guides, specifiers' handbooks and other publications
- a register of member professionals with experience of designing for people with disabilities
- a nationwide panel of access auditors and the development of new national criteria for the accreditation of access consultants.

For more information about the Centre's services and to find out how to join, please contact:

Centre for Accessible Environments  
Nutmeg House  
60 Gainsford Street  
London SE1 2NY

Tel/minicom: 020 7357 8182

Fax: 020 7357 8183

e-mail: [cae@globalnet.co.uk](mailto:cae@globalnet.co.uk)

Website: [www.cae.org.uk](http://www.cae.org.uk)

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