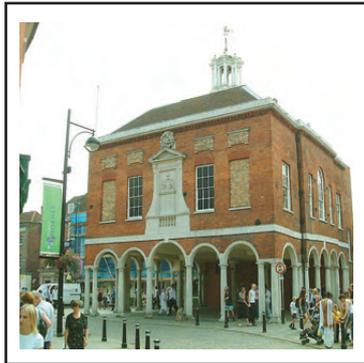


Accessibility By Design



A Standard Guide

Foreword

Contents

This design guide seeks to present the requirements of the Building Regulations 2000 and the Building Regulations (Amendment) 2003 Approved Document M Access to and Use of Buildings (2004 edition) in terms of good building design.

This guide does not cover everything or have all the answers, but covers the main design considerations.

We hope this guide will prove especially useful as a practical introduction to provide a basic understanding of what accessibility means.

This document has been produced by the Buckinghamshire and Milton Keynes Building Control Managers:

Aylesbury Vale District Council
Chiltern District Council
Milton Keynes Council
South Bucks District Council
Wycombe District Council

The distribution of this guide includes Local Authorities within Bedfordshire, Berkshire, Buckinghamshire, Hertfordshire, Northamptonshire and Oxfordshire.

Material from the Building Regulations 2000 (Approved Document M).

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ACCESS STATEMENTS

To assist Building Control Bodies in making judgements about whether proposals make reasonable provision, it is recommended that an Access Statement is provided at the time plans are deposited. This is particularly important for existing buildings and extensions. It should also be used to demonstrate how access to historic buildings will be achieved.

The guidance on access in the planning system (Planning and Access for Disabled People - a Code of Practice Guide) published by the ODPM, recommends the provision of an access statement to identify the philosophy and approach to inclusive design adopted, the key issues of the particular scheme and the sources of advice and guidance used.

An access statement provided for Building Control purposes should be seen as

complementary to and as a development of the information provided for Planning purposes, rather than a separate document. It will be beneficial to update the statement as the building work progresses to provide the end user of the building a record of what decisions were made with regard to accessibility which may help with the ongoing DDA obligations.

If an alternative detail or design to those provided in Approved Document M or BS 8300 (Design of Buildings and their Approaches to Meet the Needs of Disabled People), an access statement should be submitted to the Building Control Body which should demonstrate the reasons for the variance and any compensatory features.



ACCESS TO BUILDINGS

Car Parking Spaces

External Travel

External Hazards

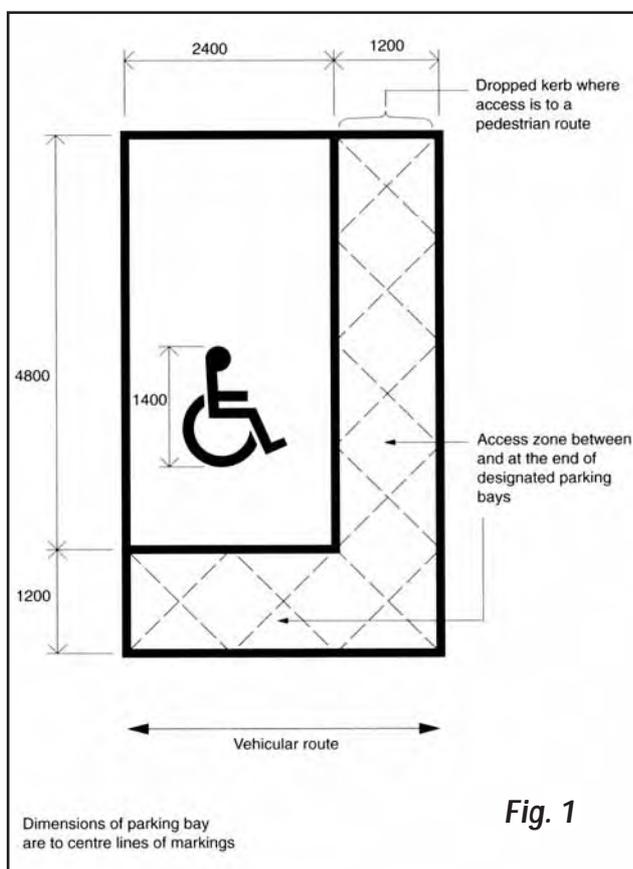
Approach to the Building

Stepped Access

Accessible Entrances

Car Parking Spaces

- For disabled people, car access is vital. In car parks, provision should be made for disabled drivers and cars carrying disabled passengers. Parking should be provided as near to the principal entrance as possible and under cover is desirable. If payment is required, provide level and unobstructed access to pay and display units.
- The surface of a designated parking bay should be firm and level, slip resistant and have a 1200mm transfer zone alongside and at the rear of the vehicle.
- If people need to obtain tickets for pay and display parking, the ticket dispensing machines need to be accessible to wheelchair users and people of short stature. They should be adjacent to the designated parking and have controls between 750mm and 1200mm from ground level.



- Guidance on designated parking, ticket dispensing machines, vehicular control barriers and multi-storey car parks can be found in BS 8300.
- The recommended numbers of reserved spaces vary in accordance with the type and capacity of car parks as follows:

Car parks associated with employment premises and provided for employees and visitors.

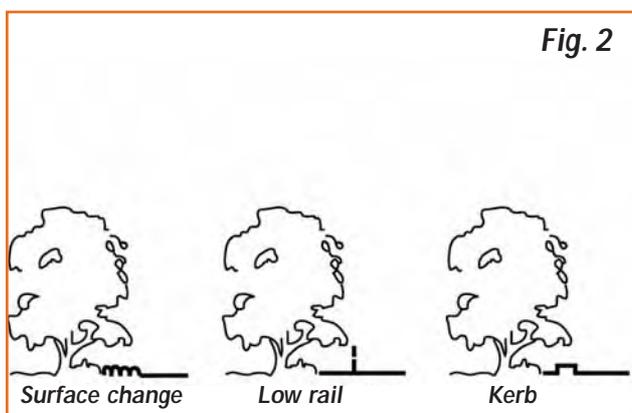
- 5% of the total parking capacity should be designated for disabled motorists.

Car parks associated with shopping areas, leisure or recreational facilities

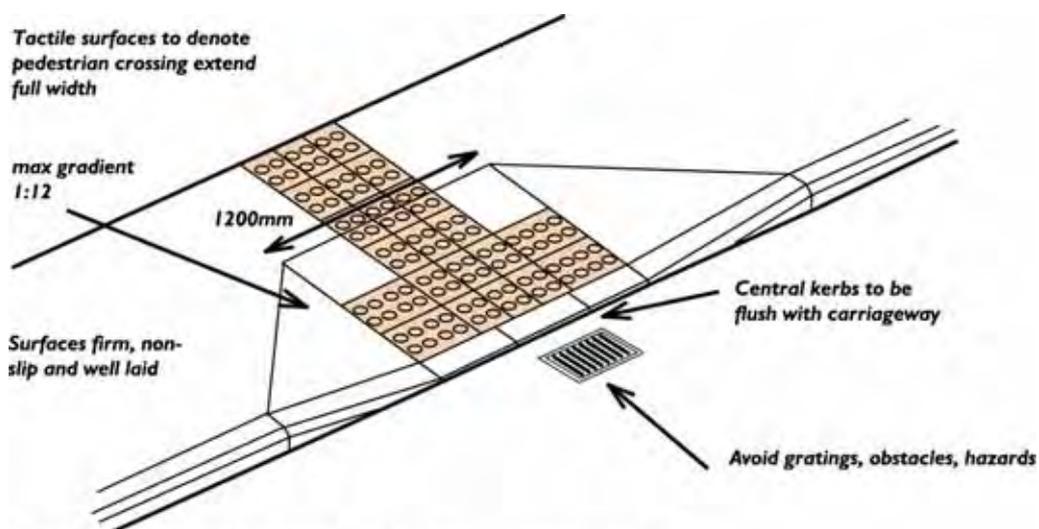
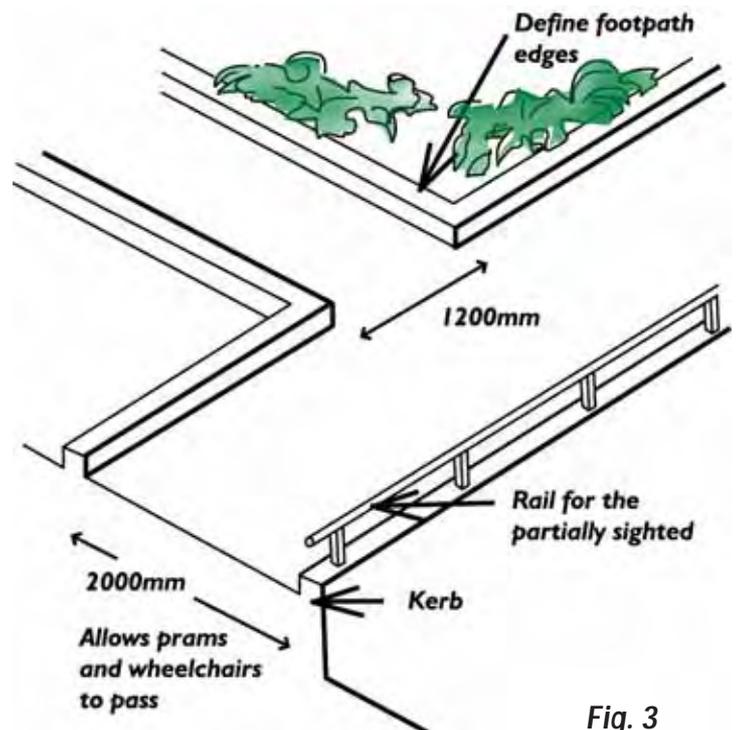
- One space for each disabled employee plus 6% of the total capacity for visiting disabled motorists.
- Car parking spaces for the disabled should be signposted using the international symbol of the disabled (fig. 46, page 53), which can also be painted on the ground with the legend "Disabled Drivers Only."

External Travel

- Routes of travel across grass or paved areas should be highlighted. This can be achieved by contrasting colour, texture or by directional paving.
- Covers and gratings should be flush with pavings, the maximum gap being 18mm.
- Define footpath edges with either kerb, low rail or a surface change.
- At changes in level and to slopes steeper than 1:15 a handrail and kerb should be provided. A lower rail and kerb should be provided as a guide for partially sighted people using canes.



- Pedestrian crossing points require special attention.
- Red tactiles should be used at controlled crossings and buff coloured tactiles at uncontrolled crossings.



This layout is a general detail only. Further advice on exact layouts should be sought from the local Highway Authority.

Fig. 4

External Hazards

LANDSCAPE FURNITURE

- The provision of landscape furniture requires careful thought. It needs to be made distinguishable from the background, i.e. by colour contrast and should be detectable at low level for people with impaired vision.

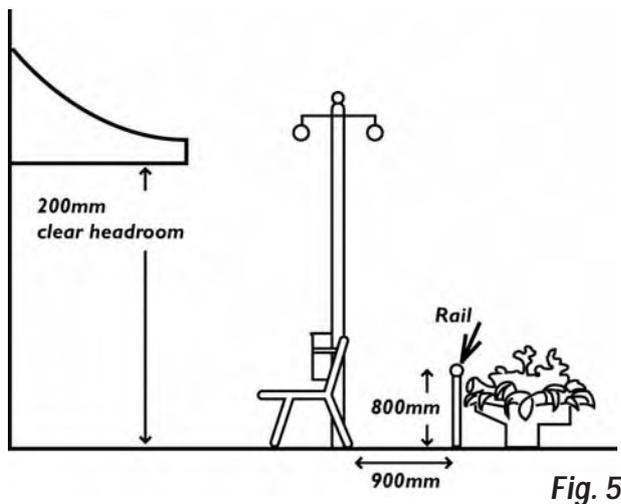


Fig. 5

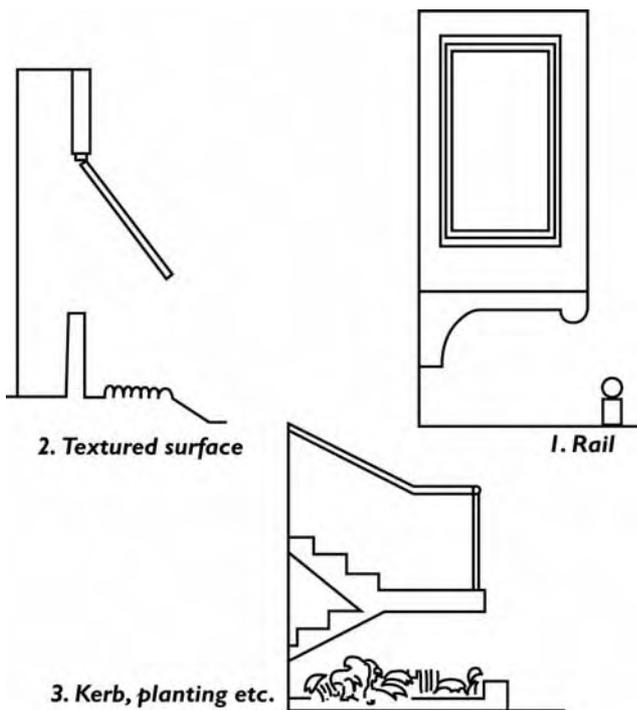
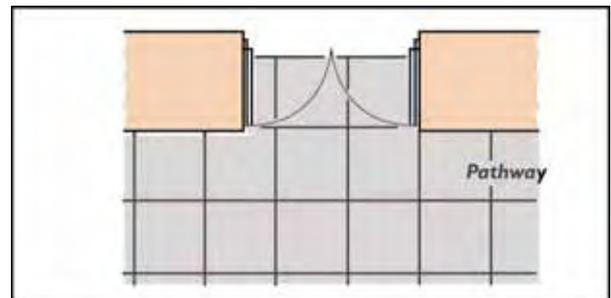


Fig. 6

- Avoid overhangs, especially at ground level.
- Guard against building projections by the use of (1) rails, (2) textured surfaces, (3) kerbs and planting, etc.

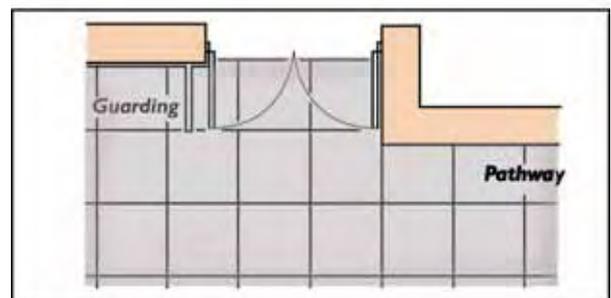
DOORS

- Doors which open outwards should not cause an obstruction on a path which runs along the face of a building, i.e. recess the doors or provide suitable guarding.



Recessed doors

Fig. 7



Guarding

Fig. 8

Approach to the Building

- There should be a convenient access into the building for disabled people, whether they are visitors to the building or work in it and whether they arrive on foot or in a wheelchair.
- If space outside the principal entrance is restrictive, an alternative accessible entrance in common use should be provided.
- Car parking spaces should be provided adjacent to the principal entrance or the accessible entrance in common use.
- Clearly signposted steps should be provided when the rise of the ramp exceeds 300mm. The surface of the ramp should be slip resistant and of a colour that contrasts visually with that of the landings.

Table 1 Limits for ramp gradients

Going of a flight	Maximum gradient	Maximum rise
10 m	1:20	500mm
5 m	1:15	333mm
2 m	1:12	166mm

Notes:
For goings between 2m and 10m, it is acceptable to interpolate between the maximum gradients, i.e. 1:14 for a 4m going or 1:19 for a 9m going (see Fig. 9).

Fig. 9 Relationship of ramp gradient to the going of a flight

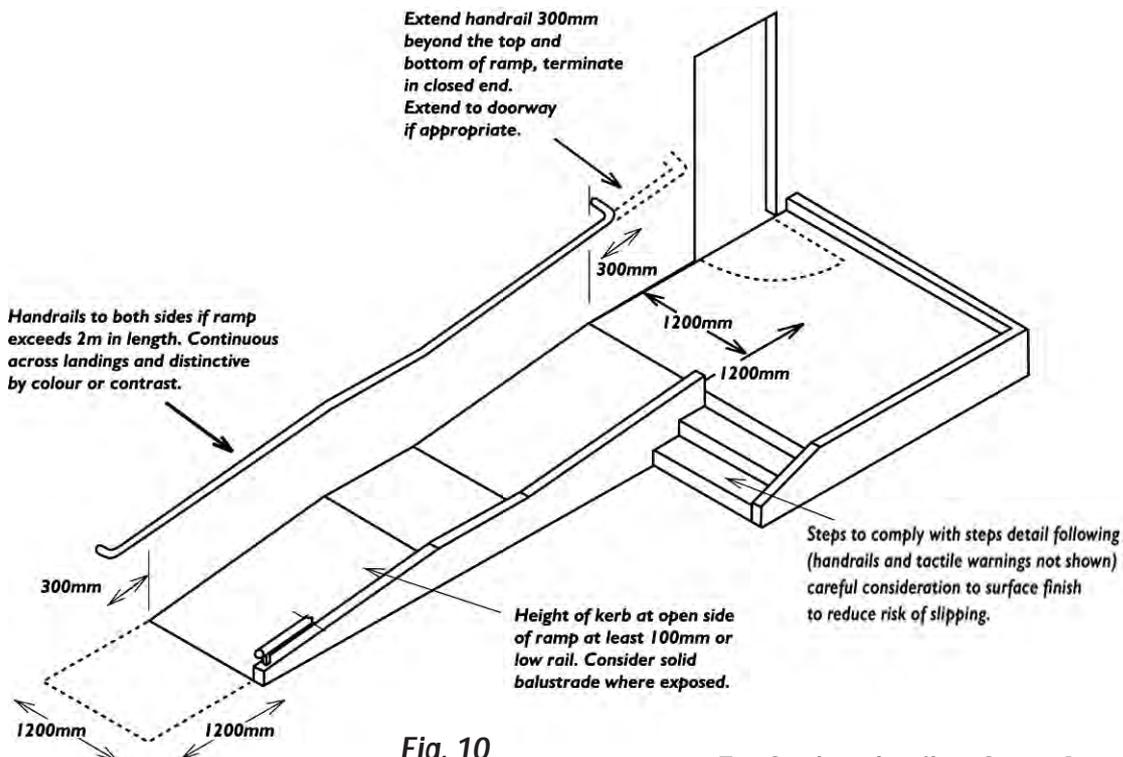
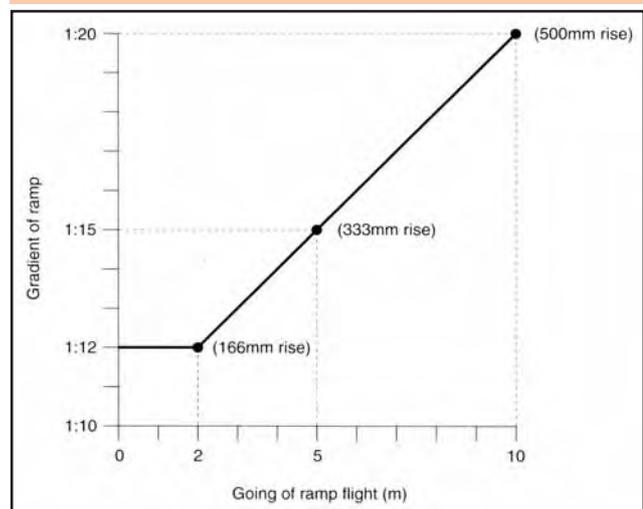


Fig. 10

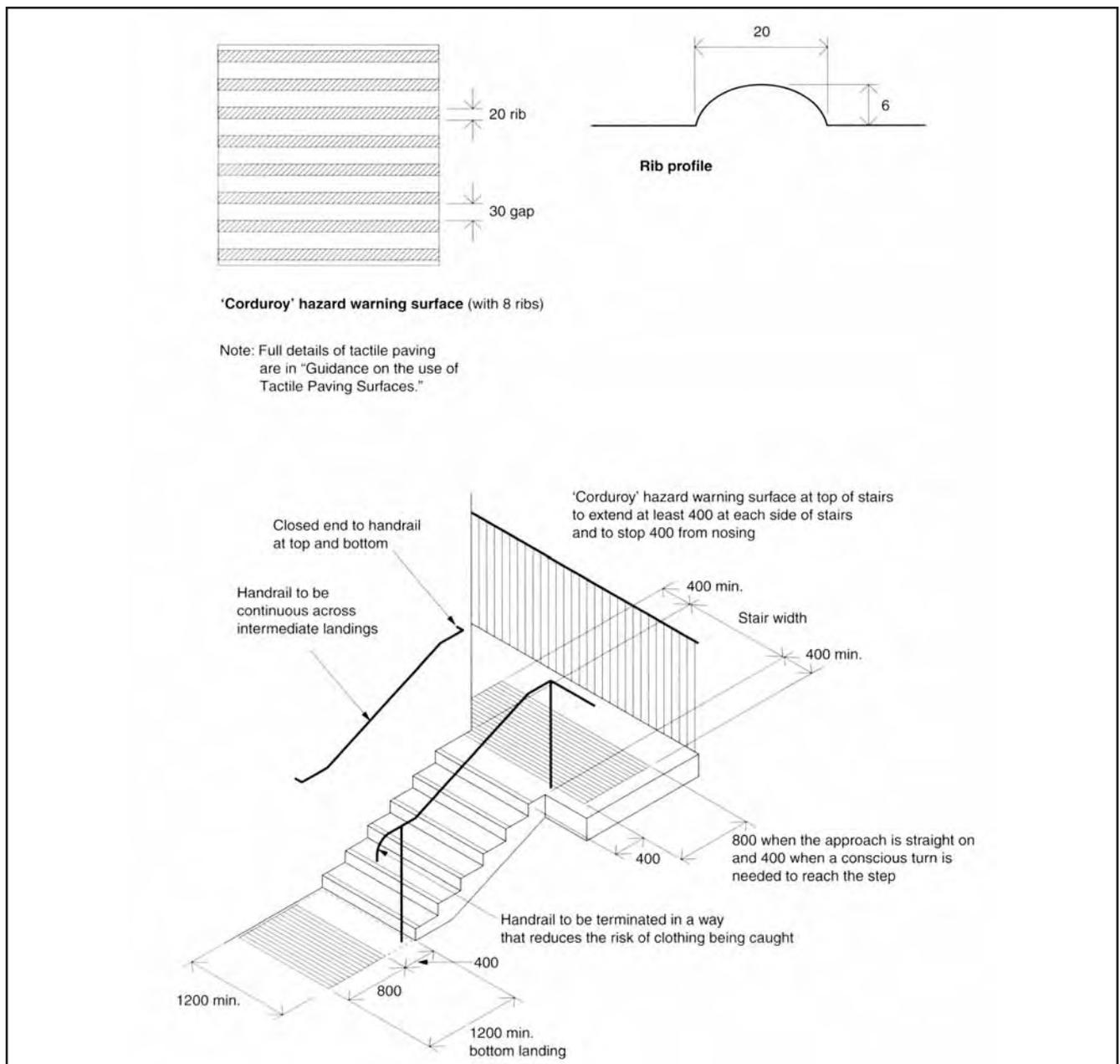
For further details refer to Approved Document M to the Building Regulations

Stepped Access

- A corduroy hazard warning surface should be provided at top and bottom landings of a series of flights to give advance warning of a change in level.
- Rise of each step should be between 150mm and 170mm.
- Going of each step should be between 280mm and 425mm.
- Rise and going of each step should be consistent throughout the flight.
- Width of the flight should not be less than 1.2m.

For schools the preferred dimensions are 150mm rise and 280mm going

Fig. 11 Stepped access – key dimensions and use of hazard warning surface



Stepped Access

Fig. 12 External steps and stairs – key dimensions

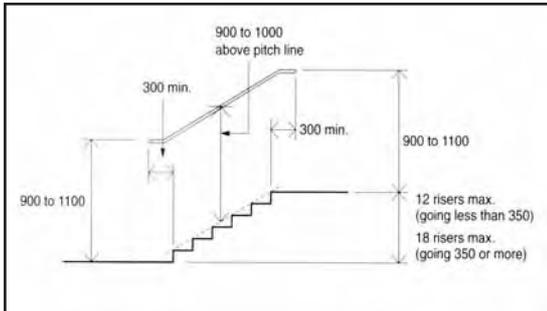
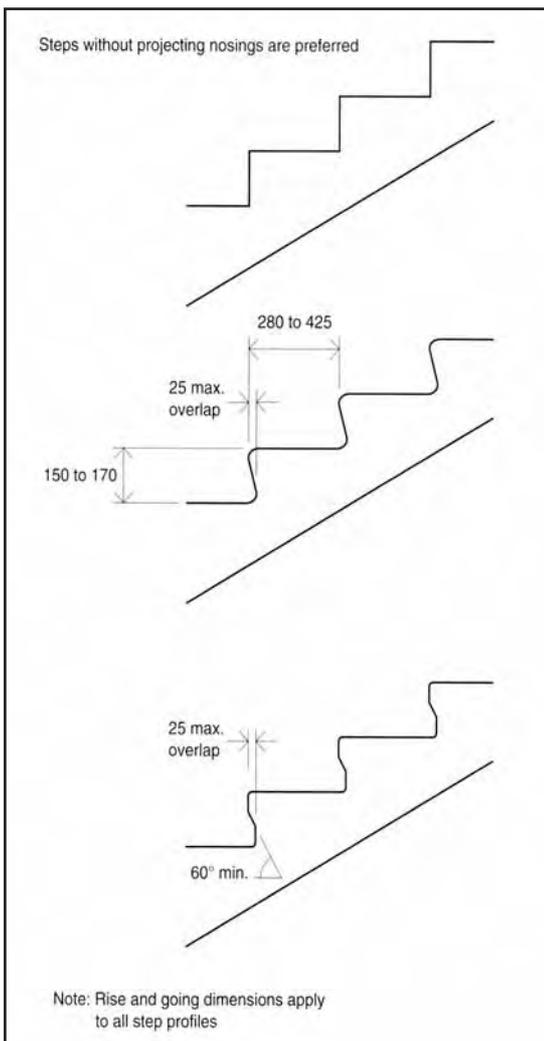


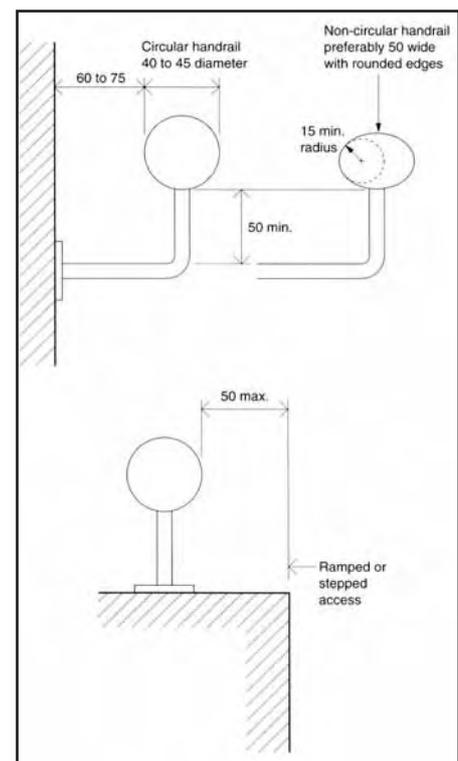
Fig. 13 Examples of acceptable step profiles and key dimensions for external stairs



HANDRAILS

- Should be between 900mm and 1000mm above the surface of the ramp.
- Should be continuous along the flights and landings of steps and ramps.
- Should extend at least 300mm beyond the top and bottom of ramps and a flight or flights of steps whilst not projecting onto an access route.
- Should contrast visually from the background without being reflective.
- The surface should be slip resistant and not cold to the touch.
- The profile should be circular with a diameter of between 40mm and 45mm or oval, preferably with a diameter of 50mm.
- Should protrude no more than 100mm into the surface width of ramp or stairs where this would impinge on the stair width requirement of Approved Document B (Fire Safety).
- Should have a clearance of between 60mm and 75mm between the handrail and any adjacent wall surface.

Fig. 14 Handrail design



Accessible Entrances

ACCESSIBLE ENTRANCES

- Should be clearly signposted and should include the international symbol of access, from the edge of the site, and the principal entrance if this is not the accessible entrance. (Guidance on sign posting can be found in BS 8300).
- Any structural supports at the entrance should not be a hazard to the visually impaired.
- Should have a level landing at least 1500mm by 1500mm clear of any door swings immediately in front of the entrance and be of a material that does not impede wheelchair users.
- Door entry systems should be accessible to deaf and hard of hearing and people who cannot speak. (LED display) fitted between 750mm and 1000mm from floor level.
- The surface of any entrance matting should be level with the floor and should not impede wheelchair movement. Avoid coir matting, and changes in floor surfaces which are potential trip hazards.

DOORS TO ACCESSIBLE ENTRANCES

- Entrance doors can be manually operated, or power operated under manual or automatic control.
- Vision panels should comply with the minimum zone of visibility of between 500mm and 1500mm from floor level, if necessary interrupted between 800mm and 1150mm from floor level to accommodate a horizontal grab-rail.

Table 2 Minimum effective clear widths of doors

Direction and width of approach	New buildings (mm)	Existing buildings (mm)
Straight-on (without a turn or oblique approach)	800	750
At right angles to an access route at least 1500mm wide	800	750
At right angles to an access route at least 1200mm wide	825	775
External doors to buildings used by the general public	1000	775

Note:

The effective clear width is the width of the opening measured at right angles to the wall in which the door is situated from the outside of the door stop on the door closing side to any obstruction on the hinge side, whether this be projecting door opening furniture, a weather board, the door, or the door stop (see Fig. 15). For specific guidance on the effective clear widths of doors in sports accommodation, refer to 'Access for Disabled People'.

MANUALLY OPERATED NON POWERED ENTRANCE DOORS

- A non-powered door fitted with a self-closing device capable of closing the door against wind forces and the resistance of draught seals is unlikely to be openable by a wheelchair user or someone with limited strength.
- The opening force at the leading edge should be no greater than 20N.

It should be noted that double buggies are wider than wheelchairs and this should be borne in mind when designing certain types of buildings.

Accessible Entrances

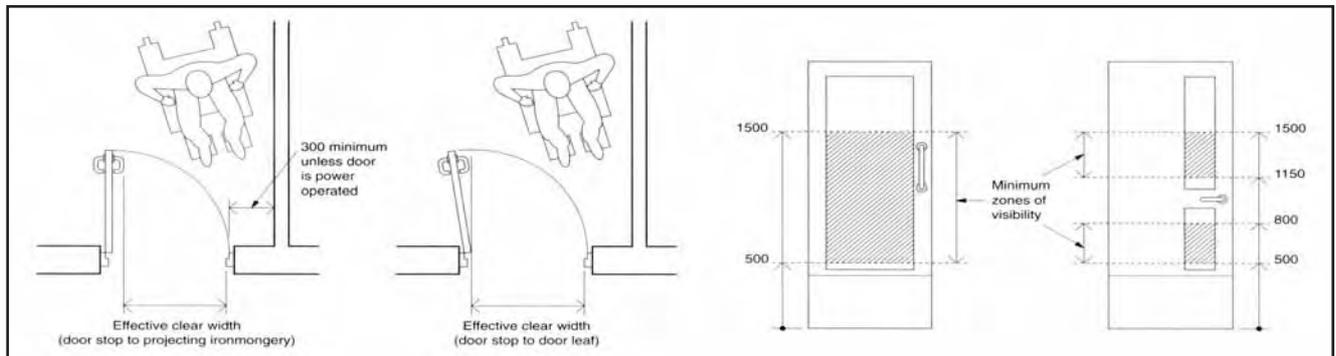
POWERED ENTRANCE DOORS

- Manual control for powered entrance doors should be clearly distinguishable from the background, and located between 750mm and 1000mm from the ground level (to include swipe cards etc).
- Where the doors swing towards people approaching them visual and audible warnings should be provided. They should incorporate a safety stop if someone is passing through and revert to manual control or stay open in a power failure.

GLASS ENTRANCE DOORS AND GLAZED SCREENS

- Should be clearly defined with manifestation on the glass at two levels 850mm to 1000mm and 1400mm to 1600mm. Manifestation is a sign or a logo at least 150mm high.

Fig. 15 Effective clear width and visibility requirements of doors





ACCESS WITHIN BUILDINGS

Entrance Lobbies

Entrance Hall and Reception Area

Internal Doors

Corridors and Passageways

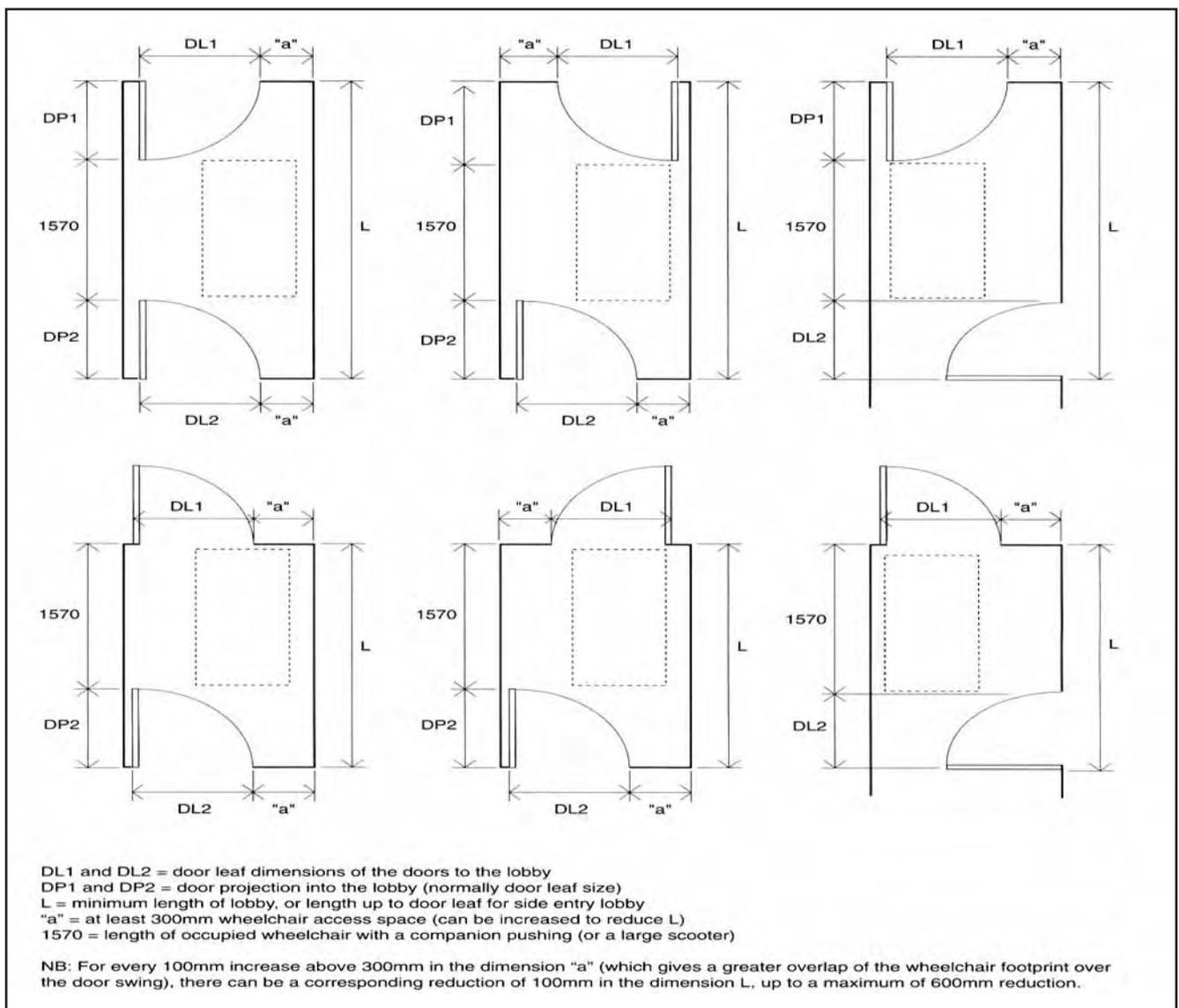
Internal Stairs

Vertical Circulation within the Building

Entrance Lobbies

- Where entrance lobbies are incorporated in buildings, adequate space must be provided between doors. There should also be space for someone assisting the wheelchair user and for someone passing in the opposite direction.
- Thresholds should be flush, 15mm maximum, at both doorsets.
- Matwells should be flush (including the surrounds), close fitting and firm.
- The door opening widths should apply to the inner doors as well as the outer doors.
- Lighting to reduce the contrast between the outside and the building's interior should be considered.
- The floor surface should be level, slip resistant and not impede the movement of wheelchairs or crutch users. Avoid coir matting and ensure any changes in floor materials do not create potential trip hazards.

Fig. 16 Key dimensions for lobbies with single leaf doors



Entrance Hall and Reception Area

- Any reception point should be easily identifiable from the entrance doors or lobby and have a direct approach and be free from obstructions.
- Should be designed to accommodate both seating and standing visitors. At least one section of the counter should be at least 1500mm wide, no higher than 760mm with a knee recess not less than 700mm from floor level.
- Reception points should be provided with a hearing enhancement system.

Guidance on aids to communication can be found in BS 8300

Internal Doors

Design considerations similar to those for entrance doors apply to internal door

Refer to table 2 and fig. 15.

- The force needed to open the door manually should not exceed 20N.
- Doors should be distinguishable from the adjacent facades, as should be ironmongery (i.e. pull handles) from the actual door itself.
- Lever handles are preferable to knob sets.

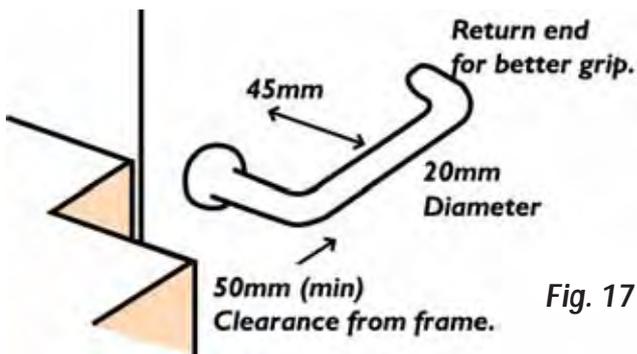


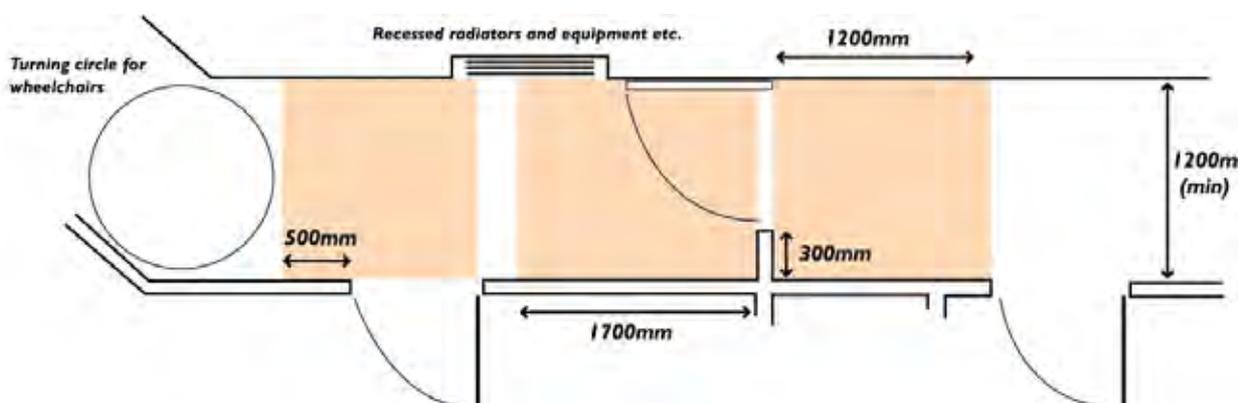
Fig. 17

- Fire doors particularly those in corridors should be held open with an electro-magnetic device, but self-close when:
 - Activated by a smoke alarm or fire alarm
 - Power supply fails
 - Activated by a hand operated switch.
- Fire doors to individual rooms should be fitted with swing-free devices that close when activated by smoke detectors, fire alarms and power failure.

For guidance on fire doors and self-closers see Approved document M and BS 8300

Corridors and Passageway

- In locations required to be accessible to wheelchair users, corridors and passageways need to be wide enough to allow for wheelchair manoeuvre and for other people to pass.
- Elements such as columns radiators and fire hoses should not protrude into the corridor; or where this is unavoidable a means of directing people around them, such as a visually contrasting guardrail should be provided.
- Unobstructed width should be at least 1200mm excluding any projections into the corridor.
- Where the unobstructed width of the corridor is less than 1800mm, passing places should be at least 1800mm long and 1800mm wide at reasonable intervals to allow wheelchairs to pass at corridor junctions and similar.
- A floor is classed as level if the gradient is no steeper than 1:60.
- Corridors of gradient between 1:20 and 1:60 should have rise no more than 500mm without a level rest area at least 1500mm long.
- If the corridor is 1:20 or steeper; refer to ramp details.
- Any door opening towards a corridor which is a major access route, should be recessed so that when fully open it does not project into the corridor.
- On a major access or escape route the wider leaf of a series of double doors with leaves of unequal widths is on the same side along the length of the corridor.
- Floor finishes should be slip resistant.
- Glass screens should have suitable manifestation.



Shaded areas show required unobstructed space requirements for approaching doors. All dimensions are clear widths.

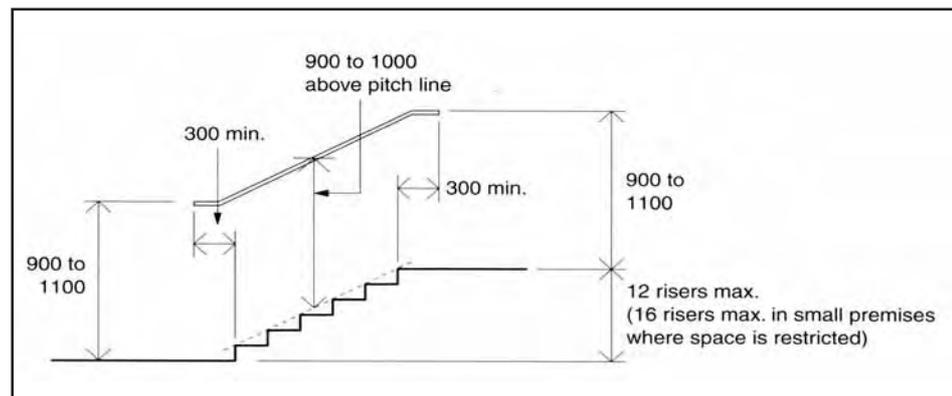
Fig. 18

Internal Stairs

Guidance as for stepped access except:

- 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) .
- A flight between landings normally contains no more than 12 risers, but in very exceptional circumstances 16 risers in small premises may be provided where the plan area is restricted.
- The rise of each step should be between 150mm and 170mm.
- The going of each step should be at least 250mm.
- The provision for handrails is the same as for stepped access.

Fig. 19 Internal stairs – key dimensions



Means of Escape

Refuge space 700mm x 1200mm (min); 900mm x 1400mm preferred including manoeuvring space

- BS 5588 Part 8 allows for assisted means of escape in case of fire for people who cannot readily travel down through the building by the provision of suitable refuges, e.g. on staircases or in protected lobbies/corridors.

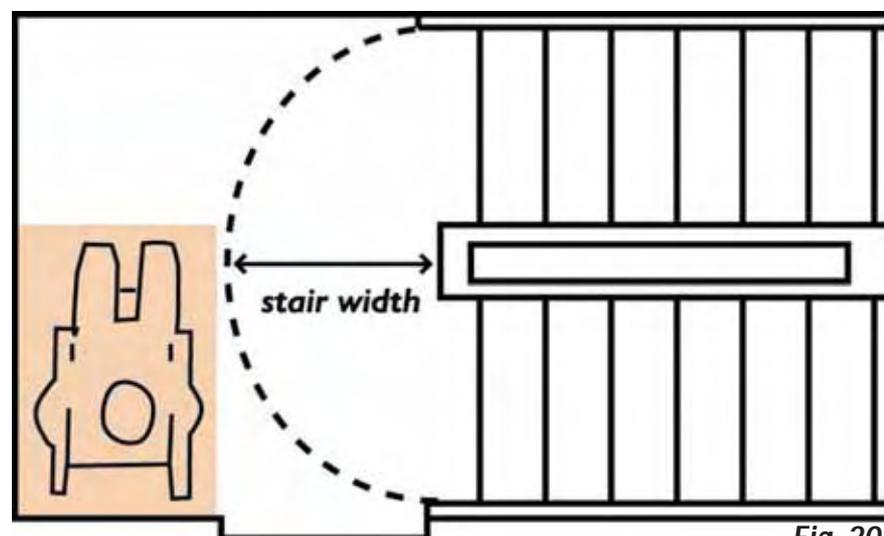


Fig. 20

Vertical Circulation within the Building

Lifting Platforms

- Vertical travel distance should be no more than 2m where there is no liftway enclosure and no floor penetration.
- Controls should be located between 800mm and 1100mm from the floor of the lifting platform and be at least 400mm from any return wall.
- Continuous pressure controls should be provided, with landing call buttons the same as for a passenger lift.

Minimum dimensions should be

- 800mm wide and 1250mm wide where the platform is not enclosed and provision is being made for an unaccompanied wheelchair user.
- 900mm wide and 1400mm deep if the platform is enclosed and provision is made for unaccompanied wheelchair users.
- 1100mm wide and 1400mm deep where two doors are located at 90 degrees relative to each other and where the platform is enclosed, or where provision is made for unaccompanied wheelchair users.
- Doors should have clear opening of 900mm for an 100mm x 1400mm platform and 800mm clear opening in other cases. Audio and visual announcements should be provided for platform arrival and location indication.

Wheelchair Platform Lifts

- In a building with a single stairway required width for means of escape should be maintained when the platform is in the parked position (see Approved Document B).
- Continuous pressure controls should be provided. The minimum dimensions are 800mm wide and 1250mm deep.
- Access with an effective clear width of at least 800mm should be provided.

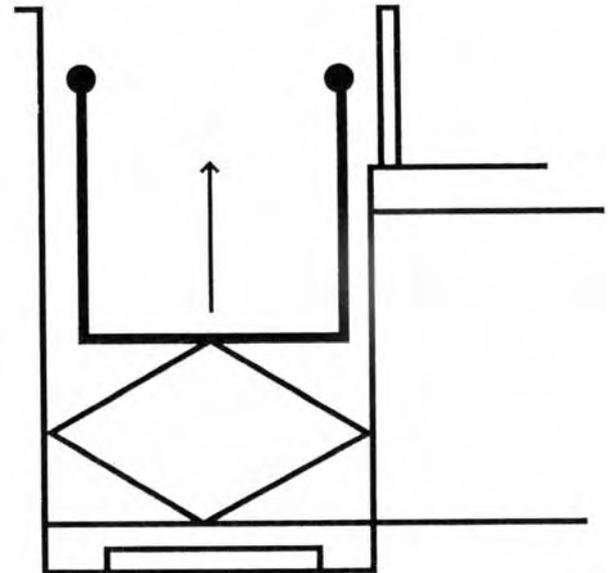
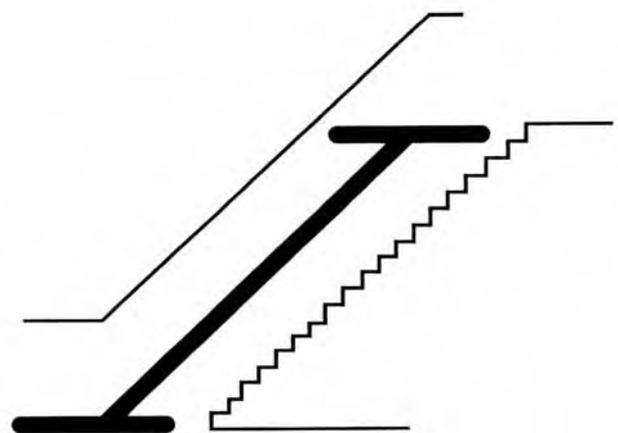


Fig. 22

Platform lift



Wheelchair stairlift

Fig. 23



FACILITIES IN BUILDINGS OTHER THAN DWELLINGS

Audience and Spectator Facilities

Refreshment Facilities

Sleeping Accommodation

Switches, Outlets and Controls

Aids to Communication

Sanitary Conveniences

Wheelchair Accessible Changing and Shower Facilities

Wheelchair Accessible Bathrooms

Audience and Spectator Facilities

Audience and spectator facilities fall into 3 categories

- Entertainment facilities, eg. Cinemas and theatres
- Sports Stadiums
- Lecture & Conference Facilities

General

- People with mobility or sensory impairments may need to view from a particular side or sit in the front to lip read or see sign interpreters.
- Care needs to be taken so that poor lighting or very bright natural light does not make it difficult to see the interpreter.
- Wheelchair users, people who have difficulty using chairs with fixed arms and those with assistance dogs should have the choice of sitting next to a seated companion or a companion wheelchair user.
- Consideration should be given to providing space by certain seats for assistance dogs to rest.
- Greater spacing between rows of seats at the rear of a block or at the end of rows may provide extra legroom for people of large stature.

Table 3 Provision of wheelchair spaces in audience seating

Seating capacity	Minimum provision of spaces for wheelchairs	
	Permanent	Removable
Up to 600	1% of total seating capacity (rounded up)	Remainder to make a total of 6
Over 600 but less than 10 000	1% of total seating capacity (rounded up)	Additional provision, if desired

Note:

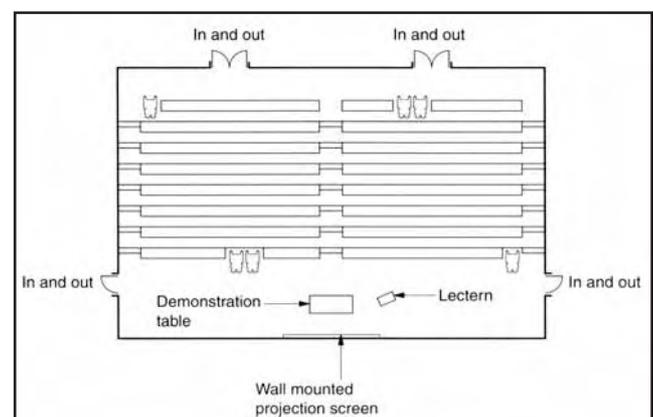
For seating capacities of 10,000 or more, guidance is given in 'Accessible stadia: a good practice guide to the design of facilities to meet the needs of disabled spectators and other users'.

LECTURE AND CONFERENCE FACILITIES

- Where a podium or stage is provided wheelchair users should have access to it by means of a ramp or a lifting platform.
- A hearing enhancement system should be provided for the hearing impaired.

Guidance on hearing enhancement systems can be found in BS 8300.

Fig. 24 An example of wheelchair spaces in a lecture theatre



Audience and Spectator Facilities

Fig. 25 Possible location of wheelchair spaces in front of a rear aisle

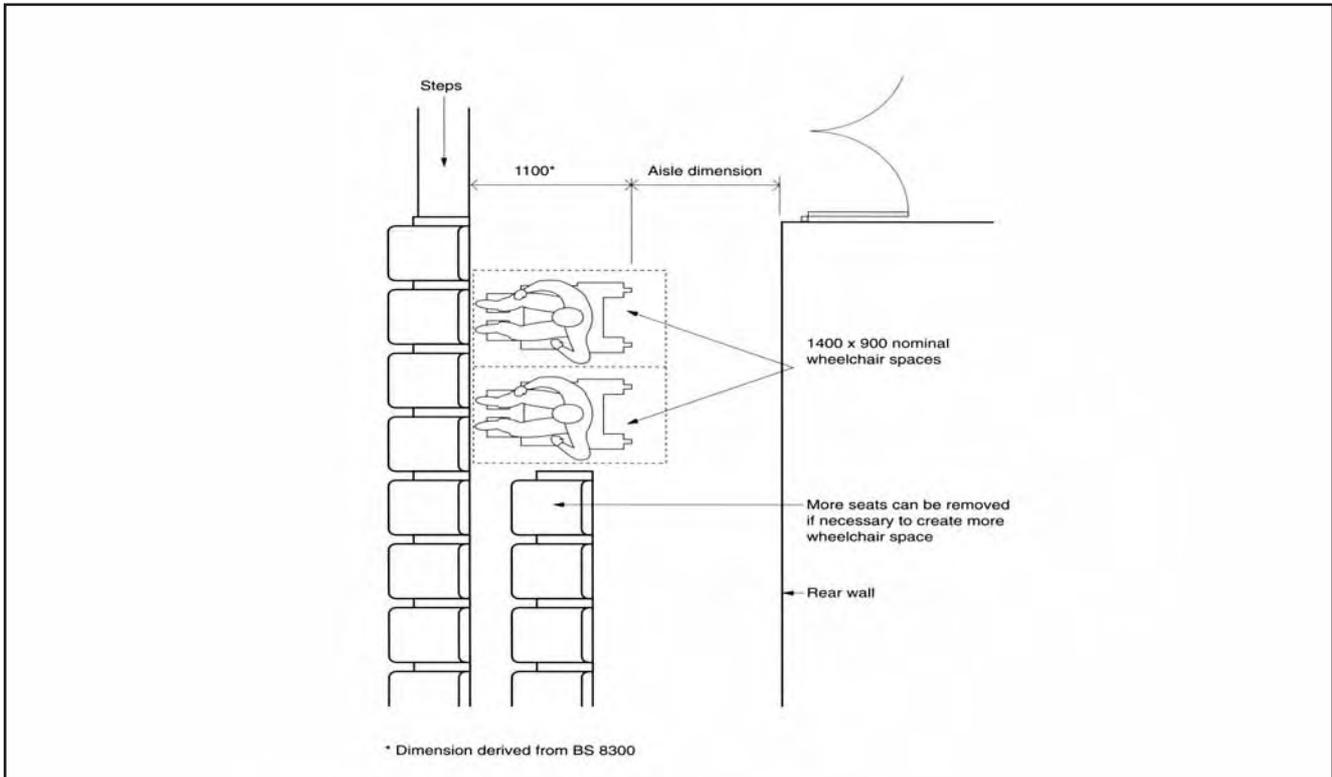
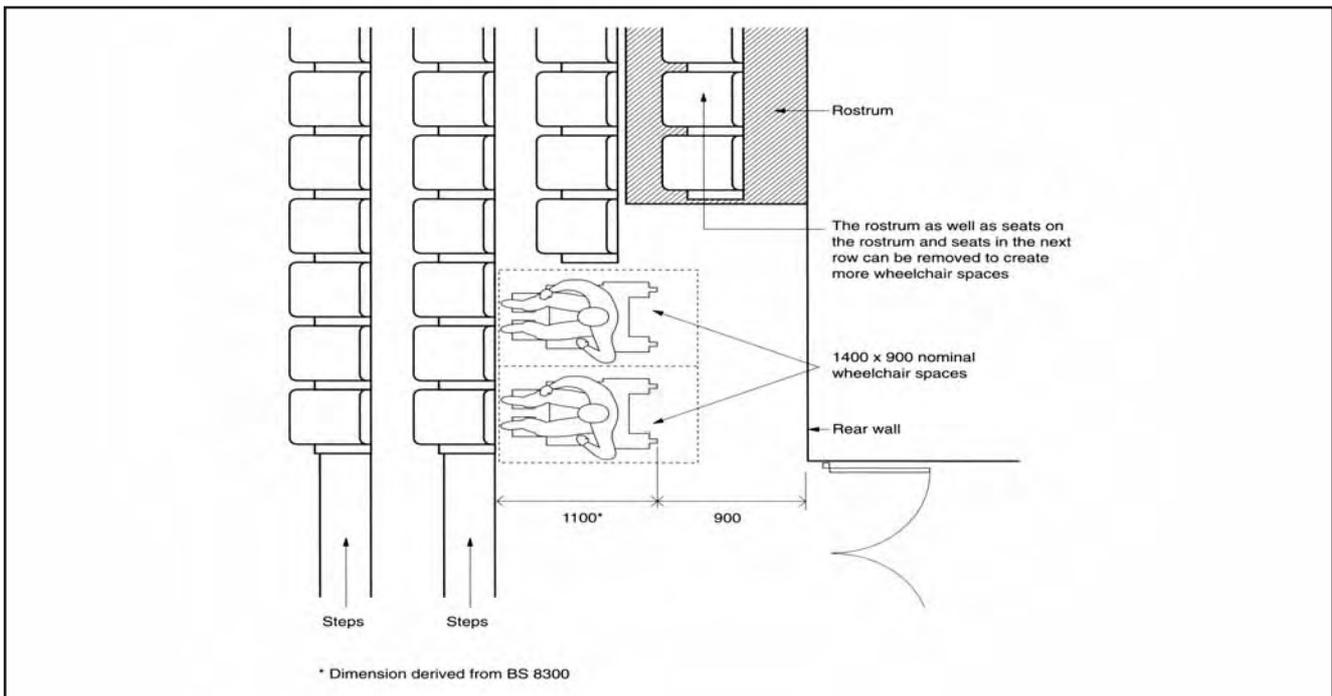


Fig. 26 An example of wheelchair space provision in a cinema or theatre



Refreshment Facilities

All bars/restaurants should be designed so all potential customers have full and independent access.

All public areas including toilets, public telephones and external terraces should be fully accessible, as should self-service and payment points.

- In many restaurants changes of level are used to differentiate between different functions or to create atmosphere.
- Changes of level are only allowed if they are fully accessible by a ramp or lifting platform.
- Part of the bar should be accessible to wheelchair users and be no higher than 850mm from the floor level.
- Worktops in shared refreshment facilities, for example tea making areas at work, should be accessible no higher than 850mm from the floor, with a clear space beneath at least 700mm above the floor.

Fig. 27 An example of a shared refreshment facility

