

INTERIOR ERGONOMICS

Signs and Symbols



Fig. 46

- The international symbol of accessibility; the setting out of the symbol should be based on a square tile as shown.

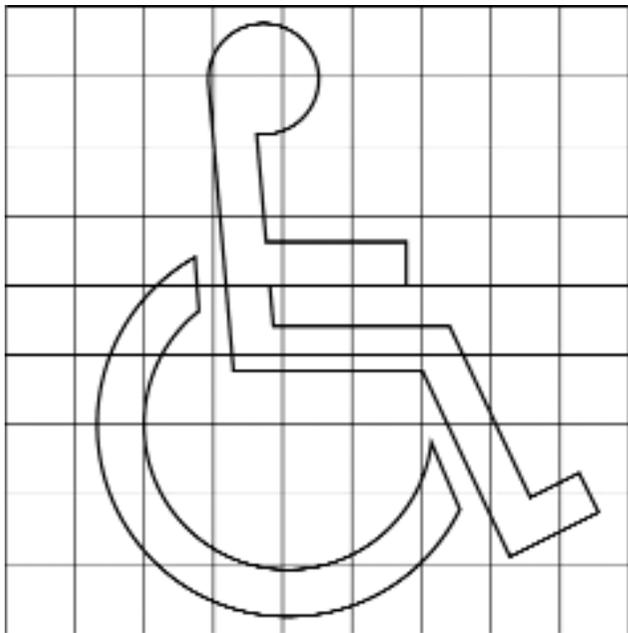


Fig. 47

- Signs should be consistent, thorough and continuous along routes and should take account of the need for reassurance.

- Ensure legibility of signs and lettering by attention to size and style and by use of strong colours, good immediate background and non-distracting general background and by good lighting without glare.
- Lettering should be within visual range and provide good contrast against the background.

Waiting room

- Raised letters are helpful to blind people particularly. They should be within hand reach at a reasonable level. Ensure the background surface is comfortable to touch. Confine to single letters, numeral, symbols and keep to standard positions in a building.
- Symbols should be as near pictorial as possible. Standard symbols should indicate specific facilities, i.e. induction loop information, communications, assistance available if required.



Fig. 48

INTERIOR ERGONOMICS

Anthropometric Data

- The formulation of design criteria for buildings depends to a considerable extent on the dimensional characteristics of people at rest and moving and on their range of physical capabilities. In the case of people with disabilities, these criteria may be modified by the use of aids such as sticks, artificial limbs and wheelchairs.
- To determine appropriate limits for the range of the population to be accommodated, the statistical technique of percentile distribution is used.
- For example, for the head-height of chairbound men's, the value of 1:235 for the fifth percentile means that five per cent of chairbound men's head height when in a wheelchair is at 1:235 or less; The value 1:435 for the 95th percentile means that 95 per cent at 1:435 high or shorter.

The figures below show the relevant dimensions.

MEN

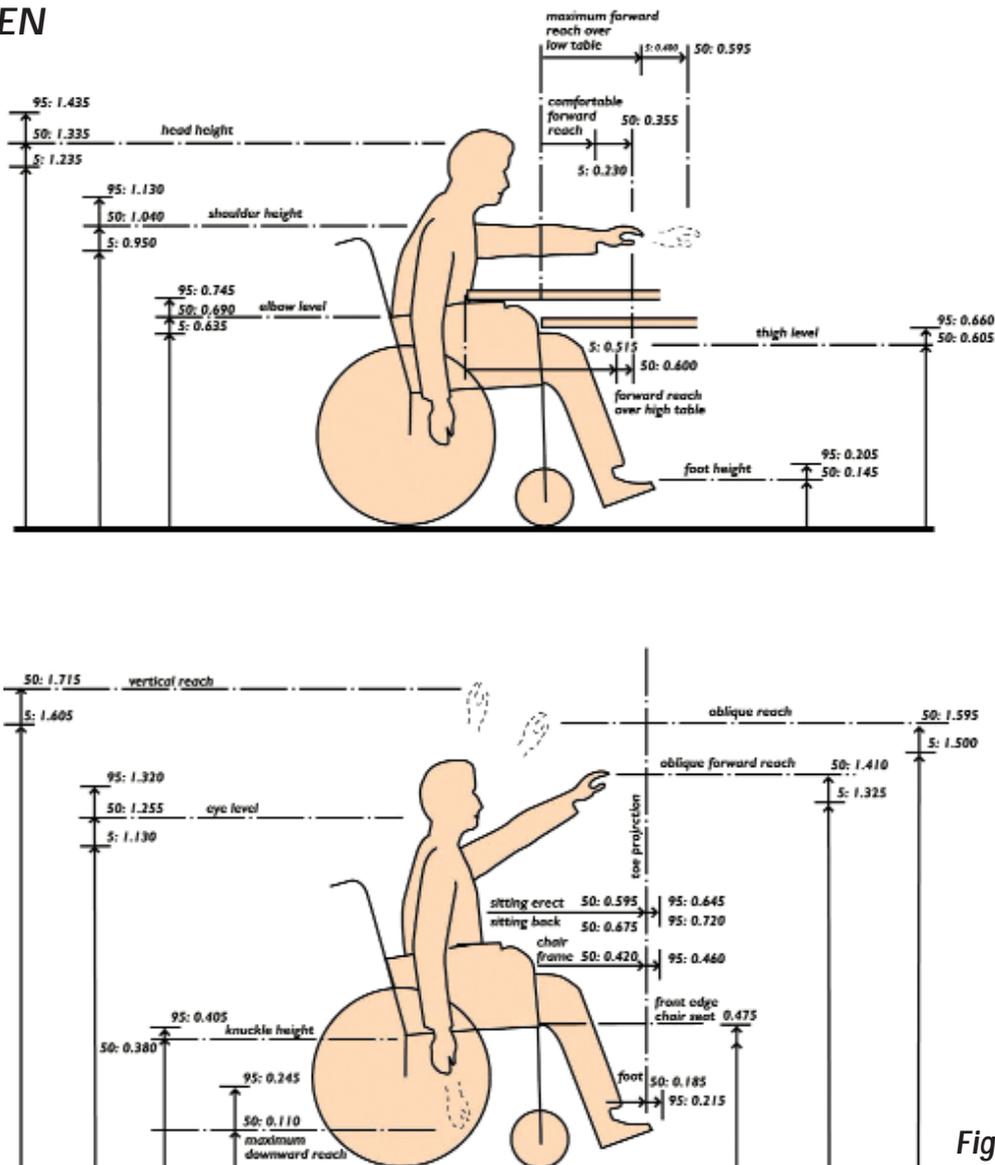


Fig. 49

INTERIOR ERGONOMICS

Anthropometric Data

- Although in certain situations, it is appropriate to use the average as a criteria, it must be emphasised that averages should be treated with caution. It is hazardous to make decisions on the basis of catering for the average man or woman. In a representative sample of

population, 50 per cent of measurements will be greater than the average and 50 per cent will be less. Dimensions based on the average will therefore at best satisfy only 50 per cent of potential users.

WOMEN

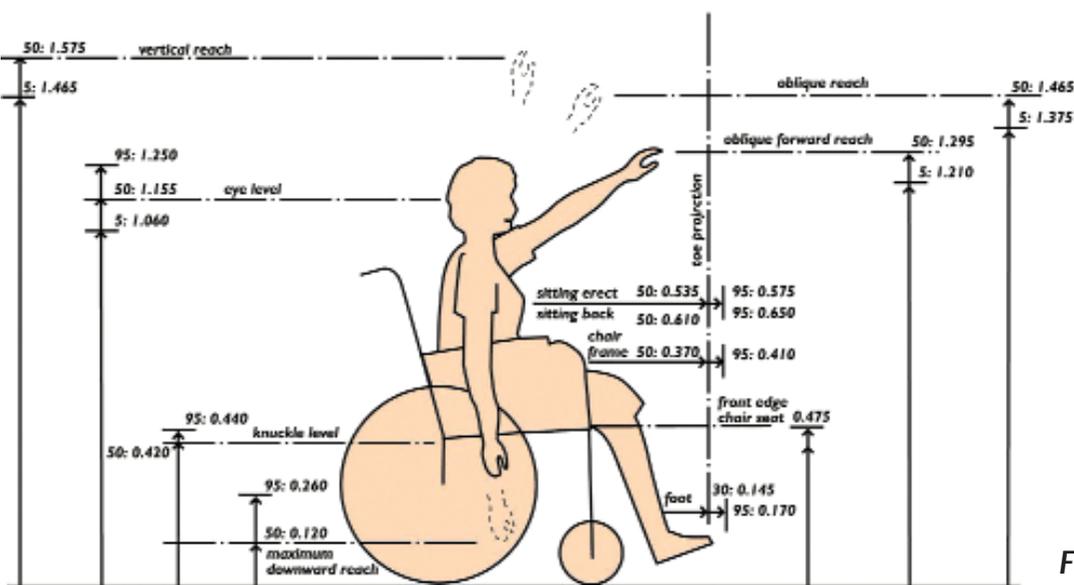
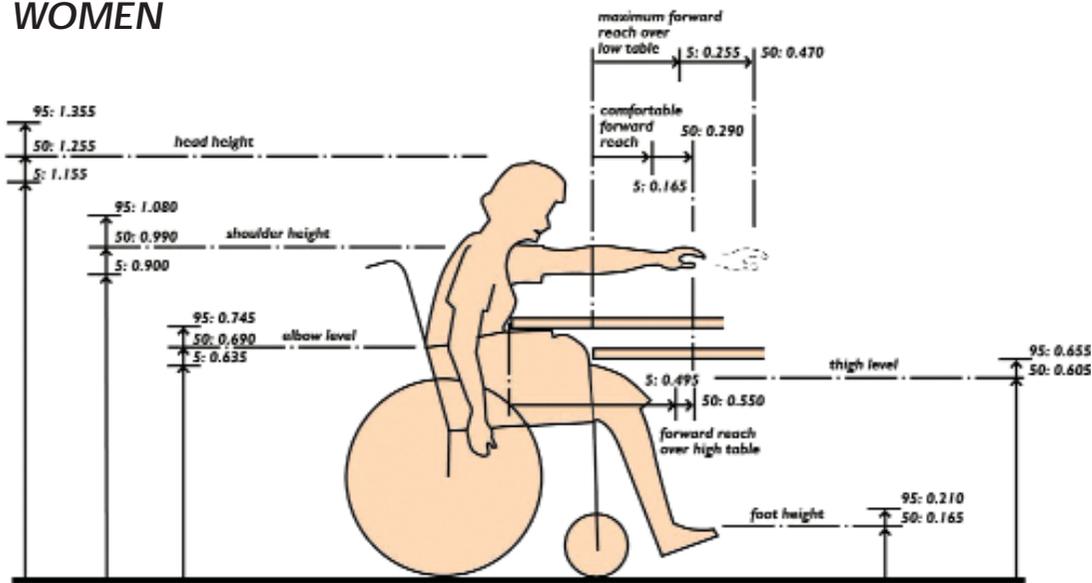


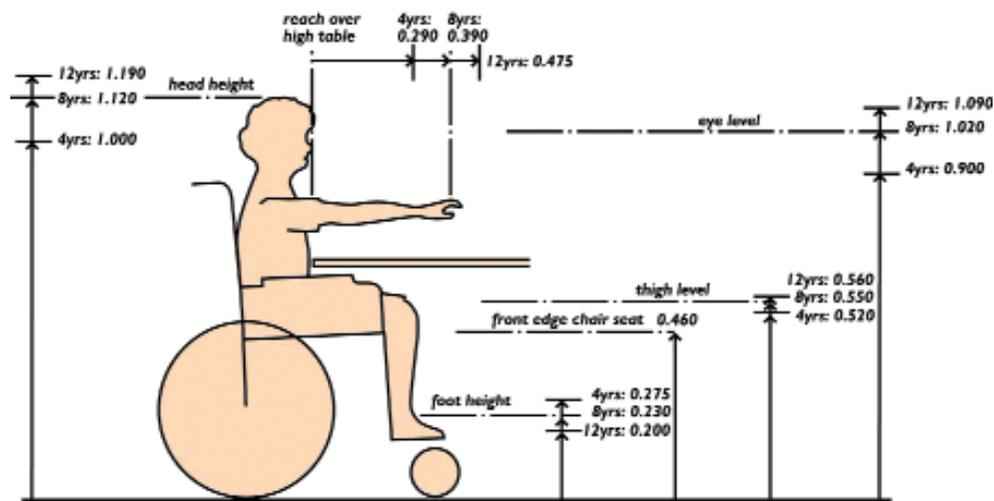
Fig. 50

INTERIOR ERGONOMICS

Anthropometric Data

- When data is applied to design problems, it is usually found that there is a limiting factor in one direction only, e.g. if the problem relates to obstructions at head-height, the measures of short people are not significant. In applying data, the designer should enquire which dimension is critical.
- It is not the case that whenever the value for the 95th percentile is observed, 95 per cent of the population will be accommodated; if the critical dimension is in the opposite direction, only five per cent will be accommodated and the correct course is to apply the 5th percentile instead.

GIRLS AGED 4, 8 AND 12



BOYS AGED 4, 8 AND 12

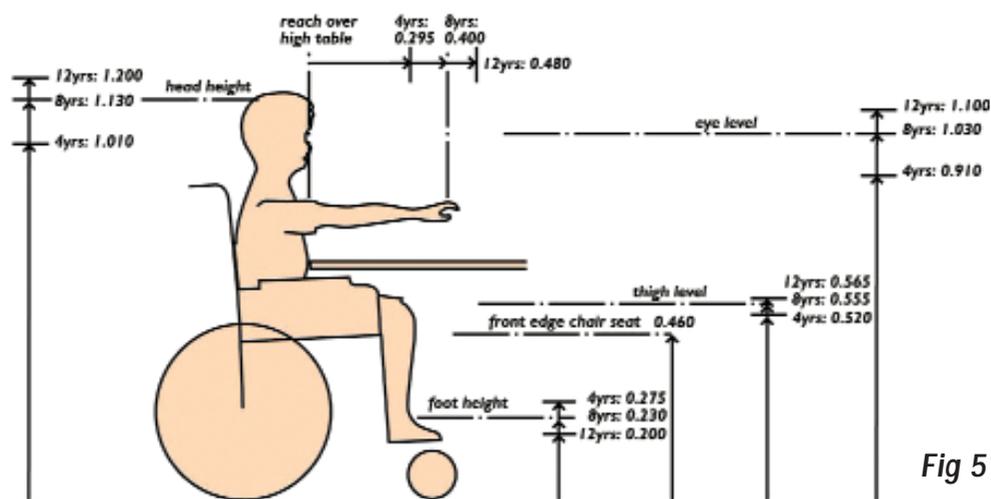


Fig 51

INTERIOR ERGONOMICS

Anthropometric Data

AMBULANT PEOPLE

- It is not always economic or practicable to cover 100 per cent of the population by catering for people at the extremes. It may not be possible to obtain a solution to a specific design problem, which is equally efficient for a typical ambulant person and a person in a wheelchair.

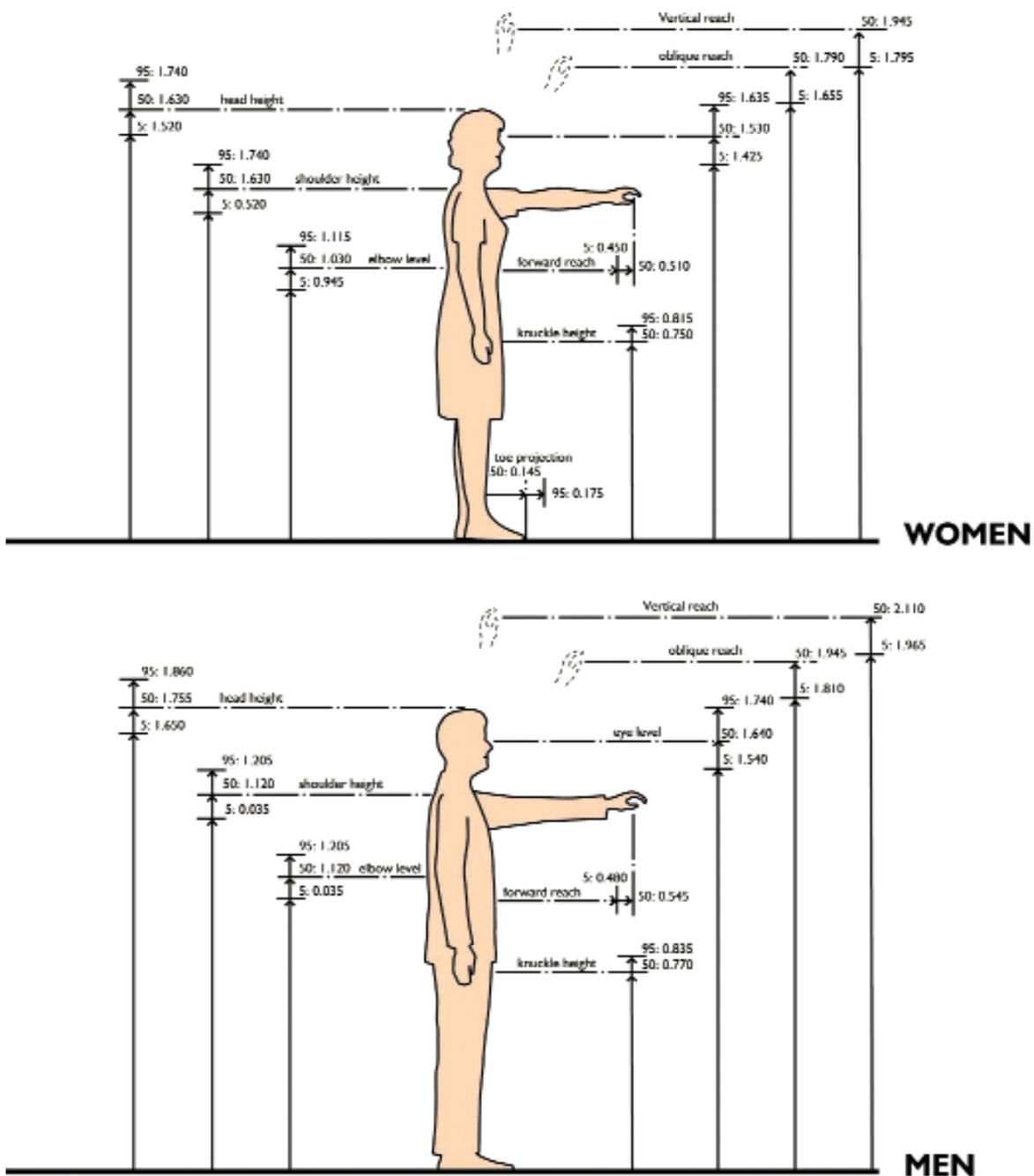


Fig 52

INTERIOR ERGONOMICS

Ergonomic Data

AMBULANT PEOPLE

- The convenient positioning of fittings and equipment is governed by body and reach dimensions. The general application of the recommendations should ensure that fittings and equipment are suitably located.

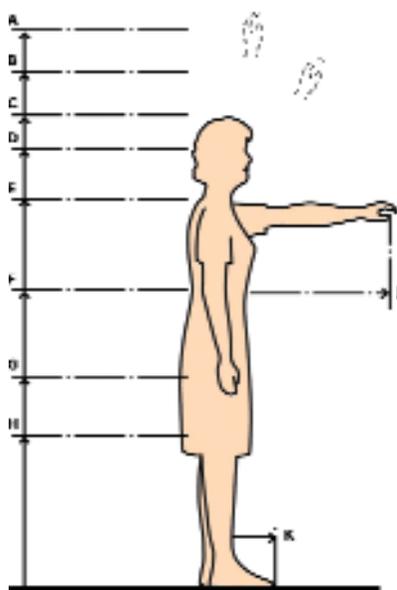


Fig 53

MEASUREMENTS OF STANDING PERSON

A. Comfortable vertical reach

A: minus 0.070: maximum height of storage shelves, allowing access to front of shelf.

A: minus 0.150: maximum height of 0.300 deep storage shelves over 0.600 floor units, allowing access to front of shelf.

B. Oblique vertical reach

B: maximum height of window and blind controls.

B: minus 0.060: maximum height of 0.200 deep storage shelves over 0.600 floor units, allowing access to front of shelf.

B: minus 0.080: maximum height of unobstructed storage shelves, allowing reach to back of shelf.

C. Head height

C: relate to fixed mirror heights and position of shower fittings.

D. Eye level

D: avoid window transoms at this level.

D: related to fixed mirror heights.

E. Shoulder level

E: preferred maximum height of switches and controls.

F. Elbow level

F: minus 0.130: preferred level of kitchen surfaces where sink rim and general work surfaces are at the same height.

F: minus 0.100: preferred level of sink rim.

F: minus 0.150: preferred level of general work surfaces.

F: minus 0.100: preferred level of wash basin rim.

F: minus 0.250: preferred level of fixed ironing board.

G. Knuckle height (comfortable downward reach)

G: lower level of preferred zone for most-used articles stored in kitchen.

G: preferred minimum height of socket outlets and other controls.

G: preferred height of letter basket and delivery shelves adjacent to entrance door.

H. Effective downward reach

H: minimum height of storage shelves, socket outlets, heater controls and oven floor.

J. Comfortable forward reach

J: plus 0.100: maximum depth of kitchen work surfaces.

J: preferred maximum dimension, sink fascia to sink tops.

K. Toe projection

K: preferred minimum depth, toe recesses to kitchen units.

INTERIOR ERGONOMICS

Ergonomic Data

WHEELCHAIR USERS

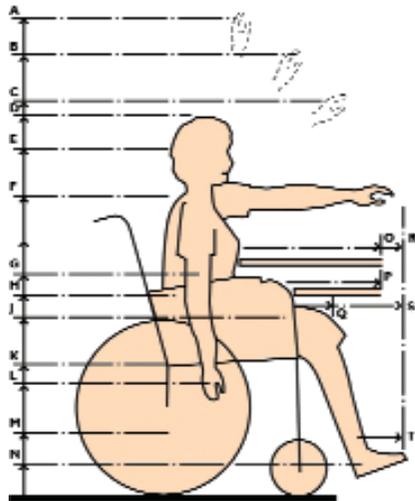


Fig 54

MEASUREMENTS

A. Comfortable vertical reach

A: minus 0.070: maximum height of unobstructed storage shelves with lateral approach, reach to front of shelf.

B. Oblique vertical reach

B: maximum height of window and blind controls.
 B: minus 0.120: maximum height of 0.300 deep storage shelves over 0.600 floor units, allowing reach to front of shelf.
 B: minus 0.160: maximum height of unobstructed storage shelves with frontal approach, allowing reach to back of shelves.

C. Comfortable forward vertical reach

C: preferred maximum height of window and other controls.
 C: maximum height of electric switches.

D. Head height

D: related to height of shower fittings.

E. Eye level

E: avoid window transoms at this level; relate to sill heights.
 E: relate to fixed mirror heights.

F. Shoulder level

F: plus 0.100: upper level of preferred zone for most-used articles stored in kitchen.
 F: preferred maximum height of electric switches.

G. Chair armrest level

G: maximum unobstructed dimension below work surfaces or tables to permit close approach.

H. Elbow level

H: plus 0.020: preferred height of letter basket and delivery shelves adjacent to entrance door.
 H: minus 0.030: preferred height of pull-out for food preparation.
 H: minus 0.040: preferred height of fixed ironing board.

J. Thigh level

J: minimum unobstructed vertical dimension for knee recesses to tables, desks, kitchen sink, preparation centre and wash hand basin.
 J: plus 0.160: preferred height of kitchen work surfaces at consistent level assuming 0.150 deep sink bowl.

K. Chair seat level, centre front edge (with cushion if used)

K: preferred level of w.c. seat, platform at head end of bath and shower seat.

L. Knuckle height

L: plus 0.100: minimum height of heater controls.
 L: plus 0.050: lower level of preferred zone for most-used articles stored in kitchen.
 L: minimum level of oven floor.

M. Comfortable downward reach

M: minimum height of storage shelves.

N. Foot height

N: minimum height of toe recesses to kitchen units.

O. Effective forward reach

O: maximum depth of kitchen work surfaces.

P. Forward reach beyond face of chair arm

P: comfortable reach over low-level tables, etc.
 P: preferred maximum dimension, sink fascia to sink taps.

Q. Knee projection beyond face of chair arm

Q: minimum dimension sink fascia to waste pipe and wash basin fascia to waste pipe.

R. Toe projection from front to waist

R: preferred minimum depth of tables and knee recesses to permit close approach.

S. Toe projection beyond face of chair arm

S: minimum depth of knee recesses to kitchen sink, preparation centre, wash basin, etc.

T. Toe projection at lower leg level

T: minimum depth of toe recesses to kitchen units.

DESIGNERS CHECKLIST

Designers Checklist of Provisions/Areas for Consideration.

NB. This list is not intended to be comprehensive; it merely acts as a quick reference guide to assist Architects/Surveyors/Designers, on achieving compliance with Part M of the Building Regulations.

You are advised to consider all other areas outside the scope of the Building Regulations to ensure your proposal is compliant with the Disability Discrimination Act 1995 (DDA) and the Disability Discrimination (employment) Regulations 1996

ACCESS STATEMENT.

- Access Statement provided YES / NO
- (See separate guidance note on Access Statements – these will be required on all commercial applications).

SECTION 1: ACCESS TO BUILDINGS

SITE ACCESS, ROUTES AND SURFACES.

- Provisions start at edge of the site, car parking provisions, vehicle and pedestrian accesses.
- Level approach, maximum slope of 1:60 and maximum cross fall of 1:40.
- Surfaces to be firm, durable, slip resistant, with maximum undulations 3mm in 1000mm.
- Clearly defined setting down point close to principal entrance of alternative entrance.
- Larger designated parking spaces (4800mm x 2400mm) together with 1200mm access space to end and side.
- Ticket machine location, accessibility and height of controls (min 750mm / max 1200mm).
- Clearly define pedestrian routes, well-lit and signed using International Symbol for Access.
- Pedestrian routes protected from hazards i.e. open windows / door edges and vehicles, Blister paving at vehicle crossing points.
- Minimum path width 1500mm with passing places 1800 x 2000mm in sight of each other (or 1.8 path width throughout).

RAMPS

(If site constraints necessitate an approach of 1 in 20 or steeper a ramped approach must be provided).

- Ramps to be readily apparent or clearly signposted.
- 1500mm width with visually contrasting 100mm edge kerb.
- Level landings to top and bottom min 1200mm and clear of any door swings.
- Intermediate landings min 1500mm and clear of any door swings.
- Passing places / intermediate landings (1800mm x 1800mm) where end of ramp out of sight and where 3 or more consecutive ramp flights.
- Landings to be level – max 1:60 gradient along length and max 1:40 cross fall gradient.
- Gradient between 1:12 and 1:20.
- Maximum ramp length 10m, maximum ramp rise 500mm for max gradient of 1:20.

- Maximum ramp length 5m, maximum ramp rise 333mm for max gradient of 1:15.
- Maximum ramp length 2m, maximum ramp rise 166mm for max gradient of 1:12.
- Surfaces to be durable, slip resistant and ramp slope to visually contrast with landings.
- Clearly signposted steps required as well as ramp where rise exceeds 300mm.
- Alternative access method where total rise is greater than 2m. An external lift is to be provided.

STEPS

- Clearly signposted steps required as well as ramp where rise exceeds 300mm.
- Approved Corduroy tactile warning top and bottom of stair - 800mm wide (layout as per Dia 4 A.D.M)
- Treads surfaces to be durable and slip resistant.
- Level landings to top and bottom, min 1200mm and clear of any door swings.
- 1200mm min surface width between enclosing walls, strings or upstands.
- Consistent rise of between 150 and 170mm – risers to be closed and of approved profile as Dia 6 A.D.M – avoid step nosing over the tread below (if necessary max 25mm). (150mm max rise and min 280mm going for schools).
- Going to be between 280 and 425mm (425mm acts as a rest platform).
- Maximum number of risers, 12 with going 350mm or less or 18 with going 350mm or more
- No single steps
- Nosing and riser to visually contrast with step, 55mm contrast band
- Wider stair flight to be divided down to 1800mm wide 'channels' with additional handrails

HANDRAILS.

- Handrail both sides, which are continuous throughout the flights, ramps and landings, visually contrasting, easy to grip: slip resistant, non-reflective and not cold to touch.
- Handrails to project 300mm beyond top and bottom landings with closed ends.
- Handrails to be between 900mm and 1000mm above surface or steps pitch line / 900mm and 1100mm above surface of landings.
- Handrail profile to be diameter between 40mm and 45mm (where circular) or oval 15mm min radius (preferred solution) min 50mm width (refer dia 7 A.D.M).
- Max 100mm projection into surface width of steps, landings or ramps.
- Clearance of between 60mm and 75mm between handrail and any wall surface.
- Min 50mm clearance between the cranked support and the underside of the handrail.
- Inner face to be N.M.T 50mm beyond the surface width of the ramp or step access.

HAZARDS ON ACCESS ROUTES.

- Avoid hazards on access routes that could come into contact with people both at low and high level.
- Any permanent obstructions or temporary obstructions i.e. open windows / doors that project more than 100mm into the access route below 2100mm above the access level are to have appropriate guarding, incorporating a kerb or other solid barrier for cane detection.

SECTION 2: ACCESS INTO BUILDINGS.

APPROACH.

- Accessible entrances to be clearly signposted and easily recognisable (i.e. by using lighting and visual contrast features). Watch for obstructions such as canopies / support posts etc. Signed using International Symbol for Access.
- Obstructions and hazards outside entrance doors to be avoided – particularly non-building related items i.e. planters / sign boards etc.
- Level landing outside entrance door 1500 × 1500mm clear of door swings – surface finish non-slip and of materials that would not impede wheelchair access.
- Level threshold entrance door – max 15mm / chamfered or rounded edges.
- Weather protection to be provided for non-powered doors.
- Access systems to be suitable for deaf and hard of hearing (CCTV).
- Internal floor surfaces adjacent to threshold must suit wheelchair users / or create trip hazards. i.e. no soft matting. Mat wells must be flush with floor surface.

DOORS

- Powered door solution preferred option – preferably sliding to avoid accidental collision.
- Doors to have maximum opening force at leading edge of 20N and to be held shut.
- Door furniture to be easily operated by a closed fist, visually apparent i.e. contrasting with door surface and not cold to touch.
- Door clear width measured from handle to jamb. Varies according to angle of approach. Straight approach to door – 800mm clear width / right angle approach to door with access route min 1500mm - 800mm clear width / right angle approach to door with access route min 1200mm - 825mm clear width / External doors used by general public – 1000mm clear width.
- Revolving doors not considered acceptable without additional compliant bypass doors.
- Doors and side panels to doors wider than 450mm to have vision panels provided – visibility zone between 500mm and 1500mm and if necessary interrupted between 800mm and 1150mm above floor level e.g. to accommodate an intermediate horizontal rail (refer to dia 9 A.D.M).
- Unobstructed 300mm min space on door pull side between door leading edge and wall (not to powered doors).

POWERED ENTRANCE DOORS.

- Controlled by motion sensors or manual push pads / swipes etc (remember size to suit limited manual dexterity / visual impaired). Controls to be min 750mm / max 1000mm above floor / operable by closed fist / visually contrasting from background / where fitted to door leading edge side – must be min 1400mm from door edge.
- Suitable early opening and timed closing to allow disabled safe entry and exit – safety stops to prevent trapping.

- Outward opening doors – suitable audible and visual warnings to be provided to warn of door opening / shutting. Doors not to project into access circulation routes when open.
- Manual operation available or fail to open position if power fails.

GLASS DOORS / GLAZED SCREENS.

- Glass doors in glass façade to have 150mm high contrast strip at door edges, and door protection if capable of being left open.
- Manifestations include additional lower level 850 to 1000mm and higher level 1400 to 1600mm, repeated on side screens. At least 150mm high if logo / sign or if decorative feature i.e. broken lines min 50mm high.
- (Supersedes Part N manifestation guidance) NB – 2 levels required.
- Manifestations should visually contrast inside and out and in all lighting conditions.
- Zone of visibility lowered to 500mm above ground level.

LOBBIES.

- Thresholds to be level but if unavoidable a maximum of 15mm, chamfered if over 5mm.
- Lobby size related to door size, door swing and footprint of wheelchair and its companion (refer to diagram 10 A.D.M). Generally 1570mm min clear space between door swings in an open position.
- Min width of 1200mm or door width + 300mm which ever is the greater (single doors).
- Min width of 1800mm (double doors).
- Lobby floors to have wheelchair friendly surface (not soft finish), be trip free and to remove water from wheels and shoes to reduce slippery surfaces within building. Mat wells must be flush with floor surface.
- Avoid distracting reflections from glazing.
- Any columns, ducts and similar full height elements projecting into lobby more than 100mm to have visually contrasting guardrail.

SECTION 3: HORIZONTAL AND VERTICAL CIRCULATION.

ENTRANCE HALL AND RECEPTION AREA.

- Reception desk easily identifiable and wheelchair accessible - counter section 1500mm wide, max 760mm high and 700mm knee recess above floor level.
- Clear approach and manoeuvring space in front of desk 1200mm deep by 1800mm wide if there is a min 500mm knee recess to counter; otherwise min 1400mm deep by 2200mm if no knee recess provided.
- Induction loop to reception point.
- Slip resistant floor surface.

INTERNAL DOORS.

- Doors to have maximum opening force at leading edge of 20N.
- Door furniture to be easily operated by a closed fist, visually apparent i.e. contrasting with door surface and not cold to touch.
- Door clear width measured from handle to jamb. Varies according to angle of approach. Straight approach to door – 800mm clear width / right angle approach to door with access route min 1500mm - 800mm clear width / right angle approach to door with access route min 1200mm - 825mm clear width / External doors used by general public – 1000mm clear width.

- Doors and side panels to doors wider than 450mm to have vision panels provided – visibility zone between 500mm and 1500mm and if necessary interrupted between 800mm and 1150mm above floor level e.g. to accommodate an intermediate horizontal rail (refer to dia 9 A.D.M).
- Unobstructed 300mm min space on door pull side between door leading edge and wall (not to powered doors).
- Door frames to contrast surrounding wall surfaces.
- Manifestation at two levels, 850mm to 1000mm and 1400mm to 1600mm.
- Glass doors in glass façade to have 150mm high contrast strip at door edges, and door protection if capable of being left open.
- Manifestations should visually contrast inside and out and in all lighting conditions.
- Fire doors self-closing either fitted with hold open devices or free swing devices and close on activation of the fire alarm (to negate requirement for 20N opening force).

CORRIDORS AND LOBBIES

- Corridor unobstructed widths of 1200mm with 1800mm by 1800mm passing places or 1800 width without passing places.
- Passing places to be at reasonable intervals.
- Projections in to the corridor to have contrasting guardrails.
- Floors to be level – max gradient 1 in 60. Any gradients steeper than 1 in 20 to be designed as ramps. Ramps less steep than 1 in 20 to have max rise 500mm with 1500mm long rest landings.
- No door to open across the corridor (doors should be recessed back from corridor) - except a unisex toilet door where the corridor is 1800mm wide. Some minor utility cupboards can outward open i.e. small store cupboards.
- Slip resistance floor surfaces. Avoid patterns to floor coverings.
- Glazed screens alongside the corridor to have manifestation at two levels – as glazed doors above.
- Ensure wider leaf of asymmetrical double doors is on same side of corridors.
- Internal lobbies to be as external above and in accordance with diagram 10 A.D.M.
- Projections in to the lobby to be protected with contrasting guardrails.

VERTICAL CIRCULATION.

LIFTING DEVICES.

- Passenger lifts preferred option for all buildings, however for existing buildings in exceptional circumstances a platform lift may be considered and in exceptional circumstances, in an existing building giving access to a small area with a unique function, a wheelchair platform stair lift could be considered and argued in the access statement.
- All new developments to have a passenger lift provided serving all storeys.
- An unobstructed manoeuvring space of 1500mm x 1500mm or 900mm straight access route to the lift.
- Landing call buttons located between 900mm and 1100mm – 500mm from any return wall, with raised symbols for tactile reading. Controls to have contrasting finish from background.
- Avoid dark colours to car floor and ensure floor frictional qualities similar or higher than the landing floor.
- A handrail on one wall 900mm above the floor.
- An emergency communication system.

PASSENGER LIFTS.

- Lift car to be designed in accordance with Diagram 11 A.D.M. - 1100mm wide x 1400mm deep and the provision of a mirror to allow wheelchair user to see behind.
- Min 800mm clear width of opening doors – doors to have timing and re-opening activators to allow for people and any assistance dogs to enter or leave car. Doors to contrast surrounding surfaces.
- Car controls between 900mm and 1200mm.
- Audible and visual indication of lift arrival and location in and out the car.
- Avoid use of visually and acoustically reflective wall surfaces.

LIFTING PLATFORMS.

- Vertical travel distance of 2.0m maximum with no enclosure and no floor penetration. More than 2.0m with a lift enclosure.
- Over 3m travel a product certificate issued by a Notified Body is required.
- Continuous pressure controls located between 800mm and 1100mm and at least 400mm from any return walls.
- Landing call buttons located between 900mm and 1100mm – 500mm from any return wall, with raised symbols for tactile reading. Controls to have contrasting finish from background.
- Three platform sizes depending on enclosures and accompanied or not;
 - 800mm wide x 1250mm deep minimum – non-enclosed platform and no provision made for wheelchair companion.
 - 900mm wide x 1400mm deep minimum – enclosed platform and no provision made for wheelchair companion.
 - 1100mm wide x 1400mm deep minimum – 2 doors at 90 degrees relative to each other / enclosed platform and provision made for wheelchair companion.
- Doors either 800mm or 900mm wide (for 1100mm wide x 1400mm deep platform). If possible position doors at different levels to allow forward movement in and out.
- Clear instructions are available for use.
- Audible and visual announcement of platform arrival.
- Avoid use of visually and acoustically reflective wall surfaces.
- Watch use in unsupervised environment.

WHEELCHAIR PLATFORM LIFTS. (Restricted use)

- In a single stairway condition ensure clear width of stair for means of escape when the lift is parked.
- Continuous pressure controls designed to prevent unauthorised use.
- Platform size of 800mm wide and 1250mm deep with access width of 800mm minimum.

INTERNAL STAIRS.

- Design as external stair dimensions.
- 12 risers maximum to a landing, but exceptionally no more than 16 in small premises where plan area is restricted.
- Rise of between 150mm and 170mm and going at least 250mm. (150mm max rise / min 280mm going for schools).
- No need for tactile warnings as external stairs.
- Provide guarding under landings less than 2100mm to prevent visually impaired walking into them.

INTERNAL RAMPS.

- Design as external ramp notes above.
- Where the change in level is more than 300mm – 2 or more clearly signposted steps must be provided in addition to ramp.

- Where the change in level is less than 300mm – a ramp is to be provided instead of a single step.
- All landings to be level – subject to a max 1 in 60 gradient along their length.
- Provide guarding under landings less than 2100mm to prevent visually impaired walking into them.

HANDRAILS TO INTERNAL STEPS, STAIRS AND RAMPS.

- As external handrails.

SECTION 4: FACILITIES IN BUILDINGS OTHER THAN DWELLINGS.

AUDIENCE & SPECTATOR FACILITIES (make

reference to good practice guides 4.11 A.D.M for sports facilities).

- The route to wheelchair spaces is accessible.
- Stepped access required fixed handrails (see 1.34 – 1.37 A.D.M).
- Minimum numbers of permanent & removable spaces (see table 3 plus diagram 13 A.D.M).
- Provide a range of views of event.
- Minimum clear space for access to wheelchair spaces / space to be allowed for wheelchair to be 900mm wide by 1400mm deep & floor space should be horizontal.
- Allowance for assistance dog required.
- See diagram 14 or 15 A.D.M for stepped terrace design requirements.

LECTURE/CONFERENCE FACILITIES.

- Access to podium or stage for wheelchair via ramp or lifting platform to be provided.
- Hearing enhancement system to be provided (see 4.36 A.D.M).

REFRESHMENT FACILITIES.

- All users have access to all parts of the facility, including wc's, public telephones and external terraces. Where premises contain self-service and waiter service, all patrons should have access to both.
- ALL different floor levels created by changes in floor areas for atmospheric design – must be accessible.
- Working surfaces or bar/serving counter at max 850mm above floor level.
- Shared areas / tea-making worktops to be max 850mm above floor level with a clear space beneath at least 700mm (see diagram 16 A.D.M). Water supplies to be accessible.
- Threshold between external seating area & internal facility (see 2.7 A.D.M)

SLEEPING ACCOMMODATION – Hotels, Motels & Student Accommodation.

For all Bedrooms:-

- Accessible bedrooms to be no less advantageous than able bodied bedrooms – adequate space to transfer into bed and access all the rooms facilities, including wardrobe facilities.
- Width of doors / door leading edges /handles as described previously (table 2 A.D.M).
- Wardrobe / swing doors to open 180 degrees – handles to be usable by closed fist and contrast the background surface.
- Openable window controls between 800mm and 1000mm above floor level and easy to operate single-handed.
- Visual fire alarm signal to be provided in addition to audible signal.
- Any room numbers to have embossed characters.

For wheelchair – accessible bedrooms:-

- At least 1 wheelchair accessible room provided for every 20 standard rooms, situated on accessible routes leading to all other available building facilities.
- To be located in a choice of locations and have standard of amenity equipment as standard rooms.
- Width of doors (3.10 table 2 A.D.M) / 300mm leading edge clearance / 20 N max opening force
- Wheelchair 1500mm x 1500mm space & transfer space alongside beds (diagram 17 A.D.M)
- Wheelchair accessible sanitary facilities (see 5.15 to 5.21 A.D.M).
- Balcony facility if provided (see table 2 (4.24 (o and p))).
- Emergency assistance alarms including re-set button and signal to central control point.
- Wide-angle door viewers located between 1050mm and 1500 above floor level to entrance door:

SWITCHES, OUTLETS AND CONTROLS.

- Wall mounted sockets, telephone and TV sockets between 400mm and 1000mm above floor level. (Preference to lower end of scale). Sockets 350mm away from room corners.
- Permanently wired appliance switches between 400mm and 1200mm above floor level.
- All switches and controls that require precise hand movement to be 750mm and 1200mm above floor level.
- Push button type controls and easy to read.
- Pull cords for emergency alarm to be red in colour with 50mm bangles at two levels. 1 at 100mm and other between 800mm and 1000mm above floor level.
- Large push pads to general public areas align horizontally with door handles between 900mm and 1100mm above floor level and for ease of location.
- All to include on/off position and front plates to contrast visually with their backgrounds. Generally unless required for safety reasons – switches and controls to be usable single handed – and all switched sockets to indicate that they are on.

AIDS TO COMMUNICATION.

- Clear audible public address system – supplemented by visual information.
- Hearing enhancement in rooms for meetings, lectures, classes, performances, spectator sport or films, and at service or reception counters when situated in noisy areas or behind glazed screens.
- Specialist telephone provision to be provided for hearing impaired.
- Artificial lighting is compatible with other electronic and radio frequency installations.

SECTION 5: SANITARY ACCOMMODATION.

- (Reference to be made to details included in this section of the Approved Document).

GENERAL PROVISION.

- Bath and washbasin taps & door opening furniture capable of being operated using a closed fist e.g. lever action or lever handles.
- Visual contrast as follows: a) door furniture and door surface b) door frame and surrounding wall c) sanitary fittings/grab bars and wall and floor finishes d) wall and floor finishes.
- Light action privacy bolts designed for lack of manual dexterity and self-closers to doors – 20N max force.
- Doors to have a release mechanism capable of being opened outward in an emergency.

- Outward opening doors not to obstruct emergency escape routes.
- Fire alarms to emit a visual and audible signal. An emergency assistance alarm system operable from seated position to be provided. Alarm to sound different than fire alarm.
- Lighting controls as provisions in Section 4.
- Heat emitters screened or to have surfaces below 43 degrees Celsius.
- W.C. pans should accommodate variable height toilet seat risers
- Cistern flushing mechanism positioned on open or transfer side.

PROVISION OF TOILET ACCOMMODATION.

- A wheelchair accessible unisex type where only one toilet is provided in a building. Size enlarged to 2.0 x 2.2m – layout in accordance with Diagram 18 / 19 / 20 A.D.M.
- At least one wheelchair accessible unisex toilet at each location where sanitary facilities are provided.
- In separate sex toilet accommodation at least one ambulant disabled persons w.c. cubicle layout in accordance with Diagram 21 is provided and where there are 4 or more cubicles an enlarged cubicle (1.2m wide) is to be provided.

WHEELCHAIR ACCESSIBLE UNISEX TOILET PROVISION.

- One located near to entrance and/or waiting area in a building.
- Not located in a way that compromises privacy of users.
- Located in similar position on each floor of a multi-storey building with choice of transfer layouts on alternate floors.
- Choice of transfer layouts when more than one unisex toilet is available.
- Where w.c. is the only one in a building the width must be increased to 2000mm to accommodate an additional standing w.c.
- Located on accessible routes that are direct and obstruction free.
- 40m maximum travel distance to an accessible toilet. Travel between floors restricted to one floor if a lifting platform is only provided.
- Minimum dimensions as diagram 18, heights and arrangements of fittings as diagrams 19 & 20 A.D.M.
- Doors to outward open – sized as previously described, with horizontal closing bar to rear.
- Heat emitters not to restrict wheelchair manoeuvring space or space beside w.c.

TOILETS IN SEPARATE SEX WASHROOMS.

- Ambulant disabled people should be able to use a w.c. compartment within any separate sex toilet washroom.
- 450mm diameter manoeuvring space is provided in cubicle between door swing and edge of pan.

- Minimum dimensions of compartments for ambulant disabled people as diagram 21 A.D.M.
- Compartment doors for ambulant disabled people preferably open outward.
- One low level washbasin and urinal with vertical grab bars.

WHEELCHAIR ACCESSIBLE CHANGING/SHOWER FACILITIES.

For changing and shower facilities:-

- A choice of left and right hand transfers is provided, when more than one individual changing / shower compartment is provided.
- Wall mounted drop-down support rails and tip up seats.
- Sub-divisions in communal shower and changing facilities.
- Individual self-contained shower and changing facilities in sports facilities in addition to communal separate sex facilities.
- Limb storage facilities for amputees.

For changing facilities:-

- Arrangements of equipment and controls to comply with diagram 22 A.D.M – min 2000mm by 2200mm size.
- Level slip resistant floor when in association with showers.
- 1500mm manoeuvring space in front of lockers.
- NOTE – For changing facilities not associated with showers, for example shop changing cubicles the dimensions and fittings as per a self contained changing cubicle need to be provided. Min clear area 1500mm x 1500mm.

For shower facilities:-

- Shower facilities as diagram 23 A.D.M.
- Minimum one accessible shower for staff in commercial developments where showers provided.
- Shower curtain operable from shower seat.
- A toiletries shelf within reach of shower seat or wheelchair.
- Level slip resistant floor when in association with showers.
- Shower terminal fittings to comply with guidance note G 18.5 and have logical and clear markings.
- Shower controls between 750-1000mm above floor level.

For shower facilities incorporating a W.C.:-

- Arrangement of fittings comply with diagram 24 A.D.M.
- Left and right hand transfer layouts available, when more than one shower area is provided.
- Level slip resistant floor when in association with showers.

WHEELCHAIR ACCESSIBLE BATHROOM PROVISIONS.

- Arrangement of fittings as diagrams 25 & 26 A.D.M.
- Left and right hand transfer layouts.
- Slip resistant floor.
- 400mm deep bath transfer seat.
- Outward opening doors with horizontal closing bar

LEGISLATION AND BIBLIOGRAPHY

LEGISLATION

The following are the most significant Acts of Parliament which affect disabled people.

Building Act 1984

Building Regulations 2000

Chronically Sick and Disabled Persons Act 1970

Cinematograph Acts 1909 and 1952

Companies (Employment of Disabled Persons) Regulations 1980

Disabled Persons Act 1981

Disabled Persons Employment Act 1944 (amended 1958)

Disability Discrimination Act 1995

Education Act 1944

Education Act 1980

Fire Precautions Act 1971

Fire Precautions (Workplace) Regulations 1997

Health and Safety at Work, etc Act 1974

Highways Act 1980

Housing Act 1985

Licensing Acts 1961 and 1964

Theatres Acts 1843 and 1968

Town and Country Planning Act 1990

BIBLIOGRAPHY

The Building Regulations 2000 as amended

The Building Regulations (Amendment) Regulations 1998

Approved Document B Fire Safety

Approved Document K Protection from falling, collision and impact

Approved Document M Access to and Use of Buildings

Approved Document N Glazing Materials and Protection

BRITISH STANDARDS

BS 4787 Internal and External Wood Doorsets, Door Leaves and Frames B.S.I.

BS 5395 Stairs, Ladders and Walkways B.S.I.

BS 5588 Part 8: Code of Practice for Means of Escape for Disabled People B.S.I.

BS 5588 Part 12: Fire precautions in the design, construction and use of buildings. Managing fire safely

BS 5619 Design of Housing for the Convenience of Disabled People B.S.I.

BS 5655 Lifts and Service Lifts B.S.I.

BS 5776 Specification for Powered Stairlifts B.S.I.

BS 6180 Code of Practice for Protective Barriers in and About Buildings B.S.I.

BS 8300 Design of Buildings and the Approaches to meet the needs of Disabled People B.S.I.

Designing for Accessibility 2004 Edition – Centre for Accessible Environments

The Good Loo Design Guide 2004 Edition – Centre for Accessible Environments

Designing for the Disabled – Selwyn Goldsmith

Access for Disabled Persons to Educational Buildings.

Design Note 18. – Secretary of State for Education and Science

New Metric Handbook – Architectural Press

Access for Disabled People, Guidance Note – Sport England

USEFUL CONTACTS

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www.a-4-a.co.uk

Bolton MBC

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Tel: 01204 336010

www.bolton.gov.uk

British Council of Disabled People

Tel: 01332 295551

Bury MBC

Building Control

Craig House, 5 Bank Street

Bury BL9 0DN

Tel: 0161 253 5289

www.bury.gov.uk

Centre for Accessible Environments

Tel/textphone: 0207 357 8182

www.cae.org.uk

Disability Rights Commission

Tel: 08457 622633

www.drc_gb.org.uk

Disability Unit

Department for Work and Pensions

Level 6, Adelphi Building, John Adams Street

London WC2N 6HT

www.disability.gov.uk

Manchester City Council

Building Control

Town Hall, Albert Square

Manchester M60 2JT

Tel: 0161 234 4320

www.manchester.gov.uk

The National Federation of Shopmobility UK

Tel: 08456 442446

www.justmobility.co.uk/shop

Oldham MBC

Building Control

Department of Environmental Services

PO Box 30, Civic Centre, West Street

Oldham OL3 7AN

Tel: 0161 911 4122

www.oldham.gov.uk

Rochdale MBC

Building Control

Floor 1, Telegraph House, Baillie Street

Rochdale OL16 1JH

Tel: 01706 864327

www.rochdale.gov.uk

Royal Association of Disability and Rehabilitation (RADAR)

Tel: 020 7250 3222

www.radar.org.uk

Royal National Institute of the Blind

Tel: 0207 388 1266

www.mib.org.uk

Royal National Institute of the Deaf

Tel: 0808 8080123 (freephone)

www.rnid.org.uk

Salford City Council

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Stockport MBC

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www.stockport.gov.uk

Tameside MBC

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Trafford MBC

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Wigan MBC

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