
TECHNICAL GUIDANCE

building
CONTROL
services

Produced by the District Surveyors Association

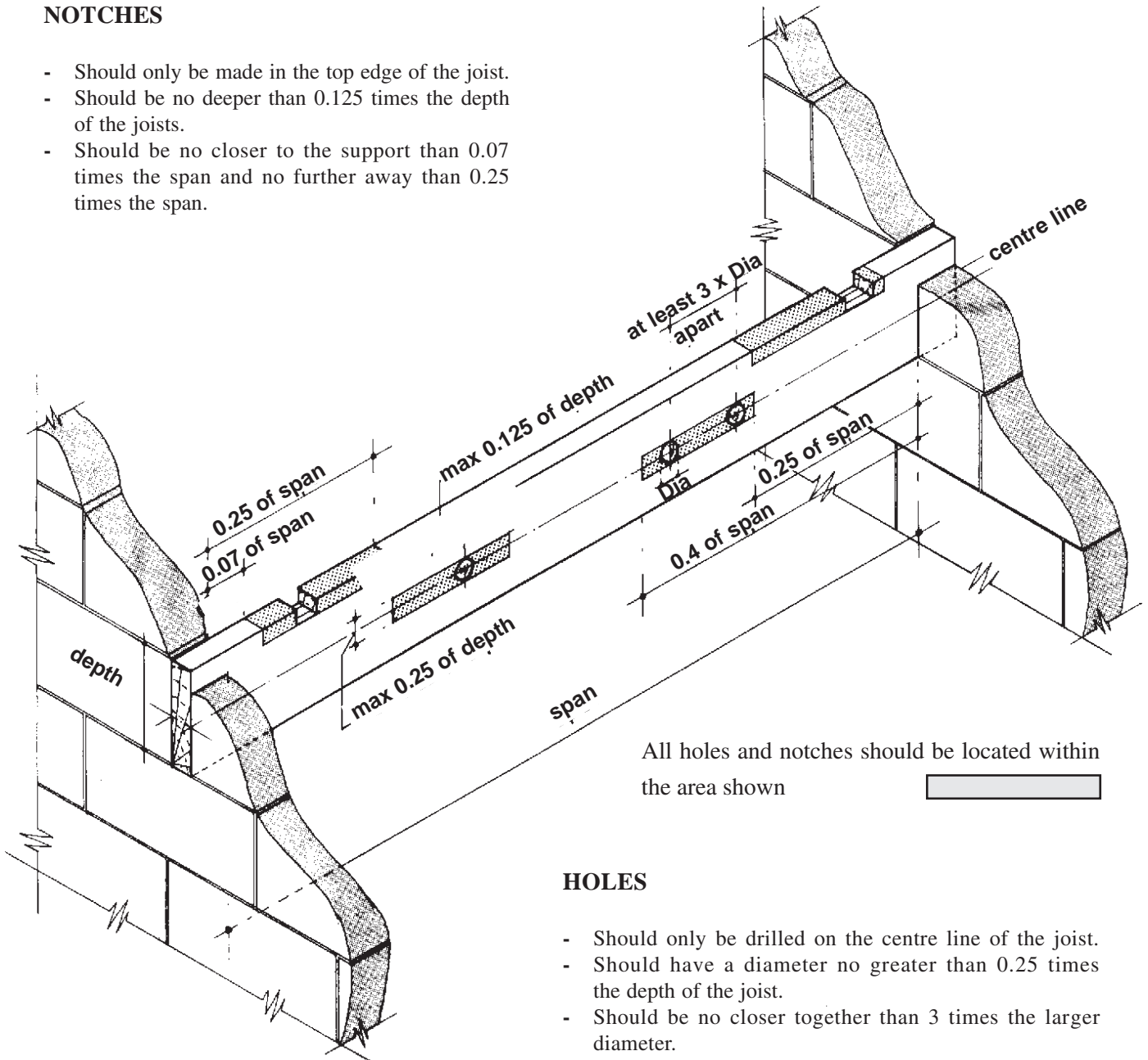
Agreed by the following
West London Building Control Services:

Brent, Ealing, Hammersmith & Fulham, Harrow,
Hillingdon, Hounslow, Kensington & Chelsea and
Kingston-upon-Thames.

LOCATION OF NOTCHES & HOLES IN SIMPLY SUPPORTED FLOOR AND ROOF JOISTS

NOTCHES

- Should only be made in the top edge of the joist.
- Should be no deeper than 0.125 times the depth of the joists.
- Should be no closer to the support than 0.07 times the span and no further away than 0.25 times the span.



All holes and notches should be located within the area shown

HOLES

- Should only be drilled on the centre line of the joist.
- Should have a diameter no greater than 0.25 times the depth of the joist.
- Should be no closer together than 3 times the larger diameter.
- Should be no closer to the support than 0.25 times the span and no further away than 0.4 times the span.

- If the above requirements cannot be met within the limitations shown, then increase the joist depth by the depth of notches or diameter of holes.

NOTE: Notches or holes should not be cut in roof rafters.

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Further information can be obtained from The Building Regulations 1991 Approved Document A 1992 or from the Building Control Section of your Local Council. The views expressed in this document are those of the DSA and do not necessarily reflect those of the Department of the Environment or any other Government Department.

STRUCTURAL SUPPORT PROVIDED BY FLOORS

1. LATERAL RESTRAINT TO WALL AT FLOOR LEVEL

Walls should be strapped to floors above ground level at not more than 2.0 metre centres using galvanised mild steel, or other durable metal straps, which have a minimum cross-section of 30mm x 5mm. See figures 1a and 1b below. Fix straps with 50mm x No.10 woodscrews or 75mm x 4mm round wire nails, at a maximum of 110mm centres with a minimum of 4 no. fixings per strap.

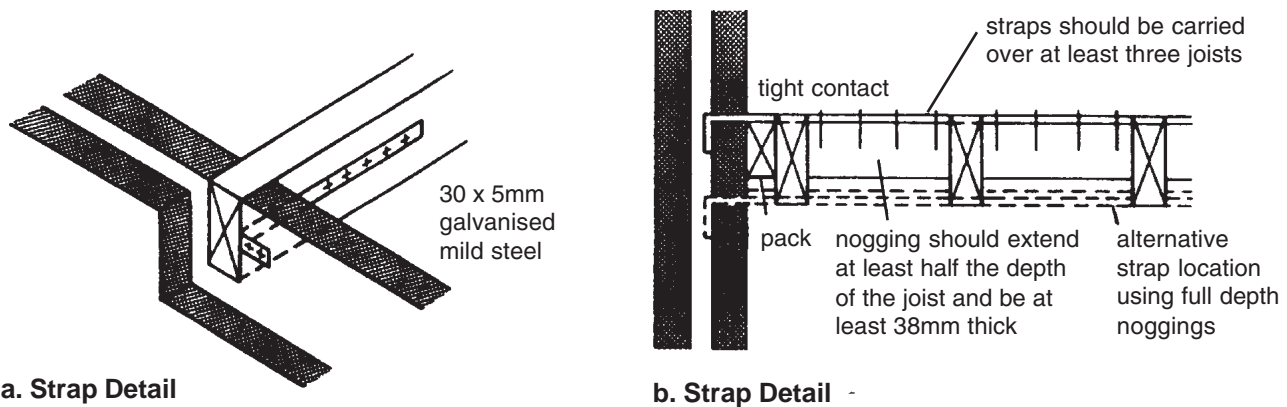


Figure 1

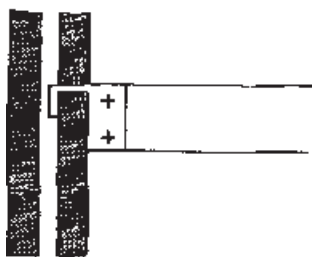
2. INTERRUPTION OF LATERAL SUPPORT

Where the continuity of lateral support is interrupted (eg. Stairway opening), the following conditions should be satisfied:

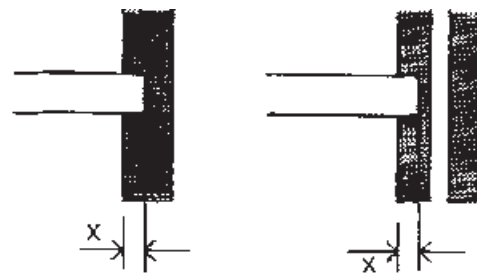
- a. the maximum permitted length of the opening is to be 3.0 metres, measured parallel to the supported wall, **and**
- b. where a connection is provided by means other than by anchor, this should be provided throughout the length of each portion of the wall on each side of the opening, **and**
- c. where connection is provided by mild steel anchors, these should be spaced closer than 2.0 metres on each side of the opening to provide the same number of anchors as if there were no opening, **and**
- d. there should be no other interruption of lateral support.

3. STRAPS NEED NOT BE PROVIDED WHEN THE FOLLOWING ARE SATISFIED

- a. in the longitudinal direction of joists in houses of not more than two storeys, if the joists are not more than 1.2 metre centres and have at least 90mm bearing on the supported walls or 75mm bearing on a timber wall-plate at each end, **and**
- b. in the longitudinal direction of joists in houses of not more than two storeys if the joists are carried on the supported wall by joist hangers of the restraint type described in BS 5628: Part 1, and are incorporated at not more than 2.0 metre centres, (see figure 2a), **and**
- c. when a concrete floor has at least 90mm bearing on the supported wall (see figure 2b), **and**
- d. where floors are at or about the same level on each side of a supported wall, and contact between the floors and wall is either continuous or at intervals not exceeding 2.0 metres. Where contact is intermittent, the points of contact should be in line or nearly in line on plan (see figure 2c).

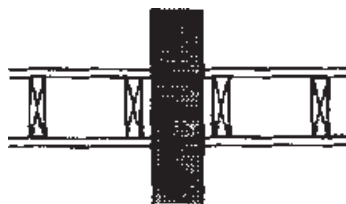


a. Restraint Type Joist hanger



b. Restraint by Concrete Floor or Roof

Where contact between floors and walls on both sides of the wall is at intervals no greater than 2m



c. Restraint of internal walls

Floors should be at or about the same level on each side of the wall. Where lateral support is intermittent, the point of contact should be in line or nearly in line

Figure 2

STRUTTING TO FLOOR JOISTS

Floor joists spanning in excess of 2.5 metres should be strutted by one or more rows of solid or herringbone strutting in accordance with the table below.

Joist Span (m)	No. of rows of strutting
less than 2.5	none
2.5 - 4.5	1 midspan
more than 4.5	2 at one third span positions

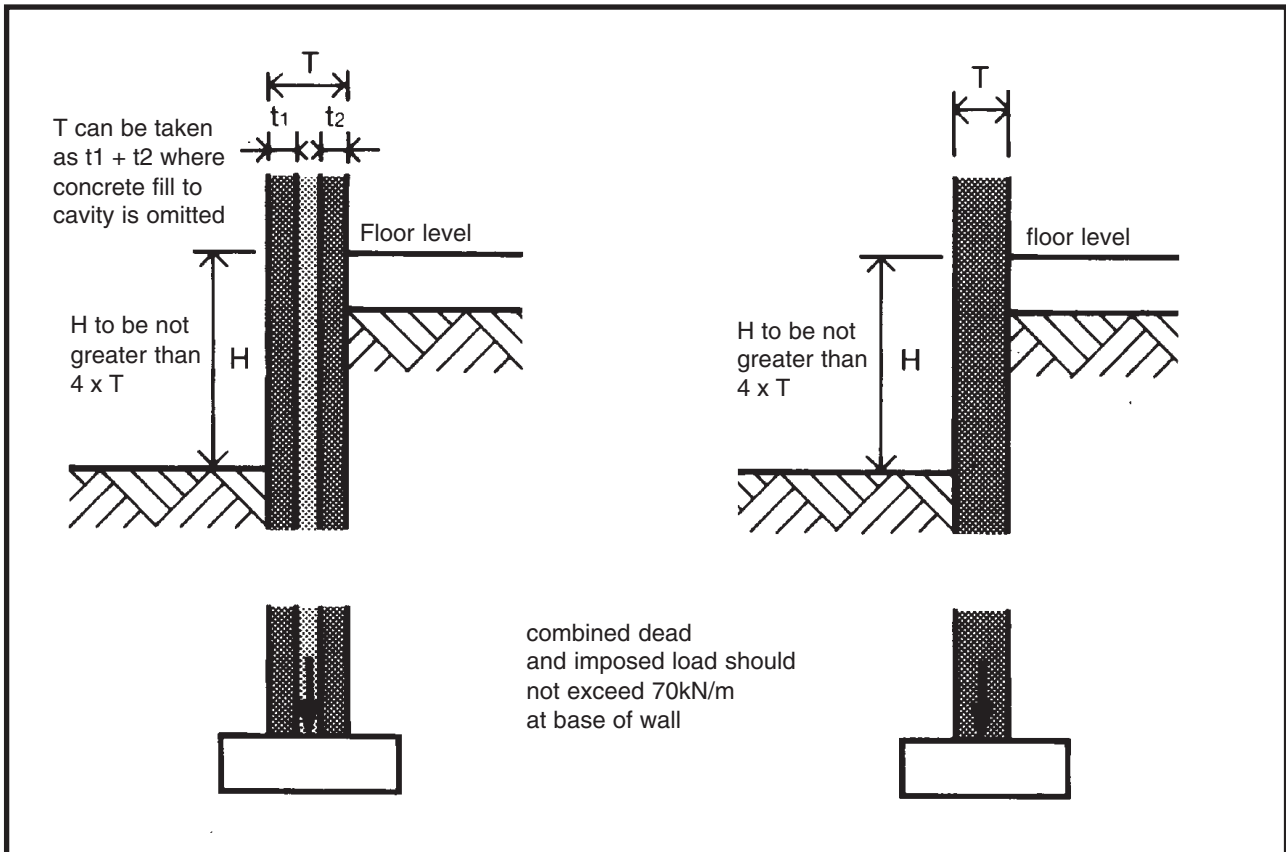
Solid strutting should be at least 38mm thickness timber size, extending at least three quarters the depth of the joists.

Herringbone strutting should be of at least 38mm x 38mm timber size, but should not be used where the distance between joists is greater than 3 times the depth of the joist, when solid strutting should be used.

Strutting should be blocked solidly to perimeter walls.

RETAINING WALLS

Differences in level of ground or other solid construction between one side of the wall and the other should be less than 4 times the thickness of the walls.



NOTE: The walls are integral parts of buildings.

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SMOKE ALARMS IN DWELLINGS

INTRODUCTION

Building Regulations require that ALL new buildings (including those converted into dwellings) are fitted with an automatic fire detection and alarm system.

Self-contained smoke alarms are suitable unless the dwelling is very large (eg. more than 30m from any part of one room to the furthest part of any other room on the same floor), in which a detection and alarm system should be designed and installed to the "L3" standard of BS5839; Part 1.

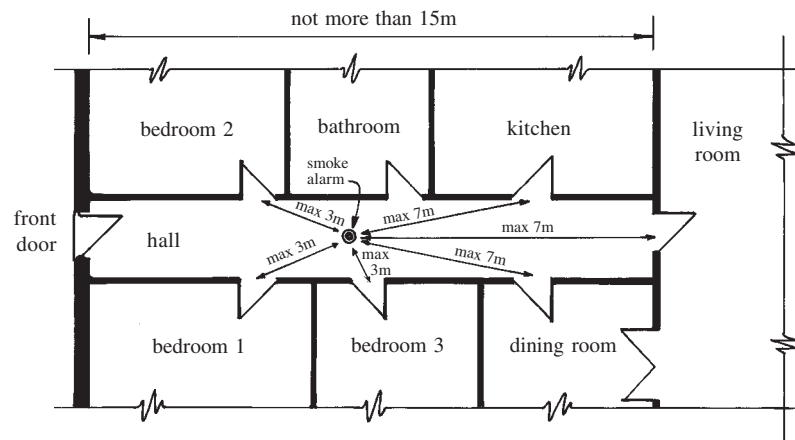
TYPE OF SMOKE ALARM

The self-contained smoke alarms should be mains operated (preferably with a secondary power supply) and designed to conform with BS5446; Part 1.

Where more than one alarm is provided they should be interconnected, so that detection by one unit operates the alarm signal in all of them (see manufacturer's instructions about the maximum number of alarms that can be interconnected).

NUMBER & POSITION OF SMOKE ALARMS

The smoke alarms should be provided to the circulation area of each and every floor of the dwelling and have more than one per floor where the corridor exceeds 15m long. The unit should be no more than 7m from the doors of rooms where a fire is most likely to start, such as the kitchen and living room, and within 3m of the bedroom doors.



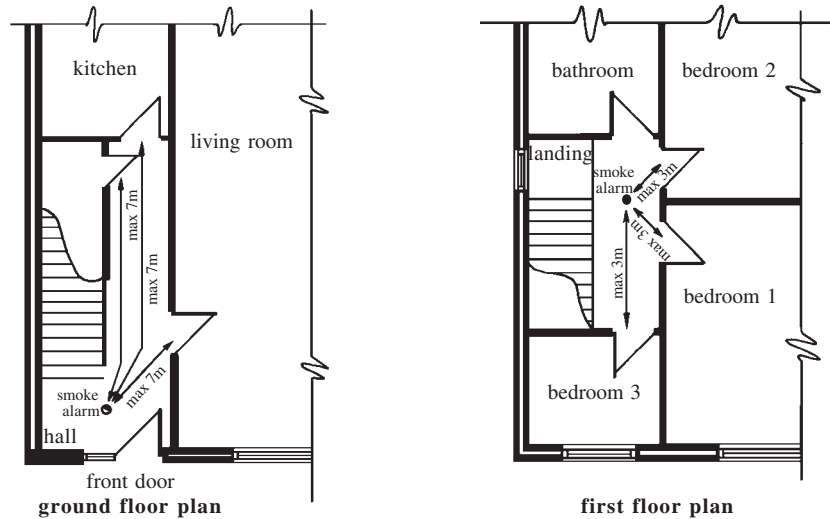
Position of Smoke Alarm within a Typical Bungalow

Each alarm should preferably, be fixed to the ceiling in a central position and at least 300mm from any wall or light fitting. If the unit is designed to be wall mounted, it should be fixed between 150mm and 300mm below the ceiling.

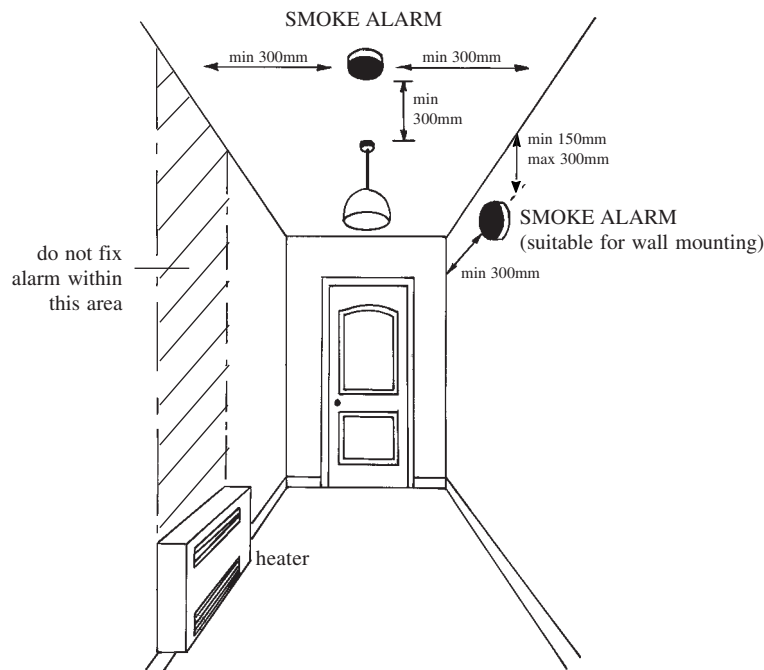
Alarms should not be fixed directly above heaters, ducted heat outlets or in bathrooms, showers, cooking areas or garages; where steam, condensation or fumes can give false alarms. Likewise, alarms should not be fitted in very hot or very cold rooms (eg. boiler rooms or unheated porches), where the air currents may move smoke away from the unit.

When positioning a self-contained smoke alarm consideration should be given to the safe testing, cleaning and maintenance of the unit. For this reason the alarm should not be fixed over a stair shaft or an opening in a floor.

NOTE: Revised design and installation LD3 standard of BS5839: Part 6: 1995.



Position of Smoke Alarms within a Typical House



Position of Smoke Alarms within the Circulation Area

INSTALLATION & MAINTENANCE

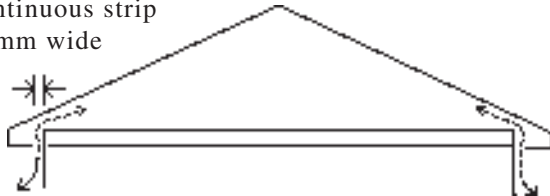
The unit should be permanently wired to a separate fused circuit at the distribution board, via mains transformer if they operate on a low voltage supply or fixed in accordance with BS 5446 pt 1. All should conform to the IEE Wiring Regulations. There is no need to have any special fire-proof wiring.

The manufacturer's instructions containing the operating, testing and maintenance of the unit should always be passed to and retained by the occupier of the dwelling.

ROOF VOID VENTILATION

(a) PITCHED ROOF

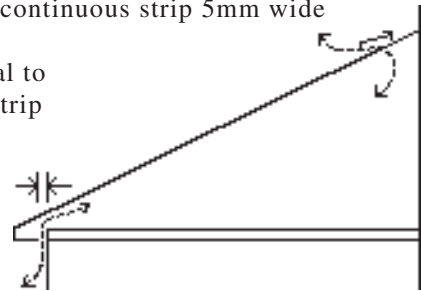
At least equal to continuous strip 10mm wide



(b) LEAN-TO ROOF

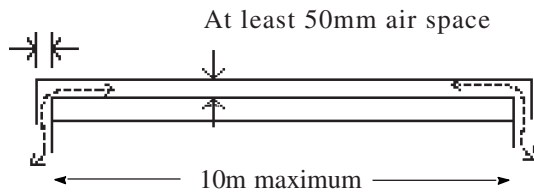
At least equal to continuous strip 5mm wide

At least equal to continuous strip 10mm wide

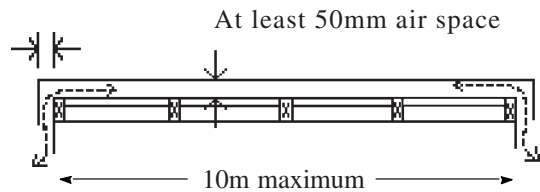


(c) FLAT ROOF

At least equal to continuous strip 25mm wide



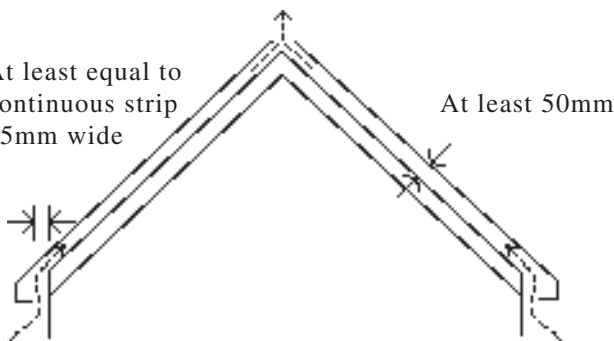
At least equal to continuous strip 25mm wide



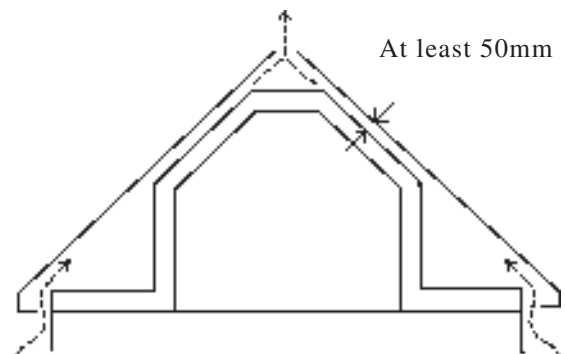
(d) CEILING FOLLOWING PITCH OF ROOF

At least equal to continuous strip 5mm wide

At least equal to continuous strip 25mm wide



At least equal to continuous strip 5mm wide



At least equal to continuous strip 25mm wide

The details above do not apply to:

- 1) Warm roofs
- 2) Small roofs ie bay, porch
- 3) Roof space less than 15 and in excess of 10m - 0.6% of roof area required
- 4) Alternative design

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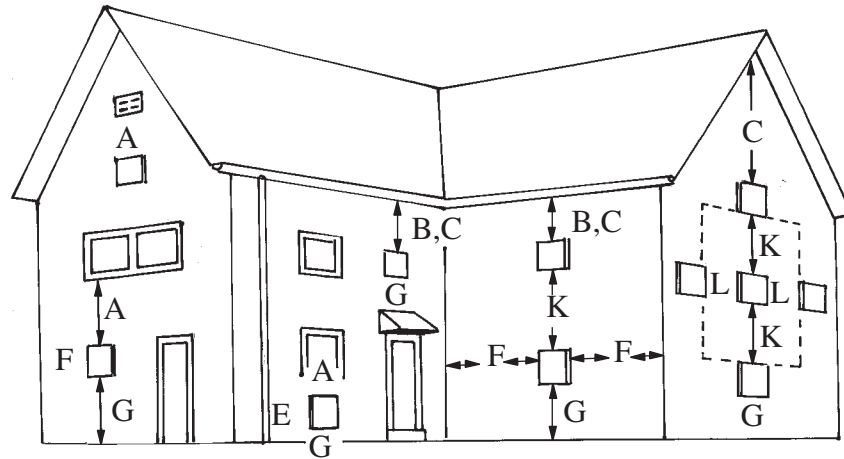
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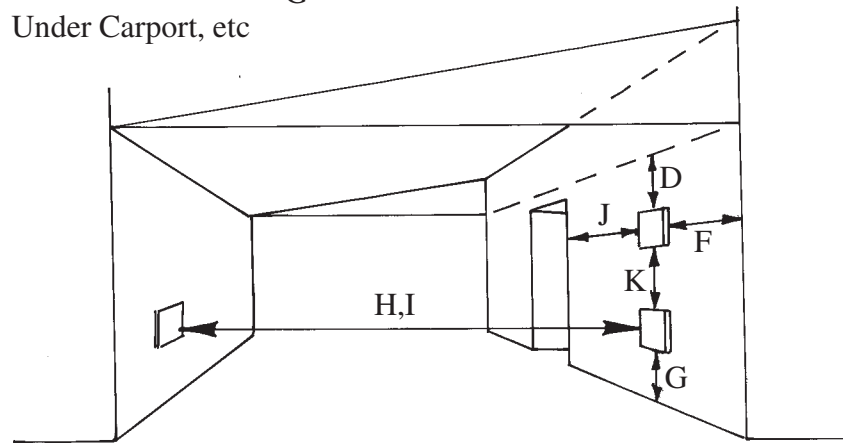
DSA
DISTRICT SURVEYORS ASSOCIATION

Guidance leaflet standards agreed with West London Boroughs of:
Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon, Hounslow,
Kensington & Chelsea and Kingston-upon-Thames.

POSITIONS FOR GAS FLUE TERMINALS



Under Carport, etc



MINIMUM SITING DIMENSIONS FOR BALANCED TERMINALS

POSITION		MINIMUM SPACING (MM)
A	DIRECTLY BELOW AN OPENABLE WINDOW, AIR VENT, OR ANY OTHER VENTILATION OPENING	300
B	BELOW GUTTER, DRAIN / SOIL PIPE	300
C	BELOW EYES	300
D	BELOW A BALCONY OR CAR PORT	600
E	FROM VERTICAL DRAINS PIPES AND SOIL PIPES	75
F	FROM INTERNAL OR EXTERNAL CORNERS	600
G	ABOVE ADJACENT GROUND OR BALCONY LEVEL	300
H	FROM A SURFACE FACING THE TERMINAL	600
I	FACING TERMINALS	600
J	FROM OPENING (DOOR / WINDOW) IN CAR PORT INTO DWELLING	1200
K	VERTICAL FROM A TERMINAL	1500
L	HORIZONTAL FROM A TERMINAL	300

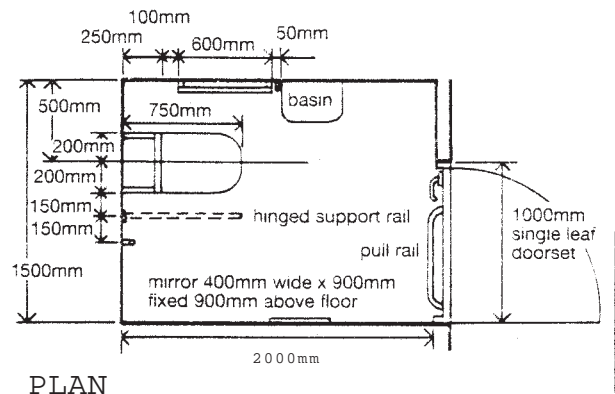
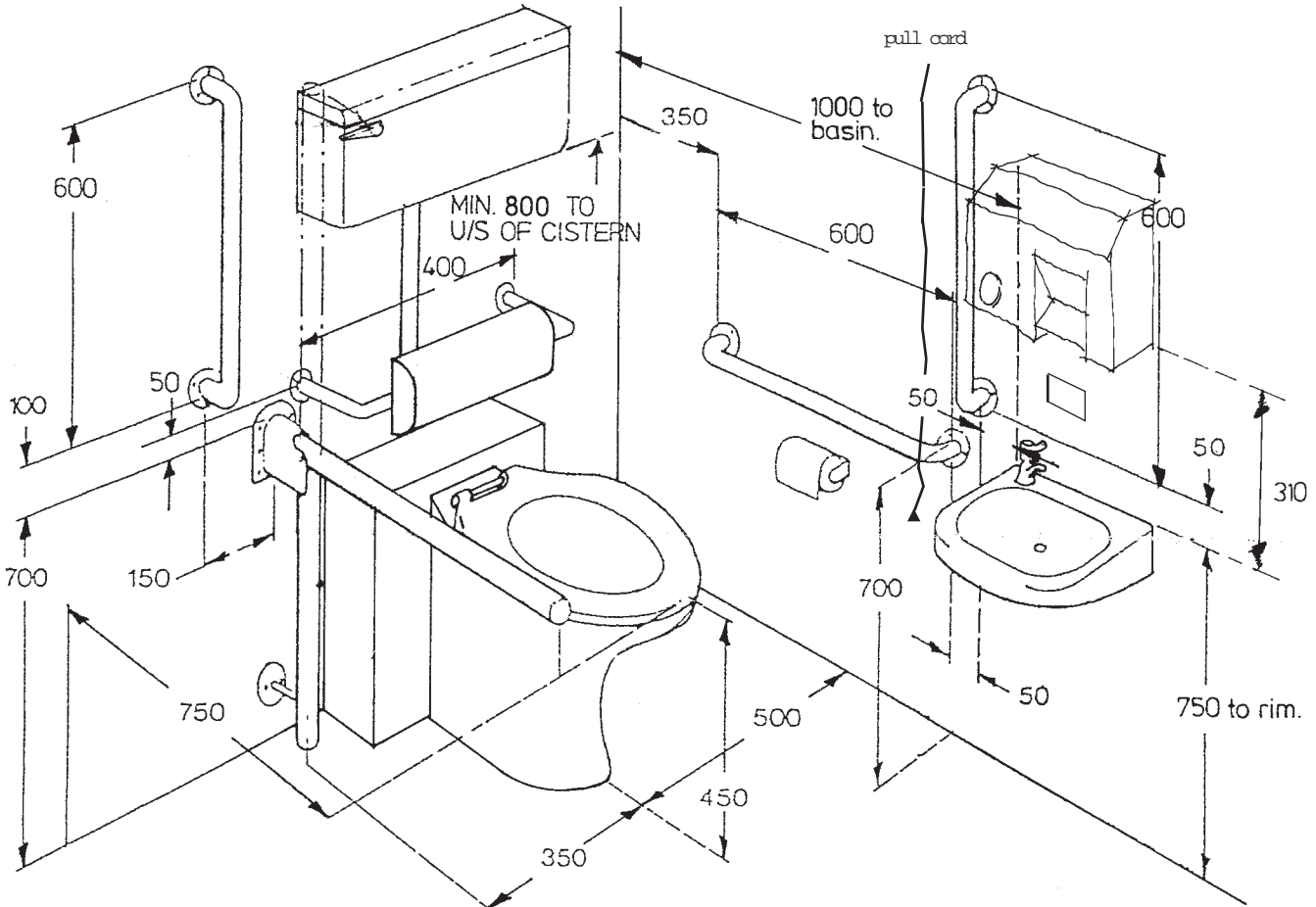
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DISABLED TOILET LAYOUT



PLAN

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TITLE : MANIFESTATION OF GLAZING

Building Regulations 1991

(This requirement is for non Domestic Buildings only)

Transparent glazing with which people are likely to collide whilst in passage in or about the building shall incorporate features which make it apparent.

Principal entrance doors and/or doors opening across circulation routes may need to have visibility glazing in order to comply with Part M (Access and Facilities for Disabled People). Where Part M applies a minimum clear zone of visibility is required in the door between the height of 900mm and 1500mm. This will need to be taken into account in order to achieve both visibility and manifestation.

This includes large areas of uninterrupted, transparent, door height, glazing in non-domestic buildings, where the glazing may not be immediately apparent and which is not separating obviously different levels. Manifestation shall be made by some form of pattern on the glass at or about 1500mm from floor level. Manifestation would not normally be required where there are mullions closer than 400mm centres, transoms between 600mm and 1500mm from floor level or doors with substantial frames or devious handles. See also diagrams 5 and 6 for clarification.

Diagram 5 Height of 'manifestation' of large areas of transparent glazing

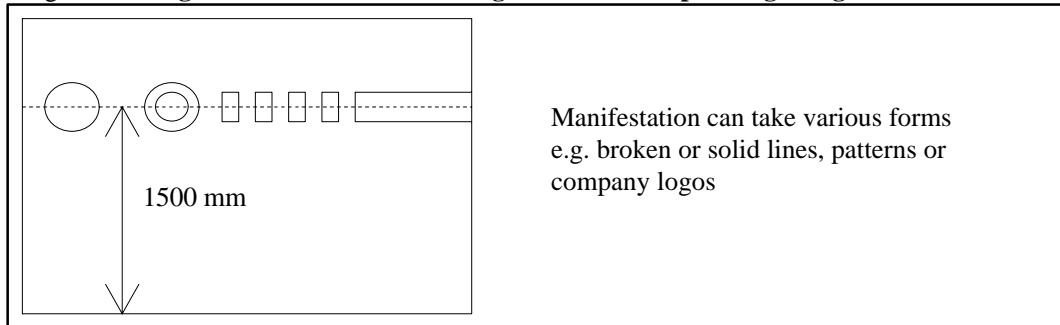
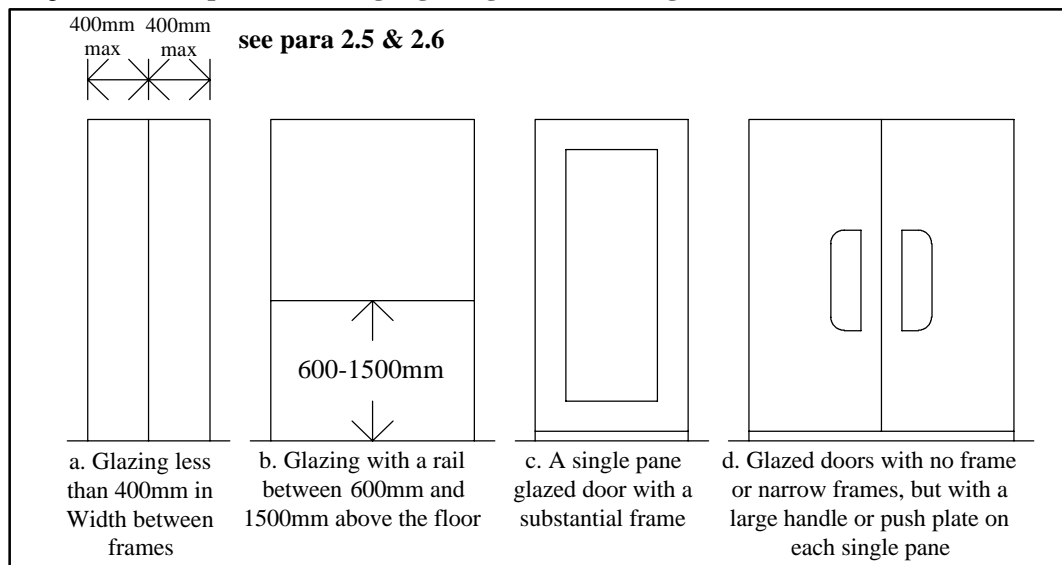


Diagram 6 Example of door height glazing not warranting manifestation



TITLE : PROVISION OF SAFETY GLAZING

Glazing - Materials and Protection

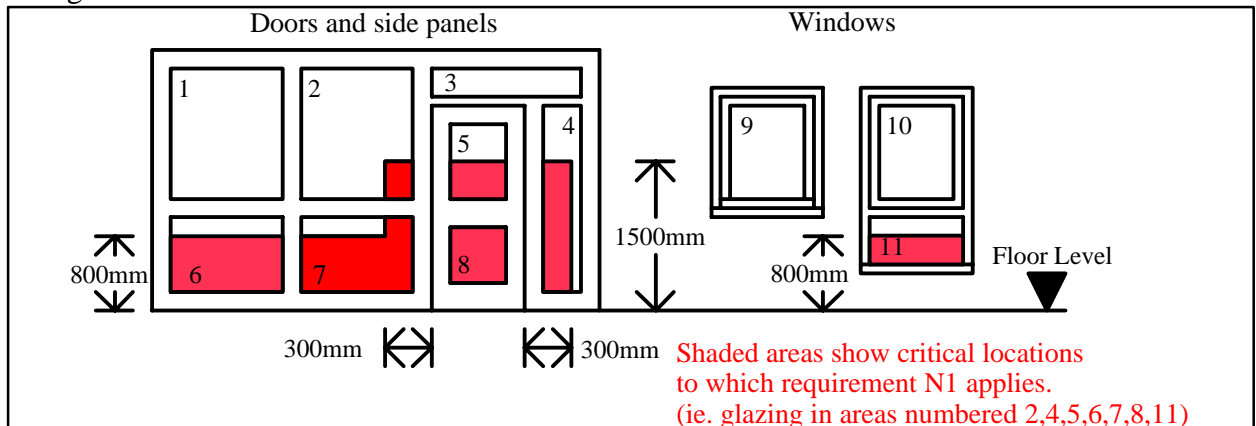
Building Regulation 4(1),(2), Schedule 1 : Part N

The most likely locations for impacts leading to cutting and piercing injuries are in doors and door side panels and at low level in walls and partitions.

The following locations may be considered "critical" in terms of safety:

- (1) **Glazing in doors** which is wholly or partially within 1500mm from floor level.
- (2) **Glazing adjacent to doors** which is wholly or partially within 300mm of the edge of a door and which is also wholly or partially within 1500mm from floor level.
- (3) **Low level glazing** not covered by (1) or (2). Glazing which is wholly or partially within 800mm from floor level.

Diagram 1 Critical locations in internal and external walls



Reducing the Risks

Glazing in critical locations should either:

- (a) break safely, if it breaks,
 - (b) be robust or in small panes,
 - (c) be permanently protected.
- (a) **Safe Breakage**, which in practice is concerned with the performance of laminated and toughened glass, is defined in BS 6206: 1981. In terms of safe breakage a glazing material suitable for installation in a critical location would need to satisfy the test requirements of class C of BS 6206 or, if it is installed in a door or in a door side panel and has a pane width exceeding 900mm, the test requirements of Class B of BS6206.
 - (b) **Robustness** - Annealed glass which is ordinary glass as it is manufactured with no further process being applied to it. This includes float glass, rolled glass, wired glass. Its strength is gained through its thickness.

Diagram 2 indicates reasonable glass thickness/ dimension limits for annealed glass which may be used in critical locations.

Diagram 3 gives maximum allowable pane sizes and areas of small panes of nominal 6mm annealed glass, except in traditional leaded or copper lights in which case 4mm would be acceptable when fire resistance is not a factor.

TITLE : PROVISION OF SAFETY GLAZING

Diagram 2 Annealed glass thickness/ dimension limits

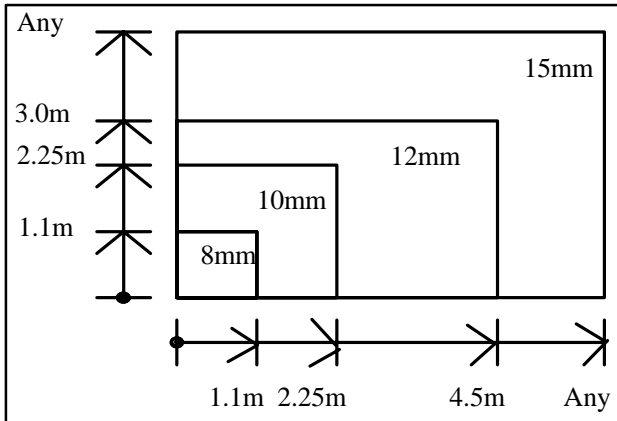
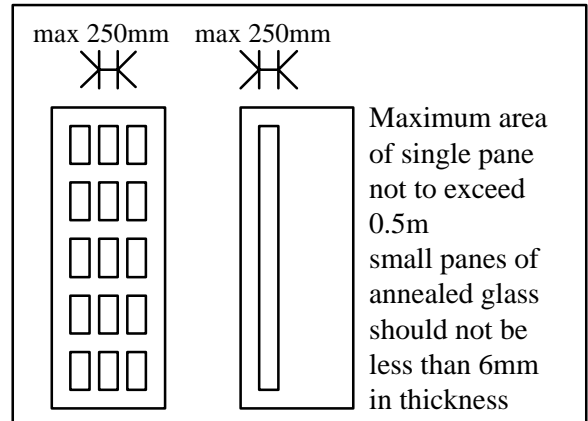


Diagram 3 Dimensions and areas of

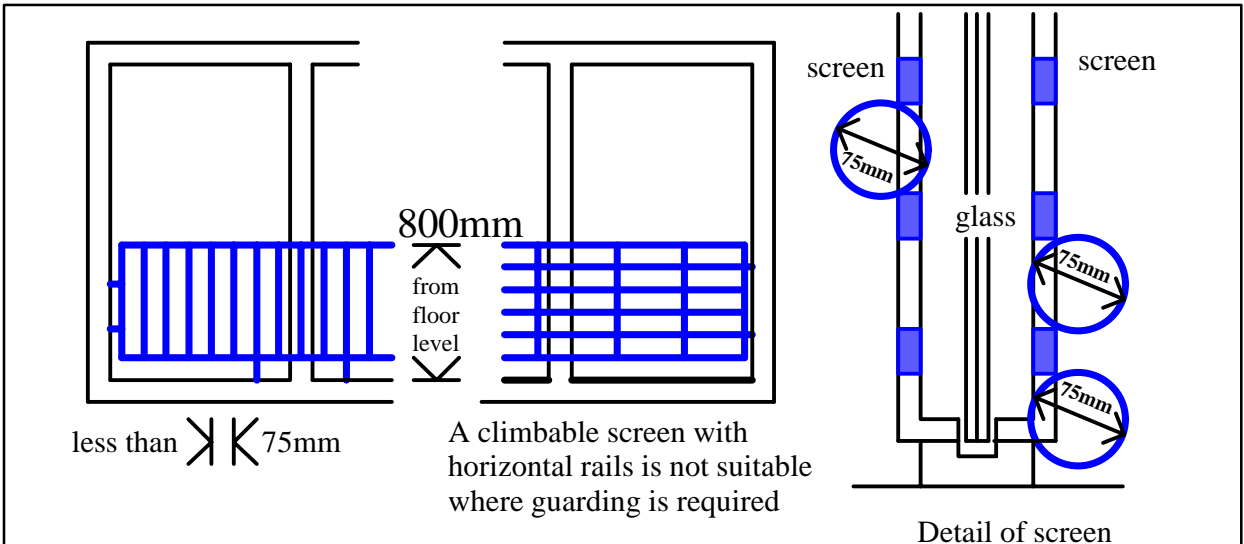


Permanent Screen Protection

If, as part of a design solution, glazing in a critical location is installed behind permanent screen protection, the screen should:

- (a) prevent a sphere 75mm from coming into contact with the glazing,
- (b) be robust and
- (c) if it is intended to protect glazing that forms part of a protection from falling, be difficult to climb. i.e. vertical rails not horizontal.

Diagram 4 Permanent screen protection



All safety glazing should be suitably marked in accordance with BS 6206. The markings should still be visible after the glass has been fitted and the beading or pointing has been carried out.

Double Glazing - Where a double glazing unit can only be impacted from one side, then only the pane on that side needs to comply with N1.