



General Principles

There are some general principles for the design of an escape route from public buildings such as churches and church halls.

They are:

- that there should be alternative means of escape from most situations,
- where direct escape to a place of safety is not possible, it should be possible to reach a “place of reasonable safety” such as a protected stairway, which is on route to an exit and is within a reasonable travel distance.
- Lifts are not normally acceptable as a means of escape.

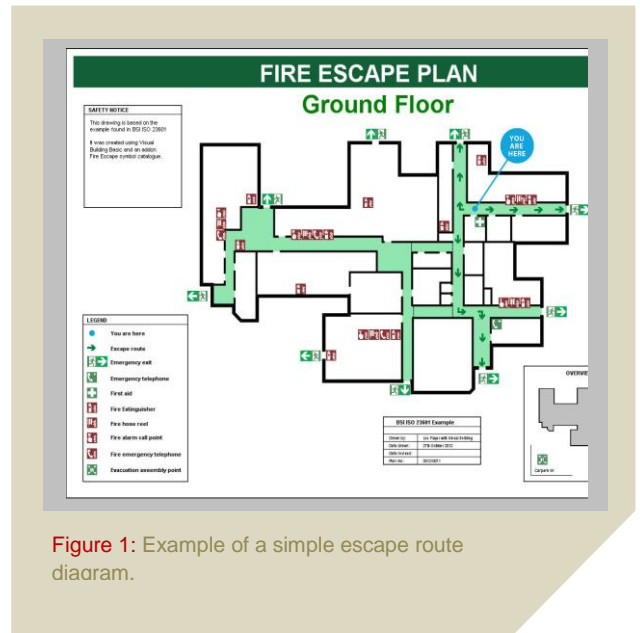


Figure 1: Example of a simple escape route diagram.

Factors to Consider

Number & Size of Escape Route for Number of Occupants

Entrances, exits and corridors exist in all buildings for normal everyday use and a means of escape should utilise, where possible these existing arrangements.

The first approach to provision of means of escape should therefore be to look at existing exits, their locations, number and width. Only if they are insufficient should further steps be taken.

The minimum width of an exit should be 750mm, and more than one exit should be provided if there are more than 60 people in a room. They must have adequate signage and exits requiring illumination should be provided with emergency lighting of adequate intensity. Escape doors should open in the direction of escape and be immediately operable (easy to open).

A simple plan of the escape routes from the building is most helpful in making users of the premises familiar with the arrangements.

Maximum Travel Distances & Evacuation Times

Travel distance is “the actual distance to be travelled by a person from any point within the floor area to the nearest storey exit or final exit”. A storey exit is defined as a final exit or doorway giving access into a protected stairway, lobby or external escape route.

If evacuation times are to be reasonable having regard to the risk then some limits have to be placed on the acceptable travel distances. The Practical Fire Safety Guidance For Places of Entertainment And Assembly provides the following guidance as outlined in Table 1 overleaf.

The aim of this is to allow sufficient time for all occupants to reach a place of safety. In consideration of this you should also have regard to what people are doing; the time needed to react to a warning; their knowledge of the premises; their need to help others; the presence of people with disabilities and so on.



Table 1

Use	Maximum Travel Distance (m)	
	Single Direction of Travel	More than one Direction
Place of Assembly	15m	32m

Inner Rooms

Consideration should be given to escape from inner rooms within churches and church halls as those occupying such locations may not become aware of a fire until it is too late. There are three possible solutions to this. Option a) is likely to be most practicable however it will of course depend upon the individual circumstances of the church premises in question.

- a) Install smoke detection linked to the fire alarm in the access room.
- b) Install a vision panel into the separating wall.
- c) Leave a 500mm gap at the top of the wall between the two rooms so smoke can be detected.

Passageways, Doors and Escape Stairs

Corridors and passageways are an integral part of escape routes in the majority of churches and church halls. They must be kept clear from obstructions and blockages that will hamper an evacuation and aid the spread of a fire.

Corridors and passageways should also be wide enough for the numbers of people who may need to use them (minimum width 1100mm and 1200mm for wheelchair user routes). The corridors should lead to direct to fresh air or to a place of safety, for example a fire protected lobby.

If corridors are long (circa 30 metres) then consideration should be given to them being subdivided with fire doors.

Fire doors serve two purposes:

- i. They prevent the spread of fire and smoke.
- ii. Ensure means of escape for people using the building.

Such doors should never be wedged open.

It is often difficult visually to tell a fire door. The following visual characteristics are what to look for:

- The door will normally have three hinges.
- It will probably be fitted with some form of self closing device, e.g. swing arm.
- It will be fitted with intumescent strips (which expand when it gets hot preventing smoke and fire passing through the door) or a cold smoke seal, (for example a neoprene or brush strip).
- It may have a coloured plug inserted into one of its sides the colours on the plug denote the standard of the door.

Fire doors are denoted according to its fire resistance performance under test conditions: a door rated to 30 minutes (short duration) will be described as FD 30. A suffix is added to denote the door also has a smoke control function giving FD 30S.

Escape stairways should be at least the width of any escape route giving access to it.



Emergency Lighting

After the design and provision of a means of escape its safe and effective use at the relevant times must be established. If there is little in the way of natural light to the area or the premises are used outside of normal day time hours then emergency lighting will be necessary. The emergency lighting will function on failure of the normal electrical supply to the lighting circuit which may arise, for example, due to fire.

There are a number of functions of emergency lighting:

- Indicate clearly the escape routes.
- Provide illumination along such routes to allow safe movement towards through and beyond the exits provided (possibly to the assembly point).
- Ensure the fire alarm call points, fire fighting and first aid equipment provided along escape routes can be readily located.
- Help to prevent panic.
- To assist church officers/fire wardens in carrying out their responsibilities.

One other consideration may also be use of photoluminescent signs and markings which are especially of use if the existing escape lighting system gives a low light level.

There are several types of emergency lighting – “maintained” operates at all times, and “non maintained” only lights when the power fails.

Emergency lighting should be installed in accordance with BS 5266 and BS EN 1838.

Testing of Emergency Lighting

At least monthly simulate a power failure to the normal; lighting circuit and check that self contained luminaires have energised; and/or that the central battery system energises (if a central battery system is fitted).

Annually longer duration tests should be done, for example 3 hour test to ensure luminaires are energised for that period and batteries recharge normally following the test.



References:

1. Practical Fire Safety Guidance for places of Entertainment & Assembly (there is no specific guide available for churches)

<http://www.scotland.gov.uk/Topics/Justice/public-safety/Fire-Rescue/FireLaw/FireLaw/SectorSpecificGuidance/PlacesEntertainment/EntertainmentPremises>

2. Health & Safety Executive Fire Safety

<http://www.hse.gov.uk/toolbox/fire.htm>

3. Fire Scotland Act

<http://www.legislation.gov.uk/asp/2005/5/contents>

4. Church of Scotland Insurance Services Ltd

<http://www.cosic.co.uk/guidelines>

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