



Design Considerations

# Means of Escape for Disabled People

ABERDEEN DISABILITY ADVISORY GROUP

[www.aberdeencity.gov.uk](http://www.aberdeencity.gov.uk)





# Introduction

The Disability Discrimination Act 1995 introduced measures which made it unlawful to discriminate against a disabled person.

With the first two parts of the Act already in force relating to the less favourable treatment and service provision, the final part of the Act regarding the physical removal of barriers came into force on 1st October 2004.

It is the intention of this part of the Act to allow disabled people as much free access to the built environment as is possible.

This guidance document has been jointly produced by Aberdeen City Council, Scottish Fire and Rescue Service and the Aberdeen Disability Advisory Group. It is intended to make building owners and occupiers aware of various solutions available in assisting disabled people to become aware of an emergency and escape from a building during an evacuation.

It is also important to note that the actual responsibility to remove people from a building during an emergency lies with the owner or service provider. The Fire Authorities take control of the situation once they arrive on the scene and a disabled person should not be left in a refuge (a fire protected safe location) to await their arrival. It is therefore most important that proper procedures and practices are in place to ensure a disabled person's safety in the event of an emergency.

## Fire Alarms

In the event of an emergency occurring within a building, the warning to evacuate the building will usually be made by the fire alarm system being activated. The time taken to fully evacuate the building should be as short as possible and therefore commence as soon as the alarm is heard.

In reality once the alarm has been set off, there is a period of time in which people generally look around and wonder what the emergency is. It is only after this recognition period has elapsed that people begin moving to the fire exits. The time taken for people to respond, move towards exits and reach a place of safety is called the escape time.

It is important that everyone within a building is capable of recognizing and responding to an alarm unaided or that either a carer is provided or some other management system is in place to ensure that a disabled person is able to respond to an emergency evacuation.

### (a) Audible/Visual Alarms

Many properties have now installed a combination audio/visual system which cater for both visual and hearing impairments. The cost of these alarm systems is not much greater than the audible only alarm, however purchaser/installers of these systems need to be aware that certain visual alarm settings can trigger a fit in people who have photosensitive epilepsy.

### (b) Vibrating Pagers

Within a building that is fitted with an audible alarm, the system is so designed that a certain level of decibels is reached in all parts of the building.

Whilst the same level of coverage should apply to a visual alarm system, to fit a warning light to every individual room would not be practical.

In order to overcome this situation vibrating pagers can be issued to hearing impaired staff and visitors.

These pagers are usually carried in people's pockets where the vibration can be felt and is triggered by a signal from the alarm systems indicator panel.

When the hearing impaired person feels the vibration they would look at the message on the pager informing them of the emergency and instructing them to exit the building.

The main problem is identifying people who have hearing difficulties and making them aware that this system is available to them.

### (c) Vibrating Pads

This works in a very similar manner to vibrating pagers and are most commonly used in hotels or similar accommodation.

The vibrating pad is located under a pillow on the bed and in the event of a fire alarm in the middle of the night the movement of the pad wakens the hearing impaired person.

### **(d) Recorded Message**

A voice alarm system incorporating a prerecorded message is sometimes used in premises where there are large numbers of people. The purpose of this type of system is to minimize panic in the event of any emergency. Rather than a traditional audio alarm signal, a recorded message is transmitted instructing people, “due to a problem within the building could you please leave by the nearest exit”.

Visual warning devices or vibrating pagers would also need to be incorporated into this system for any hearing impaired persons.

## **Means of Escape**

The Technical Standards (Scotland) require escape refuges to be provided in new buildings where the storey exceeds a specified area, however, only one refuge per stair is required.

As Technical Standards are a minimum standard that must be achieved, it is advisable for building owners to consider other British Standards and Codes of Practice.

Within BS 5588 Pt 8 1999 and BS 8300 2001, one of the main points in both documents is the responsibility that management must take for the people entering their premises. In terms of the Disability Discrimination Act (1995) (DDA), a building owner cannot simply refuse entry to a disabled person on the grounds that the property is not suitable, if this were to happen he would be in breach of the DDA. It then follows that if people have access to a building then a safe method of egress must be provided in the event of an emergency.

In the Aberdeen area many audits have been undertaken to highlight the problems with access for disabled people using buildings. These audits should include provision for escape in the event of an emergency.

At this time however, it would appear to be the case that while property owners are willing to carry out minor projects such as providing Evac chairs or altering reception desks, very little work has been undertaken in relation to larger projects that may involve altering stairs and providing protected lobbies.

It is most important that signage to escape routes is clear and unambiguous. Signs should be suitably sized, have colour contrasting letters and visual pictographs if necessary, to assist people with sensory and learning disabilities.

When dealing with horizontal evacuation there are three main methods:-

### **(a) Refuge within Stair**

Designated wheelchair spaces (refuges 900 x 1400) are provided within the stair enclosure but outwith the circulation space of the people escaping down the stairs. BS 5588 Pt 8 1999 is somewhat at odds with the Technical Standards (Scotland) in that the British Standard only requires the stair to have fire resistance up to 30mins whilst the Technical Standards (Scotland) state 1 hour.

A disabled refuge area must be contained within a protected zone, be it within the stair or adjacent protected lobby.

As these areas are for ambulant and wheelchair users the opening pressure for doors into these refuges should not exceed 20 Newtons when the door opens against direction of travel, and 30 Newtons when opening with direction of travel. These refuges should be clearly signposted and be provided with a perched seat.

It is also preferable that a window be located within these refuge areas, but essential that a two-way communication system is provided to keep the user informed of the situation at all times and to make the fire authorities aware of their location in the building.

While it is not a requirement of the refuge itself, a member of staff should remain with the disabled person for reassurance and companionship during this period of confinement.

### **(b) Protected Lobbies**

It is again the purpose of the lobby to provide a refuge for persons in a wheelchair which is located outwith the general escape route.

Lobbies are commonly provided where an older property cannot accommodate a refuge in the stair. It is erected to provide a safe haven for someone to await assistance. On the downside, from a designer point of view, it often requires to be quite large in order that the refuge is outwith the escape width and to prevent door swings encroaching over refuge areas.

### **(c) Compartmentation**

Hospitals are designed along this general principle in that, should a fire occur in one compartment within a floor, people simply move into the adjoining compartment. However, one important point here is that two exits, as far away from each other as practicable, should be provided in the compartment. This is to ensure that in the event of a fire one safe exit is always available.

This requirement may limit a design in that cellular offices often cannot be erected without the provision of a passage which links the two exit doors in the compartment.

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## **Vertical Circulation**

### **1) Stairs**

Many ambulant disabled people are confident at using the stairs, albeit they may take some time to descend them. In such instances the disabled person can wait in the refuge until the building is vacated and then go down the stairs in their own time.

This however could only occur provided the stair has a suitable rise and going for a disabled person. Other means of assisting the disabled person down the stairs would include the provision of handrails to both sides of the stairs or by the installation of a stair lift. It may not always be possible to install handrails and stair lifts as issues relating to reduced stair widths must be addressed and consultation with the appropriate authorities should be sought.

A visually impaired person could also adopt the delayed exit method. In this instance, however, the nosing of the steps should also be highlighted for their assistance and the stair should be suitably lit to a minimum standard of BS 5266 Pt 1:1999 and BS EN 1838:1999.

Another method sometimes adopted to assist disabled people down stairs is the use of an Evac Chair which is used by trained members of staff. With this method of escape the disabled person is transferred into the chair, and the chair 'climbs down' the stair at manageable speed.

In certain instances a disabled person may prefer to be carried out in their own wheelchair. Great care should be exercised if this is the preferred option.

### **2) Evacuation Lift**

An evacuation lift is different from other lifts in that additional safety measures have been taken to secure its use in the event of an emergency. Such measures include the control system for the lift, which can instantly fall under the control of the fire authorities, and the provision of a secondary power supply.

The evacuation lift should be located within a protected stair enclosure or be so positioned within the storey that access to two separate compartments can be achieved from the protected lobby to the evacuation lift.

One important feature of an evacuation lift is that it should never be used for transporting goods. In an emergency, time may be limited if goods have to be unloaded.

### **Escape Plans**

With the change in society's attitude coupled with legislative requirements that now requires improved access for disabled people to be provided, many more disabled people can be seen moving around the built environment than ever before.

Disabled people, driven by their own determination have forced barriers back to such an extent that free access is now provided to all new buildings. Existing properties by virtue of the final part of the DDA 1995, require reasonable adjustments to be undertaken to the physical features of a building to secure disabled access.

One of the biggest management contributions that could be made relates to the training of staff. In relation to this a Policy and Procedures document should be produced specifically detailing how customers are to be treated and looked after whilst in the building. This document should also detail measures to be taken to secure the safety of disabled people in the event of an emergency.

It is essential that you identify the special needs of a disabled person when planning your safety arrangements and evacuation procedures.

When disabled people are allowed into a building their safety must not be compromised by the virtue of them having a disability. In an effort to achieve this, it is important that management provide a generic evacuation escape plan (GEEP) and a personal evacuation escape plan (PEEP).

The generic evacuation escape plan is for all disabled people who could be in the building and will specify in broad terms what is expected from the disabled person and the fire warden, designated to be responsible for that area of the building.

It may specify e.g. that where a two stage alarm exists that disabled people should start making their way to fire exits at the first stage and not wait until the second stage. It is very general in nature and does not go into details for a specific individual as it caters for disabled people as a whole.

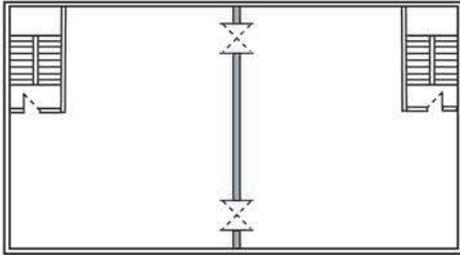
A personal evacuation escape plan on the other hand is based on an individual and tends to focus on staff that are known to be in the building. It could also be undertaken for a visitor who is frequently in the property. In this instance the individual needs of the person are looked at and any specific problems addressed.

It could be that an individual requires the use of an electric wheelchair which is too large to fit into the refuge in the stair. In this instance alternative arrangements will require to be made. For example, an ordinary wheelchair could be stored somewhere into which the person is transferred prior to entering the stair refuge with a helper, or the floor may be split into compartments, and again with a partner, the wheelchair user moves into another compartment to await assistance.

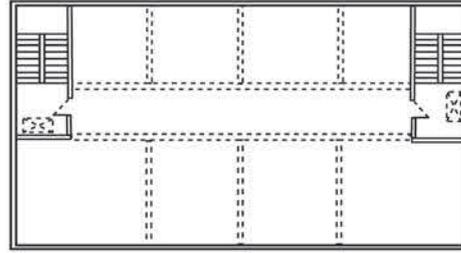
An important factor is the receptionist, for it is he/she that the rescue services will contact to find out if there are any disabled people in the building, and if so, where they are located. When anyone enters a building, in terms of their Fire Certificate where one is required, and under the Occupiers Liability Act, the owner is responsible for their safety. It is not thought unreasonable that where a disabled person enters a building that they be asked where they are going in order that in the event of an emergency, a fire warden can be contacted to look after them.

Another method would be to ask all visitors when registering at a reception to fill out a simple questionnaire regarding their visit to the building. Such questions might include who they are to see, where in the building they are to be located and do they have any special needs that will require to be addressed in the event of an emergency. All of which would prove great assistance to the fire authorities not only locating them, but also assisting them in getting the person safely out of the building.

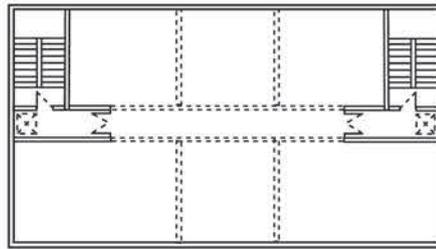
1.



Compartment wall  
Two doorsets  
required

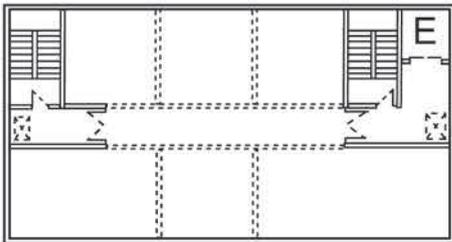


Protected stairways

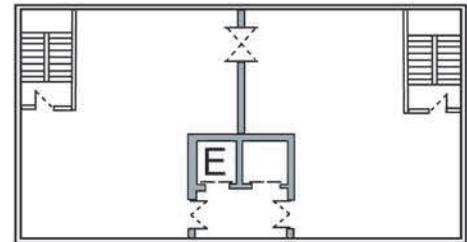


Protected lobbies

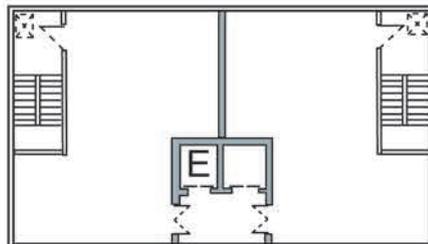
2.



Evacuation lift in  
protected lobby

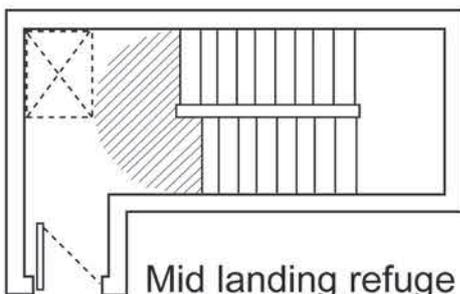


Evacuation lift separate  
from stairs. Storey  
divided into refuges



Evacuation lift separate from stairs.  
Stairs used as refuges

3.



Mid landing refuge

Rise 170 mm  
Going 250 mm

Refuge size  
min 700mm x 1200mm  
ideal 900mm x 1400mm



## Community Development

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**Arrangements can be made to have this booklet  
available in audio-cassette, Braille and large print.**

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