Safe Evacuation for All

A Planning and Management Guide

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Introduction

Access to buildings for people with disabilities has attracted considerable attention in recent years. A great deal of work has been done to improve the accessibility of public buildings for people with disabilities.

Many public bodies have done accessibility audits and related improvement works in order to meet their obligations under Section 25 of the Disability Act 2005. Equality legislation enacted over the last decade also requires public bodies to provide for the needs of their employees and customers with disabilities. In many cases, public bodies are aiming to go beyond their minimum legal obligations to create environments that are universally accessible to as wide a group as possible.

This period of improvement in the accessibility of buildings presents a considerable opportunity to implement measures to ensure prompt and safe evacuation for everybody in the event of an evacuation or emergency situation. Ensuring safe, independent and dignified evacuation in an emergency is a complex issue, requiring consideration of a broad range of factors, including the design and usage of a building, the training of staff and the provision of appropriate equipment and facilities. Those responsible for buildings must ensure safe evacuation for all. This requires consideration of the needs of everyone using the building, particularly the specific requirements of people with disabilities and people of all ages and sizes.

The NDA encourages all those with responsibility for building management and for ensuring safe evacuation in the event of an emergency to take the time to consider this guide and to develop and implement plans to ensure that everyone can safely and quickly exit a building when required.

Aims and Target Audience

The aims of this publication are

- to encourage anyone preparing an evacuation plan to consider the needs of people of all ages, sizes, abilities and disabilities in those plans;

- to help those responsible for buildings to recognise and understand the evacuation features relevant for people with disabilities;

- to give guidance on providing safe evacuation for people of all ages, sizes abilities and disabilities; and

- to identify good practice in providing safe evacuation for everybody.

This publication is aimed at primarily at those involved in planning and managing safe evacuation from buildings for employees and visitors. This includes facilities and accommodation staff, health and safety staff, disability liaison officers, access officers, human resource professionals, accessibility

consultants and others who have a responsibility to ensure the accessibility and safety of buildings. It will also be of interest to people with disabilities and their representative organisations, and design professionals such as architects and engineers, particularly fire engineers, though it is not intended as a technical guide.

This publication is based largely on the advice produced in the NDA's 2008 publication 'Promoting Safe Evacuation and Egress for People with Disabilities'. This revised version has been updated to reflect the needs of people of all ages, sizes, abilities and disabilities. This version is intended to be used on its own by the designated target audience, without reference to the previous publication.

Impacts on People

Types of disabilities

There is no 'average person'. People have different levels of abilities and disabilities. The Central Statistics Office carried out the National Disability Survey in 2006. This survey indicates that about 18.5% of the population have some kind of long-lasting disability. More information on the numbers of people with different types of disabilities in Ireland is available in Appendix D. People with disabilities are much more likely to be active and participating in community life than in previous years. Some of the types of disabilities that you might come across include:

- mobility impairment, where the speed of movement and the distance that can be travelled is affected;

- sensory impairment, where the ability to see, hear or smell is affected;

- intellectual or cognitive disability or mental health impairment, where the ability to understand what is happening and respond is affected; and

- hidden disabilities, where the disability is not obvious, or is triggered by the emergency situation. Hidden disabilities could include conditions like asthma or heart problems.

Some people are born with a disability. Others will acquire a disability during their lifetime as a result of a medical condition or an injury. People will not fit into neat categories. The severity of some disabilities or the degree of impact may change over time. For example, a relatively small number of people are completely Deaf from birth, but many more people experience some degree of hearing loss during their lifetime, particularly in older age. Some people will have more than one disability.

Tip: Don't make assumptions about somebody's abilities; there are people with disabilities working in all kinds of roles, including police officers, fire officers and professional athletes.

Age and Size

People come in all shapes and sizes. The 2006 Census showed that 20% of the population of Ireland is under 15 years old and 11% of the population is over 65 years old. (Source: CSO Census 2006). Older people are more likely to have a disability than others.

Some people will be naturally shorter than others, possibly as a result of a medical condition. Over 20% of men and 16% of women were found to be obese, according to a major survey of Irish adults carried out by the Food Safety Promotion Board in 2000.

Buildings and evacuation plans should be designed with the needs of people of all ages and sizes in mind.

Impacts of disabilities, age and size on evacuation

In any emergency situation, people may react differently to the emergency depending on their abilities or disabilities, their age or their size. This section outlines some typical differences that might happen in

- recognising the emergency,
- responding to the emergency, and
- moving to a safe place.

Recognising the emergency

People who are Deaf or have impaired hearing may not hear a traditional fire alarm bell or siren. They may also miss noise coming from a fire or even loud explosions in some cases. People who use Irish Sign Language (usually those who have been Deaf since childhood) may find it difficult to communicate where there is smoke or low light levels. Children who are sleeping are less likely to wake up with a traditional bell or siren than adults.

People who have vision impairments may be unable to see fire or smoke, or may not realise that other people are evacuating. People with intellectual disabilities, cognitive impairments or mental health issues may not understand an emergency warning, like an alarm bell or strobe light, or they may take longer to understand that others. Noisy bells and flashing lights may also cause stress and confusion. Strobe lights can cause seizures for some people.

Responding to the emergency

People may take some time before they start evacuating a building. They might have to raise the alarm or fight a fire locally using fire extinguishers. They might start getting dressed or checking on colleagues or family before

escaping. Research on 9/11 World Trade Centre evacuations by University of Greenwich noted some people took time to shut down computers, change shoes or go to the bathroom before evacuating the building. Any time taken for these activities is called the Response Time.

Older people and some people with disabilities may take longer to get dressed or to reach a break glass call point than others. People who usually have a personal assistant to help with getting dressed may find themselves on their own when an emergency happens. They may take longer to get dressed than usual. People with sensory impairments may take more time to find out what is going on than other people.

Moving to a safe place

Moving around on the same floor or storey is sometimes called 'horizontal movement' by building designers. People with sensory impairments may be slower in moving around a building during emergency situations than other people, particularly if they don't know the escape routes very well. It can be difficult for anyone to communicate during emergency evacuations, with noisy alarm bells, smoke, stress and urgency all causing problems. A Deaf person may find that they are unable to lip-read or use sign language due to smoke or dim lighting. A person with vision impairment may find that a noisy alarm bell makes it impossible for them to hear instructions. A guide dog user that gets separated from their dog will find it very difficult to move around safely. A person with an intellectual disability or mental health issue may find an emergency evacuation to be very stressful, and may not react as expected. Time spent looking for exits and finding the appropriate route can add significantly add to the time taken to get out of a building.

People with mobility impairments can be greatly affected during emergency evacuations. They may find it difficult to move to other areas of their floor when the evacuation happens. This might be due to their personal abilities, such as their speed of walking when using crutches, or their age. It might be due to the situation around them. Perhaps fire doors that are normally held open will close during an emergency. People with impaired mobility may find that crowds rushing around them make them unsteady. They may need handrails for support on corridors, ramps or stairs and they may need to rest before they reach the assembly point.

Moving down from upper floors or coming up from a basement in an emergency situation can take much longer for people with mobility impairments than for other people. This is sometimes called 'vertical movement'.

Many lifts are not designed to be used in emergencies. There is often a notice saying 'Do not use the lift in an emergency' beside the lift. Wheelchair users or other people with mobility impairments who normally use the lift may have to use evacuation chairs or other devices to get down to ground level during

an evacuation. These devices can sometimes slow down other people who are leaving the building, depending on the size of the stairs. Or, they may have to wait behind in a safe place and be rescued by the Fire Services. People are often uneasy about being left behind in a building when everyone else is leaving.

People with some heart conditions, asthma or other breathing difficulties may have severe difficulties in moving up or down stairs during evacuations. The combination of the additional physical exertion, stress and smoke can cause significant problems for these people, whose disability is often hidden.

Assessing the risks

The best way to plan for safe evacuation of everybody is through a 'risk assessment' process. A risk assessment involves identifying any hazards or potential dangers, and doing whatever it takes to reduce these risks to an acceptable level. A risk assessment plan should be written down, usually as part of the safety statement.

Organisations should get expert help to carry out a risk assessment. This could involve a fire engineer, or an architect, or a safety expert. One or more of these experts could review different aspects of the building and the evacuation plan. Make sure that any expert involved has a good understanding of how to meet the needs of people with disabilities.

A risk assessment for evacuation would cover both regular users of a building (including employees and regular visitors) and occasional users of a building. There will be different risks for buildings where visitors are controlled at a reception or security point and buildings where visitors are uncontrolled (such as a shopping centre or a public art gallery). The risks and the corresponding actions will depend on the design and layout of the building and the activities going on at the building. The risk assessment should identify what physical measures and management procedures are needed to make sure that everyone can evacuate safely.

Risk assessments need to be reviewed regularly, particularly when there are changes in the physical environment, the users or the building, legislation or local procedures.

Legislation

There are a number of pieces of legislation that place a responsibility on public bodies, building owners and employers to ensure the safety, health and welfare of anyone using a particular building. These responsibilities are in addition to the moral duty of care to building users.

Safety, Health and Welfare at Work Act (2005)

The Safety, Health and Welfare at Work Act (2005) states that every employer shall, so far as is reasonably practicable, ensure the design, provision and maintenance of a safe means of access to and egress from the workplace.

Sections 8, 9 and 10 of this Act require employers to provide sufficient information, training and supervision to ensure the safety of employees. Section 8 (c) (ii) highlights the employer's duty to ensure "the design, provision and maintenance of safe means of access to and egress from it" (the place of work). Section 9 requires information from employers to employees to be provided " in a form, manner and, as appropriate, language that is reasonably likely to be understood by the employees concerned".

Under Section 11, employers are required to prepare and revise adequate plans and procedures to be followed and measures to be taken in the case of an emergency, and that employers provide the necessary measures for fire fighting and the evacuation of employees and any other individual present in the workplace.

Section 12 clarifies that consideration must also be given to the safety of persons other than employees within the workplace. There are no exclusions in the Act relating to disabled employees or disabled people in the workplace. The requirements to ensure safety of employees and other persons in Sections 11 and 12 apply equally to people with disabilities and everyone else. Section 13 outlines the duties of employees to cooperate with safety provisions in the workplace.

Section 15 of the Act states that persons in control of workplaces "shall ensure so far as is reasonably practicable, that the place of work, the means of access thereto, or egress therefrom, and any article or substance provided for use in the place of work, are safe and without risk to health".

Section 19 of the Act states that employers "shall identify the hazards in the place of work under his or her control, assess the risks presented by those hazards and be in possession of a written assessment (to be known and referred to in this Act as a "risk assessment") of the risks to the safety, health and welfare at work of his or her employees, including the safety, health and welfare of any single employee or group or groups of employees who may be exposed to any unusual or other risks under the relevant statutory provisions."

The Safety Statement required by Section 20 of the Act contains the written hazard identification, the risk assessments, details of protective and preventative measures, the resources provided to protect health and safety and the emergency procedures to be followed in the event of serious and imminent danger. A good-quality Safety Statement should form the basis of the Evacuation Strategy for all users of the building.

Safety Health and Welfare at Work (General Application) Regulations 2007

These regulations extend the requirements of the Safety, Health and Welfare at Work Act 2005 and the fire-related Council Directives to set down minimum requirements for health and safety in specific aspects of working activities.

Regulation 25 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 states that "An employer shall ensure that places of work, where necessary, are organised to take account of persons at work with disabilities, in particular as regards doors, passageways, staircases, showers, washbasins, lavatories and workstations used or occupied directly by those persons".

Signs regulations are now part of the Safety, Health and Welfare at work (General Application) Regulations, 2007 and they provide for a standardised system of pictogram based safety signage in all places of work. These regulations apply to all places of work to the extent that the Regulations prescribe that all existing safety signage must be replaced with signage that conforms by 1st January, 2011, i.e. signage must be in pictogram form and may be supplemented with signs with text.

Fire Services Act (1981)

Fire safety within existing buildings is covered by the Fire Services Act (1981). Section 18(2) of this Act states "it shall be the duty of every person having control over premises to which this section applies to take all reasonable measures to guard against the outbreak of fire on such premises, and to ensure as far as is reasonably practicable the safety of persons on the premises in the event of an outbreak of fire. This Act empowers local fire authorities to carry out inspections to ensure the adequacy of fire-related matters in relation to existing premises.

Building Control Act (1990) and Building Regulations

The Building Control Act (1990) provides the framework for the modern Irish building control system. This legislation regulates standards in building construction and design through the introduction of building regulations. In general, Building Regulations apply to the construction of new buildings and to extensions and material alterations to existing buildings.

Building Regulations are made for specific purposes, e.g. to provide, in relation to buildings, for the health, safety and welfare of persons, the conservation of energy and access for people with disabilities.

Technical Guidance Document B (2006) of the Building Regulations is called 'Fire Safety'. This publication provides guidance on ways to achieve compliance with the Part B regulations, including the means of escape from the building.

Building Control Regulations require the developer of most new non-domestic buildings to obtain a Fire Safety Certificate for the premises. Developers send a copy of their designs to their local fire authority for approval. There are 37 fire authorities throughout Ireland. The fire authorities generally operate as part of the relevant local authority.

Part M (2000) of the Building Regulations, entitled 'Access for People with Disabilities', covers issues relating to accessibility. The Building Control (Amendment) Regulations 2009 requires a Disability Access Certificate (DAC) to be obtained by the developer of new non-domestic buildings. The Department of Environment, Heritage and Local Government defines a DAC as: "a certificate granted by a Building Control Authority which certifies compliance of the design of certain works (e.g. new buildings (except dwelling houses), some extensions to, and some material alterations to buildings (except dwelling houses) with the requirements of Part M of the Building Regulations."

Licensing of Indoor Events Act (2003)

The Licensing of Indoor Events Act (2003) makes significant amendments to the Fire Services Act (1981). It places a responsibility on any person to whom a licence has been granted to take all reasonable measures to ensure the safety of everyone attending the event. This Act permits an authorised person to serve a 'closure notice' where there is a "building or premises poses or is likely to pose a serious and immediate risk, including a risk of fire, to the safety of persons on or in such building or premises". It requires persons having control over a premises "to ensure, as far as is reasonably practicable, the safety of persons on the premises in the event of an outbreak of fire whether such outbreak has occurred or not".

Equality and disability legislation

There are also a number of other Acts that provide a legislative framework for organisations to ensure that premises and services comply with minimum accessibility requirements. These include the Employment Equality Act (1998/2004), the Equal Status Act (2000/2004), the Disability Act (2005) and the Safety, Health and Welfare at Work Act (2005).

The main driving legislation for ensuring accessibility to public buildings is the Disability Act (2005). Part 3 imposes a duty on public bodies to ensure, over time, that public buildings and services are accessible to people with disabilities. The standard for access is Part M of the Building Regulations and public buildings must be compliant by 2015. Public buildings must comply with amendments to Part M no later than ten years after the commencement of such amendments.

General Design Principles

Design professionals should consider the following principles when designing new buildings or significant changes to existing buildings.

Universal Design

Designers should follow a 'Universal Design' approach from the start of the design process. They should design the building to meet the needs of everybody who will be using it, regardless of their age, their size or their abilities.

The requirement for a Universal Design approach should be specified in the initial briefing documents for any new building project. . The NDA's Building for Everyone publication offers detailed technical guidance. It is much more cost-effective to include accessibility features as part of an initial design that to retrofit these features at a later stage

Consider the skills and experience in Universal Design of candidates when selecting a design team. For substantial projects, include an accessibility expert as part of an integrated design team. Consultation with a broad range of users, including people with a range of ability, size and age, should be considered throughout the design process.

When designers are estimating the time required to evacuate a building, they should keep in mind that many people have particular needs during evacuations. Some people use wheelchairs or crutches to move around, and may be slower than others. Some people will have some degree of hearing loss or vision impairment. Older people may be slower to move around, and some people may have young children with them. In short, the building design should cater for everyone, regardless of their age, size or abilities.

Tip: Make the most of design challenges - a sloping site can allow a designer to create level fire exits from different levels of the building.

Independent, equitable and dignified evacuation for all

New buildings should be designed to allow everybody to evacuate in an independent and dignified manner. It is important that the needs of people with disabilities are considered throughout the design process, and not just as an afterthought.

The ideal way to make sure that wheelchair users and other people with mobility difficulties can evacuate multi-storey buildings independently and with dignity is to provide lifts that are safe to use for evacuation.

Designs that rely on leaving people with mobility impairments behind at refuge areas in the building to be rescued by the fire services are not equitable.

People are often understandably nervous about being left behind when all others are leaving.

Designs that rely on use of evacuation chairs or similar devices do not allow for independent and dignified evacuation for everybody. Wheelchair users generally do not want to be handled by their colleagues, particularly during regular evacuation drills. Some people may be nervous or reluctant to use evacuation chairs, particularly if they are have not used them before.

Lifetime Cost Effectiveness

There is a natural tendency for building developers and designers to minimise costs when developing a new building. However, care should be taken to ensure that this does not lead to greater operating costs in longer term.

There are substantial additional costs in ensuring that lifts are safe for use during evacuations. However, these lifts can create opportunities for considerable savings over the lifetime of a building on evacuation equipment and time spent on training of staff in using this equipment. Similarly, there will be some additional up-front costs in fitting visual alarms in a building, though these will eliminate costs of pagers or other vibrating alerts for building occupants. There will be also be savings in time taken by management and staff in dealing with evacuation plans for people with disabilities.

Continuous Improvement

It is unlikely that the first version of the evacuation plan will be perfect. Experience with trial evacuations and real evacuations will help to identify any weaknesses in the plan to be fixed. Get feedback from everyone involved in the evacuation, including building users, fire wardens, and fire services. Pay particular attention to the feedback from people with disabilities. Use this feedback to improve the plan before the next evacuation.

Plans will also need to be updated as the users of the building change, or the external environment changes or when legislation changes. For example, if an employee breaks a leg and is using a wheelchair or crutches for a few weeks, the evacuation plan should be reviewed to ensure that this employee can evacuate the building safely and with dignity. If building work on a neighbouring site makes access to an assembly point difficult or impossible for some people, the evacuation plan might need to be revised to use a different assembly point while these works are in progress.

Evacuation planning is an ongoing process that needs regular feedback and review to get it right.

Recommendations

- Follow a Universal Design approach for new buildings - consult with a broad range of end users throughout the design process.

- Plan for safe, independent, equitable and dignified evacuation for everybody, regardless of their age, size or abilities.

- Balance initial costs of evacuation facilities against ongoing operating costs.

- Review and revise the evacuation policy and plans regularly, using feedback from building users.

Equipment, Facilities and Building Design

When preparing or revising the evacuation plan, it is important to consider what equipment and facilities are necessary for the building. This section details some of the equipment or facilities that can help to make sure that everybody can evacuate the building safely.

Recognising the emergency

It is important to ensure that people with disabilities will be able to raise the alarm and recognise alarms in emergency situations.

Break glass call points are sometimes placed out of reach of wheelchair users or short people. Make sure that call points are located clear of corners and at an appropriate height to be reachable by wheelchair users. It should be possible to set off the alarm with a simple hand or arm movement. Make sure that amount of force needed to break the glass or plastic is appropriate for the users of the building. Consider other kinds of alarms such as ceiling pull cords or wall-mounted switch strips if needed by the building users. Automatic fire detection systems can be very valuable in addition to manual alarm systems.

Some people who are Deaf or have hearing impairments will not hear a traditional fire alarm bell or siren. They may not realise that an emergency is in progress unless they see that other people are evacuating the building. This can be a particular problem if people are in an office on their own, or in a bathroom or any other segregated location. Sleeping children are less likely to wake up with a traditional alarm bell or siren than adults.

Tip: Some people cannot hear a fire alarm. Make sure you have other ways of letting people know about an emergency situation.

Alternative solutions for raising the alarm include visual alarms, paging systems, and vibrating devices.

Visual Alarms
Strobe lights can be used to give a visual signal of an emergency situation. Strobe lights are usually red, and are wired up to the emergency alarm control system to flash when required.

Plan carefully where to fit these lights, considering the room layouts, the directions that people will be facing, the lighting conditions for different times of the day and different seasons of the year and any other furniture or fittings in the room.

Some people with epilepsy can have a negative reaction to strobe lights, depending on the frequency of the flashes. Avoid frequencies of 5 hertz and above, as frequencies from 5 to 30 hertz are generally considered to be most likely to trigger a reaction. Frequencies of 2 to 4 hertz are generally safe. Be careful that overlapping strobes don't result increased frequency of flashing in any particular place. More guidance on visual alarms can be found in BS5839-1: 2002 - Section 2, clauses 17 and 18.

Vibrating Alerts
Vibrating alerts are portable devices that are normally linked to the fire alarm system. When the alarm is triggered, these devices can provide a vibrating signal to warn the person to evacuate the building. Some of these devices can also provide a flashing light, a text message or an audible tone in addition to the vibrating signal. Some systems allow for different types of paging messages, so they can be used both for emergencies and for general paging. These devices generally use a local area wireless network connected to the fire alarm system. In large buildings, more than one transmitter may be required for full coverage. These systems will need to have a battery backup and fault monitoring to the same standard as the fire alarm system.

Good management systems will need to be in place to ensure that units are maintained, and are kept fully charged. Keep a tight control over the units to make sure that people don't accidentally walk away from the building with the pager in their pocket. These systems are generally useful in buildings where the users are known. Open buildings with public access are more difficult to manage. Vibrating paging systems for use as fire alarm warning systems should comply with the relevant parts of BS5839-1: 2002 and EN54.

Some fire alarm systems can be integrated with the standard mobile phone SMS text messaging systems. This means that any mobile phone with vibrating alert can be used as a pager. These systems depend on the standard mobile phone network for delivery of the alert message. This network does not always work straight away, so there might be some delay in getting the message to the user. Good management systems will need to be in place to ensure that working phones are available and charged. Be careful when adding new phone numbers to the fire alarm system, as one incorrect digit will mean that the user will not get the relevant message. Some facility should be available to test that numbers have been configured correctly, without setting off a full fire alarm.

At home or sleeping places

Other vibrating alert systems are available for buildings where people may be asleep, such as at home, or hotels or college residences. These have a vibrating pad that is placed under the pillow or mattress. Some of these systems allow the standard paging unit to be docked in a cradle overnight. They can also be connected to strobe lights or other visual alerts.

In the USA, the National Fire Prevention Association recommends the use of low frequency alarms at sleeping places. These alarms will be helpful for people who have difficulty hearing high frequency sounds (including traditional alarm sirens). See section 18.4.5.3 of NFPA 72 ®: National Fire Alarm and Signaling Code, 2010 Edition for more details on these low frequency alarms.

For children at home, smoke alarms are available than can be customised to use the voice of a parent or other known person to wake the child. Research suggests that these alarms are more effective than a traditional siren at waking children. Source: Centre for Injury Research and Policy (CIRP) in the Columbus Children's Research Institute at Columbus Children's Hospital, Ohio, USA.

Recommendations

- Aim to ensure that alarm systems can communicate effectively with everybody, particularly people with hearing loss.

- Consider visual alarms and vibrating alert systems to supplement traditional bell or siren alarms.

- Make sure that fire wardens sweep isolated areas of the building, including meeting rooms, private offices, bathrooms etc during evacuations, provided that they are not putting their own safety at risk.

Finding your way around

Getting out of a building in an evacuation can often be more difficult than usual. Sometimes, the nearest and quickest evacuation route is not the normal exit route from the building. People will generally tend to evacuate along the route used to enter a building, particularly if they are not familiar with the escape route.

For people with disabilities, these problems can be even worse. People with vision impairments may find it hard to see emergency signage or may have difficulties in finding their way when only emergency lighting is available or in smoky conditions.

Signage

Emergency signs tell people the best way to leave the building. It is essential that these signs are easily and quickly noticed, and are easily understood. The requirements for the graphic design of signage are covered by European

Council Directive 92/58/EEC. Emergency signs in use across Europe should be generally similar. Guidance on the graphic design, size and location of escape signage can be found in BS 5499-10:2006. Irish public bodies should also be guided by the requirements about signage under the Official Languages Act 2003 and associated regulations.

Research from the University of Reading indicates that the latest generation of LED (light emitting diode) illuminated signs can improve the legibility and conspicuousness for people with vision impairments. LED signs can be more expensive to install but they have lower power consumption and longer lamp life than traditional lights.

It can be helpful to provide tactile information on signs for people with vision impairment. This is particularly important at refuge areas, where a person may need to know about the arrangements for rescue from that area. This can be done by using Braille or raised lettering on signs.

Emergency Lighting
It is essential that emergency lighting is provided in case of a power failure to the building. Guidance is available in Building regulations on the areas and types of building requiring emergency lighting.

Make sure that the emergency lighting levels are adequate for people with vision impairments. Luminance levels should be at least 0.5 lux at the floor of escape routes and at least 1.0 lux in open areas. As light fittings fade over time, the lighting levels of newly installed systems should be well above the minimum recommended lux levels. Emergency lights must achieve this level within five seconds of a power failure. Further information on emergency lighting systems is available in IS3217:1989 and BS EN 1838:1999.

Photo-luminescent directional signs on floors are often seen on airplanes but are not currently in common use in buildings. These brightly coloured signs are highly visible in normal conditions. They use a chemical material to absorb and store light. If there is a power failure or other emergency, this energy is slowly released to light up signs or direction indicators. These materials can be located in the floor covering or at low levels on walls to direct people to the nearest exit. They are particularly helpful in smoky conditions, when it might be hard to see signs that are higher up.

There are some new lighting systems available that use sets of LED lights to direct people to exits in an emergency. The major advantage of these systems is that the LED lights can be updated dynamically, depending on the circumstances. It is possible to direct people away from a fire, or to indicate that a particular stairwell should not be used. These systems can be designed to update automatically based on fire alarm and fire sensor information, or by a person (possibly building management or fire services personnel).

Take care that these LED lighting systems are usable to the widest possible audience. The LED systems should not rely just on colour to pass on information. For example, systems that use red lights to tell people to stop and green lights for go will not be understood by people who have colour deficiency. This condition affects about 8% of Irish men. The timing and strength of any flashing lights should be set to minimise the chance of causing a seizure for a person with epilepsy.

Directional sound
Directional sound is a relatively new technology that can help people to find evacuation routes and exits in case of emergency. It is a multi-frequency sound (sometimes known as 'white noise') that will guide people in the right direction. It has particular benefits where smoke is reducing visibility. It is marketed as having particular benefits for people with vision impairments, and for people who have some hearing loss.

Handrails
Most people think of handrails as something to lean on or provide physical support. Handrails can be also be very helpful along corridors or passageways in guiding people towards exit routes. Take care that the corridor is wide enough to take the handrail without restricting the capacity for people to evacuate.

It is important that handrails contrast visually to the background wall, so that they will stand out clearly for everyone. Use raised detail along the handrail to convey information to people who have impaired vision. This information could be about the floor level, the direction for escape or the location of the refuge areas.

Recommendations

* Design the building so that escape routes are the normal routes for getting in and out of the building where possible.

* Choose a signage system that is usable to the widest possible audience. LED signs can be more usable than traditional signs and are cheaper to maintain.

* Ensure that there will be enough light to allow people to get out of the building safely in case of emergency. Photo-luminescent or LED signs can be helpful.

* Fit colour contrasting handrails along longer corridors and passageways to provide physical support and direction information.

Moving around

Section 2.3.3 explains how some people will have difficulties in moving around a building during an evacuation. This movement is sometimes called 'horizontal movement' by design professionals. Moving around a building can also be

difficult for pregnant mothers, or those with small children in buggies, or people with luggage or carrying heavy loads.

Ideally, people should not have to use ramps or steps when moving around any floor of a building. Where ramps or steps cannot be avoided due to constraints of the site or the building, compliance with the requirements of Part M of the Building Regulations should ensure access for everybody.

People who use mobility aids such as crutches, walking sticks, walking frames or wheeled frames may need extra assistance during evacuation. They may need extra time and extra space to evacuate. A Personal Emergency Evacuation Plan (PEEP) can be used to agree and document appropriate evacuation procedures for such people.

Recommendations:

- Eliminate changes in level on circulation routes through alternative designs where possible.

- Where ramps are essential within a level, they should comply with the Part M Building regulations. They should have graspable handrails on each side.

- Final exits should have level thresholds, even those that open onto existing external stairs.

Moving up or down

Section 2.3.3 outlines some of the particular difficulties for people with disabilities around 'vertical circulation', or moving up or down levels of a building during an evacuation. The key problem is that lifts are often not available for use during emergencies. People with mobility impairments or hidden disabilities such as asthma who rely on lifts to get into the building may not be able to use the lift to get out.

Evacuation Lifts

Evacuation lifts are designed to continue to operate in the event of a fire. They have special design features to ensure the safety of passengers. Evacuation lifts are the most robust and effective solution for evacuation of people with disabilities from upper levels of a building. When designing a new multi-storey building or carrying out major alterations to an existing building, consider providing for appropriate evacuation lifts to ensure that everyone can evacuate the building safely, with dignity and independently. There will be some additional costs involved in providing lifts that are safe for use during evacuation. These costs should be balanced against the improved facilities, which are particularly important for people with mobility impairments. Detailed technical information on the construction and installation of lifts to ensure that the lifts can be used for evacuation of people with disabilities can be found in Irish Standard EN 81-70:2003 (IS EN 81-70:2003) Safety Rules for

the Construction and Installations of Lifts - Part 70: Accessibility to Lifts for Persons including Persons with Disability

These lifts can eliminate the need for handling, lifting or transferring people with disabilities during evacuations and evacuation drills. They can eliminate the need for fire wardens to have re-enter a building and travel upstairs, against the flow of people coming downstairs, to help with evacuation. They can eliminate the manual handling difficulties and other risks associated with use of these chairs. They can eliminate the risk of people refusing to use evacuation chairs, particularly in open or public buildings.

It can be difficult to upgrade existing lifts to be safe to use during evacuations. It is not just the lift itself that needs to be considered. The escape routes to and from the lifts may also need additional protection.

Some buildings may have fire-fighting lifts, designed to bring fire-fighters and their equipment up to a fire quickly. These lifts can often be used for evacuations before the fire services arrive at the building.

Guidelines for the design and operation of evacuation lifts are available in Appendix G2 of BS 9999:2008 Code of practice for fire safety in the design, management and use of buildings. BS 9999 highlights the importance of having robust procedures and trained staff in place to manage these evacuation lifts in an emergency situation. It is important that floors are evacuated in the appropriate order. In a fire situation, this would usually mean the fire floor first, then the floor above the fire floor, then all floors above the fire starting from the top, then all other floors. Once the fire services arrive at the building, they will normally take over responsibility for controlling any evacuation or fire-fighting lifts and for completing the evacuation of anyone left inside. Expert advice will be required to carry out a risk assessment to guide the operation of evacuation lifts.

Standard (non-evacuation) Lifts
It can be dangerous to use lifts that are not specifically designed for emergency use during evacuations. However, the other evacuation options for some people with disabilities, such as evacuation chairs, or leaving people behind at refuge areas can also pose risks. It is possible that using these standard (non-evacuation) lifts is the least risky option for evacuating some people with disabilities.

The decision to use non-evacuation lifts should only be made after taking expert advice from a competent person about the specific building and the evacuation plan. This person should have a clear understanding of the fire safety systems in the building, and of the people with disabilities who need to use the lift. The expert will need to consider many factors, including the design of the lift, the path of the power supply to the lift, the extent of structural fire protection and compartmentation in the building.

If it is possible to use the lift in certain circumstances, there must be trained staff in place with robust procedures. Staff may need to make decisions at the time of the evacuation about which lifts are safe to use, based on information available from the alarm system about the areas affected. They may also need to control what floors are evacuated first, and who is allowed to use the lift.

> Tip: An ordinary lift may be the safest way for wheelchair users and some other people with disabilities to evacuate an upper storey in some situations. Get expert advice on this approach.

Evacuation Chairs

Evacuation chairs are designed to allow people with disabilities, particularly those with mobility difficulties, to be helped to move down and, in some case, up stairs during an evacuation. These chairs can be used where it is not safe to use lifts to evacuate, and where an evacuation chair is less risky than remaining behind at a refuge area. These chairs usually require one or two operators to guide the chair down the stairs. Evacuation chairs can usually be folded into a compact size, and can be mounted to a wall at or near a stairwell. Most of these chairs require a wheelchair user to transfer out of their own chair into the evacuation chair. A transfer board can help the wheelchair user to safely transfer into the evacuation chair. Evacuation chairs have a load capacity limit, so care must be taken with larger people to make sure that the chair is safe for the intended user.

Some evacuation chairs will allow a wheelchair user to remain in their own chair. These work either by clamping the wheelchair to the evacuation chair, or by allowing the wheelchair user to enter a platform, and then securing the wheelchair to the platform with straps. This ensures a more dignified experience for the wheelchair user, as there is no lifting or personal handling involved. It also means that when they get to the bottom of the stairs, the wheelchair user is still using their own wheelchair, and can move independently from there.

Most evacuation chairs are manually powered, and rely on gravity to move the user down stairs. Some evacuation chairs are battery powered, and can be used to bring somebody upstairs, from a basement level or underground car park. The powered chairs can also be particularly useful when dealing with heavier people. Battery powered devices need to be charged regularly to make sure they are available to use when required.

Some people might be reluctant to use an evacuation chair. This could be because they are not familiar with the chairs, or because they are nervous about any personal handling that might happen while transferring out of their own wheelchair. It could be because they are worried about a particular medical condition or injury. It is important to consult employees or regular building users, to decide how best to evacuate. The agreed approach can be

documented in a Personal Emergency Evacuation Plan (PEEP). It may be unsafe to use an evacuation chair given the size, weight or medical condition of the person concerned.

> Tip: Don't assume that all wheelchair users can or will use an evacuation chair during an emergency.

When choosing an evacuation chair, consider:

- the best way to ensure a safe and dignified evacuation for any people with disabilities in the building;

- how to tell people who will need the evacuation chairs about these chairs, before any emergency happens;

- how many evacuation chairs are needed and where they should be stored. This will depend on the usage of the building and number of floors served by each stair;

- the best type of evacuation chair for the building - powered or manual - using own wheelchair or needing transfer - suitability for the staircases in the building;

- the time required to transfer to and from the evacuation chair;

- the need for wheelchairs to be available for use at ground level, or for personal wheelchairs to be brought to ground level at the same time;

- whether using evacuation chairs should be part of the regular evacuation drills

> Tip: Some wheelchair users have difficulties using a chair other than their own wheelchair, and may be very reluctant to leave their own chair behind during an evacuation.

Refuge areas
Refuge areas are defined in the Part B Building regulations as follows:

> Refuge areas are areas within a building separated by fire-resisting construction and provided with a safe route to a storey exit, where people with disabilities can await assistance for their evacuation.

These areas are sometimes called 'Area of Temporary Rescue Assistance' or 'Refuge Zones'. A person with a disability can wait for the fire services at the refuge area, when it is not possible to evacuate the building safely with everyone else. There are a number of difficulties with using Refuge Areas as part of evacuation plans:

- Anybody who is expected to wait inside a building while most others are evacuating may well be nervous or fearful about staying behind.

- Fire wardens or personal assistants may be reluctant to put their own safety at risk by staying behind with a person with a disability.

- It can be difficult to make sure that the fire services know how many people are waiting to be rescued and where they are located.

There are some important points to be considered when Refuge Areas are used as part of an evacuation plan.

- Plan to move people out of the building where this is possible and practicable. Avoid leaving anybody behind at a refuge area, unless there is no safe option to evacuate them from the building.

- Meet with the local fire services, so that they are aware of planned usage of refuge areas. They can make sure they have the right equipment, training and enough fire-fighters to evacuate people from the refuge areas.

- Make sure each refuge area has a two-way communication system that can be used by people with a range of disabilities. This should allow communication between the refuge area and the management control point. For people with hearing loss, the system should be able to let them know that their call has been acknowledged. The communications system should comply with the recommendations of BS5839-9:2003.

- The Refuge Area should be fitted with clear signage to identify the refuge, the location and floor level, and the evacuation procedures. This information should be accessible to everybody.

- Make sure that the communications system at the management control point allows for the location of the person at the refuge area to be identified quickly and reliably. Remember that the person at the refuge may not be familiar with the building, and may not know what floor or staircase they are on. The person at management control point may not be familiar with the building either. It could be a fire officer attending that building for the first time, or a replacement security guard. Ideally, the location of each refuge should be clearly marked on the control panel of the communications system. If a control panel indicator (e.g. light number 8) needs to be translated to a physical location (e.g. west stairwell, level 3), make sure that this information is easily and reliably available.

- Make sure that anybody with a disability who may have to wait at a refuge is aware of the evacuation procedure beforehand. For employees or regular building users, a Personal Emergency Evacuation Plan is a useful to document the evacuation procedure.

Escape Stairs
All staircases in new buildings should be designed for use by people with disabilities, to provide access to and from the various floor levels in the building. Where a lift is provided, the requirements for the stair design in an existing building are less demanding. The staircase provided for access to the

building may not always be the staircase intended for use in an emergency. The requirements for access and evacuation differ. Don't assume that the stairs provided for access automatically meets the needs for evacuation.

All stairs designed for use during evacuations should meet an appropriate standard, such as the requirements for access stairs in Technical Guidance Document M or BS 8300:2008.

Recommendations

- For new multi-storey buildings, evacuation lifts are the best way of providing for the safe, dignified and independent evacuation for many people with disabilities, particularly those with mobility difficulties.

- For existing buildings under renovation, consider upgrading existing lifts to evacuation lift standard. This can be costly, depending on the extent of structural changes that may be required.

- Where is not feasible to upgrade non-evacuation lifts, options for using these lifts during evacuation should be explored, with expert advice. In some circumstances, non-evacuation lifts may be the least risky option for moving some people with disabilities to ground level in an emergency.

- Where the evacuation plan involves use of refuge areas, make sure that the local fire services are aware of the plan. This will ensure that they have the resources and equipment available to complete the evacuation of the building.

- Where the evacuation plan involves use of evacuation chairs, make sure that the people who will end up sitting in the chairs are aware of the plan before an emergency.

Evacuation Policies and Plans

Safe evacuations depend on the skills and abilities of the staff involved in making evacuations happen. Fire managers and fire wardens play a critical role in making sure that everyone can get out of the building safely. It is important that staff are trained and prepared to carry out their functions.

This diagram shows one suggested approach to developing and reviewing the evacuation policy and plan.
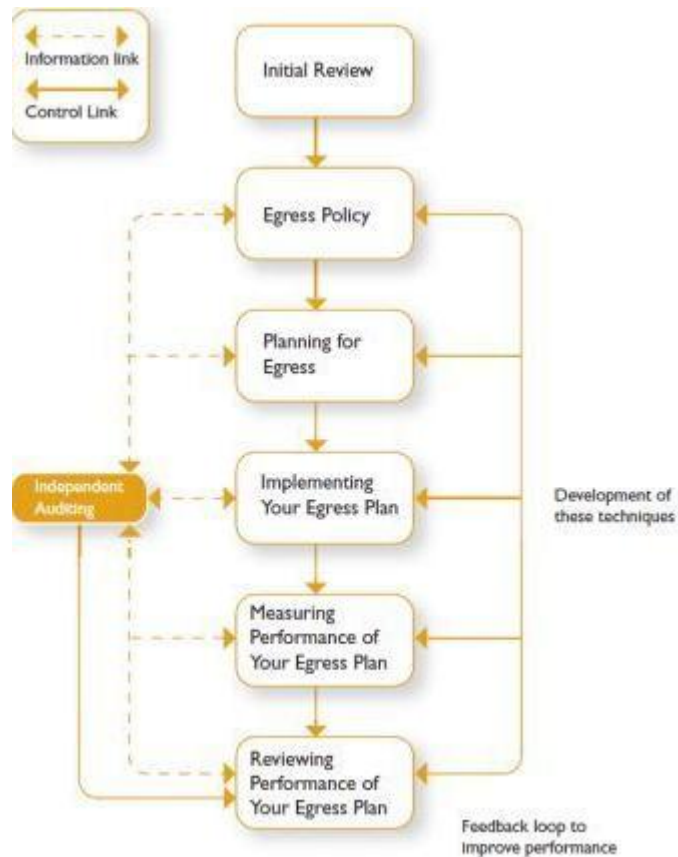
Initial Review

In preparing an evacuation policy, the first step would be to review the current position. The initial review should consider the following:

- Safety Statement;

- Fire and General Records Register;

- Minutes of Health and Safety meetings;

- Any existing emergency evacuation plan;

- The Fire Certificate for the building, including any fire engineering strategy that formed part of the fire certificate application for the building. The Fire Certificate will usually comprise of a written report with associated fire safety drawings;

- Existing access audit or risk assessments for evacuation that may be available, which identify problems and detail the mitigating steps that have been taken in the past;

- Information on life safety systems installed in the building. Such systems will include fire detection and warning, escape lighting, fire suppression, wayfinding and smoke control systems;

- Information on the specification and operation of passenger and other lifts;

- Feedback reports from previous emergency evacuations, both actual and fire drills;

- Statistical information on fire alarm activation frequency, false alarms, locations times etc;

- Records of fire safety or evacuation training given to staff;

- The number and location of fire and evacuation wardens;

- Personal Emergency Evacuation Plans (PEEPs);

- Feedback from building users.

The next step would be to work out the evacuation needs for staff and visitors. This can usually be done through surveys, questionnaires or interviews, and by considering the possible needs of unknown or unplanned visitors to the building.

Evacuation Strategies

The type of emergency evacuation procedure required will normally be decided when a building is designed. This decision will be made based on the layout of the building, the fire safety measures available and the planned usage of the building.

There are three main strategies commonly used:

- Total evacuation - Everyone in the building starts to evacuate at the same time, when the alarm is raised. The evacuation facilities are designed to cope with the planned maximum numbers. In this scenario, people with disabilities will be interacting with others during evacuation. This can increase the time required to get everyone out of the building.

- Phased evacuation - A pre-alarm system is used for areas away from immediate danger. During this stage, vulnerable people can begin to escape. A general alarm will be raised a short time later. This can allow staff to assist people with disabilities towards the exits during the initial phase.

- Zoned evacuation (sometimes called 'progressive horizontal evacuation') - The building is designed to be evacuated progressively as the extent of the emergency develops and is understood. The building is designed and constructed so that immediate evacuation is not required in all areas, and people are moved gradually away from the area of danger. This strategy is often used in healthcare buildings, as people can be gradually evacuated to other areas on the same level, behind fire resisting structures. They would only be moved down to lower levels or to outside if necessary. It is essential that the neighbouring zones have enough room to accommodate people from the other zones.

If an agreed evacuation strategy is to be changed, this may require some construction works to the building structure and the fire safety systems.

Evacuation Policy

As with most management issues, it is important that an evacuation policy is agreed, written down, and signed off by senior management. This is sometimes called an egress policy. The evacuation policy would typically form part of the safety statement required under Section 20 of the Safety, Health and Welfare at Work Act (2005).

The evacuation policy should consider any restrictions on access to the building. These restrictions could be general capacity limits relating to all users, or could be specific to people who need additional support during evacuation. Many public buildings such as bars and music venues will have a designated safe capacity limit for the number of people permitted in the building. Where a building has limited capacity of evacuation lifts or at refuge areas, it may be necessary to restrict the number of people who need to use these facilities on a particular floor of the building at any one time. It is important that any such restrictions are not discriminatory, and do not make assumptions about abilities or disabilities of building users. It would not be appropriate to say, for example; "Only two wheelchair users on this floor at any time". It may be necessary to say; "Only two people who are unable to get down stairs unassisted on this floor at any time".

Bring all the information together to produce an evacuation policy, which will include:

- a summary of relevant legal obligations;
- details of designated persons and their roles;
- the aims and objectives of the evacuation policy;
- details of the overall evacuation strategy;
- any restrictions on access to the building - capacity limits.

The policy should be dated and signed by senior management.

Planning for Evacuation

An Evacuation Plan should be developed, based on the Evacuation Policy detailed above. This plan should outline the roles and responsibilities of staff for evacuations. It may well include building floor plans, details of evacuation equipment and routes, and procedures for visitors who may need assistance during evacuation.

Tip: Make sure your evacuation plan considers the needs of new staff, temporary staff and contractors working at the site.

Personal Emergency Egress Plans (PEEPs)

A Personal Emergency Evacuation Plan (or PEEP) is a useful tool for agreeing and documenting evacuation arrangements for employees or regular visitors to a building. In an ideal world, PEEPs would not be necessary, as everyone would be able to evacuate safely at the same time. Many of our existing buildings have limitations on how some people can be evacuated. For example, if it is not possible to use lifts during an evacuation, a PEEP may be required to document the alternative arrangements required for a wheelchair user.

The drawing up of a PEEP must be done in partnership with the relevant person affected and needs to have a degree of inbuilt flexibility to allow for exceptional circumstances. The PEEP is essentially an agreement between the management and the individual on what steps will be taken if an emergency evacuation is required.

The PEEP matches the needs of the person with disabilities to the evacuation policy, evacuation plan and relevant facilities. Using a PEEP, it is possible to have assistance pre-arranged through a buddy system, with relevant information about the person's needs conveyed in advance to the helper.

Tip: Employers have legal obligations in relation to health and safety planning and management including evacuation of all employees with disabilities.

One employer was held liable in court for damages arising from an injury to an employee with a disability during an evacuation. They had not identified the employee's particular needs beforehand.

Important issues in the development and use of PEEPs include:

- consultation with the person for whom the plan is drafted is essential;

- ensuring staff with hidden disabilities can have a PEEP while maintaining appropriate confidentiality;

- ensuring that the needs of staff members with cognitive or mental health impairments (such as understanding alarm warnings, avoiding panic reactions or distress) are met;

- ensuring cover is arranged for PEEP assistants who are on holiday, sick or away from the place of work is vital;

- training needs to be up to date and include practical elements such as drills; and

- PEEPs need to be reviewed regularly and updated as necessary.

All employees and regular visitors should be asked if they would like to develop a PEEP, in conjunction with building management. It is possible that some employees with obvious or known disabilities that affect their ability to evacuate do not respond when offered a PEEP. This could be simply because

the person did not get the particular email or memo, or perhaps the person may be concerned that a particular evacuation method is going to be imposed on them. Organisations may be reluctant to put pressure on an employee or visitor about a PEEP, in case this could be seen as discriminatory in some way. In these cases, it is good practice to sensitively engage with such employees to ensure that a mutually acceptable PEEP is in place. The PEEP will benefit both the employee and the organisation.

> Tip: Instead of a buddy system with designated helpers, consider training everyone in the organisation to provide help; everyone can be a buddy.

Generic Emergency Evacuation Plans (GEEPs)

While a PEEP is helpful to document the requirements of a known employee or visitor, most organisations need to plan for the evacuation needs of unknown or unexpected visitors. In many buildings, it is impractical or sometimes impossible to check the evacuation requirements of every building user in advance of their arrival. Many existing buildings have limitations on how people with disabilities can evacuate the building. For example, the alarm system may not usable by people with hearing loss.

A Generic Emergency Evacuation Plan (GEEP) can be a helpful tool to put a general plan in place for people with different types of disabilities. The PEEP template can be used as the basis for a GEEP.

> Tip: Don't assume that a personal assistant will stay with a person with a disability during an evacuation. Discuss the evacuation plan with the personal assistant and make arrangements that take their views into account.

Organisations need be careful about the dangers of making assumptions or stereotyping people when using GEEPs. Staff may make assumptions about how the GEEP is to be applied, such as 'all wheelchair users must use the evacuation chair', because that's what the GEEP suggests for wheelchair users. The evacuation chair may not be the best evacuation option for all wheelchair users. Some wheelchair users may prefer to bump themselves down the stairs, depending on the number of stairs involved, their upper body strength and their general health. The GEEP provides a good template for assisting wheelchair users, but should not be seen as a mandatory approach for everybody.

The other danger is that the person greeting the visitor may not have the skills to carry out a 'risk assessment' and decide what is the best GEEP for a particular visitor. Organisations will need to ensure that appropriate training and supports are provided to ensure that these situations are handled sensitively and effectively.

Implementing The Evacuation Plan

Put the evacuation plan into practice, by training staff and carrying out trial evacuations.

Staff Training

Trained staff can make a big difference to making sure that an evacuation happens smoothly, safely and quickly. It is important that training is done often enough to ensure that staff can put the training into action when required. Training does not have to take place in a classroom or training room. Practical hands-on training on the stairs or at the lift is critical.

Training methods can include classroom training, eLearning, video presentation, hands-on practice, one-to-one training and mentoring. Make sure that enough staff are trained to cover out-of-hours use of the building, and absences due to turnover, holiday or illness.

Training should include the following topics:

- General evacuation procedure training - for all staff;

- Specific evacuation procedure training - for fire wardens or others responsible for evacuation of people with disabilities, and for building users with PEEPs;

- General disability equality training - for all staff, to ensure they will understand the difficulties faced by people with disabilities and can communicate effectively with people with disabilities in an emergency situation

- Mobility assistance - for anyone responsible for transferring a person from their personal wheelchair or a bed into an evacuation chair - could include patient handling and manual handling training;

- Use of equipment - for anyone responsible for using an evacuation chair, or managing an evacuation lift, or other equipment - could include use of fire extinguishers for anyone willing and competent for this.

Evacuation Drills

BS 9999: 2008 sets out useful guidelines for running 'Test Evacuations' or evacuation drills. It recommends that these drills are carried out least twice each year. Drills should not be restricted to quiet times or closed hours, as drills need to reflect normal operating conditions where possible.

It is important that any regular users of the building that have disabilities, children and older people are fully included in evacuation drills. It is a good idea to have both announced and unannounced drills to build confidence that staff can react appropriately in a real emergency.

Tip: Practice makes perfect. Evacuation drills are only safe way to test your evacuation plan.

Always hold a detailed review after any drill to make sure to learn from any mistakes. Details of drills should be recorded in the Fire and General register to comply with legislation.

Measuring Performance of the Evacuation Plan

Look for evidence on the effectiveness of the evacuation plan. Good performance could be demonstrated by showing evidence that:

- monitoring takes place at least annually during live drills;
- scenarios are included in fire drills to replicate eventualities, such as the loss of an exit due to fire;
- evacuation policy reflects current situations;
- the evacuation plan is modified to deal with changing circumstances;
- someone at senior management level has executive responsibility for ensuring safe evacuation;
- management at all levels take ownership of evacuation responsibilities;
- an evacuation risk assessment process is in place and remains effective;
- significant evacuation failures are formally identified and recorded and that appropriate corrective action is taken;
- PEEPs are reviewed at least annually; and
- inspections and tests have been carried out and records maintained.

Some examples of measurements that could be of benefit include:

- availability of fire wardens or PEEP buddies;
- occupation levels as a percentage of the total potential occupancy;
- evacuation times for fire drills;
- satisfaction of people affected;
- level of staff knowledge with evacuation procedures;
- level of liaison with Fire and Rescue Service;
- levels of maintenance of fire safety systems and aids;
- frequency and nature of near misses during evacuations;
- frequency and timing of fire safety training; and
- number of staff meetings held to discuss evacuation plans.

Reviewing Performance of the Evacuation Plan

It is important to develop and improve the policy over time. Changes in legislation or the way in which the building is used may require changes to the policy. Performance measures outlined above along with feedback from building users will help to improve the policy

Recommendations

- Develop an evacuation plan that considers the needs of all building users, including people of all ages, sizes, abilities and disabilities.

- Use PEEPs to agree and document the requirement of specific building users that need extra assistance.

- Use GEEPs to document the proposed evacuation approach for unplanned visitors that need extra assistance.

- Provide relevant staff with appropriate training to ensure that they can put the plan into practice as required.

- Use realistic Evacuation Drills to test the effectiveness of the evacuation plan.

- Review the Evacuation Plan periodically, based on user feedback and other information to continuously improve the plan over time.

Appendix A - References

Buildings for Everyone (2011), National Disability Authority.

'Safe Evacuation For All' conference proceedings, 2008 and 2009, National Disability Authority.

Building Regulations, Technical Guidance Document Part M 2010 - Access for People with Disabilities

Building Regulations, Technical Guidance Document B, 2006 - Fire Safety

BS 9999:2008 Code of practice for fire safety in the design, management and use of buildings, British Standards Institution.

Personal Emergency Egress Plans, The Northern Officer Group (1993)

Ask Me - Guidelines for Effective Consultation with People with Disabilities, National Disability Authority

Fire Safety Risk Assessment - Means of Escape for Disabled People (Supplementary Guide), Department for Communities and Local Government (UK)

Emergency Evacuation Planning Guide for People with Disabilities, National Fire Protection Association (NFPA)

Appendix B - PEEP Template

PEEP Template

Emergency Evacuation Questionnaire

Why you should fill in the form?

As your employer, <u>(organisation name)</u>   has a legal responsibility to protect you from fire risks and ensure your health and safety at work. To do this properly we need to know:

    a) if you need information about our emergency Evacuation procedures;

    b) if you need assistance during an emergency.

Please take a few minutes to complete this form.

What will happen when you have completed the form?

We will be able to provide you with information you need about the emergency Evacuation procedures in the building(s) in which you work.

If you need assistance, we will be able to work out a "Personal Emergency Evacuation Plan" for you. To do this, we will discuss the best ways of getting you out quickly and comfortably. We will involve you, your manager and the person(s) in charge of the building(s) in which you work.

We do not see you as a safety risk. The problem belongs to us and the building in which you work.

Name :-

Job Title:-

Department :-

Brief Description of Duties:-

Location

1. **Where are you based for most of the time? Please name: the building, the floor and the room number**

Building:

Floor:

Room:

2. **Will your job take you to more than 1 location in the building in which you are based?**

Yes or No:

3. **Will your job take you to different buildings?**

Yes or No:

Awareness of Emergency Evacuation Procedures

4. **Are you aware of the emergency evacuation procedures that operate in the building(s) in which you work?**

Yes or No:

5. **Do you need written emergency evacuation procedures?**

Yes or No:

    a) Do you need written emergency evacuation procedures to be supported by ISL interpretation?

       Yes or No:

    b) Do you need emergency evacuation procedures to be in Braille?

       Yes or No:

    c) Do you need emergency evacuation procedures to be on tape?

       Yes or No:

    d) Do you need emergency evacuation procedures to be in large print?

       Yes or No:

6. **Are the signs which mark the emergency exits and the routes to the exits clear enough?**

   Yes or No:

Emergency Alarms
7. **Can you hear the fire alarm(s) provided in your place(s) of work?**

   Yes or No:

8. **Could you raise the alarm if you discovered a fire?**

   Yes or No:

Assistance
9. **Do you need assistance to get out of your place of work in an emergency?**

   Yes or No or Don't Know:

If NO, please go to question 13

10. Is anyone designated to assist you to get out in an emergency?

   Yes or No or Don't Know:

If NO, please go to question 12. IF YES, give name(s) and location(s)

_____

_____

11. **Is the arrangement with your assistant(s) formal (that is, is the arrangement written into their job description)**

   Yes or No or Don't Know:

12. **Are you always in easy contact with those designated to help you?**

   Yes or No or Don't Know:

13. **In an emergency, could you contact the person(s) in charge of evacuating the building(s) in which you work and tell them where you are located?**

   Yes or No or Don't Know:

Getting Out

    14.Can you move quickly in the event of a fire?

    Yes or No or Don't Know:

    15.Do you find stairs difficult to use?

    Yes or No or Don't Know:

    16.Are you a wheelchair user?

    Yes or No or Don't Know:

Thank you for completing this questionnaire. The information you have given us will help us to meet any needs for information or assistance you may have.

Remember, we do not see you as the problem – you are not a safety risk. The problem belongs to us and the building in which you work.

Please return completed form to :-

_____

Personal Emergency Evacuation Plan

Name:

Date:

Position:

Designated Assistance (including leave cover arrangements for designated staff):

Assistance Methods/Techniques:

Equipment Provided:

Emergency Evacuation Procedure(s): (a step-by-step guide, from alarm to safety, of the evacuation procedures from different floors and buildings)

Evacuation Route(s): (preferably with diagrams)

Appendix C - Risk Assessment Checklist

Risk Assessment Checklist

The checklist below can be used to inform an appropriate plan of action including the name and role of responsible persons and timeframes, which will ensure that a safe built environment is maintained for all people, regardless of ability.

Ref	Policy	Yes	No	Signpost to evidence / comments	Action / decision	Action by	When
1	Does a risk-based emergency evacuation policy exist?						
2	Does the policy meet current legal requirements and/or best practice?						
3	Is the policy known to premises managers and being implemented fully?						
4	Is the policy available in large print, Braille, tape or other alternative format upon request?						
5	Do written procedures for the evacuation of people with disabilities exist?						
6	Are the procedures tested regularly?						
7	Do the procedures take account of : walk through procedures; announced drills; and unannounced drills						
8	Are there procedures to identify the number and location of people requiring assistance within the building?						
9	Are procedures in place for people with disabilities to make their needs known to staff?						
10	Can existing evacuation procedures cope with the maximum number of people with disabilities likely to be						

Ref	Policy	Yes	No	Signpost to evidence / comments	Action / decision	Action by	When
	present?						
11	Are measures in place to control access to the building should existing coping mechanisms be at full capacity?						
12	Has account been taken of the likely presence of guide dogs?						
13	Are procedures and information regarding the use and non-use of lifts in an emergency in place?						
14	Are pictorial symbols included on all fire evacuation signs?						
15	Do fire exit signs indicate which exits are suitable for wheelchairs?						
16	Are ground floor fire exits level or ramped and is there a suitable external surface?						
17	Are emergency exits checked regularly to ensure they are not blocked or impassable?						
18	Are fire procedure notices, including procedures for the evacuation of anyone requiring assistance, displayed within the building?						
19	Has consideration been given to allowing non-disabled people to evacuate independently of people with disabilities?						
20	Is a responsible person nominated to hand over information to Fire and Rescue Services, including information about the presence of people with disabilities and there particular disability? (Give Details of Nominated						

Ref	Policy	Yes	No	Signpost to evidence / comments	Action / decision	Action by	When
	Person)						
21	Does a means exist for assessing the extent of any assistance that people with disabilities are likely to require?						
22	Is the location of people with disabilities within the building known?						
23	Has a 'buddy' system been considered, with appropriate backups?						
24	Does the 'buddy' system take into account all working patterns?						
25	Has appropriate training in evacuation been given to all 'buddies'?						
26	Have people with disabilities working as lone or sole workers been accounted for and appropriate evacuation measures adopted?						
27	Has provision been made for people with disabilities once they have been evacuated from the building (especially if wheelchair users have been evacuated without their wheelchair)?						
28	Has a full assessment of the needs of disabled staff members been conducted?						
29	Have additional safety measures been identified?						
30	Have the measures been implemented?						
31	Is there a need for a PEEP for any staff member?						
32	Is the PEEP available in the						

Ref	Policy	Yes	No	Signpost to evidence / comments	Action / decision	Action by	When
	appropriate format?						
33	Is sleeping accommodation present in the building, which requires additional equipment or measures?						
34	Have the additional equipment/measures been provided?						
35	Are detailed and up-to-date records kept on staff training, e.g. evacuation chair, fire warden, fire extinguisher, first aid, buddy training						
36	Have suitable refuges been provided?						
37	Is appropriate communications available within each refuge?						
38	Are escape routes clearly signed?						
39	Is emergency lighting sufficient for people with visual impairments?						
40	Are doorways wide enough for wheelchair users to get out safely, without delay?						
41	Does the direction of opening of doors hinder the movement of a wheelchair?						
42	Are ramps available on evacuation routes?						
43	Have visual or sensory alarms been provided for people with poor sight?						
44	Are handrails provided on both sides of stairs?						
45	Does any fire or safety equipment need to be adapted to suit the needs of a disabled person?						
Ref	Policy						

Ref	Policy	Yes	No	Signpost to evidence / comments	Action / decision	Action by	When
46	Is all safety equipment subject to regular testing and maintenance?						
47	Are reporting procedures in place for defective equipment?						

Ref	Policy	Yes	No	Signpost to evidence / comments	Action / decision	Action by	When

Appendix D - Disability Statistics in Ireland

	Total	% of pop.	Age 0-17	Age 18-64	Age 65+
Seeing	**50,600**	**1.19**	2,700	21,300	26,600
- moderate difficulty	27,600	0.65	1,700	11,600	14,300
- a lot of difficulty	20,700	0.49	800	8,300	11,600
- cannot see	2,300	0.05	200	1,400	700
Hearing	**57,600**	**1.36**	3,300	22,900	31,400
- moderate difficulty	35,200	0.83	2,500	14,200	18,500
- a lot of difficulty	20,600	0.49	600	7,600	12,400
- cannot hear	1,800	0.04	100	1,200	500
Speech	**35,300**	**0.83**	10,100	15,700	9,500
- moderate difficulty	16,800	0.40	5,100	7,500	4,200
- a lot of difficulty	12,200	0.29	3,400	4,700	4,100
- cannot speak	6,400	0.15	1,600	3,500	1,300
Mobility and dexterity	**184,000**	**4.34**	8,100	84,500	91,500
- moderate difficulty	57,000	1.34	3,000	32,100	21,900
- a lot of difficulty	62,200	1.47	2,600	31,300	28,300
- cannot do	64,900	1.53	2,500	21,000	41,400
Moving around home	**101,200**	**2.39**	2,900	42,100	56,200
- moderate difficulty	50,200	1.18	n.a.	n.a	n.a.
- a lot of difficulty	38,400	0.91	n.a.	n.a	n.a.
- cannot do	12,700	0.30	n.a.	n.a	n.a.
Going outside of home	**128,900**	**3.04**	4,700	53,900	70,300
- moderate difficulty	53,700	1.27	n.a.	n.a	n.a.
- a lot of difficulty	49,900	1.18	n.a.	n.a	n.a.
- cannot do	25,300	0.60	n.a.	n.a	n.a.
Walking for about 15 minutes	**160,000**	**3.77**	5,600	70,500	83,900

31,000 wheelchair users

	Total	% of pop.	Age 0-17	Age 18-64	Age 65+	
- moderate difficulty	47,200	1.11	n.a.	n.a	n.a.	83,000 walk aids
- a lot of difficulty	52,900	1.25	n.a.	n.a	n.a.	
- cannot do	60,000	1.42	n.a.	n.a	n.a.	
Using hands and fingers	**79,000**	**1.86**	4,700	34,700	39,600	
- moderate difficulty	33,900	0.80	n.a.	n.a	n.a.	
- a lot of difficulty	30,900	0.73	n.a.	n.a	n.a.	
- cannot do	14,300	0.34	n.a.	n.a	n.a.	
Remembering & concentrating	**113,000**	**2.67**	17,800	54,700	40,500	
- moderate difficulty	54,900	1.29	7,600	29,400	17,800	
- a lot of difficulty	43,800	1.03	8,500	26,900	8,500	
- cannot do	14,300	0.34	1,800	4,800	7,700	
Remembering important things	**77,600**	**1.83**	11,700	35,300	30,600	
- moderate difficulty	39,100	0.92	n.a.	n.a	n.a.	
- a lot of difficulty	27,600	0.65	n.a.	n.a	n.a.	
- cannot do	10,900	0.26	n.a.	n.a	n.a.	
Forgetting where I put things	**85,800**	**2.02**	9,900	40,200	35,700	
- moderate difficulty	44,600	1.05	n.a.	n.a	n.a.	
- a lot of difficulty	30,400	0.72	n.a.	n.a	n.a.	
- cannot do	10,800	0.25	n.a.	n.a	n.a.	
Concentrating for 10 minutes	**77,900**	**1.84**	15,500	36,700	25,700	
- moderate difficulty	35,000	0.83	n.a.	n.a	n.a.	
- a lot of difficulty	29,800	0.70	n.a.	n.a	n.a.	
- cannot do	13,100	0.31	n.a.	n.a	n.a.	
Intellectual & learning	**71,600**	**1.69**	26,900	37,800	6,900	18,900 have dyslexia/sld

	Total	% of pop.	Age 0-17	Age 18-64	Age 65+	
- a little difficulty	12,000	0.28	3,700	6,700	1,600	3,400 have ADD
- moderate difficulty	25,900	0.61	11,200	13,000	1,700	5,300 have autism
- a lot of difficulty	24,800	0.58	10,500	12,200	2,100	50,400 ID
- cannot do	8,900	0.21	1,600	5,800	1,500	
Intellectual functions	**27,700**	**0.65**	7,300	17,100	3,300	
- a little difficulty	4,000	0.09	n.a.	n.a	n.a.	
- moderate difficulty	9,100	0.21	n.a.	n.a	n.a.	
- a lot of difficulty	10,300	0.24	n.a.	n.a	n.a.	
- cannot do	4,300	0.10	n.a.	n.a	n.a.	
Interpersonal skills	**22,300**	**0.53**	8,600	11,500	2,200	
- a little difficulty	4,600	0.11	n.a.	n.a	n.a.	
- moderate difficulty	7,200	0.17	n.a.	n.a	n.a.	
- a lot of difficulty	7,200	0.17	n.a.	n.a	n.a.	
- cannot do	3,400	0.08	n.a.	n.a	n.a.	
Learning everyday skills	**55,000**	**1.30**	22,200	27,800	5,000	
- a little difficulty	10,200	0.24	n.a.	n.a	n.a.	
- moderate difficulty	19,500	0.46	n.a.	n.a	n.a.	
- a lot of difficulty	18,700	0.44	n.a.	n.a	n.a.	
- cannot do	6,700	0.16	n.a.	n.a	n.a.	
Diagnosed with intellectual disability	**50,400**	**1.19**	21,400	25,900	3,100	
- a little difficulty	14,000	0.33	n.a.	n.a	n.a.	
- moderate difficulty	24,200	0.57	n.a.	n.a	n.a.	
- a lot of difficulty	9,000	0.21	n.a.	n.a	n.a.	
- cannot do	3,200	0.08	n.a.	n.a	n.a.	
Emotional, psychological & mental health	**110,600**	**2.61**	9,900	74,700	26,000	31,200 depression
- a little difficulty	25,300	0.60	3,000	15,300	7,000	13,500 anxiety

	Total	% of pop.	Age 0-17	Age 18-64	Age 65+	
						disorders
- moderate difficulty	46,300	1.09	4,000	32,400	10,000	5,300 schizophrenia
- a lot of difficulty	35,100	0.83	2,700	25,300	7,000	3,100 bipolar disorder
- cannot do	4,000	0.09	300	1,800	1,900	
Pain	**152,800**	**3.60**	3,700	87,800	61,400	
- moderate difficulty	74,900	1.77	2,500	41,200	31,200	
- a lot of difficulty	73,100	1.72	1,200	43,800	28,100	
- cannot do	4,700	0.11	1,000	1,700	2,000	
Breathing	**71,500**	**1.69**	5,500	35,800	30,100	
- moderate difficulty	45,000	1.06	4,400	23,300	17,400	
- a lot of difficulty	25,200	0.59	1,100	12,000	12,100	
- cannot do	1,300	0.03	n.a.	n.a	n.a.	
Total persons with a disability*	**393,800**	9.29	35,900	172,600	117,500	

Note: figures are subject to sampling error and rounding, and should be interpreted as a broad order of magnitude only.