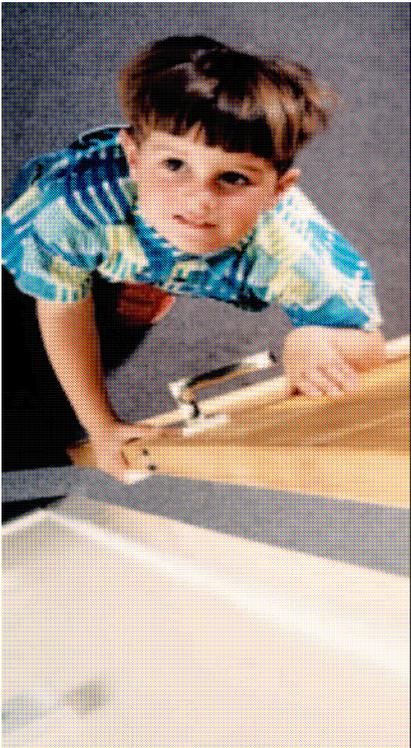




Working for a safer Scotland

A Policy Document recommending improvements sought by RoSPA to be incorporated at the design and specification for both new (including social housing) and refurbished homes.



Can the Home Ever be Safe?

The need to improve safety in the built environment of homes and gardens



Prepared by RoSPA's Home Safety Department
In association with.....
Published.....2008

Introduction

In 1999 RoSPA developed a 10-point proposal, detailed in the policy Document 'Can the Home Ever be Safe?' advocating improvements to home safety standards beyond compliance within this document was revised in 2002, 2005 and again for **Scotland** in 2008.

The original policy document supported by several seminars, conferences and correspondence between key stakeholders linked to home safety, has brought home safety further up the housing agenda.

Furthermore, there is now a greater acceptance that getting 'upstream' of the accidental injury by creating a physically safer home environment can help reduce the number of home accidents and is a cost-effective route to health improvement. In Scotland, the number of people aged 75 and over is set to rise by 75%, (1) and proportionally, the home accident rate will also increase.

Up until now homes have not been built to accommodate lifetime changes and needs. As a society that is ageing, housing needs to change to be more flexible and inclusive by building in or future-proofing the homes that are built. In England, the 2008 government document "Lifetime Homes, Lifetime Neighbourhoods – A National Strategy for Housing in an Ageing Society" ensures that "*all public sector funded housing is built to Lifetime Homes Standard by 2011*". The document continues by stating that Lifetimes Homes Standards will be made a mandatory part of the Code for Sustainable Homes to encourage a progressive uptake in new-build projects. "Our aspiration is that by 2013 all new homes will be built to Lifetime Home Standards." (2)

This Scottish revision includes current injury and mortality statistics and reflects the changes that have occurred since the original publication.

Since the publication of the policy document in 2005, numerous improvements to safety in the home have been achieved in Scotland. Advice given out by health advisers and social workers to young families and older people has improved, as the recommendations in the original document have been more widely circulated, understood, and have increasingly been adopted by developers and housing providers alike.

Improvements achieved:

- In May 2006, it became mandatory for thermostatic mixing valves (TMV's) to be installed in the bath in all new build housing and renovations (where the position of the bath is moved). Some authorities have fitted TMV's to their social housing homes retrospectively, but this is not yet mandatory. The fitting of a TMV is a simple way of eliminating scalds to the most vulnerable people in society.

The need to improve safety in the built Environment of homes and gardens

Whilst the implementation of RoSPA-recommended measures remains discretionary, rather than mandatory and driven by the statutory requirements of Building Regulations, the rate of adoption and the resultant impact on home based injuries and fatalities will be slow.

So RoSPA will continue to raise awareness through the dissemination of this policy document and by providing information, advice and encourage the use of best practice, whilst lobbying influencers, opinion formers and legislators for changes in the way we equip our homes.



Context

This document is intended to target simple, low cost design improvements to increase safety within the home, which RoSPA considers essential to reduce accidents and fatalities.

Incorporation of fire safety, safety glazing, thermostatic mixing valves and access requirements in the Building Regulations in the last few years has made progress in reducing accidental injuries, but additional improvements are still essential.

The statement is made in the light of the continuing number of accidents and fatalities in and around the home, as the following statistics highlight:

In Scotland, there were 16,282 admissions to hospital after an accident in the home in 2007. There were 6,533 admissions for people aged 75+ and 2,351 admissions were children under the age of 5. The total number of home accident admissions to hospital outnumbers hospital attendances due to road traffic accidents by 11,809.

The total of **A&E attendances** for injuries sustained in a home accident was much higher and estimated to be twenty times more than admissions.

In 2006, there were 207 accidental deaths in the home in Scotland



RoSPA's mission is to save lives and reduce injuries

RoSPA would like to see the inclusion of all of the following in **new-build (including social housing) and refurbished homes**

Provision of secure cupboards

In Scotland in 2007, 379 children under five were admitted to hospital due to accidental poisoning in the home and a further 7580 were thought to have attended A&E.

The provision of secure cupboards, which cannot be accessed by children, for storing chemicals and/or medicines within the home has historically been a matter for the owner or tenant to provide. There have been some ranges of kitchen units provided with child resistant buttons.

The idea that a secure cupboard should be provided as part of the 'as built' provision in a new home is recent. Ideally, the cupboard should be located at a height and in a location that young children cannot reach from the floor or climb up to.

It is also recommended that household chemicals and medicines should be stored in a secure cupboard in the kitchen (the busiest room) at least 1.5m above floor level.

An additional secure cupboard could also be incorporated in a garage to store garden or automotive chemicals.

The fitting of child resistant locks to existing cupboards would cost considerably less, as would the specification of lockable cupboards at the planning stage.

RoSPA recommends that a secure cupboard, located at 1.5m in the kitchen, should be provided in the specification for all new and refurbished homes and where improvements are made to kitchens in existing homes.

Staircase with provision for Fixing for a European Standard BS EN1930: 2000 stair gate

Every year in Scotland, there are almost 1200 children under the age of five who are admitted to hospital following a fall at home. It is estimated that almost 23,800 attended A&E after a fall, with the most serious accidents occurring on the stairs.

Stair gates have been marketed for more than 30 years as a safety feature to restrict children from climbing the stairs unattended by an adult. The fixing of the gate entails a permanent fixture to the wall or the gate is secured using adjustable pressure knobs seated in plastic cups which are screw fixed and brace the gate between the wall and the staircase newel posts.

The advantage of the 'braced' type of gate is that it can be relocated between the top and bottom of the stairs, as required so only one gate is needed. However, a child can easily push them out of place, if they are not securely fixed.

Gates are now required to comply with European Standard BSEN1930: 2000, but are only designed to provide protection for children of **24 months and under** – opposed to for use for children aged two, where potentially the child could be 35 months old and still aged two, but almost three.

In the absence of a standardized component for fixing stair gates to walls and the limitations of fixing gates to plasterboard stud partitioning, RoSPA recommends that suitable reinforcement be built into the walls where stair gates may be fixed. This should consist of a plywood infill between timber dwangs to enable a firm screw fix to be obtained at both top and bottom of the staircase.



Fireplace with adequate provision for fixing of British Standard fireguard

BS8423: 2002

The provision of fixed “eyes” either side of the fireplace is no longer a requirement of the Buildings Regulations.

However, compliance with the current British Standard requires that screw-in eyes be supplied with the fireguard for fixing by the purchaser.

Most existing and new homes have central heating installed, but a focal point fire is still often installed. Where gas is not available, an electric or solid fuel fire may be installed.

RoSPA considers that the ability to fix fireguards is an important safety feature in the prevention of fires in the home. A fireguard helps to prevent clothes igniting when standing too close to a fire, sparks flying from the fire, objects falling into the fire and catching light and people tripping and falling onto the fire or fireplace.

It is important that the screw-in eyes can be located firmly and securely to the fire surround or adjacent wall structure. This will ensure that when in situ, the BS8423 fireguard operates effectively as an injury and fire prevention measure.

RoSPA recommends the provision of reinforcement of the wall substructure to ensure the safe fixing of European Standard stair gates should be included in the specification of all new and refurbished homes

Provision of wall substructure for grab rails in all bathrooms

In Scotland, almost 6000 over 75-year olds are admitted to hospital each year following an injury in the toilet or bathroom. Many more find using their facilities difficult, even frightening.

For dwellings, which contain more than one storey, the Building Regulations require that sanitary accommodation for the disabled should be provided at the entrance level.

Since May 2007, in Scotland, building standards seek robust wall construction to accommodate the secure fitting of grab rails or other aids. Currently this applies only to the main bathroom in a flatted property, or to the ground floor toilet and shower room where provided in a typical house.

Since grab rails are a common adaptation, RoSPA recommends that provision be made in the building sub-structure to accommodate the easy and inexpensive fitting of grab rails in all bathrooms should they be required.

Additionally, the installation of slip-resistant flooring to wet areas also represents a worthwhile accident prevention measure.

RoSPA recommends that provision be made for wall sub-structures to accommodate easy and low-cost installation of grab rails in all bathrooms, toilets and shower areas if and when required



Provision of a second handrail to staircases

In 2006/7 in Scotland, there were almost 12,000 admissions to hospital due to a fall at home. Almost 6000 of these were people aged 75 and over – the most serious occurring on the stairs.

It is a common adaptation for older people and for the ambulant disabled within the home to provide a second handrail to staircases.

Building Regulations for common access steps, communal access stairs and steps within the entrance area of the dwelling require a handrail on both sides of the steps, but this is currently not a requirement for staircases within the home.

Whilst recommended, the fitting of a second hand rail is not sought in compliance of the building regulations, however, provision of a reinforced sub structure on the wall next to the staircase to ensure easy mounting of a second handrail (if one is required) could be installed at the building stage.

In Scotland, the width of private stairs in dwellings has increased to 900mm, which would allow for the fitting of a second handrail, or accommodate a stair lift and still maintain a clear stair width of 800mm.

RoSPA recommends that provision be made in the wall sub structure to allow for a second set of handrails on the staircase for when/if they are required

Depth of stair treads in houses to be reduced

In Scotland in 2006/7 almost 6000 people aged over 75 had a fall in the home, the most serious of which occurred on the stairs.

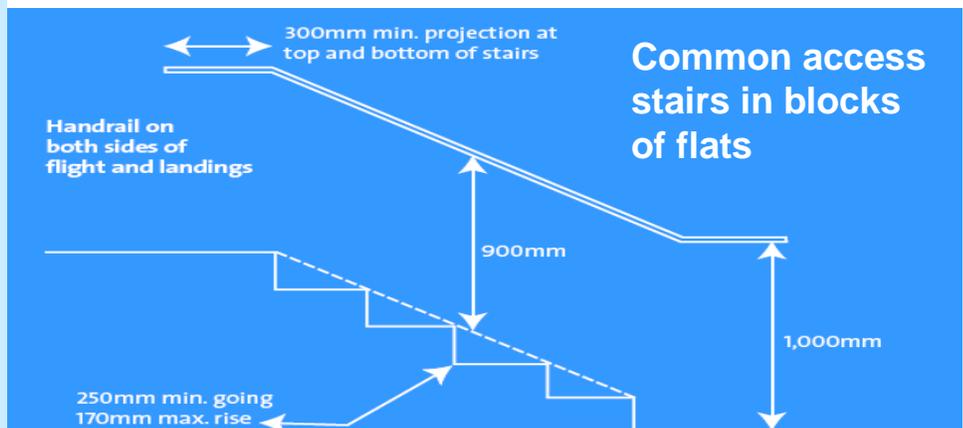
The height of stair treads within a house has been constrained by the requirements for natural ventilation within habitable rooms requiring a minimum ceiling height, and the floor depth as dictated by the depth and spans of floor joists, and the Building Regulations which control the steepness of staircases, in that:

1. The height of any rise should not be any more than 170mm
2. The going of any step should not be less than 250mm
3. The pitch/incline should not be more than 42 degrees

This is incorporated in the rule that, “for any step that the sum of twice its rise plus its going (2R+G) should not be more than 700mm nor less than 550mm”

It should also be noted that the maximum rise and the minimum going on a private stair should not be used together as it will result in an incline higher than the recommended minimum.

In a small house, it is common to have a floor-to-floor height of 2,550mm with a 13-riser staircase (196 rise) and 2,700mm length (225mm going).



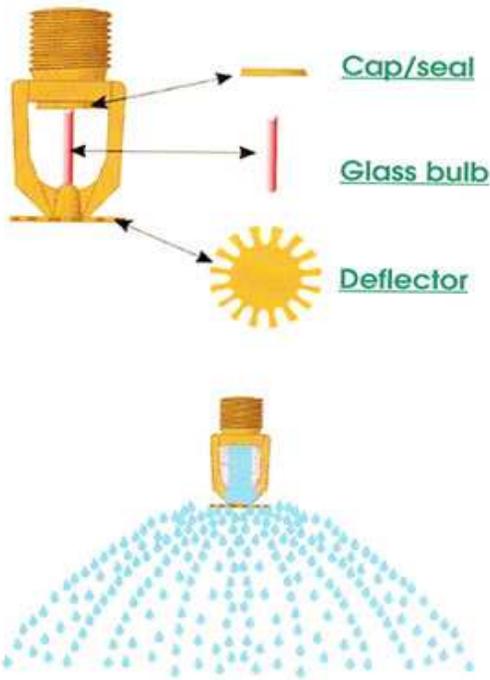
In building regulations, the requirements for accessibility for the ambulant disabled now require that the height of any riser to steps, **for common access to flats, not within a dwelling**, should not be more than 170mm rise and not less than 250mm going, and an incline of 34 degrees. The exception is where there is not basic accommodation for a dwelling (apartment, kitchen and accessible sanitary accommodation) on the entry level, as in an upper villa flat, so the common access rules come into play with.

RoSPA is of the view that this standard should also apply within all new build houses. A straight staircase would increase in length as in the example above to a 15-riser staircase (170mm rise) and 3,500mm length.

In practice, this would probably mean the greater use of a “dogleg” design of staircase within house design, which RoSPA would favour as it would reduce the falling distance of an individual tripping on the stairs, and make the first floor more accessible to the ambulant disabled.

It is understood that there is ongoing research into staircase design being undertaken at the Building Research Establishment.

RoSPA's mission is to save lives and reduce injuries



BS 9251:2005

Sprinkler systems for residential and domestic occupancies Code of Practice

This code of practice, published in February 2005, makes recommendations for the design, installation, commissioning and maintenance of fire sprinkler systems for use specifically in residential and domestic occupancies. It is not intended that sprinkler systems will supersede smoke and/or fire detector systems and the code presumes that the sprinkler protection will form part of an integrated fire safety system as part of the building design. (4)

There is not yet a British Standard for high pressure fog type of suppression system.

Facts about AWSS

- A sprinkler head uses **one tenth** of the water of that used in a Fire Service operation.
- Each sprinkler head operates **individually**, activated by heat from a fire. They **DO NOT ALL GO OFF AT ONCE** as is commonly perceived.
- The chance of accidental activation due to faulty apparatus is 16 million to 1.
- Typical sprinklers operate after room temperatures reach 68 degrees Celsius – that's 30 degrees Celsius higher than room temperature.
- AWSS is activated by heat not smoke, so they will **not activate** if you burn the toast.
- There is a **90% reduction in fire damage** compared to a property without AWSS.
- The conditions found within the sprinkler systems are not thought to support the growth of Legionella.
- Modern AWSS have a proven track record of saving lives should a fire occur, especially in the home. Fire can be controlled and heat and toxic output reduced.
- Having AWSS installed could lower household and building insurance.
- Sprinkler heads are inconspicuous.

Automatic Water Suppression Systems (AWASS)

The average financial cost of a domestic fire is around £34,000, but the personal cost is unquantifiable.

In the UK, there were 491 fire-related deaths in 2006, 363 of which were from fires in the home.

The fatality rate in fires in the UK in 2006 was 8.1 per million population (pmp), in Scotland however; the rate has a consistently higher fatality rate over the years compared to the UK average, currently at 10.2 pmp. Scotland also has the highest rate per million population non-fatal casualties at 320 pmp in 2006 compared with England's 218 pmp.

In 2006, there were 1600 non-fatal fire casualties in Scotland where 47% of all primary fires were in dwellings. ()

Up until recently the cost of installing AWSS has been prohibited by cost, but now with new building materials and production methods, and the relaxation of traditional methods of providing a fire safety regime, the cost of installing a AWSS can be reduced to as little as 1% of the building cost.

Another considerable benefit to installing an AWSS is that it allows fewer restrictions to builders and designers to meet building regulation requirements.

RoSPA recommends fitting automatic water fire suppression systems to new build homes at the design stage

97% of house fire fatalities could have been saved



Windows should be operable at **worktop level**



RoSPA would like to see the inclusion of all of the following in new and refurbished homes including social housing

Installation of window

restrictors on windows above ground level

In Scotland in 2006/7, almost 1800 children under the age of 15 were admitted to hospital following a fall in the home.

There remains a conflict between security, unlawful entry and, means of escape from fire, cleaning windows, ventilation and the prevention from falling from a window located at first floor level or above.

Protection from the danger of falling from a window by the limiting of an opening can be achieved in several ways:

Provision of a chain between the casement and the frame.

Restrictor fitted to the scissor hinges.

Provision of a lockable window stay.

Provision of a hinged bar between the window and the frame.

Provision of a window lock or provision of hinges with built-in restrictors.

It is recommended that a child resistant safety catch that limits the opening to less than 100mm should be fitted to all windows above first floor level. Any restrictor fitted should be capable of being opened in case of a fire, via the child resistant catch. Key operated catches should therefore be avoided.

RoSPA recommends that there should be the means of limiting the opening of any window where the sill level is more than three meters above external ground level.

Window controls to be easily accessible

In Scotland in 2006/7, almost 12,000 people were admitted to hospital following a fall. Almost 6,000 of these were people of 75 years and over.

Access to window catches above worktops, kitchen sinks, baths and wash basins, is difficult for older people and those short in stature. Individuals either have to attempt to

climb on the worktop or use steps, often leading to a fall.

Building Regulations require some natural ventilation to be provided 1.75m above floor level. In the kitchen and bathroom, the background ventilation requirement can be provided by a controllable high-level airbrick, or trickle ventilation over the head of a window. Trickle vents require a cord or handle operation at low level to operate them.

In addition, there is a requirement to provide extract ventilation in both kitchens and bathrooms. Rapid ventilation has to be provided by a window, which ideally should be located free from obstruction by fixtures within the room. Ideally, kitchens and bathrooms should be designed with no obstruction in front of the window, but this is rarely achievable.

Regulations require that windows, skylights and ventilators can be opened, closed and adjusted safely, but this regulation does not apply to dwellings.

RoSPA recommends that windows in kitchens or bathrooms should be operable at worktop level, or that the windows and high-level vents should be provided with some low level mechanical means of opening

RoSPA's mission is to reduce injuries and save lives



Conclusion

RoSPA would like to see all these recommendations instigated as soon as possible, but realises that it will require the full support of regulatory organisations, developers and housing providers, health promotion specialists, plus the many professional and trade associations that support the housing sector.

The number of people being admitted to hospital resulting from accidents in the home must be reduced.

Provision of safety advice for the home and garden

The provision of advice for the homeowner and tenant has been a hit and miss affair. Leaflets are sometimes available at libraries, doctor's surgeries, housing offices, welfare centres, and DIY shops.

The NHBC provide some safety information to new homeowners whilst social housing providers may include advice to tenants at handover of properties or when there is a change of tenancy. It is now mandatory under health and safety legislation that in places of work certain safety information is posted on walls and that workers undertaking risky operations are trained and provided with safety equipment and safety information. RoSPA is aware that there are proposals that all new homes should be provided with a 'logbook' and consider that this should be the vehicle for providing home safety information.

RoSPA wishes to see that a comprehensive safety checklist is provided to all new tenants and homeowners.

Until the logbook becomes mandatory, RoSPA recommends that all new homes should have safety checklists provided, one for the house and one for the garden.

RoSPA's suggested safety checklists

Home

Avoid trips, slips and falls by ensuring halls and stairways are always well lit and free from clutter.

Reduce trips, slips and falls by cleaning up spills quickly.

To minimise the risk of falls from windows, install and use restrictor catches on all upstairs windows and place furniture away from windows.

Change light bulbs safely, without the **risk of falling** by using a stable step-stool. Avoid using old chairs to climb on.

Stay safe from **fire** by testing smoke alarms weekly and be sure all the family know how to escape in the event of a fire.

Avoid fire risks by using guards with all fires and heaters and keep clothing, furniture and curtains away from all heat sources, including candles.

Reduce the likelihood of **household fires** and **carbon monoxide poisoning** from **faulty flues or equipment** by having gas, oil or solid fuel heating appliances professionally serviced once a year.

Reduce the **risk of electrical fires and electrocution** by never using appliances with cracked plugs or worn cables.

Avoid overloading electric sockets with too many appliances.

Don't risk electrocution by taking electrical appliances into the bathroom. Water is a good conductor of electricity so you should never touch electrical appliances with wet hands

Avoid burns and scalds by always using the back rings on a cooker or hotplate first, and position pan handles so that they can't be pulled over. Keep hot drinks out of reach of children.

Avoid bath time scalds (especially to children) by running the cold water first and carefully testing the water temperature with your elbow. Children should never be left unattended.

Poisoning or chemical burns can be prevented by storing medicines and household chemicals out of sight and out of reach of children, preferably in a secure, high-level kitchen cupboard.

Avoid strangulation from blind cords by cutting the cord, or by buying blinds without loops.

Garden

Protect yourself from **electrocution** by always using a Residual Current Device (RCD) when operating electrically powered garden tools and mowers.

Avoid accidents and **injury when doing DIY** tasks by operating within the range of your skills, ability and experience. Always use personal protective equipment including gloves, goggles, helmet, face mask and safety shoes as appropriate and follow manufacturers' instructions and recommendations for the task.

Avoid injury from sharp garden tools to users or children by keeping them in good repair and safely tied away after use.

Keep children safely away whenever using lawnmowers, doing DIY projects or household repairs.

Prevent accidental poisoning or injuries by carefully following manufacturers' instructions when using weed killers, adhesives and solvents. Never transfer to alternative containers that could confuse and lead to poisonings.

Avoid poisoning and chemical burns by storing chemicals for use in garage or garden safely out of sight and out of reach of children, preferably in a secure cabinet.

Reduce the risk of small children **drowning** by fencing or filling in garden ponds or water features and always supervising children near water.

Prevent injury from trips, slips and falls, by providing safety rails and barriers to changes in garden levels and ensure all paths and steps are level, stable and free from moss

Avoid injury from falls by always checking a ladder's condition before use and using it at a safe angle (1 in 4)

Avoid uncontrollable fires by always sighting bonfires and barbecues well away from fences, sheds and trees. Avoid proximity to gas cylinders and oil storage tanks. Supervise children at all times.

Appendix
Suggested website addresses for further information

Rospa	www.rospa.com
Scottish Housing Regulator	http://www.scottishhousingregulator.gov.uk/stellent/groups/public/documents/webpages/shr_homepage.hcsp
Home Safety Scotland	www.homesafetyscotland.org.uk
Thermostatic Mixing valve manufacturers Association	www.tmva.org.uk
British Automatic Fire Sprinkler Association Limited	www.basfa.org.uk
The Chief Fire officers Association	www.cfoa.org.uk
A Guide to Automatic Water Suppression Systems	www.northyorksfire.gov.uk/cms_media/files/cfoa_guide_to_awss.pdf
Information Services Division (ISD)	www.isdscotland.org
The Scottish Government	www.scotland.gov.uk
Institute of Home Safety	www.instituteofhomesafety.co.uk
General Register Office Scotland	www.gro-scotland.gov.uk

References

- 1) General Register Office
- 2) Lifetime Homes, Lifetime neighbourhoods
- 3) Information Services Division (ISD)
- 4) Fire and Rescue Services Statistics 2008
- 5) A guide to Automatic Water Suppression Systems

- 8)
- 9)
- 10)

Acknowledgements

Picture of stairs courtesy of Pear Stairs pearstairs.co.uk
Sprinkler from Chief Fire officers Association guide to AWSS
Drawing of a sprinkler from J Bryceland sprinkler systemsDundee

RoSPA welcomes feedback and any comments you would like to make on the recommendations included in this document.

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