

**A Policy Statement** recommending improvements sought by RoSPA at the **design and specification** of both new and refurbished homes



## Can The Home Ever Be Safe?

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

**RoSPA**  
The Royal Society for the  
Prevention of Accidents

Prepared by **RoSPA's Home Safety Department**

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# 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 over and above the Building Regulations as they stood.

The original policy document, supported by several seminars, conferences and correspondence between interest groups involved with home safety, is bringing 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.

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

The funding of a fixed-term post by the Department of Trade and Industry, provided the means of creating a greater level of awareness and prompted a greater concern for home safety that warranted action.

Consequently, since the publication of the policy document in 2002, numerous improvements to safety in the home have been achieved. 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:

- Wider use of restrictors on low level cupboard doors in kitchens where there are young children in the house
- Improvements to the design and fixings of stair gates
- Fixing of window restrictors during window replacement programmes
- Wider use of fire guards
- Wider provision of second handrails for the elderly and disabled
- Inclusion of residual current devices (RCDs) with the electrical consumer units in new homes and the rewiring of existing homes
- Installation of mains operated smoke and carbon monoxide detectors
- Wider awareness to keep medicines and household chemicals out of reach of children
- Design requirements for social housing recommending that thermostatic bath hot water controls be installed in new housing and proposals to include the provision of Thermostatic Mixing Valves in future Building Regulations
- Greater awareness of the dangers of DIY and gardening.

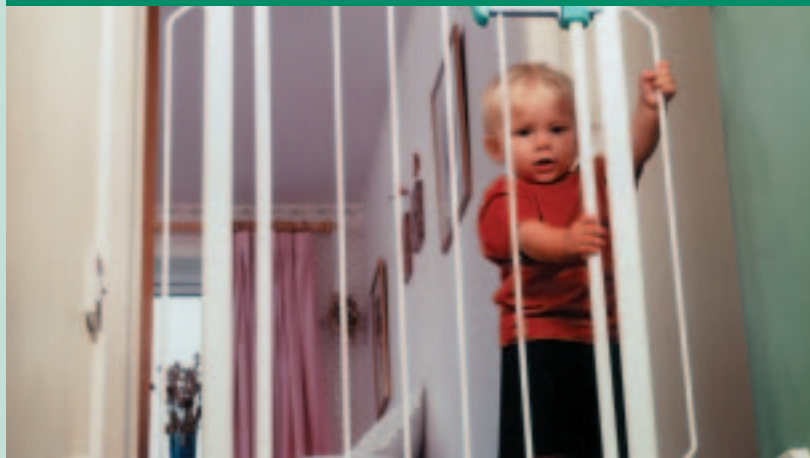
2004/5 DTI funding enabled RoSPA to invite bids in support of projects that would see the installation and evaluation of the home accident prevention measures. RoSPA will manage the 13 successful projects, which will not only provide immediate safety benefits within targeted households but also produce a wealth of information from which other housing organisations can benefit.

Comparisons between the 1999 and 2002 Home Accident Statistics would suggest that despite the increased awareness levels and commitment to home accident prevention, overall the incidence of home accidents continues, largely unabated.

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 spread of best practice, whilst lobbying influencers, opinion formers and legislators for changes in the way we equip our homes .

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



The implementation of the simple, low cost RoSPA recommended measures in our new and existing housing stock can reduce accidents in the home and contribute to an improved quality of life.

**RoSPA strongly recommends the adoption of this policy document in its entirety as a standard for all new, refurbished and modernised dwellings as a meaningful and cost-effective home accident and injury prevention strategy and calls upon all housing and health professionals to implement the recommended safety improvements in both policy and practice.**

Surely it must be preferable to invest in the health of our communities sooner, rather than later, and that home accidents are prevented, rather than treated after the event.

## 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 and access requirements in the Building Regulations in the last few years has made progress in the reduction of 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:

- 2.7 million home accidents each year requiring hospital treatment of which 477,500 are children under five.
- 4,308 deaths due to home accidents in 2002 of which 2,373 were males and 1,935 were females – more than the number of road deaths. 1,702 were aged over 75 years.
- 1,200 people aged 75+ die because of a fall at home every year.
- 120 children under 15 years die from accidents in the home.
- Estimated cost to the UK in lost education, lost working time and hospital treatment is £25 billion per year.

The main causes of accidental deaths in the home are:

- 1,884 as result of a fall
- 652 due to accidental poisoning
- 367 drowned, suffocated or choked (including some house fires)
- 314 in a fire or as a result of a burn.

Even if you buy a ticket every week, you are 20 times more likely to suffer a fatal home accident than you are to win the National Lottery.

*Mortality statistics have been sourced from 2002 Office for National Statistics data (England and Wales), coded ICD 10.*



Even if you buy a ticket every week, in a year you are **twenty times more likely to suffer a fatal home accident than you are to win the National Lottery**



## RoSPA would like to see the inclusion of all of the following in **new and refurbished homes**

### **Provision of secure cupboards, which cannot be accessed by children for storing chemicals and/or medicines**

*Around 25,000 children under five attend Accident and Emergency Departments each year after being accidentally poisoned.*

The provision of secure cupboards 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 provision of two secure cupboards would be about £120. 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.**

*Accident statistics in this document have been obtained from the 2002 Report of Home Accident Surveillance System published by the DTI Consumer Affairs Inspectorate. RoSPA now manages this data on behalf of the DTI.*

### **Staircase with provision for fixing for a European Standard EN1930 stair gate**

*Every year there are more than 42,000 Accident and Emergency attendances by the under five age group resulting from accidental falls on 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 EN1930, but only designed to provide protection for children under 24 months old.

In the absence of a standardised 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 noggins to enable a firm screw fix to be obtained at both top and bottom of the staircase.

The additional cost of providing this at the time of construction or refurbishment would be £60.

**RoSPA considers 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.**

### **Fireplace with adequate provision for fixing of British Standard fire guard**

*Annually, over 9,000 accidents involve a fireplace, grate or fender.*

The provision of fixed 'eyes' either side of a fireplace for the secure fixing of a fire guard is no longer a requirement of the Building Regulations.

However, compliance with the current British Standard requires that screw-in eyes be supplied with the fire guard 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 fire or solid fuel fire may be installed.

RoSPA considers that the ability to fix fire guards is an important safety feature in the prevention of fires in the home. A fire guard helps to prevent clothes igniting when standing near 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 fire guard operates effectively as an injury and fire prevention measure.

The additional cost of reinforcing the wall substructure adjacent to the heat source would be £20.

**RoSPA considers the provision of a suitable wall substructure to enable a British Standard fire guard to be securely fixed should be reinstated as a design requirement for new and refurbished homes.**



## Windows should be operable at worktop level



A secure cupboard should also be incorporated in garage or garden store

### Installation of window restrictors on windows above ground level

*4,000 children (aged 0-15) are injured falling from windows.*

There remains a conflict between security, unlawful entry, and means of escape from fire, cleaning windows, ventilation and the prevention of 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 frame
- Provision of a window lock
- Provision of hinges with in-built 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 fire, via a child resistant catch. Key operated catches should therefore be avoided.

The cost of providing five window restrictors would be £100.

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

## RoSPA would like to see the inclusion of all of the following in new and refurbished homes

### Window controls to be easily accessible

*In 2002, 272,000 over 75 year olds attended Accident and Emergency Departments in hospitals because of a fall in the home.*

Access to window catches above worktops, kitchen sinks, baths and washbasins, 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 falls.

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.

The cost of providing two low level controls for windows would be £120.

**RoSPA proposes 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.**

### Provision of a second handrail to staircases

*Almost 28,000 over 75 year olds attend Accident and Emergency Departments in hospitals following a fall on the stairs. Many more live in fear of using their 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.

Second handrails for staircases are recommended by the USA National Safety Council.

The provision of a second handrail would require the width of a domestic staircase to be widened to 900mm.

A common standard for both common areas and within the home itself would make a significant contribution to preventing accidents on all staircases.

The cost of an additional handrail to the staircase would be £70.

**RoSPA strongly recommends that handrails should be provided to both sides of all steps, ramps and staircases within and around the home.**



## Provision of grab rails to the bath and WC

*More than 19,000 over 75 year olds attend Accident and Emergency Departments 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.

Although sanitary accommodation for the disabled in other building types requires the provision of grab rails within the toilet and shower, currently it is not a requirement in the Building Regulations for a dwelling.

A common adaptation for older people and for the ambulant disabled is the provision of grab rails in the bathroom and toilet.

If it is considered that wheelchair disabled and ambulant disabled require grab rails in sanitary accommodation outside the home, then we consider that the regulations should require grab rails to be installed in bathrooms and toilets within the home.

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

The cost of four basic grab rails for a toilet and bathroom would be £160.

**RoSPA recommends that grab rails should be provided in all sanitary accommodation within all dwellings, irrespective of the age, or level of mobility of the occupants.**

## Depth of stair treads in houses to be reduced

*Every year there are over 300,000 Accident and Emergency attendances following falls on the stairs.*

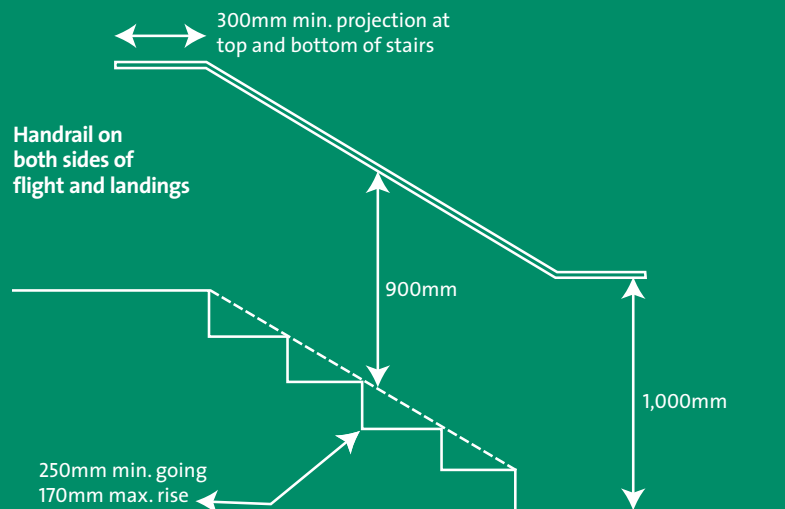
The height of stair treads within a house has been constrained by the requirements for natural ventilation within habitable rooms requiring a minimum floor to ceiling height, and the floor depth as dictated by the depth and spans of floor joists, and the Building Regulations which control the steepness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

- The height of any rise should not be any more than 220mm
- The going of any step should generally not be less than 220mm
- The pitch should not be more than 42°

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'.

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

## Common access stairs in blocks of flats



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.

RoSPA is of the view that this standard should also apply within a house. A straight staircase would increase in size 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.

The additional cost of the increase in staircase size would be about £420.

This does not, however, reflect the impact on costs of changing the area or footprint of the dwelling which will arise in some instances because of the space required to accommodate a stairway with a shallower pitch.

**RoSPA recommends that the rise and going of all steps and staircases within the home should have a rise not exceeding 170mm and a going of at least 250mm.**

Thirteen  
under fives  
are severely  
burnt or  
scalded in  
the home  
every day



## Water temperature to be safely controlled

*13 under five year olds are severely burnt or scalded in the home every day.*

There is currently no legal requirement to limit the delivery temperature of domestic hot water at the point of use although the Housing Corporations Scheme Development Standards recommend thermostatic control of bath hot water for General Needs social housing.

As a consequence, hot water is responsible for the highest number of fatal and severe scald injuries in the home with the very young and the very old being particularly vulnerable.

Building Regulations require that there should be sufficient controls on the boiler and hot water storage vessel to prevent hot water exceeding 100°C.

There are requirements, for energy conservation, to provide a thermostat to shut off the heat supply when the desired hot water temperature is reached, but there are no requirements to control temperature to prevent scalding.

Thermostatic controls on hot water cylinders have fixed settings between 40°C and 80°C.

The HSE recommendation to prevent Legionella bacteria in water storage systems is to maintain hot water temperatures above 60°C.

Scalding can occur above the temperature of 45°C, and partial thickness burns will occur within 30 seconds at 55°C, as stated in the NHS Estates Health Guidance note 'SAFE hot water and surface temperatures'. Skin sensitivity of children and the elderly can produce scalding at lower temperatures.

NB. Lower temperatures are recommended for babies, small children and older people.

RoSPA recommends that parents and carers always test bath water and shower temperatures with their elbow before bathing older people and children. The practice of cold fill first, then bringing the water up to the desired temperature is a safe practice that should be promoted. The NHS recommendations for all healthcare premises include fill temperatures of:

- a. 44°C for an unassisted bath fill
- b. 41°C for washbasin applications.

The DTI leaflet 'Cool It' recommends that bath water should not exceed 43°C.

Accident data shows that there are around 21 deaths per year associated with scalds and none from sinks and washbasins. There are over 570 severe scalds per year from bath water and 25 from other taps.

Proposed consultation on modifications to the Building Regulations (England and Wales) was announced in January 2004. The Government proposes to make the thermostatic control of hot water supplied to baths and showers mandatory in all new homes by 2006.

This still leaves the occupiers of the majority of homes vulnerable to bathtime scalds.

The additional cost of one thermostatic mixing valve to give safe temperature control to bath hot water would be £140.

**Therefore RoSPA recommends that water at the point of delivery to baths be controlled by a Thermostatic Mixing Valve, limiting temperature to no more than 46°C to help prevent scalding.**

## Provision of safety advice for the home and garden

*There are over 2.7 million accidents in the home every year.*

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.

The cost of providing two A4 size laminated checklists would be £2.

**Until the logbook becomes mandatory, RoSPA recommends that all homes should have safety checklists provided, one for the house and one for the garden. These should be fixed, with a protective cover, on a wall in an appropriate visible location in the house.**

There are almost **three million accidents** in the home every year



## 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.

### 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 tidied 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 siting bonfires and barbecues well away from fences, sheds and trees. Avoid proximity to gas cylinders and oil storage tanks. Supervise children at all times.

## 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 total cost would be in the order of £1,300 per dwelling – is this too much to pay for a Safer Home?

We must reduce the number of people being admitted to hospitals resulting from accidents in the home.

## Appendix

Suggested website addresses for further information:

| ORGANISATION  | WEB ADDRESS  |
|---|--|
| Communities Scotland                                | <a href="http://www.communitiesscotland.gov.uk">www.communitiesscotland.gov.uk</a> |
| DTI – Consumer Affairs Directorate                  | <a href="http://www.dti.gov.uk">www.dti.gov.uk</a>                                 |
| Housing Corporation                                 | <a href="http://www.housingcorp.gov.uk">www.housingcorp.gov.uk</a>                 |
| Institute of Home Safety                            | <a href="http://www.homesafe.org.uk">www.homesafe.org.uk</a>                       |
| National House Building Council                     | <a href="http://www.nhbc.co.uk">www.nhbc.co.uk</a>                                 |
| National Housing Federation                         | <a href="http://www.housing.org.uk">www.housing.org.uk</a>                         |
| National Safety Council (USA)                       | <a href="http://www.nsc.org">www.nsc.org</a>                                       |
| Northern Ireland                                    | <a href="http://www.dsdni.gov.uk">www.dsdni.gov.uk</a>                             |
| Office of the Deputy Prime Minister                 | <a href="http://www.odpm.gov.uk">www.odpm.gov.uk</a>                               |
| Royal Society for the Prevention of Accidents       | <a href="http://www.rospace.com">www.rospace.com</a>                               |
| Scottish Executive                                  | <a href="http://www.scotland.gov.uk">www.scotland.gov.uk</a>                       |
| Thermostatic Mixing Valve Manufacturers Association | <a href="http://www.tmva.org.uk">www.tmva.org.uk</a>                               |
| Welsh Assembly Government                           | <a href="http://www.wales.gov.uk">www.wales.gov.uk</a>                             |
| Welsh Federation of Housing Associations            | <a href="http://www.welshhousing.org.uk">www.welshhousing.org.uk</a>               |

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

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