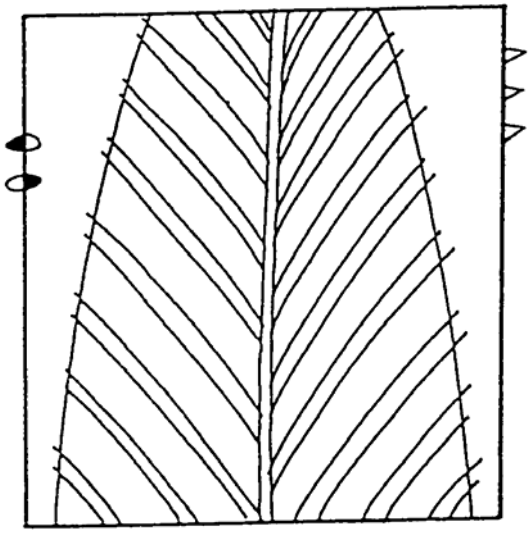
HOUSEHOLD SAFETY



Waitakere City Council

Te Taiao o Waitakere

Contents

This chapter is part of the Waitakere City Council's Sustainable Home Guidelines. The complete set can be obtained through most libraries or from the Waitakere City Council, Private Bag 93109, Henderson, Waitakere City 0650, New Zealand, phone (09) 839 0400, email: info@waitakere.govt.nz.

The guidelines are also available on the council's web site: http://www.waitakere.govt.nz

Why consider household safety?

Unfortunately our homes are where we are most likely to be injured. By far the most common type of home injuries are unintentional, but we also suggest some ways you can plan for security against crime.

These guidelines should help you to "think safety" when planning or building a home or making changes to your existing home. Some references which provide more detailed information are listed at the end of the chapter.

Safe for all

Preventing home injuries is tricky – no one approach is going to be effective on its own. However, if the home environment is designed to be safer, then the consequence of any unsafe behaviour is likely to be less.

Some groups are at greater risk of injury in the home. The elderly, for example, can have limits to their mobility or a slower response to hazards in the environment. Young children have not yet developed fully, both in physical development and understanding and in management of risks. Physical or sensory disabilities make some people especially vulnerable to injury. Most of us at some stage suffer disability, even if only for a short time through injury or illness. Our personal and family circumstances can change very quickly, and you may also want to consider the safety of friends, visitors, or potential future owners of your home.

Perhaps the best approach is to remember that anything which makes a home safer for any one of us, makes it safer for all of us. Plan a home where both inside and outside areas can be used safely by everyone. Think barrier free and access for all.

A "best-practice" approach

All major new building work done in New Zealand must meet the requirements of the Building Act 2004 and its associated regulations (the "Building Code"). The present guidelines focus rather on voluntary steps we can take to reduce home injuries. These are laid out in detail in the *New Zealand Standard for Safer House Design* (see "Further information").

This voluntary or "best-practice" approach to safer house design should be of special interest to those who live in homes built before 2004, which, unless major renovations are involved, are not subject to the requirements of the Building Act.

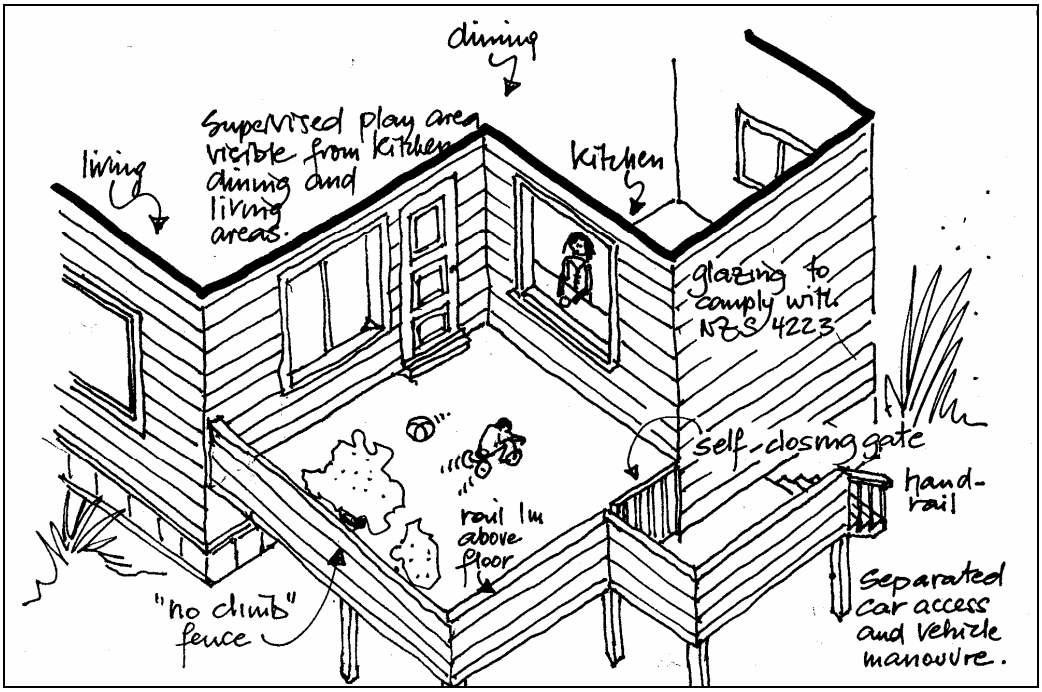
Our recommendations for a safer home are grouped according to six categories of injuries.

Falls, slips and trips

Decks, balconies, porches

Many fall injuries are from decks, balconies or porches with poorly designed railings

- Make sure decks and balconies more than 1 metre above ground level have a handrail and balustrade at least 1 metre high.
- Use vertical supports for handrails (maximum gap between supports of 100 mm) rather than horizontal ones that children can climb.
- Secure a strong fine mesh inside the railings to cover existing gaps
- Ensure the ground surface below low balconies, decks and porches without rails is impact absorbing - grass or bark, not concrete.



Safe outdoor spaces

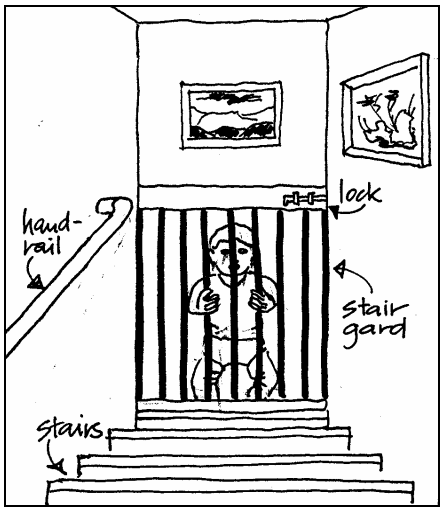
Outside

Falls from one level to another, or from steps and stairs, are a common cause of injury, especially for people with any kind of restricted mobility

- If you cannot eliminate exterior steps make sure they have easily gripped handrails and good lighting during night use (sensor lights are a great option). Paint the edges of your external stairs white to enhance visibility. Use textured paint for the edges to improve slip resistance.
- The gradient of exterior paths should not exceed 1-in-12.
- There should be non-slip surfaces to ramps and sloping paths.
- Ensure there is adequate lighting in transitional areas from outside to indoors.

Steps and Stairs

- Design your house to avoid unnecessary stairs and changes in floor level. Most importantly, avoid stairs between a kitchen and dining space, and between a bedroom and toilet.
- Clearly mark changes in floor level. Change the floor finish, the colours or lighting intensity, so that the difference in levels can be clearly seen.
- Handrails should be continuous on both sides of stairs and around the landings. You should be able to grab the handrails for their entire length. They should be 900-1000 mm high and be of a contrasting colour to the wall. Handrails should extend 300mm beyond top and bottom steps so they can be held before stepping up or down. Consider children: perhaps providing an additional handrail of smaller circumference in a lower position (600mm).
- If stairs are not enclosed by walls, a solid upstand or balustrade should be installed, while still providing a grab rail.
- Wherever possible, each stair tread should be 280mm deep (min 190mm) and have a height between 150 and 180mm. The dimensions need to be uniform for each tread.
- Stair treads should be level with secure non-slip surfacing.

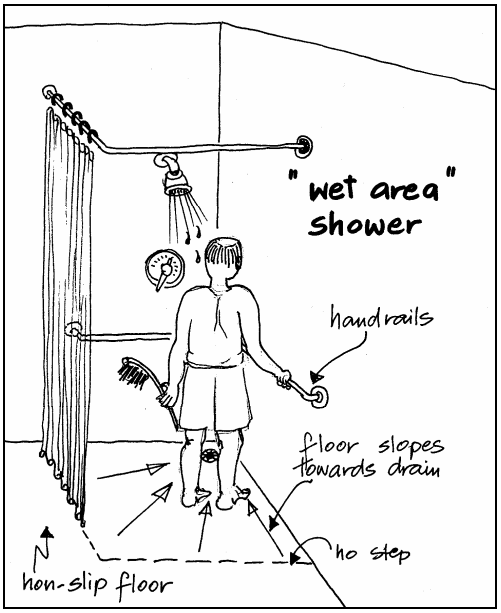


- Make sure stairs are evenly and well lit. Two lights are a good idea in case one bulb blows. Bulbs should be easily accessible for replacement. There should be light switches at both top and bottom of the stairs.
- Consider putting impact-absorbing mats at the foot of all stairs.
- Use a stair guard or gate at the top of the stairs to prevent a child falling down, and at the bottom to prevent a child climbing up the stairs. These should be the attached type rather than the pressure model – especially at the top of the stairs.

Windows, bathrooms

Children often fall from windows; older people often slip in bathrooms

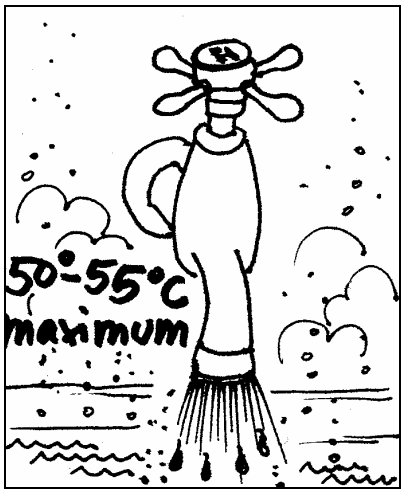
- Consider fitting window restrictors (e.g. security stays/latches) to all windows with a fall height of 2 metres or more (it is mandatory if the window sill is less than 760mm above the floor). You should be able to release them without the use of a key or tool to escape in an emergency.
- Injuries caused by a fall in the bathroom or toilet are very common for all age groups, but particularly for older adults and others with restricted mobility. Think ahead and avoid showers over baths or shower cubicles with raised entrances. Consider the benefits of a "wet area" shower with no step – just a non-slip self-draining floor.
- Use slip-resistant surfacing in baths, showers and toilets. Wherever possible fit grab rails beside bath, shower and toilet, or have the builder reinforce wall framing so that support is available for fixing rails at a later date.



Burns, scalds and electric shocks

Hot water temperature

Children and older adults are at greatest risk of scalds from hot household water because of the fragile nature of their skin



- The Building Code makes it mandatory in new homes for water in bathrooms to be delivered at a temperature no higher than 55 degrees c - 50 degrees is even better.

- There are a number of different ways of achieving safer hot water delivery. Probably the best long-term option is to install tempering valves which automatically mix hot and cold water to a desired temperature. (This is because the Building Code requires for health reasons that water be stored at a minimum 60°.)

- You can also turn down the thermostat on the hot water cylinder – you'll need to first get an electrician to fit a consumer-adjustable thermostat.

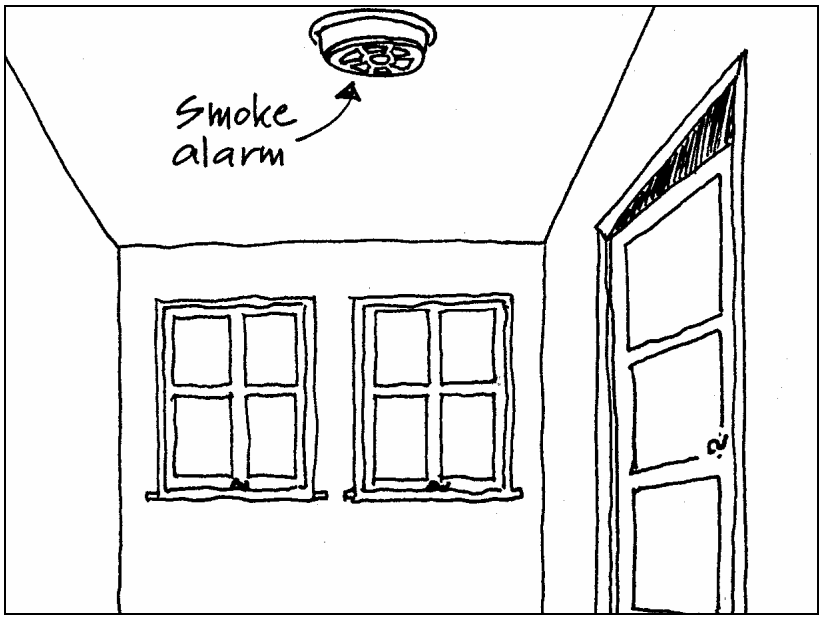
- You can install temperature-limiting taps and shower mixers.

- Make sure taps are marked clearly 'hot' and 'cold'.

House fires

Most people succumb to smoke – often while still asleep – before they are burnt in a house fire

- The Building Code requires smoke detectors in new houses or renovations . The NZ Fire Service recommends the installation of smoke alarms in every bedroom, the lounge, and hallways. Houses of two or more storeys will need one at the top and one at the bottom of the stairs. Ask your local Fire Service for the best type currently available. Battery-powered ones are very cheap, though you have to be sure to test and maintain them.



- Smoke alarms must be strategically placed to be effective. They should be high up where they will first detect smoke. Placement should also take into account ease and safety of maintenance. Your local fire station will assist you, free of charge, if you need help choosing where to put them and will happily install them for you.

- Make sure all parts of the house can be reached by a garden hose permanently attached to an outside hose tap, but under no circumstances should you attempt to extinguish a fire from inside the building. Remember – Get Out, Stay Out.. You should always call the Fire Service in the event of emergency.

- Have a regularly maintained fire extinguisher in a permanent position in or near the kitchen – the dry powder extinguisher is the best type. Know how to use it! If in any doubt, do not use your extinguisher. Fires are very fast. Again, Get Out, Stay Out. If you have children, elderly people etc, ensure their safety before attempting to fight the fire.

- Fire blankets are a useful tool to have in your kitchen, but remember that you would have to get very close to a fat fire, for example, to use the blanket.

- Choose linings and furnishings for your home which do not readily combust and which have a low spread of flame.

- Use fire-retardant building paper.

- Install fixed heaters strictly according to the manufacturer's instructions, and well away from joinery, doors, windows, curtains and furnishings.

- Consider installing sprinklers in your home, especially if you are building or extensively renovating. Sprinklers are small, unobtrusive and aesthetically pleasing.

The kitchen

Stoves and ovens are a common cause of burns or scalds. Children especially touch hot elements, pull pots off the stove, and stand on open oven doors

- When buying a stove consider one with design features which maximise safety. How stable is it? Can the oven door be easily opened by young children? Can a stove guard be fitted? Are the controls on the work surface or to the back of the stove rather than on the front of the oven?
- Stoves should be fixed to the wall to prevent them from tipping if a child climbs onto the oven door. The most common method is to attach a chain to the oven and then to the wall.
- Ensure that kitchen cupboards and fittings are built for ease of movement, and think about the accessibility to children of things like the cooktop and electric jug cord.

Electrical fittings

Electric shocks happen when electrical current from a faulty appliance, faulty wiring, or from something pushed into an appliance or power point flows to earth through the body

- Install safety switches known as Residual Current Devices – either at the switchboard or at the wall socket.
- Install enough power points in the home to discourage the use of extension cords and multi boxes. Do not have plugs on top of each other. Whenever possible use bench-height power points in the kitchen.

Cuts and lacerations - glass doors and windows

Serious lacerations are most commonly caused by falls through glass doors, doorside panels, low-level windows, or shower and bath enclosures

- When building a new home it is mandatory to use safety glass in the "high risk" areas mentioned above. In existing homes, however, we are required only to replace broken glass with the existing type. For the majority of homes this means ordinary annealed glass, which when broken shatters into jagged edges.

- Safety glass – either laminated Safety Glass or Toughened Safety glass – is much stronger than ordinary glass and breaks less easily. When it does break it does not splinter into sharp jagged pieces. This greatly reduces the risk of injury.

- When you have to replace glass in high-risk areas, always replace it with safety glass. Consider doing this anyway, before a breakage, as a preventative measure. To find out whether existing glazing is safety glass, look for the NZ Standard "S" symbol with the words "NZS 4223" in one corner.

- If you are installing ranch sliders or any other kind of floor-to-ceiling glazing, consider having a design feature at eye height (eg an opaque line or frosting). Many injuries occur from people running into closed ranch sliders, thinking they are open.

Poisoning and hazardous substances

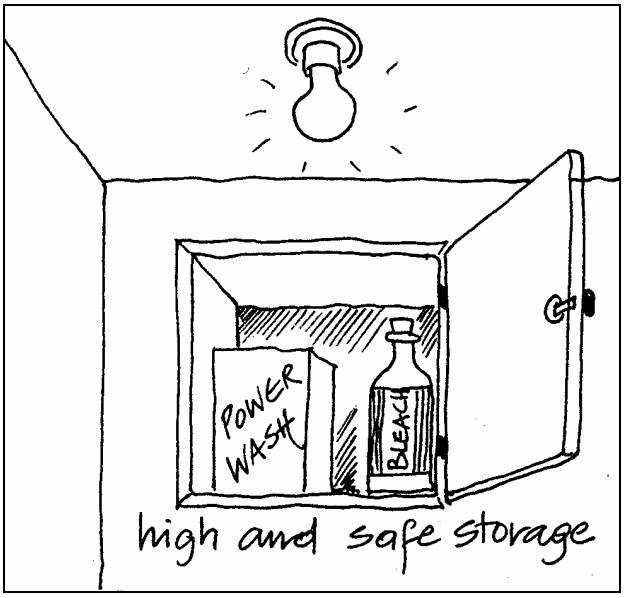
Pharmaceuticals, household cleaners, and garden chemicals are the most common substances involved in poisonings. Children under five are at greatest risk. Most accidental poisonings can be blamed on visibility or easy access

- Provide cupboards with child-resistant catches in all areas of the home - especially the kitchen and laundry - where toxic substances are likely to be stored.

- Cupboards with locks are not such a good idea, as they require a key for access and are not always locked afterwards. The best kind of child-resistant catch is one which requires a high level of dexterity, e.g. where a finger must reach the catch and press it inward for it to release or where more than one action is required to open the catch. There are also magnetic locks available.

- For the hazardous chemicals you use less often, store them "up high, out of reach, and out of sight." But remember that young children love climbing and from a young age are able to position chairs, tables, and ladders to get access to interesting or forbidden places. A high locked cupboard may be a good option for these items.

- Less toxic and more environmentally friendly cleaners are available. These will reduce the poisoning risk, but they should still be kept out of children's reach.



A safe yard for children

Every year there are many "driveover" injuries and deaths in New Zealand

- In planning a new home arrange the site to provide a suitable play/recreational area. Put it in a sunny appealing place. Ideally it should be level in parts, separate from water hazards, and visible from the kitchen. Most importantly, it should be separate from vehicle access and manoeuvring areas.

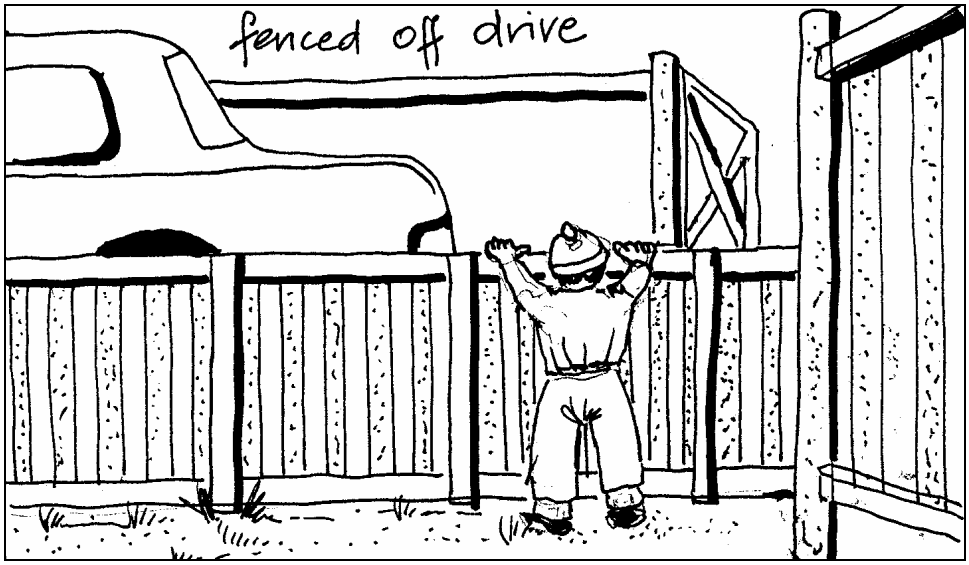
- Fence the play area. Fences should be of a height and design which discourages climbing and incorporates a self-closing and latching gate.

- Fences should prevent children getting onto the driveway or street. Make sure there is no way they can climb over.

- Try to achieve clear visibility at the end of the driveway to avoid risk to pedestrians or cyclists using the footpath. Avoid planting anything at the end of the driveway that may impede your view of the footpath when exiting.

- Where possible, make provision to turn your vehicle, so that you don't have to reverse in or out of your driveway.

- Remember also about pool safety. All pools 400mm or more deep are legally required to be fenced.



Security - keeping intruders out

We associate home security with burglar alarms and other anti-crime devices, but there are also common-sense ways you can build in security from the early stages of planning a home

- Try to site your house so that the entries can be seen from the street or neighbours, and plan for good exterior lighting. When planning your garden make sure that growing shrubbery won't block good visibility. The more likely it is an intruder can be spotted the less likely you are to receive one!

- Consider the advantages of good fencing which still encourages visibility. It not only keeps children in, it might also help to keep intruders out!

- Entry doors should have a peephole fitted so you can see who is there without being seen yourself or having to open the door. Make sure wooden doors are solid and not easily forced. Use hinges with non-removable pins on all external doors and windows, especially french doors.

- If a window is likely to be open much of the time for ventilation – such as bathroom, toilet or laundry windows – fit security stays.

Further information

Advice at the Waitakere City Council:

Phone the call centre (09) 839 0400
Ask for: Safe Waitakere
Eco Design Advisor

In print

New Zealand Standard for Safer House Design: Guidelines to Reduce Injury at Home (NZS 4102:). Prepared by the Safer House Design Committee for the Standards Council, these guidelines provide full, detailed recommendations for safer homes. This is the most comprehensive guide available to the public and to anyone involved in the design, building and ongoing maintenance of homes.

On the web

Resource Handbook for Barrier Free Communities (Barrier Free New Zealand Trust, 1997). This handbook describes the requirements for access by people with disabilities if we are to achieve universal barrier free communities. Available for $35 at www.barrierfreenz.org.nz/Handbook.htm

www.smarterhomes.org.nz is a mine of up-to-date and independent information. Designed for the general public, it's easy to use, has case studies, and includes features such as Homesmarts, a calculator you can use to find information relevant to your needs or simply to run a home-health check.

If there are questions you can't find answers to on Smarterhomes, www.level.org.nz goes into more depth and is aimed at the design and building industries, with drawings and links to Building Code compliance documents.

This chapter was last reviewed in September 2008

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