

A guide to driveway safety for property owners



Developed by
Housing New Zealand
in partnership with
Safekids Aotearoa,
New Zealand Transport
Agency, New Zealand Police
and **Roadsafe Nelson Bays**

About this guide

This guide provides property owners with general guidance on making driveways at their properties safer to reduce the risk of young children being run over.

Where feasible and where budgets allow, the guide also includes recommendations for making driveways safer for other pedestrians and vehicles.

The guide is not intended as a comprehensive technical guide as each site often requires a unique solution.

It does not include alternative models of driveway design such as 'shared pedestrian and vehicle spaces' because these require specific design by qualified professionals.



Forewords

As New Zealand's largest landlord Housing New Zealand has a responsibility to ensure the safety of our tenants in our properties. Driveway runover injuries are a serious issue in this country and we now know that good driveway design can significantly reduce the risk of a child being run over.

Our Driveway Safety Programme, which began this year, focuses on separating play areas from driveways and ensuring play areas are directly visible and accessible from main living areas.

By sharing what we have learned from this programme with other landlords and property owners we hope to help bring an end to these driveway tragedies.

Marcus Bosch

General Manager | Property Services, Housing New Zealand

Motor vehicles are the most dangerous things in our children's home environment. Pre-school children are naturally afraid of barking dogs, strangers, the dark and "monsters". No such instinct protects them from cars. We teach our children to go close to cars and get in without fear. In the blink of an eye a child can move into danger; the first thing a driver knows about the child can be a sickening bump. As adults it's easy to forget the size and weight of a car compared to a small child and not consider the serious injury a car can cause even at slow speeds.

In many homes driving spaces are used for play and play spaces for driving. While continuous supervision by adults is ideal it will always fail sometimes. Children need a failsafe physical barrier to separate a place of safety from a place of danger.

Separating play spaces from driveways has the potential to reduce death and injury not only from driveway runovers but also from drowning, falls and injury on roads. It will also encourage more outdoor play which is important for healthy development. As more preschool children have spaces for safe outdoor play I anticipate less stress for parents, less time in front of televisions and happier healthier children.

But separating driveways from play spaces is not a cure all. Motorists and parents can help reduce driveway runovers by checking where children are before driving off, always supervising children around vehicles and never letting children play in driveways.

Nick Baker

Chair | New Zealand Child and Youth Mortality Review Committee



The Driveway Safety Programme

This guide developed out of Housing New Zealand's award-winning Driveway Safety Programme which began in 2013 with an assessment of driveways at 13,000 state houses where there are children aged under five.

The programme responded to research showing good property design – particularly providing play areas separated from driveways – is one of three key factors in preventing driveway runover incidents.

Housing New Zealand's programme focuses on creating fenced, separate play areas for children by installing fencing and gates at its standalone properties, and speed humps, signage and/or convex mirrors at its complexes, where appropriate.

When building a new state home, Housing New Zealand's design specifications ensure child play areas are easily visible and directly accessible from a living or dining room, or kitchen.

Driveway safety inspections are now standard when Housing New Zealand scopes properties for an upgrade. New tenants are also provided with advice about driveway safety.

Mele and Teremoana Rima with grandson Malachi at their Housing New Zealand property which had its driveway made safer.

PHOTO CREDIT: HERALD ON SUNDAY





Factors in driveway runover incidents

Research shows property design is one of three factors linked to driveway runover incidents. The other two factors are human behaviour, such as driver awareness of the hazards and supervision of young children, and vehicle design, particularly poor visibility.

Safekids Aotearoa, the injury prevention service of Starship Children's Health, has a national focus on preventing and reducing child death and injury from driveway incidents. It is working with Housing New Zealand, among others, to raise awareness of the issue nationally.

Safekids estimates a child is hospitalised from injuries received by a vehicle in a private driveway every two weeks, and that on average, five children die each year from those injuries. Runover injuries are almost always severe enough for the child to be hospitalised.

Safekids Aotearoa's safety education campaigns focus on four main messages to drivers:

- Check for children before driving off
- Supervise children around vehicles – always
- Separate play areas from driveways
- Slow down on driveways.

For information on how to make your vehicle safer see page 15.

Fencing and a childproof gate were added to this standalone state house to separate the driveway from the play area.



Property design and driveway safety

THIS GUIDE HAS THREE MAIN DESIGN PRINCIPLES:

- 1** Provide a secure play area for young children, separate from driveways
- 2** Provide pedestrians with a safe route to the building separated from the driveway and vehicles
- 3** Provide clear lines of sight for vehicles when entering and exiting the property.

PRINCIPLE

1

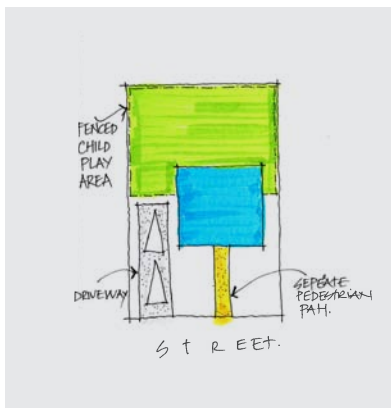
SEPARATE PLAY AREAS FROM DRIVEWAYS

Provide children with an outdoor play area that is separated from the driveway. Installing new fencing or upgrading existing fencing is one way to do this.

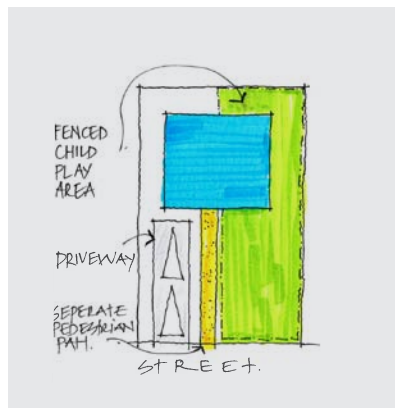
- Fencing can prevent vehicles from entering and parking on the outdoor play area.
- Fencing needs to be complete, secure and designed to discourage climbing by children under five years. It is recommended that any gates have self-closing hinges and a magnetic latch.

ACCESS TO PLAY AREAS

- When building or renovating, ensure you locate windows and doors of living areas/kitchens to allow for direct visual and physical access (window and door) between the house and children's play area. This will make it easy for parents to supervise children and for children to move freely between the house and play area without going outside the fenced area.
- Ideally, the access door to the play area is not the front/main entry to the house from the street.



1 Single house with rear yard, separate from driveway

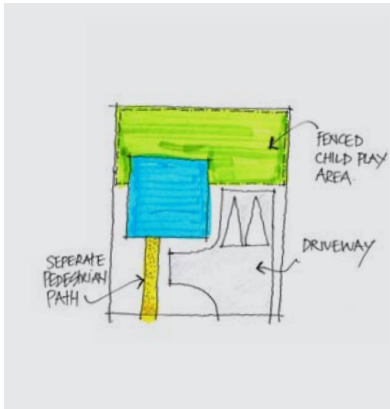


2 Single house with side yard

MULTIPLE HOUSING ON ONE DRIVEWAY

You can do a range of things to reduce the risk of children being run over if you are the owner of a block of units/apartments with a shared driveway. Your budget and the characteristics of the site will influence which of these approaches are right for you.

- Consider the safety of all users and have specific regard for children who may occupy the site.
- Slow vehicles down in the driveway with signage and/or speed humps (75mm-high humps are the most effective) and vehicle passing bays, or other methods as appropriate.
- If car parking is not immediately next to the buildings, consider how you could provide drop-off zones for young children, elderly/disabled and emergency vehicles nearer the main entranceway.
- Consider the principles of Crime Prevention Through Environmental Design (CPTED), for example providing exterior lighting and visual surveillance from dwellings and common spaces.
- Consider how to provide access and turnaround space for service and emergency vehicles.



3 Single house with onsite turning for vehicles



4 Multiple housing on shared driveway

SIGNAGE

- If your objective is to control speed then consider a “Slow” sign. This may be more appropriate than a speed restriction sign that will never be legislated or enforced.
- If your objective is to highlight the risk to children, then a nationally recognised children present sign

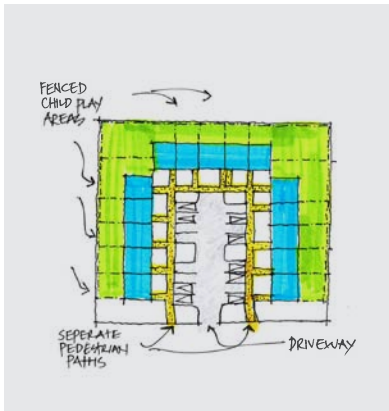


(WU2 from NZTA's Traffic Control Devices Manual) would send the appropriate message.

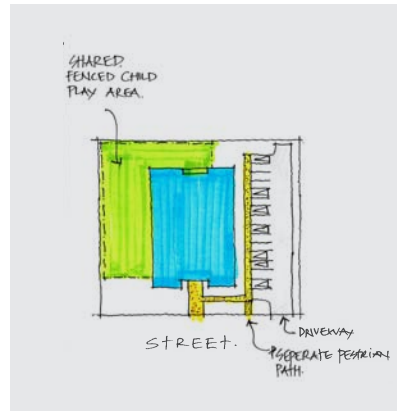
- If your objective is to highlight to drivers the risk of runover injury when reversing their vehicles, then consider using Safekids Aotearoa's stickers on doors and mailboxes.

DESIGN TIP

Rear fenced yards with wing fencing between the house and property boundary can provide a good solution for some standalone houses.



5 Terraced housing with separate pedestrian paths



6 Apartment complex with separate pedestrian paths

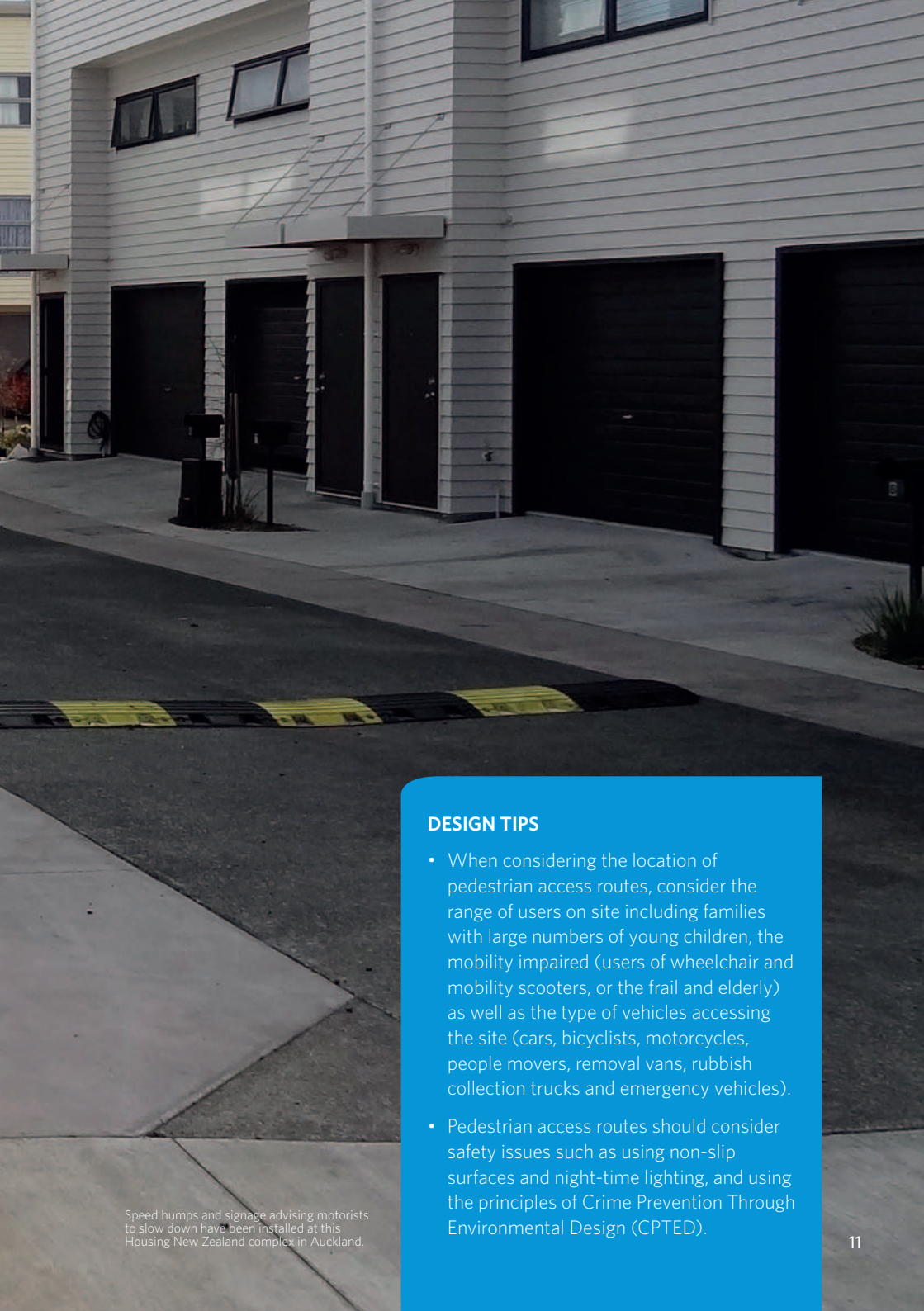


PRINCIPLE

2

PROVIDE A SAFE ROUTE FOR PEDESTRIANS

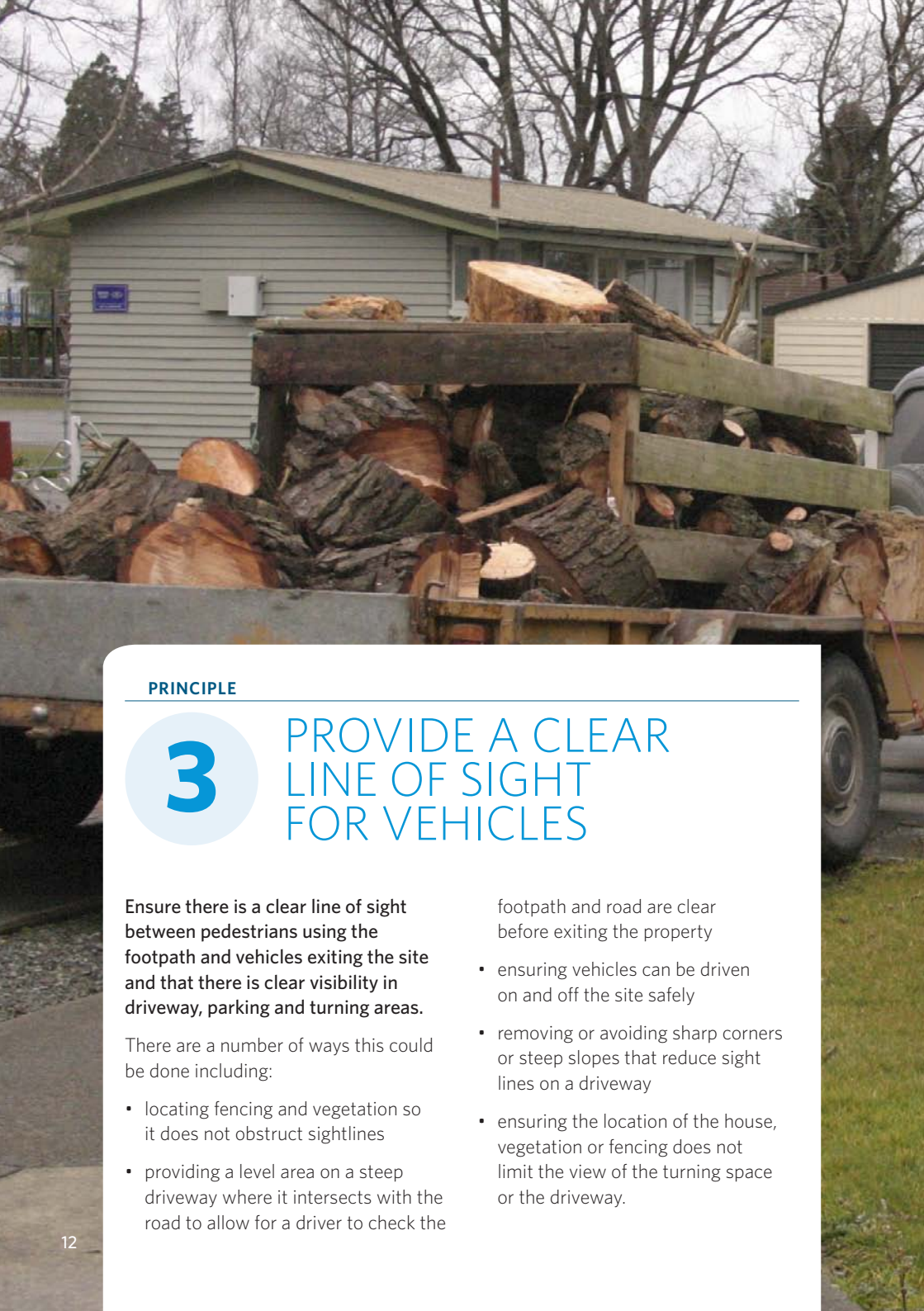
1. Provide a route – separate from the driveway – from the street and/or the car park to the house for pedestrians and people with prams, wheelchairs or mobility scooters.
2. Ensure front or main entry doors from the house do not open directly on to the driveway, car park or next to a garage door.



Speed humps and signage advising motorists to slow down have been installed at this Housing New Zealand complex in Auckland.

DESIGN TIPS

- When considering the location of pedestrian access routes, consider the range of users on site including families with large numbers of young children, the mobility impaired (users of wheelchair and mobility scooters, or the frail and elderly) as well as the type of vehicles accessing the site (cars, bicyclists, motorcycles, people movers, removal vans, rubbish collection trucks and emergency vehicles).
- Pedestrian access routes should consider safety issues such as using non-slip surfaces and night-time lighting, and using the principles of Crime Prevention Through Environmental Design (CPTED).



PRINCIPLE

3

PROVIDE A CLEAR LINE OF SIGHT FOR VEHICLES

Ensure there is a clear line of sight between pedestrians using the footpath and vehicles exiting the site and that there is clear visibility in driveway, parking and turning areas.

There are a number of ways this could be done including:

- locating fencing and vegetation so it does not obstruct sightlines
- providing a level area on a steep driveway where it intersects with the road to allow for a driver to check the footpath and road are clear before exiting the property
- ensuring vehicles can be driven on and off the site safely
- removing or avoiding sharp corners or steep slopes that reduce sight lines on a driveway
- ensuring the location of the house, vegetation or fencing does not limit the view of the turning space or the driveway.



DESIGN TIP

Ensure the driveway is wide enough for vehicles, particularly if shared by multiple users and /or used regularly by service vehicles including rubbish trucks, furniture removal trucks and emergency vehicles.

DESIGN TIP FOR DRIVEWAY ENTRANCES

The entry to a driveway should not be located immediately adjacent to a side boundary. This is because visibility will be reduced if a fence is built or if a neighbour builds or plants on the boundary.

Fencing should allow for the visibility of children, particularly between the driveway and the footpath. If it is necessary to fence immediately

adjacent to the driveway consider transparent or lower height fencing.

DESIGN TIP FOR LONG AND STEEP DRIVEWAYS

1. Shorter driveways and parking at the front of the site are preferable. Research shows that longer driveways (12 metres or more) double the risk of runover injuries.
2. On-site turning for vehicles should be provided for properties with long driveways and driveways next to major traffic routes.
3. Driveways with steep inclines, blind corners or other hazards require careful consideration to make them safer.

Driveway safety checklist summary

You can use this list to check you have considered all appropriate measures to make your driveway safer.

- ✓ Play area is separated from the driveway.
- ✓ Vehicles are prevented from entering the play area.
- ✓ Play area is directly visible from the dwelling.
- ✓ Play area has direct access from the house to allow children to move freely between the house and play area without having to cross the driveway.
- ✓ Play area fencing has a gate with self-closing hinges and a child-resistant latch.
- ✓ Driveway is long and/or shared and has traffic safety signs and/or other speed control devices such as speed humps.
- ✓ Driveway is steep with corners and there are mirrors to help vehicle visibility and speed humps to slow traffic down.
- ✓ Property is a multiple dwelling with a shared driveway and there is a drop-off zone for children and people with disabilities or limited mobility, and a turnaround area for emergency and service vehicles.
- ✓ Property is a multiple dwelling and there is safe access for pedestrians from the entranceway.
- ✓ Fencing and vegetation does not obstruct sight lines on driveway.



How to make your vehicle safer

When buying a car, one of the safety features to consider is how well the driver can see behind the vehicle. This is important for driving safety in general, as well as preventing driveway runover injuries.

There are accessories available that can be retrofitted to vehicles to help drivers when reversing such as reversing cameras and reversing sensors.

These accessories can only ever be an aid however, and do not replace the need for driver care and attention, nor do they prevent forward runover injuries.

A reversing camera is attached to the car's rear with a visual display mounted on the dashboard or incorporated into the rear-view mirror. Reversing cameras are becoming more common on new cars, and can be added to older vehicles.



There are some potential limitations to reversing cameras:

- when reversing, drivers habitually look in their rear-view mirror or over their shoulder, and not at a dashboard display
- no one camera is as effective on all vehicle makes and models
- the camera image may be obscured in rain or glare.

Reversing sensors are mounted on the back of a car. These alert the driver (by sound and/or visually) when there is an object within range of the back of the vehicle.

With both reversing cameras and sensors, correct installation is important to ensure the technology is effective and fit for purpose.

Remember:

- ✓ check for children before driving off
- ✓ supervise children around vehicles always
- ✓ slow down on driveways.

Partnering organizations

HOUSING NEW ZEALAND

Housing New Zealand manages state houses and tenancies on behalf of the Crown in New Zealand. It provides affordable houses for those in greatest need, for as long as they are in need.



SAFEKIDS AOTEAROA

Safekids Aotearoa is the national child injury prevention service, and a service of Starship Children's Health. Its goal is to reduce the incidence and severity of unintentional injuries to children aged 0-14 years in New Zealand.



NZ TRANSPORT AGENCY

The NZ Transport Agency creates transport solutions for New Zealand. It does this through planning and investing in the land transport network, managing state highways, and providing access to, and use of, the land transport system.



NZ POLICE

New Zealand Police works in partnership with communities to prevent crime and road trauma, enhance public safety and maintain public order.



ROADSAFE NELSON BAYS

Road Safe Nelson Bays (Inc) is a group set up to foster and promote safety on the local road network. Membership includes representation from a number of key agencies including Nelson City Council and Tasman District Council, New Zealand Police, ACC, New Zealand Transport Agency, New Zealand Automobile Association, NZ Road Transport Association, Bicycle Nelson Bays, Nelson Marlborough District Health Board and motorcycle clubs.



Useful references

Child and Youth Mortality Review Committee, Te Ropu Arotake Auau Mate o te Hunga Tamariki, Taiohi. 2011. *Low Speed Run Over Mortality*. Wellington: Child and Youth Mortality Review Committee.

Department of Building and Housing. 2011. New Zealand Building Code – Compliance Document D1 Access routes *Acceptable Solution 1 (AS1)*.

Ministry of Education. October 2013. Early Childhood Education PF13 *Outdoor activity space, fences*. www.lead.ece.govt.nz – downloaded from <http://www.lead.ece.govt.nz/ManagementInformation/EstablishingAnECEService/EstablishingACentreBasedService/DesigningAndBuildingYourService/EarlyChildhoodServiceDesignGuide/FencesGatesWindowsAndHandrails.aspx>.

Standards Australia and Standards New Zealand. 2004. *Parking facilities – off-street car parking – AS/NZS 2890.1:2004*.

Safekids New Zealand. 2011. *Position Paper: Child Driveway Run Over Injuries*.

Sheppard M, et al. 2010. *Driveway Runover: The Influence of the Built Environment : A Case Control Study*. *Journal of Paediatrics and Child Health*, 46 (1) pp 760–7.

Standards New Zealand. 2001. NZS 4121 Design for Access and Mobility – Buildings and Associated Facilities.

Standards New Zealand. 2011. *Safety in the home. A guideline to reducing injuries through home design building and maintenance* - HB4102:2011.

MORE INFORMATION ABOUT DRIVEWAY SAFETY:

www.hnzc.co.nz/driveway-safety

www.safekids.org.nz

This booklet is available at

www.hnzc.co.nz/driveway-safety

Published in November 2013 by Housing New Zealand, Safekids Aotearoa, New Zealand Transport Agency, New Zealand Police and Roadsafe Nelson Bays.

Wellington New Zealand

DISCLAIMER

This brochure is intended as general guidance only to help property owners understand some of the ways they could help reduce the risk of driveway runover injuries at their properties. Site characteristics and budget will determine the number of recommendations property owners may choose to action. The information contained in this brochure does not supersede the New Zealand Building Code or other legal requirements for property design. It is not intended and should not be construed as legal or professional advice.