

ISSUE 663 **BULLETIN**



UNIVERSAL DESIGN FOR ACCESS INTO HOMES BY VEHICLE

June 2021

- A universal design approach to access into homes means ensuring the main route to and into a dwelling is accessible to all.
- Steps and steep slopes along the route into a home can make it difficult for many people to enter and leave independently. A vehicle can do the work of getting people directly to the building's entrance.
- This bulletin provides a range of universal design considerations for ensuring new and existing homes are accessible by vehicle.

1 INTRODUCTION

1.0.1 Steps and steep slopes along the route into a home can make it difficult for many people to enter and leave, including:

- elderly people, who may be experiencing a wide range of mobility issues and frailty
- wheelchair users, who may not be able to stand or walk without assistance
- people who can walk but with difficulty (ambulant disabled people) and may use mobility aids such as sticks, crutches, artificial limbs and walking frames
- people who are blind, have low vision, are deaf or have hearing loss
- people with prams, pushchairs and/or young children
- able-bodied people with temporary disabilities from illness, injuries or after surgery.

1.0.2 When physical barriers and poor design make a home difficult to access, the health, safety and happiness of the occupants, visitors or care workers can be compromised.

1.0.3 Designing and adapting houses in a way that enables more people to live there at all stages of their life makes sound economic as well as emotional sense. It gives people independence, lessens their dependency, lowers the risk of accidents, reduces the cost to society and is likely to increase the resale value of the property.

1.0.4 The New Zealand Building Code requires that accessible routes be provided for premises providing accommodation, such as groups of pensioner flats, rest homes, boarding houses, hostels and student halls of residence. The Building Code does not currently require accessible routes for private housing, but ensuring that dwellings keep people safe and meet their needs throughout their lives makes good sense.

1.0.5 Ideally, access to a dwelling should be available by vehicle, on foot and by wheelchair.

1.0.6 Many people own and drive a car, including many elderly people and people with disabilities. Many people with mobility impairments are not able to use public transport and rely on a vehicle for transport. Some people may be driven by others, and some people may use other vehicles to get around such as mobility scooters.

1.0.7 A driveway can deliver people directly to the entrance, as the vehicle does the work of covering any distance or gradients across the property. It can also provide access for ambulances and other vehicles visiting the property.

1.0.8 This bulletin mainly focuses on universal design considerations for providing off-street vehicle access into low-density housing for new builds and existing buildings. The principles covered in this bulletin can also apply to medium-density or high-rise dwellings. It does not cover on-street parking.

1.0.9 The universal design considerations in this bulletin can contribute towards providing accessible routes into new and existing homes by vehicle. It does not provide a comprehensive design solution for every site, situation and type of vehicle. It is recommended that, when

designing accessible routes to dwellings by vehicle, the likely needs of the occupants and people visiting and the types of vehicle likely to be involved (private car, specialised van with side or back lifting capability) are understood and taken into consideration.

2 DRIVEWAYS

2.0.1 There are no specific accessibility-related requirements for driveways other than general requirements under the Building Code.

2.0.2 The vehicle should do all the climbing. If access to the building is steep, make sure that the vehicle ends up at the same level as the house.

2.0.3 As well as the driveway, ensuring an accessible route for pedestrians is also recommended. This should meet the specific requirements of the Building Code for accessible routes, such as requirements for slope and surface friction.

2.0.4 Remote-controlled automatic gates at the property boundary can be useful. They can be operated from inside the vehicle and can give extra security.

3 PARKING AREAS AND GARAGES

3.0.1 Parking areas should be a minimum of 3,500 mm wide for people with reduced mobility and 3,000 mm wide for ambulant disabled drivers. This size of parking space would also benefit elderly people and families with young children. Figure 1 shows an example layout. Some accessible vehicles include larger models, such as vans with built-in ramps and lifting capability – consider providing a larger area if the space is available.

3.0.2 For parking and transfer, a covered area such as a carport can provide weather protection. Carports provide flexible spaces and can be built to be suitable for the dimensions and turning circles of larger accessible vehicles.

3.0.3 A garage with direct level internal access into a dwelling is desirable for sheltered and secure entry to the house, for storage of cars, electric trolleys and scooters and for recharging of batteries for electric vehicles. Garage space is also useful for other purposes, such as a hobby space, workshop or laundry or unloading groceries, but care must be taken to ensure the space continues to meet the needs for manoeuvrability and access despite these other uses.

3.0.4 For garages, the size and planning will be influenced by:

- the size of the vehicle
- whether the driver needs assistance getting in or out of the vehicle
- whether equipment is involved, such as wheelchairs and walkers, and the method used to transport the equipment.

3.0.5 A minimum-sized single garage is almost impossible to use for an accessible route, so for existing houses, the existing garage may need to be extended or a new garage added.

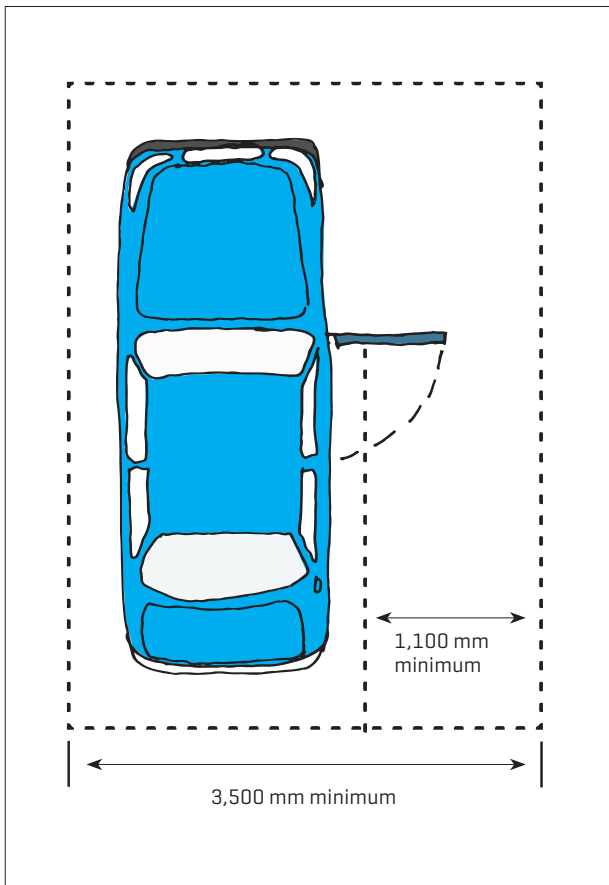


Figure 1. Minimum dimensions for a car parking space for people with mobility impairments. For ambulant disabled drivers and others, a minimum width of 3,000 mm is acceptable. Consider providing a larger area if the space is available and if larger vehicles are likely to visit.

3.0.6 Single-sized garages should be at least 3,500 mm wide if the driver uses a wheelchair and at least 4,000 mm if the passenger uses a wheelchair and is driven [Figure 2]. The garage should be at least 5,700 mm long to allow access around the vehicle.

3.0.7 Sectional, roller or tilt-up doors should be automatic and at least 3,000 mm wide. If a wheelchair is used and the chair is carried upright on the top of the vehicle, 2,500 mm clearance is needed [Figure 3]. Also check the roof-carrier manufacturer's recommendations for the required clearance for wheelchairs and other equipment. Additional clearance may be needed for larger vehicles.

3.0.8 Internal doors into the dwelling should be level entry and located in accessible positions where there is room to manoeuvre [Figure 2]. Alternatively, if internal access from the garage is not possible, the route to the dwelling's entrance should be a step-free accessible route.

4 FROM THE VEHICLE INTO THE DWELLING

4.0.1 The ideal entrance will:

- be easily located/identified
- be level entry with no steps
- be sheltered
- be visible from inside the house via a window, glazed door panel or fish-eye lens
- have a seat and parcel shelf
- be well lit with a sensor-operated light
- have the minimum fall necessary to shed water

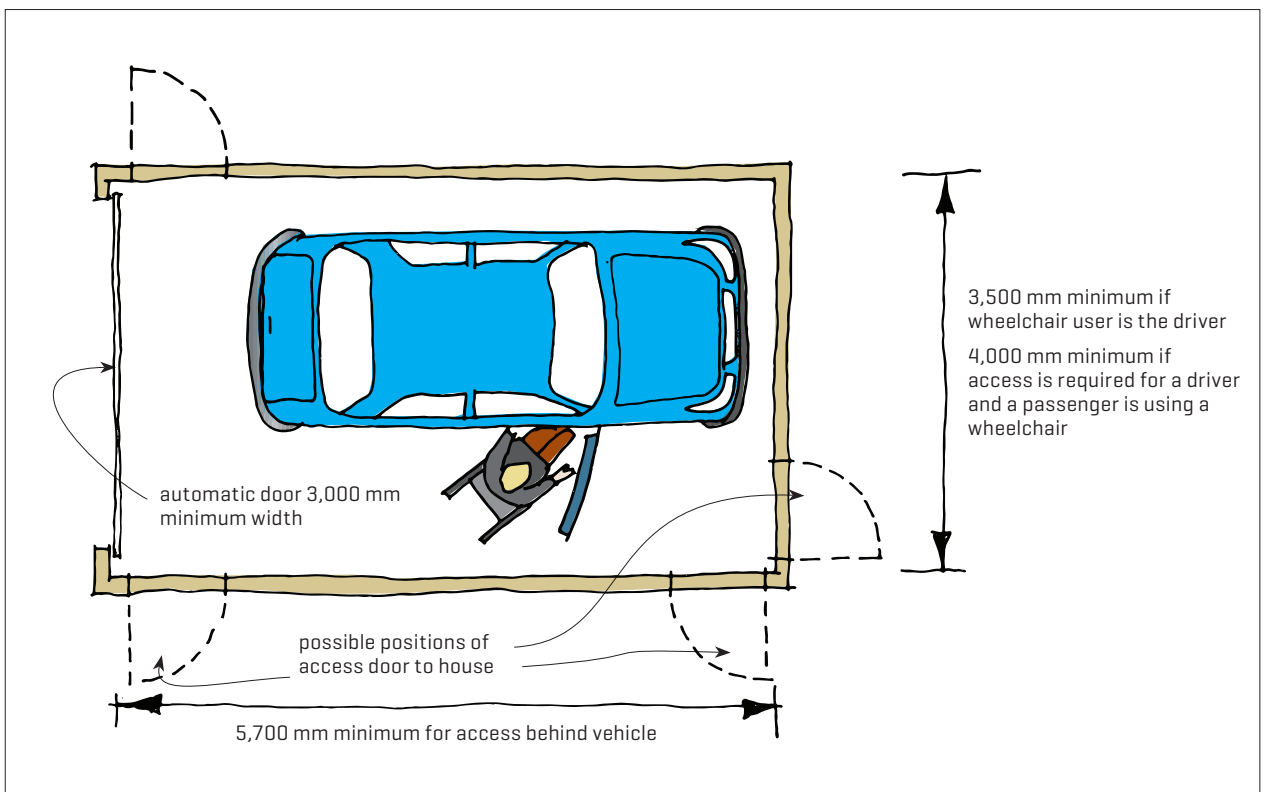


Figure 2. Minimum dimensions for an accessible single-space garage for a car. A larger area may be needed for larger vehicles.

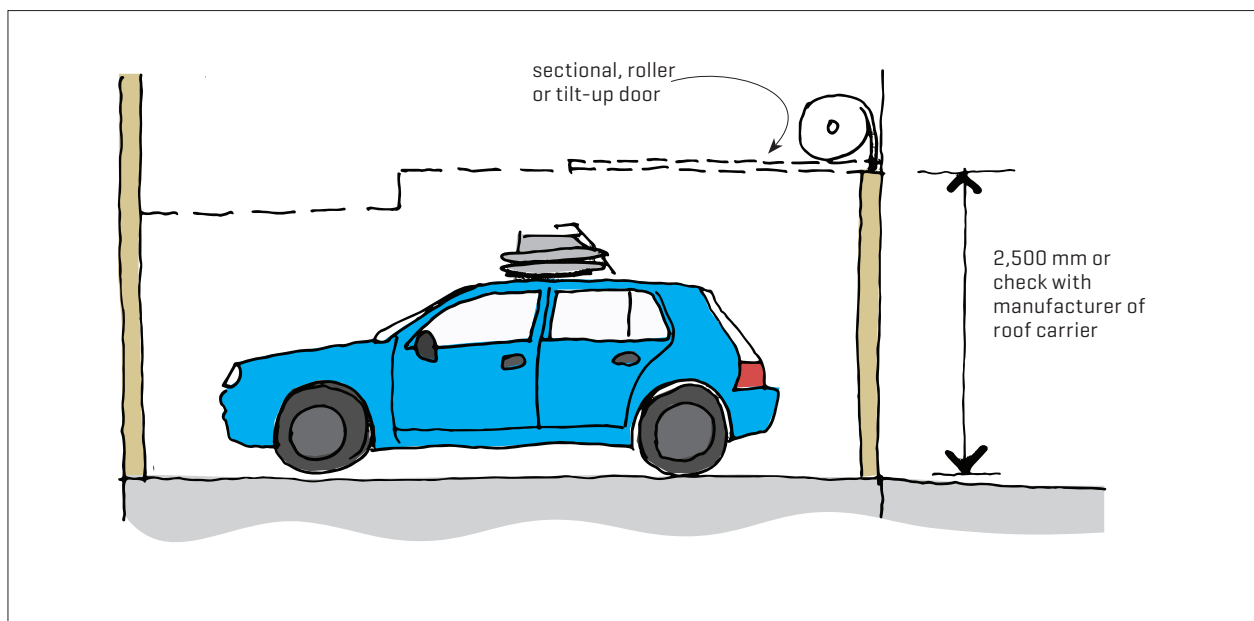


Figure 3. Vertical clearance for a car-roof carrier carrying a wheelchair. Additional clearance may be required for larger vehicles.

- have a sounding device [such as a buzzer] to announce visitors – this can include flashing internal lights if the occupant is deaf or has hearing loss
- have adequate manoeuvring space
- have an entrance door that is not too heavy for most people to manage easily
- be at least 800 mm wide
- have lever door handles placed no higher than 1,000 mm.

4.0.2 In new builds, level access without steps can be designed to Building Code requirements by including a slot or strip drain or using decking with a horizontal gap to allow drainage. There is no one-size-fits-all solution for creating Code-compliant level access into a home. This must be designed and built to meet the exact circumstances of the construction. Check with the local territorial authority to ensure that building consent requirements are met.

4.0.3 In existing houses, there is generally a step up to the entrance of at least 150 mm for compliance with weathertightness requirements. Steps at entrances can be a significant barrier to wheelchair users and an obstacle for others, as complex manoeuvring is needed at the same time as dealing with the door.

4.0.4 Many wheelchair users cope with level changes up to 20 mm. Any step larger than this can be impossible to navigate. A small change in level like this can be a trip hazard for some people with walkers or people who find raising their feet difficult.

4.0.5 To make an existing entrance with a step accessible, a permanent fillet or ramp will be needed or a level landing area at the door accessed by ramp. Take care that these do not impede the access routes out of the vehicle and to the door.

4.0.6 Including colour contrast over changes in slope and level is important to ensure visibility.

4.0.7 Where there is a significant difference in level between the garage and the adjacent house, it may be possible to install a ramp inside an existing garage to allow internal access if there is enough space [Figure 4].

5 MAILBOXES

5.0.1 The mailbox should be at a height and position so that the driver can pick up the contents through the car window and so that a wheelchair user or ambulant person can also access it [Figure 5]. If the garage is near enough to the public road, with the approval of the local delivery office, the mailbox could be built into the garage wall and the mail collected from inside.

5.0.2 Mailboxes should be placed adjacent to a level platform at least 1,200 mm wide for access. Contrast colours on the letterbox can assist visibility.

6 PARKING FOR MEDIUM-DENSITY AND HIGH-RISE HOUSING

6.0.1 For private dwellings in medium-density or high-rise residential buildings, at least one accessible off-street car park is recommended for each unit of accommodation, as close as possible to the dwelling and on an accessible route.

6.0.2 The proportion of accessible car-parking spaces should be the same as the proportion of accessible dwellings on site.

6.0.3 If no accessible car-parking spaces are provided within the development, it is recommended that at least one 3,500 x 5,400 mm drop-off space be provided to allow occupants and visitors to use taxis and other vehicle-share options.

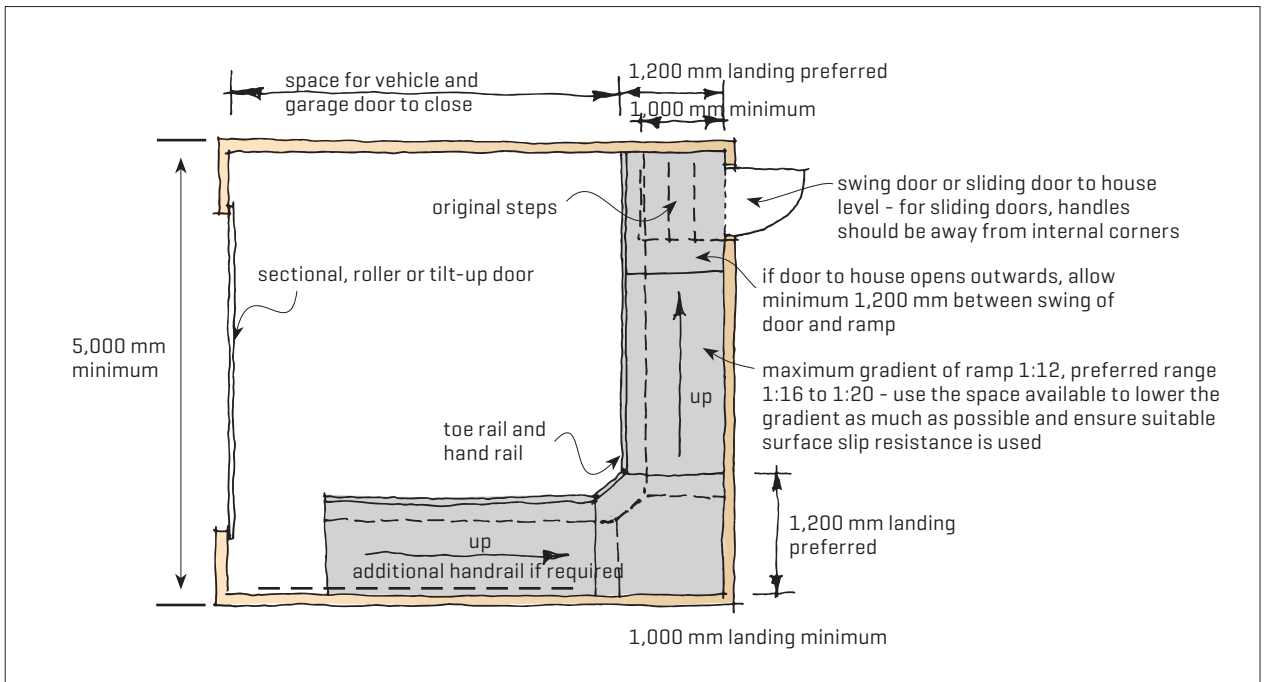


Figure 4. Installing a ramp in an existing garage to allow internal access where there is a difference in level between the garage and the house.

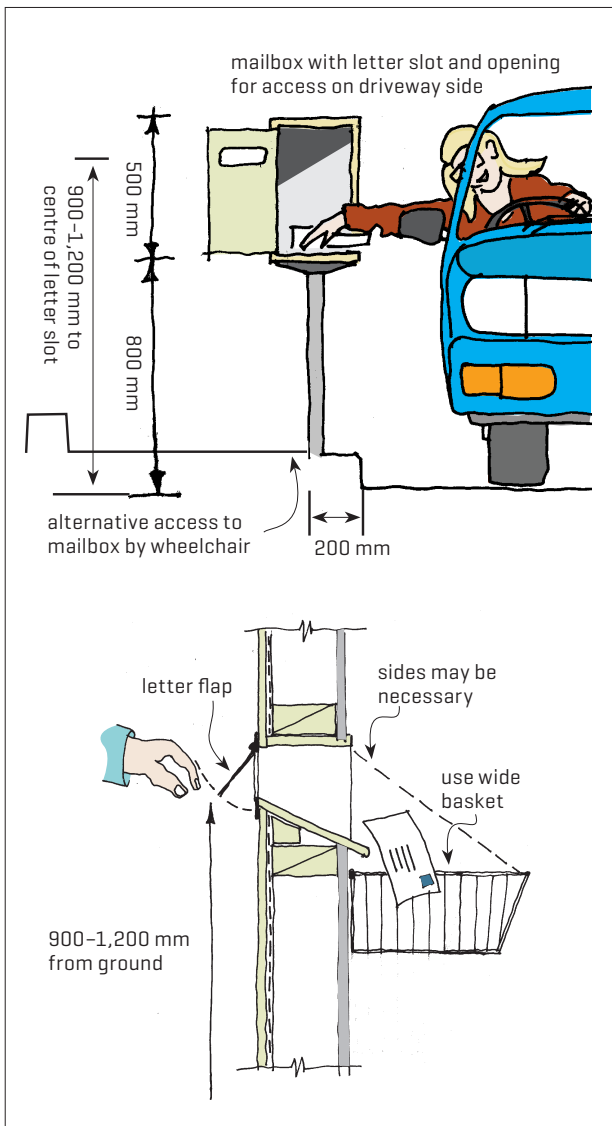


Figure 5. Example configurations for mailboxes.

7 MORE INFORMATION

BRANZ *Homes without barriers: A guide to accessible houses*

BRANZ Bulletin 662 *Universal design for access into homes*



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